TOWN OF SACO

Preliminary Engineering Report

Wastewater System Improvements

May 2022

GreatWest ENGINEERING

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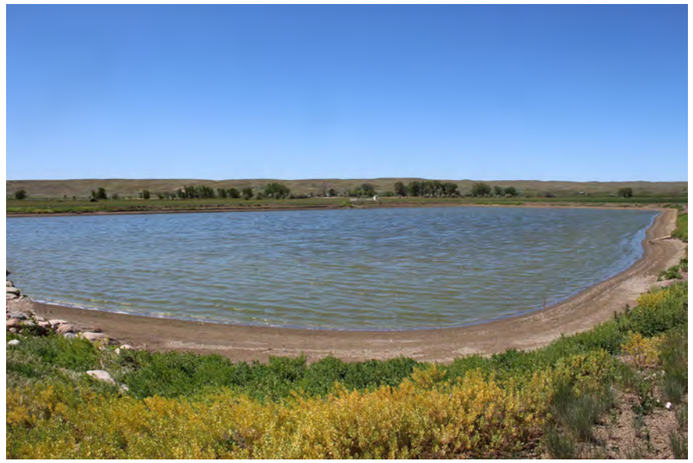

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Wastewater System Improvements

May 2022

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GreatWest
ENGINEERING

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1.0 EXECUTIVE SUMMARY

1.1 Introduction and Background

Saco is located at the eastern edge of Philips County in the north-central portion of Montana. The primary economic activities in the Town are related to agriculture and recreation activities connected to local hunting, fishing, and boating with the nearby Nelson Reservoir. The community is located along US Highway 2 (US 2), approximately 30 miles east of Malta, and the Town is a convenient stopping place for the area's farmers, ranchers, and truckers. The vicinity is surrounded by agricultural lands used for farming and natural gas wells. The Town hosts a small K-12 school which also employs residents and is the center of local activity.

Historically, Saco was originally established as a stop on the Great Northern Railway in the late 1800's, carrying natural resources, livestock, and crops between Washington to Minnesota. The railroad, which is now operated by Burlington Northern Santa Fe (BNSF) still passes through Town but does not stop. The area has active natural gas wells, and the Town is one of only few communities in Montana that provides municipal natural gas service to the community.

The Town's local government is actively involved in planning and is pursuing infrastructure improvements to better the quality of life. According to Town and DEQ records, the majority of the Town of Saco's wastewater system was originally constructed earlier than the 1950s and as far back as the 1920s for much of the original clay piping.

The latest available data shows that the population of the Town is about 244. Saco's population has been higher in past decades. The trend in population reduction is likely a result of the decline in some family farms and the general departure of younger individuals seeking other types of occupations. However, the Town has much pride in the community and desires to improve its infrastructure for the foreseeable future and continue to make the Town an attractive place to live, do business and raise a family.

According to the 2015-2019 American Communities Survey, the Town's median household income (MHI) of $42,500. The sewer rate is presently $25, and the average water rate is $55. Despite the Town's economic challenges and aging and problematic sewer infrastructure, the residents hold a strong sense of community, work ethic and commitment to maintaining a high-quality place to work and live.

The Town applied for an American Recovery Plan Act (ARPA) competitive grant application in July of 2021 and received an award on October 8, 2021, to fund critical wastewater improvements. This project is referred to as the Phase 1 wastewater project. (See Appendix A) Since DNRC required that startup on competitive grants be met within four months of award dates, the $2.7 million project identified in the Round 1 competitive grant application was paired down to be a $1.6 million project using only ARPA funds to proceed immediately with the Phase 1 project. The primary scope of work for the Phase 1 project includes upgrading the lift station and replacing up to 1,000 feet of degrading clay collection mains. Several deficiencies with the wastewater collection and treatment system will remain after Phase 1 and are identified within this PER for subsequent project phasing. A Phase 2 wastewater project identified in this PER is proposed to be included in the state and federal funding applications in 2022.

The Town contracted with Great West Engineering (GWE) to prepare a Preliminary Engineering Report (PER) needed to evaluate deficiencies and recommend solutions for the Town's sewer system problems. The Town requested assistance to evaluate the aging collection issues, analyze impacts related to infiltration and inflow (I&I) flows, and assess the treatment system for improvements to treatment performance and effluent water quality.

The format of the PER is in accordance with the Montana Water, Wastewater, and Solid Waste Action Coordination Team (W_2ASACT) for a Uniform Preliminary Engineering Report.

In summary, the primary objectives of this PER include:

- Providing the Town of Saco with an up to date and complete analysis of the sewer system
- Identifying deficiencies and performing alternative analysis to identify recommended improvements
- Defining a proposed project, project costs, and potential a potential implementation and phasing plan
- Determining funding options
- Completing an environmental assessment of a potential project
- Obtaining public comment on the proposed project

1.2 Problem Definition

The PER provides a thorough description of Saco's wastewater system infrastructure with a detailed analysis of the performance and condition of the existing system. The system deficiencies identified in this report are as follows:

1.2.1 Collection System

- Poor Condition of Existing Clay Collection Piping. Several sections of the 70-year-old and older clay collection piping and manholes are in a deteriorating and corroding state. The existing clay pipes are demonstrated to be sagging, cracked, have protruding service connections, and some areas root intrusion. Several locations throughout the collection system also have missing pipe and holes directly to the ground. The information above is documented with video inspection, sewer cleaning observation reports, maintenance logs, and site reconnaissance investigations. (Appendix M)

    - In one important sewer collection main, which services the grocery store and other local business (MH 18 to MH 16), the collection pipe is in such a poor condition that it does not even allow the sewer video camera to extend through the pipe.

    - Several sections of sewer pipe have open holes directly to the ground surface without any pipe. This condition is observed to be occurring in the pipe within MT 243, within US 2 (MH 15 to MH 11), and the alley between US 2 and Vagg Street (MH 18 to MH 16), by the school (MH 49 to MH50), and Wellington Avenue (MH 46 to MH 47).

    - Approximately 900 feet of clay piping is located within US 2 along the fog line. This section of sewer main has multiple issues including cracks, major sags, and holes in the pipe. Given that the pipe is over 17-feet deep and within high groundwater, completing repairs at this location would create traffic disruptions and impacts to a busy Montana highway.

    - While about 5,300 (about 40%) of the piping was able to be documented with video inspection during this study, the remaining original clay collection system piping is considered to be in the same deteriorating condition given the similar age and composition of the piping. The rate of degradation is only expected to increase, so

collection system improvements are critical. Collection system improvements are necessary to extend the useful life of the Town's collection system and limit unnecessary I&I intrusion into the treatment system.

- The existing collection system is one of the worst system video inspected according to the company which completed the sewer pipe assessment. The company owner and technician, Tyler Smith, stated:

  "Overall, the condition of the Town of Saco sewer's system is very poor. In our 20 years of inspection services, I have not seen a system that was in need of so much work. Most manholes have corroded to the point where you can see the reinforcing wire. We were only able to completely inspect just a handful of the mains completely through. In those inspections we found lots of intruding taps that are so far into the sewer main that cameras cannot pass by. Several of these sewer mains have more than one of these taps there for we were not able to inspect the entire line. We also found complete sections of pipe missing the top where you can see the soil. In these sections a catastrophic failure can occur without notice and with its rural location property damage would occur before the repair was made. All in all, I would recommend a phased approach to sewer main replacement with point repairs in the first phase to prevent catastrophic failures." (Copy of letter in Appendix J)

- Sanitary Sewer Overflows (SSO's). Overflows have been documented to occur throughout the system and impact up to a dozen residents during periods of high rainfall and runoff. The occurrences of SSOs presents a very serious public health and safety issue. Because of direct human contact with raw sewage, these occurrences present the possibility of not only acute illness from bacterial and viral pathogens, but also potential chronic illness from recurring exposure to potential organic (volatile organics, endocrine disruptors, pharmaceutical products) and inorganic (heavy metals) contaminants.

  - Letters were provided by some very concerned local community members about the condition of the sewer collection system. These letters document sewer overflows into their homes and also a local church. These statements express common sentiments that residents share about the degrading condition and limited capacity of the sewer collection system and lift station. The residents are

concerned about periodic surcharging conditions during times of runoff and high groundwater conditions. According to the letters, these conditions will keep repeating until and unless the sewer system deficiencies are corrected. These letters, which are from residents in various locations throughout the Town, include the following:

- Leah Molina states that sewer has backed up at least 3 feet into her basement and has caused damage to appliances.
- Dale Plouffe states that when substantial rain events come, the sewer backs up into his basement. He has had to replace appliances, beds, and sheet rock in addition to installing a manual sewer shut off valve.
- Debi and Wes Whitaker write that when a lot of rain comes, they have had sewage back up into their basement which caused damage to carpet, beds, walls, and freezer and was very expensive to repair. The Whitakers also feel a responsibility to convey the alarm conditions of the sewer lift station to the Town workers. They also have a manual sewer shut off valve on their home that they turn when the system is in a surcharged condition.
- Wayne Stall (who even lives in a higher northwestern part of Town) states that he has experienced sewer backups into his basement. Also, Wayne confirms that the Methodist church has experienced backups as well.

Copies of the full letters and a map showing the locations of each location throughout Town are found in Appendix J.

- Manholes Located Under the Flood Levee. Much of the collection system pre-dates the installation of the existing United States Army Corp of Engineers (USACE) flood levee. At least two manholes and associated collection pipe alignment is located under the levee embankment. Completing repairs along this section of pipe could compromise the levee structure.

- Poor Condition and Degrading Manhole. Several manholes are in a poor structural condition, are in a corroded state within the concrete walls and cone sections and have degrading or non-existent base sections. Most are missing access steps. Gravel and clay

pipe fragments found in the manholes during cleaning is indicative of the degrading state of the collection system and manholes.

- Infiltration and Inflows. This PER determined that Infiltration and Inflow (I&I) flows contribute over 31% of total sewer system flows on an annual average basis and over 85% of the sewer flows during peak day events. The sewer system experiences a direct response to rain events and creates exceedingly high peak flow conditions.

1.2.2 Treatment System

- Discharge Permit Violations. The lagoons are not meeting MPDES discharge permit effluent limits, and the Town regularly receives violations for BOD and E. coli when discharging. Both the Beaver Creek-Nelson South Canal (watershed 100500140704) and the downstream Milk River-Dry Stinky Creek (watershed 100500042101), as listed on the EPA source (https://mywaterway.epa.gov/community), are impaired for nutrients, metals, and flows. The wastewater treatment system located upstream of these watersheds, are potential sources of contamination by undertreated sewage. According to an independent study of the lagoon system facilitated by the Department of Environmental Quality (DEQ), there were fourteen (14) permit exceedances from August 2016 to June 2021 including 6 violations (43%) for BOD and 9 (57%) for E. coli. In the future, it is anticipated that the Town will violate E. coli. permit limits up to 60% of the time. (Appendix P)
- Excessive Sludge Accumulation. Sludge has never been removed (with over 60 years of accumulation) from both existing lagoons and is visible from the surface of the lagoon water surfaces in both cells. The lagoon sludge needs to be removed to allow for sufficient treatment capacity and for improved discharged water quality of the treatment system. According to sludge judge measurements, sludge depths are 2.6 feet in Cell #1 and up to 2.2 feet in Cell #2. Considering the measured average sludge depths, there is about 2.1 to 2.5 million gallons of in-situ (wet) sludge that is needed to be removed, dewatered, and legally disposed of using DEQ and EPA 503 criteria. Sludge removal is also one of the top priorities recommended by the DEQ H&S study. In 2021, about 70% of the treatment volume was observed to be occupied by sludge. A small water cap creates diminished treatment capacity and creates noticeable odor, leaves no room for sufficient settling, and creates problems for BOD and TSS removal. (Appendix P)

- Failed Lagoon Valves and Degrading Structure. The lagoon control valve structures have failed, and the system is stuck in parallel lagoon operation mode where raw wastewater is split into both cells, as opposed to in-series. This operation mode, in addition to the excessive sludge, does not permit optimal treatment and detention time of the wastewater treatment system. Insufficiently treated wastewater will continue to negatively impact the receiving streams and will lead to ongoing discharge permit violations. The concrete structures are subject to corrosion and degradation to the point of the reinforcement being exposed, as shown in site photos.
- Security Fencing is not Sufficient. The lagoon and lift station sites are not surrounded by sufficient security fencing to protect the public from any safety hazards and prevent any tampering with the facility, nor sufficient fencing for preventing wildlife and livestock from entering the site. There is no fencing around the lift station and the fencing around the lagoons is dilapidated and requires replacement.
- Bank Slope Erosion. The existing lagoons are experiencing erosion of the existing internal berm slopes. Also, rock slope protection does not exist on the northern internal banks within both lagoons. Wind and wave action causes recurring erosion of the slopes which are an ongoing maintenance items for the Town. Without sufficient protection of the slope, the lagoon is at risk of catastrophic failure and the release of untreated sewage.

1.2.3 Lift Station

- Power outages at the Lift Station. There is currently no permanent emergency backup power provided. The Town presently transports their temporary trailer-mounted backup generator to operate the lift station during power outages. With power outages and delayed response time, the wet well levels are subject to causing sewer overflows (SSOs). SSOs create a risk for both the public and the operations staff to have direct contact with raw sewer. According to an email from Northwestern Energy distribution planning engineer, Amerlyn Walsh, the lift station site (premise 32143) has an average of 4-5 outages per year with an average “maximum minutes out” of 271 minutes (range 86 to 867 minutes) (See Appendix N).
- Corrosion Concerns. The metal piping, fittings, and steel dry well enclosure are susceptible to corrosion from within due to humidity and externally given the corrosive nature typical of the Milk River area soils. The concrete wet well is also susceptible to H_2S corrosion from within the wet well. If these conditions are left unaddressed, then infiltration

and ultimate failure will develop in both the wet well and dry well. Exfiltration also creates the potential for contamination of the groundwater.

- Lacking Force Main Isolation Valve. The discharge force main lacks functioning isolation valves. Valves are required to provide lift station isolation to prevent backflow into the dry well area to allow replacement and/or maintenance of the pumps and fittings within the dry well.
- No Bypass Piping Assembly. The lift station does not currently have a bypass assembly pumping quick connection to be able to direct flows around the existing wet well if servicing of the existing wet well is needed. To work in the existing wet well for longer durations, the wastewater needs to be "backed-up" into the existing collection system and/or at least two pumper trucks are required to keep the existing wet well dry. Both options are costly and have a high risk of causing SSOs into the collection system.
- Alarm System Issues. No Automated Emergency Notification. The lift station does not have a permanent emergency auto dialer call-out system to notify the operators in the event of an emergency. The current alarm situation relies entirely on the periodic visits by the operator and reports from the nearby homeowner to call the Town when the lift station is off. (See Appendix J for letter) If a pump or power failure occurs while this resident is not home for an extended period, or if a local resident moves out, then the lift station and sewer lines could fill and overflow upstream collection pipes. The current situation of a homeowner reporting issues is not a reliable alarm system.
- End of Useful Design Life. The lift station is operating beyond the end of its useful life typical for lift stations. Future leaks or ruptures could result in repeated pump failures within the dry well space.
- Capacity and Inflow and Infiltration Impacts on Lift Station Capacity. The Town reports that the lift station is unable to keep up with flows during high rainfall and runoff events. The collection system is susceptible to high infiltration creating very high peak instantaneous flows at the lift station. While collection system improvements are needed to reduce the impacts of I&I, new lift station pumps that are appropriately sized and will sufficiently handle the peak flow events (with lead plus lag mode operation) are also necessary.
- Confined Space Access and Operator Safety Concerns. The existing lift station drywell is a very small and tight (24" entry tube with a 48" base section) below-ground confined

access space. Because of the small interior space, it is very difficult to operate and perform routine maintenance within the dry well. Moving equipment parts, entanglements, slips, and falls from the access ladder are all concerns. It is also possible for toxic fumes and gasses to accumulate in the dry well. The operators are working in hazardous conditions and must ensure they always follow the confined space entry protocols. Confined space entry requires special planning to arrange for repairs and maintenance provided by service providers. It is Great West Engineering's experience that many pump repair companies will not enter these types of lift stations anymore due to the nature of the confined space risks.

1.3 Alternatives Considered

1.3.1 Collection System Alternatives

The alternatives screening process considered several collection system alternatives. Of these alternatives, the following collection system were selected for detailed analysis:

- Alternative C-1 – Phase 1 Collection System Improvements
- Alternative C-2 – Phase 2 Collection System Improvements
- Alternative C-3 – Phase 3 Collection System Improvements
- Alternative C-3A – Phase 3A Collection System Improvements (Scaled-down Phase 3 Option - North of Railroad)
- Alternative C-3B – Phase 3B Collection System Improvements (Scaled-down Phase 3 Option – South of Railroad)
- Alternative C-4 – Phase 4 Collection System Improvements

Cost estimates are also provided for potential scaled-down Phase 3 options (Phase 3A or 3B) projects to provide an option for a lesser cost alternative that can be completed if funding allows for expanding the scope of the proposed Phase 2 project to compete more pipeline replacements. Due to fixed project costs, the sum of Phases 3A and 3B are greater than completing Phase 3 in a single phase.

1.3.2 Lift Station Alternatives

The lift station alternative selected for a detailed analysis includes the following:

- Alternative LS-2 – Lift Station Improvements (New submersible packaged lift station)

1.3.3 Treatment System Alternatives

The alternatives screening process considered many wastewater treatment alternatives. The Town prefers operational simplicity for treatment system upgrades. Of these, five potential alternatives were selected for a detailed analysis. All these alternatives include sludge removal and disposal.

- Alternative T-2: Reconstructed Lagoons with UV Treatment
- Alternative T-3: Total Retention System (No UV Treatment)
- Alternative T-4: Minor Lagoon Upgrades with Irrigation
- Alternative T-5: Minor Lagoon Upgrades with UV Treatment
- Alternative T-6: Minor Lagoon Upgrades Only
- Alternative T-7: UV Treatment Only

1.3.4 Project Priority Summary

Table 1-1 shows the project priority list based on a comprehensive review of the Town's entire collection system, treatment options and costs, and input from the Town. Collection system improvements resulting in a reduction in I&I take the highest priority and provide the greatest health and safety benefits to the Town. All costs are reported in 2024 dollars except for C-1 and LS-2 which are for 2023, and Phase 3 and 4 collection improvements are inflated to 2026 dollars.

Major treatment system improvements are a significant capital cost and will only be considered after improvements to the collection system are completed to reduce influent flows. The treatment alternatives listed in priority numbers 7 through 11 (T-4, T-6, T-1, T-2, and T-3) are stand-alone treatment alternatives that are shown for comparison. Priority 1 and 2 (C-1 and LS-2) are included in the Phase 1 project that is ARPA funded. Priority 3 and 4 (C-2 and T-5) are included in the Phase 2 project and part of the state and federal grant applications in 2022 for a total project cost of $1,695,000.

Table 1-1 - Improvements Project Priority List

Project Priority List		
Priority	Alternative	Total Project Cost
1	C-1: Phase 1 – Collection System Improvements	$332,000
2	LS-2: Lift Station Improvements	$768,000
3	C-2: Phase 2 – Collection System Improvements	$982,000
4	T-5: Minor Lagoon Upgrades Only	$713,000
5	C-3: Phase 3 Collection System Improvements (7,500 feet of pipe replacement, 2026 dollars)	$2,953,000
5A	C-3A: Phase 3A Collection System Improvements (scaled down Phase 3 – North of Tracks – 5,000 feet of pipe replacement, 2026 dollars)	$2,137,000
5B	C-3B: Phase 3B Collection System Improvements (scaled down Phase 3 – South of Tracks - 2,500 feet of pipe replacement, 2026 dollars)	$964,000
6	C4: Phase 4 Collection System Improvements	$1,159,000
7	T-4: Minor Lagoon Upgrades with UV Treatment (Not done if T-5 is done)	$1,345,000
8	T:6: UV Treatment System Only (If necessary, following T-5)	$716,000
9	T-1: Reconstruct Lagoons with UV System (stand-alone project)	$2,604,600
10	T-2: Total Retention System (stan- alone project)	$2,979,000
11	T-3: Minor Lagoon Upgrades with Effluent Irrigation (stand-alone project)	$929,000

1.4 Preferred Alternative

Based upon the decision matrix developed in Chapter 6, public comment, Town directives and the results of this PER, the proposed project is Alternative C-2: Phase 2 Collection System Improvements and Alternative T-5: Minor Lagoon Upgrades Only, as a combined Phase 2 project.

Major lagoon upgrades evaluated in alternatives T-1 and T-2 are not considered necessary or cost-effective for the Town at this time. Minor upgrades to the lagoon listed in alternatives T-4, T-5, and T-6 would provide sludge removal, upgrading the failed splitter control valves, and would improve the treatment performance and effluent water quality to meet permit limits. Collection system improvements to fix the degrading piping system and reduce the impacts from high I&I, are a top priority for the Town. It is recommended to improve the collection system and reduce the I&I and influent flows into the lagoon prior to the consideration of completing more costly treatment upgrades. The UV treatment only alternative (T-7) is stand-alone and can be completed with or without lagoon upgrades. It can be considered at a later date.

Effluent disposal by irrigation is not considered viable given that nearby landowners are not open to receiving effluent irrigation, and the lands near the lagoon are within the flood plain. Major

treatment system upgrades are also not preferred at this time since the final results of current flood plain mapping by FEMA and DNRC, which can impact the design of a fully upgraded treatment system, are not anticipated until 2026.

The Phase 1 project for the lift station upgrades and replacement of up to 1,000-feet of failing collection main are being completed with ARPA grant funding.

The following are some features and benefits of the preferred alternative as a Phase 2 project:

- The collection system will be improved to the latest design standards and provide watertight PVC piping and manholes that will act to significantly reduce the impacts of I&I, lift station pumping hours, and influent volumes into the lagoon.
- An upgraded collection system reduces the impacts of SSOs and reduces maintenance costs for Town responses to occurrences of blocked collection mains stemming from existing uneven and broken pipes.
- The groundwater will be better protected with new piping and will significantly reduce sewage exfiltration that previously came from cracked and broken pipes prior to collection system improvements.
- The lift station will be upgraded to a state-of-the-art new pump system with the latest efficient pumps, controls, and alarm systems. Replacement parts will be easier to obtain with a new submersible lift station.
- With an upgraded lift station, unsafe confined space access will no longer be required.
- The lagoon system free of sludge, will be operating as designed, and will provide an increased level of treatment and effluent water quality. The impact on the existing watershed will be positive.
- The proposed alternative will benefit public health and safety by reducing potential pathogens and disease-causing viruses from entering the groundwater and nearby streams.
- Over 2.5 million gallons of accumulated sludge will be removed, dewatered and legally disposed of using EPA 503 requirements. The biosolids will be beneficially reused to aid nearby crop lands.

- The structural integrity of the dikes will be repaired and the potential for extensive erosion and potential for failure of the dikes will be reduced.
- The treatment system can remain at the same location and on Town-owned property.
- With ample storage capacity in the existing lagoons and with I&I reduction from collection system improvements, the Town would have the benefit of discharging at the optimal times to achieve the MPDES permit limits.

1.5 Project Costs and Budget

The estimated project cost for the preferred alternatives as a Phase 2 (Alternative C-2 and T-5) project is $1,695,000. Various funding sources for improvements are considered in Chapter 8 and outlined in Table 8-1. The recommended funding strategy utilizes the following:

- $500,000 MCEP Grant
- $125,000 DNRC Grant
- $600,000 CDBG Grant
- $212,000 RD Grant
- $258,000 RD Loan

With the proposed funding strategy, and to be eligible for the grant and loan programs listed above, the combined water and sewer rate after completion of the wastewater improvements project herein is estimated to be at least $84.28 per month per equivalent dwelling unit (EDU). This resulting combined sewer and water rate is approximately 103.5% of the combined system target rate of $81.46 as determined by the Montana Department of Commerce. (Appendix H)

All funding should be in place prior to proceeding with the proposed project. It is expected that funding can be finalized and available for use by the end of the summer of 2023. At this time, the design phase of the Phase 2 project will commence with all necessary permits and approvals in place by the end of 2023. The project will aim to be let out for bid in early 2024, followed by a construction start in the spring of 2024. It is anticipated that construction will be complete, and the system will be operational by the end of 2024 or early 2025.

2.0 PROJECT PLANNING

The PER was prepared under the direction and approval of the Town of Saco and complies with the DEQ design requirements and regulations. State and federal funding agencies working within Montana that are members of the Water, Wastewater, and Solid Waste Action Coordination Team (W_2ASACT) have adopted the Uniform Preliminary Engineering Report for Montana Public Facility Projects. Members of W_2ASACT include CDBG, MCEP, RD, SRF, INTERCAP, and DNRC funding programs. The PER requirements must be met by communities that are planning to use any of these funding agencies. Following PER report format criteria is a condition of all planning and construction grant funds that may be received from MCEP, CDBG, DNRC, and RD as well as the SRF loan program.

The Town is utilizing MCEP, DNRC Renewable Resource Planning Grant (RRGL) planning grants and the ARPA program grants to fund this PER. To assist in completing this study, the Town of Saco retained Great West Engineering, Inc.

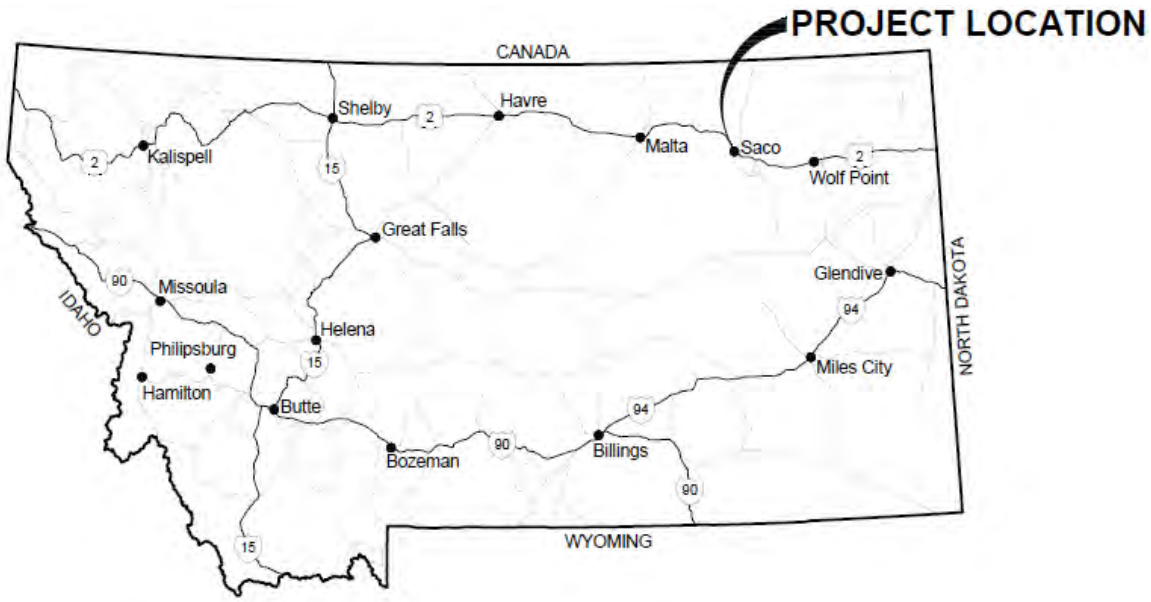
2.1 Location

The Town of Saco is located within Philips County on U.S. Highway 2 (US 2) about 30 miles east of Malta. Figure 2-1 shows the vicinity map. The planning area for this PER encompasses the incorporated limits of the Town and the existing wastewater treatment lagoons as shown in Figure 2-2. The existing wastewater system provides collection and treatment for the entire incorporated Town limits. New sewer extension can occur within undeveloped lots on the northeast side of Town.

The Town is specifically located at:

- Township/Section Range: Township 31 N, Range 34 East, Sections 7, 8 & 17
- Latitude/Longitude: 48º 27’ 26” North Latitude, 107º 20’ 33” West Longitude
- Average Elevation: 2,182

Figure 2-1 - Vicinity Map



2.2 Environmental Resources Present

As part of any major construction project, the impacts of the project on the surrounding environment must be considered and provisions made to mitigate any negative impacts. The Uniform Application for Public Facility Projects streamlines the process by utilizing a standard procedure called the Uniform Environmental Checklist. A completed Uniform Environmental Checklist for the proposed wastewater system improvements in Saco is included in Appendix B. The Enviromental Checklist, along with the findings of the PER, was presented to the Town at a public hearing held on April 13, 2022, and was adopted by resolution. The completed checklist determined "*that no environmental conditions exist within the Town of Saco that would make construction of any alternative unique in nature*." An environmental impact statement (EIS) is not required.

As part of quantifying the impacts to various environmental and historic resources, the Uniform Checklist process includes the process of sending letters to pertinent local, state, and federal agencies requesting comments on any potential environmental impacts resulting from the proposed improvements. The letters and responses to these letters, and the adopted resolution, are included in Appendix B.

Figure 2-2 - Project Planning Area

Town of Saco, Phillips County, Montana

Town of Saco Wastewater PER

Planning Area

Town Boundary

Parcel Boundaries

N

0 500 1,000 Feet

GreatWest ENGINEERING

2.2.1 Land Resources

Land use within the Town of Saco includes what is typical of Montana small towns, such as residential homes, some commercial lots and businesses, churches, a school, and a post office. Land use outside the Town limits is dominated by agricultural uses and a few residential lots with homes. The open space out of the Town limits consists of irrigated agricultural land and open rangeland. Natural gas wells are located within the region as well.

A search of the United States Department of Agriculture (USDA) Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx) indicates soils are primarily clays, silty loams and loams. A copy of the Web Soil Survey is included in Appendix C. Clays, silty loams, and loams are present through the entire depth to 60 inches below the ground surface.

The Bowdoin clay is the primary soil in the Town and vicinity area. The NRCS Prime Farmland Soil Legend for Philips County area does not designate this soil as “farmland of statewide importance.”

The soils in the Saco area are not conducive to individual drain field construction or rapid infiltration cells because of the low permeability of the soils. The clays and silty loams comprising much of the area percolate slowly. The clay soil conditions of the subsurface to typical sewer depths of up to 10-feet is confirmed by Town’s own digging reports.

A geotechnical evaluation including bore holes and a geotechnical evaluation and report will be completed to support the project during the design phase. Several bore holes will be planned to sufficiently account for and obtain design and construction recommendations for the collection, lift station and treatment system improvements.

Geographic Setting

Saco is located in the Glaciated Missouri Plateau of the Great Plains Physiographic Province. The Little Rocky Mountains and the Bears Paw Mountains are the most visible geographic features in the area. The Little Rocky Mountains rise southwest of the Town and Bears Paw to the west. Other geographic features include Nelson Reservoir and Fort Peck Reservoir, large bodies of nearby water, and the Milk River that culminates east of the Town. The Montana plains surround Saco and extend to the mountains and in all other directions. The average annual temperature in the region is 42.3° F and the average precipitation is 10 to 14 inches (U.S. Climate Data).

2.2.2 Biological Resources

A search was conducted on Montana Natural Heritage to determine animal species and plants of concern in the area and is included in Appendix D. The Natural Resource Information System lists the following species of concern for Township 31 North, Range 34 East: Ferruginous Hawk, Greater Sage-Grouse, Baird's Sparrow, Bobolink, Loggerhead Shrike, Northern Redbelly Dace and Iowa Darter. No adverse effects are anticipated for these animals as a result of this project. Based upon a review of the Montana Sage Grouse Habitat Conservation Program Mapper (https://sagegrouse.mt.gov/ProgramMap), this portion of Philips County is within the area classified as general habitat for sage grouse. Any improvements to the Town's wastewater system would be outside of the sage grouse core habitat and within previously impacted areas. It is unlikely that sage grouse will be adversely affected by this work. A copy of the map is also included in Appendix D.

Plants of concern include Hot Spring Phacelia.

A response letter from Jacob Martin of the United States Fish and Wildlife Service confirms that in implementing the proposed project, *"…we have no comments regarding federally listed or proposed threatened or endangered species or other trust species*".

2.2.3 Water Resources

The Town's drinking water is supplied by two wells located over 8-miles to the northwest of the Town, on a rise between Beaver Creek and the Milk River (GWIC No. 166830 and GWIC 248787). No threats to the Town's drinking water supply would result from the wastewater project. In fact, the water quality of the local aquifer could be further protected by replacing the old and cracked sewer piping.

The Montana Groundwater Information Center (GWIC) (Montana's Ground-Water Information Center (GWIC) | County Statistics | V.11.2022 (mtech.edu)) was referenced for groundwater well information in the Town area. A summary of wells within the Town area and within 1000-feet of the lagoon site is included in Appendix E. According to drill logs, typical groundwater depths for wells used throughout the vicinity of Town typically vary in the range of 60-75 feet below the ground surface (bgs) with an average depth to the static water level (swl) of about 16-feet bgs.

The Montana DEQ Leaking Underground Tank database (http://deq.mt.gov/Land/lust/lustsites) lists three active leaking underground tanks in Saco (see Appendix E). The new collection system

pipes are planned to be installed adjacent to these locations. The project specifications will provide special provisions for soil and groundwater special handling, removal and imported backfill requirements should contaminate soils be encountered within the trench.

The primary surface water drainage within the planning area includes Beaver Creek to the south of Town and The Milk River north of town. The lagoon treated effluent is discharged to Beaver Creek. Both the Beaver Creek-Nelson South Canal (watershed 100500140704) and the downstream Milk River-Dry Stinky Creek (watershed 100500042101), as listed on the EPA source (https://mywaterway.epa.gov/community), are impaired for nutrients, metals and flows. (See Appendix F for Beaver Creek Data)

2.2.4 Floodplains

A FEMA floodplain map search for the Town was conducted using the FEMA Flood Map Service Center (https://msc.fema.gov/portal) for the Town area. (See Appendix G)

The Town area is "not mapped," however, a new flood plain study and mapping are currently being completed by DNRC and FEMA. According to the Milk River Watershed Flood Maps Update information found at the website, http://dnrc.mt.gov/divisions/water/operations/floodplain-management/milk:

> *"Valley, Phillips, Blaine, and Hill Counties are working with MT DNRC and FEMA to update and produce new Flood Insurance Rate Maps for the Milk River Watershed. Updated floodplain maps will depict the latest, most accurate flood risk data, and will eventually replace FEMA's existing floodplain maps for all 4 counties.*
>
> *This project will update 2,325 stream miles. Project funding was broken up into two phases. Phase I of this project will cover parts of the study for the Milk River and all of the study for the tributaries. Phase II (which is dependent on available grant funds from FEMA) will finish the study for the Milk River."*

Project kickoff meetings were held in 2019 for respective participating counties. According to the project timeline listed on the website update, the data gathering phase ended in 2021, the engineering and modeling phase will be complete in 2025 with draft data and public review taking place. The new flood insurance maps are listed to become effective in the 2026/2027 timeframe. For reference, a copy of the Phillips County Floodplain Mapping Project public hearing slide show is also found in Appendix G.

The DNRC Floodplain Outreach Specialist, Nadene Wadsworth, was contacted for input in the proposed wastewater project in relation to the floodplain. Nadene provided comments in an email received on February 10, 2022:

> "*Thank you for reaching out to us about the floodplain mapping project. Currently, we are in the data development process for a multi-county Milk River watershed study. More information can be found here www.floodplain.mt.gov/milk. In regard to data and information for this project in Saco we anticipate having information to share with the town by mid to late fall. Once we have the data and information, we generally share that with the floodplain administrator for the community and ask them to share that as they see fit. We do plan to schedule some update meetings with the community late summer early fall*" (See Appendix G).

The Saco levee system was constructed in the early 1950s. The Town of Saco is responsible for the maintenance and operation of the levee system that surrounds and protects the Town. The levee system has protected the Town from major floods over the years. Some of the long-standing Town residents do report that some historical major flooding events have risen to within just inches of the top of the existing levee that surrounds the Town.

The existing lagoon treatment system is located within the flood plain and outside of the existing levee system. Any new major lagoon improvements will likely include excavation and embankments of the existing berms. Major upgrades, if completed, would include designing the new berm elevations to ensure the top of the berms will be above that of the floodplain water surface levels yet to be verified by regional flood plain mapping.

The Town is located in a relatively low-lying area. Drainage issues and ponding are reported by the Town during times of rapid snow melt or intense rainstorms. When the area is completely flooded and saturated, the groundwater and surface water intrusion will also make its way into the sewer and cause major I&I intrusion into the collection system, lift station and treatment lagoons. Improvements to the collection system will serve to reduce the I&I into the collection system and downstream treatment lagoons.

2.2.5 Wetlands

The US Fish and Wildlife Service Wetlands Mapper (https://www.fws.gov/wetlands/data/Mapper.html) was used to determine the presence of

wetlands within the planning area. See Appendix H for a figure presenting the aerial extent of mapped wetlands in the area. Some areas classified as freshwater emergent wetlands appear to intermittently follows Beaver Creek and along highway roadside ditches. If work is proposed within any of these mapped wetlands or if wetland habitat is encountered during site reconnaissance for design, a detailed delineation and assessment will be performed. The design-level delineation will determine the extent of potential impacts and necessary remediation, if applicable.

According to comments received from the Army Corps of Engineers (USACE),

> "…*if final design includes the placement of dredged or fill material in any jurisdictional areas, or otherwise requires authorization by a Department of Army (DA) permit, the project will need to submit a permit application prior to starting any work*."

If needed to support the project, a Montana Joint Permit Application Form would be completed and submitted to the USACE.

2.2.6 Cultural Resources

Cultural resources include historic and prehistoric archeological sites, historic architecture, engineering features and structures, and resources of significance to Native Americans. The Montana State Historic Preservation Office (SHPO) was contacted to determine whether there are significant historical and cultural resources within the project area. A response from SHPO dated January 20, 2022, is included in Appendix B.

The letter from SHPO states that any structure over fifty years of age is considered historic and potentially eligible for listing on the Nation Register of Historic Places. SHPO states: *"we feel that there is a low likelihood that cultural properties will be impacted. We, therefore, feel that a recommendation for a cultural resource inventory is unwarranted at this time"*.

In the event, the project creates a need to alter a structure, or if cultural materials are discovered, SHPO will be contacted.

2.2.7 Socio-economic and Environmental Justice Issues

The proposed improvements will benefit the entire community equally. The improvements will be beneficial to human health and will have an overall benefit to the environment. In addition, there

will be no disproportionate benefit to any demographic within the community that would result from the proposed improvements. The project will have beneficial effects to the Town's business core section readily used by the entire community.

2.3 Population Trends

Population analyses provide the basis for all planning efforts and play a large role in planning decisions. Projections of the future population are used in planning and engineering design to properly size facilities. Historic populations for Phillips County and the Town of Saco, as determined by the US Census Bureau and the Montana Department of Commerce, population estimates are derived from (Population - Census and Economic Information Center (mt.gov)). Table 2-1 presents the existing and projected population for the 20-year planning period.

Given that the Town has experienced a general decline in population in recent years, a conservative annual growth rate of 0.50% was used to estimate the population of Saco for the 20-year planning period (2042). The growth factor was vetted with the Town and was recommended for planning purposes. This correlates to a 20-design year population of 177, or an additional 18 residents over the 2020 census population. Supporting census data is included in Appendix I.

Table 2-1 - Census Data and Planning Period Population

Year	Saco[1]	% Annual Increase/Decrease	Phillips County	% Annual Increase/Decrease
1990	261		5,163	
2000	224	-14.2%	4,601	-12.2%
2010	197	-12.1%	4,253	-7.56%
2020	159	-19.2%	4,217	-0.85%
Average		-15.2%		-6.87%
2042(3)	177	0.50%		
(1) US Census Bureau				
(2) Population of Town at Design Year (2042) estimated from 2020 Census at conservative 0.5% Annual Growth				

2.4 Community Engagement

On July 7, 2020, an initial work session was conducted with the Town Council at their regular scheduled Council meeting to learn about the Town's sewer system needs in anticipation of a competitive ARPA grant funding application. This work session generally discussed potential

project alternatives and the scope of a potential ARPA grant application. The intent of this meeting was not to select a preferred alternative but to provide information and help the community make informed decisions about the condition of the system and needed upgrades.

After the Town received an APRA competitive grant award on October 8, 2021, follow-up work sessions were completed with the Town Council and operator staff on December 8, 2021, January 12, 2022, March 9, 2022, and March 28, 2022. The work sessions provided further detailed analysis of the existing system and preliminary wastewater alternative costs. Funding options, more detailed cost estimates, and related rate impacts were discussed as the PER findings progressed. At the last work session, the Town Council provided input regarding the overall project scope and project costs to present to the public at the schedule public hearing. All Council meetings are open to and attended by the public.

On April 13, 2022, a public meeting was held to solicit specific input and comments on the PER and Environmental Assessment. The meeting was advertised in the local newspaper (Phillips County New). The overall project cost of each project alternative was presented to the public. A proposed funding strategy was also presented along with the potential effects to user rates. In general, the response to the proposed improvement alternatives were positive. The Council members and community concurred with the preferred alternatives presented in the PER. The Town formally passed resolutions to accept the findings of the PER and EA at the public hearing.

Additionally, the community was also directed to the project website located at http://sacoinfrastructure.com. The website link was advertised in the local paper during the public hearing advertisement, given at the public hearing as well as posted in the Town. The website provided project information, schedules, an explanation of the PER process, available downloadable documents, funding information, and an opportunity to comment.

Letters were provided by some very concerned local community members about the severe condition of the sewer system. These letters document sewer overflows into their homes and also a local church. This statement expresses the common sentiments that residents share about the degrading condition and limited capacity of the sewer collection system, lift station, and confirm the periodic surcharging conditions during times of runoff and high groundwater conditions. According to the letters, these conditions will keep repeating until and unless the sewer system deficiencies are corrected. Copies of the meetings minutes, community engagement documents, meeting notices and letters are included in Appendix J.

3.0 EXISTING FACILITIES

3.1 Location Map

The existing wastewater system shown in Figure 3-1 consists of a network of gravity sewer mains that generally direct flow from the Town core, south across US 2 and the BNSF railroad tracks to the community lift station and to the treatment lagoons. There is also an existing residential service area on the south side of Town that conveys sewage to the lift station. The overall Town's sewer system consists of a clay collection piping system, a primary sewage lift station with a force main to the treatment system, a 2-cell facultative lagoon treatment system, and an effluent discharge piping system. The existing lagoon consists of cells that are about 2.4-acres each. Figure 3-2 shows the existing treatment lagoons and effluent discharge system.

Wastewater is pumped approximately 800 feet through the existing force main to the wastewater treatment lagoons. The force main was upgraded about 20 years ago to PVC. The existing 60+ year old lift station is a wet well/dry well type with a depth of nearly 30-feet with access to the valves and pumps in a confined space of the dry well. Effluent discharge from the easterly lagoon cell is conveyed by a gravity pipeline to Beaver Creek.

3.2 History

Records from the Town and DEQ indicate that the current lift station and treatment system were constructed in the 1960s, and the original collection system was primarily installed in the early 1900's. The levee that surrounds the Town was built in the 1950s and the collection system pre-dates the levee which explains why some piping is under the levee. The original system was installed using vitrified clay piping (~14,000 LF); only short segments of which have now been replaced with PVC. The 8-inch lift station force main was replaced with PVC in 2002. According to city records, the wet well cover was replaced in the early 2000's. Around this same time (~2004), one of the pump and valve assemblies were rehabilitated.

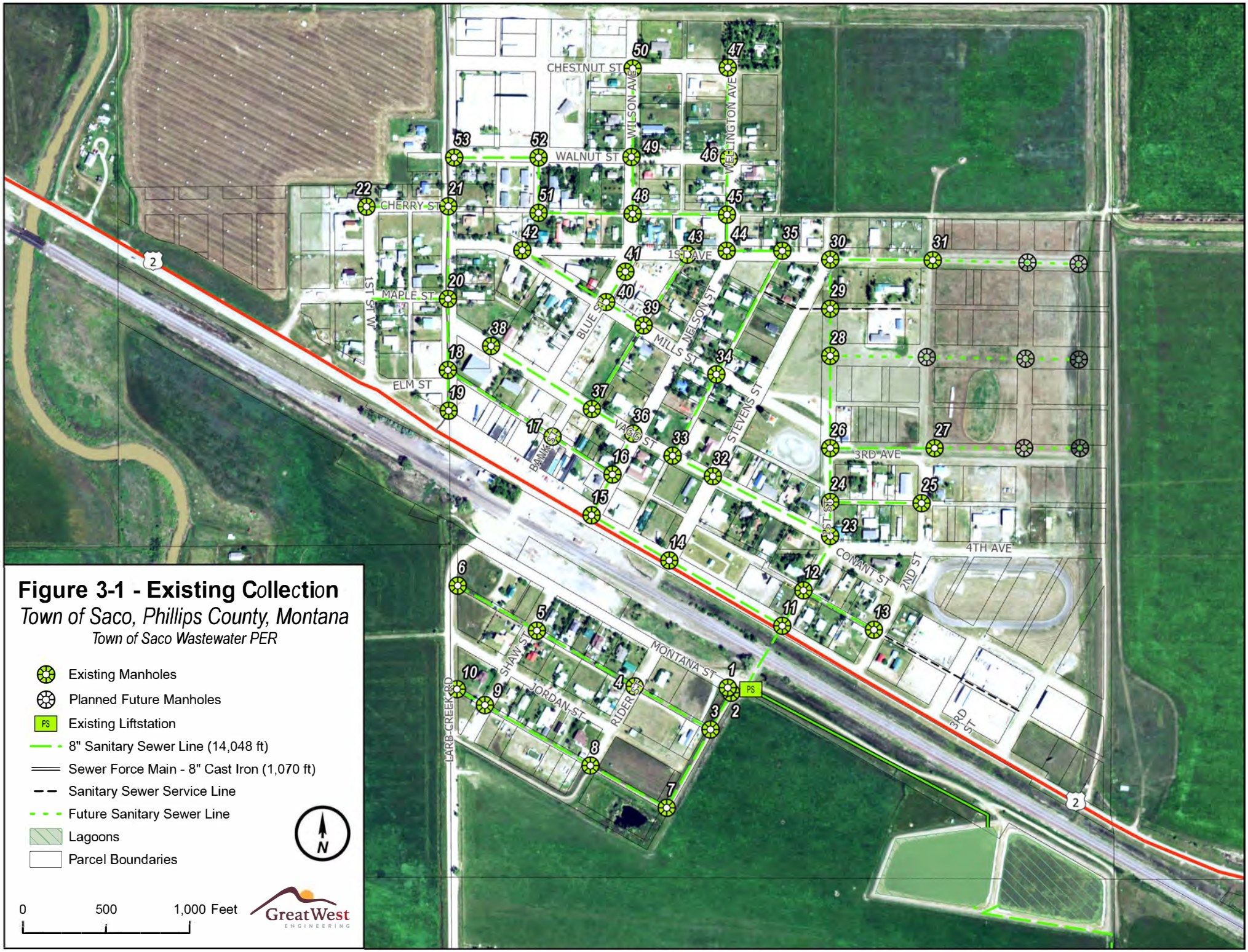


Figure 3-1 - Existing Collection

Town of Saco, Phillips County, Montana

Town of Saco Wastewater PER

- Existing Manholes
- Planned Future Manholes
- Existing Liftstation
- 8" Sanitary Sewer Line (14,048 ft)
- Sewer Force Main - 8" Cast Iron (1,070 ft)
- Sanitary Sewer Service Line
- Future Sanitary Sewer Line
- Lagoons
- Parcel Boundaries

N

0 500 1,000 Feet

GreatWest ENGINEERING

Figure 3-2 - Existing Treatment System

Town of Saco, Phillips County, Montana

Town of Saco Wastewater PER

- Treatment Structure
- Existing Manholes
- PS Existing Liftstation
- 8" Sanitary Sewer Line (14,048 ft)
- Sewer Force Main - 8" Cast Iron (1,070 ft)
- Sanitary Sewer Service Line
- Sanitary Sewer Line
- Lagoons
- Parcel Boundaries

The treatment facility is a 2-celled facultative lagoon with a total combined surface area of 4.8 acres. DEQ inspection records and site investigations show that the lagoon system is reported to have an average operating lagoon depth of 5-feet for each lagoon. The original system has a design flow of 67,000 gpd for a design population of 490 people which exceeds the current population yet is not oversized per the latest design standards. The facility currently does not have disinfection capabilities. Neither cell has had any sludge removed. (See Appendix K)

The Town's treatment system operates under the Montana Pollutant Discharge Elimination System (MPDES) Permit No MTG580012. Identified as a general batch discharge permit, the lagoons are typically discharged only once to twice a year. Between January 2016 and July 2021, a total of eight discharges have occurred.

3.3 Condition of Existing Facilities

At this time, the existing flows are estimated based on available lift station hour date recordings from October 2019 to September 2021. The calculated 2-year daily average flow is determined to be about 28,000 gpd. This estimation projects a flow factor of 176 gallons per capita per day (gpcd). Given that the lagoon system was originally designed for a population of 490 and an average design flow of 67,000 gallons per day (gpd), the existing system size has more than sufficient capacity. However, the present volume of sludge in the lagoons has significantly diminished the available treatment capacity of the system.

Most of the original clay piping and manholes remain in place. This existing clay sewer piping and corroding manholes will need to be rehabilitated and/or replaced to extend the useful life of the system and maintain the level of wastewater service that the Town residents depends on.

3.3.1 Existing Flows

Wastewater flow measurements are best derived from multiple sources of data to confirm the reliability of the observed data. Wastewater flows in Saco were measured and developed using the following three methods:

1. Lift station hour records method
2. Textbook method, as a basis of comparison
3. Water usage data in the winter months. Done as a basis for comparison

Lift Station Hour Records Method

The Town provided daily lift station hour data from October 2019-September 2021 for the flow analysis. The flow analysis uses an average pumping capacity of 440 gpm which is derated by about 10% from the existing pump nameplate rating 485 gpm, given the age and conditions of the pumps. Raw data of the lift station hour recordings and tabulations can be found in Appendix L. Table 3-1 tabulated and graphical representation of the minimum, maximum and average flow in thousands of gallons per day (TGD) for each month. Table 3-2 shows months that presented extreme highs or lows, also represented in TGD.

Table 3-1 - Lift Station Monthly Summary Flows

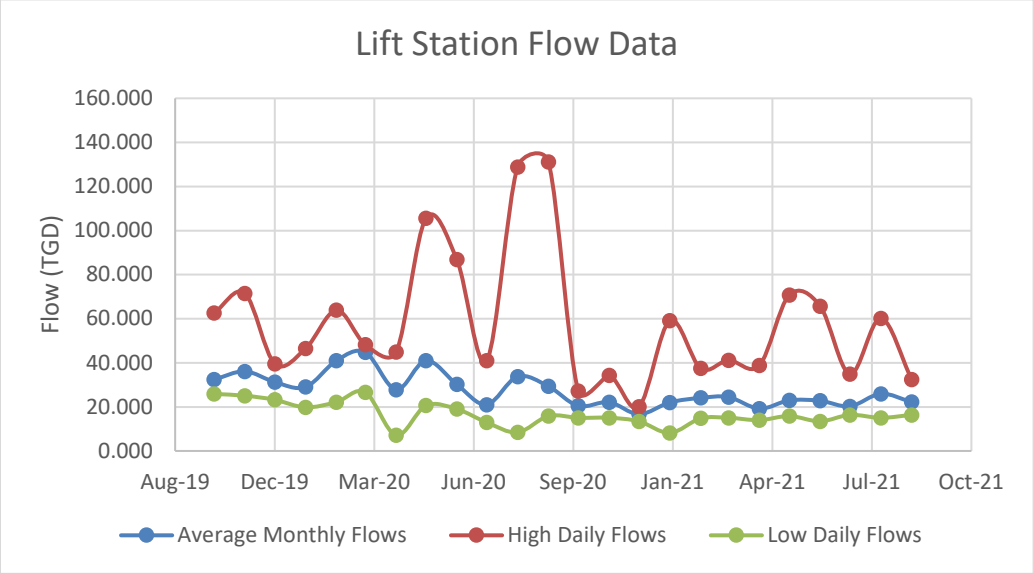
Monthly Summary Flows			
	Avg Lift Station Flows (TGD)	High Lift Station Flows (TGD)	Low Lift Station Flows (TGD)
Oct-19	32.404	62.568	25.872
Nov-19	36.115	71.544	25.080
Dec-19	31.288	39.600	23.232
Jan-20	29.014	46.464	19.800
Feb-20	41.001	63.888	22.176
Mar-20	44.798	48.312	26.664
Apr-20	27.817	44.880	7.128
May-20	41.043	105.600	20.592
Jun-20	30.193	86.856	19.008
Jul-20	21.014	40.920	12.936
Aug-20	33.766	128.832	8.448
Sep-20	29.339	131.208	15.840
Oct-20	20.451	27.192	15.048
Nov-20	22.132	34.320	15.048
Dec-20	16.676	20.064	13.464
Jan-21	22.009	59.136	8.184
Feb-21	24.071	37.488	14.784
Mar-21	24.441	41.184	15.048
Apr-21	19.208	38.808	13.992
May-21	22.942	70.752	15.840
Jun-21	22.792	65.736	13.464
Jul-21	20.277	34.848	16.368
Aug-21	25.949	60.192	15.048
Sep-21	22.202	32.472	16.368

Table 3-2 - Monthly Extreme Flows

Monthly Average High Flows (TGD)		Monthly Average Low Flows (TGD)		Daily High Flows (TGD)		Daily Low Flows (TGD)	
Dec-20	16.676	Feb-20	41.001	May-20	105.600	Apr-20	7.128
Apr-21	19.208	Mar-20	44.798	Aug-20	128.832	Aug-20	8.448
Jul-21	20.277	May-20	41.043	Sep-20	131.208	Jan-21	8.184

Figure 3-3 shows the lift station flows graphically. The peak daily flows within the period of record are easily observed with this graph. A new lift station is planned to be installed with the Phase 1 project and will be equipped with a new accurate flow meter. Flow measurements will be verified prior to and during the phased pipeline replacement projects to verify reductions in flows attributable to I&I impacts.

Figure 3-3 - Lift Station Flow Data, Oct 2019-Sept 2021



From the lift station record method described above, the following existing flows are derived:

- Average Annual Daily Flow Rate: 27,500 gallons per day (gpd)
- Peak Monthly Flow Rate: 44,800 gpd
- Peak Daily Flow Rate: 131,000 gpd
- Peak Hour Flow Rate: 485 gpm (See note, below)

Note that peak hour values were not actually captured or measured with the lift station data as hour recordings are typically done daily. The Town reports that during extreme rain events with high I&I, each existing pump is not able to “keep up”. Therefore, for this level of analysis, the peak

hour/peak instantaneous system flow rate is anecdotally estimated to be at least the rated full capacity of each pump which is 485 gpm. This flow rate relates to a high peak hour peaking factor (PF) of over 25 which exceeds the typical peaking factor of 4-5 for small communities using Circular DEQ-2 equation (10-1). Given the dilapidated condition of the collection system (holes pipes, etc), the occurrences of periods of high groundwater, surface water influence and the likely use of sump pumps, this peaking factor and flow rate is very probable, and an indication of the extreme sensitivity to I&I influence.

It is also noted that the peak daily flow rates could be higher if analyzing hour data in wet and/or flooding years (i.e., 2018 and 2011). However, for this PER the available hour data provided by the Town is sufficient to determine the average annual daily flows with reasonable confidence.

While the average annual, peak monthly and peak average flows can be verified with daily recordings, the peak hour flows entering the lift station should be further evaluated during the design phase of the project with consideration to install area velocity (AV) meters. For now, a peak flow of up to 485 gpm is considered for this level of analysis in the PER. The design of a new lift station pumping system will need to account for the peak flows. The Phase 1 project considers the installation of a new lift station and flow meter which will accurate measure system flows and be used to confirm I&I reductions with pipe replacement and for any future treatment system upgrades.

Textbook Methods

Flow estimates can also be produced from typical flow data published in *Wastewater Engineering: Treatment, Disposal, and* Reuse by Metcalf and Eddy (1991), and from the Montana Department of Environmental Quality Circular DEQ-2. Residential flows were also calculated by using the estimated contribution from single-family residences of 260 gallons per day (gpd), which is based on 100 gallons per day per capita (gpcd). Table 3-3 presents the estimated average flows existing within the Town using the current population of 159. The 100 gpcd value is more closely related to newer and “tighter” collection system and the estimated flows shown below are considered slightly low. The calculation was also completed using 120 gpcd which is more likely for older systems. The flow estimate does not accurately account for very large daily flow spikes during periods of intense rainstorms and inflow situations and the calculated peak hourly flow are likely not representative of actual conditions. However, the average flow derived from textbook methods is a useful reference point for comparison to other methods.

Table 3-3 - Estimated Flows (Textbook Factors)

Description	Average Flows		Peaking	Peak Hourly Flows	
Source	Gpd	gpm	Factor[1]	gpd	gpm
Saco Ex. Flows (100 gpcd)	15,900	11.0	4.2	66,780	44.6
Saco Ex. Flows (120 gpcd)	19,080	13.3	4.2	80,140	55.7

1. *DEQ2: Peaking Factor* $= \frac{(18+\sqrt{P})}{(4+\sqrt{P})}$
   P= population in thousands = 0.159
   PF = 4.2 for existing

Water usage comparison

As a basis of comparison to the lift station flows, water usage data from metered sales reports was obtained from the Town for recent fall/winter months. This method considers metered water services also connected to the sewer. Water usage during this timeframe, without the influence of irrigation water, is theoretically equal to the baseline sewer flows not including I&I influence into the sewer system. The October 2021 water data indicates an average of 22,128 gallons per day (3,688 gallons per month for 180 connections). The November 2021 water meter data indicates an average of 16,140 gallons per day (2,690 gallons per month for 180 connections). The estimated average sewer flow is about 19,100 gpd for the approximate base line sewer flow excluding I&I.

3.3.2 Impacts of Infiltration and Inflow (I&I)

Infiltration and Inflow (I&I) can be a major source of flows to a wastewater system for some communities. The I&I water intrusion component is not typically of a quality that requires treatment prior to discharge, and conveyance and treatment of these additional non-sewer-system flows can be taxing for systems. The primary cause for I&I, in general, is from groundwater flowing into the sanitary sewer system through joints, cracks, and holes in older and deteriorating sewer pipes. Other causes may result from rainwater entering through manholes, sump pumps for residential basements discharging into the sanitary sewer system, and faucets being left on during the winter to keep pipes from freezing. As sanitary sewer systems age, tree roots and deteriorating pipes can allow a significant amount of non-wastewater flows to enter the system. If I&I is significant, an increased amount of wastewater must then be treated by the wastewater ponds.

I&I is defined as:

> *"Water that enters the collection system through indirect and direct means. Infiltration is extraneous water that enters the collection system through leaking joints, cracks and breaks, or porous walls. Inflow is stormwater that enters the collection system from storm drain connections, roof leaders, foundation and basement drains, or through access port (manhole) covers or breaks in the access port walls." (Metcalf and Eddy)*

The entire wastewater system may see system flow increases up to 823 gpcd and higher, which is indicative of high inflows. The collection system is in very poor condition and is situated in a region of relatively high groundwater elevations. The average annual flow approaches 179 gpcd or higher on a per capita basis.

To explain and differentiate excessive I&I quantitatively, 40 CFR35.2120 supports the claim of both excessive Infiltration and Inflow. According to the CFR, if the inflow total flow rate exceeds 275 gpcd, then inflow is considered excessive, and a rehabilitation program is recommended. The CFR also states that if the flow rate is over 120 gpcd during periods of high groundwater, then infiltration is considered excessive, and a rehabilitation program is recommended. Based on the above criteria, and in consideration of the poor observed condition of the sewer, a phased pipeline replacement program should be considered a high priority for the Town.

To obtain an accurate "picture" of the existing collection system, sewer video inspections were arranged for the Town. Approximately 4,200 feet of sewer main was cleaned and up to 2,800 feet of pipeline was video inspected in December 2021 by Lakeside Excavation, Inc. Note that up to 4,200 feet of collection main was intended to be video inspected but was unable to be completed given the condition of the pipe in some locations. An additional cleaning and video survey was conducted during the week of April 4th for another 3,680 feet of cleaning and 2,490 of video footage. The surveys revealed many similar pipe condition concerns, including cracking, holes, tap break-in activity and defectiveness, offset joints and connections, breaks in connections, and sections of broken and missing pipe with open holes to the visible ground. The defaults in the existing system indicate that groundwater contamination and I&I into the system could be of large concern. The condition of the sewer shows the that the system is subject to both infiltration and exfiltration and contamination of the groundwater.

As described above, the Town's operations staff have indicated that the lift station has had trouble keeping up with the system during long-duration, low-intensity rainstorms, indicating that the

condition of the sewer system is a contributor to these issues. Also, first-hand reports from residents confirm that the flows drastically increase during large rain events and the collection system starts backing up. (Appendix J) The average volume of I&I intrusion is estimated to be the difference between the average flow rate and the estimated water meter method for the approximate sewer baseline flow as derived below.

- Estimated Average I&I: 27,500 gpd – 19,100 gpd = 8,400 gpd, 8,400/27,500 = 31%
- Estimated Peak Day I&I: 131,000 gpd – 19,100 gpd = 111,100 gpd, 111,100/131,000 = 85%

Note that the estimated I&I into the system is likely even higher if wet and flooding years (2011 and 2018) are taken into the data set. In summary, the system can see an average I&I influence of over 31% and the system can have up to 85% of the sewer flows attributed to I&I during peak day events.

3.3.3 Flow Projections for Design Period

Table 3-4 presents the design period flow projections for the Town based upon the existing and design period populations discussed in Section 2.3. The existing annual average flow rate of 28,000 gpd corresponds to a per-capita usage of 176 gpcd for the existing population of 159. For further comparison, a flow study was completed by MSU Northern in Saco in 1994 and determined an average flow of 23,000.

Projecting the same per-capita flow rate for the 20-year design population of 177 determines an annual average flow rate of 31,170 gpd for the 20-year design period. Note that the average sewer flow rates may lessen with major collection system improvements to reduce I&I into the system. While it is assumed that major collection system improvements will reduce contributing I&I into the system, it is difficult to accurately quantify at this time. Flow reductions will need to be verified following completion of each phase of the collection improvements using an accurate lift station flow meter to measure influent flows into the treatment system. Therefore, the 20-year design annual average flow rate conservatively uses 31,200 gpd.

Table 3-4 - Projected System Design Flows

Year	Population Estimate/Projection	Average Day Flow	Average Day Flow	Per Capita Usage	Peak Hourly Flow
2022	159	28,000 gpd	19.4 gpm	176 gpcd	485 gpm
2042 [1]	177	31,170 gpd	21.6 gpm	176 gpcd	485 gpm

Note: [1] Assumed without I&I reduction and collection pipe replacements. Sewer system flows will need to be verified after collection system improvements.

3.3.4 Collection System

The existing collection system was originally constructed in the early 1900s and is primarily constructed of clay piping.

Video inspection reports and sewer main cleaning observations, completed by the Lakeside Excavation, Inc., were made available by Town. A general review of the video reports displays major concerns within the clay mains, including cracked pipes, offset joins, pipeline sags, tap break-in activity and defectiveness, as well as multiple manholes in poor structural condition. Chunks of clay piping fragments and aggregate deposits accumulating at manholes were also observed in cleaning reports, which is indicative of fracturing pipelines and wear to concrete. These observed issues likely have a cumulative effect on the allowance of unwanted I&I into the system. This condition occurs throughout the entire collection system as the clay piping is of the same vintage.

According to Lakeside Excavation:

"Overall, the condition of the Town of Saco sewer's system is very poor. In our 20 years of inspection services, I have not seen a system that was in need of so much work. Most manholes have corroded to the point where you can see the reinforcing wire. We were only able to completely inspect just a handful of the mains completely through. In those inspections we found lots of intruding taps that are so far into the sewer main that cameras cannot pass by. Several of these sewer mains have more than one of these taps there for we were not able to inspect the entire line. We also found complete sections of pipe missing the top where you can see the soil. In these sections a catastrophic failure can occur without notice and with its rural location property damage would occur before the repair was made. All in all, I would recommend a phased approach to sewer main replacement with point repairs in the first phase to prevent catastrophic failures."

For the PER collection system evaluation, the major deficiencies noted in the cleaning and video reports were further evaluated and characterized after a detailed review of the footage. The major collection system issues are summarized using the overall system map that corresponds to the Town's manhole numbering convention. The collection system deficiencies from the December 2021 and April 2022 inspections, are summarized in Table 3-5.

Table 3-5 - Collection System Major Deficiency Summary

December 2021					
Start Manhole	Finish Manhole	Segment Length (ft)	Pipe Size (in)	Pipe Recorded (ft)	Issues Reported/Observed
18	17	505	8	17	Gravel Deposit
19	18	0	8	0	Cracking, corrosion, offset joint, sag
20	18	340	8	83	Tap break-in intruding (TBI-I), tap break-in hammer defective (TBI-HD), tap factory capped (TFC)
20	18	340	8	166	Concrete degradation, exposed aggregate, TBI-HD, TFC
21	20	337	8	335	TBI-HD, cracking, sag, TFC, TBI-I, hole, tap break-in activity (TBI-A), broken soil visible
21	22	298	8	298	Sag, deformed pipe, camera submerged (CS)
11	Lift Station	300	10	102	Sag, cracking, infiltration runner joint, CS
12	11	175	10	175	Sag, cracking, TFC, TBI-HD, TBI-A, hole, CS, exposed aggregate
14	11	560	10	450	Sag, circumferential cracking (CC), hole, TBI-I, gravel deposits, PVC segment
15	14	350	10	344	Sag, TBI-I, cracking, CC, CS, 4" pipe offset, encrustation
16	15	163	10	163	TFC, TBI-HD, CC, sag, CS, encrustation
17	16	250	8	54	TFC, standing water, TBI-HD, CS
16	17	250	8	134	Sags, TBI-A, TFC, CS, TBI-HD
18	17	505	8	113	Broken void visible/hole, TBI-HD, sag, alignment down, broken pipe
12	11	205	10	129	Sag, cracking TBI-A, TBI-HD
11	12	205	10	74	Sag, cracking, TFC
16	36	180	8	180	Sag, TFC, TBI-HD, TBI-A, PVC segment alignment down, defective taps, tap factory defective, cracking

April 2022					
Start Manhole	Finish Manhole	Segment Length (ft)	Pipe Size (in)	Pipe Recorded (ft)	Issues Reported/Observed
47	46	371	8	11.9	TBI-I, blocked
46	47	371	8	339.3	Offset joint, TFC, TBI-I, TBI-A, Break in Connection, hole, blocked
49	48	223	8	223.1	Sag, TBI-A, TFC, TBI-I, CS
50	49	371	8	33.3	Broken void visible, Tap Factory Defective (TFD), blocked
49	50	371	8	107.2	Sag, TBI-A, TFC, Broken Void Visible, TBI-I, blocked
51	48	376	8	3.0	TBI-I, Blocked
52	51	216	8	172.2	Sag, CC, CS, Surface Damage, TBI-A, Crack Longitudinal (CL), Roots, Tap Factory Intruding (TFI), Offset Joint, Blocked
51	52	216	8	1.0	Offset Joint, Blocked
53	52	216	8	1.0	Offset Joint, Blocked
52	53	216	8	30.7	Sag, TBI-A, Crack, TBI-I, Blocked
34	33	377	10	371.7	TFI, Sag, TBI-A, TFC, TFI, CS
35	33	558	10	516.0	Sag, TBI-A, TFC, TBI-I, Broken, TFI,
44	35	204	10	189.4	Sag, CC, TBI-I, TFC, TBI-A, CS
45	44	158	10	158.2	CS, TBI-I, TBI-A,
46	45	228	8	115.8	TFC, CS, TBI-I, Blocked
45	46	228	8	101.9	TFC, TBI-I, TFI, Blocked
48	44		8	112.1	TFC, TBI-I, Blocked
48	45	380	8	0	Blocked

In addition to the problem areas observed and identified above, it is also assumed that much of the remaining original clay collection system piping in town is also deteriorating given the similar age and composition of the piping. The rate of degradation is only expected to increase, so collection system improvements are critical. Collection system improvements are necessary to extend the useful life of the Town's collection system and limit unnecessary I&I intrusion into the treatment system.

Figures 3-4 through 3-30 depict some of the typical pipeline issues observed in video inspections and also some manhole assessments. These video "snapshot" images of the pipelines show the severity of the existing clay collection system. Reference Appendix M for the full sewer video reports. Maps showing areas cleaned and videoed inspected are also seen in the Appendix M.

Figure 3-4 - Cracked Pipe Before MH #36

Figure 3-5 - Offset PVC Pipe with Defective Tap Upstream of MH #16

Figure 3-6 - Broken Pipe Downstream of MH #18

Figure 3-7 - Sagging Pipe & Survey Blocked by Tap Break-in Intrusion (Downstream of MH #16)

Figure 3-8 - Hole in Pipe Before MH #14 w/ 4" Offset at Bottom of Pipe

Figure 3-9 - Deposit Attached Encrustation Upstream of MH#11

Figure 3-10 - Tap Break-in Intruding Upstream of MH #14

Figure 3-11 - Hole in Pipe Between MH #11 and #14

Figure 3-12 - Bottom of Pipe Broken & Soil Exposed Upstream of MH #20

Figure 3-13 - Infiltration Runner Joint, Encrusted, Upstream of Lift Station

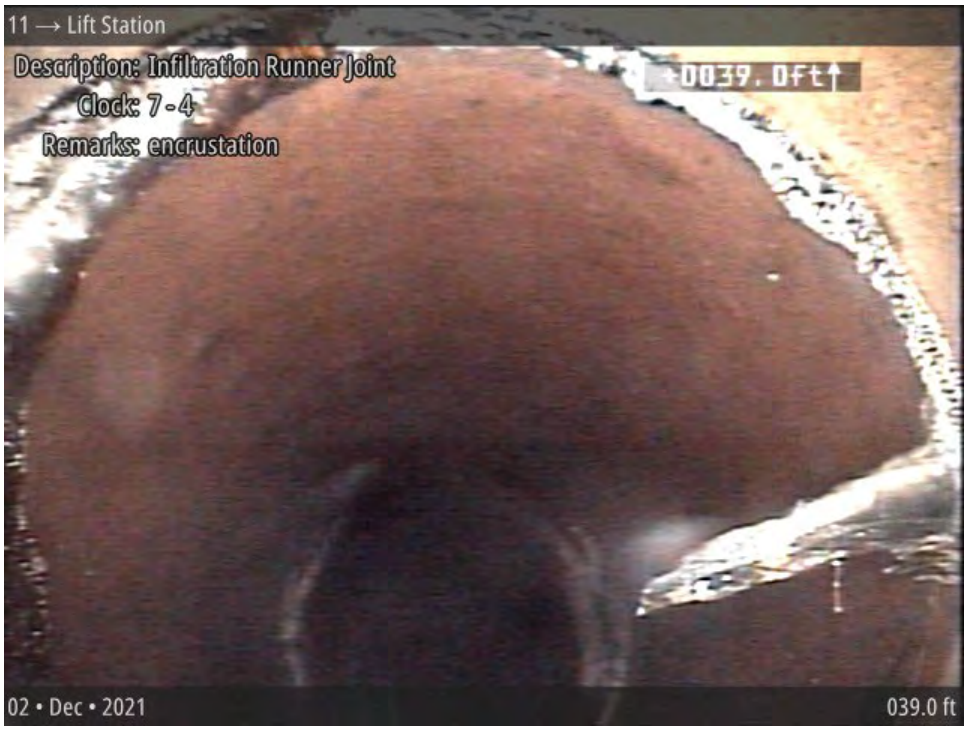


Figure 3-14 - Tap Break-in Intruding Upstream of MH #18

Figure 3-15 - Broken Pipe, Void Visible Downstream of MH #18

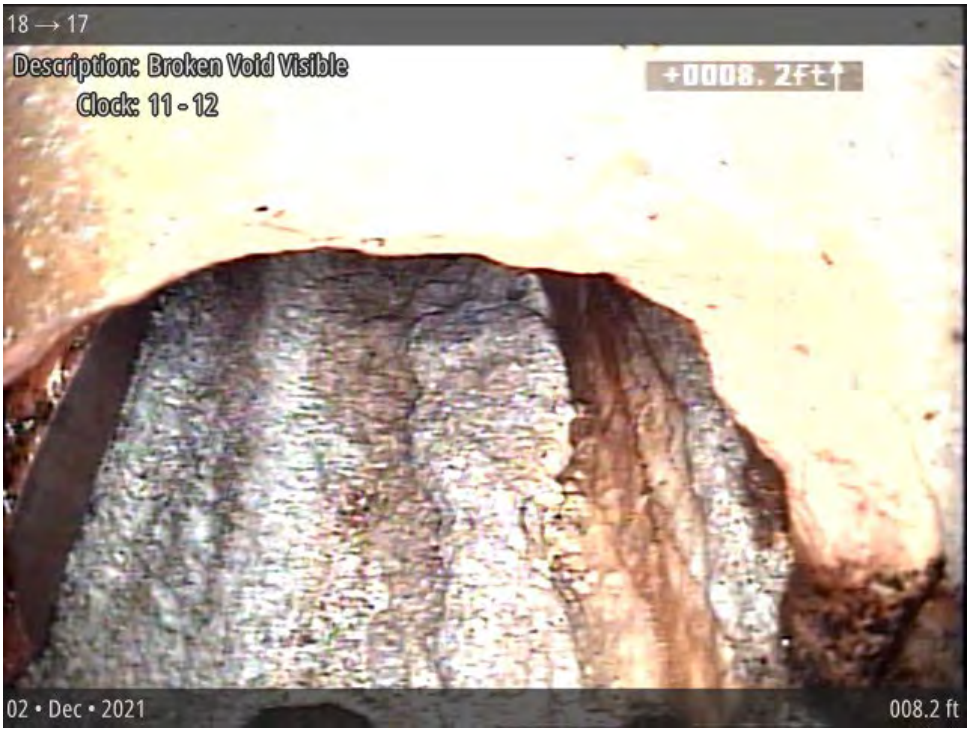


Figure 3-16 - Concrete Degradation & Standing Flows at MH#11

Figure 3-17 - Typical Intruding Tap (Wellington Ave.)

Figure 3-18 - Hole in Pipe, Soil Visible (Wellington Ave.)

Figure 3-19 - Half to Full Pipe Sag (Wilson Ave.)

Figure 3-20 - Missing Pipe on Bottom, Open to Ground (Wilson Ave.)

Figure 3-21 - Missing Pipe at Top, Open to Ground (North Wilson Ave.)

Figure 3-22 - Root Intrusion (By School)

Figure 3-23 - Clay Pipe Missing, Repaired by Metal? (By School)

Figure 3-24 - Major Joint Offset, Exposure to Soil (By School)

Figure 3-25 - Major Cracks and Damage (Walnut Street by School)

Figure 3-26 - Offset Joint and Pipe Bend (Cherry Street)

Figure 3-27 - MH #20 (Located in MT 243)

Figure 3-28 - MH #17 (Located in Alley between US 2 and Vagg Street)

Figure 3-29 - MH #11 (Located at US 2 and 1st Street)

Figure 3-30 - MH #36 (Located at Vagg Street and Nelson Street)

The snapshots of the manholes and pipelines captured with recent sewer videos and site surveys are indicative of the condition of the entire clay collection system, similar degrading condition, with the similar vintage dating back to the early 1900s. The condition of the sewer collection piping and manholes pose a serious threat to the level of service the Town needs for a dependable collection system.

3.3.5 Pumping Stations

The Town's wastewater system is served by a wet well/dry well type lift station with two 10-horsepower (HP) flooded suction closed-coupled centrifugal pumps. The existing wet well is 8-feet in diameter and about 26-feet deep. The original pumps were Fairbanks Morse Model 5433PK rated for a flow rate of 485 gpm at 29.8 total dynamic head (TDH). The pump system currently uses across-the-line starters. These pump models are no longer made nor supported, so obtaining spare and replacement parts can be consuming and difficult at best. The available site and pump power is 230/460 V, 3-phase, 60 Hz.

An email dated February 3, 2022, from Northwestern Energy (NWE) (Appendix N) shows that in the last 6-years, there have been at least 27 power outages for the circuit that supplies power to the lift station. The NWE official confirms that if the lift station circuit was out of power, the pump controls would also be down. In order to address power outages, backup power is provided by a

trailer mounted generator stored at the Town shop and a manual transfer switch (MTS) at the lift station site.

This lift station does not have a permanent emergency auto-dialer call out system to notify the owners and operators in the event of an emergency situation. This can also problematic, given that the lowest residential connections on the collection system will backup if the lift station emergency response is not timely. Alarm conditions are usually reported by the nearby residents who call the Town.

The existing lift station drywell is a small (24” entry tube with a 48” base), below-ground confined access space. Because of the small interior space, it is very difficult to properly operate and/or control the pumps, or to perform routine maintenance. Moving equipment parts, entanglements, slips and falls from the ladder are all concerns for maintenance personnel. It is possible for toxic fumes and gasses to accumulate in the dry well. It is also noted that many pump repair companies, per their corporate confined space policies, have refused to readily enter confined spaces to perform critical repairs on the pumps without proper permitting, thus creating additional logistics and delays in arranging for available installers.

At a depth of over 26-feet, the concrete wet well is susceptible to groundwater infiltration from the shallow groundwater in the vicinity of the site.

The lift station site is not secured with security fencing to protect the public from any safety hazards and prevent any tampering of the facility. The lift station equipment is located immediately adjacent to accessible walking areas and the flood plain levee. The wet well lid can also cause trip hazards for pedestrians using the levee trails.

The existing force main from the lift station to the lagoons is around 20 years old and is lacking functioning isolation valves. New valves within the force main at the lift station site are needed to control the conveyance of wastewater to the lagoons. New valves are also required to provide lift station isolation to prevent backflow into the dry well area to allow replacement and maintenance of the pumps and fittings.

Figure 3-31 shows the existing lift station wet well. Figure 3-32 shows the dry well space looking down through the access port down into the bottom of the vault.

Figure 3-31 - Existing Lift Station

Figure 3-32 - Lift Station Dry Well

The metal piping, fittings, and steel dry well enclosure are susceptible to corrosion from within the humid subsurface dry well space, and potential corrosion externally, given the corrosive nature typical of the Milk River area soils. The concrete wet well is also susceptible to H_2S corrosion from within the wet well. If these conditions are left unaddressed then infiltration and ultimate failure will develop in both the wet well and dry well.

Past lift station failures have resulted in SSOs in upstream portions of the collection system and homes. This is confirmed by statements obtained from the public. (See Appendix J) Direct human contact with raw sewage presents the possibility of not only acute illness from bacterial and viral pathogens, but also potential chronic illness from recurring exposure to potential organic (volatile organics, endocrine disruptors, pharmaceutical products) and inorganic (heavy metals) contaminants.

3.3.6 Treatment

The location of treatment facility for the Town of Saco can be seen in Figure 3-2. The Town of Saco utilizes a two-cell facultative treatment and storage with lagoon system with batch discharge. The total cumulative volume capacity of the 2-cell facultative lagoon system is over 5.1 million gallons for both cells combined excluding the allowable sludge depth. Raw influent sewer enters from the force main into a receiving structure into the northwest corner of the treatment Cell #1.

The existing lagoon piping and control valves, designed to operate the system in series or parallel, are currently inoperable, requiring the system to operator in parallel mode.

Accumulated sludge is currently visible from the lagoon surface on each pond. According to a performance analysis completed by H&S Environmental, LLC on August 4, 2021, nearly 2.5 million gallons of in-situ sludge has accumulated in both cells. At the time of the assessment, sludge in Cell #1 (western lagoon) occupied thirty-two (32) percent of the cell's volume and up about seventy (70) percent of the treatment cell's volume due to the drought conditions in 2021. (See Appendix P for H&S Study)

This operation mode, in addition to the excessive sludge, does not permit optimal treatment of the wastewater and contributes to permit violations. Insufficiently treated wastewater will continue to negatively impact the receiving waters and the Town will continue to receive discharge permit violations for water quality.

Figures 3-33 and 3-34 show the failed influent structure. The existing valves located outside the vault are unable to turn.

Figure 3-33 - Existing Influent Structure (in failed state)

Figure 3-34 - Influent Structure Valve

While the lagoons are set on relatively impermeable clays, the lagoons are both unlined by any synthetic lining method. The north side berm of each lagoon cell is eroding from ongoing wave and wind action. The northern internal slopes are not lined with rock slope protection. The Town attempted to repair the north bank of Cell #2 in 2021 using some import earthwork fill and attempted to import some additional rock to reinforce the lagoon slopes but has paused all work pending the outcome of the current grant applications for potential wastewater treatment system upgrades. Figure 3-35 below shows Cell #2 and the condition of the north side in the background where erosion occurs.

Figure 3-35 - Cell #2 (Showing Temporary Slope Fill, North Side)

Table 3-6 summarizes the physical characteristics of each lagoon cell.

Table 3-6 - Existing Treatment Lagoon Summary

	Cell 1 (Treatment)	Cell 2 (Storage)
Surface Area (ac) at Maximum Water Depth	2.4	2.4
Maximum Water Depth (ft)	5	5
Sludge Design Depth (ft)	2	1
Actual Average Sludge Depth (ft)	2.2	1.2
Design Volume (less design sludge depth) (MG)	2.2	3.0
Total Existing Detention Time (at 0.028 MGD) (days)	80	108
Effluent Measurement	NA	Parshall Flume

The facility seasonally discharges effluent from the southeast corner of the easterly lagoon with an effluent discharge structure. The system was originally designed to discharge from either cell or, if needed, to bypass either lagoon. This function is currently not operational. The lagoon effluent is discharged into a pipe in the southeast corner of Cell #2 that flows directly south into Beaver Creek, approximately 0.4 miles to the south. The effluent Parshall flume is located in a manhole along the discharge piping. The DEQ has performed periodic compliance evaluation inspections (CEIs) and maintenance inspections of the Town's sewer system. A discussion of the facility's discharge permit is presented later in this section.

Historical DEQ violations relating to the performance limitations of the lagoon system have typically pertained to BOD and E. Coli limits. EPA Enforcement and Compliance History Only (ECHO) data, found at: https://echo.epa.gov/effluent-charts#MTG580012 for the past 5 years can be referenced in Appendix Q. There have been 14 violations for permit exceedances from August 2016 through June 2021; 43-percent for BOD violations and 57-percent for E. coli violations (H&S).

Hydraulic Loading

Hydraulic loading to the existing treatment facility was determined by analyzing lift station hour records and accounting for infiltration estimated through a 2-year period. The actual estimated average annual influent flows of approximately 28,000 gpd into the treatment facility are less than the original design hydraulic loading of the lagoon system given the size and available volume capacity of the treatment system. Available records show that the original lagoon was designed

for an average design flow of 67,000 gpd. The allowable flow using latest design standards for the minimum detention time of 40 days for the treatment lagoon DEQ-2 93.36) is about 55,000 gpd. However, at 55,000 gpm, the existing secondary lagoon would be undersized to provide the DEQ-2 requirement of 180 days of detention for the treatment system. The current lagoon capacity at the 20-year design flow of 31,170 gpm, provides over 70 days detention in the primary cell, and 167 days in both cells.

Organic Loading

Table 3-7 below presents the organic loading for the treatment facility for the 20-year planning period. The existing organic loading is presented with two methods: 1) with the limited influent samples available, and 2) Circular DEQ-2 recommended loading. Given the limited number of influent samples completed the design organic loading for the 20-year planning period will use the DEQ method factors.

Table 3-7 -Planning Period Influent Organic Loading

Description	Loading Based on Sampling (28,000 gpd)		Loading based on DEQ factors	
	Sampling mg/l	Sampling lb/day	Existing Population (159)	20-Year Planning Period (177)
BOD_5	23[5]	5.4 lb/day	31.8 lb/day [1]	35.4 lb/day
TSS	84[5]	19.6 lb/day	35.0 lb/day [2]	38.9 lb/day
Total Nitrogen	4.88[5]	1.1 lb/day	5.2 lb/day[3]	5.8 lb/day
Total Phosphorous	6.12[5]	1.4 lb/day	1.4 lb/day[4]	1.6 lb/day

Notes:

(1) BOD loading per DEQ2 = 0.2 ppcd
(2) TSS loading per DEQ2 = 0.22 ppcd
(3) TN loading per DEQ2 = 0.033 ppcd
(4) TP Loading per DEQ2 = 0.009 ppcd
(5) BOD and TSS loading from H&S Study, 2021

Based upon the existing lagoon area, the 20-year BOD loading of the primary lagoon and entire lagoon system are 14.8 lb/acre/day and 7.4 lb/acre/day, respectively. This complies with the Circular DEQ-2 design criteria for a facultative lagoon system with controlled discharge.

Existing Treatment Standards

The purpose of this section is to provide a summary of the general requirements of the existing surface water discharge permit. The Town of Saco currently discharges to Beaver Creek with

coverage under Montana Domestic Sewage Treatment Lagoons General Permit MTG5800012 as a Batch Discharger.

More specifically, per DEQ's description of batch discharge permits:

> *The purpose of the Domestic Sewage Treatment Lagoons General Permit is to permit the discharge of treated wastewater from sewage treatment lagoons to state surface waters in accordance with effluent limitations, monitoring requirements and other conditions set forth in the General Permit. Most lagoons that have an average daily design flow of less than one (1) million gallons per day and do not accept significant industrial contribution are eligible for coverage under this General Permit. A written authorization letter from DEQ is required before an applicant is authorized to discharge under the General Permit.*
>
> *The Domestic Sewage Treatment Lagoons General Permit is in compliance with the Montana Water Quality Act, Title 75, Chapter 5, Montana Code Annotated (MCA), and the Federal Water Pollution Control Act (the "Clean Water Act"), 33 U.S.C. 1251 et. Seq.*

A copy of the current discharge permit, fact sheet, and letter of conditions are included in Appendix O. The existing discharge permit is effective January 1,2018 and will expire on December 31, 2022.

The permit limits are summarized in Tables 3-8 and 3-9. The technology based effluent limits (TBEL) for publicly owned treatment works were set forth in 40 CFR 133 – minimum treatment requirements for secondary treatment or equivalent.

Domestic sewage treatment lagoons may be regulated by one of three levels of treatment contained in 40 CFR 133, in order of increasing discharge limits:

- National Secondary Standards (NSS)
- Treatment Equivalent to Secondary (TES)
- Alternative State Requirements (ASR)

The current BOD and TSS limits for the Town are at NSS and ASR, respectively. The specific mass-based limits included in the Town's most recent permit are included below.

Table 3-8 - Town of Saco Technology Based Effluent Limits

TBEL Group C.3 –Technology Based Effluent Limits			
Parameter	Units	Average Monthly	Average Weekly
BOD5 (NSS)	mg/L	30	45
	lb/day	17	25
	% removal	85	-
TSS (ASR)	mg/L	100	135
	lb/day	56	75
pH	SU	6.0-9.0	

The water quality-based effluent limits (WQBEL) effective for the Town as included in the permit are shown in Table 3-9.

Table 3-9 - Existing Permit - Water Quality Based Effluent Limits

Final Water Quality Based Effluent Limits (WQBEL)				
Parameter	Units	Average Monthly	Average Weekly	Maximum Daily
E. coli summer (April 1 – Oct 31)	cfu/100 mL	126	252	-
E. coli winter (Nov 1 – March 31)	cfu/100 mL	630	1,260	-
Oil and Grease	mg/L	-	-	10

The Town is required to perform influent and effluent water quality sampling in accordance with the permit during periods of discharging. Sampling results are reported on a Discharge Monitoring Report (DMR) and submitted electronically to MDEQ. See Appendix Q for a copy of DMR data summary obtained from the EPA ECHO website.

In addition, as a batch discharger, the permit states that there shall be no discharge between June 16th and September 30th due to nutrients from the facility receiving waterbody.

Future Treatment Standards

The effluent characteristics for the existing treatment system were summarized above. Each of the major permit limit parameters, as well as the treatment implications of the anticipated effluent permit limits for Saco are discussed in this section.

As discussed earlier, the Town currently discharges under the State's Lagoon General Permit as a Batch Discharger. New permit limits became effective January 1, 2018, with the current permit cycle. The permit is set to expire on December 31, 2022, and will need to be renewed. The permit limits for TSS remained the same under Alternate State Requirements (ASR) and the current permit does not have a requirement for TSS percent removal, as referenced in the permit limits and explained in the Fact Sheet.

It is anticipated that the current BOD and TSS limits will not change in the next permit cycle. Phone conversation with the DEQ surface permitting group is consistent with this. Given the unpredictability of forecasting permit limits for the full 20-year design period, this section generally describes the current permit limits and those discussed in the General Permit Fact Sheet and potential future changes.

Permit Discharge Location

The existing treatment system for Saco discharges into Beaver Creek, an impaired waterbody on the 303(d) list. An approximately 2,100-foot-long PVC pipeline conveys discharge from the treatment lagoons directly to the creek. Treatment system sampling for the Town is performed near the end of the unnamed channel prior to entering the creek at the outfall structure.

Both the Beaver Creek-Nelson South Canal (watershed 100500140704) and the downstream Milk River-Dry Stinky Creek (watershed 100500042101), as listed on the EPA source (https://mywaterway.epa.gov/community), are impaired for nutrients, metals and flows. (See Appendix F for Beaver Creek Data)

Mixing Zone

A mixing zone is defined by DEQ as "a limited area of a surface water body or aquifer where initial dilution of a discharge takes place and where certain water quality standards may be exceeded." The Administrative Rules of Montana (ARM) describe how mixing zones may be used for dilution of parameters/pollutants of concern. Dilution is granted per parameter as the appropriate portion

of the low flow: 7-day, 10-year low flow for ammonia and 14-day, 5-year low flow for nutrients. Given the size and location of the tributary at the point of discharge, it is likely that low flows that would be used for dilution would be very limited. However, as described below, the discharge permit for the Town does not have an ammonia limit and no discharges are allowed under the General Permit for batch dischargers for summer periods when nutrients could impact the waterway. Therefore, no mixing zone has been given to the Town.

Biochemical Oxygen Demand (BOD)

BOD_5 is defined as the five-day measure of pollutant parameter biochemical oxygen demand. The current permit limit is set at the national secondary standards (NSS) of 30 mg/L monthly average and 85% removal of BOD_5 from the treated wastewater (influent to effluent) is required. In addition, DEQ has provided the Town with an average monthly mass-based load limit of 17 lb/day. The current permit limits are expected to remain the same in the next permit.

The existing lagoons experienced BOD exceedances in the past likely following spring lagoon turn-over periods and amplified by the large quantity of sludge in the lagoons. Facultative lagoon systems typically have difficulty meeting the secondary standard for BOD during spring and fall months. As indicated above, it is highly likely that the facility will receive violations for BOD in the future without corrective measures. The removal of sludge, the upgrade of the influent structure for proper in-series operation, and better timing of effluent discharges will have a beneficial impact of reducing BOD loading.

As mentioned above, the NSS also requires that the facility remove 85% of the influent BOD load. Based on the performance evaluation completed by H&S Environmental in 2021, Cell #1 showed a sixty-nine (69) percent removal of BOD, below the NSS requirement of eighty-five (85) percent. However, this assessment only accounts for a single influent BOD sample. The violation of percent removal of BOD could be attributed to spring turnover and dilute influent BOD from collection system inflow and infiltration. Improved operation of the lagoons, and also improvements to the collection system in reducing I&I into the treatment system is likely to improve percent removal of BOD.

The Town should continue to monitor BOD concentrations as collection system improvements are completed to track levels of BOD in relationship to I&I reduction. Recommended sampling locations are influent and effluent, as well as periodic inter-pond sampling. The Town should

consider pre-sampling of the lagoons for BOD and TSS prior to discharging to assure that permit limits are not exceeded.

Total Suspended Solids (TSS)

TSS is a measure of the suspended solids in wastewater. It is an indicator of the level of treatment achieved. The current permit limit is based on the ASR requirements (100 mg/L monthly and 135 mg/L weekly). Permit limits for TSS are anticipated to stay the same in future permit cycles. Without sludge removal, the system has shown an increasing chance of experiencing TSS violations in the future. Sludge removal is highly recommended and will improve treatment performance.

Total Ammonia and Nitrate + Nitrite

The facility does not currently have a permit limit for ammonia or nitrate + nitrite. The Fact Sheet for the GP Batch Dischargers, included in Appendix O, states the following for batch dischargers:

> ***< 0.10 MGD batch dischargers –*** *this subcategory or batch dischargers with an average daily design flow up to 0.10 mgd. Half of the facilities can be considered non-discharging and the other half discharge less than 3 months annually. Of those that discharge, their discharge is so miniscule that it infiltrates upon release or in some cases enters such a large river that impacts would be undetectable. As a result, there is no reasonable potential to cause or contribute to an ammonia (or nitrate + nitrite) exceedance.*

Numeric Nutrient Standards (TN and TP)

Per the General Permit, batch dischargers will be prohibited from discharging during the summer period when numeric nutrients could impact the receiving waterbody. The receiving waterbody of the Town is Beaver Creek. The next permit cycle is anticipated to continue with the same permit limits.

pH

The treatment system does not currently have issues with effluent pH exceedances. The pH level should continue to be monitored in accordance with DEQ sampling and testing standards, particularly as collection system improvements and treatment system upgrades are completed.

The presence of algae in the upper layer of a lagoon system can be critical to the performance of lagoons. Algae produces oxygen through photosynthesis during daylight, which in turn is used in microbiological processes to reduce BOD concentrations. On a bright sunny day, algae are so effective that the oxygen concentrations can reach saturation in the aerobic layer. Dissolved oxygen can be in the 9 to 10 mg/L range at saturation. In this process, algae use carbon dioxide (CO2) in the water which raises the pH of the lagoons within the aerobic layer.

E. coli

The current permit limit is set at 126 cfu/100mL monthly average from April1 – October 31, and 630 cfu/100mL from November 1 – March 31. The limits are applied at the point of discharge. The current permit limits are expected to remain the same in the next permit.

The existing lagoons experienced E. coli exceedances in the past for nearly sixty (60) percent of the monitoring periods (See H&S Study, Appendix P). To ensure compliance with E. coli limits, the treatment alternatives considered in this report will include the option of timing the discharge period to be before April during higher limits along with pre-sampling of the secondary lagoon for E. coli levels. This PER also considers the installation of new disinfection equipment at the facility assures compliance with the discharge permit for E. coli.

Sludge

One of the primary mechanisms for the treatment of wastewater within a lagoon system is settling. Heavier solids such as sands, dirt and debris are settled out close to the inlet within the primary lagoon. Lighter suspended particles continue to settle out within portions of the primary and storage lagoons. Settling also removes biological floc, inorganic contaminants, heavy metals and nutrients such as phosphorous and nitrogen. Through the continuous operation, the level of settled material begins to collect on the floor of the lagoons forming wastewater sludge.

The primary treatment cell and secondary cell have a design sludge depth of two feet and one foot, respectively. Sludge depths for lagoon system are recommended to be periodically measured and tested to determine compliance with design criteria and regulatory requirements. Typical monitoring should be performed every 5 years. Sludge depths are measured to be between 1.5 and 2.5 feet in cell #1 and between 0.8 to 2.2 feet deep in cell #2 and is estimated to make up a volume of 2.1 to 2.5 million gallons. (Appendix P)

The accumulated sludge must periodically be removed to maintain hydraulic capacity within the lagoons, reduce odor production, reduce the impact of turnover on TSS and maintain biological health of the system. This is typically recommended every 10 to 20 years. The treatment lagoons for the Town have been in operation for over 60 years and sludge has not been removed. The DMR data also shows that the effluent TSS and BOD values have steadily increased, which is an indication of increased sludge in the lagoons making it to the effluent. (H&S)

Sludge removal will be associated with the scope of the recommended project, along with the appropriate treatment system upgrades.

3.4 Operational and Management Practices and Capabilities

Saco currently employs a full-time water and wastewater operator and backup operator who live in the area. The operations staff is competent and licensed. The issues with the wastewater facility are not due to a lack of sufficient operation capabilities as much as they are due to aging and in many cases, unsafe system.

As presented, the existing treatment system for the Town was designed as a two-cell batch discharging lagoon system. The primary treatment cell at the facility is designed for and complies with the requirements of a facultative treatment cell. The treatment facility does not have any powered equipment and requires minimal operation and maintenance duties other than routine sampling and the periodic turning of valves to batch discharge. The Town regularly mows the lagoon embankments to prevent vegetative overgrowth.

The existing lift station dry well is a very small and tight space (24” entry tube with a 48” base), below-ground confined access space. Because of the small interior space, it is very difficult to operate and/or control the pumps properly or to perform routine maintenance. Confined space requires two operators as well. Moving equipment parts, entanglements, slips, and falls from the ladder are all concerns. It is also possible for toxic fumes and gasses to accumulate in the dry well. The operators are working in hazardous conditions and must ensure they always follow the confined space entry protocols. Confined space entry requires planning to arrange for repairs and maintenance coordinated with installers. The lift station does not currently have a bypass pumping connection to be able to direct flows around the existing wet well if servicing of the existing wet well is needed. To work in the existing wet well for longer durations, the sewer needs to be “backed-up” into the existing collection system and/or a pumper truck is required to bypass the system. Both of these options are costly and have a high risk of SSO.

Beyond the treatment and lift station facilities, the Town routinely jets the gravity collection system needed to address problems in the collection system. However, even with regular cleaning maintenance of the collection system, the Town is burdened by the aging clay collection system and deteriorating manholes. The aging and degrading collection system has required increasing attention and maintenance cost, as well as the continued risk of sewer backups. As shown in the recent video inspection, multiple areas of the collection system will require increases attention. Given the evident structural concerns of the piping, portions of the piping are likely to result in complete failure and collapsing of the piping. The Town will benefit with a reduction in maintenance costs, and SSO risks, by replacing the problematic clay collection mains.

3.5 Financial Status of any Existing Facilities

Income and expenditures for the wastewater system, including operations and maintenance, are retained in the Town's Black Mountain accounting system. A summary of the operating expenses and revenue for fiscal years 2019 through 2021 is provided in Table 3-10, below. The Town does not make any payments on any outstanding wastewater loans.

The average water user base rate is $55/month/EDU and the average monthly sewer system rate $25/month/EDU for a total combined rate of $80. The Town charges for metered water. The Town's expenses include personnel, supplies, utilities, testing, insurance, maintenance, and professional services. The average wastewater system expenses for the last three years have averaged about $35,700 per year, yet with O&M costs on an increasing trend. A summary of the annual sewer system revenues and expenses for the last three years, as categorized in the Town's financials, is shown in Table 3-10. The average sewer operating expenses and revenues are $35,700 and $40,300, respectively.

Table 3-10 - Summary of Current Sewer Revenue and Expenses (Fiscal Years)

Description	2019	2020	2021	Average
Expenses				
Personnel Services	19,915	20,346	16,748	19,003
Purchased Services	3,016	3,580	11,627	6,074
Supplies	422	4,474	25,295	10,064
Debt Service	-	-	-	
Total Expenses	23,353	28,400	55,332	35,695
Income				
Sewer Revenues	38,255	39,950	42,713	40,306
Total Income	38,255	39,950	42,713	40,306
Income minus expenses	14,902	11,550	(12,619)	4,611

3.6 Water/Energy/Waste Audits

No detailed energy or waste audits have been completed for the Town.

4.0 NEED FOR PROJECT

4.1 Health, Sanitation and Security

The Town's existing clay collection system is documented to be failing and in need of replacement to limit groundwater contamination, the intrusion of excess I&I flows into the treatment system and the continued probability of recurring SSOs into residences, businesses and even places of worship. The SSOs into basements are the direct result from deficient collection pipes in Town. Maintenance efforts have been made to prevent the sluggish flows and remove blockages, but these problems will repeat until the pipes are rehabilitated and reconstructed.

The existing collection system is one of the worst system video inspected according to company which completed the sewer pipe assessment. The company owner and technician, Tyler Smith, stated:

> *"Overall, the condition of the Town of Saco sewer's system is very poor. In our 20 years of inspection services, I have not seen a system that was in need of so much work. Most manholes have corroded to the point where you can see the reinforcing wire. We were only able to completely inspect just a handful of the mains completely through. In those inspections we found lots of intruding taps that are so far into the sewer main that cameras cannot pass by. Several of these sewer mains have more than one of these taps there for we were not able to inspect the entire line. We also found complete sections of pipe missing the top where you can see the soil. In these sections a catastrophic failure can occur without notice and with its rural location property damage would occur before the repair was made. All in all, I would recommend a phased approach to sewer main replacement with point repairs in the first phase to prevent catastrophic failures." (Copy of letter in Appendix J)*

Overflows have been documented to occur throughout the system and impact at least a dozen residents during periods of high rainfall and runoff. The occurrences of SSOs presents a very serious public health and safety issue. Because of direct human contact with raw sewage, these occurrences present the possibility of not only acute illness from bacterial and viral pathogens, but also potential chronic illness from recurring exposure to potential organic (volatile organics, endocrine disruptors, pharmaceutical products) and inorganic (heavy metals) contaminants.

To support the overflow concerns, letters were provided by local community members about the condition of the sewer collection system. These letters document sewer overflows into their homes and a local church. These statements express common sentiments that residents share about the degrading condition and limited capacity of the sewer collection system and lift station. The residents are concerned about periodic surcharging conditions during times of runoff and high groundwater conditions. According to the letters, these conditions will keep repeating until and unless the sewer system deficiencies are corrected. These letters, which are from residents in various locations of the Town, include the following:

- Leah Molina states that sewer has backed up at least 3 feet into her basement and has caused damage to appliances.

- Dale Plouffe states that when substantial rain events come, the sewer backs up into his basement. He has had to replace appliances, beds, and sheet rock in addition to installing a manual sewer shut off valve.

- Debi and Wes Whitaker write that when a lot of rain comes, they have had sewage back up into their basement which caused damage to carpet, beds, walls, and freezer and was very expensive to repair. The Whitakers also feel a responsibility to convey the alarm conditions of the sewer lift station to the Town workers. They also have a manual sewer shut off valve on their home that they turn when the system is in a surcharged condition.

- Wayne Stall (who even lives in a higher northwestern part of Town) states that he has experienced sewer backups into his basement. Also, Wayne confirms that the Methodist church has experienced backups as well.

Several manholes are in a poor structural condition, are in a corroded state within the concrete walls and cone sections and have degrading or non-existent base sections. Most are missing access steps. Gravel and clay pipe fragments found in the manholes during cleaning is indicative of the degrading state of the collection system and manholes.

Exposure to raw sewer presents a very serious public health and safety issue. Because of direct human contact with raw sewage, these occurrences present the possibility of not only acute illness from bacterial and viral pathogens, but also potential chronic illness from recurring exposure to potential organic (volatile organics, endocrine disruptors, pharmaceutical products)

and inorganic (heavy metals) contaminants. The U.S. EPA acknowledges that overflows of untreated sewage can contaminate waters and cause serious water quality problems. The EPA's National Enforcement Initiative (FY 2011-2013) lists public health and environmental implications associated with pollutants in raw sewage. The document states that sewage pollution can kill aquatic life and create algal blooms that can suffocate fisheries and that raw sewage carries "disease-causing microorganisms can cause fever, abdominal cramps, diarrhea, vomiting or infections of open cuts or rashes" and that human exposure to raw sewage can lead to "infections of the internal organs, such as hepatitis".

Potential health threats from consuming water containing untreated or inadequately treated sewage include bacterial pathogens such as:

- E. coli
- Salmonella
- Salmonella typhi
- Shigella
- Campylobacter
- Vibro cholera
- Pseudomonas
- and others

Diseases that can be caused by drinking sewage-contaminated groundwater include waterborne viruses such as:

- Severe Acute Respiratory Syndrome (SARS)
- Hepatitis
- Polio

In addition to microbially-mediated disease, untreated wastewater can also result in exposure to heavy metals, carcinogenic organic compounds, and endocrine-disrupting compounds and pharmaceutical products.

This PER determined that Infiltration and Inflow (I&I) flows contribute over 31% of total sewer system flows on an annual average basis and over 85% of the sewer flows during peak day events. The sewer system experiences a direct response to rain events and creates exceedingly high peak flow conditions.

The Town of Saco's current lagoon system is not functioning properly and the Town experiences violations for E. coli and BOD. To meet the permit limits, both operational adjustment and retrofits to the system are required. If no treatment action is taken, there will be discharge of inadequately

treated wastewater and continued failures to meet MPDES permit requirements. The discharge of insufficiently treated wastewater threatens the health and safety of the people living, working, and recreating downstream of the wastewater facilities. The risks are that the public may be exposed to viral and bacterial pathogens while accessing, recreating or through vectors such as pets that have contact with the effluent stream.

The Town regularly receives violations for BOD and E. coli when discharging. Both the Beaver Creek-Nelson South Canal (watershed 100500140704) and the downstream Milk River-Dry Stinky Creek (watershed 100500042101), as listed on the EPA source (https://mywaterway.epa.gov/community), are impaired for nutrients, metals, and flows. The wastewater treatment system located upstream of these watersheds, are potential sources of contamination by undertreated sewage.

Sludge has never been removed (with over 60 years of accumulation) from both existing lagoons and is visible from the surface of the lagoon water surfaces in both cells. The lagoon sludge needs to be removed to allow for sufficient treatment capacity and for improved discharged water quality of the treatment system. According to sludge judge measurements, sludge depths are 2.6 feet in cell no. 1 and up to 2.2 feet in cell no. 2. Considering average sludge depths, there is about 2.1 to 2.5 million gallons of in-situ (wet) sludge that is needed to be removed, dewatered, and legally disposed of using DEQ and EPA 503 criteria.

The lagoon control valve structures have failed, and the system is stuck in parallel lagoon operation mode where raw wastewater is split into both cells, as opposed to in-series. This operation mode, in addition to the excessive sludge, does not permit optimal treatment and detention time of the wastewater treatment system. Insufficiently treated wastewater will continue to negatively impact the receiving and will lead to ongoing discharge permit violation. The concrete structures are subject to corrosion and degradation to the point of the reinforcement being exposed as shown in site photos.

The existing lagoons are experiencing erosion of the existing internal berm slopes. Also, rock slope protection does not exist on the northern internal banks within both lagoons. Wind and wave action causes recurring erosion of the slopes which are an ongoing maintenance items for the Town. Without sufficient protection of the slope, the lagoon is at risk catastrophic failure and release of untreated sewage.

4.2 Aging Infrastructure

Several sections of the 70-year-old and older clay collection piping and manholes are in a deteriorating and corroding state. The existing clay pipes are demonstrated to be sagging, cracked, have protruding service connections, and some areas root intrusion. Several locations throughout the collection system also have missing pipe and holes directly to the ground. The information above is documented with video inspection, sewer cleaning observation reports, maintenance logs, and site reconnaissance investigations. (Appendix M)

The wastewater lift station is a critical component of the wastewater treatment system that serves the Town of Saco. An upgraded lift station is needed to provide a sustainable, reliable, safe, and more efficient system. Without a functioning lift station in this area, the only other option is for each home to have private septic systems and drain fields which may not be permittable given the lot sizes and high groundwater. The current lift station replaced the original lift station in the 1960's and is well beyond its working design life. Many concerns exist with the lift station, some including absence of an emergency alarm system, poor accessibility for maintenance and proper function, and no bypass piping system.

The existing collection system was originally constructed in the early 1900's and has only seen minimal repair and upgrade since. As such, much of the clay pipe has experienced extreme wear and is in poor working condition.

4.3 Reasonable Growth

This project assumes a 20-year design period 0.5% growth rate or the addition of 18 people. This exceeds the current average population growth trend seen but is appropriately conservative.

5.0 ALTERNATIVES CONSIDERED

The alternative screening process will discuss the available alternatives for wastewater collection, lift station, and treatment and disposal improvement options. This section completes an alternatives screening process to determine which are most viable for detailed consideration in the alternative evaluation selection in Chapter 6.

5.1 Alternative Screening

Several alternatives exist to address the deficiencies that have been identified with the Town's wastewater system. Some alternatives are not viable because of technical feasibility, regulatory compliance, or capital and/or operation and maintenance (O&M) costs. This section contains a description of the alternatives that were considered in planning for the various solutions to meet the identified needs. The alternatives considered for further analysis were schematically and conceptually designed and evaluated to determine the estimated probable project capital and O&M costs.

5.1.1 Collection System

The collection system options include either no action or action using either open-cut, trenchless, or a combination of both methods to replace or rehabilitate the problem mains. Replacement of the existing collection lines would include traditional open cut methods to replace the pipe. Rehabilitation of existing lines is completed by trenchless technologies and commonly includes pipe bursting, pipe lining or bore and jack methods. Rehabilitation would be completed as pipe and soil conditions allow.

The specific alternatives available for collection system upgrades include:

- No Action: No action may be considered an alternative in order to save immediate cost. This alternative is not viable considering the extensive problem of the collection system with damaged, sagging, cracking piping, and resulting significant I&I intrusion. Long-term O&M costs will increase if the condition of the collection system is left unaddressed.

- Open Cut Construction: This alternative would involve using open cut techniques to replace the pipelines and manholes within the areas identified. The open-cut method involves excavation, pipe removal, and installation of new pipe. Open cut installation is

used to replace pipes with major offset joints, sags, and shallow mains that are subject to freezing. The open cut method is also a primary alternative to consider when a main is being replaced by a larger pipe to increase pipe capacity. Open cut replacement can be more costly than rehabilitation methods except in cases where a small quantity of pipe is involved because of the amount of specialized equipment that must be mobilized for rehabilitation projects. However, a larger somewhat local competitive bidder pool is likely more available for open cut methods.

The primary advantages to this approach are that pipe is easily placed to the appropriate lines and grades, and service connections are fully replaced which helps ensure a quality joint and watertight connections.

A prevalent disadvantage of open trench construction is the disturbance of the surface and potential impacts to nearby underground utilities. Surface disturbances require traffic control, management of spoils, coordination with other utilities and street and sometimes landscape replacement. Open trench construction may disturb access to businesses and residences. Construction can be especially difficult when working in tight alleys, when replacing deep pipelines, locations of nearby utilities and/or when working in areas with high groundwater.

- Pipe Rehabilitation: This alternative would rehabilitate existing pipes using trenchless technologies and replace manholes within the areas identified. Trenchless technologies are becoming an increasingly popular method of rehabilitation and include various methods. Although each method has its own advantages and disadvantages, there are several advantages that can be generalized for all trenchless technologies. The biggest advantage is that there is little disruption of streets, alleys, and railways during construction since only minimal excavation is required. This method results in much less street surface restoration. Minimal disturbance of business and residential access and limited traffic control are required. The process is often, yet not always, less expensive than open trench replacement. However, only a small pool of contractors is available to complete this this very specialized work and scheduling and delays can be an issue on projects.

  Trenchless techniques will be employed whenever the existing host pipe conditions allow because of the ease of construction and cost advantages. The final determination

will be determined at the final design stage. The three forms of trenchless technology listed below are considered for Saco:

Pipe Bursting

Pipe bursting is a method for trenchless replacement of worn out and undersized pipe. The existing pipe is replaced either size for size or up sized with a new pipe in the same location. Typical pipe bursting involves the insertion of a conically shaped tool (bursting head) into the old pipe. The head fractures the old pipe and forces its fragments into the surrounding soil. While this occurs, a new pipe is pulled or pushed in behind the bursting head. The bursting head and new pipe are installed from an insertion pit, and a cable is used to pull it to the reception pit.

Pipe bursting has its limitations in expansive soils and in close proximity of other service lines and collapsed pipe sections. Pipe bursting capabilities are limited on point repairs that reinforce existing pipe with ductile material and existing grade problems such as sags or low spots that cannot be corrected through pipe bursting. Additional low spots can even be created in the new pipe when the old pipe was at minimal grade. This situation occurs when the bursting head does not displace the surrounding ground evenly but is driven lower or higher creating or deepening a sag. Grade problems typically occur at the start and end pits when the new pipe is not lined up fully with the old pipe or when a soft soil zone is located above or below the existing pipe. Thick root masses are considered obstacles for pipe bursting. This is because roots wrapped tightly around the old pipe can absorb a lot of shock without breaking, making the pipe harder to break. Obstructions in the pipe such as a heavy solid build up, dropped joints, protruding service taps, or collapsed pipes may also prevent a complete pipe bursting operation or impair the end result.

One of the biggest disadvantages of pipe bursting is that all of the services must be excavated, exposed and replaced. Significant street excavations will be required if a line has several service connections. Another disadvantage is that sewer grades are minimally fixed. Pipe bursting should not be used if the grade of the existing sewer (host pipe) is inadequate or there are sags in the host pipe.

Cured-In-Place Pipe (CIPP)

The CIPP method is another trenchless technology that is used for rehabilitating sewer mains. With this method, the mains are video inspected to determine the structural soundness of the pipe and the exact locations of service connections. Severe structural problems must be excavated, and spot repairs completed prior to installation of the CIPP. A resin impregnated flexible “sock” liner is pushed into the pipe with steam pressure. Once the sock is in place, the resin impregnated side of the sock faces the interior surface of the old pipe. Hot steam at high pressure is then circulated through the pipe to cure the sock in-place. The resulting product is a hard, structurally sound pipe formed inside the old pipe. Once the CIPP has cured, the service line locations are reestablished internally by cutting the CIPP with a robotic cutting device which travels down the main to the previously recorded service locations. All service lines are immediately re-instated internally. Services with poor main connections need to be rehabilitated to ensure watertight connections. Another video camera pass is done to verify the post-construction condition prior to acceptance. Rehabilitation is completed by excavating the service and reconnecting to the liner using Inserta tees or by remotely installing top hats (service to main liner installation) internally at the connection of a sewer service.

The biggest disadvantage of CIPP is that it requires excavation and replacement of service connections or remote installation of service connection liners for existing service connections that are in poor condition. Service connections in poor condition are also a potential ongoing infiltration source after rehabilitation is completed. Another disadvantage of CIPP lining is that sewer grades cannot be adjusted. Line and grade issues of the host pipe will be reflected in the newly lined pipe. CIPP and other lining techniques should not be used if the grade of the existing sewer (host pipe) is inadequate, if there are major offset joints, or if there are sags in the host pipe.

Advantages of CIPP include minimal disruption of streets and alleys during construction since minimal excavation is necessary, and construction can be completed much quicker than with traditional open-cut replacement because there is less digging. Finally, the end product is a seamless pipe with no joints that will be nearly completely infiltration-proof along the main line.

Bore and Jacking

Bore and Jack installation is a method of horizontal boring sewer construction. Construction crews drill a hole underground horizontally between two points without disturbing the surface between sending and receiving pits. The tool works in a way very similar to a jack hammer and uses air to pound its way through the ground. In the pipe jacking operation, jacks located in the drive shaft propel the pipe. The jacking force is transmitted through the pipe-to-pipe interaction, to the excavating face. When the excavation is accomplished, the spoil is transported through the jacking pipe in the drive shaft by manual or mechanical means. Bore and jacking can be done for both pressure and gravity pipeline projects. However, gravity main replacements require very careful consideration of grade and slope control of the casing pipe to maintain the minimum recommended slopes. These are the basic steps of jack and bore construction:

- Dig sending and receiving pits to the required depth.
- Shore the walls.
- Lay a boring machine in the pit.
- Set up tracks and insert an auger in a casing.
- The boring machine pushes the auger and casing through the ground simultaneously while the machine turns a cutting head through the ground.
- The auger carries the debris back to the machine in the pit.
- Dirt and debris are shoveled out of the pit.
- Carrier pipe is installed in the casing pipe and grades are set.

- Combination Open Cut and Trenchless Pipe Rehabilitation: This collection system alternative combines both open cut and trenchless rehabilitation technologies for the collection system improvements project. For the Saco wastewater improvements, bore and jacking trenchless methods would only be considered where surface encumbrances are limiting and permitting requirements require, such as the Montana Department of Transportation (MDT) and BNSF railroad crossings. CIPP methods will be considered where pipe conditions allow as determined during the final design of the project. CIPP methods will not be used where there are grade issues (sags or adverse grades) and where the existing conditions (bends, major offset joints) of the pipe do not allow of this method.

The combination Open Cut and Trenchless Rehabilitation will be utilized for collection system improvements in the Town of Saco. The majority of the work would take place within the existing

road rights of ways. The railroad and highway crossing permits require the use of bore and jack methods and it is the engineer's experience that CIPP is more widely used in Montana than pipe bursting. For planning and estimating purposes of the PER, the collection system improvements (other than the highway and railroad crossings) will assume open cut replacement. The determination of CIPP rehabilitation pipeline sections will be completed during the final design phase in coordination with detailed topography surveys and a detailed review of available video footage to verify pipe slopes.

5.1.2 Lift Station Improvements

Lift station alternatives include either rehabilitating the existing wet well/dry well station, installing a new wet well/dry well station, installing a new suction lift pump system, or a new submersible packaged lift station.

Rehabilitating or installing a new wet well/dry well station is not recommended as access would still require confined space entry. These types of stations are not as common anymore and the pumps and equipment are becoming harder to acquire.

Suction lift pump stations have a good track record and are known to be able to handle solids and stringy material well. However, suction lift pumps are limited to a maximum recommended depth of 10-15 feet to overcome the suction lift head. The existing wet well is over 26 feet deep and doesn't allow this option.

Submersible lift stations have become more common. Confined space entry is no longer needed with submersible pumps able to be lifted to the surface with guide rails. These lift stations also allow access to the piping, valves, and fittings from the top-side access enclosure. A submersible packaged lift station is the preferred lift station alternative and is considered for further evaluation.

5.1.3 Treatment Facility Improvements

Wastewater treatment systems vary in the degree of complexity and operation and maintenance requirements. Given the size of the Town of Saco and available operation resources, low maintenance facilities, at a low capital cost, are essential and preferred by the Town

Montana DEQ provides technical assistance to small communities for optimizing existing system operation and for complying with permitting requirements. The current philosophy held by the State (DEQ) is the encouragement of effectively implementing low and no cost wastewater

treatment improvements. In this effort, the Town was selected by DEQ to receive a complete treatment system performance assessment. The assessment was completed by DEQ staff and lagoon treatment specialist consultant Steve Harris of H&S Environmental (H&S). This assessment was completed on August 4, 2021. This evaluation was used to support the treatment system conditions recommendations reported in the PER. (See Appendix P)

There are two primary wastewater treatment and disposal system configurations available for consideration for municipal wastewater systems. These include discharging systems that discharge treated effluent to surface water or groundwater and non-discharging systems that utilize crop irrigation and/or evaporation as a means of effluent disposal.

For discharging systems, the owner must obtain a discharge permit to discharge treated effluent legally to either surface water or groundwater. Discharging options require a higher level of treatment and sometimes require effluent disinfection before disposal. The level of treatment is strongly governed by the requirements of either the surface water discharge permit (MPDES) or the groundwater discharge permit (MGWPC).

For non-discharging systems, a MPDES discharge permit is not required. However, there are several design standards and treatment requirements outlined in Circular DEQ-2 Circular 2 standards for non-discharging systems. For example, disposal of treated wastewater on crops requires that the wastewater be applied at a rate that results in 100% uptake of effluent nitrogen. Non-discharging wastewater system options require treatment to secondary standards. Effluent disinfection is not required for evaporative systems and is not required for irrigation if an irrigation area buffer control zone and set back area are provided. Disinfection is required for those irrigation disposal systems that cannot satisfy buffer zone requirements. Irrigation systems require the preparation and adherence to a nutrient management plan outlined in Circular DEQ-2 standards.

Below is a summary of the alternatives considered in the alternatives screening process. These alternatives are discussed in this section and either dismissed or recommended for further evaluation. Multiple variations or system configurations exist with several of these alternatives. Variations and configurations are typically governed by regulatory considerations, owner preference, and site constraints.

The alternatives screening for the treatment system is done in consideration of the minimum capital upgrades and associated costs of a project. The project objective considers the methods

to attain the discharge permit limits and address recurring permit violations, and factors in the current operational capabilities of the operation staff. Also, another important consideration is that future FEMA flood plain mapping results are not anticipated until 2026. Major upgrades that do not meet these criteria are screened out.

No Action Alternative

The No Action Alternative means no improvements would be made to the existing treatment system. This is an option to minimize capital costs. However, degradation of surface water resources will continue without improvements to the wastewater treatment facilities. The existing facility will also continue to require increasing maintenance and attention and will cease to provide adequate treatment. Sludge will continue to accumulate and reduce effective treatment capacity to effectively treat for BOD and TSS.

Secondary standards are intended to measure the effectiveness of wastewater treatment to protect public health. The current system discharges to Beaver Creek and experiences periodic violations for BOD and TSS and will need disinfection to meet E. coli limits.

Therefore, the No Action Alternative will not be considered further in this report.

Facultative Aerobic Lagoons (Existing Technology)

This lagoon technology uses natural wind and wave action as a means of diffusing air into the wastewater. The upper zone of the pond is an aerobic environment while the lower portion is in an anaerobic environment. Pond depths vary between five feet and ten feet. The operator must periodically mow embankment vegetation and monitor effluent quality and exercise valves. Sludge removal is typically required every 10 to 20 years. Note that sludge removal has not occurred in the life of the current system (over 60 years).

Facultative lagoon systems often dispose of treated effluent by discharging to a nearby stream or lake. A MPDES discharge permit is required for surface water discharges. The permit establishes contaminant concentration and load limits and concentrations that cannot be exceeded. Monthly wastewater effluent sampling is required during periods of discharging. The operator must be licensed by the State of Montana, and the samples must be analyzed by a certified lab. This technology is typically used when treatment is equivalent to secondary treatment standards and potentially secondary standards are required. This technology does not remove nitrogen, phosphorous and significant amounts of ammonia and would not be used alone when the permit

requires the removal of these parameters. These combinations of treatment technologies are discussed later in this report as enhanced lagoon technologies. Facultative lagoons can also suitable pre-treatment for storage and irrigation systems, which will also be discussed later in this report.

Facultative lagoons require a greater detention time than aerated lagoons to treat wastewater, but energy cost savings and O&M savings are realized because blowers are not operated in a facultative lagoon.

Facultative lagoon technology can be used for treatment with or without discharging configurations, are used at the current treatment site, and will be evaluated further in in this report.

Mechanically Aerated Lagoons

This lagoon technology uses mechanical means for diffusing air into the wastewater. The upper zone of the pond is aerated and therefore in an aerobic environment while the lower portion is in an anaerobic environment. This process is known as a partial mix mechanically aerated lagoon. Mechanical aeration may be accomplished by blowers and subsurface diffusers or by mechanical agitation at the surface using surface aerators. Pond depths vary between 10 and 15 fee. The operator must maintain the blower and aerators, monitor dissolved oxygen in the ponds, periodically mow embankment vegetation, and monitor effluent quality and exercise valves. Sludge removal is required every 10 to 20 years.

Aerated lagoon systems often dispose of treated effluent by discharging to a nearby stream or lake. A MPDES discharge permit is required for surface water discharges. The permit establishes contaminant concentration and load and concentration limits that cannot be exceeded. Monthly wastewater effluent samples are required during periods of discharging. Like a facultative lagoon, the operator must be licensed by the State of Montana, and the samples must be analyzed by a certified lab. This technology is typically used when secondary treatment standards are required. This technology does not remove nitrogen, phosphorous or significant amounts of ammonia, and would not be used when the permit requires the removal of these parameters.

Aerated lagoon are suitable pre-treatment for storage and irrigation systems. A MPDES discharge permit ~~is~~ is not required for an aerated lagoon with irrigation.

Aerated lagoon systems require much less detention time than facultative lagoons to treat wastewater and capital cost savings are realized with the smaller lagoon footprint. The primary

disadvantage of aerated lagoons is the need for mechanical aeration equipment and the associated increase in operation and maintenance costs over a facultative lagoon.

Aerated lagoon technology can be used for treatment with or without discharging configurations. Due to the O&M increase in comparison to facultative lagoons, and given that site area is not a concern, aerated lagoons will not be evaluated further in this report.

High-Rate Land Application - Discharge to Groundwater

The stabilization of wastewater using passage through the soil has historically been an attractive technology that can be appropriate on small scales. High-rate systems (rapid infiltration ponds) operate similarly to large filter beds with the natural ground being used as a medium. The systems use the cation exchange capacity of the soil to treat the wastewater as well as physically straining and anaerobic treatment. The soil must be sufficiently permeable and have high cation exchange capacity to be suitable. These properties are determined by a geotechnical investigation.

The rapid infiltration pond process does not require mechanical equipment if sufficient groundwater dilution exists to justify a groundwater permit and is relatively simple to operate. The operator must watch the water levels in each pond and the time of operation. Flows must be periodically directed to various rapid infiltration ponds to allow each pond to dry and be reconditioned. Reconditioning consists of an adequate rest period and harrowing of the pond bottom to prevent sealing. The infiltration ponds may not be located in the flood plain or areas of poorly drained soils. Many of the soils in the Saco area are clay complexes and poorly drained and are in floodplains.

Storage and pretreatment are typically required before discharge to the infiltration ponds. In the past, secondary treatment technologies such as naturally aerated facultative ponds and mechanically aerated facultative ponds were utilized as pretreatment and no discharge permit was issued. However, this is no longer true. The current DEQ policy is to issue a groundwater discharge permit whenever one of these systems is upgraded or a new one is constructed.

Groundwater dilution in the Saco area is not high due to relatively low hydraulic conductivities. Disposal to groundwater will not be considered further because it will require a high degree of treatment and very large infiltration ponds and/or multi-zoned drainfields and, therefore, offers no apparent advantage over continued surface water discharge. Also, the groundwater disposal system would have to be well removed from the location of the existing treatment plant to avoid

being categorized as hydraulically connected to surface water and being subject to the surface water standards and an MPDES permit.

Mechanical Plant Options

Mechanical wastewater treatment plant (WWTP) methods including but not limited to activated sludge plants, 3-stage biological nutrient removal (BNR) plant, membrane bioreactors (MBR) plant, sequencing batch reactor (SBR) plants and other options are herein categorized as "mechanical plants". Detailed descriptions of these methods are excluded from the PER as any major mechanical WWTP upgrade is not a viable option for the limited operational capabilities of the Town, nor are they even needed to be considered as permit limits (e.g., ammonia or nutrients limits) do not drive such treatment options to be explored.

Packed Bed Treatment (Advantex)

This treatment alternative would utilize fixed film packed bed treatment systems to improve BOD and TSS concentrations and remove ammonia. A large primary sedimentation tank would be used to manage primary sludge into the fixed film packed bed. Sludge management includes sludge storage and bio-bags. To accomplish TN and TP removal, seasonal storage or a denitrification filter would have to be added. Based on Great West's experience in analyzing this type of system for similar sized communities, the capital cost could be $5-10 million, and the annual O&M cost could approach $60,000 to $80,000. As such, this alternative is not needed to achieve permit limits, is cost-prohibitive and will not be considered further.

Existing Facultative Lagoons with the Addition of a Submerged Aerated Gravel Reactor (SAGR)

In analyzing this treatment alternative, consideration is focused on concepts that would allow continued use of the existing facultative lagoons to satisfy BOD and TSS (secondary standards) permit limits. Additional technologies to address ammonia, TN and TP removal would be required, if added to the discharge permit.

This alternative would reuse the existing lagoons by constructing new liners and adding a Submerged Aerated Gravel Reactor (SAGR) to remove ammonia and further reduce BOD and TSS concentrations. A phased planning and construction approach may be used until and unless new discharge permit limits are issued by DEQ. Using this approach, the initial treatment project would include upgrading and re-lining facultative lagoons only. If ammonia limits are imposed, a

subsequent treatment phase becomes the addition of SAGR technology to the stand-alone facultative lagoon. The SAGR system consists of a gravel bed that is approximately 7.5 feet deep and is aerated with a grid of aeration pipe on the bottom of the gravel bed. Wastewater is introduced to the gravel bed through a distribution header and moves horizontally through the bed. A biofilm grows on the bed to remove BOD, TSS, and ammonia. An insulating mulch approximately 1 foot deep is added to the top of SAGR to retain heat. The system is relatively easy to operate as it relates to improved BOD, TSS, and ammonia removal.

As mentioned previously, the SAGR system will not remove TN and TP. If required by DEQ, TN and TP removal could be accomplished by adding seasonal storage or denitrification filters. A denitrification filter may be required for the oxbow. The cost of this treatment alternative could approach over $5-8 million. A SAGR system is also not required to achieve current permit requirements and adds more complexity for a small community and will not be considered further.

Existing Facultative Lagoon with Effluent Polishing by Bio Domes/Shells

This alternative would continue to use the existing facultative lagoons with an additional aeration system. The concept is to use bio-domes or bio-shells to remove ammonia and reduce BOD and TSS concentrations. Bio-shells are aerated, fixed film devices that are placed directly in the existing lagoon. Sludge removal would be required, as the existing lagoons would need to have less than 1 foot of sludge. Like the SAGR system, the bio-shell concept must rely on other technologies to remove TN and TP such as seasonal storage or denitrification filters. This approach will only meet the secondary standards and can help achieve ammonia reduction.

Due to the complexity of this type of treatment for small communities and the fact that this alternative is not needed to achieve current permit requirements, it will not be considered further in this report.

New Complete/Partial Mix Aerated Lagoons (Lemna)

This alternative is a lagoon process that includes prescreening, a complete mix zone/partial mix lagoon, polishing reactors and clarifier or effluent filters. A treatment cell cover is also needed to control temperature and algae growth. This alternative would not utilize the existing ponds because the performance of the system is more easily managed on a new lagoon system including controlling temperature and algae growth. With an optimally designed new lagoon

system, the manufacturer will provide a treatment performance guarantee for secondary treatment standards and ammonia.

Influent would initially flow through a mechanical screen to remove material greater than 6 mm in size. No grit removal would be required for this technology. The influent would then flow into the complete mix zone which is an aggressively mixed aerated cell that establishes an environment suitable for the rapid removal of BOD. Aeration and mixing are provided by a combination of fine bubble diffusers and floating mechanical mixers. The complete mix zone is designed with enough mixing energy to ensure suspension of solids.

Influent then proceeds to the partial mix treatment process. The difference between the partial mix and the complete mix zones is a lower level of aeration and mixing is utilized to effectively achieve BOD removal. The equipment in both basins is similar. Air and mixing energy are introduced into the partial mix cell to maintain optimal degradation of BOD. Mixing energy is supplied to maintain the minimum power intensity required to achieve economically effective biological reaction rates and to maintain partial suspension of solids.

The settling pond is required for TSS removal and storage of biosolids. It is also important to control algae growth at this stage so the settling pond will be covered to eliminate sunlight. This improves clarification in two ways: 1) it prevents wind action on the water surface thereby establishing a quiescent zone for solids to settle, and 2) the insulation minimizes seasonal and diurnal temperature fluctuations, thereby reducing stirring by thermal currents.

Sludge handling efforts are confined to the settling pond. The process generates fewer biosolids than comparable systems due to the relatively long detention times. The anaerobic environment in the settling pond promotes digestion of the biosolids and reduces sludge volumes significantly. Sludge will need to be removed periodically, dried and land applied. Sludge removal is anticipated every few years.

The final step in the treatment process is the polishing reactor. This is a fixed film reactor consisting of aerated, submerged, attached growth media modules that maintain a population of bacteria used for final polishing of the lagoon effluent by removing a high percent of ammonia and further reduce BOD and TSS concentration. Effluent disinfection follows the polishing reactor before discharging.

This technology greatly completes BOD and TSS removal and will remove ammonia if required by the permit. However, this system does not remove TN and TP, and other facilities will have to be added to meet the possible future TN and TP limits. To remove TN and TP either a denitrification filter (and associated carbon addition) would have to be added, or seasonal storage ponds would need to be constructed.

The power cost of this alternative is substantially higher than all other alternatives considered. For the above reasons, and since the permit limits do not require this option, the enhanced lagoon concept is not superior to the SAGR concept and will not be considered further.

Miscellaneous Minor Upgrades to Existing Lagoons

This alternative would include sludge removal and the completion of minor upgrades and repairs to the lagoon structures and piping. The influent splitter and valve structure would be replaced to allow for the series operation of the lagoon. This alternative would also include minor earthwork operations to build-up the existing eroded internal lagoon slopes. Rip rap protection, where missing, would be placed on the internal slope to prevent further degradation of the berms.

Although the existing lagoons were constructed in the early 1960s, and have been in operation for over 60 years, minor lagoon upgrades are an attractive option at this time to deal with the most pressing critical deficiencies while not over-designing a treatment system at this time. This option can be considered with other treatment and disposal and process options such as irrigation or UV treatment.

The existing lagoon system is in the 100-year flood plain and major lagoon upgrades or other major treatment system process improvements (disinfection system, advanced lagoons treatment, etc.) would need to be designed in consideration of the local base flood elevations. If USDA Rural Development (RD) funding is used on the project, then treatment system upgrades would be required to be designed for protection from the 500-year flood plain. Major improvements should not be done without the final flood plain elevations and maps. The final FEMA flood plain maps are not expected to be completed until at least 2026. Also, given the degraded condition of the collection system and current high I&I flow, a higher priority should be given to collection system improvements over major lagoon or treatment upgrades. The removal of sludge and replacement of the broken influent splitter structure will improve treatment performance. Focusing on collection system improvements will also reduce the influent flows which would increase detention times in the existing lagoon system. The Town currently only

discharges 1-2 times per year and having even lesser influent flows will give the Town more flexibility to hold the treated lagoon water, perform pre-discharge testing (BOD, TSS, E. coli), and then discharge at times when it is assured that effluent limits can be met for E. coli, BOD and TSS.

The benefit of this option would provide a much more affordable project for the Town and allow for funding resources to be directed to the critical collection system issues. With improvements to the treatment and with a reduction in inflow, the Town will have the ability to discharge at a time that they will meet the permit limits. This option will be considered further as it appears to meet the objectives of being an economical alternative that will also improve effluent quality to permit limits.

Total Retention System Option

Another treatment system alternative considered for the Town is to convert the existing discharging lagoon system into a non-discharging total retention system. With effluent disposal by evaporation, the need for discharging and the associated MPDES permit would not be required. However, the Town could still retain the permit as an emergency discharge method.

This type of system is simple to operate and maintain and does not require additional energy to operate. However, these types of systems require significant land area to account for the precipitation, influent flows and evaporation water balance as required by DEQ design standards.

Total retention system is driven by surface area for evaporation. The existing two lagoon cells have a water surface area of 4.8 acres. A preliminary water balance estimates that an additional 7 to 8 acres, or a total system area of about 12 to 13 acres, of water surface is required for a total retention system. The actual expanded lagoon land area needed, when accounting for new berms feature, is estimated to be over 8-9 acres for an additional storage and evaporation lagoon cell. (See Appendix R for preliminary total retention sizing)

While these systems are the easiest system to operate, they require significant capital costs to construct. The total construction costs for recently completed total retention projects are in the range of $100,000 to $150,000 per acre of new total retention lagoon area, not including new land acquisition costs.

Due to the longevity, simplicity of operation and maintenance, and no energy requirements, this alternative will be further considered.

Fully Reconstructing the existing Lagoon with UV Treatment

This alternative would use the footprint of the existing facultative lagoons to fully rebuild the lagoons with the addition of a UV treatment system. Sludge removal would be necessary prior to the beginning of the construction of this alternative. Within the footprint of the existing lagoons, earthwork embankment is needed to correct lagoon depth and develop the required 3-feet of freeboard, as well as ensure the new berms are above the base flood elevations. Each lagoon would be lined with synthetic liner, accompanied by placement of subgrade material and riprap to protect the slopes. Lagoon piping and structures would also be replaced in this alternative.

This alternative would also include the installation of a UV treatment system to address E. coli permit limits. This option would include a building or structure to house the UV treatment equipment.

Reconstruction of the lagoons will provide more efficient treatment of the influent. The addition of the UV treatment system will help the Town meet disinfection requirements for batch discharge permit limits. This alternative would use the existing footprint and does not require additional land acquisition. The existing treatment facility also has sufficient capacity to meet the needs of the 20-year design flow for the Town. This alternative will be considered further.

Storage and Irrigation

Low-rate systems (irrigation) apply wastewater to the soil much less intensively than high-rate systems (rapid infiltration ponds) and require much more land area. The wastewater is typically treated in primary cells, stored in storage cells during the winter months, and then applied to cropland or pasture during the summer months using sprinkler irrigation equipment. Secondary treatment must be achieved before irrigation, so standard lagoon technologies before irrigation are adequate. The wastewater must also be disinfected and filtered before irrigation if the public will utilize the irrigated site (golf course or park). If public access is unrestricted, the level of disinfection is such that effluent clarification or filtration may be required. Wastewater is not required to be disinfected when the irrigation site is not public (cropland or pasture), and a 200-foot buffer area is provided around the irrigated acreage to control public access. If public access buffer zone is limited to 50-feet, effluent disinfection must be provided. Remote locations are preferred because of the large size of the storage lagoons and concerns with the mist of the irrigation system.

For 100% irrigation with no discharge, sufficient storage (180 to 230 days) is required during the winter in northern climates. This treatment technology has been excluded from the DEQ's non-degradation rules if the system is designed for 100 percent nitrogen uptake by irrigated crops. This requirement means that the discharge of wastewater to the irrigation site is regulated and may only be applied to specific rates at specific times of the year. A nutrient management and irrigation plan is required to be completed for the design and operation of an irrigation system to ensure that application rates and nitrogen uptake is met by the proposed crop.

Multiple parameters are explored to determine if a site is suitable for irrigation, including but not limited to soil conditions, flood plains, parcel sizes, irrigation pivot configurations related to parcel geometry, the number of parcel owners and possible interest in working with a utility, and proximity to existing facilities such as wells and buildings. According to a NRCS analysis of soil conditions for irrigation capabilities, many of the soils in and surrounding the Town have a rating of "very limited" for existing clay soils (see Appendix C). However, the land immediately adjacent to the lagoon site presently irrigates a hay crop. The web soil surveys summarize soil properties that affect irrigation design including sodium absorption ratios, depth to water tables, ponding, available water capacity, saturated hydraulic conductivity (Ksat), slope and flooding. A more detailed site-specific agronomic, geotechnical, and hydrologic investigation would be required during preliminary design to determine the site-specific feasibility of an irrigation system.

Storage and irrigation method is a good choice for small communities if a suitable site can be located within a reasonable distance from the community and if agreements with a nearby landowner can be completed. The biggest advantages of the irrigation concept are the simplicity of the operation requirements (no complex treatment process to understand), and the system does not require adhering a discharge permit. Some disadvantages of this technology are the space required to irrigate, and associated limits on community growth and the increased energy requirements to power both the effluent pump and irrigation systems. However, the Town would not need to solely rely on the irrigation system for effluent discharge and could maintain the existing discharge permit as needed.

High groundwater tables and regional flooding irrigation in the area are constraints that would need to comply with DEQ standards. A cursory evaluation indicates that sufficient storage (over 180 days) is available in the existing lagoons and access to nearby lands that support hay crops for nitrogen uptake, support this alternative.

Some general considerations for an effluent irrigation system specific to the Town of Saco's system include:

- The irrigation system must be designed and operated in accordance with Circular DEQ-2 Chapter 120 standards.
- The discharge permit may need to be modified to describe the use of supplemental irrigation.
- Need to install flow meters or flow measurements capable of tracking and reporting the volume to irrigation and to discharge so there is a good accounting for flows.
- The site must irrigate in a manner that supports and raises a crop. That crop must be maintained and be capable of removing the nutrients from the field. Irrigation waters from another source may be needed to maintain the crop.
- Low trajectory sprayers are required.
- Hand line systems tend to result in operator/farmer exposure. Spray heads should be primarily downward projecting and low-pressure nozzles, otherwise aerosol dispersion becomes a concern.
- End guns of any kind are not approved.
- The standards state that the irrigation "should not" be placed in the flood plain.
    - However, preliminary discussions with DEQ reuse specialists indicate that since a Saco irrigation would be for supplemental use, and if the system could only irrigate in mid to late summer, and there is supporting data showing the depth of groundwater is below 4-feet, then irrigation may be considered for the system.
- DEQ would require "long term" (typically 20-yr) lease with a private landowner that maintains the Town authority to control how the effluent is applied, how much, how long per application, etc.

Preliminary irrigation analysis and correspondence with DEQ can be referenced in Appendix S.

In summary, some of the noted benefits of a supplemental irrigation system include:

- Providing flexibility with using irrigation to reduce the amount and frequency of discharge.
- Available capacity (180 to 230 days) is built into the existing lagoon system.
- Adjacent lands currently support hay crops
- The irrigation site is more than 800 feet from the Town limits and any residential areas.
- Irrigation is a good beneficial reuse option for a small-town system.

Minor upgrades to the existing lagoons and installing the infrastructure for supplemental irrigation, while keeping the existing discharge permit for emergency discharge, is a viable alternative and will be evaluated further.

Disinfection System Screening

The existing and anticipated treatment standards for the Town do not require enhanced biological treatment or filtration to meet the anticipated discharge limits. However, disinfection improvements can be used to meet E. coli limits. The alternatives considered for treatment disinfection system upgrades include Ultraviolet Disinfection (UV) or Chlorine Disinfection.

Ultraviolet Disinfection (UV)

UV treatment systems have proven to be reliable treatment options that require little-to-no additional training or certifications, aside from initial setup training. UV systems require minimal maintenance and repairs, including tasks such as replacing UV lamps, cleaning the quartz sleeves that house the lamps (though many UV systems now have automatic sleeve cleaning), and routine monitoring for treatment performance.

Ultraviolet light can be an effective means of disinfecting wastewater. An advantage of UV disinfection is that there is no chemical residual and no change in water chemistry. There are no pollutants added to the waste stream that could be regulated and no dichlorination equipment to maintain. UV inactivates pathogens through absorption of UV energy/radiation that damages the cellular makeup of microorganisms in the effluent. Ultraviolet light wavelengths cover a wide range. The greatest absorption of UV energy by pathogens occurs at wavelengths between 240 and 260 nm. Low pressure mercury lamps emit approximately 92% of their light at a wavelength of 254 nm.

UV systems are designed to deliver a dose to effluent. Dose is a product of UV intensity and contact time. Systems are required to provide a minimum Ultraviolet dose of 30 milli-joules per centimeter squared (mJ/cm^2).

The delivered Ultraviolet dose is greatly impacted by the transmittance (UVT) of the effluent water. UVT is the ability of the liquid to transmit Ultraviolet light as a percentage of emitted light. Water with low UVT absorbs more ultraviolet light and requires higher energy to achieve the necessary Ultraviolet dose to meet disinfection requirements. Suspended solids and other constituents can absorb or scatter energy from UV lamps. In addition to absorbing ultraviolet light, turbidity/sediment can shield organisms (E. coli) and limit the amount of inactivation necessary to meet discharge limits.

UV lamps in disinfection systems are housed in quartz sleeves. Quartz sleeves require regular cleaning to remove accumulated or precipitated salts on sleeves that can reduce Ultraviolet light

entering the effluent. Effluent with high mineral and iron levels will require more regular cleaning. Systems with automatic wipers can reduce maintenance requirements.

UV bulbs have a typical design life of 12-18 months depending on the duration and frequency of discharge periods. Replacement of UV bulbs is straightforward, and parts are relatively inexpensive. To eliminate the need of chemical handing and costs, it is recommended that any treatment system improvements include a new UV disinfection system.

Chlorine Disinfection

Chlorine disinfection can be performed with gas or liquid sodium hypochlorite. In wastewater, chlorine reacts with ammonia to form monochloramine, which penetrates cells and kills/inactivates organisms by oxidizing some of their carbonaceous matter. The system would also need to dechlorinate prior to discharging so that there is no pollutant in the waste stream that wasn't there before. Sodium bisulfite removes residual chlorine by serving as a reducing agent (i.e., it is oxidized by the chlorine). If chlorine gas is used for disinfection, then sulfur dioxide gas would need to be used for dichlorination.

The equipment and controls would be the same for injecting chlorine and sulfur dioxide gas. Chlorine and sulfur dioxide gas are both classified as hazardous materials with serious safety and protective considerations inherent in working with each of them. If sodium hypochlorite is used for disinfection, sodium bisulfite is used for dichlorination. Sodium bisulfite can be injected using a pump similar to the one for sodium hypochlorite. Sodium bisulfite must be kept warm (over 75 degrees F) to avoid crystallization. Since warm temperatures promote off-gassing and a shortened shelf life in sodium hypochlorite, the sodium hypochlorite would also need to be stored in a separate room from the sodium bisulfite.

A contact basin would also need to be installed. Circular DEQ-2, section 102.44 requires that a minimum contact period of 15 minutes at design peak hourly flow is needed after mixing. Using a 100-gpm effluent flow, the required contact basin volume is calculated to be 1,500 gallons (100 gpm for 15 minutes). Sodium bisulfite would need to be injected immediately following the contact basin. The chemical feed range of hypochlorite should dose (as Cl_2) from 6 mg/L to 10 mg/L. For complete dichlorination, the sodium bisulfite dose must be at least 1.46 times the chlorine residual measured as Cl_2. Because of the high freezing point of sodium bisulfite, the building will be required to be heated and the injection line would also need to be sufficiently insulated and possibly heat traced.

In summary, given the size requirements for a contact basin, the specific handling requirements of multiple chemicals, and safety considerations, chlorine disinfection is not recommended for the Town, and is not considered for further analysis.

Sludge Removal

As previously described, the lagoons have been in operation for over 60 years, during which time the sludge has never been removed. Per the recommendation of DEQ in the H&S study, preparations should be made for the removal of sludge from both cells. There is an estimated 2.1 to 2.5 million gallons of sludge in both lagoons. The lack of water and high percentage of sludge creates issues with BOD and TSS removal, likely contributing to the violations observed in recent years.

There are several alternatives to be considered for sludge removal and disposal, including a temporary sludge drying bed, geofabric bags, dredging removal, and final disposal in a landfill or over land application.

Temporary Sludge Drying Bed

An existing lagoon could be used as a temporary drying bed through isolation and drainage of water. A temporary sludge drying bed could also be constructed by building earthen berms and installing a synthetic liner in the holding area to protect the local groundwater. Based on the high groundwater levels, new beds would need to be constructed by building up berms without excavating the inside to stay above the high groundwater.

Given the exposure to the atmosphere and precipitation, dewatering the sludge by allowing it to passively sit in the atmosphere, is likely to take longer than one summer season to reach sludge solids contents sufficient to load and haul.

Geofabric Bags

The geofabric bag dewatering system (or Geotube proprietary name by Tencate) uses large woven and pervious polypropylene bags that are connected directly to a sludge dredge piping or other sludge pumping outlet piping. The fabric mesh holds the sludge and allows liquid to percolate passively. A temporary lined and sloped area is constructed for the length and width of the bags. The dewatering containment area is used to prevent percolation or runoff of the separated liquid from leaving the area. A polymer dosing unit is utilized as a coagulation aid and injected into the sludge to speed up the dewatering process. Once the sludge is sufficiently dried to pass a paint filter test (typically 15-18% solids content or higher), the bags can be cut open and

the sludge would be loaded and hauled to either the selected land application or landfill disposal site.

Sludge Disposal

Disposal of municipal wastewater sludge is typically hauled and disposed at a permitted landfill or to an approved land application site. Land application takes advantage of the nutrient content or soil conditioning properties inherent of the sludge biosolids. Landfill disposal of sludge is required if metal contents within the sludge exceed ceiling concentration limits and cumulative loadings rates set forth by EPA Rule 503. As required by the Clean Water Act (CWA) Amendments of 1987, the EPA created and published "The Standards for the Use of Disposal of Sewage Sludge (Title 40 of the Code of Federal Regulations (CFR), Part 30)" in 1993.

Sludge taken to a landfill is an option and provided that the landfill is permitted for and will accept sludge for buried disposal within landfill cells or as a composting agent. Onsight composting by a landfill is on a case-by-case basis depending on the quality of the sludge and need at the landfill site. The paint filter test is an approved EPA standard test method (SW-846 test method 9095B) used to determine compliance with 40 CFR 264.314 and 265.314. For landfill burial, waste sludge does not need to meet Part 503 requirements for pathogen reduction (PAR). Therefore, landfill disposal processes do not need full digestion. However, the sludge must pass the paint filter test and may be required to meet the Toxicity Characteristic Leaching Procedure (TCLP) limits in accordance with EPA standard SW-846 Test Method 1311. TCLP limits have been set such that all predominantly domestic wastewater sludge will pass this test.

The principal design criteria is to dewater the sludge to the extent that it will not release free water, which is the objective of the paint filter test. There is no set rule with respect to how dry the sludge must be to pass the paint filter test. However, experience has shown that sludge that is dewatered to >15-18% will normally pass this test, while those that are <15% may release free water, either at the treatment site or when the dewatered cake is delivered to the landfill.

Typically, if sludge is not sufficient for composting, then higher tipping fees (or standard municipal solid waste fees) may apply for landfilling. Tipping fees will vary per site and application.

Sludge also may be utilized for land application as a beneficial soil conditioner for agricultural, horticultural, or reclamation purposes. Land application and associated costs are very site specific, labor intensive, requires specific testing and sampling, and proper planning. The factors to be considered with sludge land application include:

- Sludge stabilization process
- Sludge characteristics including the presence of inorganic and organic chemicals
- Application site characteristics (soil, groundwater elevations, setback distance requirements, etc.)
- Local topography and hydrology
- Cropping practices
- Landowner agreements and requirements
- Time of year
- Spreading and incorporation techniques
- Local population density and odor control
- Local groundwater quality
- Crop usage

In general, sludge land application rates and areas can be estimated with the 6 steps (Northwestern Education Publication PNW0511e):

1. Collect information on the site crop, include the crop Nitrogen (N) requirement,
2. Estimate the plant available needed from the biosolids application,
3. Collect biosolids nutrient data,
4. Estimate plan-available N per dry ton of biosolids,
5. Calculate the agronomic biosolids application rate on a dry ton basis,
6. Convert the application rate to an “as is” basis.

The EPA regulations require that the same application site cannot be reused for sludge land application for 20 years. The EPA also requires that the sludge to be re-sampled to reflect nitrogen levels and compliance with the 40 CFR part 503. Moreover, the sludge must not be placed on an area that is regularly irrigated with wastewater effluent.

In summary, the sludge removal, dewatering, and disposal methods ultimately selected and implemented by the wastewater project will be narrowed down and determined during the design phase. The project may also offer bid alternative options to allow the competitive bidding economics to determine the final and most cost-effective method selected. However, given the location and characteristics of the project, and with the ability to isolate/bypass lagoon cells (once upgraded), and our experience with other similar projects, dredging methods are not anticipated to be used and also the lagoon depth may be too shallow for many dredge machines.

Dewatering methods using geofabric bags may be done to expedite the project duration, and land application methods for biosolids disposal are highly likely considering the proximity to ample crop lands.

Sludge removal alternatives will be included with all treatment improvement alternatives. For this level of analysis and estimating purposes, a single lump sum budgetary item in the Phase 2 treatment upgrade estimates, called “sludge removal”, will be included for entire (removal, dewater and disposal) process described above.

5.2 Collection System Alternatives

The overall sewer collection system alternatives considered in the PER include:

- C-1 – Phase 1 Collection System Improvements. This alternative includes the replacement of about 1000-feet of sewer line.
- C-2 – Phase 2 Collection System Improvements. This alternative includes the continued replacement of sewer collection pipelines and the associated manholes.
- C-3 – Phase 3 Collection System Improvements. This alternative includes additional clay piping in Town. The phase three project may be further split into sub-phases (Phase 3A and 3B) to make the projects more affordable for the Town by taking advantage of available grants.
- C-4 – Phase 4 Collection System Improvements. This alternative includes replacing the remainder the clay collection system piping in Town.

5.2.1 Alt C-1: Phase 1 Collection System Improvements

This alternative includes initial/partial open cut replacement of the existing clay piping and manholes to fix the sagging, cracked and deteriorating collection system. Phasing of collection system improvements allows the Town to maximize available funding to develop a more affordable project, and limit rate impacts to users.

The Phase I collection system improvements are being funded with ARPA grant funding. The Phase 1 project is anticipated to be designed in 2022 and constructed in 2023. This project scope includes the replacement of up to 1,000 feet of pipe and manholes within Town as identified on the project phasing plan. This is considered a high priority project as determined by a condition assessment and input from the Town.

Phase 2 collection system improvements include the replacement and installation of up to 1,300 feet of pipe manholes from the lift station, the highway and railroad crossing to the alley between Vagg Street and US 2, and installation of new sewer main in the alley from 1st Street to Nelson Street This phase also includes the abandonment of the existing pipe located within the edge of

Highway 2 (Taylor Street) and moving this collection pipe segment to the alley north of US 2. This phase includes the trenchless (bore and jack) replacement of collection pipe extending under US 2 and the BNSF Railroad.

Phase 3 collection system improvements includes additional replacement of collection system upgrades. Due to the size of the project, the Phase 3 project may be further split into sub-phases to make the projects more affordable for the Town by taking advantage of available grants offered each grant cycle. The project includes the replacement of pipe and manholes south of the railroad track, as well as segments along Mill Street, the alleys between Blue Street and Stevens Street, 1st Street to 3rd Avenue, and the alley between 1st and 2nd Streets as indicated on the phasing map.

Phase 4 collection system improvements includes the replacement of all the remainder of collection pipe in the Town.

Design Criteria

The new collection system improvements would be designed in accordance with Circular DEQ-2, Chapter 30 – Design of Sewers. Open cut sewer installations would correct deficiencies including cracked pipe, offset joints, and sags. All new collection piping would be a minimum of 8-inches in size and would drastically improve system hydraulics with new water-tight PVC piping.

Map

Figure 5-1 shows the conceptual layout of the phased collection system improvements. Lesser pipe is replaced in the Phase 1 and 2 projects than indicated in Phase 3, as Phase 1 and Phase 2 project would be constructed in conjunction with upgrades to the lift station and lagoons, respectively. The map also shows phase 4 improvements.

Environmental Impacts

Although portions of the Town may be disturbed by open trench digging, virtually all areas will be within existing rights-of-way and easements which have been previously disturbed by development and previous utility installations. There will be no changes in land use after completion of the project.

Some air quality problems with dust may arise during the construction. However, it would be temporary, and the contract documents would require that the Contractor provide dust control. Similarly, there will be some temporary increases to noise during construction.

Some inconveniences to traffic will also result from the open cut construction work. This will only be temporary, and the contractor will be required to provide traffic control plans and periodic project updates on the work progress.

The project may encounter petroleum contaminated soils for areas of known DEQ LUST sites. The construction contract documents will identify these locations and list provisions in the specification that outline the steps required should these soils be encountered.

The contract documents shall also require that Best Management Practices (BMPs) be employed before, during, and after construction until all areas of disturbance have been fully reclaimed and/or re-vegetated.

For the reasons stated above, environmental impacts are considered minimal and no permanent, negative environmental impacts are anticipated.

Land Requirements

The proposed collection system improvements will not require the acquisition of land as the new pipelines will be placed within the existing utility corridor locations and rights-of-way.

Potential Construction Problems

Given the high groundwater levels within the work area, construction trench dewatering is anticipated. The contractor will need to deal with groundwater discharges and will also be required to obtain a temporary discharge permit. These tasks will result in slower production, higher trench safety risks, and higher project costs.

A geotechnical assessment including bore holes, and a geotechnical engineering report will be prepared to support the planning and construction phase of the project highway and railroad crossings.

Sustainability Considerations

The continued use of the existing clay sewer collection mains and corroding manholes has been a significant problem for the Town. Given the age and poor condition of these facilities, it is likely that maintenance costs would continue to increase without replacement. Replacing the collection mains with new PVC pipe and new concrete manholes will provide a more reliable and sustainable utility and will likely offer the beneficial impact of reducing maintenance costs.

Water and Energy Efficiency

This collection system alternative would not require any additional electrical demands to the wastewater system.

Reducing I&I flows would reduce energy consumption at the lift station due to reduced pumping.

Green Infrastructure

Stormwater management during the project would include temporary erosion and sediment control measures. This would include the installation and maintenance of temporary structural control measures to reduce or eliminate the erosion of soils and transport of sediment from construction activities. As a condition of the contract documents, the contractor will be required to complete and adhere to a Storm Water Pollution Prevention Plan (SWPPP).

Cost Estimates

Table 5-1 shows the preliminary capital cost estimate of the Phase I Collection System Improvements. Since the Phase 1 project is being funded by ARPA, the cost estimates assume an 8% annual inflation factor to 2023. Inflation is based on the most recent engineering new record (ENR) index average for construction.

The proposed collection system improvements may serve to slightly reduce O&M costs due to the use of new PVC mains and precast concrete manholes. Therefore, the O&M cost tables for increased O&M, are not provided and these costs are assumed to be included within the Town's current O&M budget.

Table 5-1 - Opinion of Probable Cost, C-1 Phase 1 Collection Improvements

Opinion of Probable Cost C-1: Phase 1 Collection Improvements					
#	BID ITEM	QTY	UNITS	UNIT PRICE [1]	TOTAL
1	Temporary Sewer Bypass Pumping	1	LS	$ 20,000.00	$ 20,000
2	48" Sewer Manholes	3	EA	$ 7,000.00	$ 21,000
3	8" PVC Sewer	860	LF	$ 100.00	$ 86,000
4	Connect to Existing Sewer	2	EA	$ 2,500.00	$ 5,000
5	Type A Surface Restoration	300	SY	$ 60.00	$ 18,000
6	Type B Surface Restoration	900	SY	$ 20.00	$ 18,000
	Direct Construction Subtotal				$ 168,000
	Mobilization		10%		$ 17,000
	Traffic Control		1%		$ 2,000
	Construction Subtotal				$ 187,000
	2023 Construction Cost [2]		8.0%		$ 202,000
	Contingency		20%		$ 40,000
	Basic Engineering Services - Preliminary Design, Final Design, Bidding, Construction, Post Construction				$ 40,000
	RPR				$ 20,000
	Professional Services (Grant Admin)				$ 20,000
	Legal & Administrative				$ 10,000
	TOTAL				$ 332,000

[1] Estimated unit costs are based upon estimates from suppliers and bid tabs for similar projects throughout Montana.

[2] The ENR 20-year average Construction Cost Index is +8.0% (as of January 2022), so capital costs are projected to an anticipated construction date in 2023 using an 8% inflation rate.

5.2.2 Alt C-2: Phase 2 Collection System Improvements

This alternative includes partial open cut replacement of the existing clay piping and manholes to fix the sagging, cracked and deteriorating system.

Phase 2 collection system improvements include costs for the replacement and installation of up to 1,300 feet of pipe manholes from the lift station, the highway and railroad crossing to the alley between Vagg Street and US 2, and installation of new sewer main in the alley from 1st Street to Nelson Street This phase also includes the abandonment of the pipe along Highway 2 (Taylor Street) and movement of this segment north to the alley. Only two services are located along this section due to the park site. These will be redirected to the alley with the proposed project. This

phase includes the bore and jack replacement of collection pipe running under US 2 and the BNSF Railroad.

Design Criteria

The new collection system improvements would be designed in accordance with Circular DEQ-2, Chapter 30 – Design of Sewers. Open cut sewer installations would correct deficiencies including cracked pipe, offset joints, and sags. All new collection piping would be a minimum of 8-inches in size and would drastically improve system hydraulics with new PVC piping.

Map

Figure 5-1 shows the conceptual layout of the phased collection system improvements.

Environmental Impacts

Although portions of the Community may be disturbed by open trench digging, virtually all areas will be within existing rights-of-way and easements which have been previously disturbed by development and previous utility installation. There will be no changes in land use after completion of the project.

Some air quality problems with dust may arise during the construction; however, it would be temporary, and the contract documents would require that the Contractor provide dust control. Similarly, there will be some temporary increases to noise during construction.

Some inconveniences to traffic will also result from the open cut construction work. This will only be temporary, and the contractor will be required to provide traffic control plans and weekly updates on the work progress.

The project may encounter petroleum contaminated soils for areas of known DEQ LUST sites. The construction contract documents will identify these locations and list provisions in the specification that outline the steps required should these soils be encountered.

The contract documents shall also require that Best Management Practices (BMPs) be employed before, during, and after construction until all areas of disturbance have been fully reclaimed and/or re-vegetated.

For the reasons stated above, environmental impacts are considered minimal and no permanent, negative environmental impacts are anticipated.

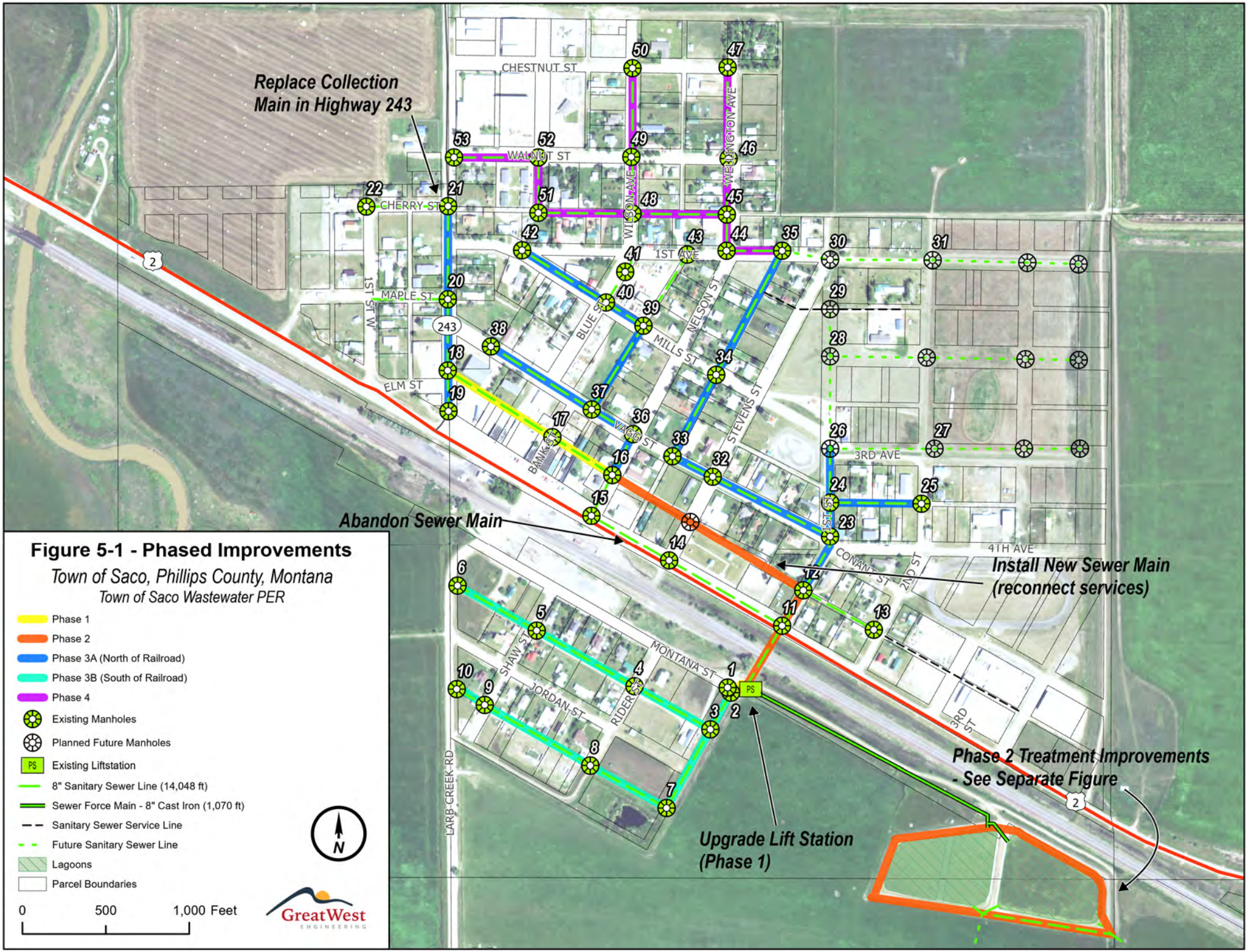


Figure 5-1 - Phased Improvements

Town of Saco, Phillips County, Montana

Town of Saco Wastewater PER

- Phase 1
- Phase 2
- Phase 3A (North of Railroad)
- Phase 3B (South of Railroad)
- Phase 4
- Existing Manholes
- Planned Future Manholes
- Existing Liftstation
- 8" Sanitary Sewer Line (14,048 ft)
- Sewer Force Main - 8" Cast Iron (1,070 ft)
- Sanitary Sewer Service Line
- Future Sanitary Sewer Line
- Lagoons
- Parcel Boundaries

Land Requirements

The proposed collection system improvements will not require the acquisition of land as the new pipelines will be placed within the existing utility corridor locations and rights-of-way.

Potential Construction Problems

It is anticipated that the US 2 and BNSF Railroad crossing will need to be performed using trenchless technology using boring and jacking methods. Though this type of work is not uncommon, these installation techniques are more costly than conventional open cut installation. Careful quality control of the lines and grades will be needed to verify the final installation of the sewer main is at the required slope under the highway and railroad.

Given the high groundwater levels within the work area, construction trench dewatering is anticipated. This will result in slower production, higher trench safety risks, and higher project costs.

A geotechnical assessment will include bore holes and a geotechnical engineering report will be prepared to support the planning and construction phase of the project highway crossing.

Sustainability Considerations

The continued use of the existing clay sewer collection mains and corroding manholes has been a significant problem for the Town. Given the age and poor condition of these facilities, it is likely that maintenance costs would continue to increase without replacement. Replacing the collection mains with new PVC pipe and new concrete manholes will provide a more reliable and sustainable utility and may have the beneficial impact of reducing maintenance costs.

Water and Energy Efficiency

This collection system alternative would not require any additional electrical demands to the wastewater system.

Reducing I&I flows would reduce energy consumption at the lift station due to reduced pumping.

Green Infrastructure

Stormwater management during the project would include temporary erosion and sediment control measures. This would include the installation and maintenance of temporary structural control measures to reduce or eliminate the erosion of soils and transport of sediment from construction activities. The Contractor will be required to complete and adhere to a Storm Water Pollution Prevention Plan (SWPPP).

Cost Estimates

Table 5-2 shows the capital cost estimate for Phase 2 Collection System Improvements. Phase 2 costs assume an 8% annual inflation factor for construction in 2024.

No O&M cost increases are assumed and assumed to be included within the Town's current O&M budget.

Table 5-2 - Opinion of Probable Cost, C-2 Phase 2 Collection Improvements

Opinion of Probable Cost C-2: Phase 2 Collection Improvements					
#	BID ITEM	QTY	UNITS	UNIT PRICE [1]	TOTAL
1	Temporary Sewer Bypass Pumping	1	LS	$ 20,000.00	$ 20,000
2	48" Sewer Manholes	4	EA	$ 7,000.00	$ 28,000
3	Restrained Joint Carrier Pipe (HWY and MDT)	270	LF	$ 120.00	$ 32,400
4	Steel Casing Pipe (HWY and MDT)	270	LF	$ 900.00	$ 243,000
5	8" PVC Sewer	1,050	LF	$ 100.00	$ 105,000
6	Reconnect Sewer Services	10	EA	$ 1,000.00	$ 10,000
7	Sewer Services	200	LF	$ 60.00	$ 12,000
8	Connect to Existing Sewer	4	EA	$ 2,500.00	$ 10,000
9	Type A Surface Restoration	50	SY	$ 60.00	$ 3,000
10	Type B Surface Restoration	1,200	SY	$ 20.00	$ 24,000
	Direct Construction Subtotal				$ 487,000
	Mobilization		10%		$ 49,000
	Traffic Control		1%		$ 5,000
	Construction Subtotal				$ 541,000
	2024 Construction Cost [2]		8.0%		$ 631,000
	Contingency		20%		$ 126,000
	Permitting (Railroad & MDT)				$ 20,000
	Basic Engineering Services - Preliminary Design, Final Design, Bidding, Construction, Post Construction				$ 110,000
	RPR				$ 40,000
	Professional Services (Grant Admin)				$ 35,000
	Legal & Administrative				$ 20,000
	TOTAL				$ 982,000

[1] Estimated unit costs are based upon estimates from suppliers and bid tabs for similar projects throughout Montana.

[2] The ENR 20-year average Construction Cost Index is +8.0% (as of January 2022), so capital costs are projected to an anticipated construction date in 2024 using an 8% inflation rate.

5.2.3 Alt C-3: Phase 3 Collection System Improvements

Phase 3 collection system improvements include the final phase of collection system upgrades. The phase three project may be further split into sub-phases to make the projects more affordable for the Town and to reduce potential rate impacts by taking advantage of available grants offered each cycle. The scope of a future Phase 3 project and grant application can be evaluated in more detail following the completion of the Phase 2 Project. A PER Amendment may be required to accommodate a future grant application and account for new information and costs.

The Phase 3 project includes the replacement of pipe and manholes south of the railroad track, as well as segments along Mill Street, alleys between Blue Street and Stevens Street, 1st Street to 3rd Avenue, and an alley between 1st and 2nd Streets.

Design Criteria

The new collection system improvements would be designed in accordance with DEQ Circular-2, Chapter 30 – Design of Sewers. Open cut sewer installations would correct deficiencies including cracked pipe, offset joints, and sags. All new collection piping would be a minimum of 8-inches in size and would drastically improve system hydraulics with new PVC piping.

Map

Figure 5-1 shows the conceptual layout of the phased collection system improvements.

Environmental Impacts

Although portions of the Community may be disturbed by open trench digging, virtually all areas will be within existing rights-of-way and easements which have been previously disturbed by development and previous utility installation. There will be no changes in land use after completion of the project.

Some air quality problems with dust may arise during the construction; however, it would be temporary, and the contract documents would require that the Contractor provide dust control. Similarly, there will be some temporary increases to noise during construction.

Some inconveniences to traffic will also result from the open cut construction work. This will only be temporary, and the contractor will be required to provide traffic control plans and weekly updates on the work progress.

The contract documents shall also require that Best Management Practices (BMPs) be employed before, during, and after construction until all areas of disturbance have been fully reclaimed and/or re-vegetated.

The project may encounter petroleum contaminated soils for areas of known DEQ LUST sites. The construction contract documents will identify these locations and list provisions in the specification that outline the steps required should these soils be encountered.

For the reasons stated above, environmental impacts are considered minimal and no permanent, negative environmental impacts are anticipated.

Land Requirements

The proposed collection system improvements will not require the acquisition of land as the new pipelines will be placed within the existing utility corridor locations and rights-of-way.

Potential Construction Problems

It is anticipated that work will be performed within the MDT right of way for MT 243 portion of the project so attention to traffic control will be required.

Given the high groundwater levels within the work area, construction trench dewatering is anticipated. This will result in slower production, higher trench safety risks, and higher project costs.

A geotechnical assessment will include bore holes and a geotechnical engineering report will inform the design and construction of the project.

Sustainability Considerations

The continued use of the existing clay sewer collection mains and corroding manholes has been a significant problem for the Town. Given the age and poor condition of these facilities, it is likely that maintenance costs would continue to increase without replacement. Replacing the collection mains with new PVC pipe and new concrete manholes will provide a more reliable and sustainable utility and may have the beneficial impact of reducing maintenance costs.

Water and Energy Efficiency

This collection system alternative would not require any additional electrical demands to the wastewater system.

Reducing I&I flows would reduce energy consumption at the lift station due to reduced pumping.

Green Infrastructure

Stormwater management during the project would include temporary erosion and sediment control measures. This would include the installation and maintenance of temporary structural

control measures to reduce or eliminate the erosion of soils and transport of sediment from construction activities. The Contractor will be required to complete and adhere to a Storm Water Pollution Prevention Plan (SWPPP).

Cost Estimates

Table 5-3 shows the capital cost estimate for Phase 3 Collection System Improvements. Phase 3 costs assume an 8% annual inflation factor for construction in 2026 to follow the Phase 2 project. As mentioned earlier, the Phase 3 project may be split into sub-phases to create a more affordable project and take advantage of available grant funding. It is evident that nearly all the existing clay collection system is in need of repair. Therefore, a cost estimate for a scaled-down Phase 3A and subsequent Phase 3B project option, is provided in Table 5-4 and 5-5, below. This option would replace about half of the identified pipe and manholes shown on the phasing plan and include the work within MT 243.

Since nearly all the clay collection system is in the similar condition as evidenced by video footage, a cost for a Phase 4 projects also added to complete the remainder of the collection system improvements. The Phase 4 cost estimate is shown on Table 5-6.

No O&M cost increases are assumed and assumed to be included within the Town's current O&M budget.

Table 5-3 - Opinion of Probable Cost, C-3 Phase 3 Collection Improvements

Opinion of Probable Cost C-3: Phase 3 Collection Improvements					
#	BID ITEM	QTY	UNITS	UNIT PRICE [1]	TOTAL
1	Temporary Sewer Bypass Pumping	1	LS	$ 20,000.00	$ 20,000
2	48" Sewer Manholes	26	EA	$ 7,000.00	$ 182,000
3	8" PVC Sewer	7,500	LF	$ 100.00	$ 750,000
4	Flowable fill within MDT R/W	600	CY	$ 110.00	$ 66,000
5	Reconnect Sewer Services	50	EA	$ 1,000.00	$ 50,000
6	Sewer Services	1,000	LF	$ 60.00	$ 60,000
7	Connect to Existing Sewer	4	EA	$ 2,500.00	$ 10,000
8	Type A Surface Restoration	770	SF	$ 55.00	$ 42,350
9	Type B Surface Restoration	7,200	SY	$ 20.00	$ 144,000
	Direct Construction Subtotal				$ 1,324,000
	Mobilization			10%	$ 132,000
	Traffic Control			1%	$ 13,000
	Construction Subtotal				$ 1,469,000
	2026 Construction Cost [2]			8.0%	$ 1,998,000
	Contingency			20%	$ 400,000
	Basic Engineering Services - Preliminary Design, Final Design, Bidding, Construction, Post Construction				$ 355,000
	RPR				$ 120,000
	MDT Permit				$ 10,000
	Professional Services (Grant Admin)				$ 50,000
	Legal & Administrative				$ 20,000
	TOTAL				$ 2,953,000

[1] Estimated unit costs are based upon estimates from suppliers and bid tabs for similar projects throughout Montana.

[2] The ENR 20-year average Construction Cost Index is +8.0% (as of January 2022), so capital costs are projected to an anticipated construction date in 2026 using an 8% inflation rate.

Table 5-4 - Opinion of Probable Cost, C-3A Phase 3A Collection Improvements

Opinion of Probable Cost C-3A: Phase 3A Collection Improvements					
#	BID ITEM	QTY	UNITS	UNIT PRICE [1]	TOTAL
1	Temporary Sewer Bypass Pumping	1	LS	$ 20,000.00	$ 20,000
2	48" Sewer Manholes	18	EA	$ 7,000.00	$ 126,000
3	8" PVC Sewer	5,000	LF	$ 100.00	$ 500,000
4	Flowable fill within MDT R/W	600	CY	$ 110.00	$ 66,000
5	Reconnect Sewer Services	30	EA	$ 1,000.00	$ 30,000
6	Sewer Services	600	LF	$ 60.00	$ 36,000
7	Connect to Existing Sewer	4	EA	$ 2,500.00	$ 10,000
8	Type A Surface Restoration	1,000	SY	$ 55.00	$ 55,000
9	Type B Surface Restoration	5,500	SY	$ 20.00	$ 110,000
	Direct Construction Subtotal				$ 953,000
	Mobilization		10%		$ 95,000
	Traffic Control		1%		$ 10,000
	Construction Subtotal				$ 1,058,000
	2026 Construction Cost [2]		8.0%		$ 1,439,000
	Contingency		20%		$ 288,000
	Basic Engineering Services - Preliminary Design, Final Design, Bidding, Construction, Post Construction				$ 259,000
	RPR				$ 86,000
	MDT Permit				$ 10,000
	Professional Services (Grant Admin)				$ 35,000
	Legal & Administrative				$ 20,000
	TOTAL				$ 2,137,000

[1] Estimated unit costs are based upon estimates from suppliers and bid tabs for similar projects throughout Montana.

[2] The ENR 20-year average Construction Cost Index is +8.0% (as of January 2022), so capital costs are projected to an anticipated construction date in 2026 using an 8% inflation rate.

Table 5-5 - Opinion of Probable Cost, C-3B Phase 3B Collection Improvements

Opinion of Probable Cost C-3B Phase 3B Collection Improvements					
#	BID ITEM	QTY	UNITS	UNIT PRICE [1]	TOTAL
1	Temporary Sewer Bypass Pumping	1	LS	$ 20,000.00	$ 20,000
2	48" Sewer Manholes	8	EA	$ 7,000.00	$ 56,000
3	8" PVC Sewer	2,500	LF	$ 100.00	$ 250,000
4	Reconnect Sewer Services	15	EA	$ 1,000.00	$ 15,000
5	Sewer Services	300	LF	$ 60.00	$ 18,000
6	Connect to Existing Sewer	1	EA	$ 2,500.00	$ 2,500
7	Type B Surface Restoration	2,800	SY	$ 20.00	$ 56,000
	Direct Construction Subtotal				$ 418,000
	Mobilization			10%	$ 42,000
	Traffic Control			1%	$ 4,000
	Construction Subtotal				$ 464,000
	2026 Construction Cost [2]			8.0%	$ 631,000
	Contingency			20%	$ 126,000
	Basic Engineering Services - Preliminary Design, Final Design, Bidding, Construction, Post Construction				$ 114,000
	RPR				$ 38,000
	MDT Permit				$ 10,000
	Professional Services (Grant Admin)				$ 30,000
	Legal & Administrative				$ 15,000
	TOTAL				$ 964,000

[1] Estimated unit costs are based upon estimates from suppliers and bid tabs for similar projects throughout Montana.

[2] The ENR 20-year average Construction Cost Index is +8.0% (as of January 2022), so capital costs are projected to an anticipated construction date in 2026 using an 8% inflation rate.

Table 5-6 shows the estimated cost for potential future Phase 4 costs. This area is shown on the phased improvement plan for the north part of Town. The environmental impacts for Phase 4 are the same as the earlier phases.

Table 5-6 - Opinion of Probable Cost, C-4 Phase 4 Collection Improvements

Opinion of Probable Cost C-4: Phase 4 Collection Improvements					
#	BID ITEM	QTY	UNITS	UNIT PRICE [1]	TOTAL
1	Temporary Sewer Bypass Pumping	1	LS	$ 20,000.00	$ 20,000
2	48" Sewer Manholes	16	EA	$ 7,000.00	$ 112,000
3	8" PVC Sewer	2,600	LF	$ 100.00	$ 260,000
4	Reconnect Sewer Services	25	EA	$ 1,000.00	$ 25,000
5	Sewer Services	500	LF	$ 60.00	$ 30,000
6	Connect to Existing Sewer	1	EA	$ 2,500.00	$ 2,500
7	Type B Surface Restoration	2,900	SY	$ 20.00	$ 58,000
	Direct Construction Subtotal				$ 508,000
	Mobilization			10%	$ 51,000
	Traffic Control			1%	$ 5,000
	Construction Subtotal				$ 564,000
	2026 Construction Cost [2]			8.0%	$ 767,000
	Contingency			20%	$ 153,000
	Basic Engineering Services - Preliminary Design, Final Design, Bidding, Construction, Post Construction				$ 138,000
	RPR				$ 46,000
	Professional Services (Grant Admin)				$ 35,000
	Legal & Administrative				$ 20,000
	TOTAL				$ 1,159,000

[1] Estimated unit costs are based upon estimates from suppliers and bid tabs for similar projects throughout Montana.

[2] The ENR 20-year average Construction Cost Index is +8.0% (as of January 2022), so capital costs are projected to an anticipated construction date in 2026 using an 8% inflation rate. The installation may be a later date and the estimate would need to be updated.

5.3 Pumping Station Alternatives

The overall pump station alternatives considered in the PER include:

- LS-1 – No Action Alternative. This alternative means no improvements will be made to the existing system.
- LS-2 –Lift Station Upgrades. This includes a Submersible Packaged Lift Station, Abandoning old lift station

5.3.1 Alt. LS-1: No Action Alternative

The no-action alternative can be an attractive alternative since the high capital costs of major improvements are minimized in the immediate timeframe. However, while capital costs are minimized, the risks of continued public and environmental health protection are not minimized. Without lift station improvements, the primary issues will continue:

- I&I Concerns for the Pumps,
- Pump failures,
- Reliance on residents for alarms,
- Confined Space Access,
- Corrosion of wet well and dry well spaces,
- End of useful design life,
- Costs for improvements for future upgrades.

For these reasons above, the no-action alternative is not considered viable.

5.3.2 Alt. LS-2: Lift Station Improvements

This alternative would convert the existing wet well-drywell type lift station to a submersible pump system with above-ground valves and controls. The existing drywell (with the existing electrical/control componentry salvaged or legally disposed) would be abandoned and filled in with a material such as slurry concrete or aggregate.

This alternative includes implementing a temporary sewer bypass system from the two upstream (north and south side) manholes during construction. Given that wastewater currently flows from two directions into the wet well, the existing upstream manholes will need to be plugged and separately pumped and manifolded together for bypassing operations.

The new wet well can be planned to be coated with a new protective lining (such as PVC/Epoxy composite or Polyurea) applied to the inside walls and floors to extend to the life of the system and limit I&I influence.

This alternative includes furnishing and installing a complete package lift station assembly, all-inclusive with new pumps, controls, cellular, and internet SCADA system. The installation would

include electrical work to replace the outdated panels as well as a connection to the Town existing trailer mounted backup generator using a manual transfer switch.

For security and protection of the County's investment, the lift station and controls would be completely fenced with chain link security fencing and include necessary access site work, gravel, and surfacing for efficient operation and maintenance functions.

Design Criteria

The proposed alternative will be designed and constructed in compliance with Circular DEQ-2 in general for all improvements and specifically Chapter 40 - Wastewater Pumping Stations standards. Plans will need to be reviewed and approved by DEQ before bidding and construction can begin.

Map

Schematic site plan is shown on Figure 5-2 with the major features of the system are indicated.

Environmental impacts

Environmental and public health impacts from the proposed project will be very positive. The preliminary assessment indicates that there will be no demonstrable effects of the lift station wetlands, land resources, endangered species, or historical or archeological properties.

The project disturbance will be much less than one acre of land, so a stormwater discharge permit from DEQ may not be needed. However, if more than one acre in combination with the pipe replacement project is disturbed, the contractor will be responsible for obtaining a stormwater permit.

The improvements will be in previously impacted areas. The lift station is located adjacent to the existing flood plain levee. Currently the flood plain is being mapped by FEMA. The lift station rim elevation will need to be verified to be above the 100-year flood plain elevation. In lieu of final mapping results which are not expected until 2026, the engineer will seek preliminary flood plain elevation results to set the lift station at or above to assure compliance with DEQ standards.

Land Requirements

The existing lift station facility is located on the public right-of-way. The nearest lot to the site is owned by the Town of Saco. Most of the construction work will occur immediately around the existing lift station. Preliminary schematic site plan layouts estimate a small additional area of would potentially be needed to allow maintenance access to the new valves/controls. During the final design phase, efforts would be made to limit the surface area of these improvements.

Potential Construction Problems

Excavations up to 20 to 30-feet will be needed to install new piping and connections to the existing collection and force main and so dewatering is anticipated given the local water table. A geotechnical bore hole and evaluation will be completed to inform the design and construction methods. The contractor may be required to obtain a temporary discharge permit.

No major adverse construction problems are identified.

Sustainability Considerations

The reduction in local SSOs resulting from the old unreliable lift station will assist with providing sustainability and reduction in O&M costs. These are resources that can be diverted back into the local community.

Other

The Town has been familiar with access the confined space dry pit. However, the new lift station will offer a much safer condition with the submersible lift station design, thereby allowing for operational ease and flexibility.

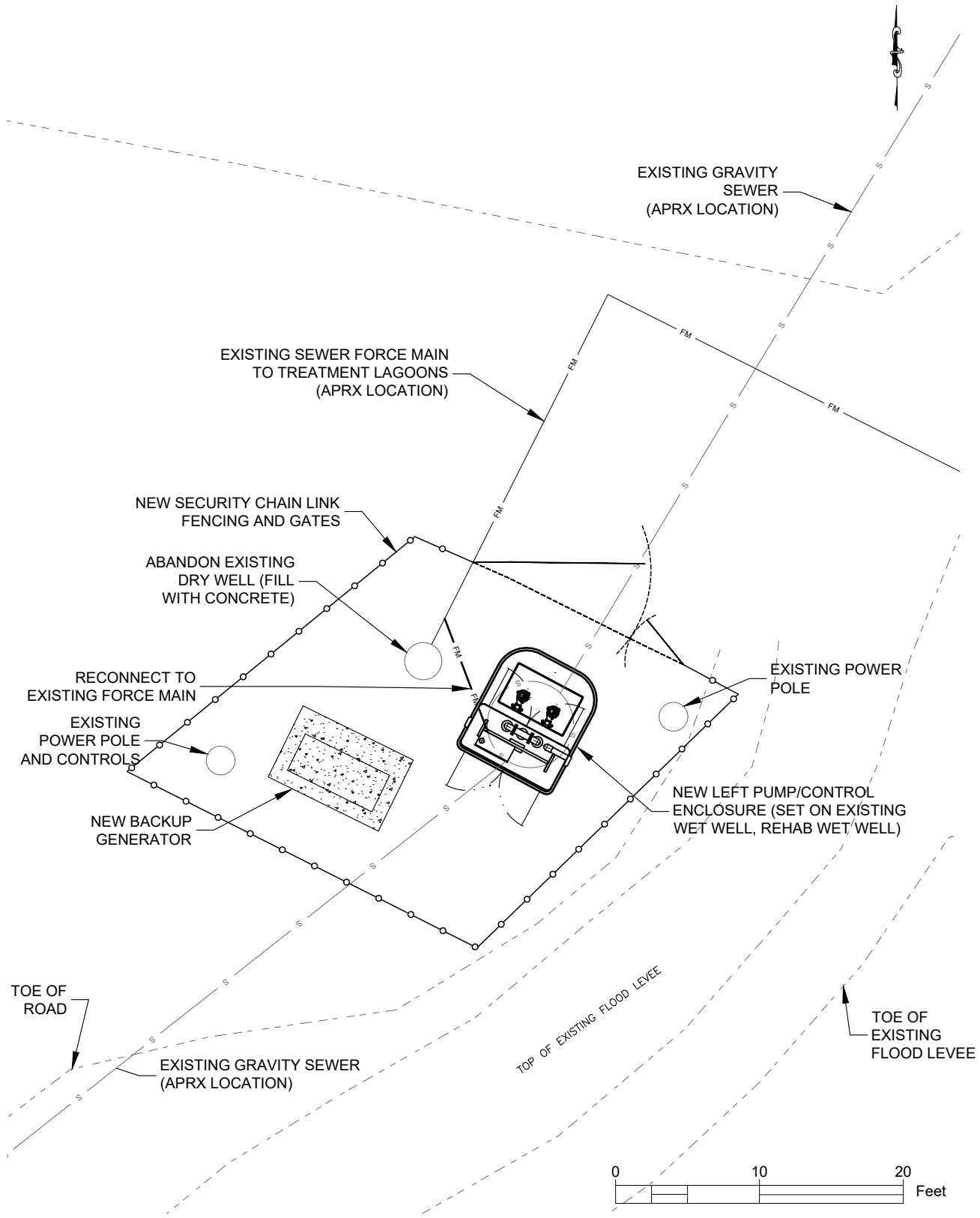


Figure 5-2
Saco Lift Station
Schematic Site Plan

Town of Saco, Montana
Wastewater PER

GreatWest ENGINEERING

Y:\Shared\Helena Projects\1-21222-Saco On-Call 2021-2026\TO2 - WW PER\CADD 1-21222-TO02\Exhibits\1-21222 Submersible Lift Station Schmeatic Site Plan.dwg

Cost Estimates

Table 5-7 shows the preliminary capital cost estimate of the lift station improvements. The lift station is planned to be designed in 2022 and constructed in 2023.

These lift station improvements will serve to slightly reduce the O&M costs due to the efficiency of a newer system. Unlike the existing system, replacement parts for the new system will be more readily available for maintenance and repair. Therefore, the O&M costs of this alternative are included within the Town's current O&M budget.

Table 5-7 - Opinion of Probable Cost, LS-2 Lift Station Improvements

Opinion Of Probable Cost LS-2 Lift Station Improvements					
#	Bid Item	Qty	Units	Unit Price [1]	Total
1	Dewatering	1	LS	$ 25,000.00	$ 25,000
2	Temporary Sewer Bypass Pumping	1	LS	$ 20,000.00	$ 20,000
3	Abandon and Fill Existing Dry Well	1	LS	$ 20,000.00	$ 20,000
4	New Wet Well Structure	1	LS	$ 90,000.00	$ 90,000
5	Furnish Duplex Pumps/Equipment/Controls	1	LS	$ 130,000.00	$ 130,000
6	Install New Lift Station Pumps/Equipment/Controls	1	LS	$ 80,000.00	$ 80,000
7	Lift Station Electrical	1	LS	$ 20,000.00	$ 20,000
8	Manual Transfer Switch for Trailer Genset	1	LS	$ 10,000.00	$ 10,000
9	Chain Link Fencing and Gates (Lift Station Site)	120	LF	$ 50.00	$ 6,000
	Direct Construction Subtotal				$ 401,000
	Mobilization		10%		$ 40,000
	Construction Subtotal				$ 441,000
	2023 Construction Cost [2]		8.0%		$ 476,000
	Contingency		20%		$ 95,000
	Geotechnical Evaluation				$ 20,000
	Basic Engineering Services - Preliminary Design, Final Design, Bidding, Construction, Post Construction				$ 100,000
	RPR				$ 30,000
	Professional Services (Grant Admin)				$ 17,000
	Legal & Administrative				$ 30,000
	TOTAL				$ 768,000

[1] Estimated unit costs are based upon estimates from suppliers and bid tabs for similar projects throughout Montana.

[2] The ENR 20-year average Construction Cost Index is +8.0% (as of January 2022), so capital costs are projected to an anticipated construction date in 2023 using an 8% inflation rate.

5.4 Treatment Alternatives

The overall treatment system alternatives considered in the PER are listed below. All lagoon improvement alternatives include sludge removal and disposal.

- T-1 – Reconstruct Lagoons with UV Treatment.
  - This alternative includes the complete reconstruction of the existing lagoons and installation of a UV building and system

- T-2: Total Retention System
  - This alternative includes the reconstruction of the existing lagoon and construction of an additional lagoon to meet storage and evaporation requirements. No UV system is needed as the system is non-discharging.

- T-3: Minor Lagoon Upgrades with Irrigation
  - This alternative includes miscellaneous upgrades to the existing lagoon system including replacing the influent control valve, slope embankments and rip rap, and installing a supplemental irrigation system for irrigation on available nearby crop lands.

- T-4: Minor Lagoon Upgrades with UV Treatment
  - Similar to T-3, this alternative includes miscellaneous upgrades to the existing lagoon system including replacing the influent control valve, slope embankments and rip rap. However, E. coli is dealt with by installing a UV treatment system.

- T-5: Minor Lagoon Upgrades Only
  - This alternative would only include minor upgrade to the lagoon similar to T-3 and T-4. However, with the focus of improvements on replacing more piping and providing I&I reductions, reduced influent flows would give the Town more flexibility to hold the treated water in the storage cell, and discharge only at times when the effluent is pretested and verified to meet permit limits.

- T-6: UV Treatment System Only
  - This alternative would include only the installation of a new UV treatment system done as a stand-alone and independent project from any other lagoon treatment improvements. This alternative could be completed with or without other lagoon treatment upgrades.

5.4.1 Alt. T-1: Reconstruct Lagoons with UV Treatment

This alternative would include removing accumulated sludge and fully reconstructing the existing lagoons to the latest design standards. This would require modifying the lagoon site to have 2 primary cells and a secondary cell within the same footprint to satisfy DEQ Circular-2 Section 93.36. New embankments would be constructed to provide the minimum required internal 3-feet

of freeboard. A synthetic liner such as a HDPE would be installed in the reconstructed lagoons. HDPE as opposed to PVC can be exposed to sunlight without suffering degradation from the ultraviolet rays. The liner subgrade would be regraded and recompacted. Any unsuitable material would be removed and replaced with compatible suitable material. During and after the placement process, quality control and quality assurance (QAQC) procedures by the liner installer would be observed by site inspector to ensure the liner is watertight. A hydraulic leak test would be completed for final acceptance prior to putting each lagoon into service.

This alternative would also include construction of a new building or large accessible vault along effluent piping to protect the UV disinfection equipment. Ultraviolet light is an effective method of disinfecting wastewater without adding pollutants to the waste stream. UV inactivates pathogens through absorption of UV energy/radiation that damages the cellular makeup of microorganisms in the effluent. Based on previous discussion (reference section 5.1), systems considered for Saco would include low pressure lamps.

Turbidity and sediment in the lagoons can inhibit the effectiveness of UV system treatment and limit the amount of inactivation necessary to meet discharge limits. As such, samples of effluent quality from the system should be periodically monitored to ensure transmittance values are consistent with design criteria.

UV disinfection systems for wastewater effluent come in a variety of configurations, including open-channel systems with vertical or horizontally oriented lamps and closed vessel systems. Closed vessel systems, though typically requiring a lower installation footprint, are not typically used for systems with higher effluent solids concentration. Sediment can accumulate in UV chambers restricting flow and preventing uniform distribution of flow through the system necessary for disinfection. An open channel system is recommended for this type of system.

A UV supplier was contacted to obtain preliminary design and budgetary quotes and cut sheets of disinfection equipment for the facility (see Appendix T). The UV system would be installed with two disinfection modules for in-series, full-redundancy lamps due to the periodic TSS spikes due to turn-over or algae periods, typically observed within existing lagoon effluent.

In addition to fully upgrading the lagoon berms and provide sufficient freeboard, this option also includes the replacement of all lagoon operational control valves and lagoon piping.

Design Criteria

To meet the E. coli limits, this alternative would include UV disinfection. Disinfection equipment design criteria is included in Circular DEQ-2, Section 104. Lagoon upgrades will be completed in conformance to Circular DEQ-2 Chapter 90 Biological Treatment Section 93 – Wastewater Treatment Ponds, where applicable to the proposed scope of work.

Map

See Figure 5-3 Reconstruct Lagoons with UV Treatment. A new UV system would be placed near the discharging outlet of the secondary cell and along the effluent piping alignment.

Environmental impacts

The anticipated environmental impacts will be insignificant with the work taking place in the existing footprint of the lagoons. Construction disturbances include temporary dust and noise from heavy construction equipment.

The effluent quality would be improved as required to meet effluent limits set by the permit and would lead to the long-term benefit of discharging a higher quality treated wastewater effluent.

Land Requirements

The new UV treatment building would be installed within the existing Town-owned lagoon site. No additional land would be needed for this installation.

Potential Construction Problems

Depending on the time of year and if it is a wet year, the groundwater levels can be high. However, the lagoon floor level would be designed to match the existing elevation. Dewatering could be required to prevent a saturated environment. No specific construction problems are anticipated with the construction of a new UV treatment building.

Sustainability Considerations

By the installation of a disinfection treatment system, the Town would have a reliable means to operate the treatment facility without exceeding permit limits. New lagoon piping and structures would be easier to operate and would aid in maintenance activities.

2ND ST
3RD ST
MONTANA ST
2
2
Cell 1A
1.1 Acres
Cell 2A
1.1 Acres
Cell 2
2.4 Acres
WTP
Proposed UV Treatment Building
Figure 5-3 - Alt. T-1
Reconstruct Lagoons
with UV Treatment
Town of Saco, Phillips County, Montana
Town of Saco Wastewater PER
Treatment Structure
New UV Treatment Building
Lagoons
Lagoon Reconstruction Area
8" Sanitary Sewer Line (14,048 ft)
Sewer Force Main - 8" Cast Iron (1,070 ft)
Sanitary Sewer Service Line
Future Sanitary Sewer Line
Parcel Boundaries
N
0
200
400 Feet
GreatWest
ENGINEERING

Water and Energy Efficiency

To meet the disinfection requirements of the discharge permit, this alternative would require a new UV treatment building at the lagoon effluent pipe. The preliminary system equipment design, which varies per manufacturer, would include a demand of about 4.2 kW. The estimated annual power consumption, when the system is batch discharging, at up to 2 months per year, and is estimated to be approximately 6,800 kwh for an estimated cost of $1,100 per year.

Green Infrastructure

Stormwater management during the project will include temporary erosion and sediment control measures including the installation and maintenance of temporary structural control measures to reduce or eliminate the erosion of soils and transport of sediment offsite from construction activities. The Contractor will be required to complete and adhere to a Storm Water Pollution Prevention Plan (SWPPP).

Cost Estimates

The estimated cost for this alternative is summarized below in Table 5-8, below. Table 5-9 shows the estimated O&M increase for this alternative.

Table 5-8 - Reconstruct Lagoons with UV System Cost Estimate

Opinion of Probable Cost					
T-1: Treatment System Improvements - Reconstructed Lagoons With UV System					
#	Bid Item	Qty	Units	Unit Price [1]	Total
1	Exploratory Excavation	20	HR	$ 250.00	$ 5,000
2	Dewatering	1	LS	$ 25,000.00	$ 25,000
3	Sludge Removal and Disposal	1	LS	$ 250,000.00	$ 250,000
4	Topsoil Removal and Stockpile	2,000	CY	$ 5.00	$ 10,000
5	Remove and Dispose of Abandon Existing Lagoon Piping and Structures	1	LS	$ 15,000.00	$ 15,000
6	Lagoon Excavation & Embankment	6,500	CY	$ 15.00	$ 97,500
7	Lagoon Liner Subgrade	4,000	CY	$ 7.00	$ 28,000
8	60 Mil HDPE Liner	220,000	SF	$ 0.75	$ 165,000
9	Lagoon Vent System	4,000	LF	$ 1.50	$ 6,000
10	Liner Protective Soil Cover (Embankments Only)	2,000	CY	$ 10.00	$ 20,000
11	Connect to Existing Influent Sewer	1	EA	$ 3,000.00	$ 3,000
12	Splitter Structure	1	EA	$ 15,000.00	$ 15,000
13	Lagoon Piping	850	LF	$ 75.00	$ 63,750
14	Level Control Structure (With Telescoping Valve)	1	EA	$ 15,000.00	$ 15,000
15	Treatment Lagoon Inlet - Pipe Support/Splash Pad	1	EA	$ 5,000.00	$ 5,000
16	Concrete Splash Pad	1	EA	$ 2,000.00	$ 2,000
17	Interior/Exterior Lagoon Emergency Overflow 10" DIP Piping	30	LF	$ 85.00	$ 2,550
18	Exterior Lagoon Emergency Overflow Rip Rap	1	LS	$ 2,000.00	$ 2,000
19	Lagoon Rip Rap and Fabric	1,750	CY	$ 50.00	$ 87,500
20	Remove and Dispose of Existing Fence	2,500	LF	$ 0.50	$ 1,250
21	Wildlife Fencing & Gates	2,500	LF	$ 15.00	$ 37,500
22	Lagoon Signs	1	LS	$ 2,500.00	$ 2,500
23	Lagoons Stage Gauge (3' Width)	2	EA	$ 5,000.00	$ 10,000
24	Seed and Fertilizer	2	AC	$ 700.00	$ 1,050
25	Temporary Bypass Pumping	1	LS	$ 20,000.00	$ 20,000
26	UV Treatment Building & Sitework	1	LS	$ 280,000.00	$ 280,000
27	Furnish & Install UV Disinfection System & Piping	1	LS	$ 150,000.00	$ 150,000
28	UV Building Electrical	1	LS	$ 50,000.00	$ 50,000
	Direct Construction Subtotal				$ 1,370,000
	Mobilization		10%		$ 137,000
	Construction Subtotal				$ 1,507,000
	2024 Construction Cost [2]		8.0%		$ 1,758,000
	Contingency		20%		$ 352,000
	Extend 3-Phase Power to UV Site				$ 60,000
	Basic Engineering Services - Preliminary Design, Final Design, Bidding, Construction, Post Construction		15%		$ 263,700
	RPR		5%		$ 87,900
	Professional Services (Grant Admin)				$ 53,000
	Legal & Administrative				$ 30,000
	TOTAL				$ 2,604,600

[1] Estimated unit costs are based upon estimates from suppliers and bid tabs for similar projects throughout Montana.

[2] The ENR 20-year average Construction Cost Index is +8.0% (as of January 2022), so capital costs are projected to an anticipated construction date in 2024 using an 8% inflation rate.

Table 5-9 - Reconstruct Lagoons with UV System O&M Cost Estimate

Opinion of Probable Annual Operation & Maintenance Costs T-1: Treatment System Improvements - Reconstructed Lagoons With UV System					
#	Item	Qty	Units	Unit Price	Total
1	Operator	60	HR	$ 20.00	$ 1,200.00
2	UV Power	6,800	KWH	$ 0.15	$ 1,020.00
3	Monitoring & Testing	1	LS	$ 700.00	$ 700.00
4	Spare Parts/Repair Maintenance	1	LS	$ 500.00	$ 500.00
5	Reserve	1	LS	$ 500.00	$ 500.00
	TOTAL				$ 3,900.00

5.4.2 Alt. T-2: Total Retention (without UV Treatment)

This alternative would include reconstructing the existing lagoons, similar to alternative described above, with the installation of an additional total retention lagoon. The total retention systems consist of large shallow ponds (4-6 feet deep) that rely on evaporation to eliminate the wastewater effluent. Solids are periodically removed from the ponds and properly disposed of via land farming or licensed solid waste facilities. These systems require considerably more land area than non-aerated discharging facultative or aerated lagoon systems due to their reliance on evaporation for effluent disposal.

The ponds must be lined to prevent wastewater seepage into the groundwater. The ponds would provide sufficient control structures and piping to allow some redirection of flows to prevent odors. Treated effluent is disposed of by evaporation, so no discharge permit is required. The ponds are extremely simple to operate and maintain, reliable, and not heavily regulated because they do not require a discharge permit.

The Town would maintain its permit for emergency discharge purposes. The size of an additional new evaporation cell would be about 7 to 8 acres using the Circular DEQ-2 design criteria and local precipitation and evaporation data. (See Appendix R for preliminary total retention sizing)

Design Criteria

Project components include the expansion, lining, and re-shaping of the existing facultative lagoons and constructing a new total retention lagoon cell. Lagoon upgrades will be completed in conformance to Circular DEQ-2 Chapter 90 Biological Treatment Section 93 – Wastewater Treatment Ponds, where applicable to the proposed scope of work.

A discharge permit is not required with total retention ponds. When compared to other alternatives, this alternative would allow the Town to address both existing and future regulatory problems by eliminating the discharge and removing the need for a discharge permit

Map

A schematic map showing Total Retention alternative is found in Figure 5-4.

Environmental impacts

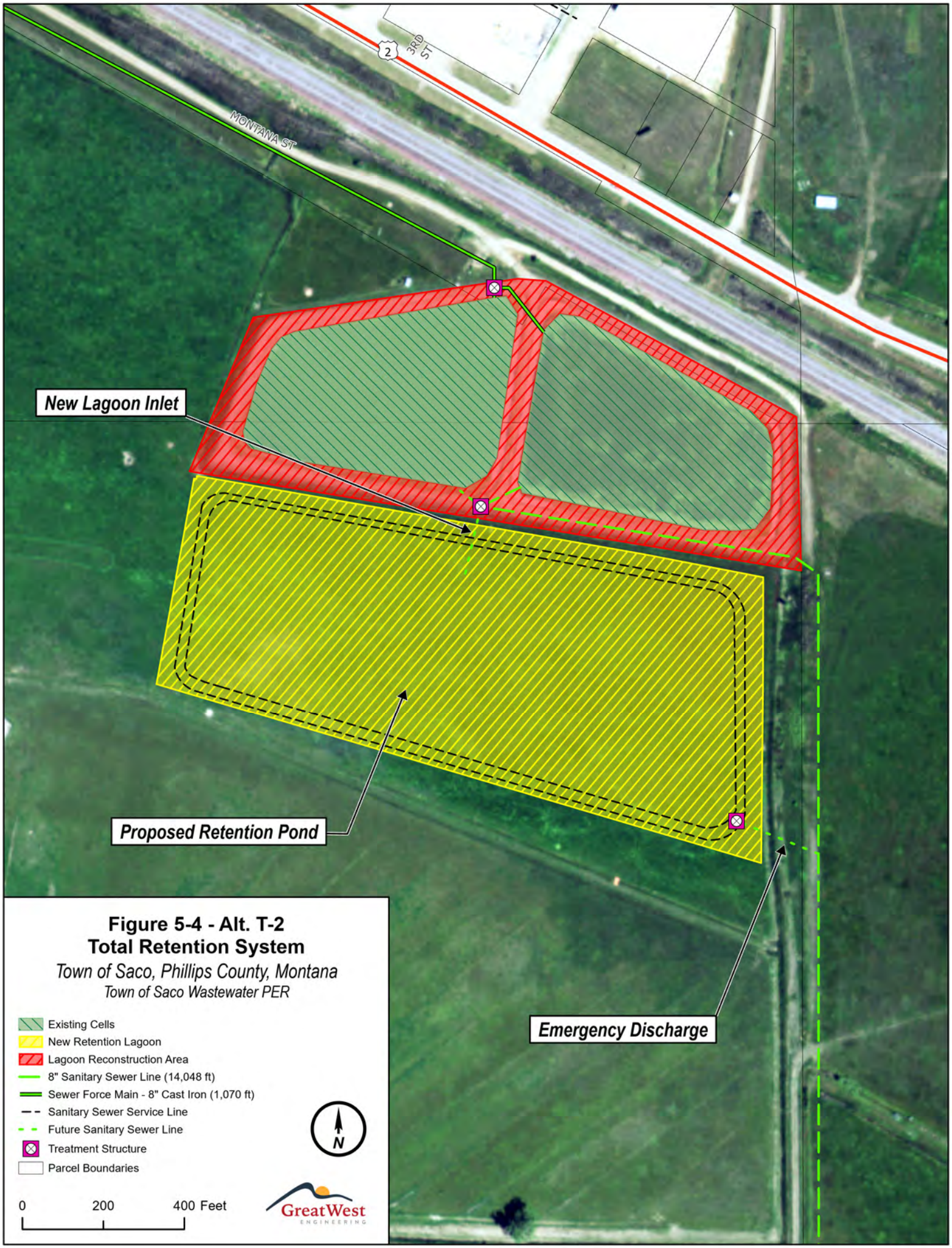
The environmental impacts of this alternative would be very positive. By upgrading and lining the lagoons, potential leakage would be curtailed, thus significantly improving the groundwater quality. Furthermore, surface water resources would be preserved by preventing surface water quality degradation since a surface water discharge would not be used.

It is possible that wetlands, exist in and around the lagoons. A wetland delineation would be completed to determine the existence of an area of potential impacts. A wetland permit would be sought from the Army Corps of Engineers, if necessary. The nearest wells within 1,000 feet of the potential new cells are stock and oil wells.

During construction, a stormwater runoff permit will be sought. Also, some temporary dust and noise problems may arise. See Chapter 2.0 for a comprehensive evaluation of environmental resources within project area.

Land Requirements

As shown in the preliminary conceptual pond sizing calculations in Appendix R, the total water surface area requirement is 12 to 13 acres for all existing plus new cells, and the new water area required is about 7 to 8 acres. The Town-owned property is limited to the existing lagoon footprint so acquisition would be necessary under this proposed alternative.


MONTANA ST
2
3RD ST
New Lagoon Inlet
Proposed Retention Pond
Emergency Discharge
Figure 5-4 - Alt. T-2
Total Retention System
Town of Saco, Phillips County, Montana
Town of Saco Wastewater PER
Existing Cells
New Retention Lagoon
Lagoon Reconstruction Area
8" Sanitary Sewer Line (14,048 ft)
Sewer Force Main - 8" Cast Iron (1,070 ft)
Sanitary Sewer Service Line
Future Sanitary Sewer Line
Treatment Structure
Parcel Boundaries
N
0
200
400 Feet
GreatWest
ENGINEERING

Potential Construction Problems

A stormwater pollution prevention plan (SWPPP) permit will be necessary because the level of ground disturbance would exceed 1-acre.

The average depth of the static water level in the area is about 16-feet below ground surface, so groundwater removal during construction would not be expected during typical dry years. Depending on the time of year and if it is a wet year, the groundwater levels could be high. However, the lagoon floor elevation would be designed to limit excavation depths. Dewatering could be required to prevent a saturated environment.

Construction methods may vary. However, it is anticipated that the new retention basin would be built first and wastewater would be pumped into the treatment lagoon. This would allow drying and removal work form each cell.

Once sludge is dried, it will be removed and properly disposed.

Sustainability Considerations

Of all the treatment alternatives considered, total retention is probably the most sustainable and require the least amount of O&M. There are no additional energy requirements with this alternative. Gravity flow will still be used to deliver raw sewage to the treatment cell and the subsequent storage cell.

Water and Energy Efficiency

This treatment system alternative would not require any additional electrical demands to the wastewater system.

Green Infrastructure

Stormwater management during the project will include temporary erosion and sediment control measures including the installation and maintenance of temporary structural control measures to reduce or eliminate the erosion of soils and transport of sediment offsite from construction

activities. The Contractor will be required to complete and adhere to a Storm Water Pollution Prevention Plan (SWPPP).

Cost Estimates

As shown in Table 5-10 shows the estimated capital for the total retention alternative. No O&M cost increases are assumed and are included within the Town's current O&M budget.

Table 5-10 - Opinion of Probable Cost, Total Retention System

Opinion of Probable Cost T-2: Treatment System Improvements - Total Retention System					
#	Bid Item	Qty	Units	Unit Price [1]	Total
1	Exploratory Excavation	20	HR	$ 250.00	$ 5,000
2	Dewatering	1	LS	$ 25,000.00	$ 25,000
3	Sludge Removal and Disposal	1	LS	$ 250,000.00	$ 250,000
4	Topsoil Removal and Stockpile	13,000	CY	$ 5.00	$ 65,000
5	Remove and Dispose of Abandon Existing Lagoon Piping and Structures	1	LS	$ 15,000.00	$ 15,000
6	Lagoon Excavation & Embankment	20,000	CY	$ 15.00	$ 300,000
7	Lagoon Liner Subgrade	10,000	CY	$ 7.00	$ 70,000
8	60 Mil HDPE Liner	540,000	SF	$ 0.75	$ 405,000
9	Lagoon Vent System	20,000	LF	$ 1.50	$ 30,000
10	Liner Protective Soil Cover (Embankments Only)	2,700	CY	$ 10.00	$ 27,000
11	Connect to Existing Influent Sewer	1	EA	$ 3,000.00	$ 3,000
12	Splitter Structure	1	EA	$ 15,000.00	$ 15,000
13	Lagoon Piping	900	LF	$ 75.00	$ 67,500
14	Level Control Structure (With Telescoping Valve)	1	EA	$ 15,000.00	$ 15,000
15	Treatment Lagoon Inlet - Pipe Support/Splash Pad	1	EA	$ 5,000.00	$ 5,000
16	Concrete Splash Pad	2	EA	$ 2,000.00	$ 4,000
17	Interior/Exterior Lagoon Emergency Overflow 10" DIP Piping	60	LF	$ 85.00	$ 5,100
18	Exterior Lagoon Emergency Overflow Rip Rap	2	LS	$ 2,000.00	$ 4,000
19	Lagoon Rip Rap and Fabric	3,400	CY	$ 50.00	$ 170,000
20	Remove and Dispose of Existing Fence	2,500	LF	$ 0.50	$ 1,250
21	Wildlife Fencing & Gates	3,500	LF	$ 15.00	$ 52,500
22	Lagoon Signs	1	LS	$ 2,500.00	$ 2,500
23	Lagoons Stage Gauge (3' Width)	3	EA	$ 5,000.00	$ 15,000
24	Seed and Fertilizer	4	AC	$ 700.00	$ 2,800
25	Temporary Bypass Pumping	1	LS	$ 20,000.00	$ 20,000
	Direct Construction Subtotal				$ 1,575,000
	Mobilization	10%			$ 158,000
	Construction Subtotal				$ 1,733,000
	2024 Construction Cost [2]	8.0%			$ 2,021,000
	Contingency	20%			$ 404,000
	Land Acquisition (±10 acres)				$ 50,000
	Floodplain and Wetland Permitting				$ 10,000
	Basic Engineering Services - Preliminary Design, Final Design, Bidding, Construction, Post Construction				$ 303,000
	RPR				$ 101,000
	Professional Services (Grant Admin)				$ 60,000
	Legal & Administrative				$ 30,000
	TOTAL				$ 2,979,000

[1] Estimated unit costs are based upon estimates from suppliers and bid tabs for similar projects throughout Montana.

[2] The ENR 20-year average Construction Cost Index is +8.0% (as of January 2022), so capital costs are projected to an anticipated construction date in 2024 using an 8% inflation rate.

5.4.3 Alt. T-3: Minor Lagoon Upgrades with Irrigation

This alternative would include sludge removal and completing minor upgrades and repairs to the lagoon structures and piping. This alternative is in consideration that the minor upgrades may be sufficient to meet the treatment objectives. Minor lagoon upgrades are an attractive option to deal with the most pressing critical deficiencies and improve water quality without creating significant project costs for the community.

For these improvements, the influent splitter and valve structure would be replaced to allow for the proper series operation of the lagoon for optimal treatment and detention time. This alternative would also include minor earthwork operations to build up the existing eroded internal lagoon slopes. Rip rap protection, where missing, would be completed to prevent further degradation of the internal slopes.

This alternative also includes the use of an irrigation disposal system provide beneficial reuse of treated effluent and allow the Town to avoid discharging and be subject to E. coli violations. The irrigation site could be placed south of the existing lagoon site, which already supports an irrigated hay crop and is over 700 feet from existing residential areas. This provides more than the 200-foot minimum buffer setback required so the Town could treat to Circular DEQ-2 Class D reclaimed water treatment standards.

The irrigation system would offer a supplemental effluent disposal method for summer use. Given that the Town only needs to discharge 1 to 2 times per year, the Town could have the option to discharge Beaver Creek and/or irrigate on crop lands. With ample storage capacity in the existing lagoons, the Town would have the benefit of storing and irrigating in the mid to late summer months; a time when the Town is not allowed to discharge under the General Permit as a batch discharger.

Lease and maintenance agreements would be required to be executed with the landowner to maintain the hay crop for uptake of nitrogen when irrigation takes place. The required irrigation site area is estimated to be in the range of 6 to 10 acres based on preliminary calculations that factor in assumed crop type, irrigation volume applied, climate information, water balance, and nitrogen effluent and uptake parameters. Domestic wastewater generally dilute, and the effluent from the facilities that store for extended periods could see nitrogen effluent in the range of 10 to 30 milligrams per liter. (See Appendix S for preliminary irrigation analysis)

More detailed irrigation calculations in coordination with an agronomist and field testing would need to be completed during the design phase. The preliminary site assessment work tasks would determine if and what potential soils amendments might be required.

Groundwater monitoring wells may be required to assure that irrigation is not occurring in areas where the groundwater is less than 4-feet from the surface.

The completion of a detailed nutrient management and irrigation plan would be required for compliance to DEQ standards. The general equipment needed for an irrigation system would include an irrigation pump with a screen, flow meter, irrigation piping and irrigation spraying system such as an irrigation wheel or more manual water reel system.

Design Criteria

Lagoon upgrades will be completed in conformance to Circular DEQ-2 Chapter 90 Biological Treatment Section 93 – Wastewater Treatment Ponds, where applicable to the proposed scope of work. The lagoon upgrades and effluent irrigation system will be required to comply with Circular DEQ-2 Chapter 120 – Irrigation and Rapid Infiltration Systems.

Sludge removal and disposal would need to be completed in accordance with EPA 503 requirements.

For an irrigation system, the completion of nutrient management and irrigation plan (NMIP) would be required for approval and for long-term operations planning. The plan is used to track the irrigated areas, volumes, nitrogen, and other logged data to assure nitrogen uptake is achieved. See Appendix S.

Map

A schematic map of minor upgrades with irrigation system is found on Figure 5-5.

Figure 5-5 - Alt. T-3
Minor Lagoon Upgrades with Irrigation
Town of Saco, Phillips County, Montana
Town of Saco Wastewater PER

Environmental Impacts

Impacts to the area would not be negative as lagoon improvements to the lagoon site would be at the existing lagoon footprint. Construction disturbances include temporary dust and noise from heavy construction equipment. Surface water resources would be preserved by preventing surface water quality degradation since effluent would be discharged primarily by irrigation and nitrogen taken up by the crops. The removal of accumulated sludge will greatly improve the treatment capacity of the system and water quality of the effluent. The sludge biosolids will provide beneficial reuse on existing crop lands if land application methods are used for disposal. Overall environmental impacts will be improved by the project.

Land Requirements

No additional land is required for the treatment lagoons site with all work taking place within the existing footprints. However, potentially up to 10 acres for an irrigation area would be needed for the system. The land can either be purchased from the landowner or a long-term lease agreement could along with an operations plan agreement would be required. DEQ typically requires a 20-year lease with a private landowner that allows the Town authority to control how the effluent is applied, volume, how applied, etc. (Circular DEQ-2, Section 121.19). The Town should also

Potential Construction Problems

A stormwater pollution prevention plan (SWPPP) permit may be necessary because the level of ground disturbance could exceed 1-acre.

Careful planning of influent flows and transferring of standing water will be required to complete the work in the exiting treatment site. The influent sewer and standing water in each lagoon cell will need to be transferred a few times. The influent splitter control valve would need to be completed first and all flows diverted to either cell 1 or cell 2, then the standing the standing can be decanted, while the cell not receiving influent can be “de-sludged”. Earthwork to repair the berms and place new rip rap rock can completed while each cell is lowered. The Contractor will ultimately determine the construction method for sludge removal and disposal with guidance form the engineer.

Sustainability Considerations

Minor lagoon upgrades are an attractive option to deal with the most pressing critical lagoon structural deficiencies, and to improve water quality without creating significant project costs and increased loan debt to the community. Advantages of the irrigation concept are the simplicity of the operation requirements (no complex treatment process to understand), and the system does would require adhering to a MPDES discharge permit. The Town could still retain the discharge permit for emergency or for flexibility of discharging during non-irrigating months.

A summary of sustainability benefits of implementing irrigation include:

- Wastewater effluent has a naturally high nutrient content which reduces or even eliminates the need for expensive chemical fertilizers.
- Environmentally friendly – Using wastewater to irrigate crops and farmland is a sustainable practice that helps to reduce water wastage and conserve water supply.
- Higher production of crops – Supplemental irrigation allows farmers to grow more pastures and crops by providing access to water. Having access to water throughout the year also lengthens the growing season. In addition, irrigation allows farmers to grow crops in areas that would otherwise be considered too dry. It provides 'insurance' against seasonal variability and drought and provide fertilizer for crops.
- Better quality crops – Irrigation allows farmers to produce higher quality crops and pastures as water stress can dramatically impact on the quality of farm produce.
- Increase the value of the property – Irrigated land has the potential to support higher crops and animal production. It is therefore more valuable. This means that having an irrigation system in place often improves the value of the property.

Water and Energy Efficiency

This treatment system alternative would require additional electrical demands to the wastewater system to operate an effluent irrigation pump system. This pump would likely be a smaller horsepower (hp) pump in estimated the range of 5-10 hp.

Green Infrastructure

Stormwater management during the project will include temporary erosion and sediment control measures including the installation and maintenance of temporary structural control measures to

reduce or eliminate the erosion of soils and transport of sediment offsite from construction activities. The Contractor will be required to complete and adhere to a Storm Water Pollution

Effluent irrigation is considered “green” and would reduce or even eliminates the need for expensive chemical fertilizers.

Cost Estimates

The estimated capital cost is shown on Tables 5-11 and the estimated increase in O&M costs are summarized in Table 5-12.

Table 5-11 - Opinion of Probable Cost, Minor Lagoon Upgrades with Effluent Irrigation

Opinion of Probable Cost					
T-3: Minor Lagoon Upgrades - With Effluent Irrigation System					
#	Bid Item	Qty	Units	Unit Price [1]	Total
1	Exploratory Excavation	20	HR	$ 250.00	$ 5,000
2	Transfer Pumping	1	LS	$ 10,000.00	$ 10,000
3	Sludge Removal and Disposal	1	LS	$ 250,000.00	$ 250,000
4	Berm Embankments Earthwork	800	CY	$ 20.00	$ 16,000
5	Connect to Existing Influent Sewer	1	EA	$ 5,000.00	$ 5,000
6	Replace Influent Splitter Structure and Piping	1	EA	$ 15,000.00	$ 15,000
7	Rip Rap Slope Protection	500	CY	$ 55.00	$ 27,500
8	Livestock Fencing around irrigation site	2,000	LF	$ 10.00	$ 20,000
9	Irrigation System Pump System	1	LS	$ 15,000.00	$ 15,000
10	Irrigation Floating Intake	1	LS	$ 15,000.00	$ 15,000
11	Irrigation Piping	600	LF	$ 20.00	$ 12,000
12	Furnish/Install Irrigation Spray System	1	LS	$ 30,000.00	$ 30,000
13	Irrigation System Electrical	1	LS	$ 25,000.00	$ 25,000
Direct Construction Subtotal					$ 446,000
	Mobilization	10%			$ 45,000
Construction Subtotal					$ 491,000
	2024 Construction Cost [2]	8.0%			$ 573,000
	Contingency	20%			$ 115,000
	Extend Power to Irrigation (single phase)				$ 30,000
	Basic Engineering Services - Preliminary Design, Final Design, Bidding, Construction, Post Construction	15%			$ 86,000
	RPR				$ 30,000
	Irrigation and Nutrient Management Plan				$ 15,000
	Land Irrigation Lease/Agreements & Services				$ 15,000
	Sludge Management Plan per EPA 503				$ 15,000
	Professional Services (Grant Admin)				$ 30,000
	Legal & Administrative				$ 20,000
	TOTAL				$ 929,000

[1] Estimated unit costs are based upon estimates from suppliers and bid tabs for similar projects throughout Montana.

[2] The ENR 20-year average Construction Cost Index is +8.0% (as of January 2022), so capital costs are projected to an anticipated construction date in 2024 using an 8% inflation rate.

Table 5-12 - Opinion of Probable O&M Costs, Minor Lagoon Upgrades with Effluent Irrigation

Opinion of Probable Annual Operation & Maintenance Costs T-3: Minor Lagoon Upgrades - With Effluent Irrigation System							
#	Item	Qty	Units	Unit Price		Total	
1	Operator (Field Operation, moving lines, sampling)	40	HR	$	20.00	$	800.00
2	NMP logging and updates	20	HR	$	20.00	$	400.00
3	Power to Irrigation System	2400	KWH	$	0.15	$	360.00
4	Monitoring & Testing	1	LS	$	700.00	$	700.00
5	Spare Parts/Repair Maintenance	1	LS	$	500.00	$	500.00
6	Reserve	1	LS	$	500.00	$	500.00
	TOTAL					$	3,300.00

5.4.4 Alt. T-4: Minor Lagoon Upgrades with UV System

This alternative would include sludge removal and completing minor upgrades and repairs to the lagoon structures and piping. Minor lagoon upgrades are an attractive option to deal with the most pressing critical deficiencies and improve water quality without creating significant project costs for the community.

Similar to alternative T-3, the influent splitter and valve structure would be replaced to allow for the proper series operation of the lagoon for optimal treatment and detention time. This alternative would also include minor earthwork operations to build up the existing eroded internal lagoon slopes. Rip rap protection, where missing, would be completed to prevent further degradation of the internal slopes.

This alternative is considered with the addition of an effluent UV treatment to meet the treatment objectives of complying with E. coli permits limits. Similar to alternative T-1, this would include construction of a new building or large accessible vault on the existing lagoon effluent to house UV disinfection equipment.

Design Criteria

To meet the E. coli limits, this alternative would include UV disinfection. Disinfection equipment design criteria is included in Circular DEQ-2, Section 104. Lagoon upgrades will be completed in conformance to Circular DEQ-2 Chapter 90 Biological Treatment Section 93 – Wastewater Treatment Ponds, where applicable to the proposed scope of work.

Map

See Figure 5-6 for the conceptual layout of minor upgrades with UV Treatment. A conceptual UV system schematic is found in Figure 5-3.

Environmental impacts

The anticipated environmental impacts will be insignificant with the work taking place in the existing footprint of the lagoons. Construction disturbances include temporary dust and noise from heavy construction equipment. The removal of accumulated sludge will greatly improve the treatment capacity of the system and water quality of the effluent. The sludge biosolids will provide beneficial reuse on existing crop lands if land application methods are used for disposal. Overall environmental impacts will be improved by the project.

The effluent will be required to meet effluent limits set by the permit and would lead to the long-term benefit of discharging a higher quality treated wastewater effluent.

Land Requirements

The new UV treatment building would be installed within the existing Town-owned lagoon site. No additional land would be needed for this installation.

Potential Construction Problems

No specific construction problems are anticipated with the construction of a new UV treatment building.

Figure 5-6 - Alt. T-4
Minor Lagoon Upgrades with UV Treatment
Town of Saco, Phillips County, Montana
Town of Saco Wastewater PER

- Existing Cells
- Lagoon Reconstruction Area
- WTP New UV Treatment Building
- Sewer Force Main - 8" Cast Iron (1,070 ft)
- Treatment Structure
- Parcel Boundaries

N

0 200 400 Feet

GreatWest ENGINEERING

Sustainability Considerations

By the installation of a disinfection treatment system, the Town would have a reliable means to operate the treatment facility without exceeding permit limits.

Water and Energy Efficiency

To meet the disinfection requirements of the discharge permit, this alternative will require a new UV treatment building at the lagoon effluent pipe. The preliminary system equipment design, which varies per manufacturer, would include a demand of around 4.2 kW. The estimated annual power consumption, when the system is batch discharging, at up to 2 months per year, is estimated to be approximately 6,800 kwh for an estimated cost of $1,100 per year.

Green Infrastructure

Stormwater management during the project will include temporary erosion and sediment control measures including the installation and maintenance of temporary structural control measures to reduce or eliminate the erosion of soils and transport of sediment offsite from construction activities. The Contractor will be required to complete and adhere to a Storm Water Pollution Prevention Plan (SWPPP).

Cost Estimates

The estimated cost for this alternative is summarized below in Table 5-13, below. Table 5-14 shows the estimated O&M increase for this alternative.

Table 5-13 - Opinion of Probable Cost, Minor Lagoon Upgrades with UV

Opinion of Probable Cost T-4: Minor Lagoon Upgrades - With UV System					
#	Bid Item	Qty	Units	Unit Price [1]	Total
1	Exploratory Excavation	20	HR	$ 250.00	$ 5,000
2	Transfer Pumping	1	LS	$ 10,000.00	$ 10,000
3	Sludge Removal and Disposal	1	LS	$ 250,000.00	$ 250,000
4	Berm Embankments Earthwork	800	CY	$ 20.00	$ 16,000
5	Connect to Existing Influent Sewer	1	EA	$ 5,000.00	$ 5,000
6	Replace Influent Splitter Structure and Piping	1	EA	$ 15,000.00	$ 15,000
7	Rip Rap Slope Protection	500	CY	$ 55.00	$ 27,500
8	Livestock Fencing around irrigation site	2,000	LF	$ 10.00	$ 20,000
9	UV Treatment Vault Sitework	1	LS	$ 150,000.00	$ 150,000
10	Furnish & Install UV Disinfection System & Piping	1	LS	$ 150,000.00	$ 150,000
11	UV Building Electrical	1	LS	$ 50,000.00	$ 50,000
	Direct Construction Subtotal				$ 699,000
	Mobilization		10%		$ 70,000
	Construction Subtotal				$ 769,000
	2024 Construction Cost [2]		8.0%		$ 897,000
	Contingency		20%		$ 179,000
	Extend Power to UV Site				$ 30,000
	Basic Engineering Services - Preliminary Design, Final Design, Bidding, Construction, Post Construction		15%		$ 130,000
	RPR		5%		$ 44,000
	Sludge Management Plan per EPA 503				$ 15,000
	Professional Services (Grant Admin)				$ 30,000
	Legal & Administrative				$ 20,000
	TOTAL				$ 1,345,000

Table 5-14 - Opinion of Probable O&M Costs, Minor Lagoon Upgrades with UV

Opinion of Probable Annual Operation & Maintenance Costs T-4: Minor Lagoon Upgrades - With UV System					
#	Item	Qty	Units	Unit Price	Total
1	Operator	60	HR	$ 20.00	$ 1,200.00
2	UV Power	6800	KWH	$ 0.15	$ 1,020.00
3	Monitoring & Testing	1	LS	$ 700.00	$ 700.00
4	Spare Parts/Repair Maintenance	1	LS	$ 500.00	$ 500.00
5	Reserve	1	LS	$ 500.00	$ 500.00
	TOTAL				$ 3,900.00

5.4.5 Alt. T-5: Minor Lagoon Upgrades Only

This alternative would only include minor upgrade to the lagoon similar to T-3 and T-4. However, with the focus of improvements on replacing more piping and providing I&I reductions, reduced influent flows would give the Town more flexibility to hold the treated water in the storage cell, and discharge only at times when the effluent is verified to meet permit limits.

Given the degraded condition of the collection system and current high I&I flows, a higher priority should be given to collection system improvements over major lagoon or treatment upgrades. The removal of sludge and replacement of the broken influent splitter structure will improve treatment performance. Focusing on collection system improvements will also reduce the influent flows which would increase detention times in the existing lagoon system. The Town currently only discharges 1-2 times per year and having even lesser influent flows will give the Town more flexibility to hold the treated lagoon water, perform pre-discharge sampling and testing (BOD, TSS, E. coli), and then discharge at times when it is assured that effluent limits can be met for E. coli, BOD and TSS.

The benefit of this option would provide a much more affordable project for the Town and allow for funding resources to be directed to the critical collection system issues. With improvements to the treatment and with a reduction in inflow, the Town will have the ability to discharge at a time that they will meet the permit limits.

This alternative would include sludge removal and completing minor upgrades and repairs to the lagoon structures. Minor lagoon upgrades are an attractive option to deal with the most pressing critical deficiencies and improve water quality without creating significant project costs for the community.

Similar to alternative T-3, the influent splitter and valve structure would be replaced to allow for the proper series operation of the lagoon for optimal treatment and detention time. This alternative would also include minor earthwork operations to build up the existing eroded internal lagoon slopes. Rip rap protection, where missing, would be completed to prevent further

Design Criteria

Lagoon upgrades will be completed in conformance to Circular DEQ-2 Chapter 90 Biological Treatment Section 93 – Wastewater Treatment Ponds, where applicable to the proposed scope of work.

Map

See Figure 5-6 for the conceptual layout of minor upgrades. However, this alternative will not have a UV system installed.

Environmental impacts

The anticipated environmental impacts will be insignificant with the work taking place in the existing footprint of the lagoons. Construction disturbances include temporary dust and noise from heavy construction equipment.

The effluent quality would be improved to meet the effluent limits set by the permit and would lead to the long-term benefit of discharging a higher quality treated wastewater effluent.

Land Requirements

additional land would be needed for this installation.

Potential Construction Problems

No specific construction problems are anticipated with this alternative.

Sustainability Considerations

By removing sludge and upgrading the influent structure for property in-series operation, the Town would have a reliable means to operate the treatment facility to achieve permit limits.

Water and Energy Efficiency

No additional power is required for this alternative.

Green Infrastructure

Stormwater management during the project will include temporary erosion and sediment control measures including the installation and maintenance of temporary structural control measures to reduce or eliminate the erosion of soils and transport of sediment offsite from construction activities. The Contractor will be required to complete and adhere to a Storm Water Pollution Prevention Plan (SWPPP).

Cost Estimates

The estimated cost for this alternative is summarized below in Table 5-15, below. No O&M cost increases are assumed are included within the Town's current O&M budget.

Table 5-15 - Opinion of Probable Cost, Minor Lagoon Upgrades Only

Opinion of Probable Cost T-5: Minor Lagoon Upgrades Only					
#	BID ITEM	QTY	UNITS	UNIT PRICE [1]	TOTAL
1	Exploratory Excavation	20	HR	$ 250.00	$ 5,000
2	Transfer Pumping	1	LS	$ 10,000.00	$ 10,000
3	Sludge Removal and Disposal	1	LS	$ 250,000.00	$ 250,000
4	Berm Embankments Embankment	800	CY	$ 20.00	$ 16,000
5	Connect to Existing Influent Sewer	1	EA	$ 5,000.00	$ 5,000
6	Replace Influent Splitter Structure and Piping	1	EA	$ 15,000.00	$ 15,000
7	Rip Rap Slope Protection	500	CY	$ 55.00	$ 27,500
8	Livestock Fencing around irrigation site	2,000	LF	$ 10.00	$ 20,000
	Direct Construction Subtotal				$ 349,000
	Mobilization		10%		$ 35,000
	Construction Subtotal				$ 384,000
	2024 Construction Cost [2]		8.0%		$ 448,000
	Contingency		20%		$ 90,000
	Basic Engineering Services - Preliminary Design, Final Design, Bidding, Construction, Post Construction				$ 80,000
	RPR				$ 30,000
	Sludge Management Plan per EPA 503				$ 15,000
	Professional Services (Grant Admin)				$ 30,000
	Legal & Administrative				$ 20,000
	TOTAL				$ 713,000

[1] Estimated unit costs are based upon estimates from suppliers and bid tabs for similar projects throughout Montana.

[2] The ENR 20-year average Construction Cost Index is +8.0% (as of January 2022), so capital costs are projected to an anticipated construction date in 2024 using an 8% inflation rate.

5.4.6 Alt. T-6: UV System Upgrades Only

This alternative would include only the installation of a new UV treatment system done as a stand-alone and independent project from any other lagoon treatment improvements. This alternative could be completed with or without other lagoon treatment upgrades.

This alternative would only include the installation of an effluent UV treatment to meet the treatment objectives of complying with E. coli permits limits. Like alternative T-1, this would include construction of a new building or large accessible vault on the existing lagoon effluent to house UV disinfection equipment.

Design Criteria

To meet the E. coli limits, this alternative would include UV disinfection. Disinfection equipment design criteria is included in Circular DEQ-2, Section 104.

Map

See Figure 5-6 for the conceptual layout showing the location of a potential UV Treatment system. The difference with this alternative is Lagoon improvements are not included. A conceptual UV system schematic is found in Figure 5-3.

Environmental impacts

The effluent will be required to meet effluent limits set by the permit and would lead to the long-term benefit of discharging a higher quality treated wastewater effluent.

Land Requirements

The new UV treatment building would be installed within the existing Town-owned lagoon site. No additional land would be needed for this installation.

Potential Construction Problems

No specific construction problems are anticipated with the construction of a new UV treatment building.

Sustainability Considerations

Water and Energy Efficiency

To meet the disinfection requirements of the discharge permit, this alternative will require a new UV treatment building at the lagoon effluent pipe. The preliminary system equipment design, which varies per manufacturer, would include a demand of around 4.2 kW. The estimated annual power consumption, when the system is batch discharging, at up to 2 months per year, is estimated to be approximately 6,800 kwh for an estimated cost of $1,100 per year.

Green Infrastructure

Stormwater management during the project will include temporary erosion and sediment control measures including the installation and maintenance of temporary structural control measures to reduce or eliminate the erosion of soils and transport of sediment offsite from construction activities. The Contractor will be required to complete and adhere to a Storm Water Pollution Prevention Plan (SWPPP).

Cost Estimates

The estimated cost for this alternative is summarized below in Table 5-16, below. Table 5-17 shows the estimated O&M increase for this alternative.

Table 5-16 - Opinion of Probable Cost, UV System Upgrades Only

Opinion of Probable Cost T-6: UV System Upgrades Only					
#	Bid Item	Qty	Units	Unit Price [1]	Total
1	UV Treatment Vault Sitework	1	LS	$ 150,000.00	$ 150,000
2	Furnish & Install UV Disinfection System & Piping	1	LS	$ 150,000.00	$ 150,000
3	UV Building Electrical	1	LS	$ 50,000.00	$ 50,000
	Direct Construction Subtotal				$ 350,000
	Mobilization			10%	$ 35,000
	Construction Subtotal				$ 385,000
	2024 Construction Cost [2]			8.0%	$ 449,000
	Contingency			20%	$ 90,000
	Extend Power to UV Site				$ 30,000
	Basic Engineering Services - Preliminary Design, Final Design, Bidding, Construction, Post Construction				$ 67,000
	RPR				$ 30,000
	Professional Services (Grant Admin)				$ 30,000
	Legal & Administrative				$ 20,000
	TOTAL				$ 716,000

[1] Estimated unit costs are based upon estimates from suppliers and bid tabs for similar projects throughout Montana.

[2] The ENR 20-year average Construction Cost Index is +8.0% (as of January 2022), so capital costs are projected to an anticipated construction date in 2024 using an 8% inflation rate.

Table 5-17 - Opinion of Probable O&M Costs, UV System Only

Opinion of Probable Annual Operation & Maintenance Costs T-6: With UV System Upgrades Only					
#	Item	Qty	Units	Unit Price	Total
1	Operator	60	HR	$ 20.00	$ 1,200.00
2	UV Power	6,800	KWH	$ 0.15	$ 1,020.00
3	Monitoring & Testing	1	LS	$ 700.00	$ 700.00
4	Spare Parts/Repair Maintenance	1	LS	$ 500.00	$ 500.00
5	Reserve	1	LS	$ 500.00	$ 500.00
	TOTAL				$ 3,900.00

6.0 SELECTION OF AN ALTERNATIVE

6.1 Life Cycle Cost Analysis

The life cycle cost for the preferred alternatives is completed for this PER. To complete the life cycle cost analysis, the anticipated annual increase to O&M costs, and estimated salvage value of any improvements are converted to present day dollars using the “real” discount rate of -0.5% for 20 years. The net present value is determined for each alternative by adding the estimated capital cost and present worth of the increased O&M, and then subtracting the present worth of the calculated salvage value.

A comparative analysis between the treatment alternatives (T-1, T-2, T-3, T-4, T-5, and T-6) are completed and a preferred alternative is selected to address the deficiencies identified for the treatment system.

The alternatives for collection system and lift station were narrowed after the screening process and the available wastewater improvement options are simply to either make the improvements or not. In summary, these alternatives (LS-2, C-2, C-3, C-4, C-4A, C-5) are stand-alone, and do not warrant a detailed comparative analysis.

Table 6-1 summarizes the life cycle cost analysis for all the alternatives.

Table 6-1 - Lift Cycle Cost Analysis

Life Cycle Cost Analysis						
Alternative	Capital Cost	Annual Increase to O&M	Present Worth of O&M Increase	20-year Salvage Value	Present Worth of Salvage	Net Present Value
Collection System Alternative						
C-1: (Phase 1) Collection System Improvements	$332,000	$ 0[1]	$0	$168,000	$52,400	$ 279,600
C-2: (Phase 2) Collection System Improvements	$982,000	$ 0[1]	$0	$440,000	$137,200	$ 844,800
C-3: (Phase 3) Collection System Improvements	$2,953,000	$ 0[1]	$0	$670,000	$209,200	$2,743,800
C-3A: (Phase 3A) Collection System Improvements	$1,137,000	$ 0[1]	$0	$461,000	$137,200	$ 1,933,300
C-3B: (Phase 3A) Collection System Improvements	$964,000	$ 0[1]	$0	$205,000	$63,900	$ 900,100
C-4: (Phase 4) Collection System Improvements	$1,159,000	$ 0[1]	$0	$258,000	$80,400	$ 1,078,600
Lift Station Alternative						
LS-2: (Phase 1) Lift Station Improvements	$768,000	$ 0[1]	$0	$58,000	$18,100	$ 799,900
Treatment System Alternatives						
T-1: Reconstruct Lagoons with UV Treatment	$2,604,600	3,900	82,700	191,000	59,600	$2,627,700
T-2 Reconstruct Lagoons with Total Retention	$2,979,000	$0[1]	$0	$ 411,000	$ 128,100	$ 2,850,900
T-3: Minor Lagoon Upgrades with Irrigation	$ 929,000	$3,300	$68,800	$ 35,000	$ 10,900	$ 989,000
T-4: Minor Lagoon Upgrades with UV Treatment	$1,345,000	$3,900	$82,700	$35,000	$10,900	$ 1,416,800
T-5: Minor Lagoon Upgrades Only	$713,000	$0[1]	$82,700	$35,000	$10,900	$ 784,800
T-6: UV Treatment System Only	$716,00	$3,900	$82,700	$75,000	$23,400	$ 775,300

Note: 1. These alternatives do not assume an increase to O&M costs and would be included within the current O&M Budget. The improvements may even serve to reduce overall O&M costs to the Town.

6.2 Ranking Criteria

A matrix to compare each alternative objectively against the other will be developed to select the preferred alternative. Each alternative will be given a score ranging from 0 to 10 for a number of criteria, with 0 representing a negative impact and 10 representing the maximum benefit to the community. The alternatives will begin with a score of 5 for each criterion, and then the score will be adjusted up or down relative to the benefit of the particular alternative in relation to the other alternatives.

In addition to scoring each alternative, the criteria themselves will be weighted in relation to one another. Weighting factors ranging from 1 to 10 will be used to give greater importance to items such as cost. This is appropriate, as often higher investments are made to overcome many other problems such as reliability or to mitigate problems with technical feasibility or environmental concerns.

6.2.1 Life Cycle Costs

The cost of extensive capital improvements to meet minimum health and safety requirements, applicable regulations, and environmental impacts is a great concern to small communities with limited budgets and resources. Life cycle costs also include anticipated increases to ongoing O&M costs.

Accordingly, this criterion will be provided with the maximum weighting factor of 10. This represents over 30% of the total weighting, and Public Opinion is closely tied to cost, giving the cost for each alternative even more weight.

In addition to providing the maximum emphasis on costs, a method must be utilized to provide an objective comparison of costs for each alternative relative to one another and not just an overall comparison. Given a range of costs for various alternatives, the relative cost of any alternative can be determined using the lowest cost and the highest cost from the range of costs and the following equation.

$$5 \times [(\text{Lowest Cost}) / (\text{Cost}) + (\text{Highest Cost} - \text{Cost}) / (\text{Highest Cost})]$$

For example, if a number of alternatives were compared having costs of $500,000, $1,000,000 and $2,000,000, the above equation would provide scores of 8.8, 5.0, and 1.3, respectively. The

utilization of a formula to score the 20-year life cycle costs in the matrix eliminates any subjectivity and provides a consistent, relative comparison of costs.

6.2.2 Operational and Maintenance Considerations

Operation and maintenance are an important issue when considering any large capital improvements within a small community. The costs for O&M associated with the alternatives is included in the 20-year life cycle costs compared under the financial feasibility, but there are other considerations that must be weighed for the O&M associated with each alternative.

The Town has limited resources and workforce, and some alternatives may have O&M requirements that drastically tax those limited resources creating deficiencies in other areas. Town personnel also have much more intrinsic knowledge of the system than the average resident or even Council members. Priorities identified by the operators to facilitate the efficient operation of the system must be given some weight.

This criterion will be provided with a weighting factor of 8.

6.2.3 Permitting Issues

Some alternatives may encounter permitting issues that would significantly delay the project and/or result in additional expenses for the community. Consideration for these concerns will be given under this criterion.

This criterion will be provided with a weighting factor of 6.

6.2.4 Social Impacts

Social impacts will be considered in the final alternative selection as a project poorly supported by the community will have a limited chance of success. Efforts such as public hearings are ways to identify public opinion and perceptions. Costs are always a concern with consumers, but the health and safety of their families is just as important.

This criterion will be provided with a weighting factor of 6.

6.2.5 Environmental Impacts

Environmental impacts for each alternative, whether detrimental or beneficial, need to be considered in the final selection of a preferred alternative.

This criterion will be provided with a weighting factor of 6.

6.2.6 Land Acquisition

Issues with land acquisition often supersede the black-and-white world of engineering. This ranking category will include the feasibility of acquiring sufficient land in terms of lease, right-of-way, and/or land purchases. Although these are not strict engineering issues, problems with land acquisition can greatly impact a project's overall feasibility and require that land issues be given a very serious consideration.

This criterion will be provided with a weighting factor of 8.

6.3 Scoring of Treatment Alternatives

This section evaluates the treatment alternative ranking criteria in more detail and assigns scoring with a brief explanation.

6.3.1 Life Cycle Costs

The 20-Year Present Worth and weighted score for Lift Cycle Costs for the four treatment alternatives are presented below. These are done using the equation listed in Section 6.2.1.

- T-1: Reconstruct Lagoons with UV Treatment – 1.9
- T-2: Total Retention System – 1.3
- T-3: Minor Lagoon Upgrades with Irrigation – 7.1
- T-4: Minor Lagoon Upgrades with UV Treatment – 5.2
- T-5: Minor Lagoon Upgrades Only – 8.6
- T-6: UV Treatment Only – 8.7

6.3.2 Operational and Maintenance Considerations

Operations and maintenance consideration ranking factors the extent of new training required for a new system, routine maintenance and attention for material replacements required, testing and analysis, and familiarity with the alternative methods. The assigned scores with these factors are presented below:

- T-1: Reconstruct Lagoons with UV Treatment - 3
- T-2: Total Retention System - 9
- T-3: Minor Lagoon Upgrades with Irrigation - 4
- T-4: Minor Lagoon Upgrades with UV Treatment – 3
- T-5: Minor Lagoon Upgrades Only – 8
- T-6: UV Treatment Only – 3

A total retention system is the least O&M intensive method as discharge permit conditions and monitoring reports are not required, and by far requires the least attention of all the options. The irrigation alternative is scored only slightly higher than the UV treatment options. While irrigation methods would be more familiar with the operators, irrigation methods complying with DEQ standard require extra time adhering to the irrigation management plan, moving equipment, and coordinating with landowners. Minor upgrades to the lagoon is ranked less than total retention as discharge permit adherence is still required.

6.3.3 Permitting Issues

The scoring for permitting issues is shown below. This scoring is in consideration with both the design and construction phase of each potential project. Also considered with the ranking of each option is how each alternative may need to comply with permitting conditions for long term operation. The fully reconstructed lagoon options are also given a lesser score as permitting as new FEMA maps are not anticipated until 2025-2026 timeframe. Minor lagoon upgrades are given a slightly lower score than the options with UV as a UV system is assumed to meet E. coli limits more readily.

- T-1: Reconstruct Lagoons with UV Treatment - 4

- T-2: Total Retention System - 3
- T-3: Minor Lagoon Upgrades with Irrigation - 4
- T-4: Minor Lagoon Upgrades with UV Treatment – 5
- T-5: Minor Lagoon Upgrades Only – 4
- T-6: UV Treatment Only – 5

The alternatives with UV treatment are scored equally as the design and implementation is similar. The total retention option would be able to adhere to discharge permitting as one is not required unless there needs to be an emergency discharge. However, flood plain permitting for a new cell can be very cumbersome and time consuming with the latest requirements. The irrigation system nutrient management and irrigation plan would require DEQ approval.

6.3.4 Social Impacts

Social impacts consider the input of the Town and the acquired public perceptions for each alternative. Minor upgrades receive higher scores as the Town does not see the need to complete a costly major upgrade project on the lagoon system if not needed at this time nor this the Town under enforcement. The minor lagoon upgrades only, is assigned the highest as this is the most familiar method and most economical. The Town is least familiar with UV systems and is very hesitant to take on new upgrades requiring more attention and O&M.

- T-1: Reconstruct Lagoons with UV Treatment - 3
- T-2: Total Retention System - 5
- T-3: Minor Lagoon Upgrades with Irrigation - 6
- T-4: Minor Lagoon Upgrades with UV Treatment – 4
- T-5: Minor Lagoon Upgrades Only – 7
- T-6: UV Treatment Only – 4

6.3.5 Environmental Impacts

All alternatives will be able to address the permit limits for E. coli and BOD as well as dispose of the accumulated sludge. The total retention lagoon will take some agricultural lands out of service

for lagoons but will positively impact the environment by not discharging. The UV alternatives are given the highest score as these system have a track record of meeting E. coli limits.

- T-1: Reconstruct Lagoons with UV Treatment - 6
- T-2: Total Retention System - 5
- T-3: Minor Lagoon Upgrades with Irrigation - 5
- T-4: Minor Lagoon Upgrades with UV Treatment – 5
- T-5: Minor Lagoon Upgrades Only – 5
- T-6: UV Treatment Only – 6

6.3.6 Land Acquisition

The greatest impact to land will be for the construction of a new total retention lagoon and land will have to be purchased. The irrigation alternative will require the development of a long-term lease agreement. The least impact to land will be those using minor upgrades. UV system upgrades do not take up very much land to build a new building (approximately 20x30 feet at most). Reconstruction of the lagoons may require slightly more land to increase the top elevations berms, and this may cause the outside toes and lagoon footprint to slightly increase.

- T-1: Reconstruct Lagoons with UV Treatment - 5
- T-2: Total Retention System - 3
- T-3: Minor Lagoon Upgrades with Irrigation - 4
- T-4: Minor Lagoon Upgrades with UV Treatment – 6
- T-5: Minor Lagoon Upgrades Only – 7
- T-6: UV Treatment Only – 5

6.4 Decision Matrix and Selection of Preferred Alternative

Based on the evaluation and raking of each treatment alternative listed above, the preferred treatment alternative for the Town is T-5: Minor Lagoon Upgrades. This alternative will be combined with the C-2: Phase 2 Collection Improvements for a combined Phase 2 project.

Table 6-2 - Decision Matrix

Decision Matrix													
Alternative	Life Cycle Costs		Operation and Maintenance		Permitting		Social Impacts		Environmental Impacts		Land Acquisition		TOTAL
	Weight:	10	Weight:	8	Weight:	6	Weight:	6	Weight:	6	Weight:	8	
	Score	Wtd.	Score	Wtd.	Score	Wtd.	Score	Wtd.	Score	Wtd.	Score	Wtd.	
Storage Alternatives													
T-1	1.9	19	3.0	24	4.0	24	3.0	18	6.0	36	6.0	40	161
T-2	1.3	13	9.0	72	3.0	18	5.0	30	5.0	30	3.0	24	187
T-3	7.1	71	4.0	32	4.0	24	6.0	36	5.0	30	4.0	32	237
T-4	5.2	52	3.0	24	5.0	30	4.0	24	5.0	30	6.0	48	216
T-5	8.6	86	8.0	64	4.0	24	7.0	42	5.0	30	7.0	56	302
T-6	8.7	87	3.0	24	5.0	30	4.0	24	6.0	36	5.0	40	241

Table 6-3 shows the project priority list based on a comprehensive review of the Town's entire collection system, treatment options and costs, and input from the Town. Collection system improvements resulting in a reduction in I&I take the highest priority and provide the greatest health and safety benefits to the Town.

Major treatment system improvements are a significant capital cost and will only be considered after improvements to the collection system are completed. Major upgrades are better to be considered after evaluation of the current treatment upgrades and after the FEMA flood plain mapping has been completed. The treatment alternatives listed in priority numbers 7 through 11 (T-4, T-6, T-1, T-2, and T-3) are stand-alone treatment alternatives that are shown for comparison. Priority 1 and 2 (C-2 and LS-2) are included in the Phase 1 project that is ARPA funded. Priority 3 and 4 (C-3 and T-5) are included in the Phase 2 project and part of the state and federal grant applications in 2022 for a total project cost of $1,662,000.

Table 6-3 - Project Priority List

Project Priority List		
Priority	Alternative	Total Project Cost
1	C-1: Phase 1 – Collection System Improvements	$332,000
2	LS-2: Lift Station Improvements	$768,000
3	C-2: Phase 2 – Collection System Improvements	$982,000
4	T-5: Minor Lagoon Upgrades Only	$713,000
5	C-3: Phase 3 Collection System Improvements (7,500 feet of pipe replacement, 2026 dollars)	$2,953,000
5A	C-3A: Phase 3A Collection System Improvements (scaled down Phase 3 – North of Tracks – 5,000 feet of pipe replacement, 2026 dollars)	$2,137,000
5B	C-3B: Phase 3B Collection System Improvements (scaled down Phase 3 – South of Tracks - 2,500 feet of pipe replacement, 2026 dollars)	$964,000
6	C4: Phase 4 Collection System Improvements	$1,159,000
7	T-4: Minor Lagoon Upgrades with UV Treatment (Not done if T-5 is done)	$1,345,000
8	T:6: UV Treatment System Only (If necessary, following T-5)	$716,000
9	T-1: Reconstruct Lagoons with UV System (stand-alone project)	$2,604,600
10	T-2: Total Retention System (stan- alone project)	$2,979,000
11	T-3: Minor Lagoon Upgrades with Effluent Irrigation (stand-alone project)	$929,000

7.0 PROPOSED PROJECT

This section will provide a detailed description of the preferred alternatives including preliminary project design, project schedule, permit requirements, sustainability considerations, a cost estimate, and an annual operating budget.

7.1 Preliminary Project Design

The overall proposed project will be completed in phases to maximize available funding The project generally includes the following scope of work:

- Phase 1 Improvements (Completed with ARPA Funding)
  - New Submersible Packaged Lift Station
  - Phase 1 Collection System Improvements as shown on the project phasing plan on Figure 5-1.

- Phase 2 Improvements (State and Federal Grant Applications in 2022)
  - Remove and dispose sludge within both lagoon cells
  - Replace the influent splitter structure
  - Placement embankments fill and rip rap protection on the lagoon north berms
  - Phase 2 Collection System Improvements as shown on the project phasing plan on Figure 5-1.

7.1.1 Collection System

The individual pipeline sections each have slightly differing surface conditions and sewer service considerations. Due to the condition of the existing clay mains and for budgetary purposes, the collection improvements all assume full open cut replacement of the pipes. During the design phase of the project with the completion of topographic survey information, the evaluation of potential locations for the use of CIPP lining methods will be conducted.

The Phase 1 collection main improvement work includes up to 1,000 feet of sewer main replacement. The Phase 1 collection improvements are in the alley between Vagg Street and US 2, from MT 243 to Nelson Street as shown on the project phasing plan.

Phase 2 collection system improvements include the replacement and installation of up to 1,300 feet of pipe and manholes from the lift station and north across the highway and railroad crossings to the alley between Vagg Street and US 2, and installation of new sewer piping in the alley from 1st Street to Nelson Street This phase also includes the abandonment of the existing pipe located

within the edge of US 2 (Taylor Street) and shifting the collection pipe segment to the alley north of US 2. Two services will need to be relocated to the alley. The location of the services will be verified during the design phase. This phase includes the trenchless (bore and jack) replacement of collection pipe extending under US 2 and the BNSF Railroad.

7.1.2 Pumping Stations

This project includes upgrading the existing Town lift station with an above-ground valve enclosure, and new reliable controls with alarm notification. The new lift station pumps will be sized to meet and exceed the peak flow conditions. This alternative includes implementing a temporary sewer bypass system during the construction that includes installing a temporary pumping system from the nearby manhole to a temporary connection at the existing force main. The new lift station permanent discharge piping will be reconnected to the existing 8-inch PVC force main.

The project includes installing a complete package lift station assembly with new submersible pumps, controls, cellular and internet SCADA system. The installation includes electrical work to replace the outdated panels as well as a manual transfer switch (MTS) connection to the Town's existing emergency backup generator. For security, the lift station, generator, and controls will be completely fenced with chain link security fencing and include necessary site work, gravel access entrance and parking surfacing for efficient operation and maintenance of the station.

7.1.3 Treatment

This work at the treatment site will include sludge removal and completing minor upgrades and repairs to the lagoon structures and piping. The influent splitter and valve structure will be replaced with new plug valves and a new concrete vault to allow for the proper series operation of the lagoon for optimal treatment and detention time. This alternative would also include minor earthwork operations to build up the existing eroded internal lagoon slopes. Rip rap protection, where missing, would be placed to prevent further degradation and protection from wind and wave action of the internal slopes.

Between phases 1 and 2, up to 2,300 feet of collection system improvements will be completed. Given the degraded condition of the collection system and current high I&I flows, a higher priority will be given to collection system improvements over major lagoon or treatment upgrades. The removal of sludge and replacement of the broken influent splitter structure will improve treatment

performance. Focusing on collection system improvements will also reduce the influent flows which will increase detention times in the existing lagoon system. The Town currently only discharges one or two times per year and inducing even lesser influent flows will give the Town more flexibility to hold the treated lagoon water, perform pre-discharge sampling and testing (BOD, TSS, E. coli), and then discharge at times when it is assured that effluent limits can be met for E. coli, BOD and TSS.

Sludge removal and disposal will be completed in accordance with EPA 503 requirements. Lagoon upgrades will be completed in conformance to Circular DEQ-2 Chapter 90 - Biological Treatment Section 93 – Wastewater Treatment Ponds, where applicable to the proposed scope of work.

7.2 Project Schedule

The project schedule is heavily dependent on the funding strategy and the anticipated timing for the notification of applicable grant and loan awards. Also, the Phase 1 and Phase 2 projects will follow separate schedule tracks. Phase 1, being entirely funded with ARPA funding is anticipated to start design in the summer of 2022 following startup of the ARPA competitive grant. Construction of the Phase 1 project is planned to be completed in 2023. In general, the Phase 2 project would start design in the late summer of 2023 for anticipated construction in 2024.

The implementation Schedule in Chapter 8 presents a more detailed breakdown of milestone dates. This schedule assumes more specific dates for the grant application submittals and anticipated approval of all required agency documents, the advertisement for bids, loan closing, contract award, initiation of construction, substantial completion, final completion, and system startups.

The proposed funding package for the Town would use MCEP, DNRC and CDBG grant funds along with an RD grant and loan or SRF with potential loan forgiveness for a funding package. Construction grant applications for MCEP and DNRC are due in May of 2022. The ranking of the applications for MCEP and DNRC are expected to be published near the end of 2022, with award notices made available in June of 2023. The RD applications and funds are available on an open cycle and do not have a strict deadline. However, it is recommended that the applications be submitted immediately following the MCEP and DNRC applications.

The CDBG program application deadlines vary from year to year. The program considers the applicant's readiness to implement the project if awarded CDBG funds, including the firm commitment of all non-CDBG funds and resources within 9-months of the grant award. The Town will need documented firm commitments for assistance from other local, state or federal funding sources within 9-months of the award date but may apply without commitment. The program desires to see that the project is “shovel ready” and can be completed in a timely manner and that other funding sources are viable. As such, the Town will plan on applying for a CDBG grant in the Fall of 2022, if the applications are being accepted at this time.

7.3 Permit Requirements

In addition to DEQ approvals needed for the project, permits would need to be secured from the following:

- MDT Encroachment Permit. This permit application would be completed for the Town during the design phase of the project. The permit is needed to bore and jack the new 8-inch collection main and steel casing under HWY-2. MDT does not charge a fee for this permit, but it does take the engineer time to prepare and execute the permit conditions within the construction contract documents.

- Railroad Authority Encroach Permit. The railroad that runs through Town is operated by BNSF. A representative from the railroad company confirmed that permitting for work on or near BNSF property is processed through their property management group, Jones Lang LaSalle. The contact information for each respective location is listed their contact webpage, https://www.bnsf.com/in-the-community/jll-contacts.html Given the likely long lead time to obtain approval, this permit application would be completed for the Town during the early design phase of the project. (See Appendix B)

- Montana Storm Water Discharge Associated with Construction Activity Permit - Storm Water Pollution Prevention Plan (SWPPP). The project would require the completion of SWPPP due to its size above 1-acre to reduce pollutants in storm water discharges from the construction site. This permit is completed with the Montana DEQ. The permit would be completed with the construction phase of the project by the Contractor as specified in the contract documents.

- While a permit is not required for work in and around potential petroleum contaminated site near know LUST sites, The DEQ Petroleum Tank Section of the Contaminated Site Cleanup Bureau should be notified of the pending project and locations. Special provisions will need to be provided in the Contract specifications to provide guidance to the contractor for what steps to take in the event that the soils are encountered.

7.4 Sustainability Considerations

The replacement of the aging existing wastewater collection and treatment system is a sustainable utility management practice that increases the resiliency of the wastewater utility. The hydraulic loading on the treatment system will be reduced when a system reduces I&I into the system. Risks of sewer overflows and the chances of exposure to raw sewage is reduced. The treatment capacity is improved with the reduction of over 2.5 million gallons of in-situ sludge within the existing lagoon.

The improvements present environmental, social, and economic benefits for the residents by improving ground water and surface water quality, reducing public health and safety risks associated with exposure to untreated wastewater, and providing a utility that can more efficiently accept growth in the Community. The improvement also provides more confidence for the Town users with a more dependable sewer system.

7.4.1 Water and Energy Efficiency

The collection system that replaces the old clay lines would be watertight and would reduce infiltration and inflow. Lift station pumping efficiency would result from the installation of new state of the art pumps that will use lesser horsepower and would use variable frequency drive (VFDs) to operate at the most efficient duty points.

Gravity collection systems do not require energy, yet lessened flows from I&I to the lift station will result in less pump run time hours and cost savings.

7.4.2 Green Infrastructure

Stormwater management during the project is expected to be minimal but may include temporary erosion and sediment control measures including the installation and maintenance of temporary structural control measures to reduce or eliminate the erosion of soils and transport of sediment offsite because of construction activities.

Over 2.5 million gallons of accumulated sludge will be removed, dewatered, and legally disposed of using EPA 503 requirements. The biosolids will be beneficially reused to aid nearby crop lands.

7.5 Total Project Cost Estimate

Table 7-1 presents the total combined project cost for the preferred alternative. Detailed itemized unit costs can be seen in the referenced Tables.

Table 7-1 - Opinion of Probable Cost Summary for Combined Alternatives C-2 and T-5

Combined Alternatives: C-2, T-3 Opinion of Probable Cost			
#	Bid Item	Source	Total
1	Alternative C-2: Phase 2 Collection System Improvements	Table 5-2	$487,000
2	Alternative T-5: Minor Lagoon Upgrades	Table 5-15	$349,000
	Direct Construction Subtotal		$836,000
	Mobilization	10%	$84,000
	Traffic Control	1%	$5,000
	Construction Subtotal		$925,000
	2024 Construction Cost	8.00%	$1,079,000
	Contingency	20.00%	$216,000
	Sludge Management Plan		$15,000
	MDT & Railroad Permitting		$20,000
	Engineering Basic Services		$190,000
	RPR		$70,000
	Professional Services Grant Admin		$65,000
	Legal & Administrative		$40,000
	TOTAL		$1,695,000

7.6 Annual Operating Budget

Table 7-2 presents the District's estimated annual operating budget accounting for any additional costs included with the proposed project. The expenses on the summary are derived from the average of the last three years of expenses, as shown previously on Table 3-10 and would account for increases in costs including supplies and recent personnel raises. The Town will need to take a careful look at the budget and consider additional reserve amounts given the critical condition of the sewer collection system. The revenues assume a new sewer rate of at least 29.84/mo. per user.

Table 7-2 - Estimated Annual Wastewater Operating Budget

Wastewater System Proposed Annual Operating Budget	
Revenues	Amount Budgeted
Estimated Revenues (at new sewer rate of $29.48/mo. x 144 EDU/mo.) (1)	$62,200
Total Revenues	$50,600
Expenses	Amount Budgeted
Estimated New Loan Payments (Projected Annual Loan Pmt. + Loan Coverage)	$10,600
Existing Debt Payments	-
Personnel Services	$20,000
Purchased Services	$6,100
Supplies	$ 10,100
Additional Monitoring and Testing	$ 2,000
Reserve	$ 1,800
Total Expenses	$50,600

Note:
1)The proposed funding package shows a need to increase sewer rates about $4.00 to 5.00 to service a new loan and to be above the DOC target rate.
2) Expenses are based on the average for the last three year of financial data (from Table 3-10) and account for increases in supply costs and recent income adjustments to Town staff.

Income

Currently, the Town residential sewer base rate is $25 per customer per month. The monthly rate is the primary source of income for funding the wastewater system operation. With the proposed funding strategy, and to be eligible for the grant and loan programs listed above, the combined water and sewer rate after completion of the wastewater improvements project herein is estimated to be at least $84.28 per month per equivalent dwelling unit (EDU) which would require at least a $4.00 to $5.00 per month rate increase. This resulting combined sewer and water rate is approximately 103.5% of the combined system target rate of $81.46 as determined by the Montana Department of Commerce. The Town may also need to increase rates as recommended to account for increasing costs and provide additional reserves for repairs.

Annual O&M Costs

The overall collection system O&M expenses will not increase with new PVC mains and manholes installed as the Town may have less frequencies of clog and repair responses.

The latest existing operating budget averages in the range of $40,000 for expenses and the Town is seeing recent increases for the cost of supplies and services and for payroll. There are currently no outstanding loans with the sewer system.

The overall collection system O&M expenses will likely be reduced with new PVC mains and manholes installed.

Capital Improvements

The Town's involved in planning and has pursued improvements to better the quality of life. The Town completed a "mini–Capital Improvements Plan" (CIP) in 2004. However, the Town is due for an updated CIP which been discussed with the Town and is under consideration for upcoming planning grant cycles. The completion of this PER is a useful planning tool that will guide the Town for current and future wastewater upgrades.

7.6.1 Debt Repayments

The Town does not presently have any outstanding debt on the sewer system. However, upgrades to the system are critically important and low interest loans are being sought to make the necessary infrastructure investments.

The proposed funding scenario for this project assumes a $258,000, 40-year term loan through the Rural Development. The Town's current MHI makes the system eligible for an intermediate rate loan. The intermediate level loan interest rate at the time of this study is 2.0%. The estimated annual debt service for this loan is $9,600. The proposed funding package is discussed further in Chapter 8 and includes a combination of grants with the RD funds. An SRF loan with a 2.5% interest rate and potential combination with an SRF loan principal forgiveness is also considered for the project funding alternatives.

7.6.2 Reserves

Debt Service Reserve

The recommended funding scenarios would likely include low-interest loans from the USDA Rural Development (RD) program or the Montana State Revolving Fund (SRF) program. Both RD and SRF requires a 10% reserve be maintained on loan funds.

Short-Lived Asset Reserve

The pipe replacement and minor lagoon upgrade project will not require short lived asset reserves.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 Funding

8.1.1 Funding Sources

The following sections provide a brief description of the potential funding sources and whether or not the Town of Saco would be eligible for those funds.

Montana Coal Endowment Program (MCEP)

MCEP is a state funded grant program, which is administered by the Montana Department of Commerce (MDOC). MCEP provides financial assistance to local governments for infrastructure improvements. Grants can be obtained from MCEP for up to $500,000 if the projected user rates are between 100% and 125% of the target rate, for up to $625,000 if projected user rates are between 125% and 150% of the target rate, and for up to $750,000 if the projected user rates are over 150% of the target rate. MCEP grant recipients are required to match the grant dollar for dollar, but the match may come from a variety of sources including other grants, loans, or cash contributions. The purpose of the program is on improvements that impact public health and safety.

The Town nearly meets 100% of target rate with its current rates yet would exceed the target rate at the completion of the project. The scope of the proposed project and funding scenarios would make the Town eligible for to apply for a $500,000 grant under the preferred funding scenario.

Renewable Resource Grant and Loan Program (RRGL)

RRGL is a state program that is funded through interest accrues on the Resource Indemnity Trust Fund and the sale or Coal Severance Tax Bonds and is administered by the Montana Department of Natural Resources and Conservation (DNRC). The primary purpose of the RRGL is to enhance Montana's renewable resources. For public facilities projects that conserve, manage, develop, or protect renewable resources, grants of up $125,000 are available.

The proposed project would provide a natural resource benefit and is eligible to apply for an RRGL grant.

Community Development Block Grant (CDBG)

CDBG is a federally funded program that is also administered by the Montana Department of Commerce (MDOC). The primary purpose of CDBG funds is to benefit low to moderate income (LMI) families. Hence, a municipality must have an LMI of 51% or greater. This is usually determined by the current Census. However, under certain circumstances, the MDOC may allow an income survey to be completed (such as there have been major economic changes since the Census or if a community is only slightly under the required LMI percentage).

The CDBG grant funds can be applied for in an amount of up to $600,000 with a limit of $20,000 per LMI household, so a community needs 30 LMI households to apply for the maximum grant funds. The use of CDBG funds requires a 25% local match that can be provided through cash funds, loans, or a combination thereof.

The Town has a documented LMI of 55% and is eligible to apply for a CDBG grant.

State Revolving Fund (SRF)

SRF provides low-interest loan funds for both water and wastewater projects through the Drinking Water State Revolving Fund (DWSRF) and the Water Pollution Control State Revolving Fund (WPCSRF), respectively. The SRF program is administered by the Montana Department of Environmental Quality. Current loan terms include an interest rate of 2.5% for a 20-year period.

The SRF program has also provided grants referred to as “loan principal forgiveness” on some projects in the last couple of years. The amount of loan forgiveness varies year-to-year and may not be granted depending on the availability of funds. The amount of forgiveness is also based on the financial need of the community determined by SRF. Past WPCSRF funded projects have received a 25% or more loan forgiveness up to $400,000 and will be included possible funding options. All projects planning to use SRF funds must be on the SRF Intended Use Plan (IUP). To get a project on the IUP, an SRF priority list survey form must be submitted.

The SRF program was contracted about the proposed project and funding to confirm that Town would be eligible for an SRF loan and some principal forgiveness. According to Anna Miller, the program is waiting to hear from EPA on the final numbers for loan forgiveness. (Appendix V) The project funding scenarios consider an SRF loan with and without 25% loan forgiveness.

USDA Rural Development (RD)

RD provides grant and loan funding to municipalities for water and wastewater projects that improve the quality of life and promote economic development in Rural America. Municipalities with a population of less than 10,000 are eligible to apply, though; priority is given to those with a population of less than 5,500.

Grant eligibility and loan interest rates are based on the community's median household income (MHI) and user rates. If the area to be served has a MHI of $38,205 or lower and the project is necessary to alleviate a health and/or sanitation concern, up to 75% of the project costs are grant eligible along with a poverty interest rate. Up to 45% of the project costs are grant eligible if the planning area has an MHI between $38,205 and $47,757 along with an intermediate rate. The loan rates at the time of this study are 1.5% for poverty rate, 2.0% for intermediate rate, and 2.5% for market rate.

The Town has a MHI of $42,500 and qualifies for the intermediate rate and is also eligible to receive grant funding. The RD funding option will assume 45% RD grants with the understanding that the final grant given could be higher given the health and safety needs of the project. According to Craig Carlson with RD, "It should be easy to document the health and safety issues for Saco. With the new MHI data set (October 1st) and the health and safety violations, Saco would be eligible for up to a 75 percent grant and a poverty interest rate."

Also note that RD may also require a local match for proposed new projects. The following formula was provided by RD to determine if and how much of a local match is required:

- Cash – Current Liabilities – 90 days O&M – Fund Restricted = Local Cash to Project

The Town of Saco has very limited sewer fund cash on hand and a local match is not determined at this time.

Montana Coal Board

The Coal Board provides grant funding to municipalities to adequately provide for the expansion of public services or facilities needed as a direct consequence of coal development activities. There is no maximum limit to the amount the Coal Board can fund, but available funding is very limited so it can be difficult to receive any funds from the Coal Board, especially large sums.

The Town is not within the region the Coal Board identifies as impacted by the coal industry and cannot associate an impact due to coal development with the proposed project, thus a Coal Board grant will not be pursued.

Economic Development Administration (EDA)

EDA provides grant funding for projects that are demonstrated to be needed for the placement of a new business. The amount of grant is dependent on the number of jobs created.

The proposed project would not create a large number of jobs; thus, an EDA grant will not be pursued.

INTERCAP

INTERCAP provides loan funds at a low cost, variable interest rate to local governments. INTERCAP is administered by the Montana Board of Investments and is very flexible in the variety of funding which would include both water and wastewater projects. There is no funding cycle (funds are always available), however, the maximum loan term is 10 years.

Due to the relatively large amount of financing required, an INTERCAP loan with the shorter loan term would cause extremely high user rates for the residents and is not recommended for long-term financing. It is possible that during construction an INTERCAP loan would be used as short-term financing prior to closing of an RD or State Revolving Fund Loan.

American Rescue Plan Act (ARPA)

The American Rescue Plan Act (ARPA) is a new program in 2021. It was passed by Congress and signed into law in March of 2021 (PUB. L. NO 117-2 SEC 602 (c)(1)(d)). The act was primarily focused on covid-19 relief for communities. As part of the ARPA funding package, the federal government allotted funds to be used for eligible water and wastewater improvements as considered critical infrastructure. The act allowed for each individual state to determine how the funds for each state were to be distributed. The American Rescue Plan Act of 2021 provides state and local aid to make necessary investments in water and sewer infrastructure. The 67th Montana Legislature passed HOUSE BILL 632 which directed the federal funds available under the American Rescue Plan Act for use in Montana. Section 1 – Section 5 address how the federal funds will be distributed to necessary water and sewer infrastructure projects. House Bill 632 created the Infrastructure Advisory Commission which oversees spending on water and sewer

infrastructure projects along with the Governor of Montana. Funds were directed to Counties and Cities in Montana for the use of water and sewer infrastructure with direct treasury funds and minimum allocation (non-competitive grants). There is also a competitive grant option.

ARPA funding was made available to Montana communities through March 11, 2021, American Rescue Act (H.R. 1319). The act provided assistance to Montana communities in three different ways:

1) ARPA Local Fiscal Recovery Funds (LFR) – The act provided direct assistance from Treasury to towns, cities, and counties. Direct assistance was given to local governments in two tranches. The first tranche became available in June 2021, and the second will be available in June 2022. The funds can be used for various purposes, including water and sewer infrastructure.
2) ARPA Minimum Allocation Grants (MAG) – The act appropriated $463 million to the State of Montana. The State of Montana, through House Bill 632, allocated $150 million of the appropriation to towns, cities, districts, and counties through the Minimum Allocation grant process that was developed in Montana's 2021 legislative session through House Bill 632. Minimum Allocation Grants can be used for water and sewer infrastructure and must be committed by January 1, 2023. A commitment of funds requires local governments to have all matching funds for the proposed project in place by January 1, 2023.
3) ARPA Competitive Grants – Montana House Bill 632 allocated $315 million to towns, cities, districts, and counties through a competitive grant process. The grants could be used for water and sewer infrastructure projects providing a necessary investment in water or sewer infrastructure as defined by the American Rescue Plan Act. The first round of applications for competitive grants was due July 2021, and the second round of applications was due January 14, 2022.

The Town has dedicated nearly all its Local Fiscal Recovery Funds to the Phase 1 project identified in the wastewater system PER and all the Minimum Allocation Grant funds. The Town has applied for and received a competitive grant from the first round of competitive grant funding that was awarded in October of 2021 for Phase 1. (Appendix A)

There has been discussion with DNRC that a competitive round three grant might occur. The Town is not basing its funding package on a competitive round three option as there is no

indication that it will occur. If a competitive round three grant option occurs, the Town will consider applying for additional funding.

8.1.2 Funding Strategy

Consideration of various combinations of the above funding strategy is depicted in Table 8-1, along with the resulting impacts user rates. Work sessions with the Town Council indicate that the community is most interested in the most feasible alternative that provides the least impact to user rates.

In Summary, the Town's preferred funding package and recommended by this PER is Scenario #2, which includes:

- $500,000 MCEP Grant
- $125,000 DNRC Grant
- $600,000 CDBG Grant
- $212,000 RD Grant
- $258,000 RD Loan

Using the preferred Scenario #2 as a basis, a detailed project budget is presented in Table 8-2, which provides a breakdown of each of the line item costs by funding source

Table 8-1 - Funding Scenarios Considered

Funding Options for Town Of Saco Phase 2 Wastewater Project				
ITEM	SCENARIO #1 MCEP, RRGL, CDBG, RD Loan (40-yrs, 2%[4])	SCENARIO #2 MCEP, RRGL, CDBG, RD Loan (40-yrs, 2%[4]), RD Grant	SCENARIO #3 MCEP, RRGL, CDBG, SRF Loan (20-yrs, 2.5%)	SCENARIO #4 MCEP, RRGL, CDBG, SRF Loan (20-yrs, 2.5%), SRF Forgiveness (25%)
C-3: Phase 2 Collection System Improvements	$982,000	$982,000	$982,000	$982,000
T-5: Minor Lagoon Upgrades Only	$713,000	$713,000	$713,000	$713,000
Rounded Total	$1,695,000	$1,695,000	$1,695,000	$1,695,000
DNRC Grant	$125,000	$125,000	$125,000	$125,000
MCEP Grant	$500,000	$500,000	$500,000	$500,000
RD Grant/SRF Forgiveness		$212,000		$118,000
CDBG Grant	$600,000	$600,000	$600,000	$600,000
RD Loan /SRF Loan	$470,000	$258,000	$470,000	$252,000
Total Project Funds	$1,695,000	$1,695,000	$1,695,000	$1,695,000
SRF Bond Reserve (1/2-year payment)			$15,087	$11,299
RD - Interim Interest (loans > $500,000, check rate with RD Staff)	$21,000	$12,500		
Total Loan Amount	$491,000	$270,500	$485,087	$363,299
Annual Loan Payment	$17,480	$9,630	$31,150	$17,370
Total Loan Payments Over Life of Loan	$699,200	$385,200	$623,000	$521,100
Total Interest Paid Over Life of Loan	$208,200	$114,700	$137,913	$157,801
Annual Loan Coverage	$1,748	$963	$3,115	$1,737
TOTAL ANNUAL CAPITAL DEBT SERVICE COST	$19,428	$10,593	$34,265	$19,107
User Capital Cost/Month[2]	*$11.13*	*$6.13*	*$19.83*	*$11.06*
Current Annual O&M [1]	$40,000	$40,000	$40,000	$40,000
Current Annual Debt Service[1]				
Additional O&M Due To Project				
TOTAL ANNUAL O&M COSTS	$40,000	$40,000	$40,000	$40,000
User O&M Cost/Month[2]	*$23.15*	*$23.15*	*$42.98*	*$23.15*
USER COST/MONTH[2]	$34.28	$29.28	$31.04	$34.21
Existing Average User Cost/Month/EDU	$25.00	$25.00	$25.00	$25.00
COST/MONTH INCREASE/EDU	$9.28	$4.28	$17.98	$9.21
Existing Other System Cost/Month	$55.00	$55.00	$55.00	$55.00
Total Proposed Water & Sewer Cost/Month	$89.28	$84.28	$97.98	$89.21
Combined Systems Target Rate[3]	$81.46	$81.46	$81.46	$81.46
PERCENT OF COMBINED TARGET RATE	109.6%	103.5%	105.6%	109.5%

[1] Based on 2021 budget presented in the Expenditure Budget Report.

[2] Based on 144 EDUs

[3] https://comdev.mt.gov/Resources/Target-Rate

[4] https://www.rd.usda.gov/programs-services/water-environmental-programs/water-waste-disposal-loan-grant-program/mt

Table 8-2 - Detailed Project Budget

Completed by: Great West Engineering	Town of Saco Wastewater System Improvements					5/7/2022
ADMINISTRATIVE/FINANCIAL COSTS	Source: MCEP Grant	Source: CDBG Grant	Source: DNRC Grant	Source: RD Grant	Source: RD Loan	Total
Personnel Costs	$ 2,000.00	$ -	$ -	$ -	$ -	$ 2,000.00
Office Costs	$ 1,000.00	$ -	$ -	$ -	$ -	$ 1,000.00
Grant & Loan Administration Services	$ 16,500.00	$ 16,500.00	$ -	$ -	$ 32,000.00	$ 65,000.00
Legal Costs	$ 1,500.00	$ -	$ -	$ -	$ -	$ 1,500.00
Audit Fees	$ -	$ -	$ -	$ -	$ 20,000.00	$ 20,000.00
Travel & Training	$ 500.00	$ -	$ -	$ -	$ -	$ 500.00
Bond Counsel and Related Costs	$ -	$ -	$ -	$ -	$ 15,000.00	$ 15,000.00
TOTAL ADMINISTRATIVE/FINANCIAL COSTS	$ 21,500.00	$ 16,500.00	$ -	$ -	$ 67,000.00	$ 105,000.00
ACTIVITY COSTS:						
Additional Services: MDT/Railroad Permitting	$ 20,000.00	$ -	$ -	$ -	$ -	$ 20,000.00
Additional Services: Sludge Management Plan	$ 15,000.00	$ -	$ -	$ -	$ -	$ 15,000.00
Engineering Basic Services (Pre-Design, Final Design, Bid, Const Management, Post Const Management)	$ 10,000.00	$ -	$125,000.00	$ 15,000.00	$ 40,000.00	$ 190,000.00
Resident Project Representative (RPR)	$ 70,000.00	$ -	$ -	$ -	$ -	$ 70,000.00
Construction	$363,500.00	$583,500.00	$ -	$ -	$132,000.00	$1,079,000.00
Contingency	$ -	$ -	$ -	$ 197,000.00	$ 19,000.00	$ 216,000.00
TOTAL ACTIVITY COSTS	$478,500.00	$583,500.00	$ 25,000.00	$212,000.00	$191,000.00	$ 1,590,000.00
TOTAL PROJECT COSTS	$500,000.00	$600,000.00	$125,000.00	$300,000.00	$258,000.00	$ 1,695,000.00

8.2 Implementation

Before implementation of the project, all funding must be secured. As noted earlier, the proposed funding package for the Town would use MCEP, DNRC and CDBG grant funds along with an RD grant and loan package. State grant applications (DNRC and MCEP) are due in May of 2022. The ranking for the MCEP/DNRC applications is not expected to be known until the end of 2022, with funds not anticipated until June 2023. RD funds are available on an open cycle and do not have a strict deadline. An RD application will be prepared and submitted following the MCEP application in the fall of 2022. The project would apply for a CDBG grant by the end of 2022, when applications are available, following the RD application submission.

Upon securing all funding, the project start-up phase for the grant programs is expected to be about a two-month process. It is anticipated that final design and approvals would be completed by the end of 2023, and bidding could take place in early 2024. Long lead permitting, especially the BNSF railroad permit, will be to initiate early in the preliminary design phase to not delay the overall project schedule. Commencement of construction activities is anticipated to start in around May 2024. The collection system and lagoon improvements are anticipated to be completed by Fall 2024. The potential overall project implantation schedule is summarized as.

Table 8-3 - Project Implementation Schedule

Action	Date
Public Hearing on Draft PER & EA, Resolutions to Adopt EA/PER	April 13, 2022
Draft PER Complete	April 15, 2022
Complete Final PER, Resolutions to Adopt EA and PER	May 2022
Apply for DNRC Grants	May 16, 2022
Apply for MCEP Grants	June 19, 2022
Apply for RD Grants	Fall, 2022
Apply for CDBG Grants	Fall, 2022
Award of MCEP and RRGL Grants	June, 2023
Finalize Grant Financing and Budget	June, 2023
Contracting for Engineering Begin Design	June/July, 2023
Begin Design	July/August, 2023
Apply for Permits (MDT and Railroad)	August, 2023
Design Basis Report/Cost Estimates to the Town	October, 2023
Submit Design Plans and Specifications to MDEQ	November, 2023
MDEQ Review & Approval	January, 2023
Advertise and Open Bids	February, 2024
Finalize RD Loan Financing	March, 2024
Start Construction	May/June 2024
Complete Collection System and Treatment System Construction	By November 2024

9.0 REFERENCES

Montana Bureau of Mines and Geology, Montana Tech of the University of Montana, Groundwater Information Center 2021, http://mbmggwic.mtech.edu/

Montana Department of Commerce, Census and Economic Information Center, http://ceic.mt.gov/

Montana Department of Environmental Quality, *Circular DEQ 2*

Montana Natural Resources Information System, http://nris.msl.mt.gov/

National Flood Insurance Program, Federal Emergency Management Agency, Flood Map Service Center, https://msc.fema.gov/portal/home

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture, Web Soil Survey, https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

U.S. Census Bureau, Census Data, https://data.census.gov/cedsci/

U.S. Fish and Wildlife Service, National Wetlands Inventory, https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/

Miscellaneous DEQ staff correspondence (DEQ LUST Program Specialists, DEQ WPCSRF)

EPA ECHO Database, https://echo.epa.gov/

DEQ Leaking Underground Storage Tank petroleum cleanup program and database: https://deq.mt.gov/cleanupandrec/Programs/petrocleanup

H&S Environmental, LLC, Performance Evaluation for the Saco, Montana Wastewater Lagoon System, 2021

Nadene Wadsworth, Montana DNRC Floodplain Program Outreach Specialist, general correspondence

Montana DNRC, Milk River Watershed Flood Maps Update, found at: http://dnrc.mt.gov/divisions/water/operations/floodplain-management/milk

APPENDIX A

ARPA Application and Award

OFFICE OF THE GOVERNOR
STATE OF MONTANA

GREG GIANFORTE
GOVERNOR

KRISTEN JURAS
LT. GOVERNOR

October 8, 2021

Wayne Woodall
Town of Saco
PO Box 330
Saco, MT 59261

RE: Notice of ARPA Water & Sewer Grant Award

Dear Wayne Woodall:

On behalf of the State of Montana, it is my pleasure to notify you that the Town of Saco has been conditionally approved for an ARPA Water & Sewer Competitive Grant award in the amount of $1,490,530.00 and Minimum Allocation Grant award in the amount of $84,703.00 for the Town of Saco Wastewater System Improvements Project.

Montana is leading the nation in making critical water and sewer infrastructure investments, with more than 80 percent of them supporting our rural communities. Projects such as this help address the critical water and sewer infrastructure needs of our local communities, allowing them to prepare for long-term growth and take action to address immediate community needs. I appreciate the planning and dedication that your community has taken to advance this critical project, so that all Montana communities and families may thrive.

Please note that pursuant to section 28 of HB 632, if a local government awardee or any of its authorized agents have health regulations related to COVID-19 that are more strict than those imposed by the state in effect at the time a grant is awarded, the grant will be reduced by 20 percent. In your application, you were required to certify whether relevant regulations were in effect. Please update the Department of Natural Resources and Conservation (DNRC), in writing, if that has changed between the date you submitted your application and the date of this award letter.

Staff at the Montana Department of Natural Resources and Conservation (DNRC) will contact the Town of Saco directly with more information in the upcoming weeks. In the meantime, if you have any questions, please contact Erin Wall, the ARPA Program Manager at the DNRC, at (406) 444-3022 or erin.wall@mt.gov.

Sincerely,

GREG GIANFORTE
Governor

TOWN OF SACO - WASTEWATER SYSTEM

TECHNICAL MEMORANDUM

PREPARED FOR:	Town of Saco, Funding Agencies
PREPARED BY:	Matthew Mudd, PE
REVIEWED BY:	Amy Deitchler, PE
DATE:	July 12, 2021
PROJECT NUMBER:	1-14267
REVISION NO.:	1

Introduction and Background

The Town of Saco (Town) is located in the eastern portion of Phillips County, just north of Highway 2. The latest available data shows that the population of the Town is about 244. According to Town and DEQ records, the majority of the Town of Saco's wastewater system was originally constructed in the 1950s.

According to the 2015-2019 American Communities Survey data, the median household income in the Town of Saco is determined to be $42,500. The Town's water system is fully metered. Per the Town's financial records, the existing water and sewer base rates are $55 and $25, respectively, with additional water rates based on metered use.

The Town of Saco is interested in improving the wastewater system and has hired Great West Engineering to evaluate the sewer system and recommend alternatives to improve the system. The purpose of the memorandum is to provide a summary of the identified problems, a feasible alternative to remedy the problems, the estimated project cost to complete the needed upgrades, and provide a project implementation schedule. This memorandum considers a two-phased project to fully characterize, assess and improve the sewer system.

The Town of Saco understands the importance of maintaining the function and continual operation of their wastewater system. The issues experienced with the wastewater system are not a function of the Town's operational capabilities as much as the issues experienced with aging of the infrastructure.

A summary of the problems, and the potential alternatives were presented to the Town Council on July 7, 2020. The Town has moved to proceed with completion of the technical memorandum as needed to support project grant applications. The proposed project goals, objectives and effectiveness are presented in order to support an application to the American Recovery Plan Act (ARPA) competitive grant program in 2021.

Existing Conditions

The sewer system is comprised of a clay collection piping system, a primary sewage lift station with a force main to the treatment system, a 2-cell facultative lagoon treatment system, and an effluent discharge piping system. The existing lagoon consists of cell, that are about 2.4 acres each. The Town's treatment system operates under the Montana Pollutant Discharge Elimination System (MPDES) Permit No MTG580012.

According to DEQ records, the existing lagoon system was originally designed for a population of 490 and an average design flow of 67,000 gallons per day (gpd). Note that existing wastewater flows can be

determined by various methods including evaluating water usage metered sales data (in the winter months), sewer collection in-pipe flow monitoring, lift station flow meter records (if available), or lift station hour records and pump draw down tests, and also using textbook calculations for design factors. A wastewater PER will utilize all of the methods described above to determine the existing and projected flows of the sewer system. DEQ generally uses a design factor of 100 gpcd for newer systems. Older systems, and those experiencing higher infiltration and inflows (I/I), will see higher design flow factors. At this time, the approximate existing flows are roughly estimated based on the existing population of 244 and a flow factor of 120 gallons per capita per day (gpcd) to derive an estimated flow of 29,000 gpd.

DEQ inspection records show that the lagoon system is reported to have an average operating lagoon water depth of 5-feet for each lagoon. The total surface area is over 4.8 acres for the two ponds combined. The total cumulative volume capacity is over 7.5 million gallons and 4.5 million gallons assuming an allowable 2-ft of sludge. However, presently the volume of the sludge is estimated to be over 4-feet or more leaving the effective treatment capacity less than 3 million gallons. Accumulated sludge is visible from the lagoon surface on each pond.

The lagoon piping and controls valves were designed to operate the system in parallel or series mode. Currently, the control valves are not functioning, and the system is stuck in parallel operation. The valves on the force main are not operational and do not allow for sufficient operation to prevent backflow of wastewater into the dry well discharge piping during maintenance work on the pumps or valves.

Wastewater generated by the Town of Saco is centrally collected by a gravity piping system that delivers wastewater to the main lift station near the lagoons. Wastewater is pumped approximately 800-1,000 feet through the existing force main to the nearby wastewater treatment lagoons. The existing lift station is a wet well/dry well type that was constructed in the 1950's. At over 62-years in age, the lift station is operating well beyond its useful design life. The lift station is at a depth of nearly 30-feet, and access to the valves and pumps is in a confined space.

Most of the originally constructed, aging clay piping and manholes remain in place. This infrastructure is over 60-years old and has a number of deficiencies as reported by the Town's contracted sewer cleaning/ jetting company (Lakeside). This existing clay sewer piping and corroding manholes may need to be rehabilitated or replaced to extend the useful life of the system and maintain the level of service that the Town depends on. The collection system will be further evaluated in the wastewater PER.

Problem Definition

A summary of the deficiencies, as observed, and identified, are summarized in this section.

- Excessive sludge accumulation. Sludge has never been removed from the lagoons and is visible on the surface of the lagoons in both cells. The lagoon sludge needs to be removed to allow for sufficient treatment capacity and improved discharged water quality of the treatment system. There is 15,000 to 20,000 cubic yards of in-situ (wet) sludge is needed to be removed from each cell, then dewatered and legally disposed of using DEQ and EPA 503 criteria.
- Failed lagoon valves. The lagoon control valve structures have failed, and the system is stuck in parallel lagoon operation mode where raw wastewater is split into both of the cells as opposed to in-series. This operation mode, in addition to the excessive sludge, does not permit optimal treatment of the wastewater to meet the Town's discharge permit requirements. Insufficiently treated wastewater will continue to negatively impact the receiving waters and the Town will continue to receive discharge permit violations for water quality.
- Discharge Permit Violations. The lagoons are not meeting MPDES discharge permit effluent limits, and the Town regularly receives violations for TSS, BOD and E.coli when discharging. Both the Beaver Creek-Nelson South Canal (watershed 100500140704) and the downstream Milk River-Dry Stinky Creek (watershed 100500042101), as listed on (https://mywaterway.epa.gov/community), are impaired for nutrients, metals and flows. The lift station and lagoons located upstream of these watersheds are sources of contamination by raw and/or undertreated sewage. A disinfection system, such as an Ultraviolet (UV) system retrofitted to the lagoon system can achieve permit limits for E.coli. A comprehensive wastewater PER is

needed to evaluate wastewater treatment alternatives to achieve compliance with the discharge permit, increase effluent water quality, and protect the surface water bodies.

- Power to the lift station site. There is currently no permanent emergency backup power provided. The Town presently transports their temporary trailer-mounted backup generator to operate the lift station during power outages. The wet well levels can rise to sanitary sewer overflows (SSOs) levels during this time responding to the emergency. SSOs create a risk for both the general public and the operations staff to have direct contact with raw sewer.
- Corrosion and degradation of the force main. The existing force main from the lift station to the lagoons is over 60 years old and is lacking functioning isolation valves and the piping is degrading. New piping and valves are needed to convey wastewater to the lagoons. New valves are required to provide lift station isolation to prevent backflow into the dry well area to allow replacement and maintenance of the pumps and fittings. The Town's operation staff believe the force main is made of cast iron which is common for this vintage of piping and is subject to corrosion in the local soils. Cast iron is especially susceptible to H_2S corrosion. If the forcemain does not flow full all the time, there is corrosion in the line.
- Corrosion Concerns. The metal piping, fittings, and steel dry well enclosure are susceptible to corrosion from within the humid subsurface dry well space, and externally given the corrosive nature typical of the Milk River area soils. The concrete wet well is also susceptible to H_2S corrosion from within the wet well. If these conditions are left unaddressed then infiltration and ultimate failure will develop in both the wet well and dry well.
- Confined space access and operator safety concerns. The existing lift station drywell is a very small and tight space (24" entry tube with a 48" base), below-ground confined access space. Because of the small interior space, it is very difficult to operate and/or control the pumps properly or to perform routine maintenance. Moving equipment parts, entanglements, slips, and falls from the ladder are all concerns. It is also possible for toxic fumes and gasses to accumulate in the dry well. The operators are working in hazardous conditions and must ensure they always follow the confined space entry protocols. Confined space entry requires planning to arrange for repairs and maintenance coordinated with installers. It is Great West Engineering's experience that many pump repair companies will not enter these types of lift stations anymore due to the nature of the confined space risks.
- No bypass piping system. The lift station does not currently have a bypass pumping connection to be able to direct flows around the existing wet well if servicing of the existing wet well is needed. To work in the existing wet well for longer durations, the sewer needs to be "backed-up" into the existing collection system and/or a pumper truck is required to bypass the system. Both of these options are costly and have a high risk of SSO.
- Alarm System Issues. No Automated Emergency Notification. The lift station does not have a permanent emergency auto dialer call-out system to notify the owners and operators in the event of an emergency situation. The alarm relies entirely on the one nearby homeowner to call the Town when the lift station is off. This is also problematic given there is no backup power available. If a pump or power failure occurs while this resident is not home for an extended period, or if this resident moves out, then the lift station and sewer lines will fill and overflow upstream areas. The current situation of an individual homeowner reporting issues is not a reliable alarm system.
- End of useful design life. The lift station is operating beyond end of its useful life typical for lift stations. Future leaks or ruptures could result in repeated future pump failures in the dry well space.
- Capacity and inflow impacts on lift station. The Owner and operator describe the lift station as unable to keep up with flows during high rainfall and runoff events. A full PER is needed to evaluate the entire collection system, measure flows, evaluate I/I and design a sufficient size lift station pump system.

- Degrading Lagoon Operating Control Valve Structures. The concrete structures are subject to corrosion and degradation to the point of the reinforcement being exposed.
- Security Fencing not Sufficient. The lagoon and lift station sites are not surrounded by sufficient security fencing to protect the public from any safety hazards and prevent any tampering of the facility. There is no fencing around the lift station and the fencing around the lagoons is delipidated and needs to be replaced.

A photo of one of the existing lagoon system is shown in Figure 1. The accumulated sludge is visible near the slopes.

Figure 1 – Lagoon showing sludge

A photo of the existing lift station is shown in Figure 2

Figure 2 – Existing Lift Station Complex

Figure 3 – Existing lagoon structure. (Showing signs of degradation)

Figure 4 – Existing lagoon manhole structure. (Showing signs of corrosion and standing water)

Figure 5 – Existing Lagoon Operating Valve. (Valve Seized-up)

An exhibit of the overall system is shown as Figure 6. The proposed improvements are located at the lift station and lagoon sites.

Wastewater treatment systems vary in the degree of complexity and operation and maintenance requirements. Given the size of the Town of Saco and available operation resources, low maintenance facilities, at a low capital cost, are essential. Treatment alternatives in the form of lagoon upgrades will be evaluated in the PER as a Phase 2 project.

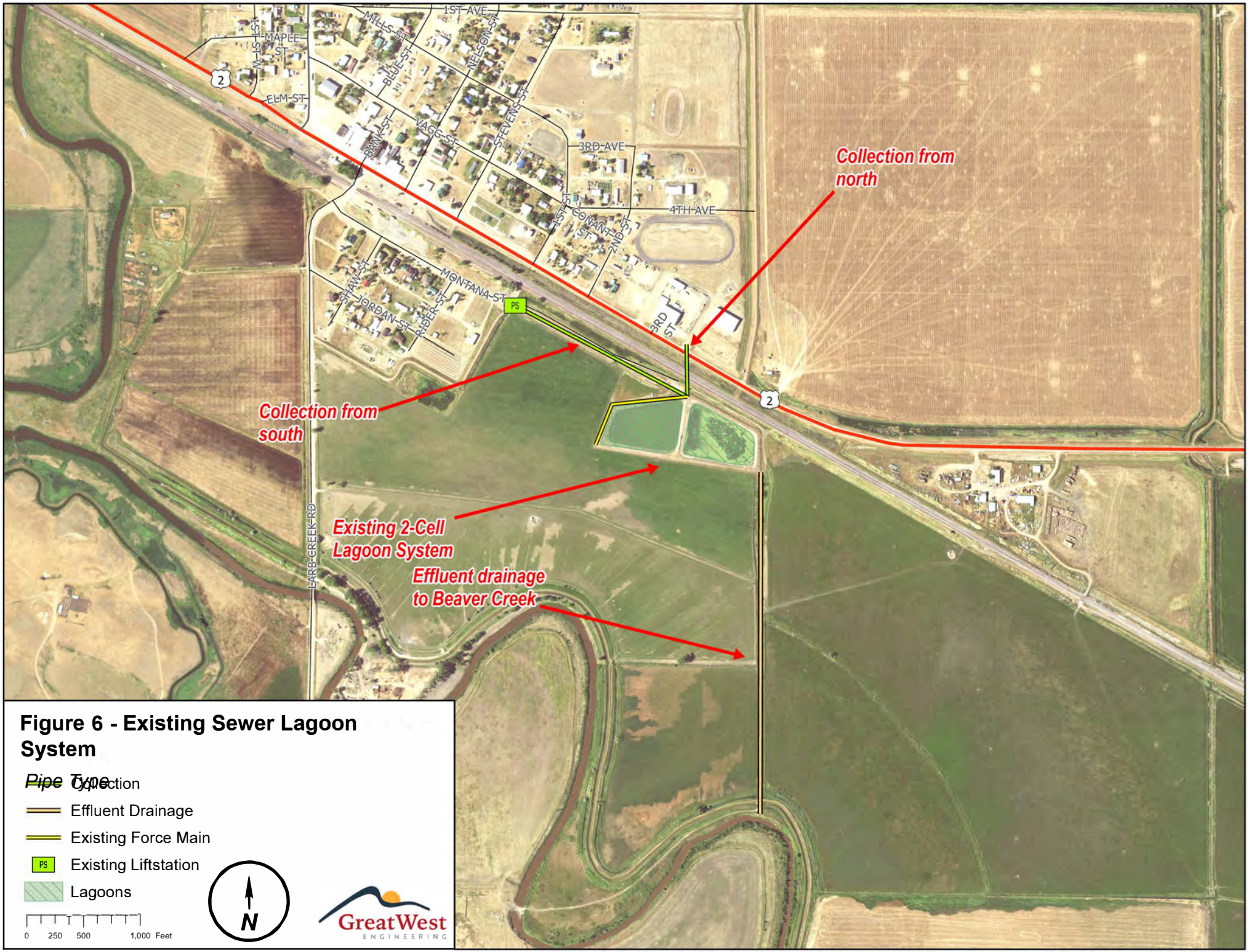


Figure 6 - Existing Sewer Lagoon System

Pipe Type

- Collection
- Effluent Drainage
- Existing Force Main
- PS Existing Liftstation
- Lagoons

0 250 500 1,000 Feet

N

GreatWest ENGINEERING

Scope, Goals, Objectives, and Effectiveness

The scope of the proposed project to remedy the problems identified above are to remove and dispose of the accumulated sludge in both lagoon cells, replace the failed lagoon control valves, fully upgrade the lift station system and install a backup generator, replace the lift station force main to the lagoon, install a UV disinfection system, and complete a more detailed wastewater PER to fully evaluate the wastewater system. The PER will inform a Phase 2 project to fully characterize and upgrade the sewer system.

Project Goal

The primary intent of the project is to develop a fully functioning, more dependable, and safe wastewater system for the foreseeable future. The project will allow the Town to address the most pressing and immediate needs as a Phase 1 project and plan for addressing the items suspected of needing to be addressed yet requiring further investigation in a Phase 2 project.

The project will increase treatment system capacity by the removal of accumulated sludge, replace lagoon control valves, replace the degrading force main, install a UV system to meet E.coli discharge limits, rehabilitate the existing wet well to limit I/I and/or contamination of the local groundwater, and provide a new lift station. The new lift station will prevent future major breakdowns and sewer overflows, increase efficiency, protect the health and safety of the operations staff, public, residents of the service area. A project goal is to provide a comprehensive wastewater PER to fully evaluate the sewer system and obtain additional sources of grant funding.

Project Objectives

The project objective is to install a new lift station, backup generator, rehabilitation and lining of the existing wet well, emergency power generator, replace lagoon control valves, remove and dispose of excess accumulated sludge, and install a UV disinfection system to meet E.coli limits. Provide a comprehensive wastewater PER to fully evaluate the sewer system and obtain additional sources of grant funding to fund upgrades to the wastewater system.

Project Effectiveness

The project effectiveness will include installing a new lift station with to handle peak flow capacity pumps for all ranges of sewer flows, provide a new auto dialer alarm system, install related electrical and lighting, chain link security fencing, natural gas or diesel powered backup generator, install site piping and perform lift station sitework. The project will remove and legally dispose (either land application or landfill methods) wet sludge using EPA 503 criteria. New lagoon control valves will be replaced to provide both parallel and series operation. A new UV treatment system to meet E.coli limits.

General Design Parameters

- The new collection system improvements would be designed in accordance with DEQ Circular-2, Chapter 30 – Design of Sewers.
- To meet the E. coli limits, the Phase 1 project proposes to include ultraviolet (UV) disinfection. Disinfection equipment design criteria is included in DEQ Circular-2, Chapter 100 - Disinfection.
- New lift stations are designed and constructed in compliance with DEQ Circular-2, Chapter 40 – Lift Stations.
- The sludge handling items of the project are designed in accordance with DEQ Circular-2, Chapter 80 – Sludge, and also in accordance with EPA Part 503.
- The plans and specifications will need to be reviewed and approved by DEQ before bidding and construction can begin on all elements of the project.

Project Description

The proposed project is to be separated into two phases based on the known and immediate wastewater system needs as a Phase 1 project and those yet to be characterized and evaluated in further detail following the completion of the wastewater PER as a Phase 2 project. In summary, the scope of the project includes:

Phase 1:

- Remove and dispose of accumulated excess sludge biosolids.
- Replace the existing wetwell/drywell lift station with a new packaged submersible lift station with backup generator, transfer switch and related electrical.
- New controls and autodialer system for the lift station.
- New security fencing installed around the lift station and lagoon sites.
- Replacement of up to 1,000 feet of force main piping and valves from the lift station to the lagoon system.
- Replacement of lagoon operation control valves.
- Installation of a UV disinfection system and building.
- Sewer video the entire collection system focusing on the old clay sections and degrading manholes to fully characterize the existing collection system condition.
- Prepare a comprehensive wastewater PER.

Phase 2

- Scope to be refined with development of a wastewater PER.
- Phase 2 project scope to incorporate DEQ the 2021 site visit assessment and lagoon evaluation to be completed in August 2021. Project scope to also include input from Montana Rural Water site assessments of the Town's system.
- Lagoon System upgrades as recommended by PER from Phase I.
- Collection System Improvements (pipe, manholes, service reconnections) as recommended by PER from Phase I.
- Effluent Discharge Piping system improvements as recommended by PER from Phase I.

Project Implementation

This section describes the estimated budgetary cost for the proposed Phase 1 project, and the recommended funding and schedule needed to implement the project.

Budgetary Cost Estimate

The estimated construction cost to complete the project as described is determined to be approximately $2,063,000 with a 30% contingency given the preliminary nature of this study. Also considering the recently seen 5% inflation, the total project cost when factoring in other costs such as engineering, geotechnical and related professional services is about $2.7 million to 2023 dollars.

The estimated itemized cost and budget estimates are shown in the tables below.

Table 1 - Estimated Project Construction Cost

OPINION OF PROBABLE COST SACO WASTEWATER SYSTEM IMPROVEMENTS PHASE 1					
#	BID ITEM	QTY	UNITS	UNIT PRICE	TOTAL
1	Mobilization	1	LS	$ 140,000.00	$ 140,000
2	Dewatering	1	LS	$ 20,000.00	$ 20,000
3	Sludge Removal and Disposal From Both Cells	1	LS	$ 500,000.00	$ 500,000
4	Replace Lagoon Control Valve Structures	3	EA	$ 10,000.00	$ 30,000
5	New Lagoon Security Fencing	2,400	LF	$ 15.00	$ 36,000
6	Lagoon Access Gate	2	EA	$ 3,000.00	$ 6,000
7	Seed and Fertilize	1	LS	$ 5,000.00	$ 5,000
8	Temporary Sewer Bypass Pumping	1	LS	$ 15,000.00	$ 15,000
9	Abandon and Fill Existing Dry Well	1	LS	$ 10,000.00	$ 10,000
10	Rehabilitate or Replace Wet Well Structure	1	LS	$ 50,000.00	$ 50,000
11	Furnish Triplex Pumps/Equipment/Controls	1	LS	$ 130,000.00	$ 130,000
12	Install New Lift Station Pumps/Equipment/Controls	1	LS	$ 60,000.00	$ 60,000
13	New Force Main Pipe and Fittings	1,000	LF	$ 80.00	$ 80,000
14	New Lift Station UV Building Electrical	1	LS	$ 45,000.00	$ 45,000
15	New UV Treatment System & Building	1	LS	$ 400,000.00	$ 400,000
16	Backup Generator and Transfer Switch	1	LS	$ 60,000.00	$ 60,000
					$ 1,587,000
	Construction Contingency		30%		$ 476,000
	SUBTOTAL CONSTRUCTION				$ 2,063,000
	Inflation to 2023		5% per year		$ 2,273,000
	Geotechnical Exploration				$ 15,000
	Sewer Collection System Video Inspection & Assessment				$ 20,000
	Wastewater PER				$ 45,000
	Engineering Design & Construction Management				$ 210,000
	Construction Inspection				$ 75,000
	Legal and Administration				$ 45,000
	Audit				$ 15,000
	TOTAL PROJECT				$ 2,698,000

Funding

The preferred funding scenario is to use mix of ARPA funding including Saco's ARPA minimum allocation grant, direct treasury payment, grant funding from MCEP, DNRC-RRGL, CDBG and the remainder from the ARPA competitive grant to meet the project match. Phillips County is not presently committing funds to local Towns and District's within the County until the County evaluates its own water and wastewater project needs.

Implementation Schedule

The implementation schedule for the proposed project is summarized in the Table below.

Project Implementation Schedule

Action	Date
Technical Memorandum Complete	July 2021
Apply for ARPA Competitive Grant	July 15, 2021
Award of ARPA Grant	November 2021
Contracting Grant/Engineering	December 2021
Begin Wastewater PER	January 2022
Sewer Collection System Assessment/Video	February 2022
Complete Wastewater PER	May 2022
Apply for MCEP and DNRC Funding	May 2022
Award MCEP and DNRC Funding	May 2023
Begin Design	July 2023
Submit Design Plans and Specifications to MDEQ	September 2023
MDEQ Review & Approval	November 2023
Advertise and Open Bids	December/Jan 2023
Start Construction	April 2024
Complete System Construction	September 2024

APPENDIX B

Environmental Checklist Agency Correspondence

For assistance in preparing the Environmental Checklist, contact DNRC grant manager listed on grant application.

Environmental Checklist

Environmental Checklist Prepared by: On: 3/3/2022

Matthew Mudd, PE	Great West Engineering
Name of Person 1	Organization
406-495-6196	mmudd@greatwesteng.com
Phone Number	Email
.	.
Name of Person 2	Organization
.	.
Phone Number	Email

.

List additional people above. Include organization, phone number and email for all.

Physical Environment		
Impact Code	**Impact Type**	**Explanation of Impact to Resource**
1. Soil Suitability, Topographic and/or Geologic Constraints (example: soil lump, steep slopes, subsidence, seismic activity)		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: Previously Impacted Soils in roadway and lift station site, exiseting lagoon berms. Preferred Alternative Environmental Narrative: A geotechnical engineering site evaluation and report will be completed to provide specific guidance for construction. Area is not a high seismic area. (Source: Engineers Opinion)
2. Hazardous Facilities (example: power lines, hazardous waste sites, acceptable distance from explosive and flammable hazards including chemical/petrochemical storage tanks, underground fuel storage tanks, and related facilities such as natural gas storage facilities and propane storage tanks)		
☐ No Impact ☐ Beneficial ☒ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: Identified LUST sites are within the vicinity of the project area near proposed open cut construction. Preferred Alternative Environmental Narrative: The new collection system pipes are planned to be installed adjacent to these location. The project specifications will provide special provisions for soil and groundwater special handling, removal and imported backfill requirements should contaminated soils be encountered. (Source: Montana DEQ LUST database, Engineers Opinion)

3. Surrounding Air Quality (example: dust, odors, emissions)		
☐ No Impact ☐ Beneficial ☒ Adverse	☐ Direct ☒ Indirect ☐ Cumulative	Current Conditions: Existing conditions in Town Preferred Alternative Environmental Narrative: Short term and temporary impacts due to dust and exhaust due to typical construction. No long term impacts (Engineers Opinion)
4. Groundwater Resources and Aquifers (example: quantity, quality, distribution, depth to groundwater, sole source aquifers)		
☐ No Impact ☒ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: Existing wells near the treatment site indicate depths to the static water level approximately 10-13 feet below the surface for wells completed in January through March timeframe and the groundwater levels are likely higher during periods of flooding. The existing collection system is in a degraded state and the lagoons are not lined. Preferred Alternative Environmental Narrative: New collection piping and manholes and a new lined lagoon system will protect the existing groundwater. (Source: Montana GWIC)
5. Surface Water/Water Quality, Quantity and Distribution (example: streams, lakes, storm runoff, irrigation systems, canals)		
☐ No Impact ☒ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The lagoon treated effluent is discharged to Beaver Creek. Both the Beaver Creek-Nelson South Canal (watershed 100500140704) and the downstream Milk River-Dry Stinky Creek (watershed 100500042101), as listed on the EPA source (https://mywaterway.epa.gov/community), are impaired for nutrients, metals and flows. The lagoons have excessive sludge accumulation and the the system receives discharge permit violations. Preferred Alternative Environmental Narrative: The project will improve the water quality of stream by upgrading the lagoons (Engineer's Opinion)
6. Floodplains and Floodplain Management (Identify any floodplains within one mile of the boundary of the project.)		
☐ No Impact ☒ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☒ Cumulative	Current Conditions: The Town is located protected by an existing levee system and the 100-year flood plain, the lagoons are located outside the levee system and within the flood plain. The town area is currently being re-mapped for the floodplain with re-mapping finding expected by the end of 2022. Preferred Alternative Environmental Narrative: New lagoon improvements and the lift station will consider the flood plain elevevations to set the rim and levee elevations above and provide sufficient freeboard for the improvements. A floodplain permit will be completed with the project. (Source: Nadene Wadsworth, DNRC Floodplain program, FEMA Firm Mapping)

7. Wetlands (Identify any wetlands within one mile of the boundary of the project and state potential impacts.)

☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: Some areas classified as freshwater emergent wetlands appear to intermittently follows Beaver Creek and along highway roadside ditches. If work is proposed within any of these mapped wetlands or if wetland habitat is encountered during site reconnaissance for design, a detailed delineation and assessment will be performed. The design-level delineation will determine the extent of potential impacts and necessary remediation, if any. Preferred Alternative Environmental Narrative: If work is proposed within any of these mapped wetlands or if wetland habitat is encountered during site reconnaissance for design, a detailed delineation and assessment will be performed. The design-level delineation will determine the extent of potential impacts and necessary remediation, if any. (Source: National Wetlands Inventory)

8. Agricultural Lands, Production, and Farmland Protection (example: grazing, forestry, cropland, prime or unique agricultural lands) Identify any prime or important farm ground or forest lands within one mile of the boundary of the project.

☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The Bowdoin clay is the primary soil in the Town and vicinity area. The NRCS Prime Farmland Soil Legend for Philips County area does not designate this soil as "farmland of statewide importance." Preferred Alternative Environmental Narrative: No negative impacts anticipated with the proposed project. (NRCS database)

9. Vegetation and Wildlife Species and Habitats, Including Fish (example: terrestrial, avian and aquatic life and habitats)

☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: A search was conducted on Montana Natural Heritage to determine animal species and plants of concern in the area. The Natural Resource Information System lists the following species of concern for Township 31 North, Range 34 East: Ferruginous Hawk, Greater Sage-Grouse, Baird's Sparrow, Bobolink, Loggerhead Shrike, Northern Redbelly Dace and Iowa Darter. A response letter from Jacob Martin of the United States Fish and Wildlife Service confirms that in implementing the proposed project, *"…we have no comments regarding federally listed or proposed threatened or endangered species or other trust species*". Preferred Alternative Environmental Narrative: No adverse effects are anticipated to vegetation and wildlife species is anticipated due to the project. (NHP Program, USFWS)

10. Unique, Endangered, Fragile, or Limited Environmental Resources, Including Endangered Species (example: plants, fish or wildlife)		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The proposed project is primarily within previously impacted areas. Preferred Alternative Environmental Narrative: A response letter from Jacob Martin of the United States Fish and Wildlife Service confirms that in implementing the proposed project, *"…we have no comments regarding federally listed or proposed threatened or endangered species or other trust species*". (Source: USFWS)
11. Unique Natural Features (example: geologic features)		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The project does not have any identified unique natural features and is primarily within previously impacted areas. Preferred Alternative Environmental Narrative: No impact to unique natural features anticipated with the project (Source: Engineer's Opinion)
12. Access to, and Quality of, Recreational and Wilderness Activities, Public Lands and Waterways, and Public Open Space		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The project with located within existing right of ways and/or private lands. Preferred Alternative Environmental Narrative: The proposed project will not limit access to, or quality of recreational land or public space. (Source: Engineer's Opinion)
Human Environment		
Impact Code	**Impact Type**	**Resource**
1. Visual Quality – Coherence, Diversity, Compatibility of Use and Scale, Aesthetics		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The project will take place in the location of current existing infrastructure. Preferred Alternative Environmental Narrative: No impacts due to visual quality anticipated with the project. (Source: Engineer's Opinion)
2. Nuisances (example: glare, fumes)		
☐ No Impact ☐ Beneficial ☒ Adverse	☐ Direct ☒ Indirect ☐ Cumulative	Current Conditions: Construction work using convetional construction equipment will be onsite to install the new sewer pipe and lagoon upgrades. Construction duration expected to take 3-4 months total. Preferred Alternative Environmental Narrative: Only temporary due to construction activity but no long term impacts anticipated (Source: Engineer's Opinion)

3. Noise – Suitable Separation Between Housing and Other Noise Sensitive Activities and Major Noise Sources (example: aircraft, highways and railroads.)		
☐ No Impact ☐ Beneficial ☒ Adverse	☐ Direct ☒ Indirect ☐ Cumulative	Current Conditions: Construction work using convetional construction equipment will be onsite to install the new sewer pipe and lagoon upgrades. Construction duration expected to take 3-4 months total. re to enter text. Preferred Alternative Environmental Narrative: Only temporary due to construction activity but no long term impacts anticipated (Source: Engineer's Opinion)
4. Historic Properties, Cultural, and Archaeological Resources ***(Please see end of Environmental Checklist for details if Cultural Survey has not been performed per SHPO Section 106)***		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The project will take place in the location of current existing infrastructure. Preferred Alternative Environmental Narrative: The Montana State Historic Preservation Office (SHPO) was contacted to determine whether there are significant historical and cultural resources within the project area. A response from SHPO dated January 20, 2022 was obtained. The letter states that any structure over fifty years of age is considered historic and potentially eligible for listing the Nation Register of Historic Places. SHPO states *"we feel that there is a low likelihood cultural properties will be impacted. We, therefore, feel that a recommendation for a cultural resource inventory is unwarranted at this time"*. (Source: SHPO, Engineer's opinion)
5. Changes in Demographic (Population) Characteristics (example: quantity, distribution, density)		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The entire Town relies on the wastewater infrastructure for its sewer system. Preferred Alternative Environmental Narrative: No changes in demographic characteristics is anticipated with the project. (Source: Engineer's Opinion)
6. General Housing Conditions – Quality, Quantity, Affordability		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The entire Town relies on the wastewater infrastructure for its sewer system needs. Preferred Alternative Environmental Narrative: No changes in general housing conditions is anticipated with the project. (Engineer's Opinion)

7. Businesses or Residents (example: loss of, displacement, or relocation)		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The entire Town relies on the wastewater infrastructure for its sewer system needs. Preferred Alternative Environmental Narrative: No changes in business or residents displacements is anticipated with the project. (Engineer's Opinion)
8. Public Health and Safety		
☐ No Impact ☒ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The entire Town relies on the existing wastewater system. Both the colletion system, treatment system and lift station are in dire need of upgrades to prevent future occurrences of sewer overflows and to improve the surface water quality. Preferred Alternative Environmental Narrative: The improvements will protect the groundwater and surface water from potential untreated wastewater seepage, and potential overflows. The upgrades will provide a much more reliable and safe wastewater system. (Engineer's Opinion)
9. Local Employment – Quantity or Distribution of Employment, Economic Impact		
☐ No Impact ☒ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☒ Cumulative	Current Conditions: The entire Town relies on the existing wastewater system. Both the colletion system, treatment system and lift station are in dire need of upgrades to prevent future occurrences of sewer overflows and to improve the surface water quality. Preferred Alternative Environmental Narrative: The project will provide a boost to the local economy during construction and will provide a more reliable and sustainable system in the long-term to not detract from business from working in the Town. (Engineer's Opinion)
10. Income Patterns – Economic Impact		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The entire Town relies on the wastewater infrastructure for its sewer system needs. Preferred Alternative Environmental Narrative: No negative Long-term changes to income patters could result from the project. A temporary positive impact may be a boost to the local economy during construction.
11. Local and State Tax Base and Revenues		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The entire Town relies on the wastewater infrastructure for its sewer system needs. Preferred Alternative Environmental Narrative: The project will have no adverse impacts to the tax base and revenues.

12. Community and Government Services and Facilities (example: educational facilities; health and medical services and facilities; police; emergency medical services; and parks, playgrounds and open space)		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The entire Town relies on the wastewater infrastructure for its sewer system needs. Preferred Alternative Environmental Narrative: The project will have no adverse impacts to community and government facilities.
13. Commercial and Industrial Facilities – Production and Activity, Growth or Decline		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The entire Town relies on the wastewater infrastructure for its sewer system needs. Preferred Alternative Environmental Narrative: The project will have no adverse impacts to commercial and industrial facilities.
14. Social Structures and Mores (example: standards of social conduct/social conventions)		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The entire Town relies on the wastewater infrastructure for its sewer system needs. Preferred Alternative Environmental Narrative: The project will have no adverse impacts to social structures.
15. Land Use Compatibility (example: growth, land use change, development activity, adjacent land uses and potential conflicts)		
☐ No Impact ☒ Beneficial ☐ Adverse	☐ Direct ☒ Indirect ☐ Cumulative	Current Conditions: The entire Town relies on the wastewater infrastructure for its sewer system needs. Preferred Alternative Environmental Narrative: The infrastructure will allow for sustainable growth and expansion in the Town limits from new sewer lines and an upgraded lagoon system with sufficient capacity. The improvements will be within the existing District-owned lands and right of ways. Those activities are in keeping with historical and existing land use policies. Construction will occur in previously disturbed areas.
16. Energy Resources – Consumption and Conservation		
☐ No Impact ☒ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The existing sewer collection, pump and treatment system is over 60 years old. Preferred Alternative Environmental Narrative: It is not anticipated that the improvements will have any impact on energy consumption within the Community. In fact, new lift station pumps and controls may result in more efficiency and cost saving.

17. Solid Waste Management		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The wastewater system does not relate directly to the solid waste management of the Town. Preferred Alternative Environmental Narrative: It is not anticipated that the project will have any impacts on solid waste management. (Engineer's Opinion)
18. Wastewater Treatment – Sewage System		
☐ No Impact ☒ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The existing sewer collection, pump and treatment system is over 60 years old. Preferred Alternative Environmental Narrative: The project will have a beneficial impact to the community's wastewater system. Public health and safety will be improved as a result of the proposed improvements due to decreased inflow and infiltration and decreased risk of leakage of raw sewage into the community groundwater from the existing leaky manholes. Decreased inflow and infiltration will also reduce stress on the existing wastewater treatment lagoon system, Improved protection of the groundwater and surface water will result form the project (Source: Engineer's Opinion, DEQ)
19. Storm Water – Surface Drainage		
☒ No Impact ☐ Beneficial ☒ Adverse	☐ Direct ☒ Indirect ☐ Cumulative	Current Conditions: The existing sewer collection, pump and treatment system is over 60 years old and is planned to be upgraded with the project. Preferred Alternative Environmental Narrative: There may be temporary impacts to surface water runoff during construction that will be mitigated. The project will take BMP's into account. Where practicable, construction will incorporate features to direct storm water (which may contain sediment, salt, or other contaminants) away from State Waters. No long-term impacts anticipated. (Engineer's Opinion)
20. Community Water Supply		
☐ No Impact ☒ Beneficial ☐ Adverse	☐ Direct ☒ Indirect ☐ Cumulative	Current Conditions: The existing sewer collection, pump and treatment system is over 60 years old and is planned to be upgraded with the project. Preferred Alternative Environmental Narrative: The proposed project may be beneficial to the community water supply as a result of reduced interaction between the groundwater and raw sewage due to the existing leaky manholes. (Engineer's Opinion)

21. Fire Protection – Hazards		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The existing sewer collection, pump and treatment system is over 60 years old and is planned to be upgraded with the project. Preferred Alternative Environmental Narrative: Fire protection will be be impacted with the project
22. Cultural Facilities, Cultural Uniqueness and Diversity		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The existing sewer collection, pump and treatment system is over 60 years old and is planned to be upgraded with the project. Preferred Alternative Environmental Narrative: Cultural facilities will not be impacted. (Engineer's Opinion)
23. Transportation Networks and Traffic Flow Conflicts (example: rail; auto including local traffic; airport runway clear zones – avoidance of incompatible land use in airport runway clear zones)		
☒ No Impact ☐ Beneficial ☒ Adverse	☐ Direct ☒ Indirect ☐ Cumulative	Current Conditions: The existing sewer collection, pump and treatment system is over 60 years old and is planned to be upgraded with the project. Preferred Alternative Environmental Narrative: Temporary impacts of construction traffic control may result with the project for only short durations. No long term impact will result with the project. (Engineer's Opinion)
24. Consistency with Local Ordinances, Resolutions, or Plans (example: conformance with local comprehensive plans, zoning, or capital improvement plans.)		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The existing sewer collection, pump and treatment system is over 60 years old and is planned to be upgraded with the project. Preferred Alternative Environmental Narrative: The project meets the objectives of the Town, with respect to their need to operate and maintain a properly functioning wastewater system.(Engineer's Opinion)
25. Private Property Rights (example: a regulatory action or project activity that reduces, minimizes, or eliminates the use of private property.)		
☒ No Impact ☐ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: The existing sewer collection, pump and treatment system is over 60 years old and is planned to be upgraded with the project. Preferred Alternative Environmental Narrative: The project should not have any impacts on property rights. Most of the work takes place within public right of ways. Expansion of the lagoon may require obtaining additional land near the treatment system but will be completed equitably and fair.

Additional Information

****If no cultural survey has been performed, or is not expected to be needed, applicant must agree to**

the following statement:

☒ I hereby agree that, to my knowledge, there are no cultural or paleontological materials in the proposed project site. If previously unknown cultural or paleontological materials are identified during project related activities, the DNRC grant manager will be notified, and all work will cease until a professional assessment of such resources can be made.

List all sources of information used to complete the Environmental Checklist. Sources may include studies, plans, documents, or the individuals, organizations, or agencies contacted for assistance. For individuals, groups, or agencies, please include a contact person and phone number. List any scoping documents or meetings and/or public meetings during project development.

Great West Engineering (Wastewater PER) and Engineering Opinions, therein.

DNRC, Nadene Wasdworth

DEQ LUST Database

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture, Web Soil Survey, http://websoilsurvey.nrcs.usda.gov/app

Montana Bureau of Mines and Geology, Montana Tech of The University of Montana, Groundwater Information Center 2010, http://mbmggwic.mtech.edu/

United States Department of Agriculture, http://www.usda.gov/wps/portal/usdahome

Montana Natural Resources Information System, http://nris.msl.mt.gov/

U.S. Fish and Wildlife Service, National Wetlands Inventory, http://www.fws.gov/wetlands/

Montana Department of Environmental Quality, Circular DEQ 2

National Oceanic and Atmospheric Administration (NOAA) Western Regional Climate Center, Historical Climate Information, http://www.wrcc.dri.edu/NEWWEB.html

See what's possible.

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GreatWest ENGINEERING

January 17, 2022

Mr. Peter Brown
State Historic Preservation Officer
P.O. Box 201202
Helena, MT 59620-1202

RE: United States Department of Agriculture (USDA) – Rural Development (RD) Rural Utilities Service (RUS) Applicant SHPO Section 106 Initiation
Saco Wastewater System Improvements
Saco, Philips County, MT

Dear State Historic Preservation Officer Brown:

The Town of Saco plans to seek financial assistance from the USDA Rural Development (RD), Rural Utilities Service (RUS) under its water & waste loan & grant program for Saco Wastewater System Improvements.

The wastewater system was originally constructed in the early 1900's and consists of around 14,000 feet of vitrified clay pipe (VCP) and a community lift station. In the 1960's, the lift station was replaced and a 5-acre, two cell facultative lagoon system was constructed at the southeast corner of town. The Town's wastewater is pumped from the community through this wet well/dry well type primary lift station to the lagoon system. The lagoons are discharged into an unnamed slough that empties into Beaver Creek which is an impaired waterbody on the 303(d) list. The lift station is outdated, very deep and unsafe. The collection system is in a degraded state as evidenced by recent video inspection.

If RUS elects to fund the Project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

RUS defines the area of potential effect (APE), as an area that includes all Project construction and excavation activity required to construct, modify, improve, or maintain any facilities; any right-of-way or easement areas necessary for the construction, operation, and maintenance of the Project; all areas used for excavation of borrow material and habitat creation; all construction staging areas, access routes, utilities, spoil areas, and stockpiling areas. Impacts that come from the undertaking at the same time and place with no intervening causes, are considered "direct" regardless of its specific type (e.g., whether it is visual, physical, auditory, etc.). "Indirect" effects to historic properties are those caused by the undertaking that are later in time or farther removed in distance but are still reasonably foreseeable.

Based on this definition, the Town of Saco proposes that the APE for the referenced project consists of disturbed right of way (ROW) in Town and the land owned by the Town which the lift station is built as shown on the enclosed map. The geographic scope of the APE will not

be final until a determination is made by RUS pursuant to 36 CFR § 800.4(a)(1). Additionally, the APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x).

Pursuant to 36 CFR § 800.2(c)(4), and 7 CFR § 1970.5(b)(2) of the regulations, "Environmental Policies and Procedures" (7 CFR Part 1970), RUS has issued a blanket delegation for its applicants to initiate and proceed through Section 106 review if there is agreement.

In accordance with this blanket delegation, the Town of Saco is initiating Section 106 review on behalf of RUS. In delegating this authority, RUS is advocating for the direct interaction between its borrowers and the State Historic Preservation Office (SHPO). RUS believes this interaction, prior to direct agency involvement, will support and encourage the consideration of impacts to historic properties earlier in project planning.

At the direction of RUS, on 2/7/2022 the Town of Saco notified the following Indian tribes about the Saco Wastewater System Improvements: the Apache Tribe of Oklahoma, the Crow Tribe of Montana, and the Fort Belknap Indian Community of the Fort Belknap Reservation of Montana.

Please review the Project(s) and enclosed maps. After completing your review, please provide the Town of Saco with your recommendation(s) about whether or not a study of the APE is needed to identify potentially affected historic properties. **If you recommend a study, please explain the nature and scope of the proposed investigation, specifically in reference to those factors identified in 36 CFR § 800.4(b)(1)**. If you do not recommend a study or require additional information, please provide a proposed finding of no historic properties affected or no adverse effect.

Please submit your recommendations, request for additional information, or a proposed finding, **electronically** within **30** days of your receipt of this request to Kinsee Dodge who can be reached at (406) 495-6172 or kdodge@greatwesteng.com. If no timely response is received, the Town of Saco will notify RUS so the federal agency may determine how to proceed with Section 106 review in accordance with 36 CFR § 800.3(b)(4). Should you have any questions, please contact Kinsee Dodge or Jason Bailey who can be reached at (406) 449-5000 ext. 3879 or Justin.Bailey@usda.gov.

Sincerely,
Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Enclosure: Maps of Area of Potential Effect

See what's *possible*.

See what's possible.

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GreatWest ENGINEERING

January 19, 2022

Duane Reid
THPO
Little Shell Tribe
P.O. Box 221
Elmo, MT 59915

RE: United States Department of Agriculture (USDA) – Rural Development (RD) Rural Utilities Service (RUS) Applicant THPO Section 106 Initiation
Saco Wastewater System Improvements
Saco, Philips County, MT

Dear THPO Reid:

The Town of Saco plans to seek financial assistance from the USDA Rural Development (RD), Rural Utilities Service (RUS) under its water & waste loan & grant program for Saco Wastewater System Improvements.

The wastewater system was originally constructed in the early 1900's and consists of around 14,000 feet of vitrified clay pipe (VCP) and a community lift station. In the 1960's, the lift station was replaced and a 5-acre, two cell facultative lagoon system was constructed at the southeast corner of town. The Town's wastewater is pumped from the community through this wet well/dry well type primary lift station to the lagoon system. The lagoons are discharged into an unnamed slough that empties into Beaver Creek which is an impaired waterbody on the 303(d) list. The lift station is outdated, very deep and unsafe. The collection system is in a degraded state as evidenced by recent video inspection.

If RUS elects to fund the Project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

RUS defines the area of potential effect (APE), as an area that includes all Project construction and excavation activity required to construct, modify, improve, or maintain any facilities; any right-of-way or easement areas necessary for the construction, operation, and maintenance of the Project; all areas used for excavation of borrow material and habitat creation; all construction staging areas, access routes, utilities, spoil areas, and stockpiling areas. Impacts that come from the undertaking at the same time and place with no intervening causes, are considered "direct" regardless of its specific type (e.g., whether it is visual, physical, auditory, etc.). "Indirect" effects to historic properties are those caused by the undertaking that are later in time or farther removed in distance but are still reasonably foreseeable.

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Pursuant to 36 CFR § 800.2(c)(4), and 7 CFR § 1970.5(b)(2) of the regulations, "Environmental Policies and Procedures" (7 CFR Part 1970), RUS has issued a blanket delegation for its applicants to initiate and proceed through Section 106 review if there is agreement.

In delegating this authority, RUS is advocating for the direct interaction between its water & waste disposal loan & grant program applicants and Indian tribes. RUS believes this interaction, prior to direct agency involvement, will support and encourage the consideration of impacts to historic properties of importance to Indian tribes earlier in project planning.

At the direction of RUS, on 2/7/2022 the Town of Saco notified the following Indian tribes about the Saco Wastewater System Improvements: the Apache Tribe of Oklahoma, the Crow Tribe of Montana, the Fort Belknap Indian Community of the Fort Belknap Reservation of Montana, and the Little Shell Tribe of Montana. Should the referenced tribes elect to participate in Section 106 review of the referenced project, please notify me in writing via letter or email as soon as possible at the following addresses – 2501 Belt View Dr. Helena, MT 59601 or kdodge@greatwesteng.com.

Please include with your affirmative response, a description of any specific historic properties or important tribal resources in the APE and your recommendations about the level of effort needed to identify additional historic properties which might be affected by the referenced project. The Town of Saco will respect the confidentiality of the information which you provide to the fullest extent possible.

If at any time you wish to share your interests, recommendations and concerns directly with RUS, as the agency responsible for conducting Section 106 review, or to request that RUS participate directly in Section 106 review, please notify me at once, preferably via email. However, you may contact RUS directly. If you wish to do so, please submit your request to Justin Bailey, State Environmental Coordinator, USDA Rural Development, 790 Colleen Street, Helena, MT 59601. Mr. Bailey's phone number is (406) 449-5000 ext. 3879, and his email address is Justin.Bailey@usda.gov.

Please submit your response **electronically** by 2/7/2022. RUS will proceed to the next step in Section 106 review if you fail to provide a timely response. Should you have any questions or require additional information you may contact me at the mailing address and email provided above.

Sincerely,
Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Enclosure: Map of Area of Potential Effects

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GreatWest ENGINEERING

January 17, 2022

Bobby Komardley
Chairman
Apache Tribe of Oklahoma
PO Box 1330
Anadarko, AnadarkoOK 70035

RE: United States Department of Agriculture (USDA) – Rural Development (RD) Rural Utilities Service (RUS) Applicant THPO Section 106 Initiation
Saco Wastewater System Improvements
Saco, Philips County, MT

Dear Chairman Komardley:

The Town of Saco plans to seek financial assistance from the USDA Rural Development (RD), Rural Utilities Service (RUS) under its water & waste loan & grant program for Saco Wastewater System Improvements.

The wastewater system was originally constructed in the early 1900's and consists of around 14,000 feet of vitrified clay pipe (VCP) and a community lift station. In the 1960's, the lift station was replaced and a 5-acre, two cell facultative lagoon system was constructed at the southeast corner of town. The Town's wastewater is pumped from the community through this wet well/dry well type primary lift station to the lagoon system. The lagoons are discharged into an unnamed slough that empties into Beaver Creek which is an impaired waterbody on the 303(d) list. The lift station is outdated, very deep and unsafe. The collection system is in a degraded state as evidenced by recent video inspection.

If RUS elects to fund the Project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

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Please submit your response electronically by 2/7/2022. RUS will proceed to the next step in Section 106 review if you fail to provide a timely response. Should you have any questions or require additional information you may contact me at the mailing address and email provided above.

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Enclosure: Map of Area of Potential Effects

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GreatWest ENGINEERING

January 17, 2022

AJ Not Afraid
Chairperson
Crow Tribe of Montana
PO Box 159
Crow Agency, Crow AgencyMT 59022

RE: United States Department of Agriculture (USDA) – Rural Development (RD) Rural Utilities Service (RUS) Applicant THPO Section 106 Initiation
Saco Wastewater System Improvements
Saco, Philips County, MT

Dear Chairperson Not Afraid:

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Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Enclosure: Map of Area of Potential Effects

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GreatWest ENGINEERING

January 17, 2022

Aaron Brien
THPO
Crow Tribe of Montana
PO Box 159
Crow Agency, Crow AgencyMT 59022

RE: United States Department of Agriculture (USDA) – Rural Development (RD) Rural Utilities Service (RUS) Applicant THPO Section 106 Initiation
Saco Wastewater System Improvements
Saco, Philips County, MT

Dear THPO Brien:

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Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

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GreatWest ENGINEERING

January 17, 2022

Michael Blackwolf
THPO
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana
656 Agency Main Street
Harlem, HarlemMT 59526

RE: United States Department of Agriculture (USDA) – Rural Development (RD) Rural Utilities Service (RUS) Applicant THPO Section 106 Initiation
Saco Wastewater System Improvements
Saco, Philips County, MT

Dear THPO Blackwolf:

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Kinsee Dodge, EI
Project Engineer

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GreatWest ENGINEERING

January 17, 2022

Andrew Werk
President
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana
656 Agency Main Street
Harlem, HarlemMT 59526

RE: United States Department of Agriculture (USDA) – Rural Development (RD) Rural Utilities Service (RUS) Applicant THPO Section 106 Initiation
Saco Wastewater System Improvements
Saco, Philips County, MT

Dear President Werk:

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Pursuant to 36 CFR § 800.2(c)(4), and 7 CFR § 1970.5(b)(2) of the regulations, "Environmental Policies and Procedures" (7 CFR Part 1970), RUS has issued a blanket delegation for its applicants to initiate and proceed through Section 106 review if there is agreement.

In delegating this authority, RUS is advocating for the direct interaction between its water & waste disposal loan & grant program applicants and Indian tribes. RUS believes this interaction, prior to direct agency involvement, will support and encourage the consideration of impacts to historic properties of importance to Indian tribes earlier in project planning.

At the direction of RUS, on 2/7/2022 the Town of Saco notified the following Indian tribes about the Saco Wastewater System Improvements: the Apache Tribe of Oklahoma, the Crow Tribe of Montana, and the Fort Belknap Indian Community of the Fort Belknap Reservation of Montana. Should the referenced tribes elect to participate in Section 106 review of the referenced project, please notify me in writing via letter or email as soon as possible at the following addresses – 2501 Belt View Dr. Helena, MT 59601 or kdodge@greatwesteng.com.

Please include with your affirmative response, a description of any specific historic properties or important tribal resources in the APE and your recommendations about the level of effort needed to identify additional historic properties which might be affected by the referenced project. The Town of Saco will respect the confidentiality of the information which you provide to the fullest extent possible.

If at any time you wish to share your interests, recommendations and concerns directly with RUS, as the agency responsible for conducting Section 106 review, or to request that RUS participate directly in Section 106 review, please notify me at once, preferably via email. However, you may contact RUS directly. If you wish to do so, please submit your request to Justin Bailey, State Environmental Coordinator, USDA Rural Development, 790 Colleen Street, Helena, MT 59601. Mr. Bailey's phone number is (406) 449-5000 ext. 3879, and his email address is Justin.Bailey@usda.gov.

Please submit your response electronically by 2/7/2022. RUS will proceed to the next step in Section 106 review if you fail to provide a timely response. Should you have any questions or require additional information you may contact me at the mailing address and email provided above.

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Enclosure: Map of Area of Potential Effects

See what's possible.

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GreatWest ENGINEERING

January 17, 2022

Department of Commerce, Census and Economic Information Center
PO Box 200505
Helena MT 59620

RE: Saco Wastewater System Preliminary Engineering Report

Dear Department of Commerce, Census and Economic Information Center:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

- Township 31 North, Range 34 East, Sections: 7, 8, & 17

To help visualize the proposed project area, maps of the existing wastewater system and the proposed improvements are enclosed with this letter.

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We would appreciate feedback and comments from Department of Commerce, Census and Economic Information Center. Please send your response back to me by February 7, 2022, at kdodge@greatwesteng.com or the following address:

GreatWest
ENGINEERING

Great West Engineering, Inc.
Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Attached: Figure 1 and Figure 2 of Potential Wastewater System Improvement Areas

[ ] Department of Commerce, Census and Economic Information Center has reviewed the enclosed information and has no comment on the project at this time.

_____ _____

Signature Date

See what's possible.

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GreatWest ENGINEERING

January 17, 2022

Department of Labor and Industry
PO Box 1728
Helena MT 59624

RE: Saco Wastewater System Preliminary Engineering Report

Dear Department of Labor and Industry:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

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Great West Engineering, Inc.
Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Attached: Figure 1 and Figure 2 of Potential Wastewater System Improvement Areas

[ ] Department of Labor and Industry has reviewed the enclosed information and has no comment on the project at this time.

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Signature Date

See what's *possible.*

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GreatWest ENGINEERING

January 17, 2022

Department of Environmental Quality
Permitting and Compliance Division
PO Box 200901
Helena MT 59620

RE: Saco Wastewater System Preliminary Engineering Report

Dear Department of Environmental Quality:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

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We would appreciate feedback and comments from Department of Environmental Quality. Please send your response back to me by February 7, 2022, at kdodge@greatwesteng.com or the following address:

Great West Engineering, Inc.
Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Attached: Figure 1 and Figure 2 of Potential Wastewater System Improvement Areas

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Signature Date

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GreatWest ENGINEERING

January 17, 2022

Department of Fish, Wildlife and Parks
1420 E. 6th Ave.
Helena MT 59620

RE: Saco Wastewater System Preliminary Engineering Report

Dear Department of Fish, Wildlife and Parks:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

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We would appreciate feedback and comments from Department of Fish, Wildlife and Parks. Please send your response back to me by February 7, 2022, at kdodge@greatwesteng.com or the following address:

Great West Engineering, Inc.
Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Attached: Figure 1 and Figure 2 of Potential Wastewater System Improvement Areas

[ ] Department of Fish, Wildlife and Parks has reviewed the enclosed information and has no comment on the project at this time.

_____ _____

Signature Date

See what's *possible.*

See what's possible.

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GreatWest ENGINEERING

January 17, 2022

Department of Natural Resources and Conservation
Attn: Resource Development Bureau Engineer
PO Box 201601
Helena MT 59620

RE: Saco Wastewater System Preliminary Engineering Report

Dear Department of Natural Resources and Conservation:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

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Great West Engineering, Inc.
Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Attached: Figure 1 and Figure 2 of Potential Wastewater System Improvement Areas

[ ] Department of Natural Resources and Conservation has reviewed the enclosed information and has no comment on the project at this time.

Signature _____ Date _____

See what's possible.

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GreatWest ENGINEERING

January 17, 2022

Department of Transportation
PO Box 201001
Helena MT 59620

RE: Saco Wastewater System Preliminary Engineering Report

Dear Department of Transportation:

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Great West Engineering, Inc.
Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Attached: Figure 1 and Figure 2 of Potential Wastewater System Improvement Areas

[ ] Department of Transportation has reviewed the enclosed information and has no comment on the project at this time.

Signature _____ Date _____

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GreatWest ENGINEERING

January 17, 2022

State Historic Preservation Office
PO Box 201202
Helena MT 59620

RE: Saco Wastewater System Preliminary Engineering Report

Dear State Historic Preservation Office:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

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Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

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Signature Date

See what's possible.

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GreatWest ENGINEERING

January 17, 2022

Phillips County
Department of Public Health
314 S 2nd Ave W
Malta MT 59538

RE: Saco Wastewater System Preliminary Engineering Report

Dear Phillips County:

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Great West Engineering, Inc.
Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Attached: Figure 1 and Figure 2 of Potential Wastewater System Improvement Areas

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Signature Date

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GreatWest ENGINEERING

January 17, 2022

US Environmental Protection Agency
Montana Office
Federal Building
10 West 15th Stree, Suite 3200
Helena MT 59625

RE: Saco Wastewater System Preliminary Engineering Report

Dear US Environmental Protection Agency:

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We would appreciate feedback and comments from US Environmental Protection Agency. Please send your response back to me by February 7, 2022, at kdodge@greatwesteng.com or the following address:

Great West Engineering, Inc.
Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Attached: Figure 1 and Figure 2 of Potential Wastewater System Improvement Areas

[ ] US Environmental Protection Agency has reviewed the enclosed information and has no comment on the project at this time.

_____ _____

Signature Date

See what's *possible.*

See what's possible.

HELENA
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GreatWest ENGINEERING

January 17, 2022

US Fish and Wildlife Service
Ecological Services
585 Shepherd Way
Helena MT 59601

RE: Saco Wastewater System Preliminary Engineering Report

Dear US Fish and Wildlife Service:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

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Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

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Kinsee Dodge, EI
Project Engineer

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GreatWest ENGINEERING

January 17, 2022

US Forest Service
Region 1
26 Fort Missoula RD
Missoula MT 59804

RE: Saco Wastewater System Preliminary Engineering Report

Dear US Forest Service:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

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Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

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Kinsee Dodge, EI
Project Engineer

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GreatWest ENGINEERING

January 17, 2022

US Army Corps of Engineers
10 West 15th Street
Suite 2200
Helena MT 59626

RE: Saco Wastewater System Preliminary Engineering Report

Dear US Army Corps of Engineers:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

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Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

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Kinsee Dodge, EI
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GreatWest ENGINEERING

January 17, 2022

National Park Service
PO Box 25287
Denver CO 80225

RE: Saco Wastewater System Preliminary Engineering Report

Dear National Park Service:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

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Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

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Project Engineer

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GreatWest ENGINEERING

January 17, 2022

Federal Aviation Administration
Airport District Office
2725 Skyway Drive
Suite 2
Helena MT 59602

RE: Saco Wastewater System Preliminary Engineering Report

Dear Federal Aviation Administration:

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Great West Engineering, Inc.
Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

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Signature Date

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GreatWest ENGINEERING

January 17, 2022

Bureau of Land Management
5001 Southgate Drive
Billings MT 59101

RE: Saco Wastewater System Preliminary Engineering Report

Dear Bureau of Land Management:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

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Great West Engineering, Inc.
Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

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Project Engineer

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GreatWest ENGINEERING

January 17, 2022

Bureau of Indian Affairs
2021 4th Ave N.
Billings MT 59101

RE: Saco Wastewater System Preliminary Engineering Report

Dear Bureau of Indian Affairs:

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Helena, MT 59601
406-495-6172

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Project Engineer

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GreatWest ENGINEERING

January 17, 2022

Natural Resource Conservation Service
10 E. Babcock St.
Bozeman MT 59771

RE: Saco Wastewater System Preliminary Engineering Report

Dear Natural Resource Conservation Service:

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406-495-6172

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Project Engineer

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GreatWest ENGINEERING

January 17, 2022

Occupational Safety and Health Administration
2900 4th Ave. N
Billings MT 59101

RE: Saco Wastewater System Preliminary Engineering Report

Dear Occupational Safety and Health Administration:

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The wastewater system was originally constructed in the early 1900's and consists of around 14,000 feet of vitrified clay pipe (VCP) and a community lift station. In the 1960's, the lift station was replaced and a 5-acre, two cell facultative lagoon system was constructed at the southeast corner of town. The Town's wastewater is pumped from the community through this wet well/dry well type primary lift station to the lagoon system. The lagoons are discharged into an unnamed slough that empties into Beaver Creek which is an impaired waterbody on the 303(d) list. The lift station is outdated, very deep and unsafe. The collection system is in a degraded state as evidenced by recent video inspection.

The goal of this project is to review the existing wastewater system, identify deficiencies, and make improvements to correct the inadequacies. The primary concerns of the current system are excess sludge accumulation in the lagoons, failed lagoon valves, discharge permit violations primarily for E. coli, inadequate safe access to the drywell, and an absence of bypass system around the wet wells. Additionally, the lift station and much of the collection system pipe is operating beyond useful design life, and the system is frequently overwhelmed during high rainfall events. Finally, the lift station lacks backup power and an automated alarm system in case of emergency.

The proposed improvements, as indicated on the attached maps, may include collection pipeline replacements primarily within Town limits and public right of ways, collection pipe replacement under Highway 2 and the BNSF railroad, a full lift station upgrade, and lagoon treatment system upgrades to be determined by the PER.

We would appreciate feedback and comments from Occupational Safety and Health Administration. Please send your response back to me by February 7, 2022, at kdodge@greatwesteng.com or the following address:

Great West Engineering, Inc.
Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Attached: Figure 1 and Figure 2 of Potential Wastewater System Improvement Areas

[ ] Occupational Safety and Health Administration has reviewed the enclosed information and has no comment on the project at this time.

Signature _____ Date _____

See what's possible.

HELENA
PO Box 4817
2501 Belt View Drive
Helena, MT 59604
Ph: (406) 449-8627
F: (406) 449-8631

BILLINGS
6780 Trade Center Avenue
Billings, MT 59101
Ph: (406) 652-5000
F: (406) 248-1363

BOISE
3050 N Lakeharbor Lane
Suite 201
Boise, ID 83703
Ph: (208) 576-6646

GREAT FALLS
702 2nd Street S, #2
Great Falls, MT 59405
Ph: (406) 952-1109

SPOKANE
9221 N Division Street
Suite F
Spokane, WA 99218
Ph: (509) 413-1430

GreatWest ENGINEERING

January 17, 2022

US Department of Transportation
585 Shephard Way
Helena MT 59601

RE: Saco Wastewater System Preliminary Engineering Report

Dear US Department of Transportation:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

- Township 31 North, Range 34 East, Sections: 7, 8, & 17

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2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

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[ ] US Department of Transportation has reviewed the enclosed information and has no comment on the project at this time.

_____ _____

Signature Date

See what's *possible.*

See what's possible.

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9221 N Division Street
Suite F
Spokane, WA 99218
Ph: (509) 413-1430

GreatWest ENGINEERING

January 17, 2022

Department of Natural Resources and Conservation Water Resources Regional Office
Attn: Regional Engineering Specialist
PO Box 1828
Havre MT 59501

RE: Saco Wastewater System Preliminary Engineering Report

Dear Department of Natural Resources and Conservation Water Resources Regional Office:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

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Great West Engineering, Inc.
Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Attached: Figure 1 and Figure 2 of Potential Wastewater System Improvement Areas

[ ] Department of Natural Resources and Conservation Water Resources Regional Office has reviewed the enclosed information and has no comment on the project at this time.

_____ _____

Signature Date

See what's *possible.*

See what's possible.

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9221 N Division Street
Suite F
Spokane, WA 99218
Ph: (509) 413-1430

GreatWest ENGINEERING

January 17, 2022

BNSF Permitting
Attn: Jones Lang LaSalle Brokerage, Inc.
4200 Buckingham Rd, Suite 110
Fort Worth TX 76155

RE: Saco Wastewater System Preliminary Engineering Report

Dear BNSF Permitting:

The Town of Saco is proposing to review and upgrade their current public wastewater system. The purpose of this letter is to solicit comments of any concerns about construction within the project area. The Town of Saco is located in Philips County, northeastern Montana along U.S. Highway 2, about 25 miles east of Malta. The project area will be specifically located within:

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We would appreciate feedback and comments from BNSF Railroad. Please send your response back to me by February 7, 2022, at kdodge@greatwesteng.com or the following address:

Great West Engineering, Inc.
Attn: Kinsee Dodge
2501 Belt View Drive
Helena, MT 59601
406-495-6172

Sincerely,

Great West Engineering, Inc.

Kinsee Dodge, EI
Project Engineer

Attached: Figure 1 and Figure 2 of Potential Wastewater System Improvement Areas

[ ] BNSF Permitting has reviewed the enclosed information and has no comment on the project at this time.

_____ _____

Signature Date

See what's *possible*.

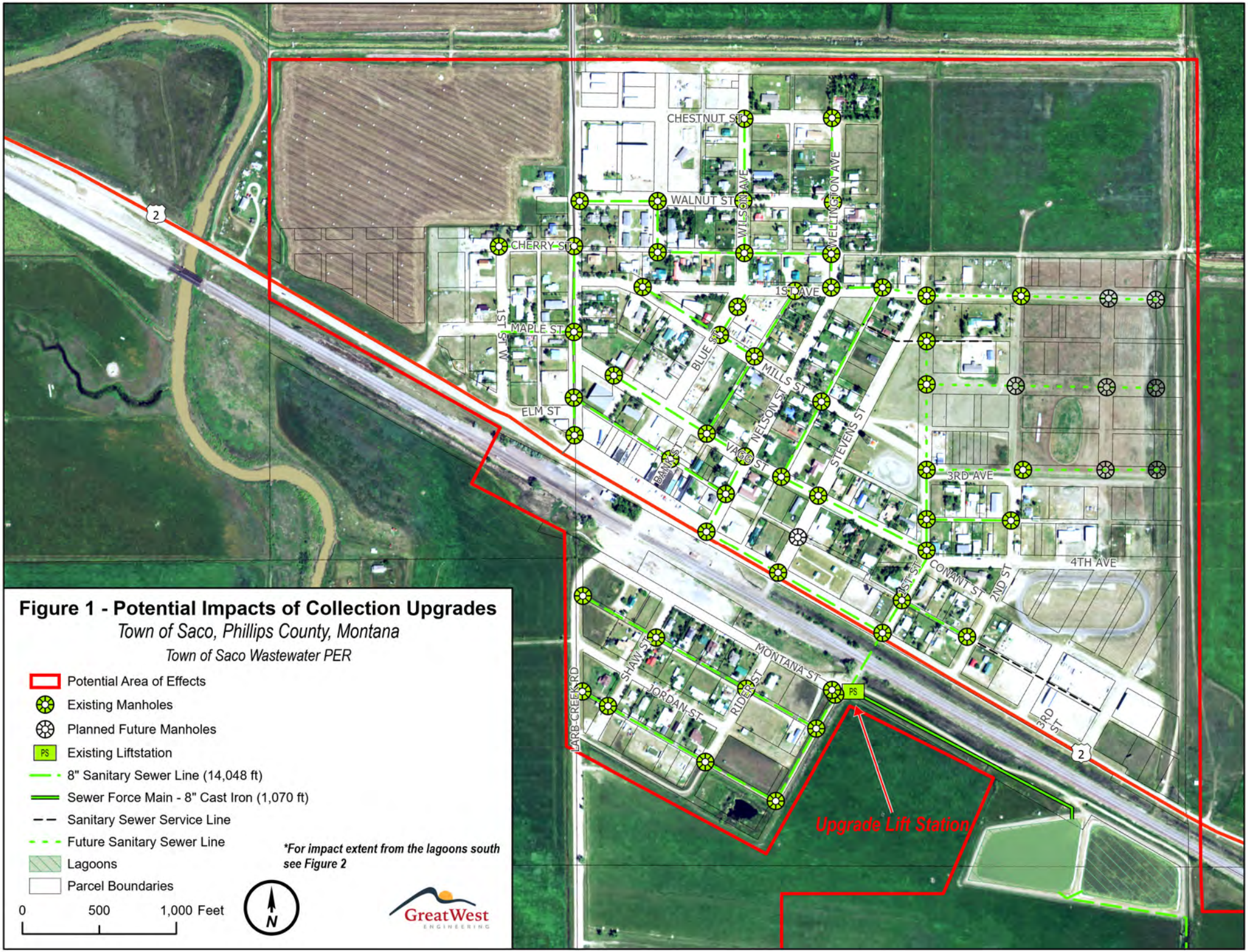


Figure 1 - Potential Impacts of Collection Upgrades

Town of Saco, Phillips County, Montana

Town of Saco Wastewater PER

- Potential Area of Effects
- Existing Manholes
- Planned Future Manholes
- Existing Liftstation
- 8" Sanitary Sewer Line (14,048 ft)
- Sewer Force Main - 8" Cast Iron (1,070 ft)
- Sanitary Sewer Service Line
- Future Sanitary Sewer Line
- Lagoons
- Parcel Boundaries

0 500 1,000 Feet

N

***For impact extent from the lagoons south see Figure 2**

GreatWest ENGINEERING

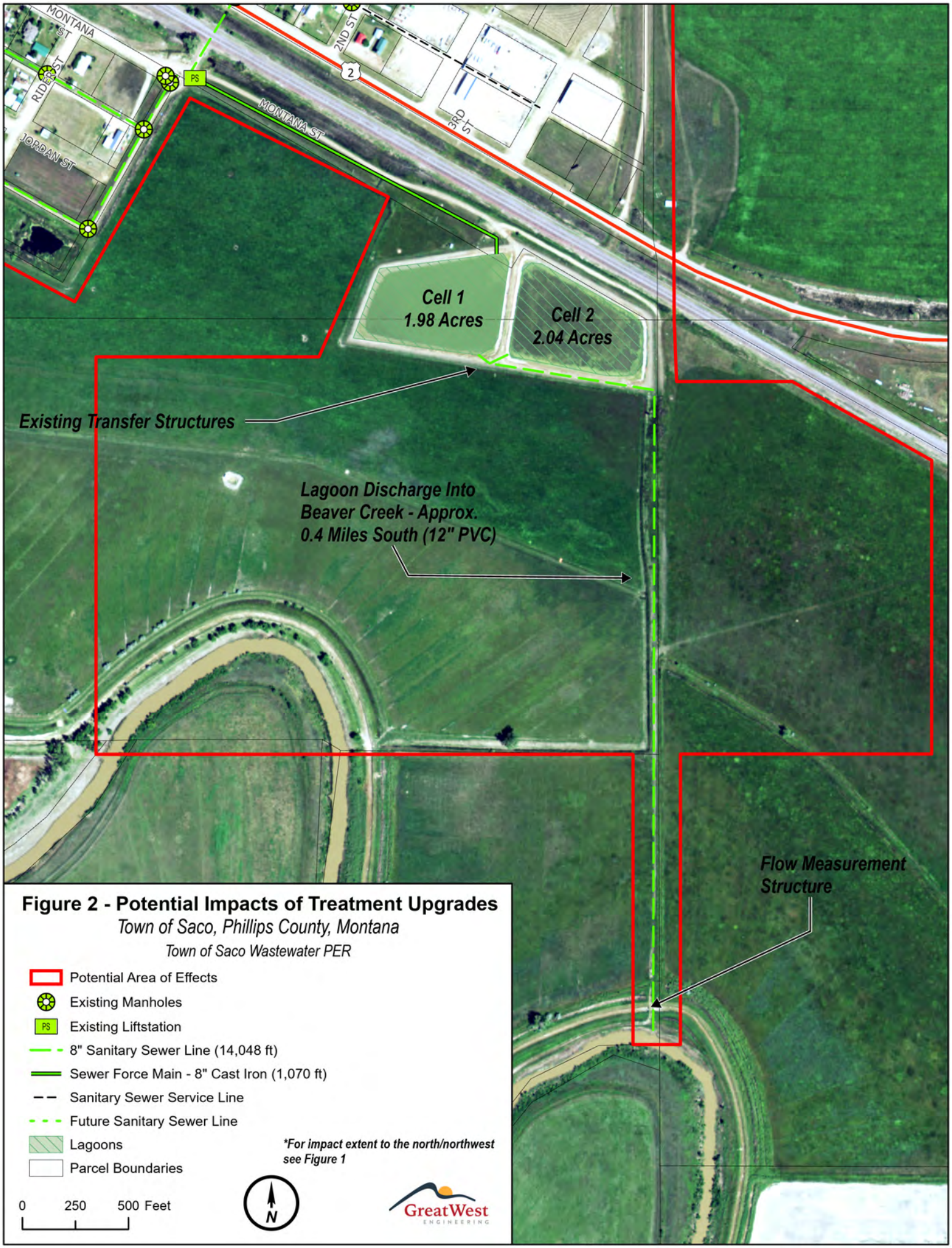


Figure 2 - Potential Impacts of Treatment Upgrades

Town of Saco, Phillips County, Montana

Town of Saco Wastewater PER

- Potential Area of Effects
- Existing Manholes
- PS Existing Liftstation
- 8" Sanitary Sewer Line (14,048 ft)
- Sewer Force Main - 8" Cast Iron (1,070 ft)
- Sanitary Sewer Service Line
- Future Sanitary Sewer Line
- Lagoons
- Parcel Boundaries

**For impact extent to the north/northwest see Figure 1*

0 250 500 Feet

N

GreatWest ENGINEERING

DEQ
Montana Department
of Environmental Quality

February 2, 2022

Kinsee Dodge
Great West Engineering, Inc.
2501 Belt View Drive
Helena, MT 59601

Re: Saco Wastewater System Preliminary Engineering Report

Dear Kinsee:

Thank you for the information and request for comments regarding the above referenced proposed project. Since the Department of Environmental Quality (DEQ) will be reviewing environmental documents, the engineering report, plans, and specifications for the proposed project and issuing an approval to construct the new facilities, those reviews will serve as DEQ's comments.

The reviews will be performed by either the Public Water Supply Program or, if DEQ funding is also proposed, the Drinking Water State Revolving Fund Program (SRF). Both of these programs are in DEQ's Engineering Bureau. Please keep in mind that other DEQ permits associated with construction of the project may be required.

If you decide to use SRF and have questions, please contact Mike Abrahamson at (406) 444-6776 or mabrahmson@mt.gov. If you do not plan to use SRF and have questions please contact Margarite Juarez Thomas, Section Supervisor, Public Water Supply Engineering, at (406) 755-8956 or MJuarezThomas@mt.gov.

Sincerely,

Mark A. Smith, P.E.
DWSRF Engineering Mgr.
Engineering Bureau

Matthew Mudd

From: Matthew Mudd
Sent: Wednesday, February 2, 2022 3:37 PM
To: Nadene Wadsworth (Nadene.Wadsworth@mt.gov)
Subject: Saco Wastewater Improvements and Floodplain
Attachments: Figure 5-1 - Phased Improvements.pdf

Good afternoon Nadene:

I am reaching out to you on behalf of the Town of Saco regarding obtaining the latest floodplain information in relation to planned wastewater improvements for the Town. We are currently completing a wastewater PER which identifies critical needs to complete collection, lift station and lagoon/treatment improvements. The Town has also been awarded an ARPA competitive grant to proceed with a Phase 1 wastewater project. The design of Phase 1 will commence within the next month.

The Phase 1 project will include replacing the 70-year-old lift station and up to 1,000 feet of collection sewer main replacements in Town. The subsequent phased projects will be identified in the WW PER but are anticipated to include completing lagoon rehabilitation (earthwork, piping/structures) and potentially installing a UV disinfection building in addition to more pipe replacements. The existing lift station is located within and nearby the existing levee system and the treatment lagoons are located completely outside of the levees. The Phase 2 project will be included in the PER for state grant applications in 2022.

The new lift station rim/finish floor elevation will need to be designed to be above the 100-year flood plain elevation, and the lagoons berm tops will need to be at least above the 100-year flood plain elevation but may need to be set at/above the 500-year elevation with a potential RD funded project. I am also including a planning level exhibit showing the draft phasing plan of the work.

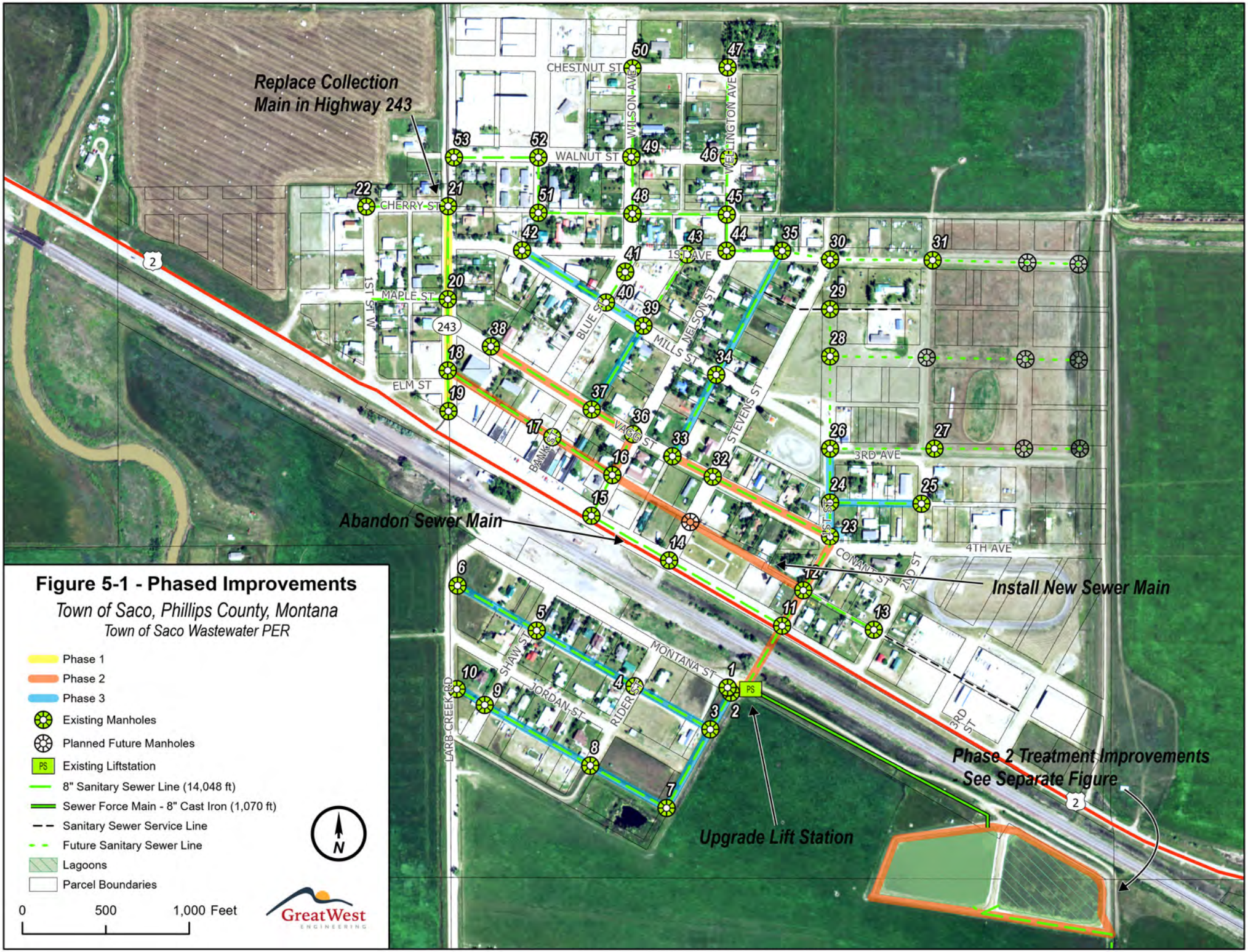
Your assistance and input are appreciated for the current design and PER study.

Regards,

GreatWest ENGINEERING

Matthew Mudd, PE
Project Manager

d: (406) 495-6196
c: (406) 490-3909


Replace Collection Main in Highway 243
Abandon Sewer Main
Install New Sewer Main
Upgrade Lift Station
Phase 2 Treatment Improvements - See Separate Figure
CHESTNUT ST
WALNUT ST
CHERRY ST
MAPLE ST
ELM ST
1ST AVE
3RD AVE
4TH AVE
MILLS ST
VAGG ST
CONANT ST
MONTANA ST
JORDAN ST
WILSON AVE
WELLINGTON AVE
NELSON ST
BLUE ST
STEVENS ST
BANK ST
SHAW ST
RIDER ST
LARB CREEK RD
1ST ST W
1ST ST
2ND ST
3RD ST
PS
2
243
Figure 5-1 - Phased Improvements
Town of Saco, Phillips County, Montana
Town of Saco Wastewater PER
Phase 1
Phase 2
Phase 3
Existing Manholes
Planned Future Manholes
Existing Liftstation
8" Sanitary Sewer Line (14,048 ft)
Sewer Force Main - 8" Cast Iron (1,070 ft)
Sanitary Sewer Service Line
Future Sanitary Sewer Line
Lagoons
Parcel Boundaries
N
0
500
1,000 Feet
GreatWest
ENGINEERING

From:	Matthew Mudd
To:	Kinsee Dodge
Subject:	FW: Saco Wastewater Improvements and Floodplain
Date:	Wednesday, February 9, 2022 4:40:54 PM
Attachments:	image001.png image002.png image003.png image004.png image005.png

---

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: "Wadsworth, Nadene" <Nadene.Wadsworth@mt.gov>
Date: 2/9/22 4:15 PM (GMT-07:00)
To: Matthew Mudd <mmudd@greatwesteng.com>
Cc: "Turk, Peri" <Peri.Turk@mt.gov>
Subject: RE: Saco Wastewater Improvements and Floodplain

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Good Afternoon Matthew,

Thank you for reaching out to us about the floodplain mapping project. Currently we are in the data development process for a multi-county milk river watershed study more information can be found here www.floodplain.mt.gov/milk .

In regards to data and information for this project in Saco we anticipate having information to share with the town by mid to late fall. Once we have the data and information we generally share that with the floodplain administrator for the community and ask them to share that as they see fit. We do plan to schedule some update meetings with the community late summer early fall.

I'm sorry I can't be more help until the data is reviewed by FEMA and the DNRC our preference is to not share since there can be changes to the information.

Nadene Wadsworth, CFM
MT DNRC Floodplain Program
Outreach Specialist
(406) 444-6732

From: Matthew Mudd <mmudd@greatwesteng.com>
Sent: Wednesday, February 2, 2022 3:37 PM
To: Wadsworth, Nadene <Nadene.Wadsworth@mt.gov>
Subject: [EXTERNAL] Saco Wastewater Improvements and Floodplain

Good afternoon Nadene:

I am reaching out to you on behalf of the Town of Saco regarding obtaining the latest floodplain information in relation to planned wastewater improvements for the Town. We are currently completing a wastewater PER which identifies critical needs to complete collection, lift station and lagoon/treatment improvements. The Town has also been awarded an ARPA competitive grant to proceed with a Phase 1 wastewater project. The design of Phase 1 will commence within the next month.

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Your assistance and input are appreciated for the current design and PER study.

Regards,

GreatWest ENGINEERING [greatwesteng.com]

[greatwesteng.com]
[facebook.com]
[instagram.com]
[linkedin.com]

Matthew Mudd, PE
Project Manager

d: (406) 495-6196
c: (406) 490-3909

From:	Murdo, Damon
To:	Kinsee Dodge
Subject:	SACO WASTEWATER SYSTEM PER
Date:	Thursday, January 20, 2022 4:14:37 PM
Attachments:	Reports.pdf Sites.pdf 2022011908.pdf

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Big Sky. Big Land. Big History.
Montana
Historical Society

January 20, 2022

Kinsee Dodge
Great West Engineering
2501 Belt View Drive
Helena MT 59604

RE: SACO WASTEWATER SYSTEM PER. SHPO Project #: 2022011908

Dear Kinsee:

I have conducted a cultural resource file search for the above-cited project located in Sections 7, 8, 17, T31N R34E. According to our records there have been a few previously recorded sites within the designated search locale. In addition to the sites there have been a few previously conducted cultural resource inventories done in the area. I've attached a list of these sites and reports. If you would like any further information regarding these sites or reports, you may contact me at the number listed below.

It is SHPO's position that any structure over fifty years of age is considered historic and is potentially eligible for listing on the National Register of Historic Places. If any structures are to be altered and are over fifty years old, we would recommend that they be recorded, and a determination of their eligibility be made prior to any disturbance taking place.

As long as there will be no disturbance or alteration to structures over fifty years of age and ground disturbance is kept to previously disturbed areas, we feel that there is a low likelihood cultural properties will be impacted. We, therefore, feel that a recommendation for a cultural resource inventory is unwarranted at this time. However, should structures need to be altered or if cultural materials be inadvertently discovered during this project, we would ask that our office be contacted, and the site investigated.

Sincerely,

From: Moritz, Anthony
To: Kinsee Dodge
Cc: townsaco@nemont.net
Subject: RE: Saco Wastewater System Preliminary Engineering Report
Date: Tuesday, February 1, 2022 4:37:25 PM

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Kinsee,

The subject project has potential areas of effect in the mapped Zone A floodplain of FIRM panel 3001620625B. Please coordinate with the town of Saco floodplain administrator Clint Simpson.

Saco, Town of Simpson, Clint townsaco@nemont.net (406) 527-3312 PO Box 330 Saco, MT 59261

Please call or email me if you have any questions.

Thank you,

Anthony Moritz, Engineering Analyst
Montana DNRC, Water Resources Division
Havre Regional Office
Anthony.Moritz@mt.gov
Office: 406 265-5516
Direct: 406 808-7127

From: Martin, Jacob
To: Kinsee Dodge
Subject: Saco Wastewater System Preliminary Engineering Report
Date: Thursday, January 27, 2022 11:25:21 AM

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Kinsee Dodge:

Thank you for your January 17, 2022, letter, received on January 21, 2022, requesting U.S. Fish and Wildlife Service (USFWS) comment on a proposed wastewater system improvement project at Saco, Phillips County, Montana. The Town of Saco proposes to upgrade, repair, or replace infrastructure associated is wastewater collection and treatment system.

The USFWS reviewed your letter. Based on the information provided, we have no comments regarding federally listed or proposed threatened or endangered species or other trust species. Additional information regarding listed species that may occur within the project footprint may be obtained using the IPaC project-planning tool, which streamlines the USFWS environmental review process at https://ecos.fws.gov/ipac/.

Thank you for the opportunity to comment. If you have any questions or comments about this correspondence, please contact me via reply email or at the address or phone numbers, below.

Sincerely,

Jacob M. (Jake) Martin
Assistant Field Supervisor
Montana Ecological Services Office
585 Shephard Way, Suite 1
Helena, Montana 59601
(406) 422-8524 (cell, preferred, I'm teleworking)
(406) 430-9007 (office)
jacob_martin@fws.gov

From: Borrego, Jerin E CIV USARMY CENWO (USA)
To: Kinsee Dodge
Subject: RE: Saco Wastewater System Preliminary Engineering Report - Project Area Comments
Date: Wednesday, January 19, 2022 10:13:47 AM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Kinsee Dodge,

This email is to inform you that USACE has received your request for comments. The project number assigned is NWO-2022-00115-MT. A project manager will be assigned and will reach out to you shortly.

Sincerely,

Jerin Borrego
Regulatory Project Manager
U.S. Army Corps of Engineers
100 Neill Avenue, Suite 200
Helena, Montana 59601
Work Cell: 406-417-1370
Jerin.E.Borrego@usace.army.mil

The Montana Regulatory Office is now accepting digital submittals! Effective immediately, please submit new requests in digital form to Montana.Reg@usace.army.mil for initial in-processing. (NOTE: Emails including attachments cannot exceed 40Mb). Further information and instructions regarding submitting requests electronically can be found at: https://www.nwo.usace.army.mil/Missions/Regulatory-Program/Montana/

Regulatory Customer Service Survey: https://regulatory.ops.usace.army.mil/customer-service-survey/

From: Kinsee Dodge <kdodge@greatwesteng.com>
Sent: Wednesday, January 19, 2022 8:59 AM
To: Montana.Reg <Montana.Reg@usace.army.mil>
Subject: [URL Verdict: Neutral][Non-DoD Source] Saco Wastewater System Preliminary Engineering Report - Project Area Comments

Good morning,

I am reaching out regarding a proposed Wastewater System Improvement project that is in

development in Saco, Montana. The attached letter and maps outline this project and the associated project area, of which any comments concerning the project area would be appreciated at this time. Please distribute this accordingly, and I look forward to receiving any feedback by February 7,2022.

Please feel free to reach out with any questions or concerns.

Thank you,

GreatWest ENGINEERING

We're Hiring!

Kinsee Dodge, EI

d: (406) 495-6172
o: (406) 449-8627

2501 Belt View Drive
Helena, MT 59601

Environmental Review Form

On a separate piece of paper, please answer the following as they apply to your proposed project:

1. **Alternatives:** Describe reasonable alternatives to the project.

2. **Mitigation:** Identify any enforceable measures necessary to reduce any impacts to an insignificant level.

3. **Is an EA or Environmental Impact Statement (EIS) required?** Describe whether or not an EA or EIS is required and explain in detail why or why not.

4. **Public Involvement:** Describe the process followed to involve the public in the proposed project and its potential environmental impacts. Identify the public meetings -- where and when -- the project was considered and discussed, and when the applicant approved the final environmental assessment.

5. **Person(s) Responsible for Preparing:** Identify the person(s) responsible for preparation of this checklist.

6. **Other Agencies**: List any state, local, or federal agencies that have over-lapping or additional jurisdiction or environmental review responsibility for the proposed action and the permits, licenses, and other authorizations required; and list any agencies or groups that were contacted or contributed information to this Environmental Assessment (EA).

5/11/22

(1) Matthew Mudd, PE, Engineer, Date

Town of Saco

(2) Mayor Date: 5-11-2022

* If an authorized representative (1) completes the checklist and this form, a chief elected official (2) must also sign authorizing acceptance of the review process. Explanation or statement of how/why that representative was authorized should also be included.

Environmental Review Questions

1. **Alternatives:** Describe reasonable alternatives to the project.

   For the proposed sewer pipe project the alternatives included no action, open cut replacement, and trenchless options. The preferred alternative will include a combination of open cut and bore and jack crossings across the BNSF railroad and US-2 highway.

   Treatment upgrades looked at several alternatives including major upgrades to the treatment site and minor lagoon improvements and repairs. All treatment alternatives would include sludge removal and disposal. Effluent options for treatment evaluated UV disinfection, irrigation and also total retention. Ultimately, minor upgrades vs. major upgrades are preferred at this time and the focus is on pipeline replacements to reduce the impacts of I&I on the system and reduce the influent flows to allow for better treatment capacity and retention time.

2. **Mitigation:** Identify any enforceable measures necessary to reduce any impacts to an insignificant level.

   According to the MEPA, If it is unclear whether the proposed action may generate impacts that are significant, then an agency may prepare an EA in order to determine the potential significance (MEPA Model Rule III (3)). If the EA determines that the proposed action will have significant impacts, then either an EIS must be prepared or the effects of the proposed action must be MITIGATED below the level of significance and documented in a mitigated EA (MEPA Model Rule III(4)).

   Mitigation measures are minimal for this project since the majority of work will take place within previously impact public right of ways.

   Those items considered for the project include:

   The project may encounter contaminated soils given the proximity to documented DEQ LUST site in town. Special provisions in the contract will instruct the contractor on the steps to take when/if contaminated soils are encountered.

   Both BNSF and MDT crossings will be part the project and permits from each authority will be required.

   Preparation of a sludge management plan conforming to EPA 503 will be required for the sludge removal/disposal scope of the project.

   The Contractor will be required to prepare a storm water pollution prevention plan (SWPPP) and use best management practices (BMPs).

3. **Is an EA or Environmental Impact Statement (EIS) required?** Describe whether or not an EA or EIS is required and explain in detail why or why not.

   According to the MEPA, An EIS is a detailed environmental review that is required whenever an agency proposes a major action significantly affecting the quality of the human environment (section

75-1-201(1)(b)(iv), MCA).

For the proposed project an Environmental Checklist was completed and agency comments have been solicited in accordance to the PER and MEPA guidelines. No major actions that would significantly affect the quality of the human environment is anticipated and no EIS is required as determined by the engineer.

4. **Public Involvement:** Describe the process followed to involve the public in the proposed project and its potential environmental impacts. Identify the public meetings -- where and when -
- the project was considered and discussed, and when the applicant approved the final environmental assessment.

For a small town of less than 300 people, the community has been engaged about the proposed project throughout the entire planning process .

On July 7, 2020, an initial work session was conducted with the Town Council at their regular scheduled Council meeting to learn about the Town's sewer system needs in anticipation of a competitive ARPA grant funding application. This work session generally discussed potential project alternatives and the scope of a potential ARPA grant application. The intent of this meeting was not to select a preferred alternative but to provide information and help the community make informed decisions about the condition of the system and needed upgrades.

After the Town received an APRA competitive grant award on October 8, 2021, follow-up work sessions were completed with the Town Council and operator staff on December 8, 2021, January 12, 2022, March 9, 2022, and March 28, 2022. The work sessions provided further detailed analysis of the existing system and preliminary wastewater alternative costs. Funding options, more detailed cost estimates, and related rate impacts were discussed as the PER findings progressed. At the last work session, the Town Council provided input regarding the overall project scope and project costs to present to the public at the schedule public hearing. All Council meetings are open to and attended by the public.

On April 13, 2022, a public meeting was held to solicit specific input and comments on the PER and Environmental Assessment. The meeting was advertised in the local newspaper (Phillips County New). The overall project cost of each project alternative was presented to the public. A proposed funding strategy was also presented along with the potential effects to user rates. In general, the response to the proposed improvement alternatives were positive. The Council members and community concurred with the preferred alternatives presented in the PER. The Town formally passed resolutions to accept the findings of the PER and EA at the public hearing.

Additionally, the community was also directed to the project website located at http://sacoinfrastructure.com. The website link was advertised in the local paper during the public hearing advertisement, given at the public hearing as well as posted in the Town. The website provided project information, schedules, an explanation of the PER process, available downloadable documents, funding information, and an opportunity to comment.

Letters were provided by some very concerned local community members about the severe condition of the sewer system. These letters document sewer overflows into their homes and also a local church. This statement expresses the common sentiments that residents share about

the degrading condition and limited capacity of the sewer collection system, lift station, and confirm the periodic surcharging conditions during times of runoff and high groundwater conditions. According to the letters, these conditions will keep repeating until and unless the sewer system deficiencies are corrected. Copies of the meetings minutes, community engagement documents, meeting notices and letters are documented.

5. **Person(s) Responsible for Preparing:** Identify the person(s) responsible for preparation of this checklist.

   The environmental checklist was prepared by: Matthew Mudd, PER (Great West Engineering)

6. **Other Agencies**: List any state, local, or federal agencies that have over-lapping or additional jurisdiction or environmental review responsibility for the proposed action and the permits, licenses, and other authorizations required; and list any agencies or groups that were contacted or contributed information to this Environmental Assessment (EA).

   The agencies contacted for the EA include:

   - Department of Commerce, Census and Economic Information Center
   - Department of Labor and Industry
   - Department of Environmental Quality
   - Department of Fish, Wildlife and Parks
   - Department of Natural Resources and Conservation
   - Department of Transportation
   - State Historic Preservation Office
   - Chouteau County
   - US Environmental Protection Agency
   - US Fish and Wildlife Service
   - US Forest Service
   - US Army Corps of Engineers
   - National Park Service
   - Federal Aviation Administration
   - Bureau of Land Management
   - Bureau of Indian Affairs
   - Natural Resource Conservation Service
   - Occupational Safety and Health Administration
   - US Department of Transportation
   - Department of Natural Resources and Conservation Water Resources Regional Office

APPENDIX C

NRCS Soils Report

Search

Clear | Search

Basic Search

Enter keywords

Advanced Search

Clear | Search

Soil Reports

Open All | Close All

- AOI Inventory
- Building Site Development
- Construction Materials
- Disaster Recovery Planning
- Land Classifications
- Land Management
- Recreational Development
- Sanitary Facilities
- Soil Chemical Properties
- Soil Erosion
- Soil Health
- Soil Physical Properties
- Soil Qualities and Features
- Vegetative Productivity
- **Waste Management**
  - Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge
  - Agricultural Disposal of Wastewater by Irrigation and Overland Flow

    View Description | View Soil Report

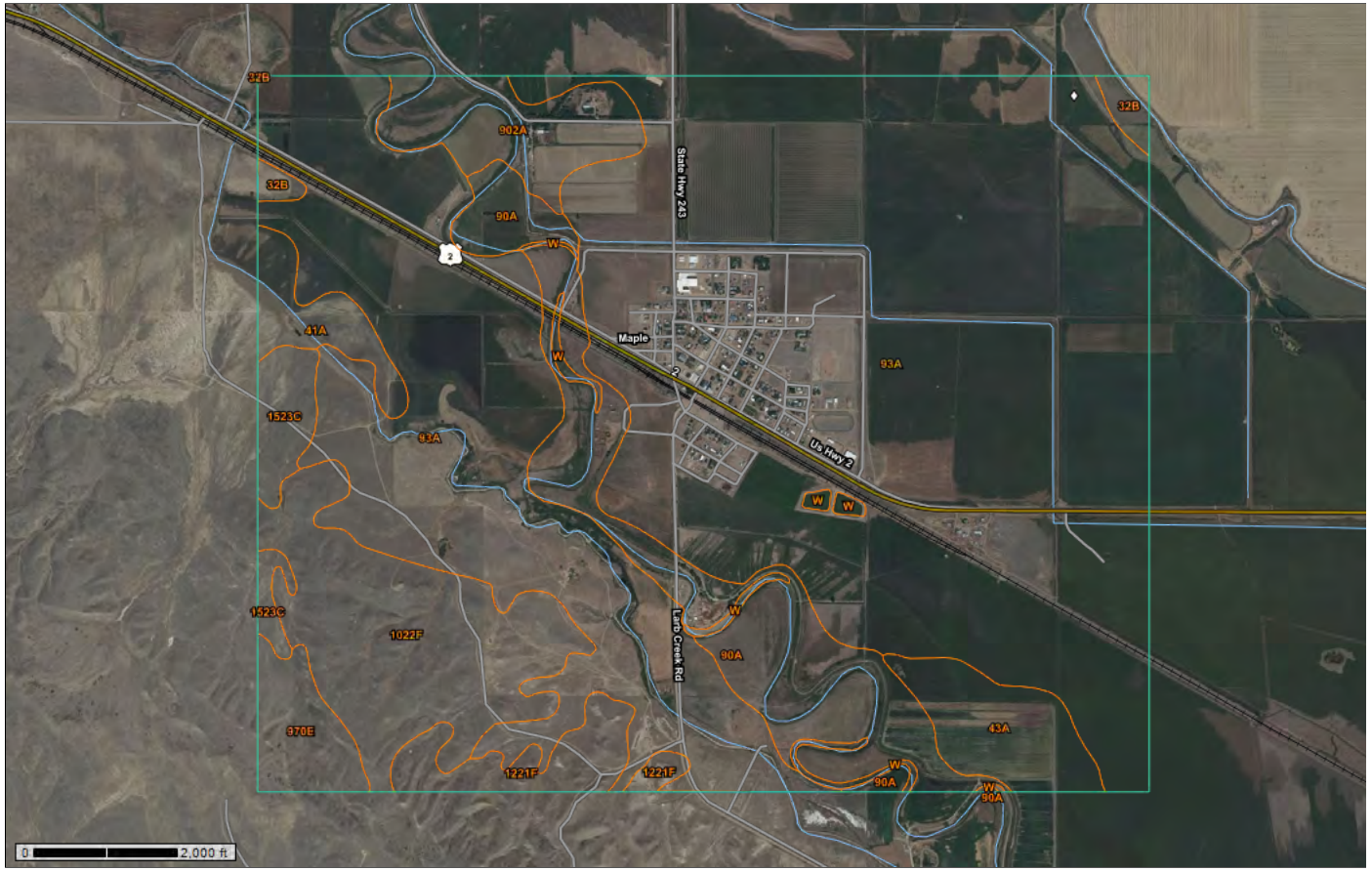
    Options

    Include minor soils?

    View Description | View Soil Report
  - Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment
  - Large Animal Carcass Disposal
- Water Features
- Water Management

Soil Map

Scale (not to scale)



Report — Agricultural Disposal of Wastewater by Irrigation and Overland Flow

Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations.

Phillips County Area, Montana

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation	Overland flow of wastewater

Phillips County Area, Montana					
		Rating class and limiting features	**Value**	**Rating class and limiting features**	**Value**
32B—Kobase silty clay loam, 0 to 4 percent slopes					
Kobase	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Seepage	0.77
		Sodium content	0.08	Sodium content	0.08
41A—Vaeda clay, 0 to 2 percent slopes					
Vaeda	90	Very limited		Very limited	
		Slow water movement	1.00	Sodium content	1.00
		Sodium content	1.00		
43A—Pendroy clay, 0 to 2 percent slopes					
Pendroy	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Flooding	0.40
90A—Harlake clay, 0 to 2 percent slopes					
Harlake	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Flooding	0.40
93A—Bowdoin clay, 0 to 2 percent slopes					
Bowdoin	85	Very limited		Very limited	
		Slow water movement	1.00	Sodium content	1.00
		Salinity	1.00	Salinity	0.50
		Sodium content	1.00	Flooding	0.40
902A—Lostriver-Bullhook complex, 0 to 2 percent slopes					
Lostriver	50	Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00
		Slow water movement	1.00	Flooding	0.40
		Salinity	0.13		
Bullhook	40	Very limited		Very limited	
		Sodium content	1.00	Seepage	1.00
		Salinity	0.13	Sodium content	1.00
				Flooding	0.40

Phillips County Area, Montana					
970E—Neldore-Bascovy clays, 8 to 25 percent slopes					
Neldore	45	Very limited		Very limited	
		Slow water movement	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Droughty	1.00	Sodium content	0.82
		Too steep for surface application	1.00		
		Too steep for sprinkler application	1.00		
Bascovy	35	Very limited		Very limited	
		Slow water movement	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Sodium content	0.50
		Sodium content	0.50		
		Depth to bedrock	0.46		
1022F—Hillon-Cabbart loams, 15 to 60 percent slopes					
Hillon	40	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Slow water movement	0.37		
Cabbart	35	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Sodium content	0.32
		Slow water movement	0.37		
1221F—Hillon clay loam, 15 to 60 percent slopes					
Hillon	80	Very limited		Very limited	

Phillips County Area, Montana					
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	0.62
		Slow water movement	1.00		
1523C—Elloam-Phillips-Absher association, 0 to 8 percent slopes					
Elloam	40	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Sodium content	1.00	Sodium content	1.00
		Too steep for surface application	0.08		
Phillips	25	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too steep for surface application	0.08	Sodium content	0.08
		Sodium content	0.08		
Absher	15	Very limited		Very limited	
		Slow water movement	1.00	Sodium content	1.00
		Sodium content	1.00		
		Droughty	0.71		
		Salinity	0.50		
		Too steep for surface application	0.08		
W—Water					
Water	100	Not rated		Not rated	

Description — Agricultural Disposal of Wastewater by Irrigation and Overland Flow

Agricultural Disposal of Wastewater by Irrigation and Overland Flow

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

This table shows the degree and kind of soil limitations affecting the treatment of wastewater, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of this table, the effluent in lagoons and storage ponds is from facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, heavy metals, and salts are not added in excessive amounts.

The ratings in the table are for waste management systems that not only dispose of and treat wastewater but also are beneficial to crops. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect agricultural waste management. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can

be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, Ksat, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding. The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

Overland flow of wastewater is a process in which wastewater is applied to the upper reaches of sloped land and allowed to flow across vegetated surfaces, sometimes called terraces, to runoff-collection ditches. The length of the run generally is 150 to 300 feet. The application rate ranges from 2.5 to 16.0 inches per week. It commonly exceeds the rate needed for irrigation of cropland. The wastewater leaves solids and nutrients on the vegetated surfaces as it flows downslope in a thin film. Most of the water reaches the collection ditch, some is lost through evapotranspiration, and a small amount may percolate to the ground water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, and the design and construction of the system. Reaction and the cation-exchange capacity affect absorption. Reaction, salinity, and the sodium adsorption ratio affect plant growth and microbial activity. Slope, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, flooding, depth to bedrock or a cemented pan, stones, and cobbles affect design and construction. Permanently frozen soils are unsuitable for waste treatment.

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Some minor components, however, have properties and behavior characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Phillips County Area, Montana

93A—Bowdoin clay, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: cnxw
Elevation: 2,170 to 3,400 feet
Mean annual precipitation: 11 to 14 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 100 to 120 days

Farmland classification: Not prime farmland

Map Unit Composition

Bowdoin and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bowdoin

Setting

Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciolacustrine deposits

Typical profile

A - 0 to 3 inches: clay
Bnss - 3 to 31 inches: clay
Bnssy - 31 to 60 inches: clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: RareNone
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 10 percent
Maximum salinity: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 30.0
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): 6s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: R052XC206MT - Dense Clay (DC) 10-14" p.z.
Hydric soil rating: Unranked

Minor Components

Strongly saline soils

Percent of map unit: 7 percent
Ecological site: R052XC206MT - Dense Clay (DC) 10-14" p.z.
Hydric soil rating: No

Strongly sodic soils

Percent of map unit: 7 percent

Ecological site: R052XC206MT - Dense Clay (DC) 10-14" p.z.
Hydric soil rating: No

Wheatbelt

Percent of map unit: 1 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R052XC210MT - Saline Upland (SU) 10-14" p.z.
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Phillips County Area, Montana
Survey Area Data: Version 17, Sep 2, 2021

APPENDIX D

Species of Concern

Montana Natural Heritage - SOC Report

Plant Species of Concern

Species List Last Updated **02/19/2021**

1 Species of Concern
Filtered by the following criteria:
Township = 031N034E (based on mapped Species Occurrences)

MONTANA Natural Heritage Program

A program of the Montana State Library's Natural Resource Information System operated by the University of Montana.

Expand All | Collapse All

Introduction

Species of Concern

Species of Concern
1 Species
Filtered by the following criteria:
Township = 031N034E (based on mapped **Species Occurrences**)

FLOWERING PLANTS - DICOTS (MAGNOLIOPSIDA)

1 SPECIES
TOWNSHIP = 031N034E (based on mapped **Species Occurrences**)

SCIENTIFIC NAME COMMON NAME TAXA SORT	OTHER NAMES	FAMILY (SCIENTIFIC) FAMILY (COMMON)	GLOBAL RANK	STATE RANK	USFWS	USFS	BLM	MNPS THREAT CATEGORY	HABITAT
Phacelia thermalis Hot Spring Phacelia		Hydrophyllaceae Waterleaf Family	G3G4	S1S3				4	Barren clay slopes
			Species Occurrences verified in these Counties: Fergus, Garfield, Phillips, Valley **State Rank Reason:** Hot spring phacelia is known from a very small number of sites in northeastern Montana, where it is disjunct from its primary range (northern California to southwestern Idaho). The species is an annual and may be vulnerable to competition from invasive exotics, particularly sweet clover, which is widespread in the type of habitat where hot spring phacelia has been found.						

Potential Species of Concern

Special Status Species

Additions To Statewide List

Species Removed From Statewide List

Citation for data on this website:
Montana Plant Species of Concern Report. Montana Natural Heritage Program. Retrieved on 1/26/2022, from mtnhp.org/SpeciesOfConcern/?AorP=p

Montana Natural Heritage - SOC Report

Species List Last Updated **02/19/2021**

Animal Species of Concern

7 Species of Concern
Filtered by the following criteria:
Township = 031N034E (based on mapped Species Occurrences)

MONTANA Natural Heritage Program

A program of the Montana State Library's Natural Resource Information System operated by the University of Montana.

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Introduction

Species of Concern

Species of Concern

7 Species
Filtered by the following criteria:
Township = 031N034E (based on mapped **Species Occurrences**)

BIRDS (AVES)

5 SPECIES
TOWNSHIP = 031N034E (based on mapped **Species Occurrences**)

SCIENTIFIC NAME COMMON NAME TAXA SORT	FAMILY (SCIENTIFIC) FAMILY (COMMON)	GLOBAL RANK	STATE RANK	USFWS	USFS	BLM	FWP SWAP	% OF GLOBAL BREEDING RANGE IN MT	% OF MT THAT IS BREEDING RANGE	HABITAT
Buteo regalis Ferruginous Hawk	**Accipitridae** Hawks / Kites / Eagles	G4	S3B	MBTA; BCC17		SENSITIVE	SGCN3	11%	95%	Sagebrush grassland
		Species Occurrences verified in these Counties: Beaverhead, Blaine, Broadwater, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Deer Lodge, Fallon, Fergus, Gallatin, Garfield, Glacier, Golden Valley, Hill, Jefferson, Judith Basin, Lewis and Clark, Liberty, Madison, Mccone, Meagher, Musselshell, Park, Petroleum, Phillips, Pondera, Powder River, Powell, Prairie, Roosevelt, Rosebud, Sheridan, Stillwater, Teton, Toole, Valley, Wheatland, Wibaux, Yellowstone								
Centrocercus urophasianus Greater Sage-Grouse	**Phasianidae** Upland Game Birds	G3G4	S2		Sensitive - Known on Forests (BD) Sensitive - Suspected on Forests (CG)	SENSITIVE	SGCN2	17%	75%	Sagebrush
		Species Occurrences verified in these Counties: Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Chouteau, Custer, Dawson, Deer Lodge, Fallon, Fergus, Gallatin, Garfield, Golden Valley, Hill, Madison, Mccone, Meagher, Musselshell, Park, Petroleum, Phillips, Powder River, Prairie, Rosebud, Silver Bow, Stillwater, Sweet Grass, Treasure, Valley, Wheatland, Wibaux, Yellowstone								
Centronyx bairdii Baird's Sparrow	**Passerellidae** New World Sparrows	G4	S3B	MBTA; BCC11; BCC17		SENSITIVE	SGCN3	27%	67%	Grasslands
		Species Occurrences verified in these Counties: Blaine, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Fallon, Fergus, Glacier, Golden Valley, Hill, Judith Basin, Lewis and Clark, Liberty, Mccone, Meagher, Musselshell, Petroleum, Phillips, Powder River, Prairie, Richland, Roosevelt, Rosebud, Sheridan, Stillwater, Sweet Grass, Teton, Toole, Treasure, Valley, Wheatland, Wibaux, Yellowstone **State Rank Reason:** Montana populations were declining until recently and the species is declining in most or the surrounding states and provinces.								
Dolichonyx oryzivorus Bobolink	**Icteridae** Blackbirds	G5	S3B	MBTA; BCC10; BCC11; BCC17			SGCN3	9%	100%	Moist grasslands
		Species Occurrences verified in these Counties: Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Deer Lodge, Fallon, Fergus, Flathead, Gallatin, Garfield, Glacier, Granite, Hill, Jefferson, Judith Basin, Lake, Lewis and Clark, Liberty, Lincoln, Madison, Mccone, Meagher, Missoula, Musselshell, Park, Petroleum, Phillips, Powder River, Powell, Prairie, Ravalli, Richland, Roosevelt, Rosebud, Sanders, Sheridan, Stillwater, Sweet Grass, Teton, Toole, Valley, Wheatland, Wibaux, Yellowstone **State Rank Reason:** Species has undergone recent large population declines in Montana and a patchwork of declines and increases have been documented in surrounding states and provinces.								
Lanius ludovicianus Loggerhead Shrike	**Laniidae** Shrikes	G4	S3B	MBTA		SENSITIVE	SGCN3	4%	100%	Shrubland
		Species Occurrences verified in these Counties: Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Fallon, Fergus, Gallatin, Garfield, Glacier, Golden Valley, Hill, Jefferson, Liberty, Madison, Mccone, Meagher, Musselshell, Petroleum, Phillips, Pondera, Powder River, Prairie, Richland, Roosevelt, Rosebud, Sheridan, Stillwater, Sweet Grass, Teton, Toole, Valley, Wheatland, Wibaux, Yellowstone								

FISH (ACTINOPTERYGII)

2 SPECIES
TOWNSHIP = 031N034E (based on mapped **Species Occurrences**)

SCIENTIFIC NAME COMMON NAME TAXA SORT	FAMILY (SCIENTIFIC) FAMILY (COMMON)	GLOBAL RANK	STATE RANK	USFWS	USFS	BLM	FWP SWAP	% OF GLOBAL BREEDING RANGE IN MT	% OF MT THAT IS BREEDING RANGE	HABITAT
Chrosomus eos Northern Redbelly Dace	**Cyprinidae** Minnows	G5	S3				SGCN3	4%	27%	Small prairie rivers
		Species Occurrences verified in these Counties: Blaine, Cascade, Chouteau, Daniels, Dawson, Fergus, Golden Valley, Hill, Judith Basin, Lewis and Clark, Mccone, Meagher, Musselshell, Petroleum, Phillips, Pondera, Richland, Roosevelt, Sheridan, Stillwater, Sweet Grass, Teton, Toole, Valley, Wheatland, Wibaux **State Rank Reason:** The Northern Redbelly Dace is currently listed as an "S3" species of concern in Montana because they are potentially at risk because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas.							
Etheostoma exile Iowa Darter	**Percidae** Perches	G5	S3			SENSITIVE	SGCN3	1%	9%	Small prairie rivers
		Species Occurrences verified in these Counties: Blaine, Carter, Chouteau, Daniels, Dawson, Fallon, Glacier, Hill, Liberty, Mccone, Phillips, Powder River, Richland, Roosevelt, Sheridan, Toole, Valley, Wibaux **State Rank Reason:** The Iowa Darter is currently listed as an "S3" species of concern in Montana because they are potentially at risk because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas.							

Potential Species of Concern

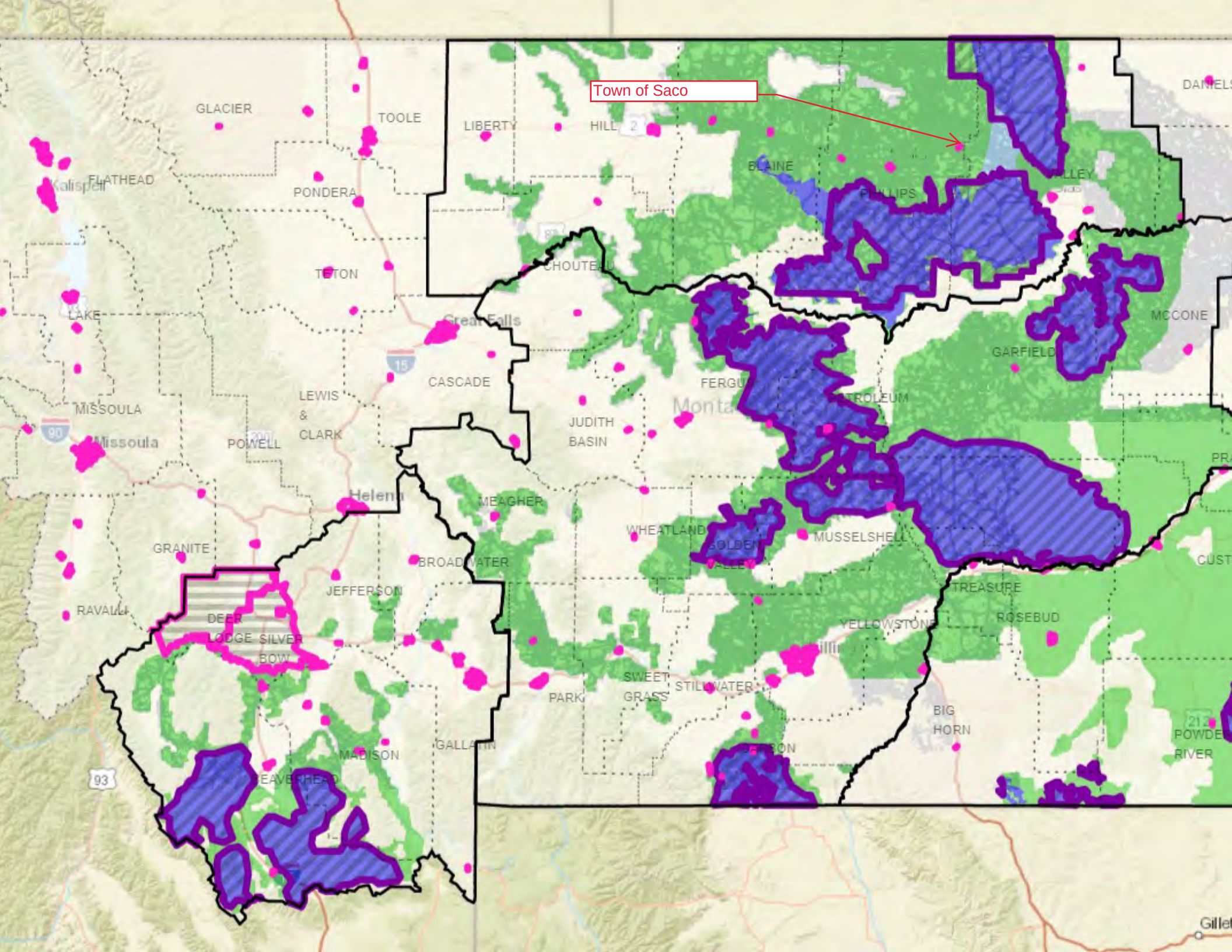
Special Status Species

Additions To Statewide List

Species Removed From Statewide List

Species of Greatest Inventory Need

Citation for data on this website:
Montana Animal Species of Concern Report. Montana Natural Heritage Program and Montana Fish, Wildlife and Parks. Retrieved on 1/26/2022, from mtnhp.org/SpeciesOfConcern/?AorP=a


Town of Saco
GLACIER
TOOLE
LIBERTY
HILL
BLAINE
PHILLIPS
DANIELS
FLATHEAD
PONDERA
TETON
CHOUTEAU
LAKE
Great Falls
MCCONE
GARFIELD
CASCADE
FERGUS
PETROLEUM
MISSOULA
Missoula
POWELL
LEWIS & CLARK
JUDITH BASIN
MEAGHER
Helena
WHEATLAND
MUSSELSHELL
GRANITE
BROADWATER
JEFFERSON
TREASURE
ROSEBUD
RAVALLI
DEER LODGE
SILVER BOW
YELLOWSTONE
SWEET GRASS
STILLWATER
PARK
BIG HORN
MADISON
GALLATIN
BEAVERHEAD
POWDER RIVER
93

APPENDIX E

Groundwater and LUST Information

Ground Water Information Center | **MBMG Data Center**
Montana Bureau of Mines and Geology
Montana Technological University
1300 West Park Street - Natural Resources Building Room 329
Butte Montana 59701-8997
Ph: (406) 496-4336 Fx: (406) 496-4343

GWIC Data > Well Construction Data > Township: 31N Range: 34E Sec: 7, 8, 17

The following data were returned from the GWIC databases for the area you requested. For a more detailed description of the data view the GWIC Metadata report. If you notice data entry errors or have questions please let us know by sending us an Email at **GWIC@mtech.edu**. If you wish to view a one page report for a particular site, click the hyperlinked **Gwic Id** for that well. Scroll to the right of your screen to view all the data. All data displayed on the screen may not show up when printed.

Retrieval Statistics*

Field	Max	Min	Avg
Total Depth (ft)	101.00	18.00	65.23
Static Water Level (ft)	82.00	6.00	16.33
Yield (gpm)	100.00	6.00	23.87

* These statistics do not take any geographic, topographic, or geologic factors into consideration. Negative swl values are reported for water levels that are above land surface.

Did you know about...

Other GWIC data

Thanks, Just take me back to the menu.

Other MBMG data

MBMG has 404 publications available for PHILLIPS county.
MBMG has 458 publications available for VALLEY county.
MBMG has 0 abandoned mine record(s) for this request area.

Gwic Id	PDF	DNRC WR	Site Name	Twn	Rng	Sec	Q Sec	Ver?	Type	Td	Swl	Pwl	Rwl	Yield	Test	Date	Use
42726			BLUE WALLACE	31N	34E	7	A	No	WELL	56.00		20.00		7.00	PUMP	8/7/1954	STOCKWATER
42729			ARNOTT EVERETT	31N	34E	7	AB	No	WELL	77.00	7.00			40.00	PUMP	5/15/1955	STOCKWATER
42727		2152	BLUE WALLACE	31N	34E	7	AB	No	WELL	68.00	9.00	40.00		16.00	BAILER	3/12/1974	STOCKWATER
42728			BLUE WALLACE	31N	34E	7	AB	No	WELL	56.00	8.00	10.00		12.00	PUMP	1/1/1950	DOMESTIC
42730			BUFFINGTON PAT	31N	34E	7	AC	No	WELL	70.00				10.00	OTHER	12/20/1952	STOCKWATER
194458			MDOT * US 2 SACO*3-50-01	31N	34E	7	ACD	No	BOREHOLE	101.00					OTHER	12/12/2001	GEOTECH
194461			MDOT * US 2	31N	34E	7	ACD	No	BOREHOLE	92.00	21.60				OTHER	12/13/2001	GEOTECH

		SACO*3-51-01													
194463		MDOT * US 2 SACO*3-52-01	31N	34E	7	ACD	No	BOREHOLE	97.00				OTHER	1/3/2002	GEOTECH
42731		HANSON MUROL	31N	34E	7	BDD	No	WELL	68.00	6.00	9.00	12.00	PUMP	10/29/1962	STOCKWATER
913859		NO. 718	31N	34E	7	C	No	PETWELL							
913377		STILES NO. 2	31N	34E	7	DD	No	PETWELL							
42732		TOWN OF SACO #2	31N	34E	8		No	WELL	82.00	82.00		100.00	PUMP	5/1/1946	PUBLIC WATER SUPPLY
42733		TOWN OF SACO #1	31N	34E	8	BA	No	WELL	84.00	7.00	18.00	50.00	PUMP	6/13/1959	DOMESTIC
902582		SACO #2	31N	34E	8	BC	No	PETWELL							
42734		TOWN OF SACO	31N	34E	8	CBB	No	WELL	80.00	7.00	38.00	35.00	BAILER	7/7/1984	DOMESTIC
225096		RICH NELSON PROPERTIES-FORMER EZZIES	31N	34E	8	CBC	No	WELL	18.00				OTHER	4/22/2006	MONITORING
287214		SACO MT - CONOCO OIL * MW-3	31N	34E	8	CBC	No	WELL	20.00					5/10/2016	MONITORING
287211		SACO, MT - CONOCO OIL * MW-1	31N	34E	8	CBC	No	WELL	20.00					5/10/2016	MONITORING
287212		SACO, MT - CONOCO OIL * MW-2	31N	34E	8	CBC	No	WELL	20.00					5/10/2016	MONITORING
902778		TOWN OF SACO #2	31N	34E	8	CBC	No	PETWELL							
125226		HILL SCHUYLER	31N	34E	8	CC	No	WELL	49.00	19.00	40.00	6.00	BAILER	6/13/1974	DOMESTIC
912640		#515	31N	34E	8	CD	No	PETWELL							
902669		SACO #1	31N	34E	8	CDA	No	PETWELL							
42735		HANSON MELVIN	31N	34E	8	D	No	WELL	70.00	12.00	14.00	12.00	PUMP	6/3/1970	STOCKWATER
42741		NELSON RICHARD	31N	34E	17	AB	No	WELL	71.00	10.00	13.00	15.00	BAILER	3/23/1982	STOCKWATER
42740		SHIPP DON	31N	34E	17	AB	No	WELL	67.00	13.00	15.00	12.00	PUMP	1/25/1968	STOCKWATER

42742		SHIPP DONALD	31N	34E	17	ABB	No	WELL	71.00	13.00	20.00	15.00	PUMP	2/26/1974	STOCKWATER
42743		PETERSON GEORGE	31N	34E	17	BC	No	WELL	98.00	14.00	18.00	16.00	BAILER	3/6/1974	DOMESTIC
913262		NO. 627	31N	34E	17	CC	No	PETWELL							

End of Report.
29 record(s) listed.

Items of Note:

[1]This report is restricted to site types of **WELL, BOREHOLE, SPRING, COAL BED METHANE WELL, PETWELL, PIEZOMETER**.

[2]A single well record (a distinct GWIC Id) may be represented by more than one line in this report if more than one performance test was conducted on the well at the time of drilling.

Explanation of Columns:
GWIC Id = Key field for the GWIC database. Links to one page reports.
PDF = Are scanned documents available through the Document Manager?

- = Yes, click on the icon to download the PDF file.
- = No, well was submitted electronically. No paper record exists.
- = No, record does have a known well log but it is not scanned yet.
- = No, record may or may not have a document to scan. Metadata is unclear.
- = No, record was created from a source other than a well log. No paper record exists.

DNRC WR = Water right number assigned to this site by Department of Natural Resources and Conservation.
Site Name = Current owner name assigned to GWIC record.
Location = Location of site in Montana township, range, section, and quarter-section coordinates.
Ver? = Has this location been verified by field staff?
Type = Type of site assigned to GWIC record.
Td = **T**otal **d**epth of well in feet below ground.
Swl = **S**tatic **w**ater **l**evel in feet above/below ground - Negative values are reported for water levels that are above land surface.
Pwl = **P**umping **w**ater **l**evel in feet below ground.
Rwl = **R**ecovery **w**ater **l**evel in feet below ground.
Yield = Yield in gallons per minute.
Test = Type of performance test reported.
Date = Completion date of well/borehole.
Use = Reported use of water.

Disclaimer:
The preceding materials represent the contents of the GWIC databases at the Montana Bureau of Mines and Geology at the time and date of the retrieval. The information is considered unpublished and is subject to correction and review on a daily basis. The Bureau warrants the accurate transmission of the data to the original end user at the time and date of the retrieval [3/14/2022 1:22:24 PM]. Retransmission of the data to other users is discouraged and the Bureau claims no responsibility if the material is retransmitted. There may be wells in the request area that are not recorded at the Information Center.

Wells within 1000-feet of the lagoon site. All wells are stock and/or petroleum and not potable drinking water wells.

gwicid	site_name	datum_latl	site_type	total_deptl	swl	date_completed	how_drilled	drilling_company	driller_name	all_water_uses	yield_gpm	pumping_water_level_ft	
42740	SHIPP DON	NAD83	WELL	67	13	1/25/1968 0:00	CHURN		CARL PALM	STOCKWATER	12.00 (PUI	15.00 (PUMP)	
42741	NELSON RICHARD	NAD83	WELL	71	10	3/23/1982 0:00	CABLE	EATON DRILLING CO	RICHARD EATON JR.	STOCKWATER	15.00 (BAI	13.00 (BAILER)	
42742	SHIPP DONALD	NAD83	WELL	71	13	2/26/1974 0:00	CABLE	ERICKSON DRILLING & PUMP CO	RODERICK ERICKSON	STOCKWATER	15.00 (PUI	20.00 (PUMP)	
912640	#515	NAD83	PETWELL										

Release Code	Facility Site Name	Facility Code	Legacy FID	Address	City	County	Release Regulation	Confirmed Date	Resolved Date	Eligibility	Status
2763	SACO CONOCO	26203	36-00573	303 Taylor St	Saco	Phillips	Federal	9/25/1995		Eligible	Confirmed
1994	QWEST SACO	26321	36-13358	106 Nelson St	Saco	Phillips	Federal	11/30/1993	5/23/1994		Resolved
1454	EZZIES SACO STATION	26276	36-06672	US Hwy 2	Saco	Phillips	Federal	10/28/1992		Eligible	Confirmed
342	S and R BARNARDS	26229	36-04200	501 Taylor St	Saco	Phillips	Federal	4/12/1990	6/19/1996	Eligible	Resolved

Matthew Mudd

From: Miner, Reed <RMiner@mt.gov>
Sent: Monday, March 7, 2022 5:23 PM
To: Matthew Mudd; Williams Cala, Shannon; Kinsee Dodge
Subject: RE: LUST Site Information

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

The Remedial Investigation Report for Release 1454 has been made available to you via the Montana File Transfer Service. Petroleum contamination in soil was encountered in borings south of the Former Ezzie's Saco facility between the water line and sewer line. Depending on the depth of utility work, there is potential for petroleum contaminated soil and groundwater to be encountered. Once you have reviewed the report made available to you, please contact me with questions and to coordinate contingency for handling contaminated soil and groundwater.

Regards,
Reed Miner I *Environmental Project Officer*
Contaminated Site Cleanup Bureau
Montana Department of Environmental Quality
Office: 406-755-8982
Cell: 406-250-9157

From: Matthew Mudd <mmudd@greatwesteng.com>
Sent: Friday, March 4, 2022 4:30 PM
To: Williams Cala, Shannon <SCala@mt.gov>; Kinsee Dodge <kdodge@greatwesteng.com>
Cc: Schiff, Allen <ASchiff@mt.gov>; Miner, Reed <RMiner@mt.gov>
Subject: [EXTERNAL] RE: LUST Site Information

Good to know. We are starting with the phase 1 design to replace the sewer main in highway 243 which could be near the 1454 site. The sewer main is located within the highway. Design just kicked off. The other sites might be out of the way from proposed pipe improvements to be in the alley between Vagg and Talery/Highway 2.

Thanks,

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[greatwesteng.com]

Matthew Mudd, PE
Project Manager

d: (406) 495-6196
c: (406) 490-3909

2501 Belt View Drive
Helena, MT 59601

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From: Williams Cala, Shannon <SCala@mt.gov>
Sent: Friday, March 4, 2022 4:25 PM
To: Matthew Mudd <mmudd@greatwesteng.com>; Kinsee Dodge <kdodge@greatwesteng.com>
Cc: Schiff, Allen <ASchiff@mt.gov>; Miner, Reed <RMiner@mt.gov>
Subject: RE: LUST Site Information

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The above map captures the four known petroleum releases along the phase 2 area.
Releases 342 and 1994 have been resolved.
Release 1454 is an open, active petroleum release site which is managed by Reed Miner.
Release 2763 is an open, active petroleum release site which is managed by Allen Schiff.
Both project managers have been copied on this e-mail.
Good Luck,

Shannon Cala

Shannon Williams-Cala | *Petroleum Tank Section Lead*

Contaminated Site Cleanup Bureau
Montana Department of Environmental Quality
Office: 406-444-6377

DEQ Montana Department of Environmental Quality

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From: Matthew Mudd <mmudd@greatwesteng.com>
Sent: Thursday, March 3, 2022 1:35 PM
To: Kinsee Dodge <kdodge@greatwesteng.com>; Williams Cala, Shannon <SCala@mt.gov>
Subject: [EXTERNAL] RE: LUST Site Information

Hi Shannon:

We are working on the draft environmental check list for the Saco Wastewater project and focusing on some of the collection improvement areas. Please see the attached phasing map. It looks like the phase 2 work may come within the area of one or more of the site listed in the attached LUST list – specifically around the Nelson/Highway 2 area. Does that Conoco station have an active LUST sit?. Similar to the Geraldine project that encountered contaminated soils, any information we can capture now will be much appreciated. Can you provide some more information on these site by October 11?

Thanks,

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[greatwesteng.com]

Matthew Mudd, PE
Project Manager

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Helena, MT 59601

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From: Kinsee Dodge <kdodge@greatwesteng.com>
Sent: Monday, February 28, 2022 3:35 PM

To: scala@mt.gov
Cc: Matthew Mudd <mmudd@greatwesteng.com>
Subject: LUST Site Information

Good afternoon,

We are developing a wastewater PER for proposed collection for the Town of Saco. With this we are looking to mitigate any environmental impacts, such as those sometimes caused by petroleum tanks. I have attached a list of the known tanks in the area. We are looking for any information you may have pertaining to these particular sites, and also the current status of each. Any information you can provide will be greatly appreciated.

Thank you,

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[greatwesteng.com]

Kinsee Dodge
EI

d: (406) 495-6172
c: (406) 449-8627

2501 Belt View Drive
Helena, MT 59601

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Sent: Friday, March 4, 2022 4:25 PM
To: Matthew Mudd; Kinsee Dodge
Cc: Schiff, Allen; Miner, Reed
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Shannon Williams-Cala | *Petroleum Tank Section Lead*
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Office: 406-444-6377

DEQ Montana Department of Environmental Quality

How did we do? »

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Thanks,

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Matthew Mudd, PE
Project Manager

d: (406) 495-6196
c: (406) 490-3909

2501 Belt View Drive
Helena, MT 59601

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Matthew Mudd

From: Schiff, Allen <ASchiff@mt.gov>
Sent: Tuesday, March 8, 2022 6:40 AM
To: Matthew Mudd; Kinsee Dodge
Cc: Miner, Reed; Williams Cala, Shannon
Subject: RE: LUST Site Information

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Mr. Mudd:

My site is Release #2763 (Former Saco Conoco). I am currently awaiting a remedial investigation report for the site where additional monitor wells were placed on and off site.

I am almost positive that groundwater contamination will be encountered in the ROW of Highway in front of 303 Taylor Street since the depth to water ranges between 1.3 and 9.9 feet as of 2020 measurements.

Allen Schiff

From: Matthew Mudd <mmudd@greatwesteng.com>
Sent: Friday, March 04, 2022 4:30 PM
To: Williams Cala, Shannon <SCala@mt.gov>; Kinsee Dodge <kdodge@greatwesteng.com>
Cc: Schiff, Allen <ASchiff@mt.gov>; Miner, Reed <RMiner@mt.gov>
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Sent: Monday, February 28, 2022 3:35 PM

To: scala@mt.gov
Cc: Matthew Mudd <mmudd@greatwesteng.com>
Subject: LUST Site Information

Good afternoon,

We are developing a wastewater PER for proposed collection for the Town of Saco. With this we are looking to mitigate any environmental impacts, such as those sometimes caused by petroleum tanks. I have attached a list of the known tanks in the area. We are looking for any information you may have pertaining to these particular sites, and also the current status of each. Any information you can provide will be greatly appreciated.

Thank you,

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ENVIRONMENTAL

October 30, 2020

Mr. Reed Miner
Petroleum Tank Cleanup Section
Montana Department of Environmental Quality
P.O. Box 200901
Helena, Montana 59620-0901

Subject: Report of Remedial Investigation
Former Ezzie's Saco Station – Intersection of US Highway 2 and Highway 243, Saco, Montana
Montana DEQ Facility ID 36-06672; Release No. 1454
DEQ Contract 414025-TO 13
CTA Project No. GF13024.13

Dear Mr. Miner,

CTA Environmental (CTA) has prepared the enclosed *Report of Remedial Investigation* for petroleum hydrocarbon release investigation activities conducted at the Former Ezzie's Saco Station, located at the Intersection of US Highway 2 and Highway 243 in Saco, Montana. The report summarizes subsurface investigation, well installation, and ground water monitoring activities completed at the site during 2020.

If you have any questions about the enclosed report, please feel free to contact Scott Vosen in our Great Falls office (406.452.3321) at your convenience.

Respectfully Submitted,

Ross Remsen
Staff Engineer
rossremsen@cushingterrell.com

Scott Vosen
Project Manager
scottvosen@cushingterrell.com

Enclosure: Report of Remedial Investigation

REPORT OF REMEDIAL INVESTIGATION

Former Ezzie's Saco Station
Intersection of US Highway 2 and Highway 243
Saco, Montana
Montana DEQ Facility ID 36-06672; Release No. 1454

Prepared For:

Montana Department of Environmental Quality

Petroleum Tank Cleanup Section
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DEQ Contract 414025-TO 13

CTA Project No. GF13024.13

October 30, 2020

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1.0 EXECUTIVE SUMMARY

This report has been prepared to summarize Remedial Investigation (RI) efforts relating to a petroleum release at the Former Ezzie's Saco Station property, located at the intersection of US Highway 2 and Highway 243 in Saco, Montana (the Site; refer to Figure 1 in Appendix A).

The RI was required by the Montana Department of Environmental Quality Petroleum Tank Cleanup Section (DEQ), as set forth in DEQ Contract 414025 – Task Order 13. CTA Environmental (CTA) completed a proposal and submitted it to DEQ on January 24, 2020. Revisions were made to costs on February 12, 2020. DEQ legal counsel approved the proposal on February 24, 2020. CTA signed Task Order 13 on March 4, 2020, and DEQ's contracts officer completed final execution of the task order on March 5, 2020. Modification A to the task order was issued by DEQ to provide a schedule extension in response to delays caused by COVID-19 complications. Modification A was executed by DEQ's legal counsel (April 30, 2020), CTA (May 1, 2020), and DEQ's contracts office (May 1, 2020).

The cumulative scope of on-site work for the RI included a preliminary well assessment and private utility locate; advancement of soil borings; completion of new groundwater monitoring wells; well development; completion of one round of groundwater sampling; and, a site survey. This report documents our methods and findings for each portion of the RI.

Nine soil borings were completed, with five of them being completed as monitoring wells. Soil at the Site consisted of a sandy clay to approximately 7 feet below ground surface (bgs), then to clay to 20 feet bgs. Petroleum-impacted soils was encountered in six of the soil borings: SB-1, SB-2, SB-3, MW-1, MW-2, and MW-4 (see Figure 2 in Appendix A). Laboratory results coincide with field findings, with six of the borings displaying contamination levels above Montana DEQ Risk Based Screening Levels (RBSLs). However only three of the borings (MW-2, SB-1, and SB-2) displayed contamination concentrations above DEQ's calculated direct contact for construction workers, and that contamination can be risked away using DEQ's Risk-Based Corrective Action Guidance for Petroleum Releases (RBCA) guidance calculations, as summarized in Table 1 (Appendix B).

Groundwater samples from existing well DEQ-1 and new wells MW-1, MW-2, and MW-4 identified petroleum-impacted groundwater above RBSLs (see Table 2 in Appendix B).

CTA recommends additional soil borings to further define the plume just north of MW-4, west of MW-1 and MW-4, and south of SB-3 and SB-1. An excavation appears to be the most affective remediation strategy to remove source material from the Site. However, the presence of contamination south of the Site would require the excavation to impact Taylor Street, possibly including the city water and sewer mains which run under Taylor Street. In addition, an excavation will likely not address the 1,2-dicloroethane (DCA) plume. Therefore, a recirculation system utilizing pump and treat may need to be installed to treat the DCA plume.

2.0 BACKGROUND

The Former Ezzie's property is currently owned by Nelco Leasing. The petroleum release at the Former Ezzie's property was confirmed when petroleum contaminated soil was encountered during underground storage tank (UST) removal activities in March 1990. Three USTs were removed from the site: two 1,000-gallon gasoline tanks, and one 2,000-gallon diesel tank. In 1997, DEQ dug four test pits near the old tank basin. Test Pit #1 confirmed that contamination was present above then-current regulatory criteria. Approximately 100 to 200 cubic yards of soil was reportedly excavated during highway and sidewalk construction activities in 2003.

In 2006, five soil borings were installed at the Site to a depth of 18 feet bgs. Contamination appeared to be in only the initial three feet of each boring. Based on the shallow depths of contamination and lack of groundwater observed, there was no inferred threat to drinking water or the environment at that time, although it was recommended to excavate approximately 350 cubic yards of contaminated soil from the Site.

3.0 METHODS

The following sections detail the methods used by CTA during completion of the RI, including the preliminary well assessment and private utility locate, advancement of soil borings, installation of monitoring wells, monitoring well development, and groundwater monitoring.

3.1 Preliminary Well Assessment and Private Utility Locate

On March 23, 2020, CTA submitted an online utility locate request with the Utilities Underground Locate Center (UULC) to request underground utilities be located and surface marked at the Site. On March 25, 2020, CTA met Geosearch Services (Geosearch), private locator, at the Site to locate all private utilities in the area. Geosearch utilized both ground penetrating radar (GPR) and electromagnetic induction locating (EM locating) equipment. CTA also conducted the preliminary well assessment of the existing well on the Site (DEQ-1).

EM locating equipment was used first to locate buried power lines prior to starting the GPR investigation. The GPR was used to scan a 10 to 15-foot grid around each proposed boring location. Some of the proposed locations could not be scanned because surface conditions were too wet or muddy. CTA coordinated with Geosearch to record the findings onto Site figure.to help determine if proposed location of soil borings and monitoring wells needed to be adjusted. The report provided by Geosearch is attached in Appendix C.

CTA coordinated with DEQ prior to initiating soil borings and monitoring well installation. The Geosearch findings were utilized to make needed adjustments to the soil borings and monitoring well locations while still trying to define the extent and magnitude of contamination on Site.

3.2 Soil Borings/Monitoring Well Installation

CTA subcontracted Hansen Environmental Drilling (Hansen) to advance soil borings and install monitoring wells at the Site. An initial start date of May 4, 2020 was scheduled with Hansen. Prior to initiating drilling activities, CTA completed on-site confirmation that all proposed soil borings and monitoring wells were located a safe distance away from known underground and above ground utilities at the Site and conducted a brief, site-specific health and safety meeting with all Site project personnel.

Hansen uses a CME 55 hollow-stem auger drill rig with an hydraulic percussion system that allows for collection of continuous soil core samples (from surface to depth) using disposable macro-core liners. All reusable downhole equipment was decontaminated before initiating each soil boring.

Soil samples were collected continuously to depth in each of the borings. CTA's environmental personnel recorded observations of lithology on field forms and collected field screening soil samples from each spoon interval. Field screening samples were placed in Ziploc® freezer bags, taking care to ensure sample volumes were approximately equal between samples. A potential laboratory analytical sample split was collected for each field screening sample; potential laboratory samples were also placed in Ziploc® freezer bags. Field screening samples were kept out of direct sunlight and allowed to warm to approximately 70 degrees Fahrenheit (as estimated

by field personnel), while potential laboratory samples were temporarily placed in a cooler with ice.

Once adequately warmed, field screening samples were analyzed for total volatile organic compounds (VOCs) using a photoionization detector (PID) with 10.6 electron volt lamp; the PID was field-calibrated against 100 parts per million (ppm) isobutylene-in-air calibration standard. Field analytical data were recorded on field forms. Field total VOC data and visual observation of the soil encountered was communicated to DEQ's case manager, Mr. Reed Miner, for each boring, and samples were cooperatively selected for laboratory analyses. Soil samples were packed in coolers with ice and sent to Energy Laboratories (Energy) using chain-of custody (CoC) protocol.

Energy analyzed the soil samples for volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) Screen in accordance with DEQ's May 2018 *Montana Risk-Based Corrective Action Guidance for Petroleum Releases*. Samples exhibiting total extractable hydrocarbon (TEH) concentrations in exceedance of the screening criterion of 200 milligrams per kilogram (mg/kg) were further analyzed for EPH fractions. In addition, the samples were also analyzed for lead scavengers 1,2-dichlorethane (DCA) and ethylene dibromide (EDB) using EPA methods 8260B and 8011, respectively.

CTA directed Hansen to construct groundwater monitoring wells in five of the nine soil borings. The wells consisted of two-inch diameter, Schedule 40 polyvinyl chloride (PVC) well casing blank and factory-slotted (0.010-inch or 0.020- inch) well screen. Casing joints were flush-threaded; no PVC glue or adhesive was used. CTA marked the top north quadrant of each well casing with indelible ink to establish a permanent measuring point for the well.

The annular space of each boring was backfilled with inert filter-pack sand from the bottom of the screened interval to approximately one foot above the screened interval. Hydrated granular or chipped bentonite was placed above the filter pack to create a well seal. A steel, flush-mounted well protector was grouted in place over the well casing to prevent premature degradation. Hansen stockpiled the soil drill cuttings on plastic sheeting to be hauled off at a later date. Lakeside Excavation Inc. hauled the contaminated soil to the Hill County Unified Disposal landfill east of Havre on May 8, 2020.

Observations of lithology, field screening data, and soil boring and monitoring well completion information and illustrations are provided on soil boring and monitoring well lithologic and completion logs provided in Appendix D.

3.3 Monitoring Well Development

CTA developed each of the five new wells on May 19, 2020. An electronic probe was used to measure depth to water (DTW) relative to the established measuring point in each well prior to development. DTW data were used to calculate the volume of water (i.e. "casing volume") in each well casing. CTA's environmental personnel employed a "surge-and-purge" technique, utilizing new, disposable polyethylene bailers to evacuate water and suspended solids from the wells. Development typically continues until three well volumes of water are evacuated, or until

insufficient water is present to continue. Three casing volumes were evacuated from wells MW-1, MW-4, and MW-5. Wells MW-2 and MW-3 stopped producing sufficient water before three casing volumes could be evacuated, with final evacuation volumes of approximately 4 gallons and 0.75 gallons, respectively.

All reusable, down-hole equipment was decontaminated between wells. Decontamination included a residue-free detergent solution scrub, a 10% methanol solution rinse, and a distilled water rinse. Evacuation water was surface-applied proximate to each well. Well development data, visual observations of turbidity, and visual and olfactory evidence of petroleum impacts were recorded on field forms, copies of which are presented in Appendix E.

3.4 Groundwater Monitoring

CTA completed groundwater monitoring activities on July 6-7, 2020, allowing groundwater to equilibrate in the wells for approximately 6 weeks following development. Monitoring activities included measuring DTW, analyzing field Intrinsic Biodegradation Indicators (IBIs), analyzing turbidity, and collecting groundwater samples for laboratory analyses of petroleum hydrocarbon constituents.

All reusable down-hole equipment was decontaminated using a residue-free detergent solution scrub, 10% methanol rinse, and distilled water rinse. Electronic meters were calibrated on site in accordance with the recommendations of the respective manufacturers prior to monitoring. Evacuation water was surface-applied proximate to the wells. Evacuation and monitoring data, including visual and olfactory observations, were recorded on field forms provided in Appendix E.

DTW was measured using an electronic probe and was used to calculate the well casing volumes. Dissolved oxygen (DO) was measured in each well prior to evacuation using an electronic, down-hole meter. Other field IBIs were monitored for each well using low-flow methods, including use of a peristaltic pump; open, flow-through monitoring cell; and, electronic meters. IBI parameters measured in the flow-through cell included DO, oxidation/reduction potential (ORP), potential of hydrogen (pH), specific conductance (SC), and temperature. Turbidity was also measured throughout low-flow evacuation, although measurements were not taken inside the flow-through cell. Aliquots were diverted from the flow-through cell at periodic intervals for evaluation in a separate electronic meter.

New, disposable tubing was submerged to the approximate upper 1/3 of the water column for each monitored well. The flow rate of the pump was set between 200 to 500 milliliters per min (ml/min), as verified at each well using a graduated vessel and a time piece, and the effluent was set to flow into the bottom of the open monitoring cell and allowed to overflow the open top. Field IBI parameters were observed and recorded in approximate five-minute intervals, and low-flow evacuation continued until DO, pH, SC, and turbidity readings stabilized. Stabilized readings included changes of no more than 0.1 standard unit (su) for pH and no more than 10 percent (%) for DO, SC and turbidity, as stipulated in DEQ's *March 2018 Groundwater Sampling Guidance*.

Laboratory natural and duplicate samples were collected after confirming IBI parameters had stabilized. In order to prevent cross-contamination from well to well, approximately one foot was

cut from the tubing (i.e. removing the portion in contact with the flow-through monitoring cell) before containerizing the samples. Laboratory samples were containerized and preserved using sample vessels and preservatives provided by Energy. The samples were placed in a cooler with ice as quickly as practicable following collection and were shipped to Energy using chain-of-custody protocol.

CTA requested Energy analyze the samples for VPH and EPH screen in accordance with DEQ's *March 2018 Groundwater Sampling Guidance*. Samples exhibiting TEH concentrations in exceedance of the DEQ screening threshold of 1,000 micrograms per liter (µg/l) were further analyzed for EPH fractions, in accordance with the analytical method. In addition, the samples were also analyzed for lead scavengers DCA and EDB using EPA methods 8260B and 8011 respectively.

4.0 RESULTS

The following sections summarize the findings of CTA's initial remedial investigation at the Site. Figures referred to below are presented in Appendix A. Soil and groundwater field and laboratory analytical data are summarized in tabular form in Appendix B. A copy of the private utility locate report is presented in Appendix C. Soil boring and monitoring well lithologic and completion logs are included in Appendix D. Monitoring well development and groundwater sampling logs are included in Appendix E. Copies of laboratory analytical reports are presented in Appendix F. A Data Validation Report is provided in Appendix G.

4.1 Subsurface Soil Data

As noted above, on May 4-6, 2020, nine soil borings were drilled on the Site, with five being completed as monitoring wells. All monitoring wells were drilled to a depth of 20 feet bgs, while the additional soil borings were drilled to 7 to 10 feet bgs. The locations and depths of each boring were coordinated with DEQ, including adjustments based on review of field data. As shown on the well logs in Appendix D, subsurface soil across the Site generally consists of sandy clay from 2 to 5-7 feet bgs, and clay from 5-7 to 20 feet bgs. Groundwater was observed in each monitoring well boring at the time of drilling.

Visual and olfactory observations, along with field screening data for total VOCs, indicated potential petroleum hydrocarbon constituents in subsurface soil samples collected from six of the nine soil borings (SB-1, SB-2, SB-3, MW-1, MW-2, and MW-4). As shown on the well logs (Appendix D) and field forms (Appendix E). The laboratory results confirmed contamination in six of the nine soil borings above RBSLs. However only three of the borings (MW-2, SB-1, and SB-2) displayed contamination concentrations above DEQ's calculated direct contact for construction workers, and that contamination can be risked away using DEQ's RBCA guidance calculations, as summarized in Table 1 (Appendix B).

4.2 Groundwater Data

Table 2 summarizes field and laboratory analytical data for the groundwater monitoring event completed at the Site on July 6-7, 2020. During the groundwater monitoring event, DTW measurements ranged between 0.81 to 18.09 feet below the measuring point (bmp). Groundwater flow direction is difficult to define because of the large variance in DTW at the time of the monitoring event. It appears previous excavation areas may have created a "bathtub" effect on Site, with groundwater tending to collect in the more permeable excavation fill materials.

As presented in Table 2 in Appendix B, VPH constituent concentrations were above RBSLs in samples from monitoring wells DEQ-1, MW-1, MW-2, and MW-4. EPH Screen analyses resulted in TEH concentrations exceeding 1,000 µg/l in samples from wells DEQ-1, MW-1, MW-2, and MW4, therefore requiring fractionation. The fractionations came back all below RBSLs. The lead scavenger DCA was detected at levels above the RBSL of 4 µg/l in MW-2 and MW-4.

A Data Validation Report was completed for groundwater laboratory data, and the document is provided in Appendix G. Per the report process, the groundwater laboratory data was determined to be valid.

5.0 RELEASE CLOSURE PLAN

CTA completed a Release Closure Plan (RCP) for release 1454. The RCP accompanies this report, in Appendix H.

The RCP reviewed monitored natural attenuation (MNA), excavation, pump and treat, dual phase extraction (DPE), petroleum mixing zone (PMZ), and a combination of excavation and pump and treat. MNA would be easy to implement but is not considered a viable form of remediation because there is no indication that natural attenuation is occurring on Site. Excavation would help remove source material but would likely not address the DCA plume. Pump and treat would help remediate the groundwater but would not address the contaminated soil that continues to leach into the groundwater. DPE would treat source material, but the high cost and location of contamination made this not the most favorable choice of remediation. PMZ would require that source material be removed, not ideal remediation plan at this time. CTA's RCP identified a combination of excavation and pump and treat as the best remediation strategy.

As detailed in the RCP, CTA recommends installing additional monitoring wells and soil borings to define the lateral and vertical extents of the contaminant plume. Once the plume has been defined, CTA believes the best form of remediation for Release 1454 is to excavate the contaminated source material from the Site. Post excavation CTA recommends replacing monitoring wells abandoned during excavation and complete a groundwater monitoring event. The excavation may not address the DCA plume given the density and high solubility of DCA. If the groundwater is still impacted by DCA, CTA recommends the installation of a recirculation system which would utilize pump and treat technology.

6.0 CONCLUSIONS

The soil and groundwater data above RBSLs confirm the presence of petroleum contamination on Site. The plume appears to be defined to the north and to the east. However, the plume is not defined to the south or the west. It appears that the vertical extent of the contamination is from 2 to 13-feet bgs.

7.0 RECOMMENDATIONS

Based on the data presented in this report, CTA recommends additional soil borings to further define the plume just north of MW-4, west of MW-1 and MW-4, and south of SB-3 and SB-1. An excavation appears to be the most affective remediation strategy to remove source material from the Site. However, the presence of contamination south of the Site would require the excavation to impact Taylor Street, possibly including the city water and sewer mains which run under Taylor Street. In addition, an excavation will likely not address the DCA plume. Therefore, CTA recommends replacing the wells abandoned as part of the excavation activities and conducting a groundwater monitoring event. If the DCA plume is still present a recirculation system utilizing pump and treat may need to be installed to treat the DCA plume.

It is also worth noting that vinyl floor tiles were observed on the existing floor slab from the former site building, located along the west edge of the site. The floor tiles are exposed to the elements and show signs of significant deterioration. Consideration should be given to assessing the floor tiles and associated mastic for the potential presence of asbestos.

8.0 LIMITATIONS

This report was prepared specifically for use by DEQ. Use by any other party is at the sole risk of the user(s). CTA's findings and recommendations are based on our professional interpretation of field observations, field data, and laboratory analytical data from our remedial investigation, as described herein.

CTA's scope of work for this project was limited to those services described in this report. Our investigation was not intended to be a comprehensive site characterization or regulatory compliance audit. Specifically, CTA cannot and does not warrant the Site contains no hazardous and/or toxic materials or other latent conditions beyond those identified in this report.

If additional suspect petroleum and or other chemically impacted materials are encountered during future activities, further investigation may be warranted. The findings and conclusions of this report may not apply to future conditions at the Site which CTA has not had the opportunity to evaluate.

Report Prepared By:

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Report Reviewed By:

Scott Vosen
Project Manager
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ENVIRONMENTAL

APPENDIX A

Figures

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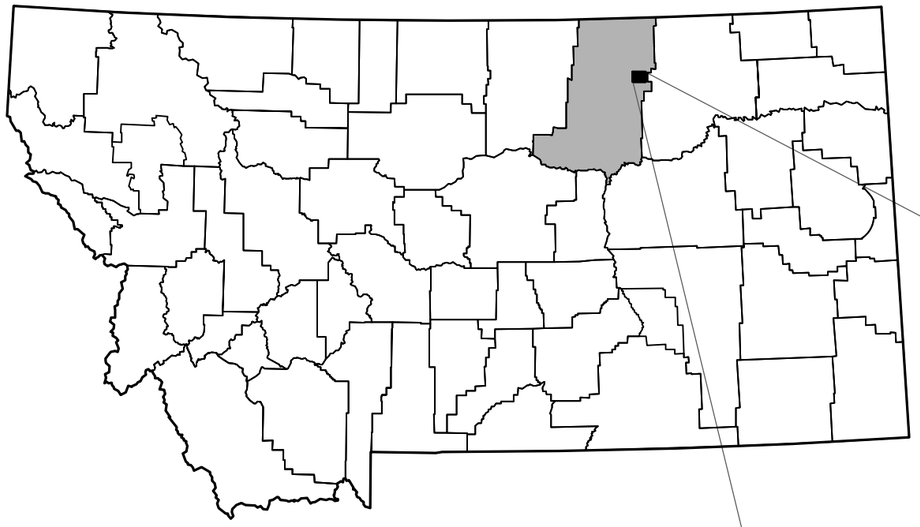
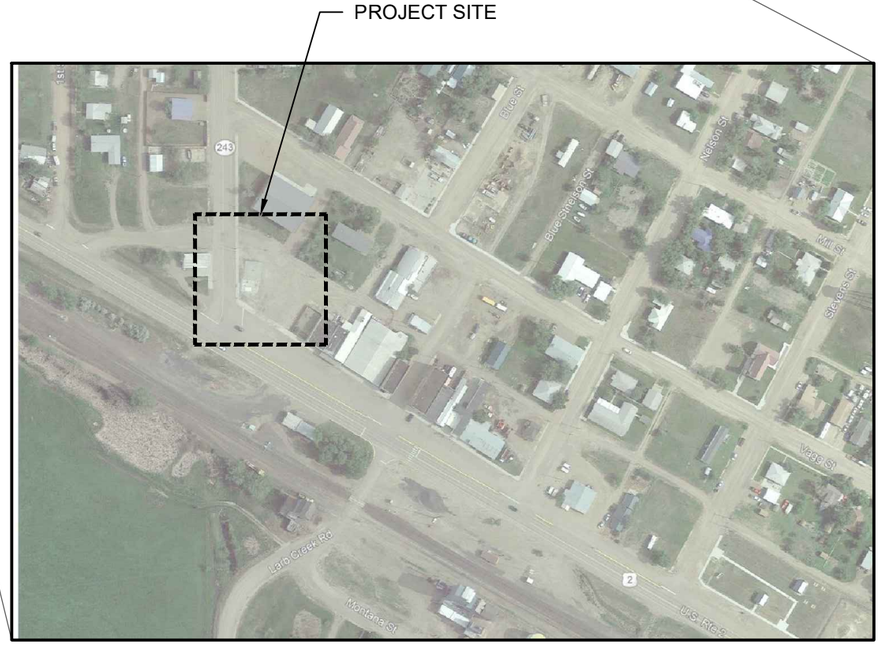
f 406.454.1873

SACO, PHILLIPS COUNTY, MONTANA





NORTH

1
FIG 1

SITE VICINITY MAP

103 TAYLOR STREET, SACO MONTANA 59261
EZZIE'S SACO STATION
SOIL AND GROUNDWATER INVESTIGATION
MONTANA DEQ

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08.10.2020
GF13024.13

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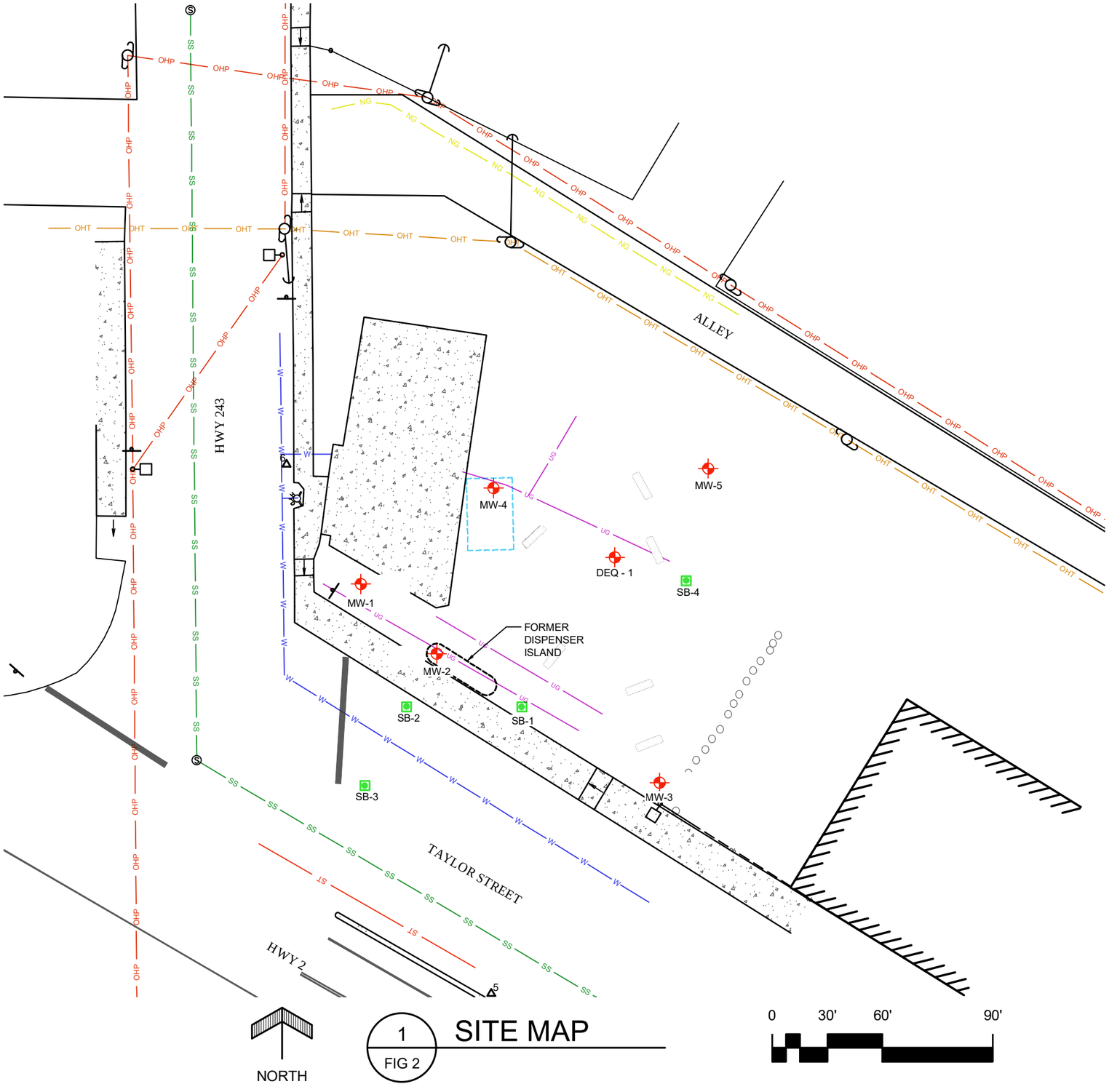
RISTER

CHECKED BY
REMSEN

SITE VICINITY MAP

FIGURE
1



1 FIG 2 SITE MAP

LEGEND

- BP — BURIED POWER LINE
- OHT — OVERHEAD TELEPHONE LINE
- OHP — OVERHEAD POWER LINE
- NG — NATURAL GAS LINE
- SS — SANITARY SEWER LINE
- W — WATER LINE
- ST — STORM SEWER LINE
- UG — UNKNOWN UTILITY
- DEQ — MONITORING WELL - DEQ
- MW — MONITORING WELL
- SB — SOIL BORING
- FORMER UST BASIN

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SOIL AND GROUNDWATER INVESTIGATION
MONTANA DEQ

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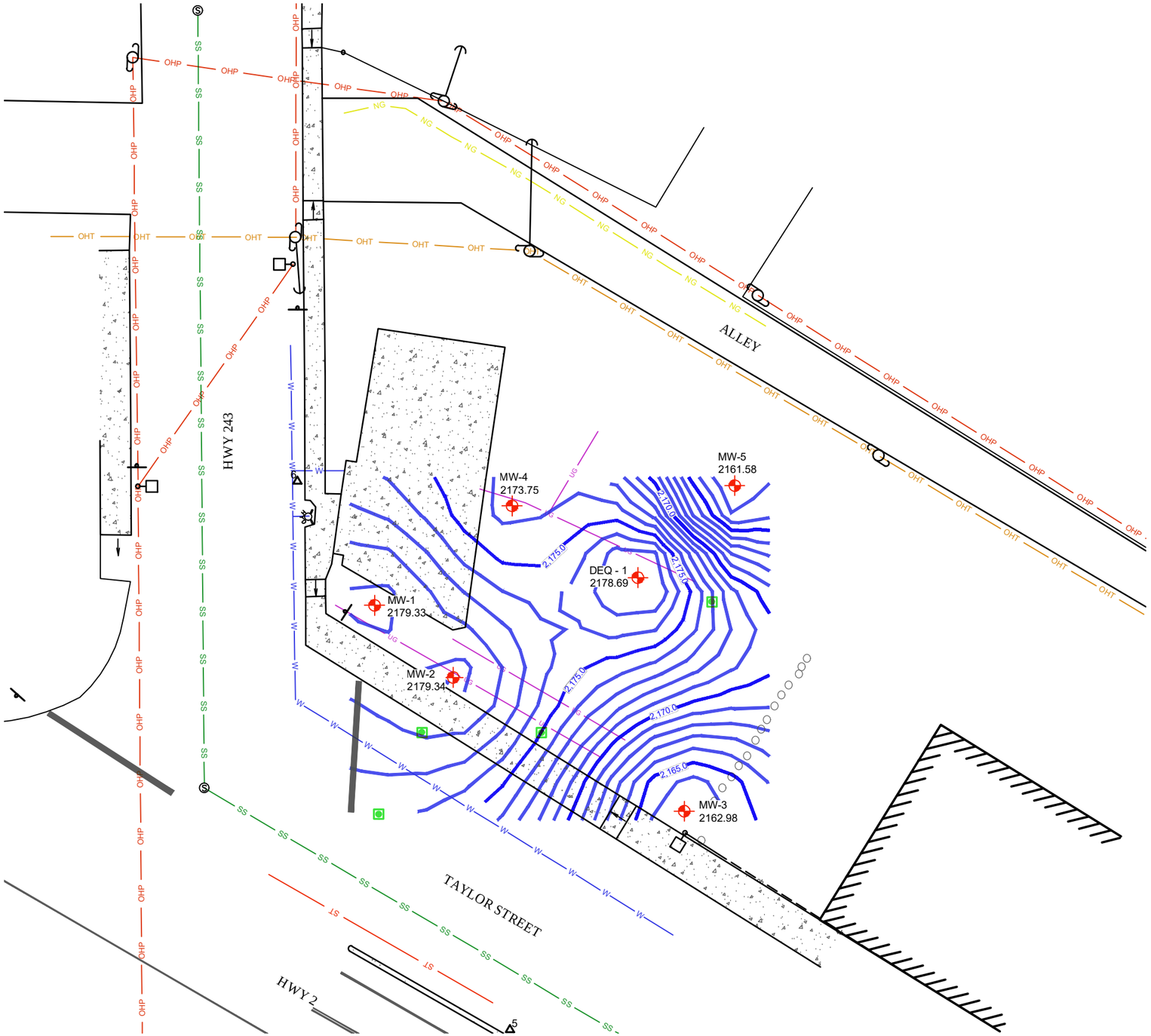
SITE MAP

FIGURE
2



NORTH

1
FIG 3

GROUNDWATER CONTOURS

07.06.2020

0 30' 60' 90'

LEGEND

- BURIED POWER LINE
- OVERHEAD TELEPHONE LINE
- OVERHEAD POWER LINE
- NATURAL GAS LINE
- SANITARY SEWER LINE
- WATER LINE
- STORM SEWER LINE
- UNKNOWN UTILITY
- DEQ — MONITORING WELL - DEQ
- MW — MONITORING WELL
- SB — SOIL BORING
- FORMER UST BASIN
- DEQ/MW-X 21XX.X' — MONITORING WELL NUMBER AND GROUNDWATER ELEVATION
- MAJOR CONTOUR
- MINOR CONTOUR

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GROUNDWATER CONTOURS

FIGURE
3

CTA ENVIRONMENTAL

APPENDIX B

Data Summary Tables

CTA ENVIRONMENTAL

Table 1
SOIL BORING DATA SUMMARY TABLE
Former Ezzie's, Saco, Montana
Facility ID 36-06672, Release 1454, DEQ Contract 414025-TO-13

Soil Boring	Sample Date	Sample Depth[2]	Total Field VOCs[3]	Analytical Data[1]																		
											VPH				EPH					Lead Scavengers	
				B	T	E	X	M	N	TPH	C_{5-8} Aliphatics	C_{9-12} Aliphatics	C_{9-10} Aromatics	EPH Screen	C_{9-18} Aliphatics	C_{19-36} Aliphatics	C_{11-22} Aromatics	TEH	DCA	EDB*
MW-1	5/5/20	1-3'	4.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3-7'	585	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		7-10'	602	0.45	0.93	4.6	5.5	< 0.40 D	1.4	379	178	111	104	177	–	–	–	–	< 0.035	< 0.00028
		10-13'	223	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		13-15'	187	0.21	0.45	2.6	2.8	< 0.50 D	1.3	218	108	83	42	55	–	–	–	–	< 0.0070	< 0.00028
		13-15'	Duplicate	0.80	0.54	2.9	3.1	< 0.40 D	0.78	194	103	47	48	40	–	–	–	–	< 0.034	< 0.00027
		15-17'	23.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		17-20'	10.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-2	5/4/20	2-5'	524	0.71	0.96	24	7.0	< 0.38 D	10	1,490	215	960	709	177	–	–	–	–	< 0.064	< 0.00026
		5-7'	1,050	1.9	1.9	30	1.4	< 1.4 D	0.84	1,340	514	372	509	405	109	< 25	57	290	< 0.013	< 0.00026
		7-9'	789	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		9-13'	528	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		13-15'	121	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		15-18'	175	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		18-20'	95.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-3	5/4/20	2-5'	17	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		5-7'	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		7-10'	4.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		10-12'	10.6	< 0.067	< 0.067	< 0.067	< 0.067	< 0.13	< 0.13	1.5 J	< 2.7	1.5 J	< 2.7	< 13	–	–	–	–	< 0.0067	< 0.00027
		12-14'	8.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		14-16'	9.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		16-20'	9.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-4	5/5/20	2-5'	16.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		5-7'	30.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		7-10'	58.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		10-12'	614	2.9	1.7	18	17	< 1.7 D	3.1	733	398	159	172	22	–	–	–	–	< 0.035	< 0.00027
		12-14'	334	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		14-16'	206	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		16-18'	130	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		18-20'	10.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-5	5/5/20	2-5.5'	6.7	0.039 J	< 0.068	0.036 J	0.036 J	< 0.14	< 0.14	2.0 J	< 2.7	1.4 J	< 2.7	14	–	–	–	–	< 0.0068	< 0.00027
		5.5-8'	4.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		8-10.5'	5.2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		10.5-13'	5.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		13-15.5'	4.4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		15.5-18'	4.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		18-20'	4.6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SB-1	5/4/20	3-5'	282	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		5-7'	1,040	3.2	3.3	39	24	< 2.5 D	6.1	2,220	951	554	783	875	116	81	104	484	< 0.25	< 0.00025
SB-2	5/5/20	2-4'	168	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		4-5'	1,300	11	13	47	68	< 0.68 D	9.8	1,980	946	502	510	277	80	< 14	35	182	< 0.14	< 0.00027
		5-8'	702	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		8-10'	1,400	8.3	4.4	31	43	< 2.9 D	8.9	1,310	599	288	412	68	–	–	–	–	< 0.070	< 0.00028
SB-3	5/6/20	2.5-4.5'	12.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		4.5-6'	102	0.083	0.060 J	0.71	0.12	< 0.14	0.17	76	19	50	24	< 13	–	–	–	–	< 0.0067	< 0.00026
		6-8'	216	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		8-9'	46.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		9-10'	548	0.36	0.069	1.2	0.44	< 0.14	0.076 J	39	17	16	10	25	–	–	–	–	< 0.0069	< 0.00027
SB-4	5/6/20	2-5'	6.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		5-6'	6.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		6-8'	7.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		8-9'	7.4	0.039 J	< 0.068	< 0.068	< 0.068	< 0.14	< 0.14	< 2.7	< 2.7	< 2.7	< 2.7	< 14	–	–	–	–	< 0.0068	< 0.00027
		9-10'	7.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Leaching to Groundwater <10 ft[4]			**NR**	**0.07**	**21**	**26**	**320**	**0.078**	**12**	**NR**	**220**	**11,000**	**130**	**200**	**53,000**	**Immobile**	**370**	**NR**	**0.019**	**0.000086**
Direct Contact Construction[4]			**NR**	**240**	**5,500**	**1,300**	**610**	**8,900**	**140**	**NR**	**410**	**640**	**1,000**	**200**	**900**	**200,000**	**3,900**	**NR**	**110**	**7.8**
Adjusted Construction RBSL[5]			**NR**								**1,640**	**2,560**								

Notes:

1 - Laboratory analytical data include benzene (B), toluene (T), ethylbenzene (E), total xylenes (X), methyl-tertiary-butyl-ether (M), naphthalene (N); volatile petroleum hydrocarbons (VPH) including total purgeable hydrocarbons (TPH), C_{5-8} aliphatics, C_{9-12} aliphatics, and C_{9-10} aromatics; and, extractable petroleum hydrocarbons (EPH) including EPH Screen, C_{9-18} aliphatics, C_{19-36} aliphatics, and C_{11-22} aromatics, and Total Extractable Hydrocarbons (TEH). Lead Scavengers 1,2-dichlorethane (DCA) and ethylene dibromide (EDB). Analytical data are presented in milligrams per kilogram (mg/kg).

2 - Sample depths are approximate and are reported in feet below ground surface.

3 - Total Field Volatile Organic Compounds (VOCs) are determined using a photoionization detector and a heated headspace method. Results are reported in parts per million (ppm), relative to a 100 ppm isobutylene-in-air standard.

4 - Regulatory criteria are risk-based screening levels (RBSLs) established by the Montana Department of Environmental Quality (DEQ) in Table 4 - from their May 2018 Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases (RBCA) guidance document. There are no regulatory criteria (NR) for Total Field VOCs, TPH, or fractionated TEH in soil, although the RBCA document stipulates EPH fractionation must be completed for soil samples exhibiting EPH Screen concentrations in exceedance of the DEQ screening level criterion of 200 mg/kg. C_{19-39} Aliphatics are listed as immobile and therfore do not leach to groundwater.

5 - Adjusted Concentrations calcualted following the RBCA Guidance.

– Indicates the analysis was not required and was therefore not performed.

< - Indicates the analyte concentration was lower than the limit of detection for the sample.

* - Indicates the regulatory criterion for the analyte is less than the laboratory's method reporting limit for the sample.

- Pink shading indicates an exceedance of the current RBSL for leaching to groundwater less than 10 feet.

- Red shading indicates an exceedance of DEQ's current calcualted direct contact RBSL for construcion.

J - Estimated value - analyte was present but less than the Reporting Limit (RL)

D - Reporting Limit (RL) increased due to sample matrix

CTA ENVIRONMENTAL

Table 2
GROUNDWATER DATA SUMMARY TABLE
Former Ezzie's, Saco, Montana
Facility ID 36-06672, Release 1454, DEQ Contract 414025-TO-13

Well Info[3]	Sample Date	DTW[4]	GWE[5]	Field IBI Data[1]						Laboratory Data[2]																	
										VPH Constituents (µg/L)						VPH Carbon Ranges (µg/L)				EPH (µg/L)					Lead Scavengers	
				DO	ORP	pH	SC	Turb-idity	Temp	B	T	E	X	M	N	TPH	C_{5-8} Aliphatics	C_{9-12} Aliphatics	C_{9-10} Aromatics	EPH Screen	C_{9-18} Aliphatics	C_{19-36} Aliphatics	C_{11-22} Aromatics	TEH	DCA	EDB
DEQ-1	7/6/20	1.55	2,178.69	1.24	-75	6.55	10.06	37.6	13.2	956	11	782	527	< 25 D	22	6,060	1,560	1,000	912	1,750	< 300	< 300	< 300	850	< 1.8 H	< 0.010
TD: 18.00																										
Screen: UNK																										
MPE: 2180.24																										
MW-1	7/6/20	1.08	2,179.33	1.09	-158	7.44	3.27	26.8	15.5	515	20	319	97	< 38 D	25	6,360	2,450	1,670	1,750	2,760	261 J	< 313	171 J	1,490	< 1.2	< 0.010
TD: 19.30																										
Screen: 4.3-19.3																										
MPE: 2180.41																										
MW-2	7/6/20	0.81	2,179.34	0.93	-116	7.62	3.29	9.87	16.0	1,910	44	2,480	339	< 52 D	83	18,900	3,970	4,520	6,410	7,530	300 J	< 301	310	3,480	85	< 0.010
TD: 19.70	7/6/20	0.81		Duplicate						2,010	55	2,620	352	< 57 D	84	19,500	4,070	4,530	6,650	8,490	508	< 300	348	4,350	88	< 0.010
Screen: 4.7-19.7																										
MPE: 2180.15																										
MW-3	7/6/20	17.37	2,162.98	2.03	-32	7.22	19.99	109	13.2	< 0.50	< 0.50	< 0.50	0.39 J	< 1.0	< 1.0	18 J	< 20	15 J	< 20	238 J	–	–	–	–	< 0.50 H	< 0.010
TD: 19.74																										
Screen: 4.74-19.74																										
MPE: 2180.35																										
MW-4	7/6/20	6.49	2,173.75	1.38	-1	6.73	18.28	20.3	11.3	1,260	41	428	518	< 66 D	62	7,090	1,920	1,250	1,760	3,570	< 631	597 J	337 J	2,210	58 H	< 0.010
TD: 19.70																										
Screen: 4.7-19.7																										
MPE: 2180.24																										
MW-5	7/6/20	18.09	2,161.58	1.44	22	7.11	19.88	308	12.2	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 1.0	8.4 J	< 20	< 20	< 20	< 323	–	–	–	–	< 0.50 H	< 0.010
TD: 19.75																										
Screen: 4.75-19.75																										
MPE: 2179.67																										
Regulatory Criterion[6]:				NR	NR	NR	NR	NR	NR	5	1,000	700	10,000	30	100	NR	650	1,400	1,100	1,000	1,400	1,000	1,100	1,000	4	0.004

Notes:

1 - Intrinsic Biodegradation Indicators (IBIs) include dissolved oxygen (DO), oxidation/reduction potential (ORP), pH, specific conductance (SC), turbidity (turb), and temperature (temp). IBIs were measured using electronic meters and are reported in the following units: DO - milligrams per liter (mg/l); ORP - millivolts (mV); pH - standard units (su); SC - microseimens (mS); turbidity - Nephelometric Turbidity Units (NTU); and temp - degrees Celsius (°C). DO measurement were taken down-hole, pre-purge. All other measurements were stabilized readings taken immediately prior to collection of laboratory samples.

2 - Laboratory analytical data include benzene (B), toluene (T), ethylbenzene (E), total xylenes (X), methyl-tertiary-butyl-ether (M), naphthalene (N); volatile petroleum hydrocarbons (VPH) including total purgeable hydrocarbons (TPH), C_{5-8} aliphatics, C_{9-12} aliphatics, and C_{9-10} aromatics; and, extractable petroleum hydrocarbons (EPH) including EPH Screen, C_{9-18} aliphatics, C_{19-36} aliphatics, C_{11-22} aromatics. Reported Total Extractable Hydrocarbons (TEH) data are from EPH fractionation. Lead Scavengers 1,2-dichlorethane (DCA) and ethylene dibromide (EDB). All laboratory analytical data are presented in micrograms per liter (µg/l).

3 - Well information includes well identification (e.g. MW-1); total depth (TD) of the well reported in feet below ground surface (bgs); the well screen interval reported in feet bgs; and the measuring point elevation (MPE) reported in feet above mean sea level, relative to the North American Vertical Datum of 1988 (NAVD88).

4 - Depth to Water (DTW) is reported in feet below the MP.

5 - Ground Water Elevation (GWE) is reported in feet above mean sea level, relative to the NAVD88, as determined by subtracting the DTW from the MPE.

6 - Regulatory criteria are Human Health Standards (HHSs) or Risk-Based Screening Levels (RBSLs) established by the Montana Department of Environmental Quality (DEQ) in Table 3 - Tier 1 Ground Water RBSLs and Standards from their May 2018 Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases (RBCA) guidance document. Regulatory criteria for B, T, E, X, M, N, DCA, and EDB are HHSs. Most other listed criteria are RBSLs; the RBCA stipulates ceiling concentrations of 1,000 µg/l for TPH and TEH in water samples, and the criterion for C19-36 aliphatics is based on "beneficial use" (taste or odor). There are no regulatory criteria (NR) for Field/Lab IBIs.

7 - Laboratory IBI data are reported in milligrams per liter (mg/l).

– - Indicates the analysis was not performed

< - Indicates the analyte concentration was lower than the limit of detection for the sample.

- Pink shading indicates an exceedance of the regulatory criterion or screening level for the analyte.

J - Estimated value - analyte was present but less than the Reporting Limit (RL)

D - Reporting Limit (RL) increased due to sample matrix

H - Analysis performed past the method holding time

ENVIRONMENTAL

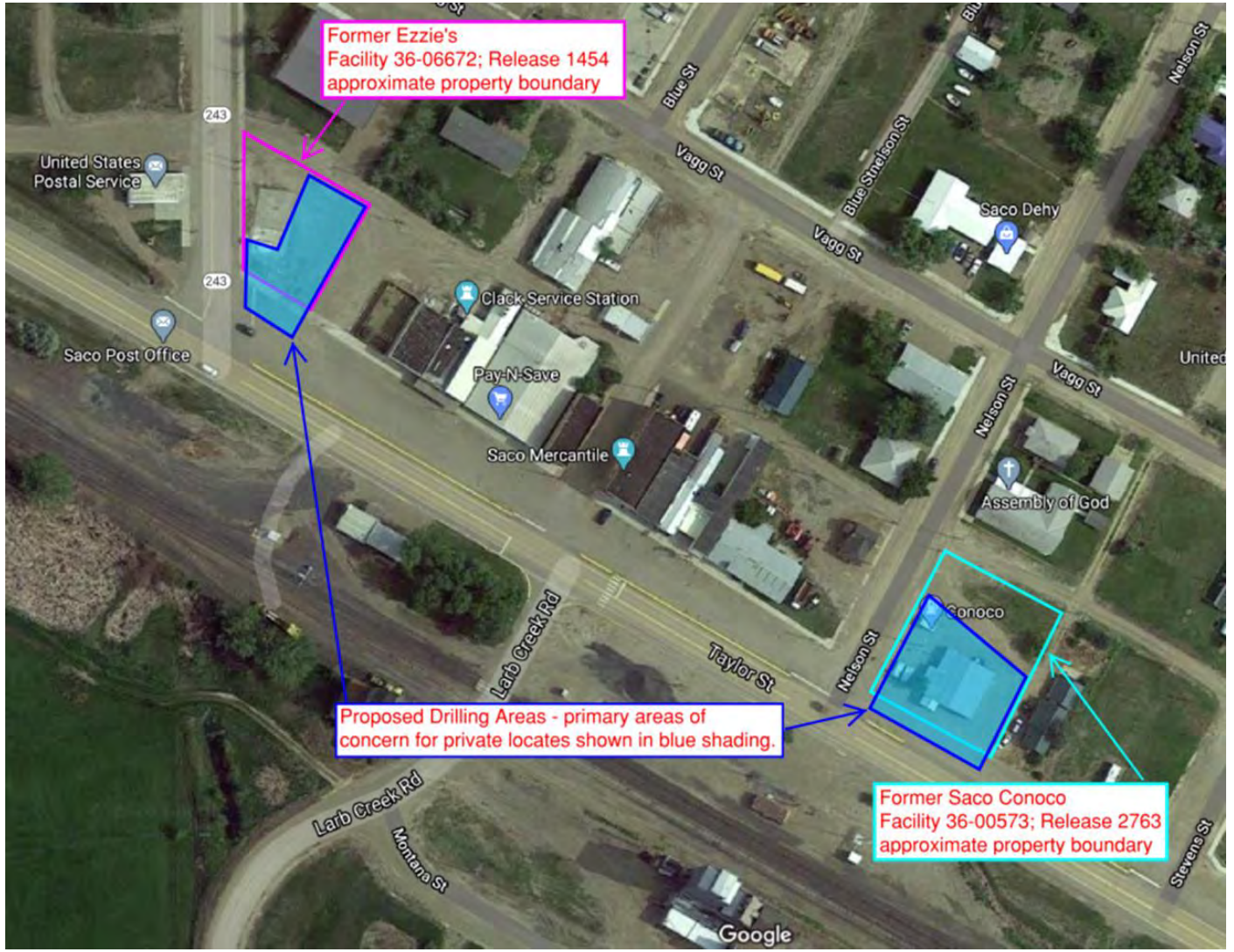
APPENDIX C

GeoSearch Services Private Utility Locate Report

GEOSEARCH SERVICES
CTA – SACO INVESTIGATION

March 25, 2020

Aerial Photograph of Former Saco Conoco & Former Ezzies in Saco, Montana



Proposed Monitoring Well and Soil Boring Locations for CTA Architects

Purpose and Scope of Project

Mr. Scott Vosen, CTA Architects Project Manager, in Great Falls, Montana contacted GoeSearch Services LLC to perform utility line locating for proposed monitoring well and soil boring locations at two former fuel service stations in Saco, Montana. In conversation with Mr. Scott Vosen, the purpose of this project was to locate and mark all buried utility lines at the project site using both ground penetrating radar (GPR) and electromagnetic induction locating equipment.

Site Description & Background

The town of Saco is located approximately 50 miles west of Glasgow, Montana just east of the Milk River. Near surface sediments encountered at the project sites in Saco, Montana are composed primarily of silty to clayey soils with scattered gravels. The soil was very moist to wet due to spring melt and recent snow. GPR signatures were not very distinct. Additionally, the ground surface was very rutted and standing water was present in some places, preventing GPR scanning.

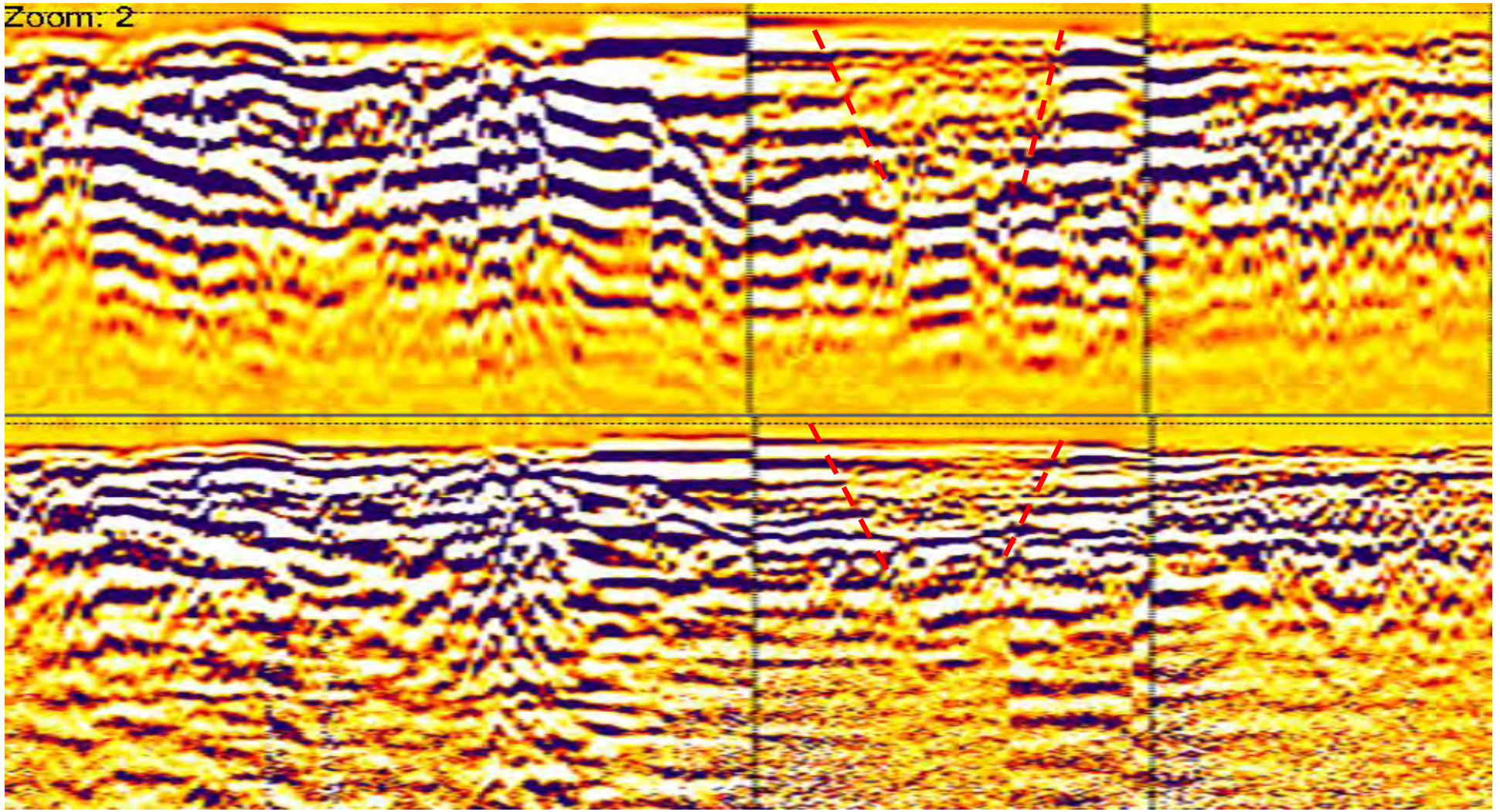
Project Description & Methods

Both Electromagnetic (EM) Induction and Ground Penetrating Radar (GPR) equipment was used at the site to determine the location of known and unknown utilities. To perform EM locating, a Radio Detection 7100 TL with a 5-watt transmitter was used. To perform GPR scanning, a Q4300 Quantum Imager Triple Frequency System manufactured by US Radar was used at the site where surface conditions were compatible with GPR scanning. Both of these locating tools are state-of-the-art electronic equipment used in the practice of utility locating around the world.

The RD 7100 was used on power mode to perform a quick search for buried power lines in the area prior to initiating a GPR investigation and direct connect methods were used when possible. The US Radar Q4300 Quantum Imager was used to scan a 10 to 15 -foot grid area around each of the proposed monitoring well and soil boring locations where ground conditions permitted. Scans were performed at two-foot intervals perpendicular to each other in a hatch pattern. Some of the proposed monitoring well and soil boring locations could not be scanned because surface conditions were too wet or muddy to perform the scan. However, all identified utility lines were marked in each of the project areas. Each time a possible utility line signature was encountered, the GPR was moved back and forth over the area to confirm a possible target.

Possible location of former buried underground fuel storage tanks. Information from a former service station employee.

GPR Screenshot of Possible UST



The red dashed lines represent one of the GPR passes over the area shown in slide 6. As indicated from the GPR signatures, the near surface lithology is not continuous and a GPR signature appears approximately three feet wide and 3.5 feet deep. This signature is shown on both the 1000 (top) and 500 (bottom) mhz antennas

Pictures of Possible Buried Underground Tank Basin area in front of building

3 Parallel lines identified during GPR scan of area

One line appears to continue west

Map of GPR Signatures at the Former Conoco in Saco, MT. GPR Signatures may indicate the location of known and unknown utility lines.

Unknown utility lines identified with GPR

Water Service Line into building

Water Main Line (30 ft from bldg.)

Sewer Main Line (37 ft from bldg.)

Pictures of utility lines at Former Conoco in Saco

Front of former Conoco – Water service line shown running from building to water main line on frontage road

Water service line intersecting with water main line running east-west on frontage road

Pictures of utility lines at Former Conoco in Saco

Water main line running east-west along frontage road (30 ft south of bldg.)

Water Main line looking back to west

Pictures of utility lines at Former Conoco in Saco

Sewer Main line running east-west along frontage road (37 ft east of building)

Unknown utility line (possible sewer lateral ?)

Pictures of utility lines at Former Conoco in Saco

Unknown utility line running east-west from building on north side of buiding

Unknown utility line running east-west from building on south side of buiding

Pictures of east side of building with unknown utility line running diagonal northeast past building

Proposed Boring location 5 in center

Picture of gas line into back of building

Map of GPR signatures at Former Ezzies location in Saco, MT. Signatures may indicate location of known and unknown utility lines.

Former Ezzies – Saco, Montana

Intersection of Hwy 2 and Hwy 243

Picture of unknown utility line running parallel to sidewalk (see Slide 16)

Former Ezzies – Saco, Montana

GPR Signature indicating possible utility shown on slide 16

GPR Signature indicating possible utility shown on slide 16

Former Ezzies – Saco, Montana

Location of proposed PM-2

Location of proposed PM-1

Former Ezzies – Saco, Montana

Water main line running north-south along Hwy 243

Location of possible sewer lateral into former Ezzies. The toilet and vent are visible on concrete pad.

Former Ezzies – Saco, Montana

GPR signature of possible utility line running from concrete pad to the east near proposed location of PM-4

Location of GPR signature indicating possible utility running to the northeast (shown on upper portion of slide 16).

Former Ezzies – Saco, Montana

Picture looking east near PB-4 showing possible utility line (Slide 16)

Picture showing proposed location of PB-3

Former Ezzies – Saco, Montana

Looking south along east edge of former Ezzies property

Results for the former Conoco Service Station

Despite the very moist conditions and silty to clayey soils, GPR signatures were obtained at both of the former service station locations. As indicated in slides 7 and 8, the probable location of the UST basin for the former Conoco station was was indicated by GPR signatures shown on slide 8. Additionally, former distribution lines may also be indicated in the GPR scans (see slide 8). The location of the former UST basin was also identified by a former employee who worked at the Conoco in Saco several years ago.

The water main and service lines were located as well as the sewer main and possible lateral was located at this site. Additionally, some unknown utility lines were also indicated by GPR signatures shown on slides 10 through 16. All of the possible utility signatures were marked with the appropriate spray paint color. The unknown lines were marked with pink paint.

Results for the former Ezzies Service Station

AS shown on slides 17, the location of water, sewer and gas lines were marked. Additionally, GPR signatures indicated the location of other possible utility lines which are shown as pink dashed lines. GPR scanning was not possible in the location of the former tank basin because the area was very wet, muddy and rutted. Photos shown on slides 18 through 24 show the location of possible old utility lines.

Conclusions

Despite poor GPR soil scanning conditions due to excess moisture in the subsurface soil materials and the cohesive soils at both of the project areas, GPR signatures indicate the possible location of the former UST basin at the old Saco Conoco station. A former employee of the service station indicated that the UST's were located where the GPR scan indicated a possible UST basin. Other possible buried underground utilities were also determined at the site during scanning of the project areas as shown on the slides contained in this report. The data obtained by GPR scanning cannot be used to conclusively determine that a utility line is present in these soil conditions. Additionally, the GPR data indicating the location of a possible utility line that may have been removed.

ENVIRONMENTAL

APPENDIX D

Soil Boring and Monitoring Well Lithologic and Completion Logs

CTA ENVIRONMENTAL

ENVIRONMENTAL BOREHOLE LOG

BOREHOLE ID: **MW-1**

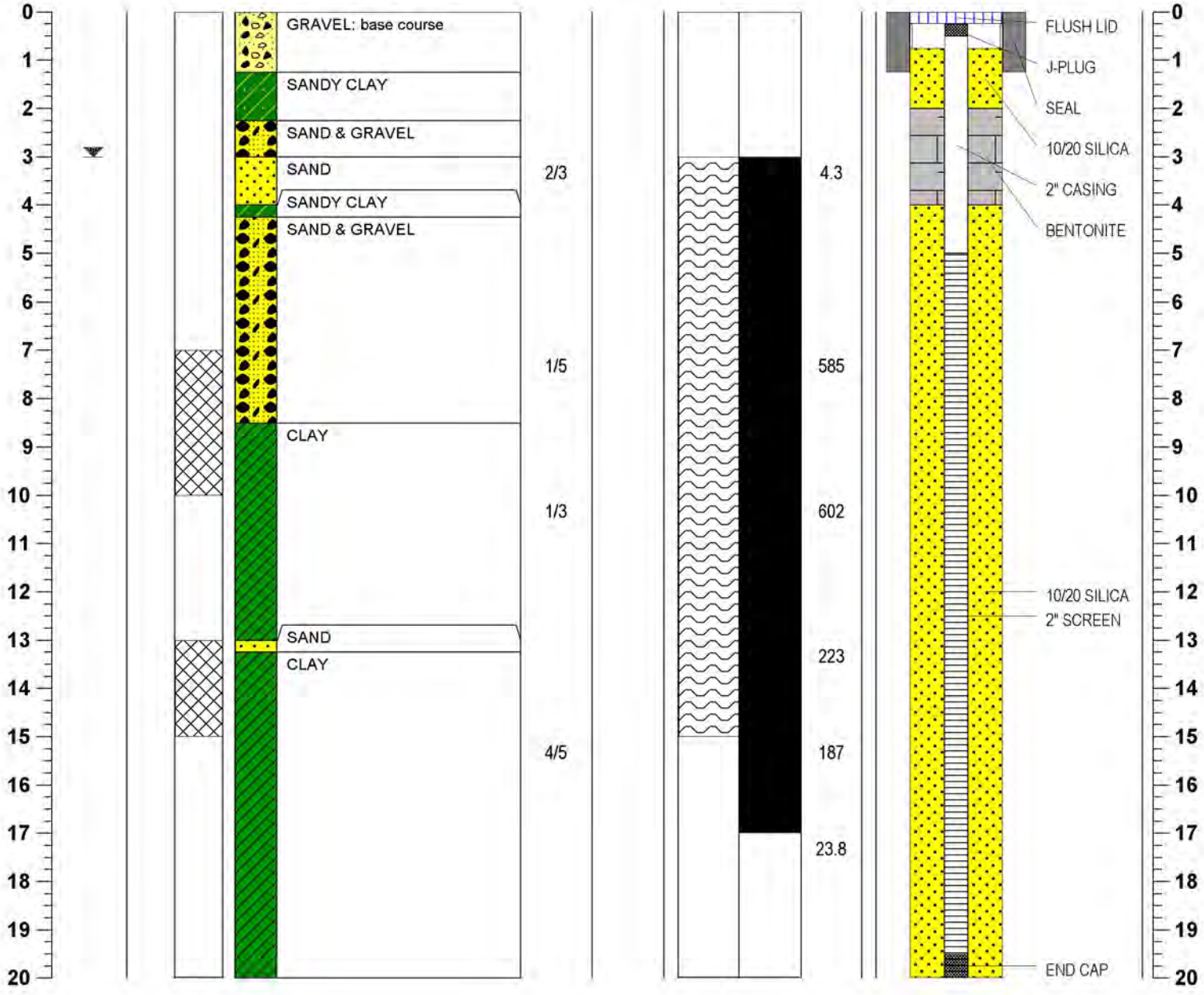
TOTAL DEPTH: **20 feet**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Former Ezzie's**	DRILLING CO.:	**Hansen Drilling**
SITE LOCATION:	**Saco, MT**	DRILLER:	**Steve Hansen**
JOB NO.:	**GF13024.13**	RIG MODEL:	**CME 55**
LOGGED BY:	**Ross Remsen**	DRILLING METHOD:	**8" hollow stem augers**
PROJECT MANAGER:	**Scott Vosen**	SAMPLING METHODS:	**macro-core**
DATES DRILLED:	**May, 5, 2020**		

NOTES: SW corner of Site

FIELD DATA

Depth (ft)	Water Level (ft)	Lab Sample Type	Lab Sample Interval	Description of Materials	Recovery	Moisture	Odor	Staining	PID Reading (ppm)	Well Construction	Depth (ft)
0–20	▼			GRAVEL: base course; SANDY CLAY; SAND & GRAVEL; SAND; SANDY CLAY; SAND & GRAVEL; CLAY; SAND; CLAY	2/3; 1/5; 1/3; 4/5				4.3; 585; 602; 223; 187; 23.8	FLUSH LID; J-PLUG; SEAL; 10/20 SILICA; 2" CASING; BENTONITE; 10/20 SILICA; 2" SCREEN; END CAP	0–20



CTA ENVIRONMENTAL

ENVIRONMENTAL BOREHOLE LOG

BOREHOLE ID: **MW-2**

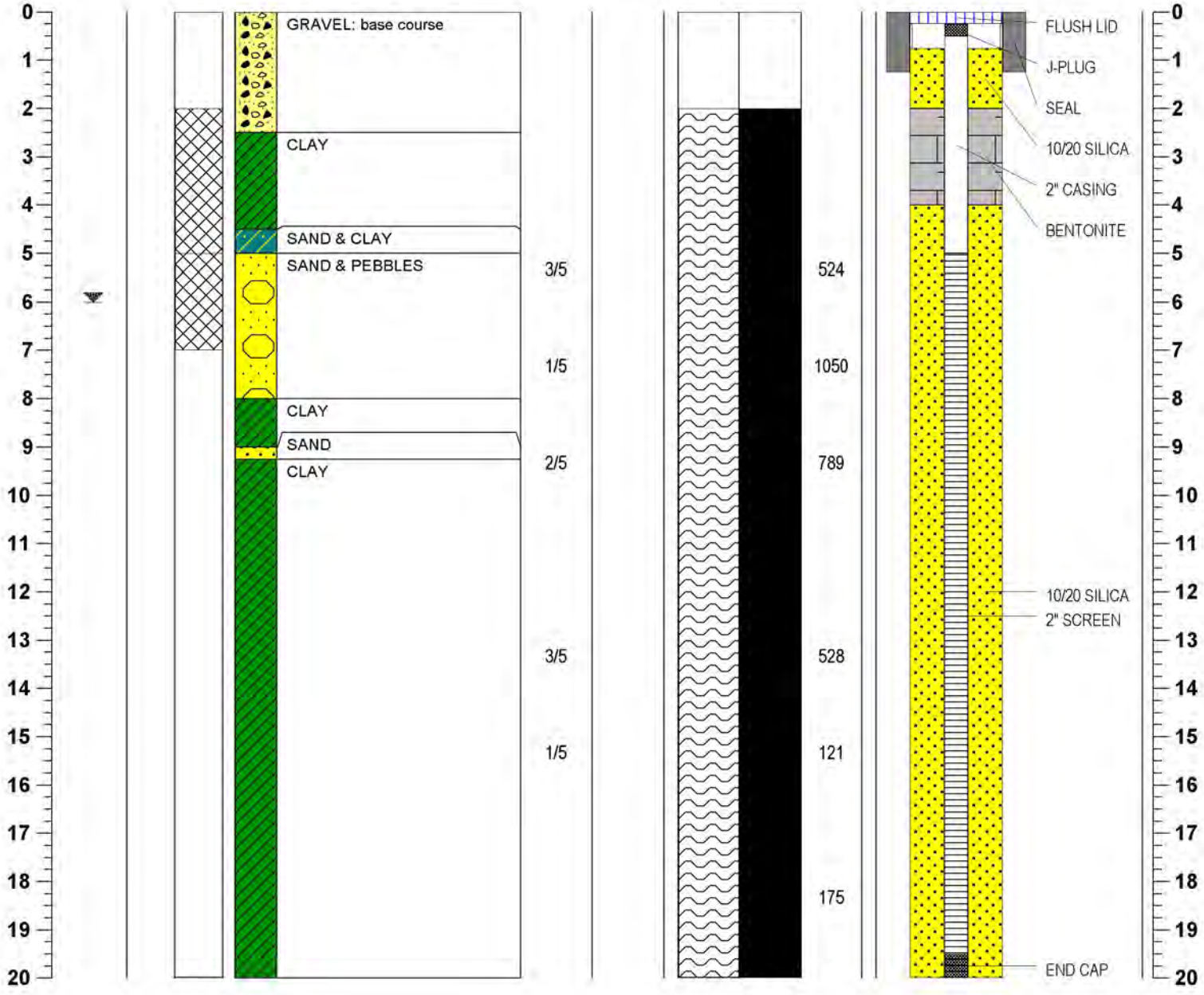
TOTAL DEPTH: **20 feet**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Former Ezzie's**	DRILLING CO.:	**Hansen Drilling**
SITE LOCATION:	**Saco, MT**	DRILLER:	**Steve Hansen**
JOB NO.:	**GF13024.13**	RIG MODEL:	**CME 55**
LOGGED BY:	**Ross Remsen**	DRILLING METHOD:	**8" hollow stem augers**
PROJECT MANAGER:	**Scott Vosen**	SAMPLING METHODS:	**macro-core**
DATES DRILLED:	**May, 4, 2020**		

NOTES: Near former pump island

FIELD DATA

Depth (ft)	Water Level (ft)	Lab Sample Type	Lab Sample Interval	Description of Materials	Recovery	Moisture	Odor	Staining	PID Reading (ppm)	Well Construction	Depth (ft)
0–20	▼			GRAVEL: base course; CLAY; SAND & CLAY; SAND & PEBBLES; CLAY; SAND; CLAY	3/5; 1/5; 2/5; 3/5; 1/5				524; 1050; 789; 528; 121; 175	FLUSH LID; J-PLUG; SEAL; 10/20 SILICA; 2" CASING; BENTONITE; 10/20 SILICA; 2" SCREEN; END CAP	0–20



CTA ENVIRONMENTAL

ENVIRONMENTAL BOREHOLE LOG

BOREHOLE ID: **MW-3**

TOTAL DEPTH: **20 feet**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Former Ezzie's**	DRILLING CO.:	**Hansen Drilling**
SITE LOCATION:	**Saco, MT**	DRILLER:	**Steve Hansen**
JOB NO.:	**GF13024.13**	RIG MODEL:	**CME 55**
LOGGED BY:	**Ross Remsen**	DRILLING METHOD:	**8" hollow stem augers**
PROJECT MANAGER:	**Scott Vosen**	SAMPLING METHODS:	**macro-core**
DATES DRILLED:	**May, 4, 2020**		

NOTES: East of SB-1

FIELD DATA

Depth (ft)	Water Level (ft)	Lab Sample Type	Lab Sample Interval	Description of Materials	Recovery	Moisture	Odor	Staining	PID Reading (ppm)	Well Construction	Depth (ft)
0–2				GRAVEL: base course						FLUSH LID, J-PLUG, SEAL	0–2
2–5				SANDY CLAY						10/20 SILICA, 2" CASING, BENTONITE	2–5
5–7				CLAY	2/5				17.4		5–7
7–10					1/5				6.4		7–10
10–12	▼								4.8		10–12
12–14					5/5				10.6	10/20 SILICA, 2" SCREEN	12–14
14–16					1/5				8.9		14–16
16–20					1/5				9.7	END CAP	16–20

CTA ENVIRONMENTAL

ENVIRONMENTAL BOREHOLE LOG

BOREHOLE ID: **MW-4**

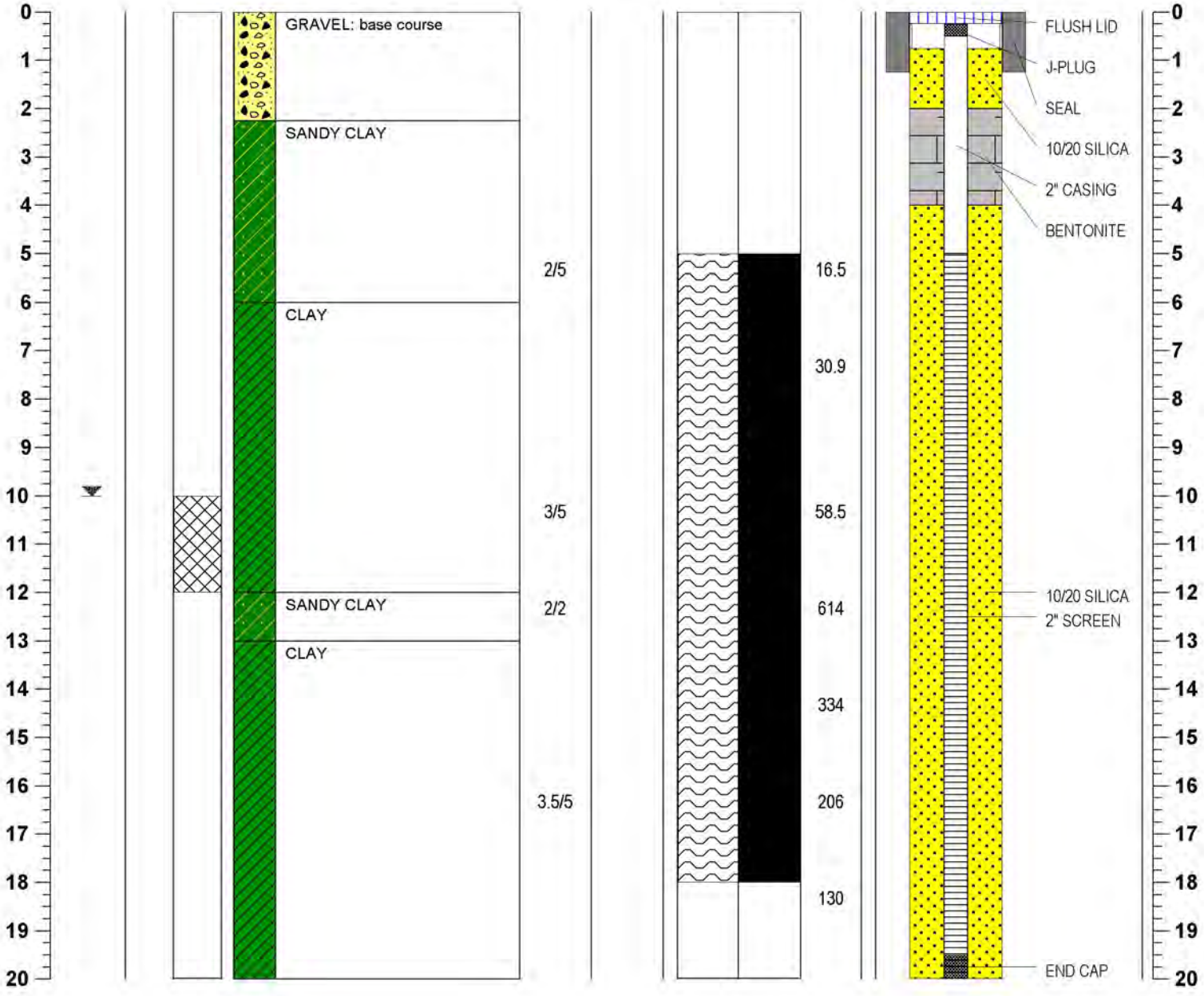
TOTAL DEPTH: **20 feet**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Former Ezzie's**	DRILLING CO.:	**Hansen Drilling**
SITE LOCATION:	**Saco, MT**	DRILLER:	**Steve Hansen**
JOB NO.:	**GF13024.13**	RIG MODEL:	**CME 55**
LOGGED BY:	**Ross Remsen**	DRILLING METHOD:	**8" hollow stem augers**
PROJECT MANAGER:	**Scott Vosen**	SAMPLING METHODS:	**macro-core**
DATES DRILLED:	**May, 5, 2020**		

NOTES: East of former building

FIELD DATA

Depth (ft)	Water Level (ft)	Lab Sample Type	Lab Sample Interval	Description of Materials	Recovery	Moisture	Odor	Staining	PID Reading (ppm)	Well Construction	Depth (ft)
0–5				GRAVEL: base course; SANDY CLAY	2/5				16.5	FLUSH LID; J-PLUG; SEAL; 10/20 SILICA; 2" CASING; BENTONITE	0–5
5–10	▼			CLAY	3/5				30.9; 58.5		5–10
10–12				SANDY CLAY	2/2				614	10/20 SILICA; 2" SCREEN	10–12
12–20				CLAY	3.5/5				334; 206; 130	END CAP	12–20



CTA ENVIRONMENTAL

ENVIRONMENTAL BOREHOLE LOG

BOREHOLE ID: **MW-5**

TOTAL DEPTH: **20 feet**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Former Ezzie's**	DRILLING CO.:	**Hansen Drilling**
SITE LOCATION:	**Saco, MT**	DRILLER:	**Steve Hansen**
JOB NO.:	**GF13024.13**	RIG MODEL:	**CME 55**
LOGGED BY:	**Ross Remsen**	DRILLING METHOD:	**8" hollow stem augers**
PROJECT MANAGER:	**Scott Vosen**	SAMPLING METHODS:	**macro-core**
DATES DRILLED:	**May, 5, 2020**		

NOTES: NE of DEQ-1

FIELD DATA

Depth (ft)	Water Level (ft)	Lab Sample Type	Lab Sample Interval	Description of Materials	Recovery	Moisture	Odor	Staining	PID Reading (ppm)	Well Construction	Depth (ft)
0–2				GRAVEL: base course						FLUSH LID, J-PLUG, SEAL	
2–5.5				SANDY CLAY						10/20 SILICA, 2" CASING, BENTONITE	
5.5–14				CLAY	3/5				6.7, 4.9, 5.2, 5.9		
14–15	▼			SANDY CLAY							
15–20				CLAY	5/5				4.4, 4.5	10/20 SILICA, 2" SCREEN, END CAP	

CTA ENVIRONMENTAL

ENVIRONMENTAL BOREHOLE LOG

BOREHOLE ID: **SB-1**

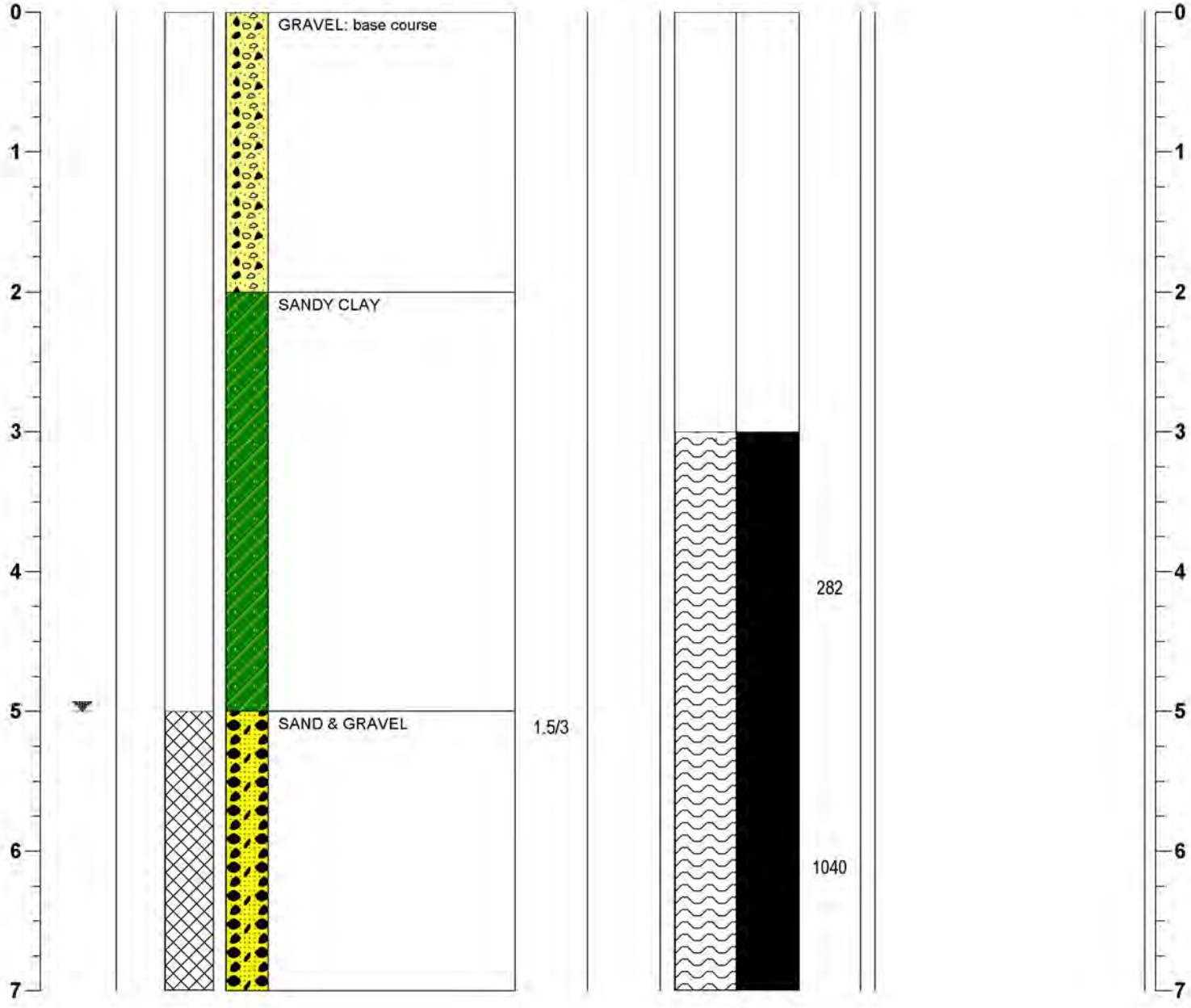
TOTAL DEPTH: **7 feet**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Former Ezzie's**	DRILLING CO.:	**Hansen Drilling**
SITE LOCATION:	**Saco, MT**	DRILLER:	**Steve Hansen**
JOB NO.:	**GF13024.13**	RIG MODEL:	**CME 55**
LOGGED BY:	**Ross Remsen**	DRILLING METHOD:	**8" hollow stem augers**
PROJECT MANAGER:	**Scott Vosen**	SAMPLING METHODS:	**macro-core**
DATES DRILLED:	**May, 4, 2020**		

NOTES: East of MW-2

FIELD DATA

Depth (ft)	Water Level (ft)	Lab Sample Type	Lab Sample Interval	Description of Materials	Recovery	Moisture	Odor	Staining	PID Reading (ppm)	Well Construction	Depth (ft)
0				GRAVEL: base course							0
2				SANDY CLAY							2
5	▼			SAND & GRAVEL	1.5/3				282 / 1040		5
7											7



CTA ENVIRONMENTAL

ENVIRONMENTAL BOREHOLE LOG

BOREHOLE ID: **SB-2**

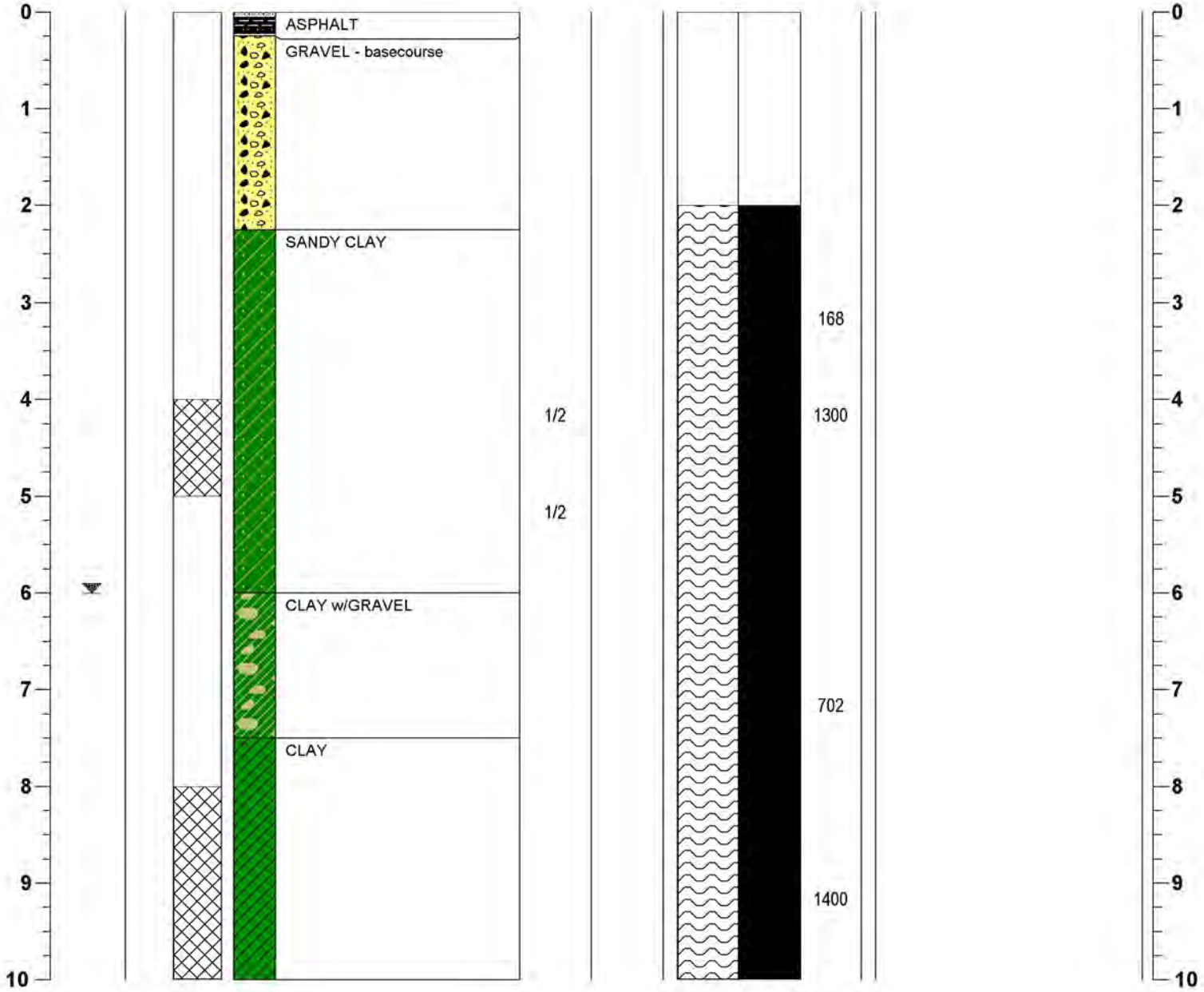
TOTAL DEPTH: **10 feet**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Former Ezzie's**	DRILLING CO.:	**Hansen Drilling**
SITE LOCATION:	**Saco, MT**	DRILLER:	**Steve Hansen**
JOB NO.:	**GF13024.13**	RIG MODEL:	**CME 55**
LOGGED BY:	**Ross Remsen**	DRILLING METHOD:	**8" hollow stem augers**
PROJECT MANAGER:	**Scott Vosen**	SAMPLING METHODS:	**macro-core**
DATES DRILLED:	**May, 5, 2020**		

NOTES: South of MW-2

FIELD DATA

Depth (ft)	Water Level (ft)	Lab Sample Type	Lab Sample Interval	Description of Materials	Recovery	Moisture	Odor	Staining	PID Reading (ppm)	Well Construction	Depth (ft)
0				ASPHALT							0
				GRAVEL - basecourse							
1											1
2				SANDY CLAY							2
3									168		3
4					1/2				1300		4
5					1/2						5
6	▼			CLAY w/GRAVEL							6
7									702		7
8				CLAY							8
9									1400		9
10											10



CTA ENVIRONMENTAL

ENVIRONMENTAL BOREHOLE LOG

BOREHOLE ID: **SB-3**

TOTAL DEPTH: **10 feet**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Former Ezzie's**	DRILLING CO.:	**Hansen Drilling**
SITE LOCATION:	**Saco, MT**	DRILLER:	**Steve Hansen**
JOB NO.:	**GF13024.13**	RIG MODEL:	**CME 55**
LOGGED BY:	**Ross Remsen**	DRILLING METHOD:	**8" hollow stem augers**
PROJECT MANAGER:	**Scott Vosen**	SAMPLING METHODS:	**macro-core**
DATES DRILLED:	**May, 6, 2020**		

NOTES: South of SB-2

FIELD DATA

Depth (ft)	Water Level (ft)	Lab Sample Type	Lab Sample Interval	Description of Materials	Recovery	Moisture	Odor	Staining	PID Reading (ppm)	Well Construction	Depth (ft)
0				ASPHALT							0
				GRAVEL - basecourse							
1											1
2											2
				SANDY CLAY							
3									12.8		3
4											4
5									102		5
6					3.5/5						6
7				CLAY					216		7
8									46.9		8
9									548		9
10											10

CTA ENVIRONMENTAL

ENVIRONMENTAL BOREHOLE LOG

BOREHOLE ID: **SB-4**

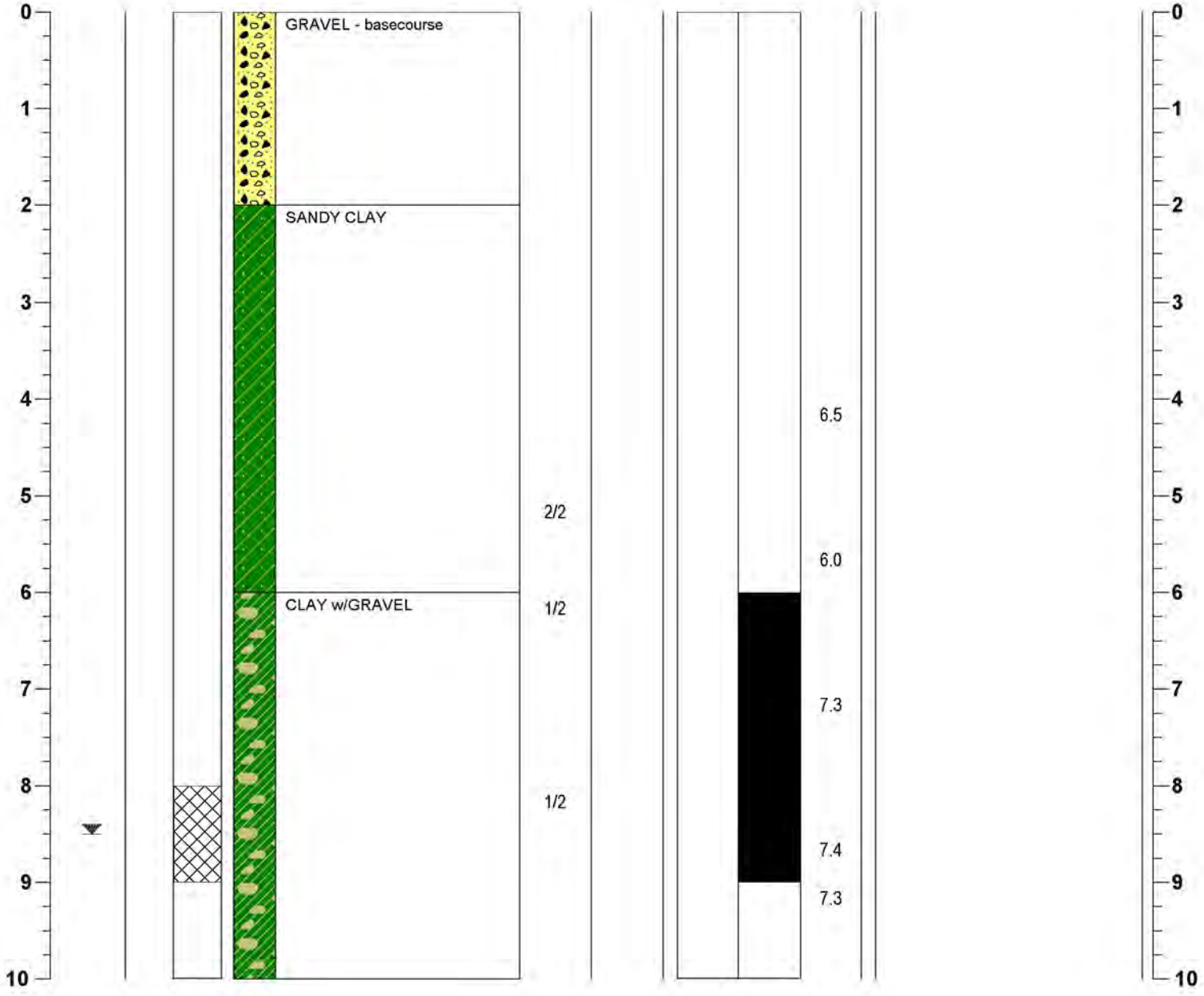
TOTAL DEPTH: **10 feet**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Former Ezzie's**	DRILLING CO.:	**Hansen Drilling**
SITE LOCATION:	**Saco, MT**	DRILLER:	**Steve Hansen**
JOB NO.:	**GF13024.13**	RIG MODEL:	**CME 55**
LOGGED BY:	**Ross Remsen**	DRILLING METHOD:	**8" hollow stem augers**
PROJECT MANAGER:	**Scott Vosen**	SAMPLING METHODS:	**macro-core**
DATES DRILLED:	**May, 6, 2020**		

NOTES: East of DEQ-1

FIELD DATA

Depth (ft)	Water Level (ft)	Lab Sample Type	Lab Sample Interval	Description of Materials	Recovery	Moisture	Odor	Staining	PID Reading (ppm)	Well Construction	Depth (ft)
0–2				GRAVEL - basecourse							
2–6				SANDY CLAY	2/2				6.5		
6–8				CLAY w/GRAVEL	1/2				6.0		
8–10	▼				1/2				7.3		
									7.4		
									7.3		



ENVIRONMENTAL

APPENDIX E

Field Forms

Subject: Utility Locate Page: 1 of 1

Project No.: GF13024.13 By: Scott Vosen Date: 3/25/2020

Project Name: DEQ Saco Sites

On site at Conoco at 11:30. Met locator (Brent Bauman). He showed me what he found, along w/ his marks. Photo-documented. Found 3 DEQ wells & assessed (see below).

Moved to Ezzie's site. Brent finished marking. 2 large trailers parked at E. edge of property. Trailer owner (leases site to park) stopped by. Can't move today. Asked her to have them moved by next Monday.

Conoco

Well	DTW	Top NW mark TD	
DEQ-1	2.25	20.08	Good condition. J-plug off. Old/weathered fuel odor (slight).
DEQ-2	4.88	20.08	Good condition. ~~Strong~~ weathered AC odor (moderate).
DEQ-3	4.42	20.06	Good condition. No odor.

Ezzie's

DEQ-1	4.75	18.01	No odor. Added mark to top NW (same as Conoco)

Located DEQ well after considerable effort. Assessed (see above). Spoke w/ Brent to review his findings. Marked on figs & photo documented.

* Double-decon'ed DTW probe w/ soap/methanol/distilled between wells since clocking TD.

Cleaned up and off site at ~17:10.

* Brent told me earlier that a local stopped by Conoco site this morning before I got there. Told Brent he worked there as a kid. Showed him Tank Basin & dispenser locations. I marked on diagram, UST basin agrees w/ Brent's GPR observations.

PIONEERING ENVIRONMENTS

CTA ENVIRONMENTAL

ENVIRONMENTAL LOG OF EXPLORATION BORING

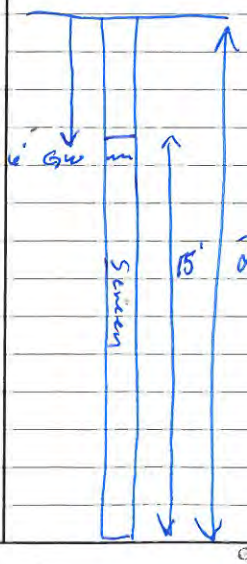
Client Name: DEQ	Boring / Monitoring Well Number: MW-2
Project Name: Former Ezzies	Boring Location: Near Former Dispenser Island
Project Number: GF13024.1	
Drill Type: Soil - Rock -	Date Boring Started: 5-4-20
Drilled By: Stevens Of: Hanson Env.	Date Boring Completed: 5-4-20
Logged By: Ross Of: CTA Env.	DTW (if present): ~5.5' Following Day:
Comments:	

Sheet of

Depth (feet)	Lithology: Classification & Description	Sample Symbol	Sample Interval (feet bgs)	Length Recovered (feet)	Blow Counts (LSS or SSS): 1st 6"	2nd 6"	3rd 6"	4th 6"	Headspace: Sample Interval (feet bgs)	Total VOC (ppm)	Visual & Olfactory (y/n): Discoloration	Odor	Other
0-2	Gravel												
2-5	sand + gravel to Clay (1.5') to sand w/clay "moist 4.5-5' Black		2-5	3'					2-5	524	x	x	
5-7	Sand w/ Rocks "wet" Black		5-7	1'					5-7	1050	x	x	
7-9	Sand "wet" (1') to Clay 2" Gravel at 8'		7-9	2					7-9	789	x	x	
9-13	Sand "wet" (3") to Clay		9-13	3					9-13	528	x	x	
13-15	Clay		13-15	1					13-15	121	x	x	
15-20	Clay		15-20	5					15-18	175	x	x	
									18-20	95.7	x	x	

2-7 Composite time 1230

5-7 Discrete time 1235



* Comp.

ENVIRONMENTAL LOG OF EXPLORATION BORING

Client Name: DEQ	Boring / Monitoring Well Number: ~~MW-3~~ SB-1
Project Name: Former Ezzie's	Boring Location: ~ 30' * East of MW-2
Project Number: GF13024.1	
Drill Type: Soil - Rock -	Date Boring Started: 5.4.20
Drilled By: Steve Of: Hansen Env.	Date Boring Completed: 5.4.20
Logged By: Ross Of: CTA Env.	DTW (if present): Following Day:
Comments:	

Sheet of

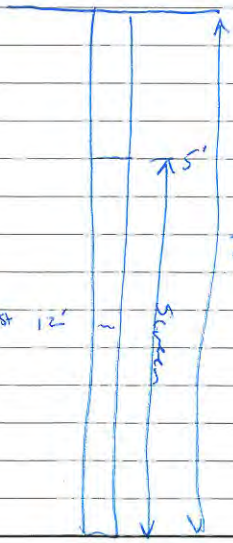
Lithology		Sample Symbol	Sample Interval (feet bgs)	Length Recovered (feet)	Blow Counts (LSS or SSS)				Headspace		Visual & Olfactory (y/n)		
Depth (feet)	Classification & Description				1st 6"	2nd 6"	3rd 6"	4th 6"	Sample Interval (feet bgs)	Total VOC (ppm)	Discoloration	Odor	Other
0-2	Gravel		3-5	1.5					3-5	282	x	x	
3-5	Sandy Clay "Black" at 4.5', 5' moist		5-7	1					5-7	1040	x	x	
5-7	"WET" Black visible sheen Sand & Gravel												
	* Sample 5-7' time 1430												

* Sample 5-7' time 1430

ENVIRONMENTAL LOG OF EXPLORATION BORING

Client Name:	DEQ	Boring / Monitoring Well Number:	MW-3
Project Name:	Former Ezzies	Boring Location:	~ 36' east of SB-1
Project Number:	GF13024.1		
Drill Type:	Soil - Rock -	Date Boring Started:	5.4.20
Drilled By:	Steve Of: Hansen Env	Date Boring Completed:	
Logged By:	Ross Of: CTA Env.	DTW (if present):	Following Day:
Comments:			

Sheet of

Lithology					Blow Counts (LSS or SSS)				Headspace		Visual & Olfactory (y/n)		
Depth (feet)	Classification & Description	Sample Symbol	Sample Interval (feet bgs)	Length Recovered (feet)	1st 6"	2nd 6"	3rd 6"	4th 6"	Sample Interval (feet bgs)	Total VOC (ppm)	Discoloration	Odor	Other
0-2	Gravel		2-5	2					2-5	17.4			
2-5	Sandy Clay		5-7	1					5-7	6.4			
5-7	Clay		7-12	5					7-10	4.8			
7-12	Clay		[illegible]						10-12	10.6			*
12-14	Clay "moist"		12-14	1					12-14	8.9			
14-16	Clay "moist"		14-16	1					14-16	9.7			
16-20	Clay "moist"		16-20	2					16-20	9.9			
	* Sample 10-12' time		1630										
													

ENVIRONMENTAL LOG OF EXPLORATION BORING

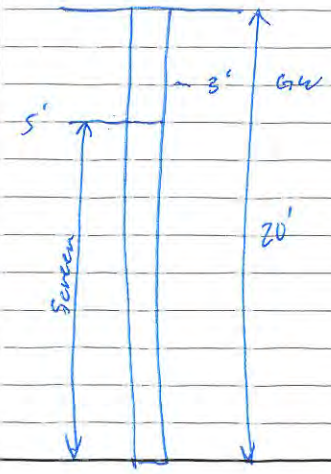
CTA ENVIRONMENTAL

Client Name: DEQ	Boring / Monitoring Well Number: MW-1
Project Name: Former Ezzies	Boring Location: SW corner near STOP sign
Project Number: GF 13024.13	
Drill Type: Soil - Rock -	Date Boring Started: 5-5-20
Drilled By: Steve Of: Hansen Env.	Date Boring Completed: 5-5-20
Logged By: Ross Of: CTA Env.	DTW (if present): 3' Following Day:
Comments:	

Sheet of

Depth (feet)	Classification & Description	Sample Symbol	Sample Interval (feet bgs)	Length Recovered (feet)	Blow Counts (LSS or SSS) 1st 6"	2nd 6"	3rd 6"	4th 6"	Headspace Sample Interval (feet bgs)	Total VOC (ppm)	Visual & Olfactory (y/n) Discoloration	Odor	Other
0-1	Gravel		1-3	2					1-3	*4.3			
1-3	3" Gravel, 1" Sandy clay, Sand w/ Gravel		3-7	1					3-7	585	x	x	
3-7	"wet" Sand to 2" Sandy Clay to Gravel, Black at 6.5'		7-10	1					7-10	602	x	x	*
7-10	sand + gravel to Clay "wet" Black		10-15	4					10-13	223	x	x	
10-15	Clay Black staining Sand 2" @ 13' - Clay, Sandy clay 15'		x	x					13-15	187	x	x	*
15-20	1" Sandy clay Black to Clay		15-20	2					15-17	23.8	x		
									17-20	10.0			

* Sample 7-10' time 1000
13-15' time 1005
Duplicate 13-15'



ENVIRONMENTAL LOG OF EXPLORATION BORING

Client Name: DEQ	Boring / Monitoring Well Number: SB-2
Project Name: Former Ezzie's	Boring Location: South of MW-2
Project Number: GF 13024.13	
Drill Type: Soil - Rock -	Date Boring Started: 5.5.20
Drilled By: Stevens Of: Hansen Env.	Date Boring Completed:
Logged By: Ross Of: CTA Env.	DTW (if present): 6' Following Day:
Comments:	

Sheet of

Lithology		Sample Symbol	Sample Interval (feet bgs)	Length Recovered (feet)	Blow Counts (LSS or SSS)				Headspace		Visual & Olfactory (y/n)		
Depth (feet)	Classification & Description				1st 6"	2nd 6"	3rd 6"	4th 6"	Sample Interval (feet bgs)	Total VOC (ppm)	Discoloration	Odor	Other
0-2	Asphalt 3" to Sand & Gravel		2-4	1					2-4	148	x	x	
2-4	Sand & Gravel 2" to Sandy clay		4-5	1					4-5	1306	x	x	*
4-5	Sandy Clay staining		5-10	5					5-8	702	x	x	
5-10	Sandy clay 4' to ~~Clay~~ Sandy clay & gravel 15' to Clay								8-10	1400	x	x	*
	* Sample 4-5' 1135 8-10 1140												

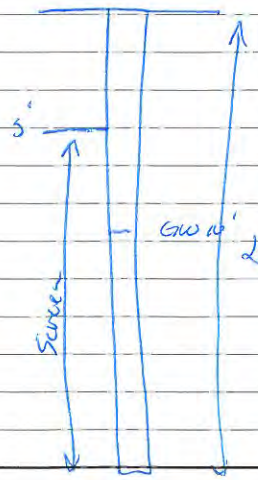
ENVIRONMENTAL LOG OF EXPLORATION BORING

Client Name:	DEO	Boring / Monitoring Well Number:	MW-4
Project Name:	Former Ezzie's	Boring Location:	East of former Bldg. (middle)
Project Number:	GF 13024.13		
Drill Type:	Soil - Rock -	Date Boring Started:	5-5-20
Drilled By:	Steve Of: Hanson Env.	Date Boring Completed:	
Logged By:	Ross Of: CTA Env.	DTW (if present):	Following Day:
Comments:			

Sheet of

Depth (feet)	Classification & Description	Sample Symbol	Sample Interval (feet bgs)	Length Recovered (feet)	Blow Counts (LSS or SSS) 1st 6"	2nd 6"	3rd 6"	4th 6"	Headspace Sample Interval (feet bgs)	Total VOC (ppm)	Visual & Olfactory (y/n) Discoloration	Odor	Other
0-2	Sand + Gravel		2-5	2					2-5	16.5			
2-5	Gravel 2" to Sandy clay		5-10	3					5-7	30.9	x	x	
5-10	Sandy clay 1" to Clay "gray"		x	x					7-10	58.5	x	x	
10-12	Clay "moist"		10-12	2					10-12	614	o	x	*
12-16	Sandy clay 1" to Clay "moist"		12-16	3.5					12-14	334	o	x	
16-20	Clay		x	x					14-16	206	x	x	
			16-20	4					16-18	130	x	x	
									18-20	10.8			

* Sample 10-12' 1345



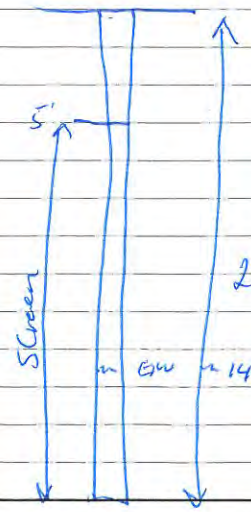
CTA ENVIRONMENTAL

ENVIRONMENTAL LOG OF EXPLORATION BORING

Client Name: DEQ	Boring / Monitoring Well Number: MW-5
Project Name: Former Ezzie's	Boring Location: NE of DEQ-1
Project Number: GF13024.13	
Drill Type: Soil - Rock -	Date Boring Started: 5.5.20
Drilled By: Steve Of: Hansen Env.	Date Boring Completed:
Logged By: Ross Of: CTA Env.	DTW (if present): Following Day:
Comments:	

Sheet of

Lithology		Sample Symbol	Sample Interval (feet bgs)	Length Recovered (feet)	Blow Counts (LSS or SSS)				Headspace		Visual & Olfactory (y/n)		
Depth (feet)	Classification & Description				1st 6"	2nd 6"	3rd 6"	4th 6"	Sample Interval (feet bgs)	Total VOC (ppm)	Discoloration	Odor	Other
0-2	Gravel		2-5.5	3					2-5.5	6.7			
2-5.5	Sandy clay		5.5 10.5	5'					5.5-8	4.9			
5.5-10.5	Clay		X	X					8-10.5	5.2			
10.5-15.5	Clay - 14' "moist" sandy clay (6")- clay		10.5-15.5	5					10.5-13	5.9			
15.5-20	Clay		X	X					13-15.5	4.4			
			15.5-20	5					15.5-18	4.5			
									18-20	4.6			
	* Sample 2-5.5' 1625												



CTA ENVIRONMENTAL

ENVIRONMENTAL LOG OF EXPLORATION BORING

Client Name: DEQ	Boring / Monitoring Well Number: SB-3
Project Name: Former Ezzie's	Boring Location: South of SB-2 + water main
Project Number: GF 13024.13	
Drill Type: Soil - Rock -	Date Boring Started: 5.6.20
Drilled By: Steve Of: Hansen Env.	Date Boring Completed: 5.6.20
Logged By: Ross Of: CTA Env.	DTW (if present): Following Day:
Comments:	

Sheet of

Lithology		Sample Symbol	Sample Interval (feet bgs)	Length Recovered (feet)	Blow Counts (LSS or SSS)				Headspace		Visual & Olfactory (y/n)			
Depth (feet)	Classification & Description				1st 6"	2nd 6"	3rd 6"	4th 6"	Sample Interval (feet bgs)	Total VOC (ppm)	Discoloration	Odor	Other	
0-2.5	Asphalt 2" + Gravel		2.5-6	3.5					2.5-4.5	12.8				
2.5-6	Sandy clay Gray streaking 5.5'		x	x					4.5-6	102	x	x		*
6-10	Sandy clay 1' to clay Gray streaking								6-8	216	x	x		
									8-9	46.9	x	x		
									9-10	548	x	x		*
	* Sample 4.5-6' 0915 9-10' 0920													

ENVIRONMENTAL LOG OF EXPLORATION BORING

Client Name:	DEQ	Boring / Monitoring Well Number:	SB - 4
Project Name:	Former Geers	Boring Location:	East of DEQ - 1
Project Number:	GF13024.13		
Drill Type:	Soil - Rock -	Date Boring Started:	8-6-20
Drilled By:	Steve Of: Hewlett Env	Date Boring Completed:	8-6-20
Logged By:	Ross Of: CTA Env.	DTW (if present):	Following Day:
Comments:			

Sheet of

Lithology		Sample Symbol	Sample Interval (feet bgs)	Length Recovered (feet)	Blow Counts (LSS or SSS)				Headspace		Visual & Olfactory (y/n)		
Depth (feet)	Classification & Description				1st 6"	2nd 6"	3rd 6"	4th 6"	Sample Interval (feet bgs)	Total VOC (ppm)	Discoloration	Odor	Other
0-2	Gravel		2-5	3					2-5	6.5			
2-5	Sandy Clay		5-6	1					5-6	6.0			
5-6	Sandy Clay		6-8	1					6-8	7.3	x		
6-8	Sandy Clay w/ pebbles Black streaks at 7'-8'		8-10	2					8-9	7.4	x		*
8-10	Clay rocks in clay 8-9 "moist" 8-8.5'								9-10	7.3			
	* Sample 8-9' 10:15												

Subject: Drilling Page: 1 of 2

Project No.: GF 13024.13 By: Ross Date: 5/4/20

Project Name: Former Ezzie's

- On site at 1015. Hansen Drilling on site.
- Called Reed Miner w/ DEQ To Discuss Plan.
  - Start with Proposed MW-2, will call back while Drilling.
    - MW-2 hit something hard at 8', will try + Drill past
      - Drilled to 20' putting in 15' screen.
    - Spoke with Reed 5-7' Discrete Sample
      - * Also submit 2-5' to have lab composite w 2-7'
      - Reed also asks for only 1' silica sand above screen to try + seperate vadose zone.
  - Next well (MW-3) is east of MW-2. Soil Hot, talked with Reed. Move well further East. Stopped Drilling at ~7' SB-1
- GW in wells Apprx 2-3 ft bgs. Water above screen.
- SB-1 collected worst case sample as discussed with Reed - 5-7' bgs.
- MW-3 collected sample at Soil / GW interface.
- Done for day at 1730

5/5/20

- On site at 0755. Steve Hansen already on site.
  - said he will be working by himself today.
- Starting with MW-1
- 0900 started to Rain, stopped after 10min.
- Spoke with Reed. Sample 7-10' + 13-15' (Also Duplicate)
- -Next complete SB south of MW-2
- Informed Reed that Scott Cassel (w/ Hansen) was former Mayor of Sco.
  - Said fuel was entering basement of former theatre to the east which initiated investigation.
  - Also placed concrete barrier on west side of site ~4 to 7'

PIONEERING ENVIRONMENTS

Subject: Drilling Page: 2 of 2

Project No.: GF 3024.13 By: Ross Date: 5/5/20

Project Name: Former Ezzie's

- Drilling SB-2 South of MW-2
  - spoke with Reed Collect 4-5' & 8-10'
  - might want a bority further south. will Discuss later.
- Talked with Reed. Proceeding with MW-5 if consistent or clean will proceed with soil boring east of DEQ-1. (Drill to out of contamination).
- Talked w/ Reed after MW-5, will call Reed in the morning to confirm, but will likely Drill PB-4 & 5 of water train
  - Collected MW-5 Sample at 2-5.5'
- Done for day at 1800

5/6/20

- Arrived on Site at 0745. Called Reed to confirm bority locations. Hansen arrived on site at 0812.
  - Semi parked over proposed PB-4, bority owner move.
- Talked with Reed SB-3 sample 4.5-6' & 9-10'
- Talked again after SB-4 - bority clean.
- Done Filling holes at 1046.

PIONEERING ENVIRONMENTS

CTA ENVIRONMENTAL

Ground Water Monitoring Well Development Log

Client Name: DEQ — Well I.D.: MW-1

Project Name: FORMER EZZIES

Project Location: SAKO MT

Development Date: 05/12/2010

Well Location (descriptive): SW CORNER NEAR STOP SIGN

Well Depth (feet bgs): 20' — Screened Interval: 5'-20'

Casing Diameter / Material: 2" PVC

Measuring Point Description: NORTH

*Note: If not established, mark the top north quadrant of the casing with indelible marker to establish the MP.

Pre-Development DTW: 1'5.5" — Time: 1050

*Note: If well contains free product, do NOT develop. Contact project manager, and record product information in Comments section below.

Development Method / Equipment: PURGE & SIZZIES

1.5" DISPOSABLE BAILER

Pre-Development Water Color / Turbidity: CLEAR

Development Started: 1055

Development Completed: 1135

Total Development Time: 40 MINS

Post-Development Water Color / Turbidity: TURBID - LIGHT GREY

Total Estimated Volume Evacuated During Development: 22 GALLONS

Post-Development DTW: 1'6" — Time: 1136

General Description of Ground Water Re-Infiltration (i.e. recovery):

QUICK RECOVERY — RECOVERY 05/12/2010 1205 DTW: 1'5.5"

Comments:

1ST BAILER - CLEAR

2ND BAILER - TURBID (BROWN/GREY)

H2O TURBID AT 13.5 GALLONS

13.5 - 18 GALLONS - LESS TURBID, STILL DARK GREY

18 - 22 GALLONS + TO GREY BUT CLEARING

* VERY ODORous AND DARK.

* WELL IS VERY QUICK TO RECOVER

Personnel: SEDSTAD

CTA ENVIRONMENTAL

Ground Water Monitoring Well Development Log

Client Name: DEQ	Well I.D.: MW-2
Project Name: Former Exxon	
Project Location: Saco, MT	
	Development Date: 05/19/20
Well Location (descriptive): North Former Dispenser Island	
Well Depth (feet bgs): 20'	Screened Interval: 5'-20'
Casing Diameter / Material: 2" PVC	
Measuring Point Description: North	
*Note: If not established, mark the top north quadrant of the casing with indelible marker to establish the MP.	
Pre-Development DTW: 1'3.3"	Time: 1154
*Note: If well contains free product, do NOT develop. Contact project manager, and record product information in Comments section below.	
Development Method / Equipment: 1.5" Disposable Bailer Bucket + String	
Pre-Development Water Color / Turbidity: Clear	
Development Started: 1158	
Development Completed: 1240	
Total Development Time: 42 mins	
Post-Development Water Color / Turbidity: Mostly Clear	
Total Estimated Volume Evacuated During Development: 22.5	
Post-Development DTW: 1'4.0"	Time: 1240
General Description of Ground Water Re-Infiltration (i.e. recovery): Quick	
Recovery 05/21/20 1210 DTW: 1'3.5"	

Comments:

1st Bailer: Clear
2nd : Clear w/ Some Turbidity
3rd : Turbid - Dark Grey / Odorous

* Very odorous + Dark (Lead Known)
* Well is Quick to Recover

0-4.5 Gallons - 1st Clear then Dark Grey
4.5-9 Gallons - Dark Grey to Grey
9-13.5 Gallons - Grey to Grey
13.5-18 Gallons - Grey to Light Grey
18-22.5 Gallons - Light Grey to Clear (Mostly)

Personnel: Scientists

CTA ENVIRONMENTAL

Ground Water Monitoring Well Development Log

Client Name: DEQ — Well I.D.: MW-3

Project Name: FORMER EZZELL

Project Location: SACO MT

Development Date: 05/19/20

Well Location (descriptive): ~36' EAST OF SB-1 (SB-1 ~36' E OF MW-2)

Well Depth (feet bgs): (20') — Screened Interval: 5'-20'

Casing Diameter / Material: 2" PVC

Measuring Point Description: NORTH

*Note: If not established, mark the top north quadrant of the casing with indelible marker to establish the MP.

Pre-Development DTW: 18' 7.0" — Time: 1316

*Note: If well contains free product, do NOT develop. Contact project manager, and record product information in Comments section below.

Development Method / Equipment: PURGE + SURGE 1.5" DISPOSABLE BAILER

Pre-Development Water Color / Turbidity: MUDDY - BROWN

Development Started: 1318

Development Completed: 1328

Total Development Time: 10 MINS

Post-Development Water Color / Turbidity: MUDDY - BROWN

Total Estimated Volume Evacuated During Development: ~12 OZ (1.5 CUPS)

Post-Development DTW: 19' 0.9" — Time: 1330

General Description of Ground Water Re-Infiltration (i.e. recovery):

LITTLE TO NO H2O IN WELL. RECOVERY 05/20/20 1150 DTW 18'9"

Comments:

1ST BAILER - MUDDY - BROWN

** WELL BASICALLY DRY. SMALL AMOUNT OF H2O IN BOTTOM

* WELL IS SLOW TO RECOVER

0-4.5 GALLONS - N/A

4.5-9 GALLONS -

9-13.5 GALLONS -

13.5-18 GALLONS -

18-22.5 GALLONS -

Personnel: SCHLOTA

CTA ENVIRONMENTAL

Ground Water Monitoring Well Development Log

Client Name: DEQ	Well I.D.: MW-4
Project Name: Former Ezzies	
Project Location: Salo MT	
	Development Date: 05/19/2020
Well Location (descriptive): East of Former Building (Middle)	
Well Depth (feet bgs): 19' 7.0"	Screened Interval: 5'-20'
Casing Diameter / Material: 2" PVC	
Measuring Point Description: North	
*Note: If not established, mark the top north quadrant of the casing with indelible marker to establish the MP.	
Pre-Development DTW: 5' 1.6"	Time: 1346
*Note: If well contains free product, do NOT develop. Contact project manager, and record product information in Comments section below.	
Development Method / Equipment: 1.5" DISPOSABLE Bailer Purge + Surge	
Pre-Development Water Color / Turbidity: Clear	
Development Started: 1350	
Development Completed: 1405	
Total Development Time: 15 mins.	
Post-Development Water Color / Turbidity: Muddy - Tan	
Total Estimated Volume Evacuated During Development: 7.5 Gallons	
Post-Development DTW: 15' 4.7"	Time: 1407
General Description of Ground Water Re-Infiltration (i.e. recovery):	
Slow Recovery = 05/20/2020 1145 DTW: 15' 3.5"	

Comments:

1st Bailer → Clear (H_2O Δ'd from clear to tan @ 3 gallons)

0 - 4.5 Gal - Clear to tan

4.5 - 7.5 Gall → Tan to tan

Slight odor

Water stayed tan. No grey

Well de watered @ 7.5 gallons

Personnel: Seilstad

CTA ENVIRONMENTAL

Ground Water Monitoring Well Development Log

Client Name: DEQ	Well I.D.: MW-5
Project Name: Former Ezzies	
Project Location: Shelby, MT	
	Development Date: 05/19/2020
Well Location (descriptive): ~80' from ~~NW~~ E corner of former Building NE of DEQ-1	
Well Depth (feet bgs): 20'	Screened Interval: 5'-20'
Casing Diameter / Material: 2" PVC	
Measuring Point Description: Marked	
*Note: If not established, mark the top north quadrant of the casing with indelible marker to establish the MP.	
Pre-Development DTW: 18' 8.5"	Time: 1433
*Note: If well contains free product, do NOT develop. Contact project manager, and record product information in Comments section below.	
Development Method / Equipment: Purge + Sample 1.5" Disposable Bailer	
Pre-Development Water Color / Turbidity: Muddy	
Development Started: 1434	
Development Completed: 1444	
Total Development Time: 10 mins	
Post-Development Water Color / Turbidity: Muddy	
Total Estimated Volume Evacuated During Development: 1.5-2 Gals	
Post-Development DTW: 19' 5.0"	Time: 1446
General Description of Ground Water Re-Infiltration (i.e. recovery):	
Slow Recovery 05/20/2020 1200 DTW 19' 3.0"	
Comments:	
- H2O is muddy and slow to recover like MW-3	
- No odor	
- Slow to recover	
Personnel: SG/STAD	

CTA ENVIRONMENTAL

Sheet ___ of ___

GROUND WATER SAMPLE LIST

Project Name: Former Ezzie's Project No.: GF 13024.13 Completed By: Ross

Project Location: 103 Taylor St., Saco, ME Approximate Elevation: ___

Well I.D.	Total Depth (ft.)	Casing Diam. (in.)	Prev. DTW (ft.)	DTW (ft.)	DTP (ft.)	Field Analyses: DO (pre-purge) mg/l	ORP (final) mV	pH (final) su	SC (final) mS	Turbidity (NTU)	Temp (final) °C	Lab Analyses: VPH	EPH						Sample Date	Sample Time
MW-1	19.30	2	1.55	1.08	NA	1.09	-158	7.44	3.27	26.8	15.5								7.6.20	1442
MW-2	19.70	↓	1.33	0.81	NA	0.93	-116	7.62	3.29	9.87	16.0								↓	1535
MW-3	19.74		18.70	17.37	NA	2.03	-32	7.22	19.99	109	13.2								↓	1637
MW-4	19.70		5.16	6.49	NA	1.38	-1	6.73	18.28	20.3	11.3								7.7.20	0807
MW-5	19.75		18.85	18.09	NA	1.44	22	7.11	19.88	308	12.2								↓	0858
DEQ-1	18.00	↓	—	1.55	NA	1.24	-75	6.55	10.06	37.6	13.2								↓	1008

Notes: DTW recorded 7-6-20

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Former Ezzie's - Sacco Well Number: MW-1

Project Number: GF13024.13 Sample Date / Time: 7-6-20 / 1442 Sequence: 1 of 6

Casing Diameter / Type: 8" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☑ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☑ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☑ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☑ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 19.30 DTW: 1.08 Sample Depth = DTW + [(TD-DTW)/3]: 7.15

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	YSI	today	Cal. Method: BP
ORP	YSI	Not Required	
pH	Apera	"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC	Apera	"	Cal standard: 1413 µS /
Turbidity	Oakton	"	Cal buffers: 800 NTU, 100 NTU, 20 NTU, 0.02 NTU

Evacuation Start Time: 1426 Flow Rate: ~250 *(start between 200 – 500 ml/min; 1,000 ml/min max.)*

Time	Gallons Evacuated	DTW	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Turbidity (NTU)	Temp. (°C)
Pre-Evac.	0	1.08	1.09					
1431	.25	1.10	1.07	-151	7.31	3.31	102	15.4
1436	.5	1.04	0.98	-157	7.40	3.31	46.7	15.3
1441	.75	1.06	0.95	-158	7.44	3.27	26.8	15.5

Note: Evacuate and monitor until DO, pH, SC, and Turbidity stabilize (Δ DO < 10%, Δ pH < 0.1 su; Δ ORP < 10%, Δ SC < 3%; Δ Turbidity < 10%). Turbidity less than 5 NTU and DO less than 0.5 mg/L for 3 consecutive values is considered stabilized.

Observations & Comments: 1' flex ↓ 14' tubing used.

Decontamination Fluids Used: ☑ Potable Water/Liquinox ☑ Methanol ☑ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☑ Same as Evacuation Method ☐ Other: _____

Sample Type: ☑ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☑ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☐				

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Former Ezzie's Well Number: MW-2

Project Number: GF13024.15 Sample Date / Time: 7.6.20 / 1535 Sequence: 2 of 6

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☑ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☑ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☑ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☑ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 19.7 DTW: 0.81 Sample Depth = DTW + [(TD-DTW)/3]: 7.11

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	S	today	Cal. Method: 138
ORP	A	Not Required	
pH		"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC	YSI E	"	Cal standard: 1413 µS /
Turbidity		"	Cal buffers: 800 NTU, 100 NTU, 20 NTU, 0.02 NTU

Evacuation Start Time: 1519 Flow Rate: ~250 *(start between 200 – 500 ml/min; 1,000 ml/min max.)*

Time	Gallons Evacuated	DTW	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Turbidity (NTU)	Temp. (°C)
Pre-Evac.	0	0.81	0.93					
1524	.25	0.80	0.94	-103	7.57	3.44	40.1	16.3
1529	.5	0.80	0.93	-112	7.61	3.31	22.7	16.4
1534	.75	0.80	0.89	-116	7.62	3.29	9.87	16.0

Note: Evacuate and monitor until DO, pH, SC, and Turbidity stabilize (Δ DO < 10%, Δ pH < 0.1 su; Δ ORP < 10%, Δ SC < 3%; Δ Turbidity < 10%). Turbidity less than 5 NTU and DO less than 0.5 mg/L for 3 consecutive values is considered stabilized.

Observations & Comments: 1' flex & 14' ridged tubing used

Decontamination Fluids Used: ☑ Potable Water/Liquinox ☑ Methanol ☑ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☑ Same as Evacuation Method ☐ Other: _____

Sample Type: ☑ Natural ☑ Duplicate ☐ Field Blank

Analytical Laboratory: ☑ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☐				

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Former Ezzie's Well Number: MW-3

Project Number: GF13024.13 Sample Date / Time: 7.6.20 / 1437 Sequence: 3 of 6

Casing Diameter / Type: _____ Measuring Point (MP) Description: _____

Depth to Water (DTW) Measuring Device: ☑ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☑ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☑ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☑ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 19.74 DTW: 17.37 Sample Depth = DTW + [(TD-DTW)/3]: 18.16

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	5	today	Cal. Method: BP
ORP	A	Not Required	
pH	my	"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC	E	"	Cal standard: 1413 µS /
Turbidity		"	Cal buffers: 800 NTU, 100 NTU, 20 NTU, 0.02 NTU

Evacuation Start Time: 1431 Flow Rate: ~250 *(start between 200 – 500 ml/min; 1,000 ml/min max.)*

Time	Gallons Evacuated	DTW	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Turbidity (NTU)	Temp. (°C)
Pre-Evac.	0	17.37	2.03					
1436	.25	17.44	2.64	-32	7.22	18.99	109	13.2

Note: Evacuate and monitor until DO, pH, SC, and Turbidity stabilize (Δ DO < 10%, Δ pH < 0.1 su; Δ ORP < 10%, Δ SC < 3%; Δ Turbidity < 10%). Turbidity less than 5 NTU and DO less than 0.5 mg/L for 3 consecutive values is considered stabilized.

Observations & Comments: 1' flex x 25' ridged tubing used

Decontamination Fluids Used: ☑ Potable Water/Liquinox ☑ Methanol ☑ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☑ Same as Evacuation Method ☐ Other: _____

Sample Type: ☑ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☑ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☐				

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Former Ezzie's Well Number: MW-4

Project Number: GF13024.13 Sample Date / Time: 7.7.20 / 0807 Sequence: 4 of 6

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☑ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☑ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☑ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☑ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 19.70 DTW: 6.49 Sample Depth = DTW + [(TD-DTW)/3]: 10.89

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	YSI	7.7.20	Cal. Method: BI
ORP	YSI	Not Required	
pH	Aqua	"	Cal. buffers used: 4.01su / 7.00su / 10.00 su
SC	Aqua	"	Cal standard: 1413 µS /
Turbidity	Oakton	"	Cal buffers: 800 NTU, 100 NTU, 20 NTU, 0.02 NTU

Evacuation Start Time: 0751 Flow Rate: ~250 *(start between 200 – 500 ml/min; 1,000 ml/min max.)*

Time	Gallons Evacuated	DTW	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Turbidity (NTU)	Temp. (°C)
Pre-Evac.	0	6.49	1.38					
0756	.25	6.97	1.15	15	6.78	19.99	16.16	10.6
0801	.5	7.33	1.10	6	6.72	18.76	24.7	11.1
0806	.75	7.52	1.06	-1	6.73	18.28	20.3	11.3

Note: Evacuate and monitor until DO, pH, SC, and Turbidity stabilize (Δ DO < 10%, Δ pH < 0.1 su; Δ ORP < 10%, Δ SC < 3%; Δ Turbidity < 10%). Turbidity less than 5 NTU and DO less than 0.5 mg/L for 3 consecutive values is considered stabilized.

Observations & Comments: 1' flex + 17.5' ridged tubing used

Decontamination Fluids Used: ☑ Potable Water/Liquinox ☑ Methanol ☑ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☑ Same as Evacuation Method ☐ Other: _____

Sample Type: ☑ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☑ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☑ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☑ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☑ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☐				

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Farmington Ezzell Well Number: MW-5

Project Number: GF13024.13 Sample Date / Time: 7-7-20 / 0858 Sequence: 5 of 6

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☑ Electronic DTW Probe ☐ Other: _____

Free Product (FP) Measuring Device: ☑ Electronic Interface Probe ☐ Other: _____

FP Present: ☐ Yes ☑ No Depth to Product: _____ Type of Product: _____

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☑ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other: _____

Well Total Depth (TD): 19.75 DTW: 18.09 Sample Depth = DTW + [(TD-DTW)/3]: 18.64

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	YSI ProA	4	Cal. Method: BP
ORP		Not Required	
pH		7	Cal. buffers used: ~~4.01su~~ / ~~7.00su~~ / 10.00 su
SC		7	Cal standard: 1413 µS /
Turbidity		"	Cal buffers: 800 NTU, 100 NTU, 20 NTU, 0.02 NTU

Evacuation Start Time: 0852 Flow Rate: ~~~250~~ (*start between 200 – 500 ml/min; 1,000 ml/min max.*)

Time	Gallons Evacuated	DTW	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Turbidity (NTU)	Temp. (°C)
Pre-Evac.	0	18.09	1.44					
0857	~.25	18.42	1.56	22	7.11	19.88	308	12.2
~~0902~~ 0904								

Note: Evacuate and monitor until DO, pH, SC, and Turbidity stabilize (Δ DO < 10%, Δ pH < 0.1 su; Δ ORP < 10%, Δ SC < 3%; Δ Turbidity < 10%). Turbidity less than 5 NTU and DO less than 0.5 mg/L for 3 consecutive values is considered stabilized.

Observations & Comments: 1' flex + 25.5' ridged tubing used

Decontamination Fluids Used: ☑ Potable Water/Liquinox ☑ Methanol ☑ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☑ Same as Evacuation Method ☐ Other: _____

Sample Type: ☑ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☑ Energy Labs (Helena / Billings) ☐ Other: _____

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☐ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☐ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☐ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☐				

CTA ENVIRONMENTAL

GROUND WATER SAMPLING LOG (LOW FLOW)

Project Name: Former Ezzie's Well Number: DEQ-1

Project Number: GF13024.13 Sample Date / Time: 7.7.20 / 1008 Sequence: 6 of 6

Casing Diameter / Type: 2" PVC Measuring Point (MP) Description: N mark

Depth to Water (DTW) Measuring Device: ☑ Electronic DTW Probe ☐ Other:

Free Product (FP) Measuring Device: ☑ Electronic Interface Probe ☐ Other:

FP Present: ☐ Yes ☑ No Depth to Product: Type of Product:

Note: Do NOT complete evacuation, monitoring, or sampling if FP is present. Contact project manager.

Evacuation Method: ☑ Peristaltic pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Bladder pump with disposable tubing (IBIs monitored in open cell; ~ 5-min intervals)
☐ Other:

Well Total Depth (TD): 18 DTW: 1.55 Sample Depth = DTW + [(TD-DTW)/3]: 7.03

INTRINSIC BIODEGRADATION INDICATOR (IBI) METERS & DATA

Meter Type	Model	Calibration Date	Comments
DO	SA	"	Cal. Method: BG
ORP		Not Required	
pH	147	"	Cal. buffers used: ~~4.01su~~ / ~~7.00su~~ / 10.00 su
SC	E	"	Cal standard: 1413 µS /
Turbidity		"	Cal buffers: 800 NTU, 100 NTU, 20 NTU, 0.02 NTU

Evacuation Start Time: 0952 Flow Rate: ~250 *(start between 200 – 500 ml/min; 1,000 ml/min max.)*

Time	Gallons Evacuated	DTW	DO (mg/L)	ORP (mV)	pH (su)	SC (mS)	Turbidity (NTU)	Temp. (°C)
Pre-Evac.	0	1.55	1.24					
0957	.25	2.80	1.07	-77	6.53	11.27	66.96	12.9
1002	.5	3.36	1.01	-73	6.53	10.50	46.10	13.1
1007	.75	3.50	0.99	-75	6.55	10.06	37.6	13.2

Note: Evacuate and monitor until DO, pH, SC, and Turbidity stabilize (Δ DO < 10%, Δ pH < 0.1 su; Δ ORP < 10%, Δ SC < 3%; Δ Turbidity < 10%). Turbidity less than 5 NTU and DO less than 0.5 mg/L for 3 consecutive values is considered stabilized.

Observations & Comments: 1' flex + 14' ridged tubing used

Decontamination Fluids Used: ☑ Potable Water/Liquinox ☑ Methanol ☑ DI / Distilled Water ☐ Nitric Acid

Sampling Method: ☑ Same as Evacuation Method ☐ Other:

Sample Type: ☑ Natural ☐ Duplicate ☐ Field Blank

Analytical Laboratory: ☑ Energy Labs (Helena / Billings) ☐ Other:

REQUIRED ANALYSES

Parameter	Method	Container(s)	Preservative	Comments
☑ VPH	MA-VPH	2 – 40 ml VOAs	HCl	Zero headspace
☑ EPH	MA-EPH	2 – 1L amber glass	H_2SO_4	
☑ EDB / DCA	EPA 8011 / 8260	6 – 40 ml VOAs	HCl	Zero headspace; 3 VOAs each
☐ Diss. Methane	SW 8015M	2 – 40 ml VOAs	H_2SO_4	Zero headspace
☐ Tot & Diss. Fe & Mn	E200.7_8	2 – 250 ml plastic	HNO_3	Field filter "dissolved" bottle
☐ Sulfate	E300.0	1 – 250 ml plastic	None	
☐ Sulfide	A4500-SD	1 – 250 ml plastic	NaOH	Zero headspace
☐ N (NO_3 + NO_2)	E353.2	1 – 250 ml plastic	H_2SO_4	
☐				

Subject: GW Monitoring Page: ____ of ____

Project No.: GF13024.13 By: Ross Date: 7/6/20

Project Name: Saco - Former Ezzie's

- Arrived on site at 1245
- Starting w/ DTW in all wells
- Calibrating meters prior to sampling
- Sampling - starting w/ MW-1
- * MW-2 - Duplicate Sample
- MW-3 - did not allow well to balance due to lack of water.
- Done for day at 1730

10.5 hrs

7-7-20

- On site at 0730. Calibrating meters prior to sampling.
- Starting with MW-4.
  - MW-4 water bubbled when HCl preservative added to vials.
- MW-5 - did not allow well to balance due to lack of water.
- DEQ-1 water bubbled when HCL preservative added to water.
- Decon'd all equipment. Leaving site at 1040

0715

3.5 hrs

PIONEERING ENVIRONMENTS

ENVIRONMENTAL

APPENDIX F

Laboratory Analytical Reports

Montana DEQ - Waste Management and Remediation Division

Data Validation Summary Form (Version 1.3.0, Revised 1/26/18)

Please fill out the information below, using one form for each lab batch (one form can be used for multiple analytical methods). The form will grow and adjust, based on your responses. Please include a discussion regarding the sampling event in the report that is sent to DEQ with this form. For additional instructions, please click the Open Complete Instructions button.

Open Complete Instructions

Basic Questions View example (Note: example optimized for viewing in Chrome browser)

1. Site/Facility name	Former Ezzies Saco Station
2. Site code or facility ID (if applicable)	36-06672
3. Release ID (if applicable)	1454
4. Sample delivery group	Ezzies Soil: H20050162
5. Name of DEQ-approved sampling plan	Approval of Modification A of Task Order No. 13
6. Date DEQ approved the sampling plan	4/30/2020 M/D/YY
7. Name of data validator	Erik Seilstad
8. Phone	406-452-3321
9. Date validated	M/D/YY

Field Collection Questions View example (Note: example optimized for viewing in Chrome browser)

10. Sample matrix	☒ Soil ☐ Sediment ☐ Surface water ☒ Groundwater ☐ Tap water ☐ Air (including soil gas) ☐ Other
11. Sample collection start date	5/5/2020 M/D/YY
12. Sample collection end date	5/5/2020 M/D/YY

13. Analytical methods used

Use Add Method button to list multiple methods. Enter any other methods in the field manually.

Add Method	Analytical Method(s)
Delete Method	EPH Screen
Delete Method	VPH
Delete Method	1, 2 DCA (8260B)
Delete Method	EDB (8011)

Laboratory-related Questions View example (Note: example optimized for viewing in Chrome browser)

14. Laboratory name and location	Energy Laboratories Inc., Helena, MT
15. Laboratory project ID	Ezzies: H20050162

16. Were samples received in good condition and at appropriate temperature, chain-of-custody forms complete, and all samples analyzed within holding times?

Yes ◉ No ○ See Below ○ Comments

17. Were all laboratory quality control procedures complied with and is data validated without qualifiers?	Yes ◉	No ○	See Below ○	Comments
18. Were the total number of lab method blanks at least 5% of the total number of samples, or as required by the method?	Yes ◉	No ○		Comments
19. Were the total number of lab matrix spike samples prepared at least 5% of the total number of samples, or as required by the method?	Yes ◉	No ○		Comments

20. Please list any project samples used for matrix spike/matrix spike duplicates.

Add Sample	Lab ID	Field Sample ID	Comments
Delete Sample	H20050162-006	MW-1 13-15'	Former Ezzies

21. Is the total number of laboratory control samples at least 5% of the total number of samples?	Yes ◉	No ○		Comments

Consultant/Validator Questions View example (Note: example optimized for viewing in Chrome browser)

22. Are the detection limits appropriate for the project (i.e. at or below screening levels)?	Yes ◉	No ○		Comments
23. Are the reported units appropriate for the sample matrix (i.e. water results in ug/L, not mg/kg)?	Yes ◉	No ○		Comments
24. Do the analytical methods comply with project requirements (e.g. in the SAP, work plan, or QAPP)?	Yes ◉	No ○		Comments
25. Do the laboratory reports include all constituents requested to be analyzed on the chain-of-custody or under the sampling plan or other applicable document?	Yes ◉	No ○		Comments
26. Is the number of sample blanks (e.g. equipment, trip, or field blanks) equal to at least 10% of the total number of samples, or as otherwise required?	Yes ◉	No ○		Comments
27. Are field blanks free from contamination, duplicates collected as required, and field duplicate percent differences within data validation quality control limits?	Yes ◉	No ○	See Below ○	Comments

28. Please provide an Excel or CSV file to the DEQ project manager (via e-mail or CD) that lists all samples evaluated in this summary and lists any qualified data.
Please use the following format:

Lab ID	Field Sample ID	Qualifiers	Comments (indicate whether the issue biases the results high or low)
Example 48310-2.31E	Example GW-1	R	Sample dropped in lab and unrecoverable
Example 48310-2.32D	Example GW-2		

Please use the following format for qualifiers. See EPA's National Functional Guidelines for more information on qualifiers for unique samples such as dioxins.

Qualifier	Explanation
C	Pesticide and Arochlor results confirmed with GC/MS
J-	Estimated value, may be biased low
J	Analyte identified, but concentration is estimated
J+	Estimated value, may be biased high
NJ	Tentatively identified compound
R	Sample result rejected
U	Analyte analyzed for, but not detected above quantitation limit
UJ	Analyte not detected above CRQL, but CRQL may be inaccurate
X	Pesticide and Arochlor results attempted using GC/MS, but unsuccessful

If you wish to manually enter qualified sample results, please use the table below.

Add Sample	Lab ID	Field Sample ID	Qualifiers	Comments (indicate whether the issue biases the results high or low)
Delete Sample	H20050162-010	Duplicate	D, *	D: Reporting limit increased due to sample matrix. *: The result exceeds the Maximum Contaminant Level
Delete Sample	H20050162-006	MW-1 13-15'	D, *, S	D: Reporting limit increased due to sample matrix. *: The result exceeds the Maximum Contaminant Level S: Spike recovery outside of advisory limits

			Comments
29. What is the percent completeness (samples planned versus valid samples collected)?	100		
30. Was the completeness goal met?	Yes (●)	No ( )	
31. Does all data conform to analytical methods and data quality objectives specified for this project?	Yes (●)	No ( )	

32. Other general comments or observations?

Split Samples

			Comments
33. Did DEQ collect split samples?	Yes ( )	No (●)	

Print Form | Save As | Open Instructions | Hide Instructions

Montana DEQ - Waste Management and Remediation Division

Data Validation Summary Form (Version 1.3.0, Revised 1/26/18)

Please fill out the information below, using one form for each lab batch (one form can be used for multiple analytical methods). The form will grow and adjust, based on your responses. Please include a discussion regarding the sampling event in the report that is sent to DEQ with this form. For additional instructions, please click the Open Complete Instructions button.

Open Complete Instructions

Basic Questions View example (Note: example optimized for viewing in Chrome browser)

1. Site/Facility name	Former Ezzies Saco Station
2. Site code or facility ID (if applicable)	36-06672
3. Release ID (if applicable)	1454
4. Sample delivery group	Ezzies GW: H20070302
5. Name of DEQ-approved sampling plan	Approval of Modification A of Task Order No. 13
6. Date DEQ approved the sampling plan	4/30/2020 M/D/YY
7. Name of data validator	Erik Seilstad
8. Phone	406-452-3321
9. Date validated	M/D/YY

Field Collection Questions View example (Note: example optimized for viewing in Chrome browser)

10. Sample matrix	☐ Soil ☐ Sediment ☐ Surface water ☒ Groundwater ☐ Tap water ☐ Air (including soil gas) ☐ Other
11. Sample collection start date	7/6/2020 M/D/YY
12. Sample collection end date	7/7/2020 M/D/YY

13. Analytical methods used

Use Add Method button to list multiple methods. Enter any other methods in the field manually.

Add Method	Analytical Method(s)
Delete Method	EPH Screen
Delete Method	VPH
Delete Method	1, 2 DCA (8260B)
Delete Method	EDB (8011)

Laboratory-related Questions View example (Note: example optimized for viewing in Chrome browser)

14. Laboratory name and location	Energy Laboratories Inc., Helena, MT
15. Laboratory project ID	Ezzies: H20070302

16. Were samples received in good condition and at appropriate temperature, chain-of-custody forms complete, and all samples analyzed within holding times?

Yes ◉ No ○ See Below ○ Comments

17. Were all laboratory quality control procedures complied with and is data validated without qualifiers?	Yes ◉	No ○	See Below ○	Comments
18. Were the total number of lab method blanks at least 5% of the total number of samples, or as required by the method?	Yes ◉	No ○		Comments
19. Were the total number of lab matrix spike samples prepared at least 5% of the total number of samples, or as required by the method?	Yes ◉	No ○		Comments

20. Please list any project samples used for matrix spike/matrix spike duplicates.

Add Sample	Lab ID	Field Sample ID	Comments
Delete Sample	H20070302-004	DUP	Former Ezzies
Delete Sample	H20070291-009	Duplicate	Former Saco Conoco

21. Is the total number of laboratory control samples at least 5% of the total number of samples?	Yes ○	No ○	Comments

Consultant/Validator Questions View example (Note: example optimized for viewing in Chrome browser)

22. Are the detection limits appropriate for the project (i.e. at or below screening levels)?	Yes ◉	No ○		Comments
23. Are the reported units appropriate for the sample matrix (i.e. water results in ug/L, not mg/kg)?	Yes ◉	No ○		Comments
24. Do the analytical methods comply with project requirements (e.g. in the SAP, work plan, or QAPP)?	Yes ◉	No ○		Comments
25. Do the laboratory reports include all constituents requested to be analyzed on the chain-of-custody or under the sampling plan or other applicable document?	Yes ◉	No ○		Comments
26. Is the number of sample blanks (e.g. equipment, trip, or field blanks) equal to at least 10% of the total number of samples, or as otherwise required?	Yes ◉	No ○		Comments
27. Are field blanks free from contamination, duplicates collected as required, and field duplicate percent differences within data validation quality control limits?	Yes ◉	No ○	See Below ○	Comments

28. Please provide an Excel or CSV file to the DEQ project manager (via e-mail or CD) that lists all samples evaluated in this summary and lists any qualified data.
Please use the following format:

Lab ID	Field Sample ID	Qualifiers	Comments (indicate whether the issue biases the results high or low)
Example 48310-2.31E	Example GW-1	R	Sample dropped in lab and unrecoverable

Example 48310-2.32D	Example GW-2		

Please use the following format for qualifiers. See EPA's National Functional Guidelines for more information on qualifiers for unique samples such as dioxins.

Qualifier	Explanation
C	Pesticide and Arochlor results confirmed with GC/MS
J-	Estimated value, may be biased low
J	Analyte identified, but concentration is estimated
J+	Estimated value, may be biased high
NJ	Tentatively identified compound
R	Sample result rejected
U	Analyte analyzed for, but not detected above quantitation limit
UJ	Analyte not detected above CRQL, but CRQL may be inaccurate
X	Pesticide and Arochlor results attempted using GC/MS, but unsuccessful

If you wish to manually enter qualified sample results, please use the table below.

Add Sample	Lab ID	Field Sample ID	Qualifiers	Comments (indicate whether the issue biases the results high or low)
Delete Sample	H20070302-004	DUP	D	D: Reporting limit increased due to sample matrix.
Delete Sample	H20070302-001	MW-1	D, J, S	

29. What is the percent completeness (samples planned versus valid samples collected)? 100 Comments

30. Was the completeness goal met? Yes (●) No ( ) Comments

31. Does all data conform to analytical methods and data quality objectives specified for this project? Yes (●) No ( ) Comments

32. Other general comments or observations?

Split Samples

33. Did DEQ collect split samples? Yes ( ) No (●) Comments

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CTA ENVIRONMENTAL

APPENDIX H

Release Closure Plan

MT DEQ Petroleum Tank Cleanup Section -- Release Closure Plan

(7 Mar 2018)

for the Investigation, Cleanup, Monitoring & Closure of Petroleum Releases

Part 1: Site Summary & Remedial Investigation (RI) Results

reference: MT DEQ Remedial Investigation (RI) Guidance for Petroleum Releases

Consultant:	CTA Environmental		Date:	10/30/2020	DEQ PM:	Reed Miner
Facility Name / Address:	Former Ezzie's / Intersection of US Highway 2 and Highway 243, Saco, MT					
Facility ID:	36-06672	Release:	1454	WP ID:		

Site Information	Release Cause, Source(s) & Petroleum Types:	Gasoline release found during UST removal.
	other releases onsite and nearby:	Release 2763 located approximately two blocks to the east.
	Site Use(s) -- Former, Current & Planned:	Former Fuel Station and Vehicle Maintenance facility. Currently vacant lot
	Surface Conditions & Access:	The west side of the property is the former building foundation, and the rest of the property is gravel.
	former Petroleum Tank Systems:	Two 1,000-gallon gasoline USTs and one 2,000 diesel UST.
	current Petroleum Tank Systems:	None
	Other:	
Subsurface	Stratigraphic sequence - layers & thicknesses:	2-6 feet bgs sandy clay. 6-20 feet bgs clay to clay.
	Stratigraphic Continuity - Lateral Variation(s):	Similar across site
	Groundwater Depth & Flow Direction(s):	Groundwater varied from 0.81 to 18.09 feet below measuring point. Direction hard to define.
	Aquifer(s) unconfined, confined, perched:	unconfined, perched aquifer
	Receptor Depth/Location (basements, utilities):	Water and sanitary sewer mains that run along the south and west side of the site.
	Other:	
Extent & Magnitude	Petroleum Types, Age & NAPL Mobility:	Gasoline, 45 + years. NAPL has not been detected.
	Surface Soil Impacts (0 to 2 ft bgs):	Found in soil near former pump island.
	Vadose-Zone Soil Impacts:	Found in MW-1, MW-2, SB-1, SB-2, and SB-3
	Smear-Zone Soil Impacts:	Found in MW-1, MW-2, SB-1, SB-2, SB-3, and MW-4.
	Groundwater Impacts:	Found in DEQ-1, MW-1, MW-2, and MW-4.
	Surface Water Impacts:	No nearby surface waters at risk
	Petroleum Vapor Impacts:	No structures on site. No risk at this time.
	Other:	
Reports	RI and Monitoring Reports & Dates:	Last work completed in 2006.
	Pilot Tests & Results:	No pilot test have been completed
	Results from Cleanup(s):	100-200 cubic yards of were excavated in 2003 during highway and sidewalk repair.
	Other:	

What currently prevents Release Closure?	Groundwater and soil above RBSLs.
additional information required for PMZ Closure:	Additional soil borings and wells to define plume. Would require easement approval for offsite contamination.
Information & Data Gaps:	Plume not defined to the west or the south.
Recommendations and comments:	CTA recommends installing additional soil borings and monitoring wells. Once plume defined conduct a remedial excavation to remove source material from the Site. Post excavation replace monitoring wells abandoned during excavation, complete groundwater monitoring event. If the excavation did not address the 1,2-DCA install a recirculation system utilizing pump and treat.

MT DEQ Petroleum Tank Cleanup Section -- Release Closure Plan (7 Mar 2018)

for the Investigation, Cleanup, Monitoring & Closure of Petroleum Releases

Part 2: Conceptual Site Model (CSM) - Evaluation of Exposure Pathways

reference: MT DEQ Risked-Based Corrective Action (RBCA) Guidance for Petroleum Releases

Consultant:	CTA Environmental		Date: 10/30/2020	DEQ PM:	Reed Miner
Facility Name:	Former Ezzie's / Intersection of US Highway 2 and Highway 243, Saco, MT				Complete Description for All Receptors
Facility ID:	36-06672	Release: 1454	WP ID: 0		Describe why a Receptor is not threatened or impacted; and Describe proposed Investigation, Cleanup, and/or Monitoring Methods for each threatened or impacted Receptor.

Required: Complete Description of the Source(s) of Petroleum Release

Petroleum Source(s)	Affected Medium	Exposure Medium / Point	Exposure Route	Receptor	Complete Description for All Receptors
→	Surface Soil (0 - 2 ft bgs)	→ Soil	→ Ingestion Dermal	→ Resident and/or Worker	Surface soil impacts present in vicinity of former pump island. No residents or workers onsite but possible risk to future residents or workers.
		→ Soil	→ Leaching	→ Groundwater	Soil contamination is leaching into groundwater.
		→ Dust/Vapors	→ Inhalation	→ Resident and/or Worker	Surface soil impacts present in vicinity of former pump island. No residents or workers onsite but possible slight risks to pedestrians.
		→ Surface Erosion to Surface Water and Sediment	→ Ingestion Dermal	→ Recreator, Ecological Receptor [1]	Surface soil impacts present in vicinity of former pump island. Minimal threat to ecological receptors with Beaver Creek being over 1,000 feet away.
→	Sub-Surface Soil (> 2 ft bgs)	→ Soil	→ Ingestion Dermal	→ Construction Worker [2]	Soil impacts below DEQs calculated RBSLs for direct contact for construction workers.
		→ Soil	→ Leaching	→ Groundwater	Soil contamination is leaching into and impacting groundwater
		→ Indoor Air	→ Inhalation	→ Commercial or Residential Indoor Air	No structures on Site, no indoor air risk at this time. Possible risk to future development on Site.
		→ Dust/Vapors	→ Inhalation	→ Construction Worker	Soil impacts below DEQs calculated RBSL for direct contact for construction workers.
		→ Buried Water Line	→ Ingestion Dermal	→ Resident and/or Worker	Soil impacts present above RBSLs in vicinity of water line from 4-13 feet bgs and approximately 60 feet horizontally. The water main is estimated 6 feet bgs. Possible risk to water line.
		→ Buried Utility Line	→ Inhalation of Indoor Air	→ Indoor Resident and/or Worker	Soil impacts present above RBSLs in vicinity of sanitary sewer line. No structures on Site, minimal risk to indoor inhalation.
→	Groundwater	→ Groundwater	→ →	→ State water [3]	Groundwater impacted above RBSLs
		→ Indoor Air [4]	→ Inhalation of Indoor Air	→ Resident and/or Worker	No structures on Site, no indoor air risk at this time. Possible risk to future development on Site.
		→ Groundwater and Vapors	→ Ingestion Dermal Inhalation	→ Construction Worker [2]	Groundwater above RBSLs, possible risk to construction workers.
		→ Drinking Water	Ingestion Dermal	Resident and/or Worker	Groundwater not used for domestic use on Site, slight risk for ingestion or dermal contact.
		→ Surface Water and/or Sediment	Ingestion Dermal Inhalation	Recreator, Ecological Receptor	No defined groundwater-surface water interaction at site. Risk is minimal
		→ Buried Water Line	→ Ingestion Dermal	→ Resident and/or Worker	Soil impacts present above RBSLs in vicinity of water line from 4-13 feet bgs and approximately 60 feet horizontally. The water main is estimated 6 feet bgs. Possible risk to water line.
		→ Buried Utility Line	→ Inhalation of Indoor Air	→ Indoor Resident and/or Worker	Sanitary sewer main runs through contamination. Contamination present from approximately 5-12 feet bgs, horizontal contamination not known. Possible risk to workers.

Data Gaps:	Plume not defined to the west or the south.
Recommendations:	CTA recommends installing additional soil borings and monitoring wells. Once plume defined conduct a remedial excavation to remove source material from the Site. Post excavation replace monitoring wells abandoned during excavation, complete groundwater monitoring event. If the excavation did not address the 1,2-DCA install a recirculation system utilizing pump and treat.

Footnotes:

1. Ecological Receptors (e.g. plants and animals) can be added as a separate line associated with surface soil but it is not common for PTC sites.
2. Construction worker covers excavations conducted for building construction, utility installation and repair, as well as residents planting trees, etc.
3. Standard or RBSL exceedence are a complete pathway to a receptor, which is state water (or groundwater).
4. Indoor Air is the exposure medium for a potential or known vapor intrusion setting where a resident or an employee of a business may breathe petroleum vapor from the release.

MT DEQ Petroleum Tank Cleanup Section -- Release Closure Plan (7 Mar 2018)
for the Investigation, Cleanup, Monitoring & Closure of Petroleum Releases

Part 3: Evaluation of Cleanup Alternatives

reference: MT DEQ Remedial Alternatives Analysis (RAA) Guidance for Petroleum Releases

Consultant:	CTA Environmental	Date:	10/30/2020	DEQ PM:	Reed Miner
Facility Name / Address:	Former Ezzie's / Intersection of US Highway 2 and Highway 243, Saco, MT				
Facility ID:	36-06672	Release:	1454	WP ID:	0

Administrative Rules of Montana 17.56.605(3) requires screening and selection of cleanup methods to develop a matrix evaluation of cleanup alternatives. A cleanup plan requires information on all alternatives and an explanation why any alternative was selected.

Enter appropriate site-specific Cleanup Methods that are based on RI results & CSM

Evaluation Criteria		No Action*	Monitored Natural Attenuation	Excavation	Pump and Treat	Dual Phase Extraction	Excavation + Pump and Treat	PMZ
Estimated Costs		5 - Excellent ($0)	1 - Poor ($500,000)	2 - Low ($250,000)	3 - Moderate ($125,000)	2 - Low ($200,000)	2 - Low ($400,000)	3 - Moderate ($100,000)
Performance	Protective of Human Health & Environment (e. g. residences, utilities, water supply, future use)	1 - Poor	2 - Low	4 - Good	3 - Moderate	3 - Moderate	4 - Good	2 - Low
	Method-specific regulatory requirements (e. g. disposal of impacted soil & water, access agreements)	5 - Excellent	4 - Good	2 - Low	2 - Low	2 - Low	2 - Low	4 - Good
	Method-specific feasibility requirements (e. g. pilot tests, treatability studies)	5 - Excellent	5 - Excellent	4 - Good	3 - Moderate	3 - Moderate	3 - Moderate	3 - Moderate
	Contaminant-specific requirements (e. g. method achieves soil & GW RBSLs & DEQ-7 standards)	1 - Poor	1 - Poor	3 - Moderate	3 - Moderate	3 - Moderate	4 - Good	1 - Poor
	Location-specific requirements (e. g. potential historical, cultural, or ecological significance, or site near wetlands, floodplains, surface water, endangered species / migratory bird habitat)	4 - Good	4 - Good	3 - Moderate	3 - Moderate	3 - Moderate	3 - Moderate	3 - Moderate
Reliability -- Short Term		1 - Poor	1 - Poor	3 - Moderate	3 - Moderate	3 - Moderate	4 - Good	1 - Poor
Reliability -- Long Term		1 - Poor	1 - Poor	3 - Moderate	3 - Moderate	4 - Good	4 - Good	1 - Poor
Implementation Issues & Limitations		5 - Excellent	4 - Good	3 - Moderate	3 - Moderate	3 - Moderate	3 - Moderate	3 - Moderate
Safety Issues		3 - Moderate	4 - Good	3 - Moderate	3 - Moderate	3 - Moderate	3 - Moderate	3 - Moderate
Effects on Public Health and Environment (includes Receptors)		2 - Low	2 - Low	4 - Good	3 - Moderate	3 - Moderate	4 - Good	2 - Low
Numerical Rating [1]		33	29	34	32	32	36	24
Advantages of Cleanup Method:		None	None	Remove Source Material	Remove contaminated water	Remove contaminated water and vapors	Remove Source Material & contaminated water	Closed by PMZ
Disadvantages of Cleanup Method:		Does not achieve cleanup	Does not achieve cleanup	Will likely not adress 1,2-DCA	Wells would need to be installed in Taylor Street	Wells would need to be installed in Taylor Street	Excavation will impact Taylor Street	Does not achieve cleanup
Est. Years to Complete Cleanup Method:		30 +	30 +	2	5 to 10	5 +	3 +	NA
Cleanup Recommendations:							X	

Information & Data Gaps:	Plume not defined to the west or the south.
Recommendations and comments:	CTA recommends installing additional soil borings and monitoring wells. Once plume defined conduct a remedial excavation to remove source material from the Site. Post excavation replace monitoring wells abandoned during excavation, complete groundwater monitoring event. If the excavation did not address the 1,2-DCA install a recirculation system utilizing pump and treat.

* Note: Cleanup technologies may be removed or added as appropriate for each Release; however, the 'No Action' alternative must be evaluated for comparison at every Release.

[1] Note: The Numerical Rating is intended to aid in determining which remedial alternative is most desirable. Ratings for each of the evaluation criteria have been assigned a numerical value: Poor = 1; Low = 2; Moderate = 3; Good = 4; and, Excellent = 5. The numerical rating reflects the sum of all rating criteria for each respective remedial alternative. A higher rating is more desirable than a lower rating.

MT DEQ Petroleum Tank Cleanup Section -- Release Closure Plan

(7 Mar 2018)

for the Investigation, Cleanup, Monitoring & Closure of Petroleum Releases

Part 4: Compliance Monitoring

reference: MT DEQ Remedial Alternatives Analysis (RAA) Guidance for Petroleum Releases

Consultant:	CTA Environmental	Date:	10/30/2020	DEQ PM:	Reed Miner
Facility Name / Address:	Former Ezzie's / Intersection of US Highway 2 and Highway 243, Saco, MT				
Facility ID:	36-06672	Release:	1454	WP ID:	0

Compliance & Operation Monitoring Methods to Evaluate Effectiveness of each Cleanup Alternative Listed in Part 3

	Administrative Rules of Montana 17.56.605(6) requires the cleanup plan to include a plan and schedule for compliance monitoring to evaluate the effectiveness of cleanup activities.	No Action*	Monitored Natural Attenuation	Excavation	Pump and Treat	Dual Phase Extraction	Excavation + Pump and Treat	PMZ
Evaluation of Cleanup	Confirmation Sampling	No	Yes	Yes	Yes	Yes	Yes	Yes
	Borings/ Monitoring Wells (MWs)	No	Yes	Yes	Yes	Yes	Yes	Yes
	GW Monitoring (freq., wells, years)	No	Yes	Yes	Yes	Yes	Yes	Yes
	System O/M (frequency & years)	No	No	No	Yes	Yes	Yes	No
	Petroleum Vapor Monitoring (freq., locations, years)	No	No	No	No	Yes	No	Possible
	Receptor Monitoring	No	Yes	Yes	Yes	Yes	Yes	Yes
	Waste Management	No	No	Soil	Water	Water and Vapors	Soil and Water	No
	Other site-specific monitoring:	No	No	PID, during excavation	Possible	Possible	Yes	3rd Party Impacts
	Method(s) to Evaluate Interim Results and Optimize Cleanup:	No	GW Sampling	Soil and GW Sampling	GW Sampling	GW and Vapor Sampling	Soil and GW Sampling	GW Sampling
	Est. Years to Complete all Monitoring:	30 +	30 +	2	5 to 10	5 +	3 +	3 +
	Estimated costs for O/M & monitoring:	$0	$500,000	$250,000	$125,000	$200,000	$400,000	$100,000
Closure	Estimated Total Years to Closure:	30 +	30 +	5 +	10	5 to 10	3 to 5	3 to 5
	Natural Attenuation Trends:	Unknown						
	What currently prevents Closure?	Soil and Groundwater above RBSLs						
	Is this a PMZ Closure Candidate?	Not at this time						
	Other:							
	Information & Data Gaps:	Plume not defined to the west or the south.						
	Recommendations and comments:	CTA recommends installing additional soil borings and monitoring wells. Once plume defined conduct a remedial excavation to remove source material from the Site. Post excavation replace monitoring wells abandoned during excavation, complete groundwater monitoring event. If the excavation did not address the 1,2-DCA install a recirculation system utilizing pump and treat.						

* Note: Cleanup technologies may be removed or added as appropriate for each Release; however, the 'No Action' alternative must be evaluated for comparison at every Release.

APPENDIX F

Stream Impairment Data

Glossary Data About Contact Us

How's My Waterway?

Informing the conversation about your waters.

Community | State | National

Let's get started!

saco mt × >> Go OR Use My Location

Saco, Montana
WATERSHED: Beaver Creek-Nelson South Canal (100500140704)

Overview | Swimming | Eating Fish | Aquatic Life

Overview

Show Text

Your Waters: What We Know

Waters in your community are connected within a local watershed. The **dashed outline on the map shows your watershed.**

Water quality is monitored for physical, chemical and biological factors. The monitoring results are assessed against EPA approved water quality standards or thresholds. Water can be impaired, meaning it is not able to be used for certain purposes.... **Show more**

DISCLAIMER

1	3	N/A
Waterbodies	Monitoring & Sensors	Permitted Dischargers

Waterbodies | Monitoring & Sensors | Permitted Dischargers

Waterbody Conditions:

Good | Impaired | Condition Unknown

Expand All

Overall condition of **1** waterbody in the *Beaver Creek-Nelson South Canal* watershed.

Beaver Creek
State Waterbody ID: MT40M001_020 >

How's My Waterway?

Informing the conversation about your waters.

Waterbody Report

Beaver Creek

Assessment Unit ID: MT40M001_020

Waterbody Condition: Impaired

Existing Plans for Restoration: No

303(d) Listed: Yes

Year Reported: 2020

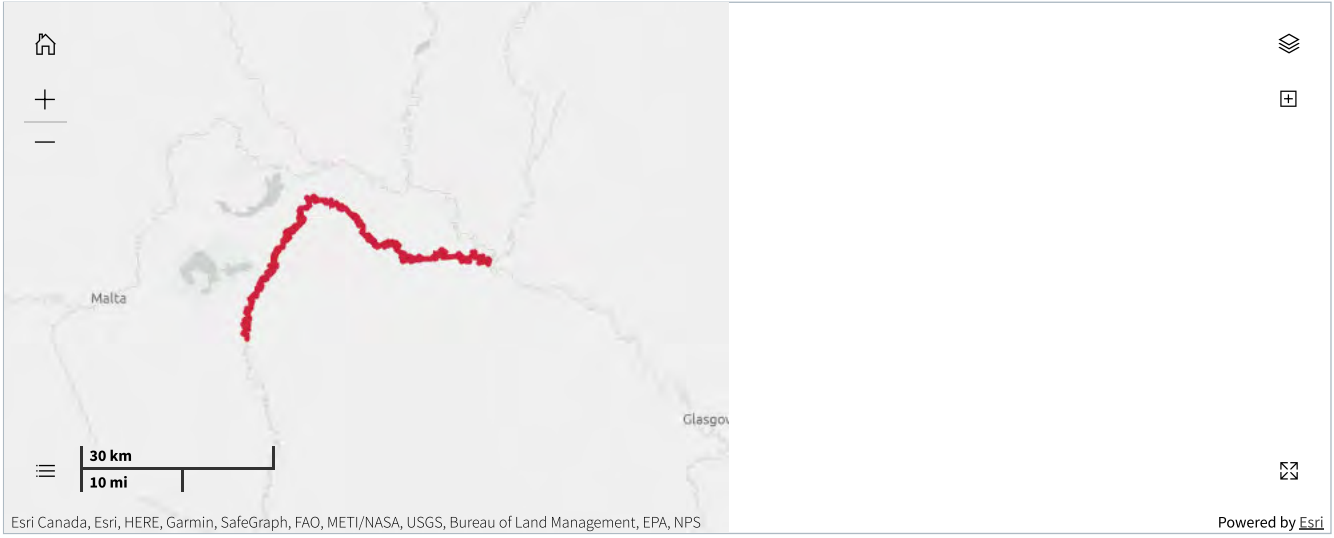
Organization Name (ID): Montana (MTDEQ)

What type of water is this?

River (86.86 Miles)

Where is this water located?

BEAVER CREEK, Un-named tributary at T30N R32E S32 to mouth (Milk River)



Assessment Information from 2020

What is this water used for?

Expand All

Agricultural	Good
Aquatic Life	Impaired
Drinking Water	Impaired
Primary Contact Recreation	Not Assessed

Probable sources contributing to impairment from 2020:

Source	Confirmed
Source	Confirmed
Agriculture	No
Source Unknown	No

Plans to Restore Water Quality

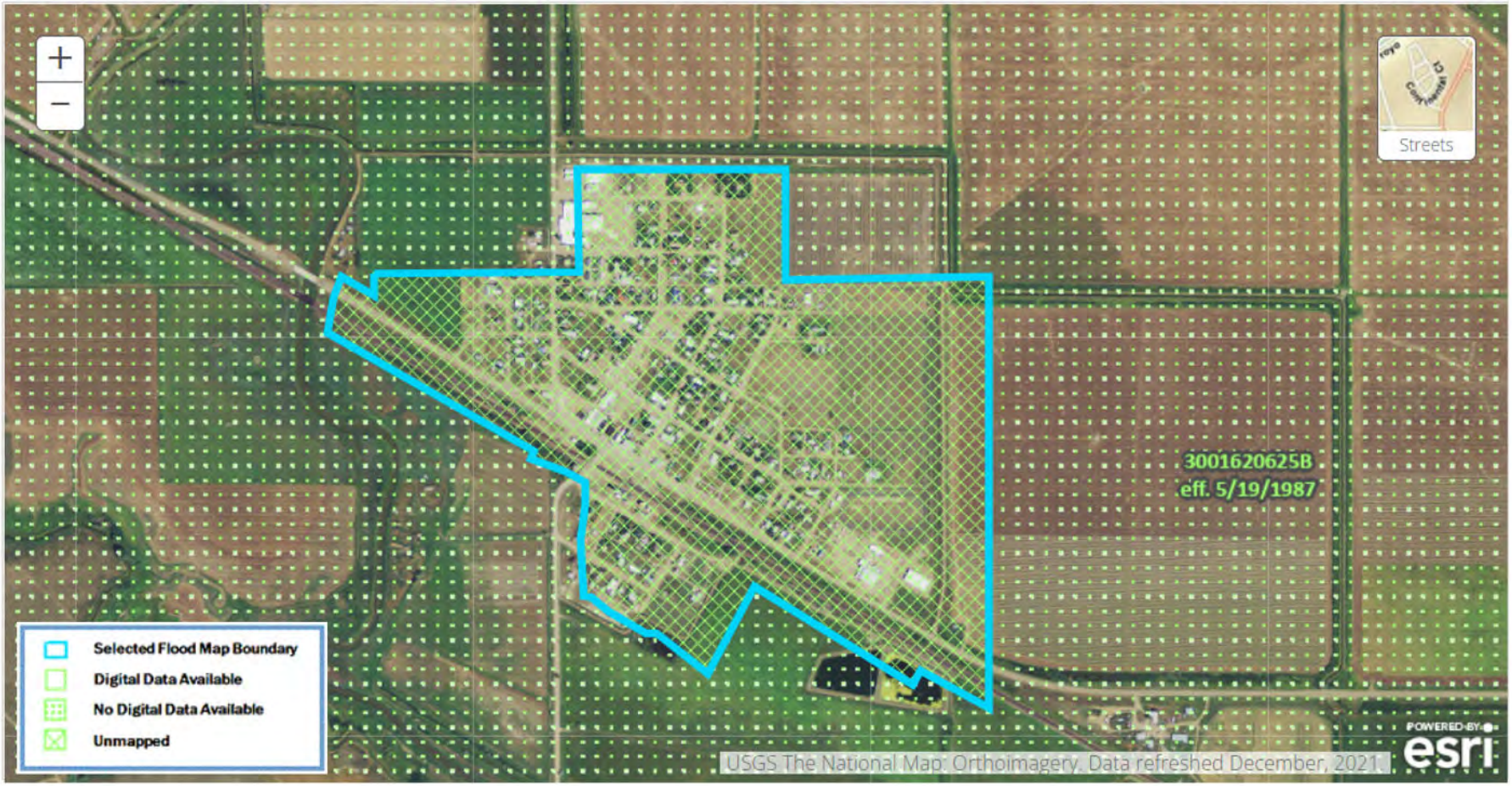
What plans are in place to protect or restore water quality?

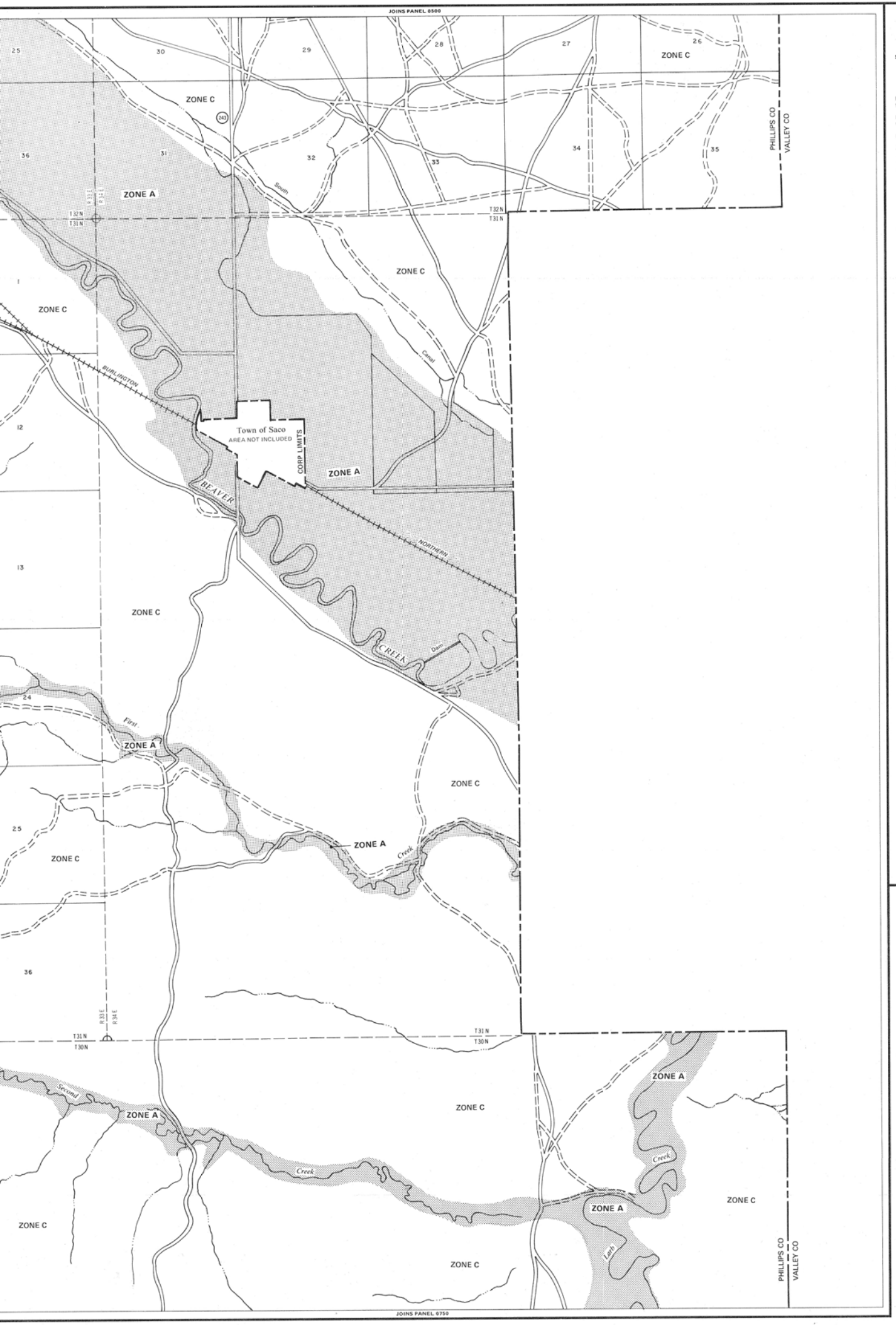
No plans for this waterbody.

APPENDIX G

Floodplain

You can choose a new flood map or move the location pin by selecting a different location on the locator map below or by entering a new location in the search field above. It may take a minute or more during peak hours to generate a dynamic FIRMette. If you are a person with a disability, are blind, or have low vision, and need assistance, please contact a map specialist.





KEY TO MAP

SPECIAL FLOOD HAZARD AREA

ZONE

ZONE

Base Flood Elevation Line With Elevation In Feet**

Base Flood Elevation in Feet Where Uniform Within Zone**

Elevation Reference Mark

Zone D Boundary

River Mile

**Referenced to the National Geodetic Vertical D

EXPLANATION OF ZONE DESIG

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood flood hazard factors not determined.
A0	Areas of 100-year shallow flooding are between one (1) and three (3) feet of inundation are shown, but no floo are determined.
AH	Areas of 100-year shallow flooding are between one (1) and three (3) elevations are shown, but no flood are determined.
A1-A30	Areas of 100-year flood; base flood flood hazard factors determined.
A99	Areas of 100-year flood to be pro protection system under construct elevations and flood hazard factors
B	Areas between limits of the 100-yea year flood; or certain areas subject to ing with average depths less than one (the contributing drainage area is less mile; or areas protected by levees fro (Medium shading)
C	Areas of minimal flooding. (No shadin
D	Areas of undetermined, but possible
V	Areas of 100-year coastal flood with action); base flood elevations and floo not determined.
V1-V30	Areas of 100-year coastal flood with action); base flood elevations and floo determined.

NOTES TO USER

Certain areas not in the special flood hazard areas may be protected by flood control structures.

This map is for use in administering the National Program; it does not necessarily identify all areas ing, particularly from local drainage sources of planimetric features outside special flood hazard a

Coastal base flood elevations apply only landward shown on this map.

For adjoining map panels, see separately printed Panels.

INITIAL IDENTIFICATION:
FEBRUARY 7, 1978

FLOOD HAZARD BOUNDARY MAP RE
NONE

FLOOD INSURANCE RATE MAP EFFE
MAY 19, 1987

Refer to the FLOOD INSURANCE RATE MAP E shown on this map to determine when actuari structures in the zones where elevations or depths lished.

To determine if flood insurance is available in contact your insurance agent, or call the National Program, at (800) 638-6620.

APPROXIMATE SCALE IN FEE
2000 0

NATIONAL FLOOD INSUR

FIRM
FLOOD INSURANCE

PHILLIPS COU
MONTANA
(UNINCORPORATE

PANEL 625 OF 14
(SEE MAP INDEX FOR PANE

COMMUNITY-PA
300

EFFE
MA

Federal Emergency Man

Matthew Mudd

From: Wadsworth, Nadene <Nadene.Wadsworth@mt.gov>
Sent: Wednesday, February 9, 2022 4:15 PM
To: Matthew Mudd
Cc: Turk, Peri
Subject: RE: Saco Wastewater Improvements and Floodplain

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Good Afternoon Matthew,

Thank you for reaching out to us about the floodplain mapping project. Currently we are in the data development process for a multi-county milk river watershed study more information can be found here www.floodplain.mt.gov/milk .

In regards to data and information for this project in Saco we anticipate having information to share with the town by mid to late fall. Once we have the data and information we generally share that with the floodplain administrator for the community and ask them to share that as they see fit. We do plan to schedule some update meetings with the community late summer early fall.

I'm sorry I can't be more help until the data is reviewed by FEMA and the DNRC our preference is to not share since there can be changes to the information.

Nadene Wadsworth, CFM
MT DNRC Floodplain Program
Outreach Specialist
(406) 444-6732

From: Matthew Mudd <mmudd@greatwesteng.com>
Sent: Wednesday, February 2, 2022 3:37 PM
To: Wadsworth, Nadene <Nadene.Wadsworth@mt.gov>
Subject: [EXTERNAL] Saco Wastewater Improvements and Floodplain

Good afternoon Nadene:

I am reaching out to you on behalf of the Town of Saco regarding obtaining the latest floodplain information in relation to planned wastewater improvements for the Town. We are currently completing a wastewater PER which identifies critical needs to complete collection, lift station and lagoon/treatment improvements. The Town has also been awarded an ARPA competitive grant to proceed with a Phase 1 wastewater project. The design of Phase 1 will commence within the next month.

The Phase 1 project will include replacing the 70-year-old lift station and up to 1,000 feet of collection sewer main replacements in Town. The subsequent phased projects will be identified in the WW PER but are anticipated to include completing lagoon rehabilitation (earthwork, piping/structures) and potentially installing a UV disinfection building in addition to more pipe replacements. The existing lift station is located within and

nearby the existing levee system and the treatment lagoons are located completely outside of the levees. The Phase 2 project will be included in the PER for state grant applications in 2022.

The new lift station rim/finish floor elevation will need to be designed to be above the 100-year flood plain elevation, and the lagoons berm tops will need to be at least above the 100-year flood plain elevation but may need to be set at/above the 500-year elevation with a potential RD funded project. I am also including a planning level exhibit showing the draft phasing plan of the work.

Your assistance and input are appreciated for the current design and PER study.

Regards,

GreatWest ENGINEERING
[greatwesteng.com]

[greatwesteng.com]
[facebook.com]
[instagram.com]
[linkedin.com]

Matthew Mudd, PE
Project Manager

d: (406) 495-6196
c: (406) 490-3909

DNRC Headquarters
1539 Eleventh Ave. Helena, MT 59601
Questions? Email us

Milk River Watershed Flood Maps Update

Valley, Phillips, Blaine, and Hill Counties are working with MT DNRC and FEMA to update and produce new Flood Insurance Rate Maps for the Milk River Watershed. Updated floodplain maps will depict the latest, most accurate flood risk data, and will eventually replace FEMA's existing floodplain maps for all 4 counties.

This project will update 2,325 stream miles.Project funding was broken up into two phases. Phase I of this project will cover parts of the study for the Milk River and all of the study for the tributaries. Phase II (which is dependent on available grant funds from FEMA) will finish the study for the Milk River.

Hydrology Reports

Volume 1 Tributaries and Waterbodies prepared by Michael Baker Int.

Volume 2 Stream Gage Analysis prepared by Michael Baker Int.

DNRC held project kickoff meetings with the communities November 5-7, 2019.

Hill County/ City of Havre November 5, 2019- **to view the slides from the meeting click here**.
Blaine County/ City of Chinook, November 6, 2019- **to view the slides from the meeting click here.**
Phillips County/ City of Malta, November 6, 2019- t**o view the slides from the meeting click here.**
Valley County/ City of Glasgow, November 7, 2019- t**o view the slides from the meeting click here.**

- Valley County [Show/Hide]
- Phillips County [Show/Hide]
- Blaine County [Show/Hide]
- Hill County [Show/Hide]

Estimated Timeline for project completion.

Project Points of Contact

Valley County

Cam Shipp

Valley County Floodplain Administrator
(406) 228-6264
email

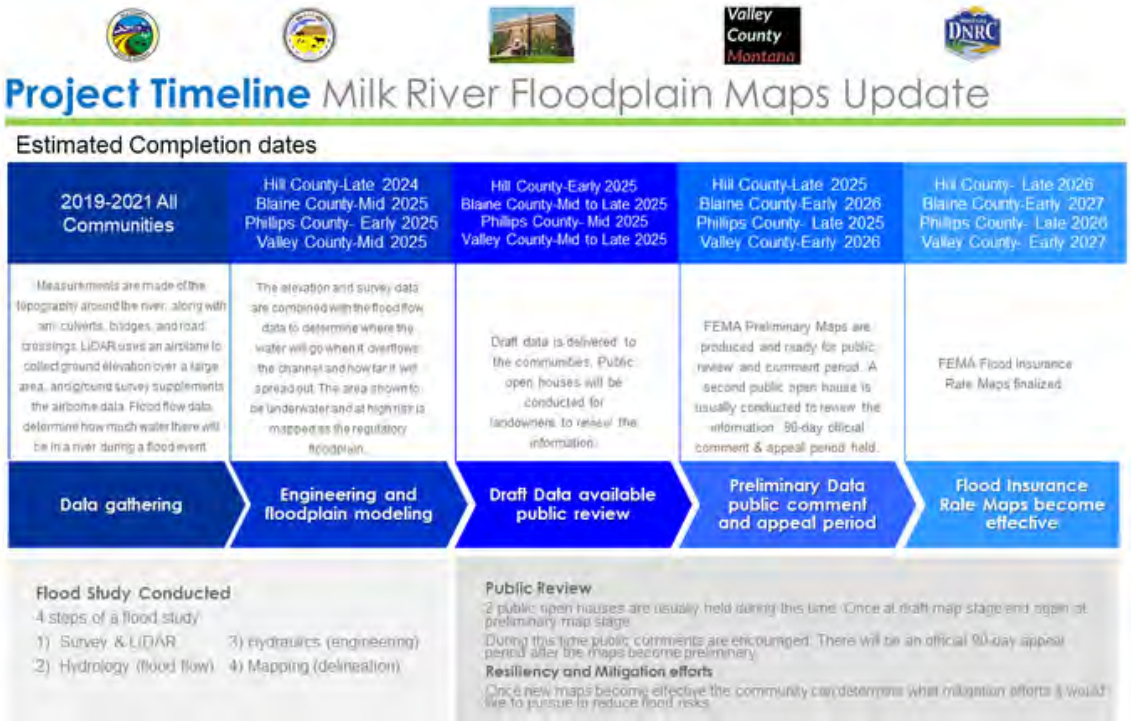
Robert Kompel
City of Glasgow Floodplain Administrator
(406) 228-2476
email

Christina Washington
Town of Nashua Floodplain Administrator
(406) 746-3461
email

Phillips County

Return to Top

Casey Burke
Phillips County Floodplain Administrator
(406) 270-1884
email



Lorie Bond
City of Malta Floodplain Administrator
(406) 651-1251
email

Blaine County

Shawn Higley
Blaine County, City of Chinook, City of Harlem Floodplain Administrator
(406) 443-3962
email

Hill County

Amy Ferguson
Hill County Floodplain Administrator
(406) 265-5481 x268
email

DNRC

Tiffany Lyden
Floodplain Outreach Specialist
(406) 444-0599
email

Nadene Wadsworth
Floodplain Outreach Specialist
(406) 444-6732
email

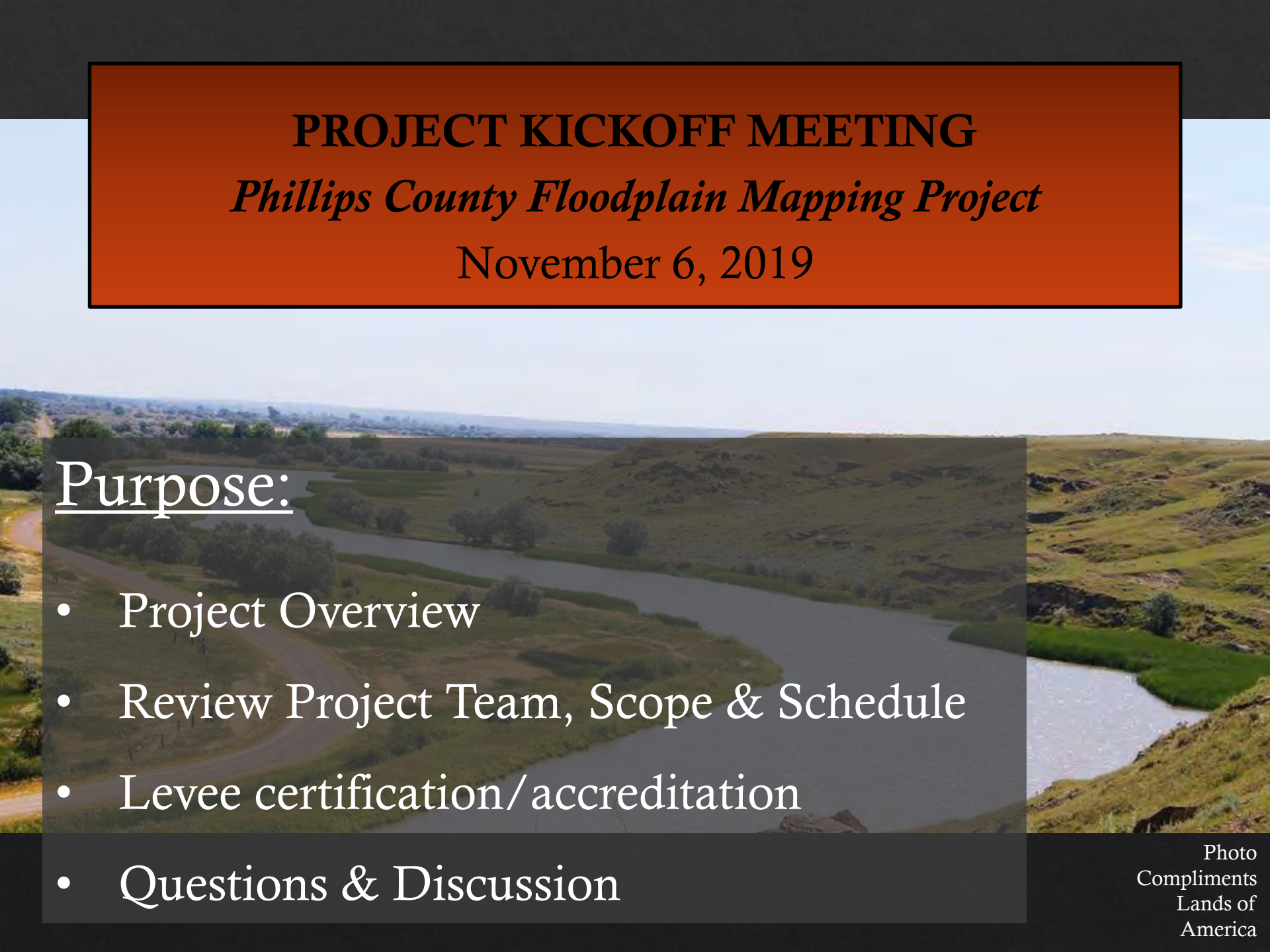
Return to Top

Return to Top

PROJECT KICKOFF MEETING

Phillips County Floodplain Mapping Project

November 6, 2019



Purpose:

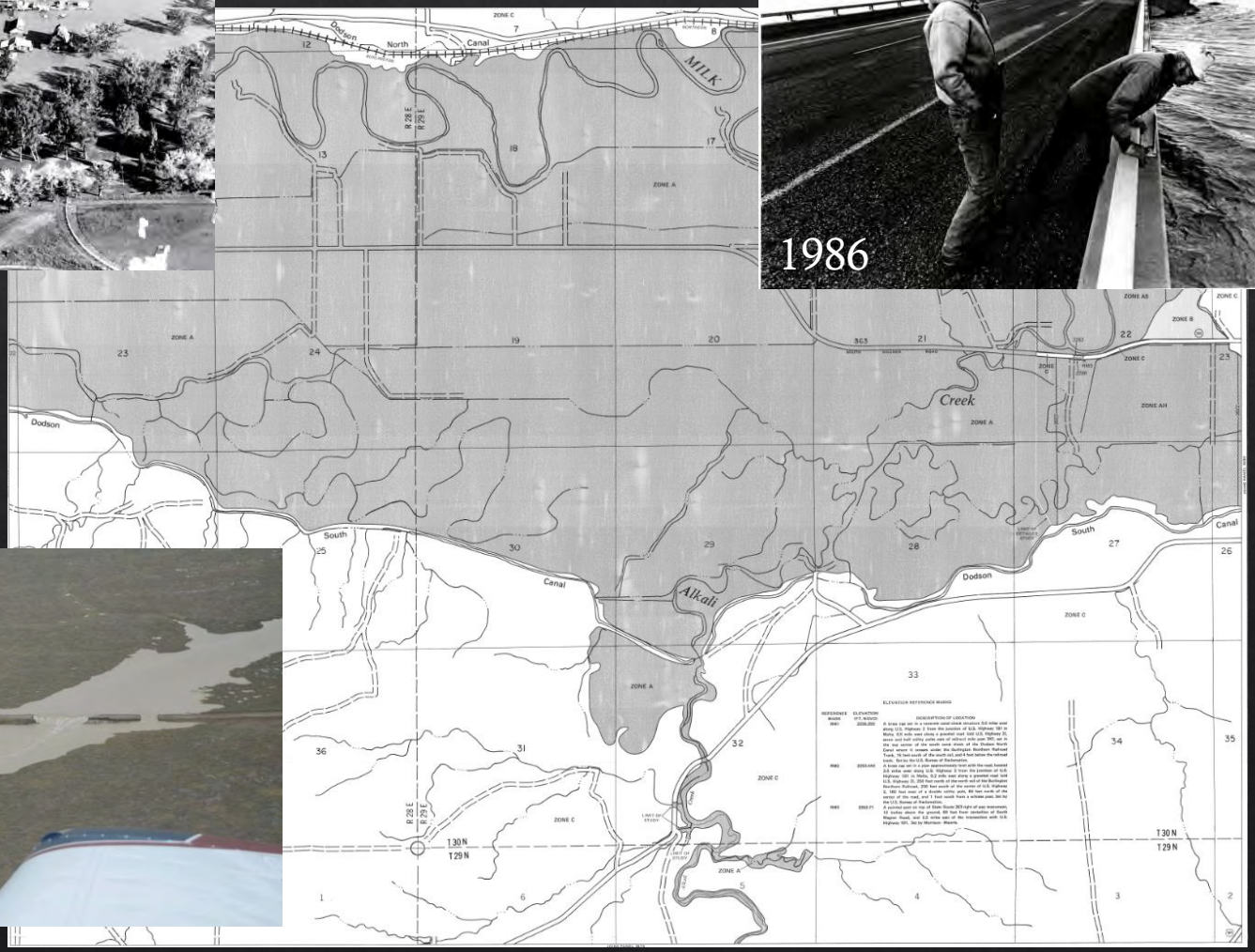
- Project Overview
- Review Project Team, Scope & Schedule
- Levee certification/accreditation
- Questions & Discussion

Photo Compliments Lands of America

Identifying risk through mapping

1986

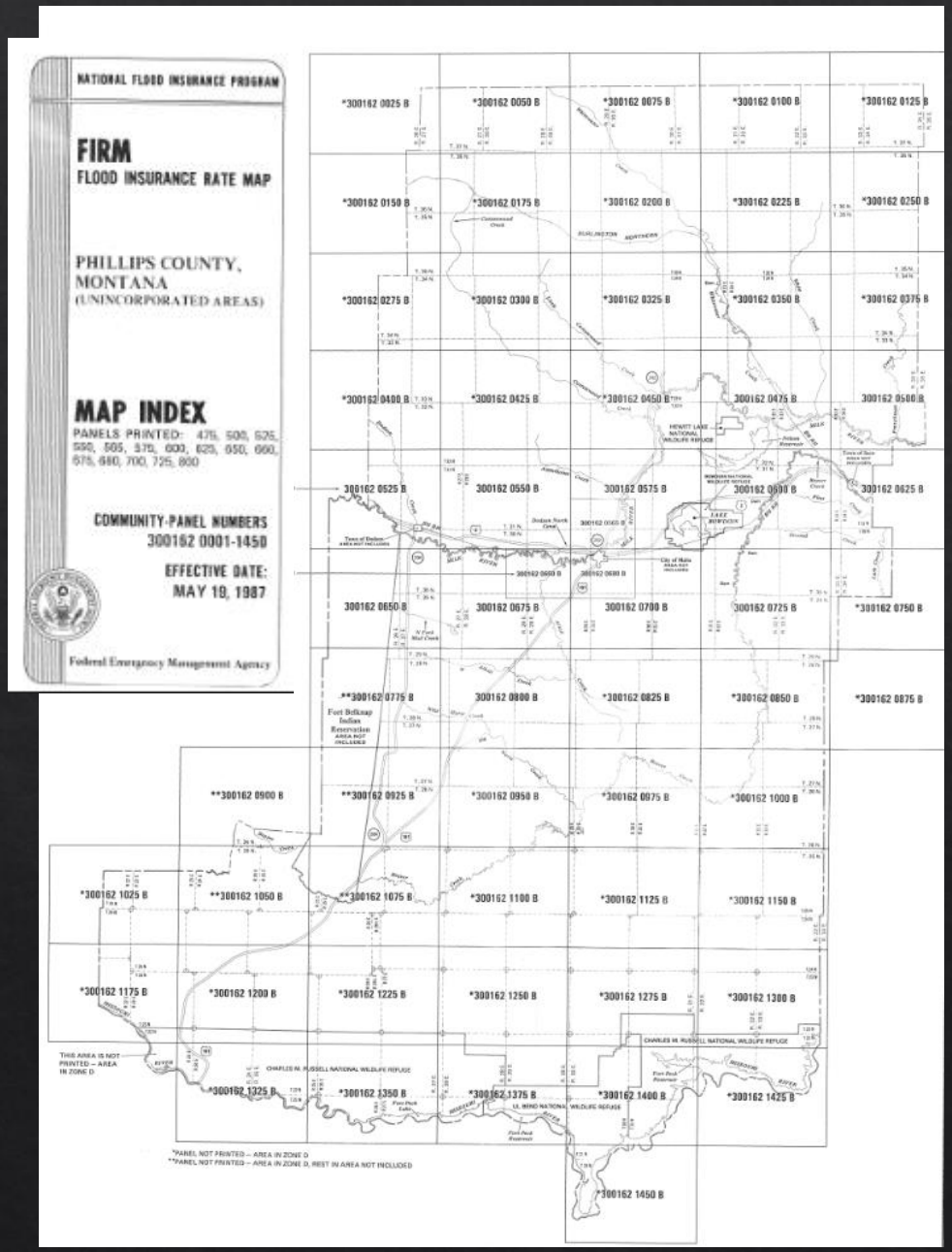
1986



2016

Flood Insurance Rate Maps

- Used for various purposes
  - Local floodplain regulations
  - Flood insurance premiums
  - Local emergency planning
- Need periodic updating

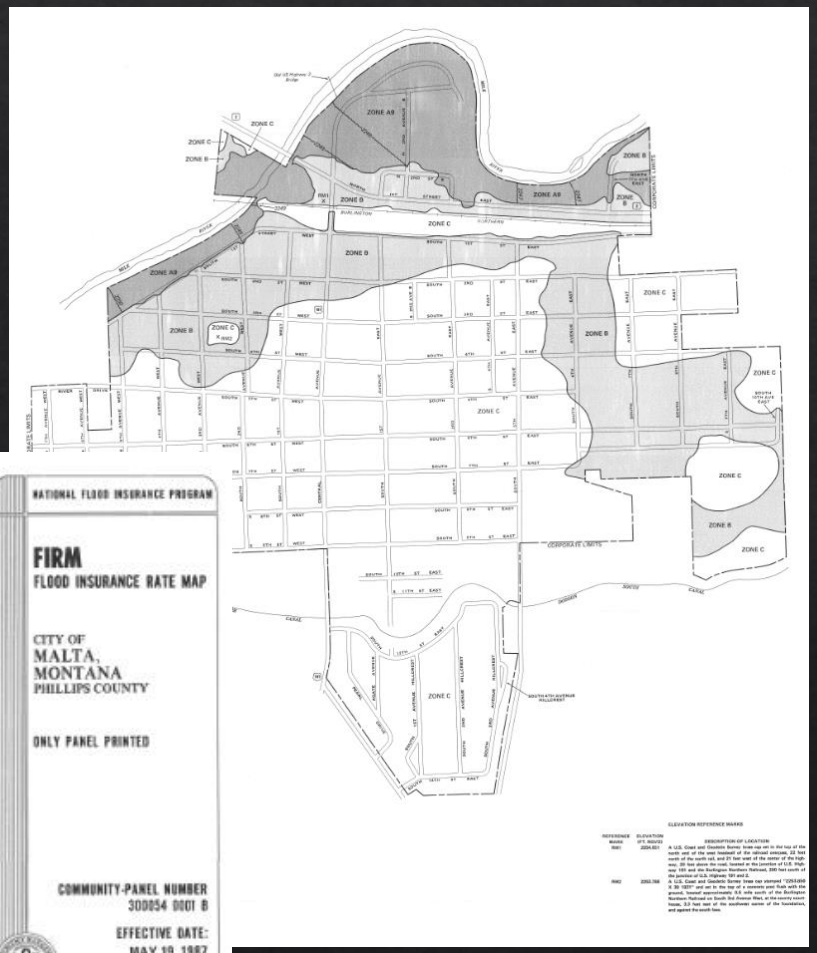


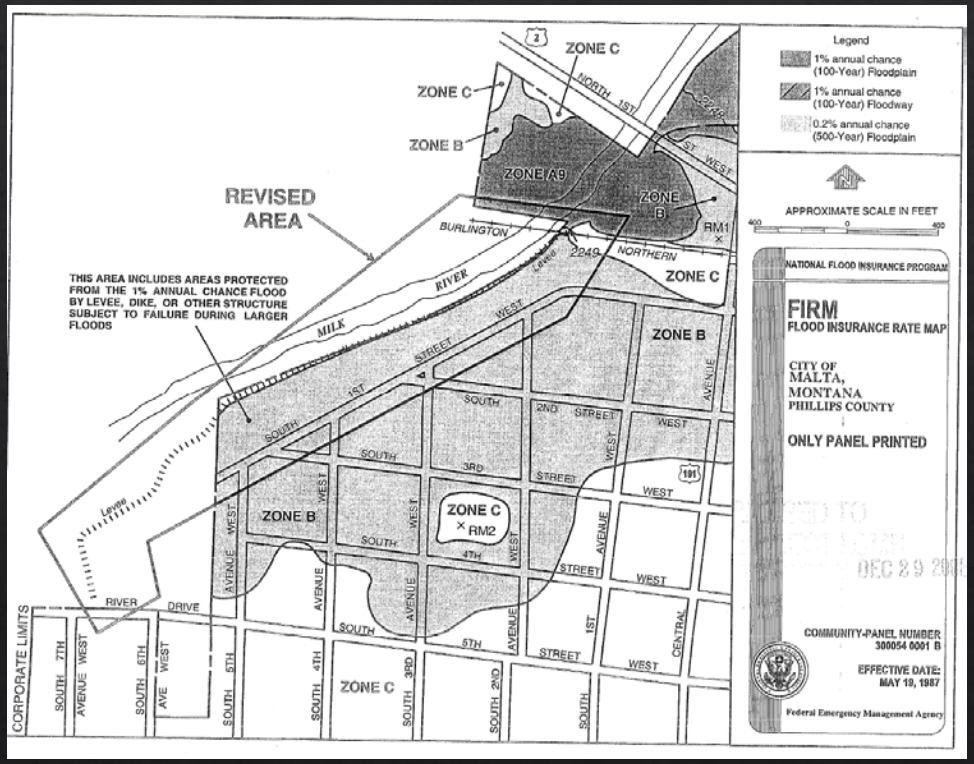
Phillips County - Floodplain Maps

- 1978 1st floodplain maps issued
- 1987 update to the floodplain maps

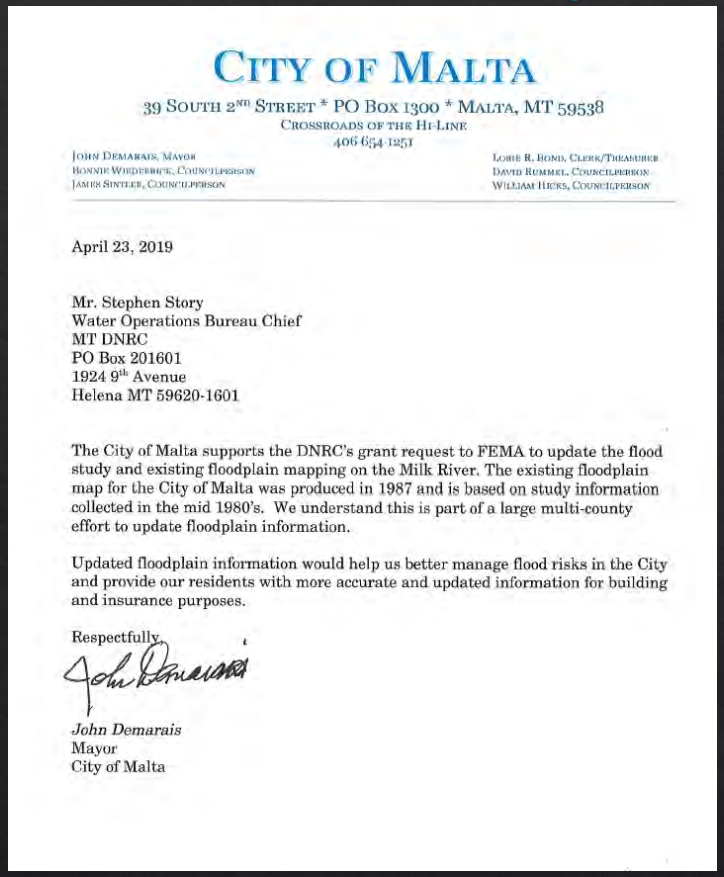
City of Malta- Floodplain Maps

City of Malta
1987 First map issued
2006 Map Revision





Project Background



CITY OF MALTA

39 SOUTH 2ND STREET * PO BOX 1300 * MALTA, MT 59538
CROSSROADS OF THE HI-LINE
406 654-1251

JOHN DEMARAIS, MAYOR
BONNIE WIEDERRICK, COUNCILPERSON
JAMES SINTLER, COUNCILPERSON

LORIE R. BOND, CLERK/TREASURER
DAVID RUMMEL, COUNCILPERSON
WILLIAM HICKS, COUNCILPERSON

April 23, 2019

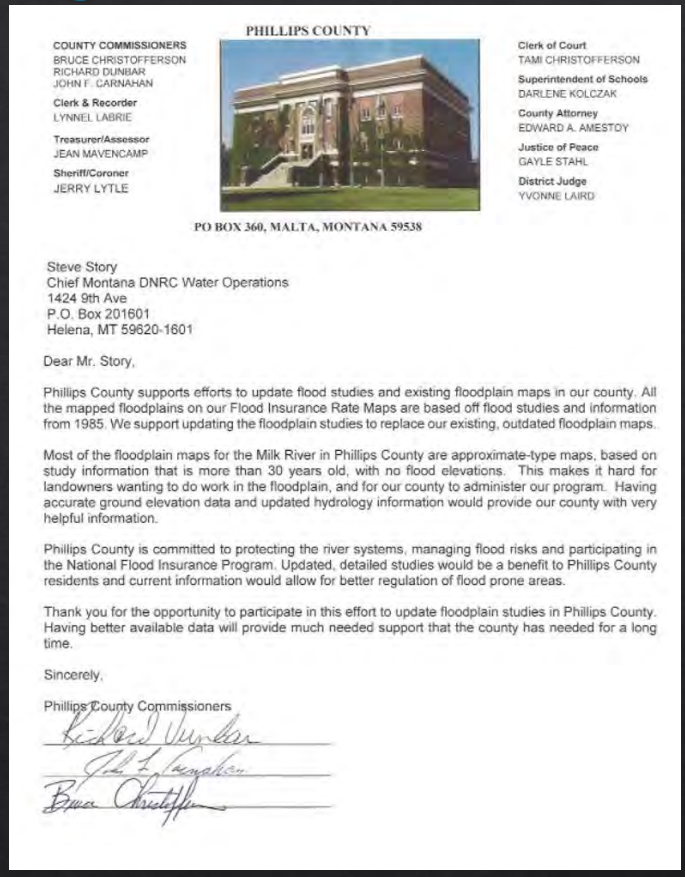
Mr. Stephen Story
Water Operations Bureau Chief
MT DNRC
PO Box 201601
1924 9th Avenue
Helena MT 59620-1601

The City of Malta supports the DNRC's grant request to FEMA to update the flood study and existing floodplain mapping on the Milk River. The existing floodplain map for the City of Malta was produced in 1987 and is based on study information collected in the mid 1980's. We understand this is part of a large multi-county effort to update floodplain information.

Updated floodplain information would help us better manage flood risks in the City and provide our residents with more accurate and updated information for building and insurance purposes.

Respectfully,

John Demarais
Mayor
City of Malta



PHILLIPS COUNTY

COUNTY COMMISSIONERS
BRUCE CHRISTOFFERSON
RICHARD DUNBAR
JOHN F. CARNAHAN

Clerk & Recorder
LYNNEL LABRIE

Treasurer/Assessor
JEAN MAVENCAMP

Sheriff/Coroner
JERRY LYTLE

Clerk of Court
TAMI CHRISTOFFERSON

Superintendent of Schools
DARLENE KOLCZAK

County Attorney
EDWARD A. AMESTOY

Justice of Peace
GAYLE STAHL

District Judge
YVONNE LAIRD

PO BOX 360, MALTA, MONTANA 59538

Steve Story
Chief Montana DNRC Water Operations
1424 9th Ave
P.O. Box 201601
Helena, MT 59620-1601

Dear Mr. Story,

Phillips County supports efforts to update flood studies and existing floodplain maps in our county. All the mapped floodplains on our Flood Insurance Rate Maps are based off flood studies and information from 1985. We support updating the floodplain studies to replace our existing, outdated floodplain maps.

Most of the floodplain maps for the Milk River in Phillips County are approximate-type maps, based on study information that is more than 30 years old, with no flood elevations. This makes it hard for landowners wanting to do work in the floodplain, and for our county to administer our program. Having accurate ground elevation data and updated hydrology information would provide our county with very helpful information.

Phillips County is committed to protecting the river systems, managing flood risks and participating in the National Flood Insurance Program. Updated, detailed studies would be a benefit to Phillips County residents and current information would allow for better regulation of flood prone areas.

Thank you for the opportunity to participate in this effort to update floodplain studies in Phillips County. Having better available data will provide much needed support that the county has needed for a long time.

Sincerely,

Phillips County Commissioners

Pre 2019- Discussions to have a new flood study and updated maps/ LiDAR work began

June 2019- Communities provided letters of support for the project

July 2019- DNRC applied for FEMA grant

September 2019- Grant awarded by FEMA

Fall 2019- project underway

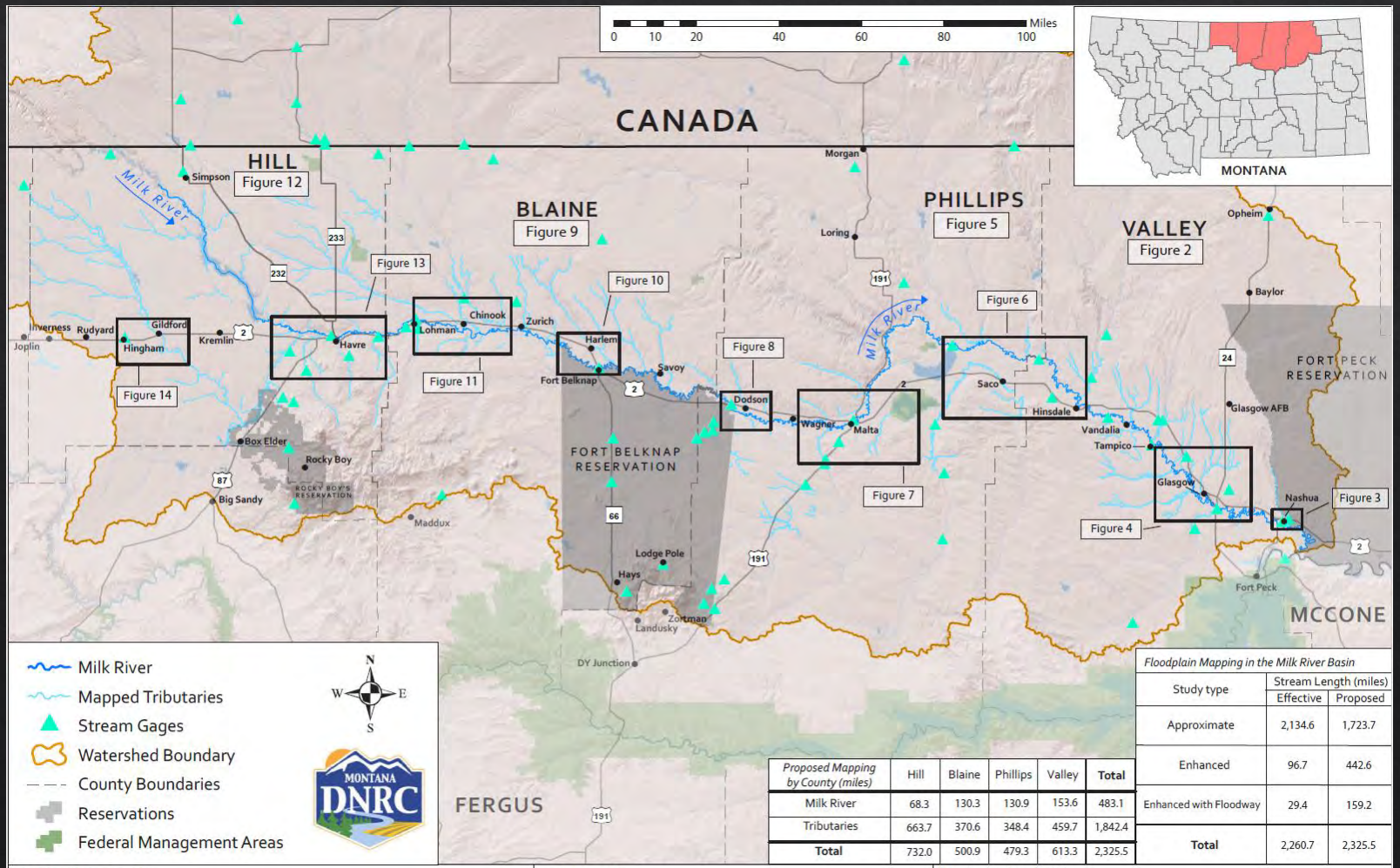
Milk River Floodplain Mapping Project

Update 2,325.5 stream miles

732 miles in Hill County
500.9 miles in Blaine County

479 miles in Phillips County
613 miles in Valley County

Project Funding:
$3,544,000 FEMA



Floodplain Mapping in the Milk River Basin

Study type	Stream Length (miles)	
	Effective	Proposed
Approximate	2,134.6	1,723.7
Enhanced	96.7	442.6
Enhanced with Floodway	29.4	159.2
Total	2,260.7	2,325.5

Proposed Mapping by County (miles)	Hill	Blaine	Phillips	Valley	Total
Milk River	68.3	130.3	130.9	153.6	483.1
Tributaries	663.7	370.6	348.4	459.7	1,842.4
Total	732.0	500.9	479.3	613.3	2,325.5

FIGURE 1: Project Overview
Project: Milk River Basin - Modernization
Drawn By: KPS
Checked By: SES
Map Print Date: 7/1/2019
Scale: 1:1,250,000

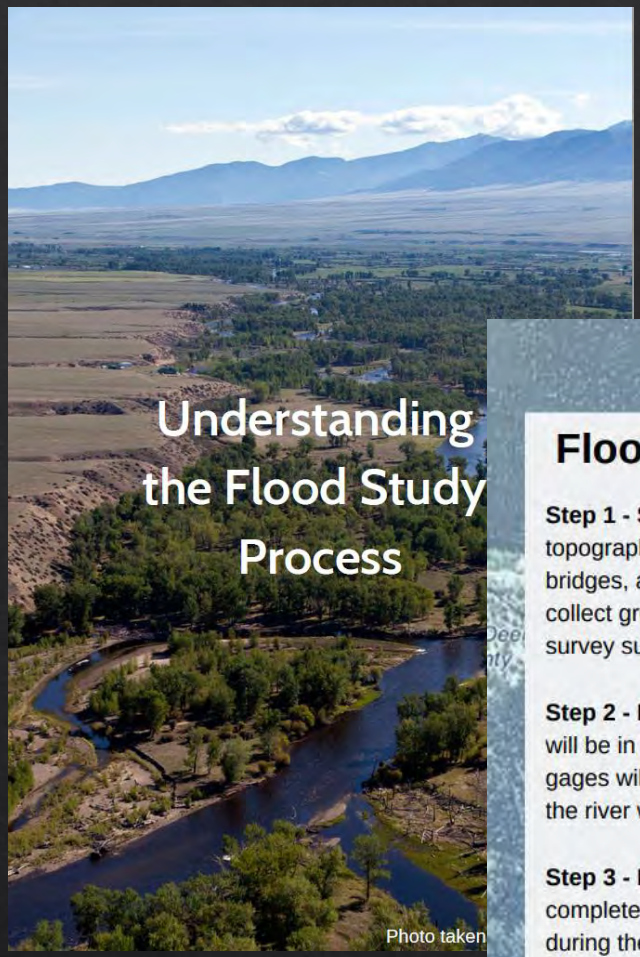
Project Team – Milk River project

- DNRC Floodplain Staff – Tiffany Lyden, Nadene Wadsworth, Steve Story, Katie Shank, Doug Brugger, Worby McNamee, Traci Sears
- Communities

Valley County Montana

- FEMA Region VIII
- DNRC Contractors:
  - Topography/LiDAR – Quantum Spatial
  - Survey Work– Bathymetric survey-River Design Group

    Structure survey- Great West
  - Hydrology- USGS and Michael Baker
  - Hydraulic Analysis and Floodplain Mapping - Michael Baker



Flood Study Steps

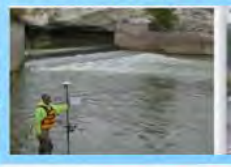
Step 1 - Survey: measurements are made of the topography around the river, along with any culverts, bridges, and road crossings. LiDAR uses an airplane to collect ground elevation over a large area, and ground survey supplements the airborne data.

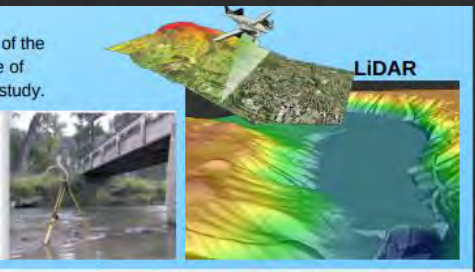
Step 2 - Hydrology: determines how much water there will be in the river during a flood event. Data from stream gages will tell how many cubic feet of water per second the river will carry during the flood.

Step 3 - Hydraulics: once the first two steps are complete, calculations can show where the water will go during the flood. The elevation data is combined with the flood flow data to determine where the water will go when it overflows the channel.

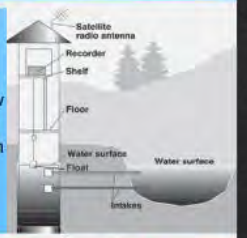
Step 4 - Mapping (delineation): the results from step 3 are combined with the elevation data and official maps to see how far the water will spread out. The area shown to be underwater during the flood is the regulatory floodplain.

Step 1 - Survey: The type of the survey depends on the size of the study area and type of study.

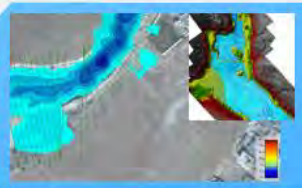


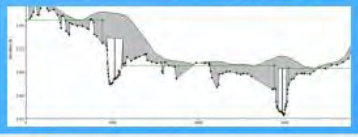


Step 2 - Hydrology:
Stream gage stations are an important tool to determine flow rates. If nearby stream gages aren't available, gage data from a similar location is used to determine the flow rate.



Step 3 - Hydraulics:
5 main components to the model
1) Hydrology (stream flow data)
2) Cross Sections (measurements of the river bottom at key locations)
3) Roughness (thickness of vegetation, land cover, etc determined by surveyors)
4) Structures (road crossings, culverts, bridges, etc.)
5) Downstream conditions



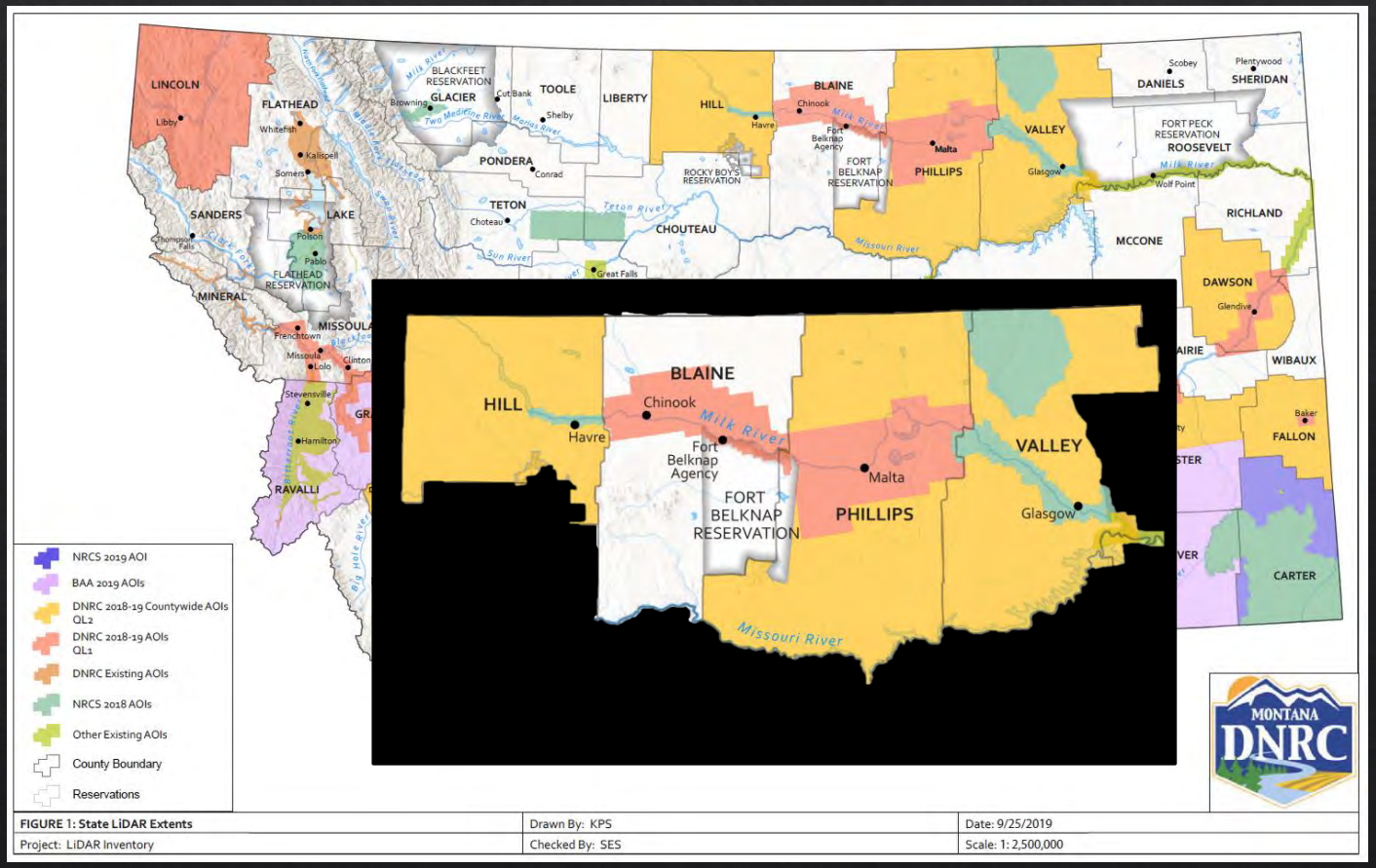


Step 4 - Mapping (delineation):
The result will be the floodplain boundary and a depth grid identifying the shallower and deeper areas of flooding.

Project Scope

Topographic Data Collection

- Lidar Data Acquisition:
  - LiDAR uses an airplane to collect ground elevation over a large area, and Ground Survey supplements the airborne data.



Project Scope

Survey Work

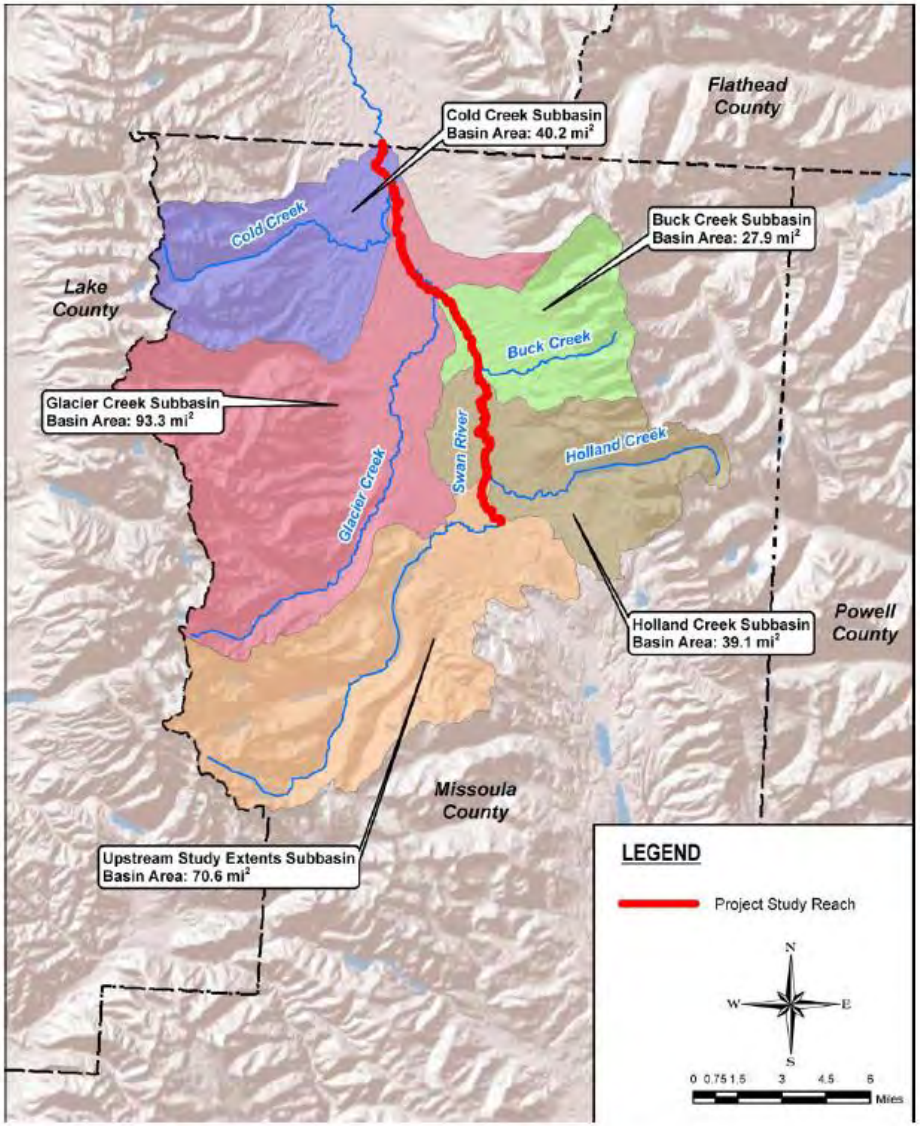
Provides in-stream and bridge/crossing data needed for hydraulic modeling and floodplain mapping.

Project Scope

Hydrology

Determines how much water there will be in the river during a flood event. Data from stream gages will tell how many cubic feet per second the river will carry.

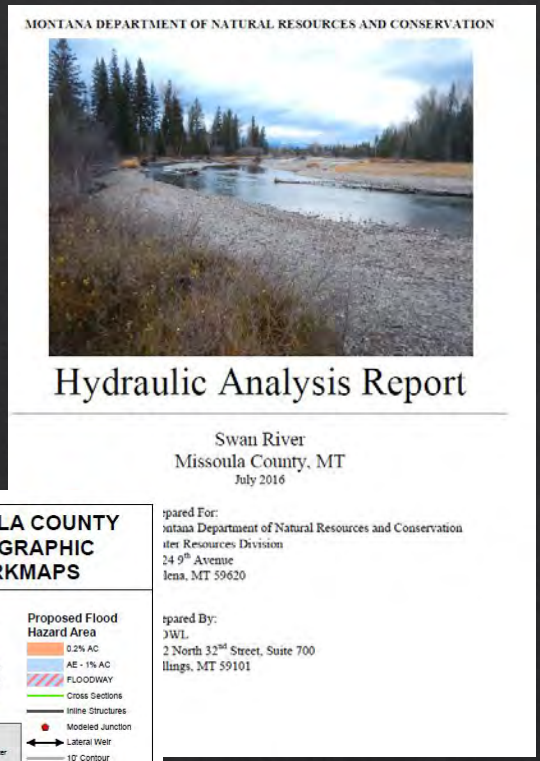
Figure 3: Drainage Basin Area

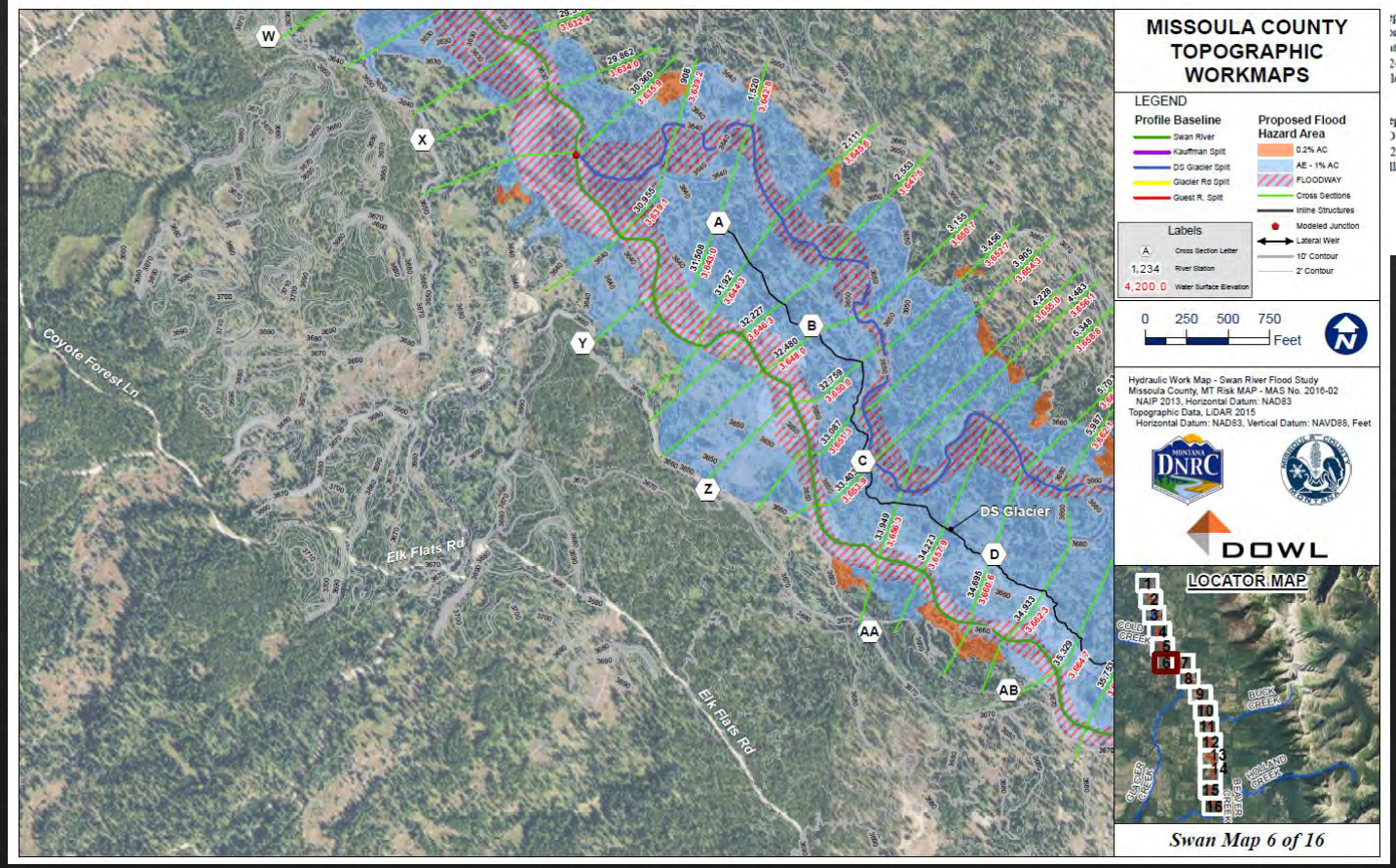


Project Scope

Hydraulic Analysis and Floodplain Mapping

Hydraulic modeling (where the water will go when it overflows the channel) and engineering to produce draft maps.

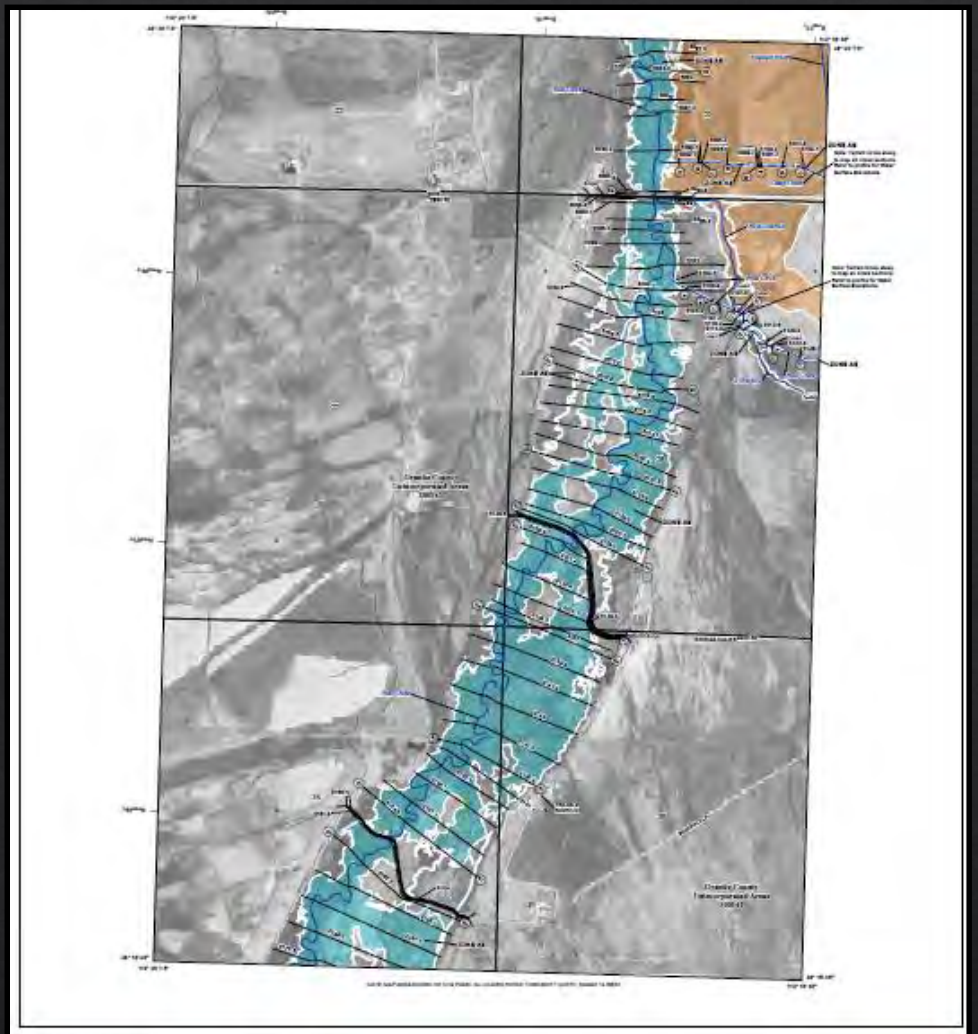


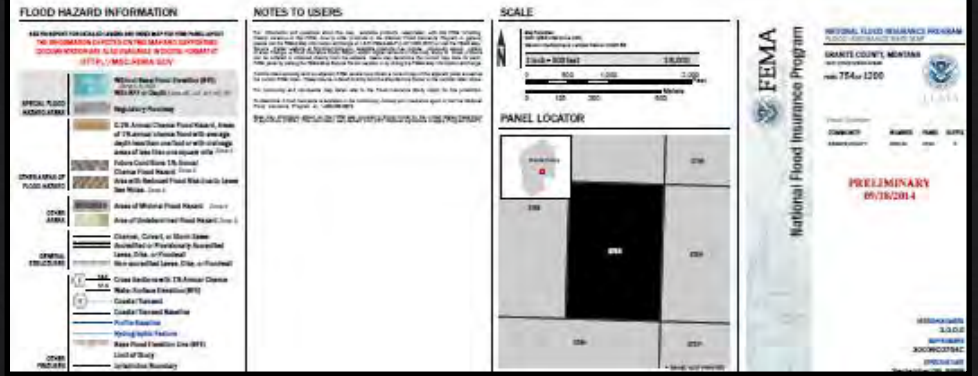


Project Scope

FEMA Map Production

- Preliminary Maps
- Public Review
- Maps Finalized





Estimated Project Schedule

Topographic (LiDAR) – Complete

Survey Work- completed early 2021

Hydrology- completed mid to late 2021

Hydraulics-

Tributaries-completed mid 2022

Milk River- phase II

Draft Maps

Public review of draft maps

FEMA Map Production/
Preliminary Maps

Public review of preliminary maps

FEMA maps finalized

Community Contribution

ATTENTION SWAN RIVER PROPERTY OWNERS

in or near the FLOODPLAIN...

Missoula County is currently working with FEMA and Montana DNRC to update floodplain maps for the Swan River. FEMA's Preliminary Digital Flood Insurance Rate Maps (DFIRM) are intended to provide more reliable and detailed information about flood-prone areas along the Swan River. You are receiving this postcard because proposed floodplain mapping changes could affect your property.

www.missoulacounty.us/swanfp

Visit the County's website above to view FEMA's Preliminary DFIRM showing proposed floodplain changes and/or attend the public open house to get more information about this project.

PUBLIC OPEN HOUSE

Tuesday, June 20, 2017 | 6:00 p.m. - 7:00 p.m.

Swan Valley Community Hall | 6803 HWY 83N, Condon, MT

Staff from the DNRC Floodplain Program and Missoula County will be on hand during the open house to answer questions and provide an overview of the project. We ask anyone with information relevant to potential flood hazards to share information at the meeting.

We look forward to seeing you there. For more information, contact Todd or Tiffany.

TODD KLIETZ
Missoula County Floodplain Administrator
tklietz@missoulacounty.us
406.258.4841

TIFFANY LYDEN
MT DNRC
tlyden@mt.gov
406.444.0599

Project Webpage

Carbon County Flood Maps Update

by Nadene Wadsworth — last modified Oct 17, 2019 01:18 PM — History

Background on the floodplain maps in the County:

Carbon County floodplain maps were modernized through a Digitized Flood Insurance Rate Map (DFIRM) project in 2012. The maps were converted from paper to the digital environment. Most of the mapped floodplains in the county are still based off flood studies from the late 1970s and early 1980s. The 2012 DFIRM project entailed digital conversion of the effective floodplains in the county, with the exception of revised hydraulics and mapping on 9 miles of the Clarks Fork of the Yellowstone (upstream from the Carbon/Yellowstone County border). This revision, however, did not include updated hydrology or survey data. In 2017 a Partial Mapping Revision (PMR) was completed for the portion of the Yellowstone River in the county. The PMR leveraged US Army Corps of Engineers information from a Yellowstone River corridor study and updated floodplain mapping in Stillwater and Yellowstone Counties to update and replace the approximate floodplain mapping on the Carbon County side of the Yellowstone River with enhanced and floodway mapping.

2019 Project

DNRC with support from Carbon County applied and received a FEMA grant to update the flood study and floodplain maps for the Clarks Fork of the Yellowstone, Rock Creek, and tributaries.

DNRC held a project kick off meetings on October 3rd & 4th, 2019 with Carbon County, Joliet, Red Lodge, Bear Creek, and Fromberg. To view the slides that were presented click here.

Below are the figures of the study extents for the project.

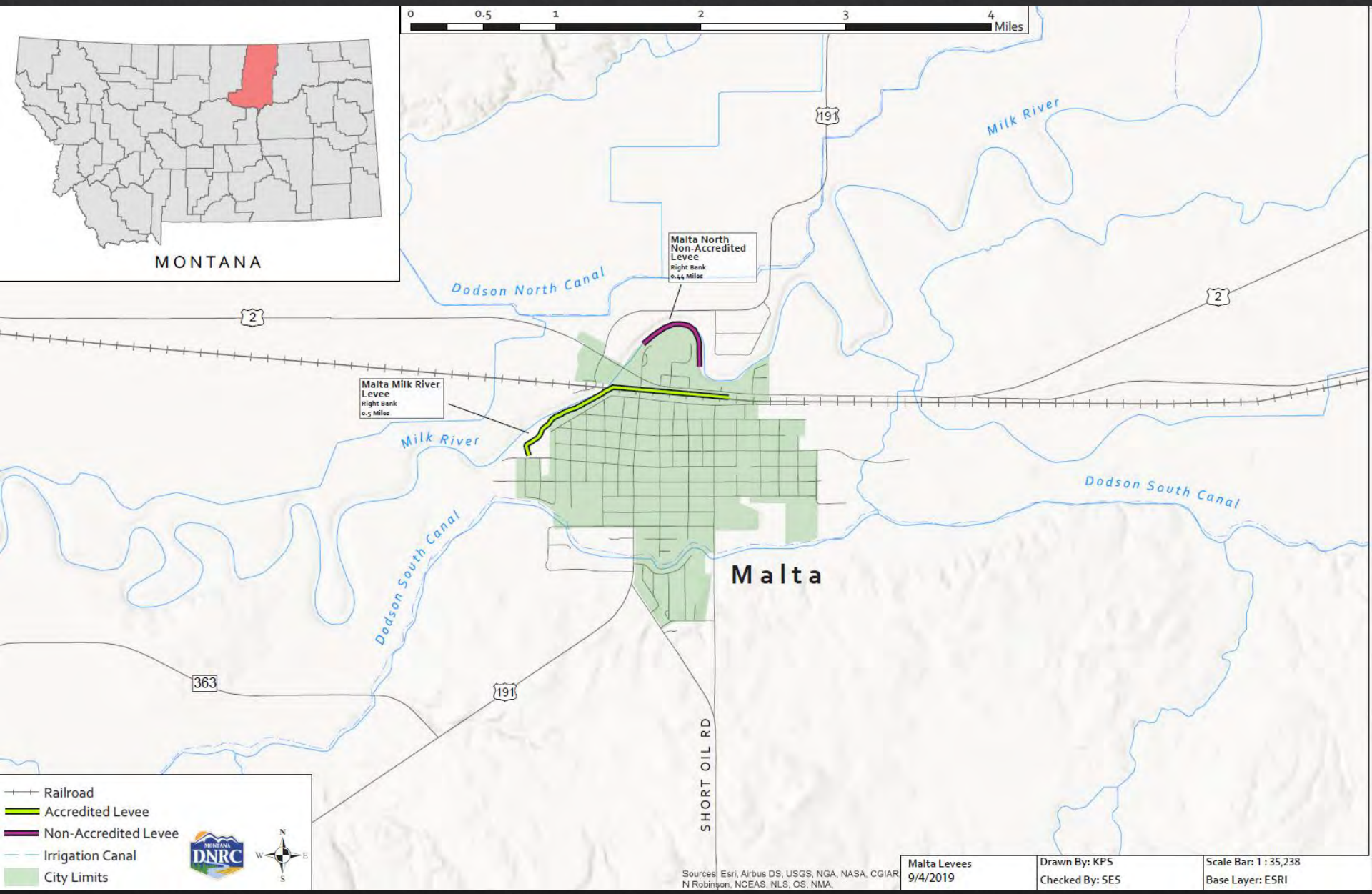
Project Points of Contact

Annie Gillespie
Carbon County Floodplain Administrator
(406) 445-7300
email

Tiffany Lyden
MT DNRC Outreach Specialist
(406)444-0599
email

Nadene Wadsworth
MT DNRC Outreach Specialist
(406)444-6732
email

Manage portlets


MONTANA
0 0.5 1 2 3 4 Miles
Malta North Non-Accredited Levee
Right Bank
0.44 Miles
Malta Milk River Levee
Right Bank
0.5 Miles
Dodson North Canal
Milk River
Dodson South Canal
Malta
191
2
363
SHORT OIL RD
Railroad
Accredited Levee
Non-Accredited Levee
Irrigation Canal
City Limits
N
W
E
S
Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA,
Malta Levees
9/4/2019
Drawn By: KPS
Checked By: SES
Scale Bar: 1 : 35,238
Base Layer: ESRI

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION

STEVE BULLOCK
GOVERNOR

DIRECTOR'S OFFICE (406) 444-2074
TELEFAX NUMBER (406) 444-2684

STATE OF MONTANA

WATER RESOURCES DIVISION (406) 444-6601
TELEFAX NUMBERS (406) 444-0533 / (406) 444-5918
http://www.dnrc.mt.gov

1424 9TH AVENUE
PO BOX 201601
HELENA, MONTANA 59620-1601

October 28, 2019

Mayor John Demarais
39 South 2nd St. East
Malta, MT 59538

Dear Mayor Demarais:

The Department of Natural Resources and Conservation (DNRC) floodplain program, The City of Malta, and Phillips County have been collaborating to undertake a new flood hazard study for the Milk River watershed which will update the existing Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM). FEMA recently awarded DNRC a grant to complete the project. Accordingly, we are beginning the process of scheduling community kickoff meetings and launching the initial project tasks.

The new study requires a review and assessment of any existing flood protection systems in the Milk River watershed. FEMA requires that Levee Sponsor/Owners provide engineering certification to ensure the levees are sound and to qualify for a reduced flood risk category on the landward side of the levee systems, in accordance with FEMA's accreditation requirements (44 CFR 65.10). DNRC has identified two levees that are owned and maintained by The City of Malta: Malta-Milk River Right Bank and Malta North Levee (see attached figure). The existing status of these levees, based on the effective FIRMs is:

- The Malta-Milk River Right Bank levee shows a reduced risk on the landward side of the levee
- The Malta North levee was not previously certified/accredited and does not show a reduced risk on the landward side of the levee

As the Owner/Sponsor of these levee systems, the city is responsible for providing all the necessary data, documentation, and certification (by a licensed professional engineer) to FEMA and DNRC, demonstrating that the levee systems comply with FEMA's minimum requirements for accreditation (per 44 CFR 65.10).

This letter serves as our formal request of the city's intent to pursue FEMA accreditation of the levee systems defined above.

The city may choose to pursue certification at the city's expense for potential accreditation by FEMA. Accreditation status from FEMA will result in the levee(s) showing reduced risk on the landward side of the levee system(s) on the future FIRMs. Residents that live behind an accredited levee may receive reduced flood insurance premiums.

The city may choose not to pursue certification/accreditation, which would result in a different flood mapping process. The levee would be modeled and potentially mapped as not reducing the risk on the landward side of the levee system(s). As a result, residents living behind non-certified/non-accredited levees that have a federally backed mortgage would be required to carry flood insurance at the high-risk premium.

Understanding the city's intent will help DNRC facilitate the flood study process along with coordinating the project schedule and study methods. Additionally, we request the city provide us with a designated point of contact for all levee related information and questions, as well as the contact information for whichever engineering firm the city may choose to work with, if certification/accreditation is the path forward. Should you have any questions, please contact Nadene Wadsworth at Nadene.wadsworth@mt.gov (406) 444-6732 or myself sestory@mt.gov (406) 444-6816.

For your convenience, we have prepared a sample 'letter of intent' template. If you could, please fill it out and return it to our office with all the information by February 28, 2020.

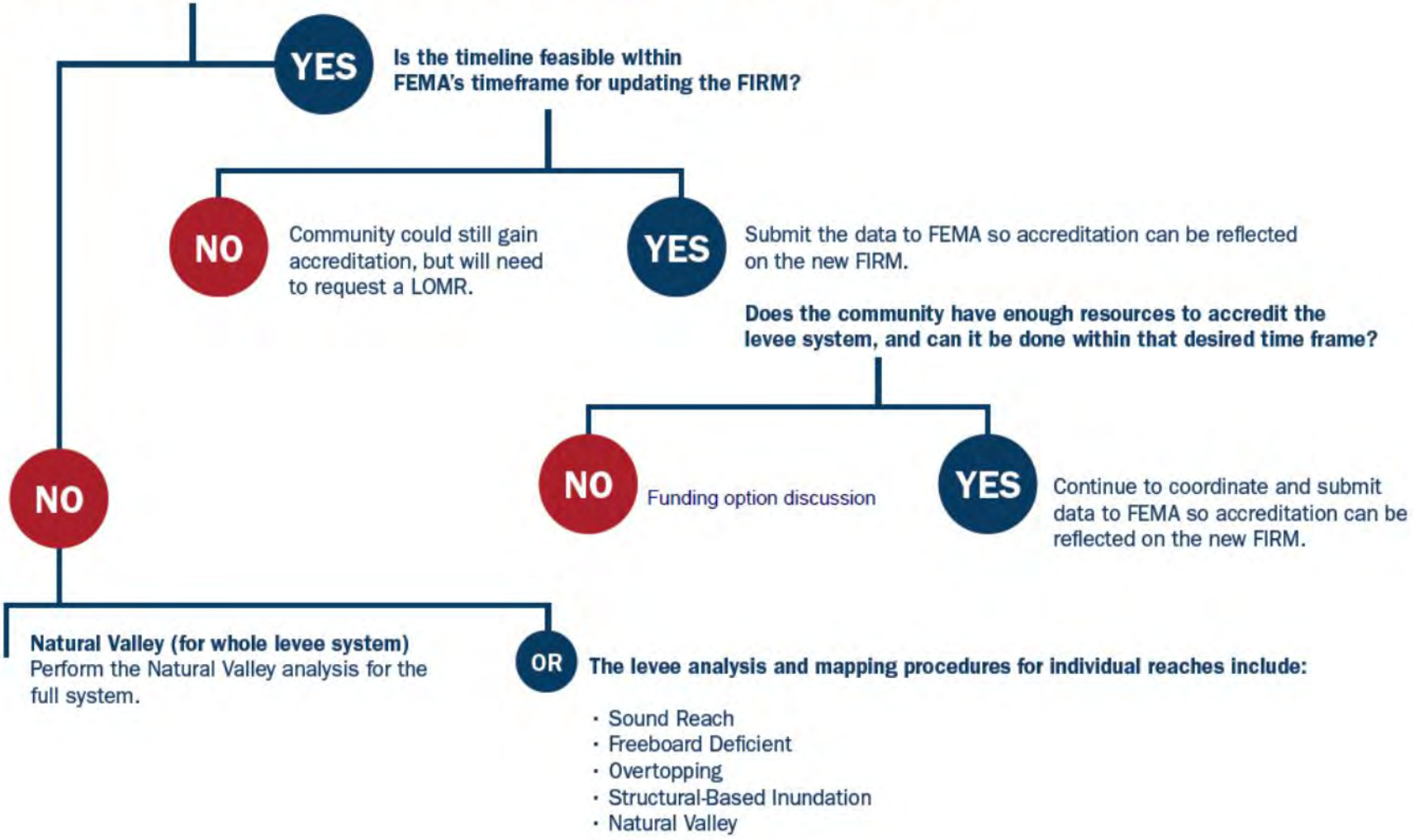
Thank you,

Steve Story, PE, CFM
Chief, Water Operations Bureau

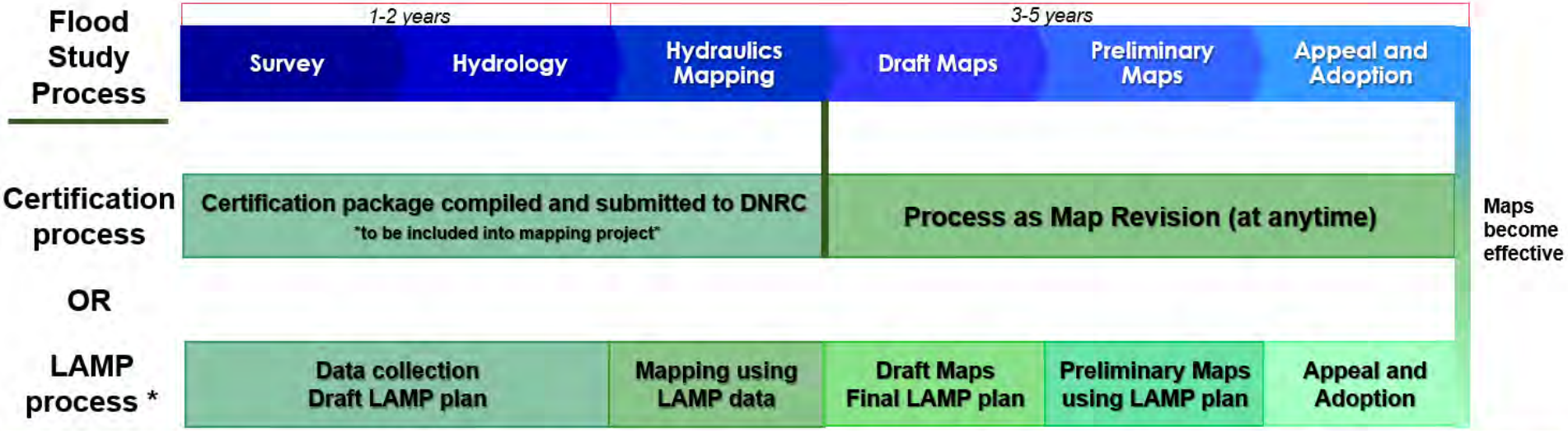
cc: Lori Bond, City of Malta Floodplain Administrator
Jim Truelove, City of Malta Public Works
Mark English, FEMA

Determining your path forward:

DO YOU INTEND TO ACCREDIT YOUR LEVEE SYSTEM?



Levee Mapping Timeframe



LAMP (Levee Analysis and Mapping Procedures) mapping process for non-accredited levees, or levees that may not be able to be certified during mapping projects.

Meeting the Criteria for Accrediting Levee Systems on Flood Insurance Rate Maps:
How-To Guide for Floodplain Managers and Engineers

The National Flood Insurance Program (NFIP) defines a levee system in Title 44, Chapter 1,Section 59.1 of the Code of Federal Regulations (44 CFR 59.1) as a flood risk reduction system that consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices to protect a hydraulically distinct area. Within the NFIP, a levee is a manmade structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

As part of the flood mapping process, the Federal Emergency Management Agency (FEMA), and its State and local mapping partners, review and evaluate levee system data and documentation. Any community and/or other party seeking recognition or continued recognition of a levee system on a Flood Insurance Rate Map (FIRM) must provide FEMA with data and documentation, certified by a registered professional engineer, showing that the levee system is expected to provide 1-percent-annual-chance (base) flood risk reduction.

To be mapped on a FIRM as providing base flood risk reduction, levee systems must meet and continue to meet the NFIP minimum design, operation, and maintenance requirements described in Title 44, Chapter 1, Section 65.10 of the Code of Federal Regulations (44 CFR 65.10). FEMA has posted several guidance documents related to levee accreditation, mapping, and other topics. Please access the Levee Resources Library for updated guidance documents. To help clarify the responsibilities of community officials, levee owners, or other parties seeking recognition of a levee system identified during a study/mapping project, FEMA has posted several guidance documents related to levee accreditation, mapping, and other related topics. This document provides information regarding how FEMA maps levee systems, a checklist of the types of data and documentation that must be submitted for levee systems to be accredited on FIRMs, and an index of further resources.

A NOTE ABOUT FLOOD RISK AND FLOOD INSURANCE

Levee systems are designed to provide a specific level of protection. They can be overtopped or fail during flood events larger than those for which the system was designed. Levee systems also decay over time, which may increase the likelihood of failure. They require regular maintenance and periodic upgrades to retain their level of protection. When levees do fail, the resulting damage, including loss of life, may be much greater than if the levee system had not been built.

For all these reasons, FEMA strongly encourages people in levee-impacted areas to understand their flood risk, know and follow evacuation procedures, and protect their property by purchasing flood insurance, floodproofing their structure, or taking other precautionary measures. For more information on flood insurance, please visit FloodSmart.gov.

RISK MAPPING, ASSESSMENT, AND PLANNING PROGRAM (RISK MAP)

The Federal Emergency Management Agency's Risk MAP Program delivers quality data that increases public awareness and leads to action to reduce risk to life and property. Risk MAP is a nationwide program that works in collaboration with States, Tribes, and Local communities using best available science, rigorously vetted standards, and expert analysis to identify risk and promote mitigation action, resulting in safer, more resilient communities.

RiskMAP
Increasing Resilience Together

FEMA

RiskMAP
Increasing Resilience Together

FEMA

Design Criteria	Section of the NFIP Regulations: 65.10(b)
Description: For levee systems to be accredited by FEMA, communities and/or levee owners must submit data and documentation to show that adequate design and operations and maintenance systems are in place to provide reasonable assurance that the levee has, and will continue to have, base flood risk reduction capability.	
Checklist for Design Criteria:	
■	**Freeboard.** The minimum freeboard required is 3 feet above the Base Flood Elevation (BFE) all along the length of the levee, with an additional 1 foot within 100 feet of structures (such as bridges) or wherever the flow is restricted, and an additional 0.5 foot at the upstream end of a levee. Levees impacted by coastal flooding have special freeboard requirements (see Paragraphs 65.10(b)(1)(iii) and (iv)).
■	**Closures.** All openings must be provided with closure devices that are structural parts of the system during operation and designed according to sound engineering practice.
■	**Embankment Protection**. Engineering analyses must be submitted that demonstrate that no appreciable erosion of the levee embankment can be expected during the base flood, as a result of either currents or waves, and that anticipated erosion will not result in failure of the levee embankment or foundation directly or indirectly through reduction of the seepage path and subsequent instability.
■	**Embankment and Foundation Stability Analyses.** Engineering analyses that evaluate levee embankment stability must be submitted. The analyses provided must evaluate expected seepage during loading conditions associated with the base flood and must demonstrate that seepage into or through the levee foundation and embankment will not jeopardize embankment or foundation stability. An alternative analysis demonstrating that the levee is designed and constructed for stability against loading conditions for Case IV as defined in the U.S. Army Corps of Engineers (USACE) Engineer Manual 1110–2–1913, *Design and Construction of Levees*, (Chapter 6, Section II), may be used.
■	**Settlement Analyses.** Engineering analyses must be submitted that assess the potential and magnitude of future losses of freeboard as a result of levee settlement and demonstrate that freeboard will be maintained. This analysis must address embankment loads, compressibility of embankment soils, compressibility of foundation soils, age of the levee system, and construction compaction methods. In addition, detailed settlement analysis using procedures such as those described in USACE Engineer Manual 1110–1–1904, *Soil Mechanics Design— Settlement Analysis*, must be submitted.

Thank You

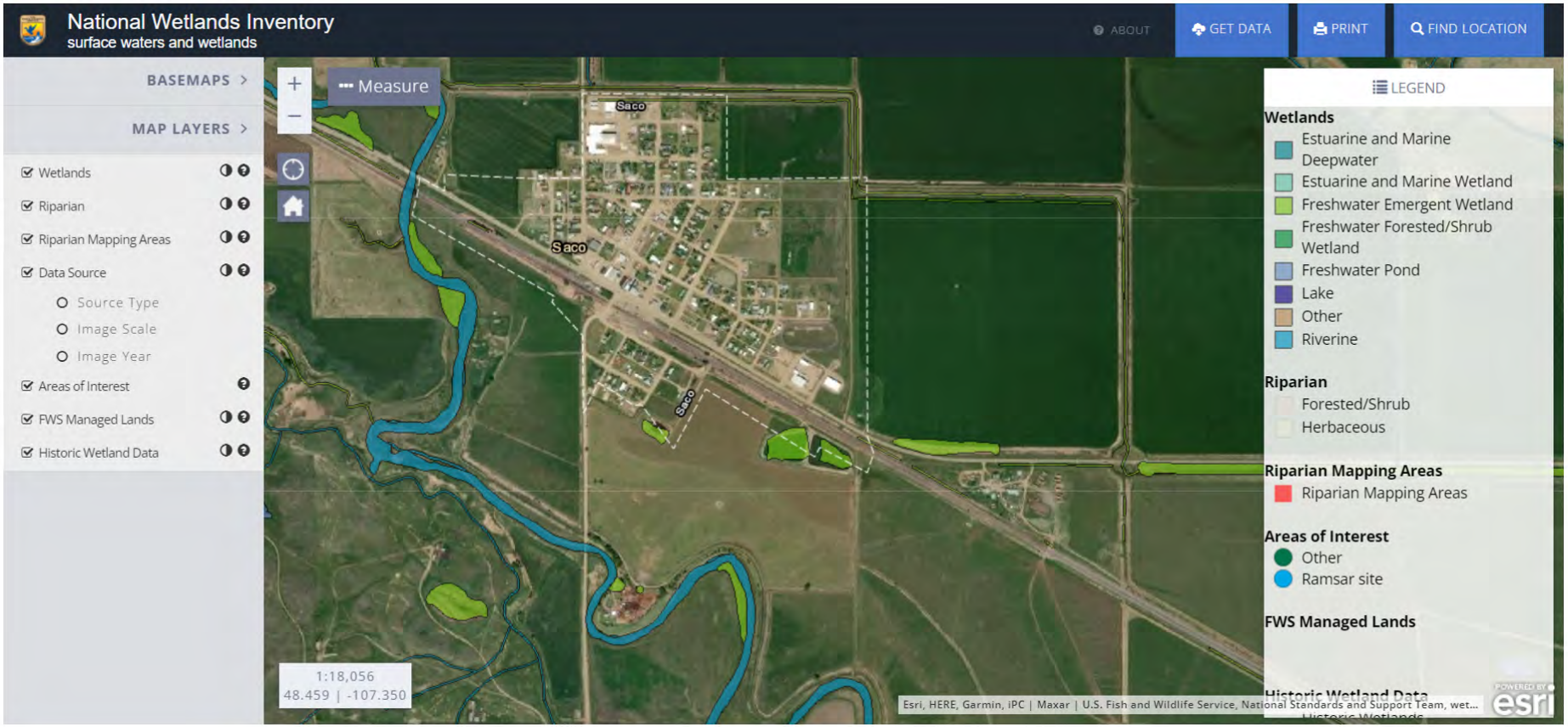
Tiffany Lyden
MT DNRC
Tlyden@mt.gov
(406) 444-0599

Nadene Wadsworth
MT DNRC
Nadene.Wadsworth@mt.gov
(406) 444-6732

APPENDIX H

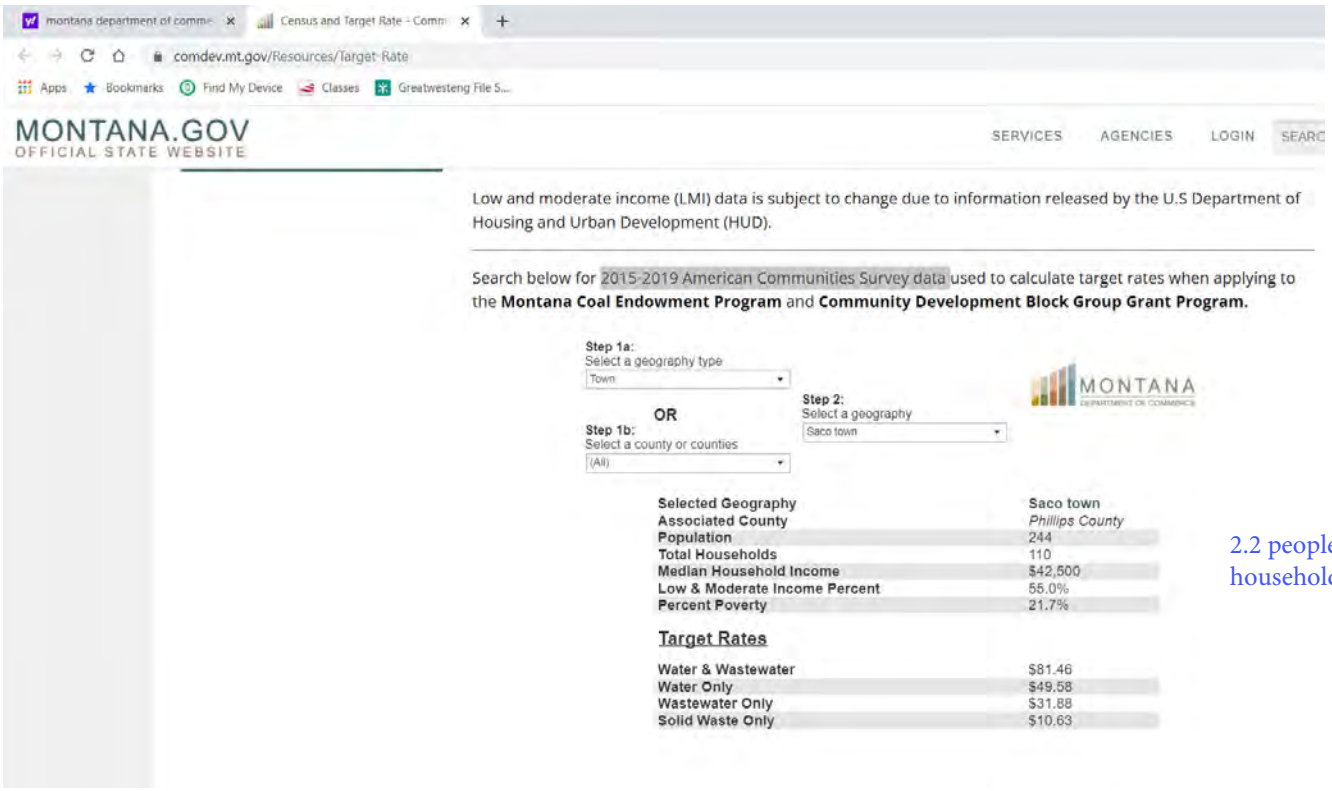
Wetlands

Saco Area Wetlands



APPENDIX I

Census and Target Rate Data



2.2 people/ household

An official website of the United States government Here's how you know

MEAN INCOME IN THE PAST 12 MONTHS (IN 2010 INFLATION-ADJUSTED DOLLARS)

United States® Census Bureau

Note: This is a modified view of the original table produced by the U.S. Census Bureau. This download or printed version may have missing information from the original table.

	Saco town, Montana			
	Total		Mean income (dollars)	
Label	Estimate	Margin of Er	Estima	Margin of Error
HOUSEHOLD INCOME				
All households	103	±28	43,818	±9,363
With earnings	59.2%	±15.8	55,475	±13,4...
With interest, dividends, or net rental income	17.5%	±12.7	5,700	±4,094
With Social Security income	47.6%	±16.8	15,814	±4,577
With Supplemental Security Income (SSI)	5.8%	±6.5	5,867	±1,153
With cash public assistance income	2.9%	±6.6	5,067	±51
With retirement income	20.4%	±11.5	8,967	±4,761
⌄ FAMILY INCOME BY NUMBER OF WORKERS IN FAMILY				
All families	53	±21	42,538	±7,711
No workers	35.8%	±22.4	N	N
1 worker	15.1%	±17.6	N	N
2 workers, husband and wife worked	32.1%	±25.0	N	N
2 workers, other	0.0%	±35.4	N	N
3 or more workers, husband and wife worked	17.0%	±18.5	N	N
3 or more workers, other	0.0%	±35.4	N	N
⌄ PER CAPITA INCOME BY RACE AND HISPANIC OR LATINO ORIGIN				

Table Notes

MEAN INCOME IN THE PAST 12 MONTHS (IN 2010 INFLATION-ADJUSTED DOLLARS)

Survey/Program: American Community Survey
Year: 2010
Estimates: 5-Year
Table ID: S1902

Explanation of Symbols:

An "**" entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
An "-" entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
An "-" following a median estimate means the median falls in the lowest interval of an open-ended distribution.
An "+" following a median estimate means the median falls in the upper interval of an open-ended distribution.
An "***" entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
An "*****" entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
An "N" entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
An "(X)" means that the estimate is not applicable or not available.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Data and Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2000 data. Boundaries for urban areas have not been updated since Census 2000. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

While the 2006-2010 American Community Survey (ACS) data generally reflect the December 2009 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

There were changes in the edit between 2009 and 2010 regarding Supplemental Security Income (SSI) and Social Security. The changes in the edit loosened restrictions on disability requirements for receipt of SSI resulting in an increase in the total number of SSI recipients in the American Community Survey. The changes also loosened restrictions on possible reported monthly amounts in Social Security income resulting in higher Social Security aggregate amounts. These results more closely match administrative counts compiled by the Social Security Administration.

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, for 2010, the 2010 Census provides the official counts of the population and housing units for the nation, states, counties, cities and towns. For 2006 to 2009, the Population Estimates Program provides intercensal estimates of the population for the nation, states, and counties.

Source: U.S. Census Bureau, 2006-2010 American Community Survey

An official website of the United States government Here's how you know

INCOME IN THE PAST 12 MONTHS (IN 2020 INFLATION-ADJUSTED DOLLARS)

United States® Census Bureau

Note: This is a modified view of the original table produced by the U.S. Census Bureau. This download or printed version may have missing information from the original table.

	Saco town, Montana					
	Households		Families		Married-couple families	
Label	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Ma
Total	123	±42	70	±28	46	
Less than $10,000	3.3%	±5.1	0.0%	±31.3	0.0%	
$10,000 to $14,999	1.6%	±2.4	4.3%	±7.3	2.2%	
$15,000 to $24,999	12.2%	±9.3	12.9%	±12.5	10.9%	
$25,000 to $34,999	17.1%	±12.6	10.0%	±15.8	2.2%	
$35,000 to $49,999	25.2%	±15.8	28.6%	±19.3	23.9%	
$50,000 to $74,999	17.9%	±11.1	8.6%	±10.6	13.0%	
$75,000 to $99,999	8.9%	±9.4	14.3%	±16.3	21.7%	
$100,000 to $149,999	11.4%	±11.5	17.1%	±18.0	26.1%	
$150,000 to $199,999	0.0%	±19.9	0.0%	±31.3	0.0%	
$200,000 or more	2.4%	±5.9	4.3%	±10.8	0.0%	
Median income (dollars)	44,236	±10,143	49,091	±20,656	62,000	
Mean income (dollars)	57,490	±14,639	69,403	±24,277	N	
PERCENT ALLOCATED						
Household income in the past 12 months	35.8%	(X)	(X)	(X)	(X)	
Family income in the past 12 months	(X)	(X)	52.9%	(X)	(X)	
Nonfamily income in the past 12 months	(X)	(X)	(X)	(X)	(X)	

Nonfamily income in the past 12 months	(X)	(X)	(X)	(X)	(X)	(X)

Table Notes

INCOME IN THE PAST 12 MONTHS (IN 2020 INFLATION-ADJUSTED DOLLARS)

Survey/Program: American Community Survey
Year: 2020
Estimates: 5-Year
Table ID: S1901

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, for 2020, the 2020 Census provides the official counts of the population and housing units for the nation, states, counties, cities, and towns. For 2016 to 2019, the Population Estimates Program provides estimates of the population for the nation, states, counties, cities, and towns and intercensal housing unit estimates for the nation, states, and counties.

Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

When information is missing or inconsistent, the Census Bureau logically assigns an acceptable value using the response to a related question or questions. If a logical assignment is not possible, data are filled using a statistical process called allocation, which uses a similar individual or household to provide a donor value. The "Allocated" section is the number of respondents who received an allocated value for a particular subject.

Between 2018 and 2019 the American Community Survey retirement income question changed. These changes resulted in an increase in both the number of households reporting retirement income and higher aggregate retirement income at the national level. For more information see Changes to the Retirement Income Question .

The categories for relationship to householder were revised in 2019. For more information see Revisions to the Relationship to Household item.

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see ACS Technical Documentation). The effect of nonsampling error is not represented in these tables.

The 2016-2020 American Community Survey (ACS) data generally reflect the September 2018 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas. In certain instances, the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineation lists due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Explanation of Symbols:

-

The estimate could not be computed because there were an insufficient number of sample observations. For a ratio of medians estimate, one or both of the median estimates falls in the lowest interval or highest interval of an open-ended distribution.

N

The estimate or margin of error cannot be displayed because there were an insufficient number of sample cases in the selected geographic area.

(X)

The estimate or margin of error is not applicable or not available.

median-

The median falls in the lowest interval of an open-ended distribution (for example "2,500-")

median+

The median falls in the highest interval of an open-ended distribution (for example "250,000+").

**

The margin of error could not be computed because there were an insufficient number of sample observations.

***

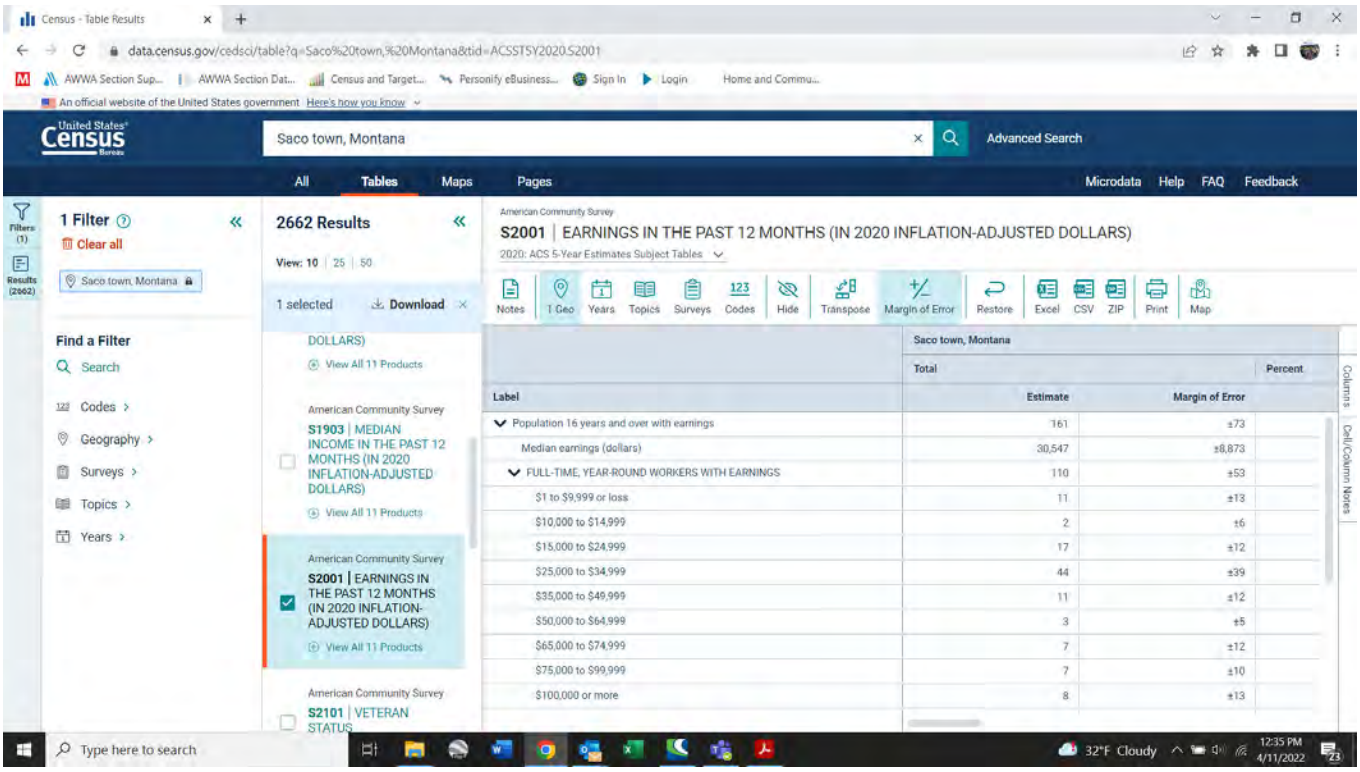
The margin of error could not be computed because the median falls in the lowest interval or highest interval of an open-ended distribution.

*****

A margin of error is not appropriate because the corresponding estimate is controlled to an independent population or housing estimate. Effectively, the corresponding estimate has no sampling error and the margin of error may be treated as zero.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.


Census - Table Results
data.census.gov/cedsci/table?q=Saco%20town,%20Montana&tid=ACSST5Y2020.S2001
An official website of the United States government Here's how you know
United States Census Bureau
Saco town, Montana
Advanced Search
All
Tables
Maps
Pages
Microdata
Help
FAQ
Feedback
1 Filter
Clear all
Saco town, Montana
Find a Filter
Search
Codes
Geography
Surveys
Topics
Years
2662 Results
View: 10 | 25 | 50
1 selected
Download
DOLLARS)
View All 11 Products
American Community Survey
S1903 | MEDIAN INCOME IN THE PAST 12 MONTHS (IN 2020 INFLATION-ADJUSTED DOLLARS)
View All 11 Products
American Community Survey
S2001 | EARNINGS IN THE PAST 12 MONTHS (IN 2020 INFLATION-ADJUSTED DOLLARS)
View All 11 Products
American Community Survey
S2101 | VETERAN STATUS
American Community Survey
S2001 | EARNINGS IN THE PAST 12 MONTHS (IN 2020 INFLATION-ADJUSTED DOLLARS)
2020: ACS 5-Year Estimates Subject Tables
Notes
1 Geo
Years
Topics
Surveys
Codes
Hide
Transpose
Margin of Error
Restore
Excel
CSV
ZIP
Print
Map
Saco town, Montana
Total
Percent
Label
Estimate
Margin of Error
Population 16 years and over with earnings 161 ±73
Median earnings (dollars) 30,547 ±8,873
FULL-TIME, YEAR-ROUND WORKERS WITH EARNINGS 110 ±53
$1 to $9,999 or loss 11 ±13
$10,000 to $14,999 2 ±6
$15,000 to $24,999 17 ±12
$25,000 to $34,999 44 ±39
$35,000 to $49,999 11 ±12
$50,000 to $64,999 3 ±5
$65,000 to $74,999 7 ±12
$75,000 to $99,999 7 ±10
$100,000 or more 8 ±13
Columns
Cell/Column Notes
Type here to search
32°F Cloudy
12:35 PM
4/11/2022

APPENDIX J

Community Engagement

Apr 6, 2022

To Town of Saco,

Our property is 602 Wellington Ave in Saco, MT. I am writing to inform you that in the past the sewer has backed up and caused damage to our basement. The sewage was three feet deep.It affected the water heater, the furnace, and the freezer.

Respectfully,

Leah Molina

Leah Molina

To whom it may concern;

I Dale Plouffe have a concern with the Town of Saco's lift station.

When Saco receive's a substantial amount of rain, the sewer backs up into my basement, due to the LIFT STATION not keeping up.

In the past I have replaced the furnace, hot water heater, beds & replace all the walls & sheetrock. Since this has happened several time's, I have installed a sewer shut off valve, to eliminate this from happening again, but this only work's if your at home!

Thank You

Dale Plouffe

To Whom it may concern;

We have a very real concern with the lift station to do its job correctly. Last time we had a lot of rain, we had sewage about a foot deep in our basement because of the backup, it ruined carpets freezer, furnace, beds, walls. To say the least it was very expensive. Since then we are very aware of the light and alarm We are one of the first house in town to get the back up inside if things fail. We are early risers and if the light is on we have to take City workers. So when things are wet and we see the light we have to shut a sewer value off until we get an all clear from City workers. We had the shut off value installed after our flood.

thank you

Deb & Wes Whitaker

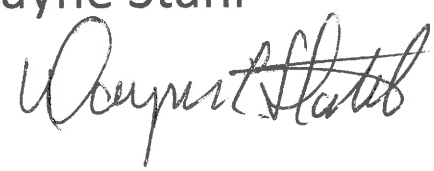
13 APRIL 2022

DEAR SIRS,

I have had my basement flood form sewer backup two times since I have lived in Saco MT.

The Methodist Church has also had sewer backup in the basement.

Wayne Stahl



Matthew Mudd

From: Tyler Smith <tyler@lakesideexcavation.com>
Sent: Tuesday, May 3, 2022 10:17 AM
To: Matthew Mudd
Subject: Saco Over condition

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Matt,
Overall the condition of the Town of Saco sewer's system is very poor. In our 20 years of inspection services I have not seen a system that was in need of so much work. Most man holes have a corroded to the point where you can see the reinforcing wire. We were only able to completely inspect just a handful of the mains completely through. In those inspections we found lots of intruding taps that are so far into the sewer main that camera's can not pass by. Several of these sewer mains have more than one of these taps there for we were not able to inspect the entire line. We also found complete sections of pipe missing the top where you can see the soil. In these sections a catastrophic failure can occur without notice and with its rural location property damage would occur before the repair was made. All in all I would recommend a phased approach to sewer main replacement with point repairs in the first phase to prevent catastrophic failures. Please let me know if you have any questions.

Thank you

Tyler Smith
Owner-Estimator
Lakeside Excavation Inc.
220 22nd Ave W.
Havre, MT 59501
Office 406-265-9401
Cell 406-262-3178
Fax 406-265-5693
www.lakesideexcavation.com
https://www.facebook.com/Lakesideexcavation/
https://www.linkedin.com/company/lakeside-excavation-inc/

GreatWest ENGINEERING

TOWN OF SACO
Public Hearing
April 13, 2022
Sign-In Sheet

Name	Company	email	Telephone
Wayne C Stahl		wstahl@nemont.net	527-3321
DALE PLOUFFE	TOWN SACO W/WWOPER	dep@nemont.net	527-7427
Wayne Woodall	" "	Mtwrw1@yahoo.com ~~MTWRW@~~	406 527-7799
Kirsten Albus	town SACO	townsaco@nemont.net	527-3312
LARRY Ross Simpson	town of SACO	" "	527-3312
Dan Minnerat	" "	dminnerat@nemont	527-3549
MATT MUDD	GWE	mmudd@greatwesteng.com	495-6196

NOTICE OF PUBLIC HEARING

The Town of Saco will hold a public hearing following its monthly Town Council meeting on April 13, 2022. The public hearing will begin at 7:00 p.m. at Saco Town Hall at 110 Nelson Street. The City Council has scheduled the hearing to obtain public comments regarding the proposed improvements to the Saco's wastewater system. With assistance from Great West Engineering, the town is preparing a wastewater preliminary engineering report (PER) and is preparing applications for funding from the Montana Department of Commerce's Montana Coal Endowment Program and Community Development Block Grant Program, Montana Department of Natural Resources and Conservation, and USDA Rural Development.

At the public hearing, representatives of Saco and Great West Engineering will explain the purpose of the project, the project area, the scope of work, budget, possible sources of funding, and any costs that may result for local citizens because of the project. Great West Engineering will also present its assessment of the project's impact on the environment. Copies of the draft environmental assessment and PER are available at Town Hall and www.sacoinfrastructure.com.During the public hearing; residents may ask questions and express their opinions regarding the project and its impact on the Town of Saco.

Residents can submit comments and questions about the project at any time at www.sacoinfrastructure.com. You may also contact Great West Engineering's Project Manager Matt Mudd, PE, at (406) 495-6196 or mmudd@greatwesteng.com.

Publish Two (2) Times: Phillips County News

March 30, 2022
April 6, 2022

AFFIDAVIT OF PUBLICATION

STATE OF MONTANA,

County of Phillips

Wanda Bushman, is the Office Manager of the Phillips County News, a newspaper of general circulation, published weekly at Malta, Phillips County, Montana; that the notice hereto attached and entitled

Legal-Public Notice-Town of Saco Great West Engineering

has been published in the said newspaper once each week for 2 (two) successive weeks as follows: the said notice was published in said paper on 3/30, 2022

it was also published in said paper on 4/6, 2022

it was also published in said paper on _____, 2022.

it was also published in said paper on _____, 2022

by Wanda Bushman

This instrument was acknowledged before me this 9th day of May, 2022

Terri J Skiff

(Notary Public)

TERRI J. SKIFF NOTARIAL SEAL STATE OF MONTANA

TERRI J. SKIFF
NOTARY PUBLIC for the
State of Montana
Residing at Malta, Montana
My Commission Expires
July 15, 2024

LEGAL

PUBLIC NOTICE

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(Published by Phillips County News 3/30, 4/6/2022)
MNAXLP

See What's *Possible*.

www.greatwesteng.com

WASTEWATER PRELIMINARY ENGINEERING REPORT

TOWN OF SACO
PUBLIC HEARING – APRIL 13, 2022

Matthew Mudd, PE

GreatWest ENGINEERING

1

WHY ARE WE HERE & OUTLINE

- Town Identified Sewer System Needs
- ARPA Grant Applied For and Received
- Planning Grants Obtained
- Explain the PER Process
- Wastewater Problems & Alternatives
- Summarize Environmental Assessment (EA) and Impacts
- Go over Funding and Potential Rate Impacts
- Take Public Comment

GreatWest ENGINEERING

2

PRELIMINARY ENGINEERING REPORT

- **What is a PER**
  - Technical and Planning
  - Required by Funding Agencies to Apply for Grants
  - Defines Current and Future Projects
- **Evaluates Alternatives**
- **Establishes Costs and Funding Scenarios**
- **Develops Implementation Schedule**

GreatWest

3

PLANNING AREA
COLLECTION AND TREATMENT AREAS

- **Study Area**

4

EVALUATION OF EXISTING SEWER SYSTEM
POPULATION

Year	Saco[1]	% Annual Increase/Decrease	Phillips County	% Annual Increase/Decrease
1990	261		5,163	
2000	224	-14.2%	4,601	-12.2%
2010	197	-12.1%	4,253	-7.56%
2020	159	-19.2%	4,217	-0.85%
Average		-15.2%		-6.87%
2042	177	0.50%		
(1) US Census Bureau				
(2) Population of Town at Design Year (2042) estimated from 2020 Census at conservative 0.5% Annual Growth				

Original design population=490

5

EVALUATION OF EXISTING SEWER SYSTEM - COLLECTION

- Reviews Original Maps
- Over 14,000 8” – mostly Clay
- Some 8” PVC
- Some 4” and 6” extensions
- Future Extensions

6

EVALUATION OF EXISTING SEWER SYSTEM - COLLECTION SYSTEM

» **Evaluation Methods**
  - » Sewer Cleaning and Video Reports
  - » Site Visits/Investigations
  - » Historical Information and Accounts

» **History**
  - » No Major Capital Project Upgrades Done on Collection System
  - » Repairs are Done as Needed
  - » Town Routinely Cleans Lines

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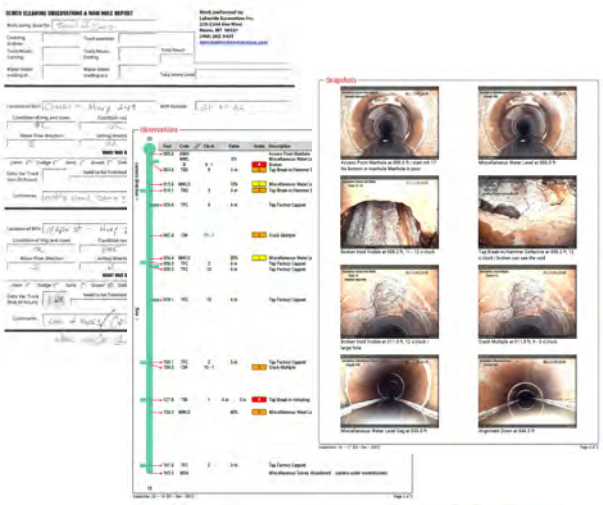
7

EVALUATION OF EXISTING SEWER SYSTEM - COLLECTION SYSTEM

» **Cleaning and Video Reports**



- » 4,200 Cleaned, 2,800 Video' d
- » More Planned

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8

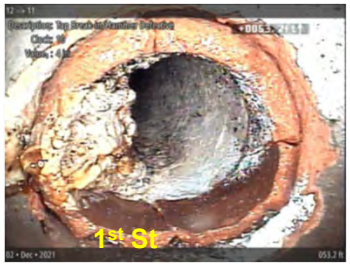
EVALUATION OF EXISTING SEWER SYSTEM - COLLECTION SYSTEM

» Video Snapshots

9

EVALUATION OF EXISTING SEWER SYSTEM - COLLECTION SYSTEM

» Video Snapshots



10

EVALUATION OF EXISTING SEWER SYSTEM - COLLECTION SYSTEM

» Manholes

HWY 243

Alley b/t Vagg/HWY 2

1st St/HWY 2

Vagg/Nelson

Note: Some Manholes are Under the Levee (South of Tracks)

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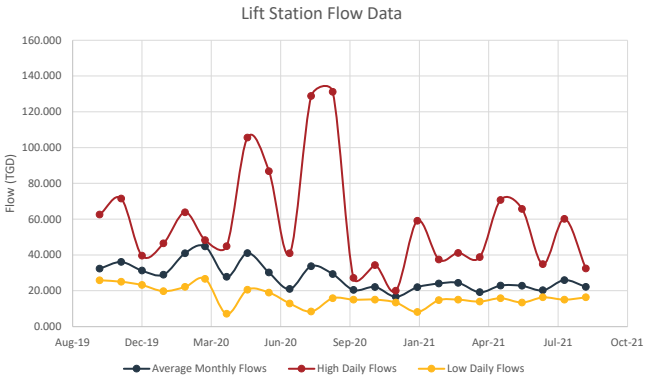
EVALUATION OF EXISTING SEWER SYSTEM - COLLECTION SYSTEM

» Flow Evaluation

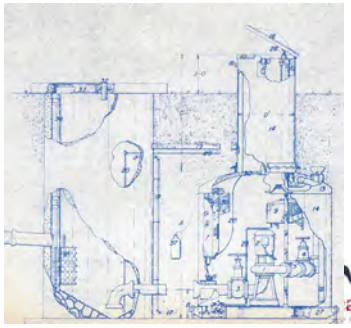


- Average Annual Daily Flow Rate: 27,500 gallons per day (gpd)
- Peak Monthly Flow Rate: 44,800 gpd
- Peak Daily Flow Rate: 131,000 gpd
- Peak Hour Flow Rate: 485 gpm

12

EVALUATION OF EXISTING SEWER SYSTEM – LIFT STATION

» **Wet Well / Dry Well Lift Station**

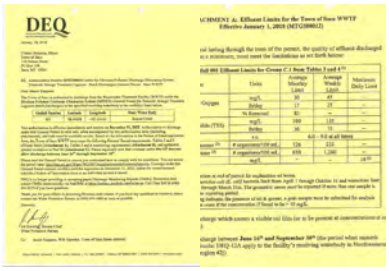


13

EVALUATION OF EXISTING SEWER SYSTEM – TREATMENT

Treatment Lagoons w/ Discharge

- » Batch – No discharge June 16 – Sept. 30
- » Discharge 1-2 times per year
- » E.coli. Limits – Exceed nearly 60% of time
- » TSS limits
- » BOD limits – Exceed nearly 45% of time


DEQ

14

EVALUATION OF EXISTING SEWER SYSTEM – TREATMENT

Lagoon Issues

- » DEQ H&S Study & Recommendations
- » Influent Structure Splitter Control Not Working
- » Excessive Sludge – about 2.5 million gallons
- » Eroded Banks

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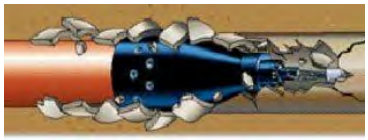
ALTERNATIVES EVALUATION - COLLECTION

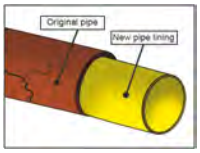
Methods to Consider:

- » No Action
- » Open Cut
- » Pipe Rehabilitation
  - » Pipe Bursting
  - » Cured-In-Place Pipe (CIPP)
  - » Bore and Jack Pipeline installation

Preferred Alternative:

- » Open Cut, with Bore and Jack at HWY
- » and Railroad





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ALTERNATIVES EVALUATION - COLLECTION

Locations & Phasing

Total Project Estimates

» C-1: No Action

» C-2: Phase 1 - $350k

» C-3: Phase 2 - $960k

» C-4: Phase 3 - $2.7 mil

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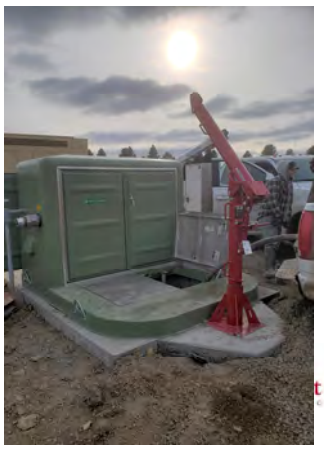
ALTERNATIVES EVALUATION – LIFT STATION

» LS-1 No Action

» LS-2 Lift Station Upgrades - $750k

» Submersible Packaged Lift Station



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ALTERNATIVES EVALUATION – TREATMENT

Methods:

- No Action
- All Options Would Remove and Dispose Sludge
- T-1: Reconstruct Lagoons, add UV System
- T-2: Reconstruct Lagoon, add Total Retention Lagoon
- T-3: Minor Lagoon Upgrades, Effluent Irrigation
- T-4: Minor Lagoon Upgrades, UV System

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ALTERNATIVES EVALUATION – TREATMENT

Methods:

- Lagoon Reconstruction Alternatives

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20

ALTERNATIVES EVALUATION – TREATMENT

» UV System Options (Building or Vault)

21

ALTERNATIVES EVALUATION – TREATMENT

» Effluent Irrigation Options

» DEQ Standards and Considerations:

- Keep Discharge Permit as Backup
- Flow meter required
- Raise a viable crop to remove nutrients
- Low trajectory sprayers - End guns are not approved
- "should not" be placed in the flood plain.
- Could irrigate in mid to late summer,
- Groundwater is below 4-feet
- Own land or have 20-yr lease/agreement with a private landowner
- Nutrient Management and Irrigation Plan Required
- No irrigation on surface water. No ponding
- Soil Conditions

» Cost Effective Method

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ALTERNATIVES EVALUATION – TREATMENT

» T-1 Reconstruct Lagoons Add UV System

» Estimated Total Project Cost = $2.6 mil

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ALTERNATIVES EVALUATION – TREATMENT

» T-2 Reconstruct Lagoons, Total Retention

» Estimated Total Project Cost = $2.98 mil.

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ALTERNATIVES EVALUATION – TREATMENT

» T-3 Minor Lagoon Upgrades, Irrigation

» Estimated Total Project Cost = $930,000

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ALTERNATIVES EVALUATION – TREATMENT

» T-4 Minor Lagoon Upgrades, UV Treatment

» Estimated Total Project Cost = $1.3 mil.

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SELECTION OF PREFERRED ALTERNATIVE

ALTERNATIVE	DESCRIPTION	TOTAL
C-1	Phase 2 - Collection System Improvements	$960,000
T-3	Phase 2 - Minor Lagoon Improvements, Irrigation	$930,000
Grand Total		$1,890,000

ANNUAL OPERATION & MAINTENANCE COST INCREASE					
	ITEM	QTY	UNITS	UNIT PRICE	TOTAL
1	Operator	40	HR	$20.00	$800
2	Nutrient Management, Irrigation Plan Logging	20	HR	$20	$400
3	Power to Irrigation System	2,400	kWh	$0.15	$360
4	Monitoring & Testing	1	LS	$700.00	$700
5	Spare Parts/Maintenance	1	LS	$500.00	$500
6	Reserve	1	LS	$500.00	$500
	TOTAL				**$3,300**

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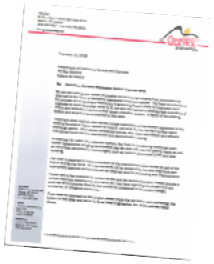
ENVIRONMENTAL ASSESSMENT

What is an Environmental Assessment (EA)?

» Public document analyzing environmental issues

Draft EA has been completed

» State and federal agencies have been contacted
» Many responses have been received
» Public comments solicited



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ENVIRONMENTAL ASSESSMENT

No Substantive Comments or Assessments

- Some Mitigated Impacts
  - Leaking Underground Tank Areas and Mitigation
  - Irrigation Permit – DEQ Feedback
  - Storm Water
  - Flood Plain Mapping
  - Railroad and Highway Crossings (Permits)

Decision:

- Environmental Assessment is Acceptable
- Environmental Impact Statement (EIS) is not necessary

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PROJECT FUNDING STRATEGY

Funding Sources Being Considered

- MCEP – Montana Coal Endowment Program
- DNRC – Department of Natural Resources and Conservation
- CDBG – Community Development Block Grant
- SRF – State Revolving Fund
- RD – U.S. Department of Agriculture Rural Development
- ARPA – American Rescue Plan Act

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PROJECT FUNDING STRATEGY

Target Rate Analysis for Grant Eligibility

» Using 2015-2019 American Communities Survey (Department of Commerce)

Medium Household Income (MHI)	**=$42,500**
Department of Commerce Target Rate Threshold:	
(Target Rate is 2.3% for combined water/wastewater)	
SS & Water Target Rate	**=$81.46/MO**
Current Combined Rate ($25 Sewer, $55 Water)	**=$80/MO**
Percent Poverty	**=21.7%**
Low & Moderate Income (LMI)	**=55%**

Town is eligible for RD, TSEP, CDBG Grants, SRF Loan w/ Forgiveness

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PROJECT FUNDING STRATEGY

PROJECT FUNDING SCENARIOS ($1.9 Mil Project)

» **Scenario #1**
- » $500,000 MCEP Grant
- » $125,000 DNRC Grant
- » $600,000 CDBG Grant
- » $334,000 SRF Loan (2.5% 20 years) with 50% SRF forgiveness ($333k)
- » $6-8 per month rate increase

» **Scenario #2**
- » $500,000 MCEP Grant
- » $125,000 DNRC Grant
- » $600,000 CDBG Grant
- » $300,000 RD Grant (Assume 45%)
- » $367,000 RD Loan (2.0%, 40 years)
- » $5 to $7 per month rate increase

» **Scenario #3**
- » $500,000 MCEP Grant
- » $125,000 DNRC Grant
- » $570,000 RD Grant (Assume 45%)
- » $697,000 RD Loan (2.0%, 40 years)
- » $12 to $14 per month rate increase
- » (Example without a CDBG Grant)

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IMPLEMENTATION SCHEDULE

Action	Date
Public Hearing on Draft PER & EA	4/13/22
Complete Final PER, Adopt EA & PER by Resolution	April 39, 2022
Apply for DNRC Grants	May 15, 2022
Apply for TSEP Grants	May, 2022
Apply for CDBG Grants	Fall, 2022
Apply for RD Grants or SRF Funding	Fall, 2022
TSEP Award and Contracting	June/July, 2023
Finalize Grant Financing and Budget	June/July, 2023
Contracting for Engineering Begin Design	June/July, 2023
Begin Design	July/August ,2023
Submit Design Plans and Specifications to MDEQ	November, 2023
MDEQ Review & Approval	January, 2024
Bidding Process	February/March, 2024
Finalize RD Loan Financing	April, 2024
Start Construction	May/June 2024
Complete Collection and Treatment System Construction	By November 2024

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WEBSITE

www.sacoinfrastructure.com

Can obtain web visit metrics for app.

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WHERE TO GO FROM HERE

- Public Opinion
  - Is there support for the project?
  - Make a comment
- MCEP and DNRC Applications – May 2022
- CDBG and RD or SRF Applications – Fall 2022
- Phase 1 Project – ARPA startup, start design

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QUESTIONS OR COMMENTS?

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Saco Council Meeting – November 10, 2021

Great West Engineering

Wastewater PER Update

Update Completed by: Matt Mudd, PE (GWE)

Status:

- Recall Town received and ARPA competitive grant award (+/- 1.5 mil), and also has access to ($47k Bucket A, $84k Bucket B) ARPA funds for the Town for water and wastewater improvements. (This is in consideration of applying for upcoming eligible grants for match (MCEP, DNRC, CDBG, and RD))
- The PER contract was approved at October Council Meeting
- Research work is underway
    - Dong flow analysis: plan to lift station hour records, winter water usage flows
- PER startup checklist was given to Town
- GWE has all system (sewer, water, gas, storm) maps as GWE staff came from Entrenco
- $20,000 of the ARPA grant budget included cleaning/video inspection of the existing clay piping.
    - The Town prefers to work with Lakeside excavation
    - Quote received from Lakeside (Tyler) is $3.44/ft (clean/video). $20,000/3.44 = 5,800 +/- ft
    - Need to determine the most important sections to video (Need Town input)
    - Also may need to video some levee pipes while in Town
    - Lakeside scheduled for early December, weather pending.
- All problems suspected/known:
    - Lagoon:
        - Excessive sludge accumulation.
        - Failed lagoon valves.
        - Discharge Permit Violations occur (BOD, TSS, e. Coli)
        - Degrading Lagoon Operating Control Valve Structures.
        - Security Fencing Needs to updated
        - Eroded embankments
    - Lift Station
        - No backup power to the lift station site.
        - Corrosion and degradation concerns of the force main.
        - Corrosion Concerns in dry well
        - Confined space access and operator safety concerns.
        - No bypass piping system.
        - Alarm System Issues, outdated alarm system
        - End of useful design life.
        - Capacity and inflow impacts on lift station
        - Failure can cause backups in homes
    - Collection System
        - Mostly all clay – pending findings from video/CCTV inspection
        - Reported that several manholes are severely degraded
            - MDT highway improvements are planned over some of these sections

- Town Action Requested:
    - GWE is requesting input on any major sewer issues including but not limited to:
        - Areas where sewer backups have/tend to occur
        - Location, information, and/or photos of the major manhole degradation
        - These and other sewer information marked on a planning map
        - Flooding impacts on sewer infrastructure? Lagoons, Inflows into sewer pipe, etc?
    - Recommendations for the 5,800 feet of pipe to video
    - PER Startup Checklist Items (GWE will work with Dale and Kirsten)

Saco Council Meeting – December 8, 2021

Great West Engineering

Wastewater PER Update

Update Completed by: Matt Mudd, PE (GWE)

Status:

- Recall Town received and ARPA competitive grant award (+/- 1.5 mil), and also has access to ($47k Bucket A, $84k Bucket B) ARPA funds for the Town for eligible water and wastewater improvements.
    - Scope of the ARPA application project:
        - Sludge remove, replace control valves, new fencing, complete lift station improvements, add UV disinfection system, and WW PER for all system review. (Does not include collection/pipe or major lagoon improvements)
    - This is in consideration of applying for upcoming eligible grants for match (MCEP, DNRC, CDBG, and maybe RD
    - See Budget for discussion
    - Explain how a typical grant timeline works (MCEP, DNRC, RD, CDBG, SRF)
- Due to ARPA grant startup conditions, can't use ARPA funds until 2023
- The WW PER contract was approved at October Council Meeting
- PER Research work is underway
    - Doing flow analysis: plan to lift station hour records (Done), winter water usage flows (TBD)
    - Can see the I/I in the flow data for some high flows. No high flows in 2021 which makes sense.
    - Range 15k -35k gpd, with peak days approaching 150-200k gpd+
    - Plan to compare with water meter sales in winter months
- PER startup checklist was given to Town and am working through these
- MCEP grant to cover some of the PER cost will be awarded. Allows more ARPA to go to other items.

Population: 2010 Census listed 197 and 159 for 2020. Does that sound right. What growth to assume for 20 years? 0.5% for 20 years from 150 gets to 177

- GWE has all system (sewer, water, gas, storm) maps as GWE staff came from Entrenco
- Sewer Video:
    - Project considered $20,000 of the ARPA grant budget included cleaning/video inspection of the existing clay piping.
    - The Town preferred to work with Lakeside excavation and they proceeded with the work
    - Markup of areas recorded provided by Lakeside.
    - Quote received from Lakeside (Tyler) is $3.44/ft (clean/video). $20,000/3.44 = 5,800 +/- ft
    - GWE made up a manhole numbering map for reference
    - Per phone with Lakeside:
        - there were some issues, cleaning, and weather and there was less done than originally budgeted at this time.
        - Did video under county road

        - May come back if decent weather applies.
    - General observations/comments:
        - Big sag in the pipe under the railroad. (solution – new jack and bore pipe)
        - Poor pipe and manhole condition in the County Road
        - Poor condition and bad location next to highway 2
        - Lakeside will pass along videos to GWE to review and incorporate into study

Snapshot of bad section (MH 18 to MH 17):

    - Considerations
        - Do a phased improvement project for the entire collection, starting with worst
        - Move main between 18 and 17….located on fog line on highway 2…only a few services along this line
- All problems suspected/known:
    - Lagoon:
        - Excessive sludge accumulation.
        - Failed lagoon valves.
        - Discharge Permit Violations occur (BOD, TSS, e. Coli)
        - Degrading Lagoon Operating Control Valve Structures.
        - Security Fencing Needs to updated
        - Eroded embankments
        - H&S Study facilitated by DEQ released September 28, 2021
            - Primary Recommendations:
                - Prepare now for sludge removal from Cell # 1.
                - Add UVB to disinfect the effluent
                - Minimize the discharge of algae cells by pulling water a foot or two off the bottom of the discharge cell

        - Purchase a dissolved oxygen and pH meter and routinely record pH and DO, and water temperature
        - Quarterly perform intra-pond diagnostic BOD, TSS, Ammonia, and Nitrate to monitor the success of any changes.
    - High Level Treatment Upgrade considerations:
        - Do nothing
        - Remove sludge. All lagoon options would include. Different ways to do.
        - T-2 Lagoon Rehabilitation – batch discharging (Keep Same Size, Add UV System)
            - Line the lagoons
            - Reconstruct embankments (raise if needed based on flood plain elevations)
            - Add rip rap slope protection
            - Replace all lagoon piping/valves/structures
            - New disinfection system for discharging 1-2 times/year
        - T-3 Lagoon Rehabilitation – total retention system (Increase area, No UV System)
            - Increase/expand existing lagoons or add a new third cell
            - Line all the lagoons
            - Reconstruct embankments (raise if needed based on flood plain elevations)
            - Add rip rap slope protection
            - Replace all lagoon piping/valves/structures
            - No New disinfection system, but keep permit and discharging system for emergency discharge
        - T-4 Lagoon Retrofits– minor repairs (Keep Same Size, Add UV System)
            - Don't line
            - Add rip rap slope protection
            - Replace all lagoon piping/valves/structures
            - New disinfection system for discharging 1-2 times/year

- Lift Station
    - No backup power to the lift station site.
    - Corrosion and degradation concerns of the force main.
    - Corrosion Concerns in dry well
    - Confined space access and operator safety concerns.
    - No bypass piping system.
    - Alarm System Issues, outdated alarm system
    - End of useful design life.
    - Capacity and inflow impacts on lift station
    - Failure can cause backups in homes
    - Upgrade Options:
        - Do nothing or completely upgrade

        - More common to see conversion to submersible stations (no confined space), upgraded controls and call out alarms, reliable
    - Collection System
        - Mostly all clay – pending detailed review from all video/CCTV inspection
        - Reported that several manholes are severely degraded
            - MDT highway improvements are planned over some of these sections
        - Lift Station Log shows evidence of I/I in summer months. Pumps have hard time keeping up sometimes.
        - Upgrade Options:
            - Phased pipeline replacement/rehabilitation plan (Open Cut or CIPP)
            - Start with the worst sections
    - Schedule:
        - Get sewer video data and review
        - Keep working on sewer PER
        - Draft Alternatives/Costs Done – Feb/March 2022
        - Public hearings on PER findings - March/April 2022
        - Finish PER and Submit State Grant Applications – May 2022
        - Apply for RD Funding (To Be Determined) – Possibly August 2022
        - Apply for CDBG grant – October 2022
        - Award for MCEP/DNRC grant applications – May 2022
        - Startup ARPA grant – May 2022
        - Award for RD grant (to be determined)
        - Award for CDBG grant - ?
        - Start Design – July 2023
        - DEQ Approvals – Nov 2023
        - Bid - Jan 2024
- Town Action Requested:
    - GWE is requesting input on any major sewer issues including but not limited to:
        - Areas where sewer backups have/tend to occur
        - Location, information, and/or photos of the major manhole degradation
        - These and other sewer information marked on a planning map
        - Flooding impacts on sewer infrastructure? Lagoons, Inflows into sewer pipe, etc?
    - PER Startup Checklist Items (GWE will work with Dale and Kirsten)

Levees:

- Is Saco planning to address the levee deficiencies. The levee work is ARPA eligible so we could apply and try to get some funds to help make the improvements.

County Rod Section to be resurfaced. Has bad manholes..maybe bad pipes too?

LEGEND

- 8" SANITARY SEWER LINE (14,048 FT.)
- SANITARY SEWER SERVICE LINE
- SANITARY SEWER MANHOLE (58)
- FUTURE SANITARY SEWER LINE
- SEWER FORCE MAIN - 8" CAST IRON (1,070 FT.)

NOTE:

1. FUTURE SEWER LINES ARE PLANNED FOR THE EASTERN PORTION OF ORIGINAL TOWN SITE, NORTH OF FOURTH AVE AND EAST OF FIRST STREET.

BEAVER CREEK
U.S. HWY 2
FOURTH ST. W.
THIRD ST. W.
SECOND ST. W.
FIRST ST. W.
CHERRY ST.
MAPLE ST.
ELM ST.
WASHINGTON AVE.
CHESTNUT ST.
WILSON AVE.
WELLINGTON AVE.
WALNUT ST.
FIRST AVE.
VAGG ST.
BLUE ST.
MILLS ST.
NELSON ST.
STEVENS ST.
TAYLOR ST.
SECOND ST.
THIRD ST.
FIRST ST.
SECOND AVE.
THIRD AVE.
FOURTH AVE.
CONANT ST.
FRONT ST.
COUNTY RD.
MONTANA ST.
SHAW ST.
JORDAN ST.
RIDER ST.
LIFT STATION
FM
EXISTING LIFT STATION
EXISTING LAGOON (2 CELL FACULTATIVE/DISCHARGING) SEE FIG 02
7 8 18 17
NORTH
0 200 400
SCALE IN FEET

Figure 1
Existing Wastewater
Town of Saco

Town of Saco, Montana
Wastewater PER

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Y:\Shared\Helena Projects\1-21222-Saco On-Call 2021-2026\T02 - WW PER\CADD 1-21222-T002\Exhibits\1-21222-T02-FIG01.dwg

Saco Council Meeting – January 12, 2022

Great West Engineering

Wastewater Project

Update Completed by: Matt Mudd, PE (GWE)

Status:

- ARPA
    - Town can proceed with a scaled-down "Phase 1" project using only ARPA funds and start design work this year.
        - Recall how the July 2021 application was for a $2.7 mil. project using future applications to help fund the project
        - DNRC is allowing the Town to proceed with a $1.6 mil project using only ARPA grant funding
        - Phase 1 can focus on critical items and hold off on lagoon design until after the PER and state grant applications done
        - Phase 1 Scope: Lift Station Upgrades, Replace Pipe under the County Road (900 ft)
    - Town would still need to get the items done listed in the ARPA grant scope in the Phase 2 project
    - The ARPA project startup and contracting is in progress with DNRC
    - Had a startup call with DNRC on December 10th. Town was not able to attend.
    - **Town needs to sign the attached management plan**

- The Wastewater PER Research work is underway

- Sewer Cleaning Video work on a few thousand feet was done by Lakeside was done in December:
    - Work can be paid for under the Town's APRA direct treasury funds.
    - General observations/comments:
        - Big sag in the pipe under the railroad. (solution – new jack and bore pipe)
        - Poor pipe and manhole condition in the County Road
        - Poor condition and bad locations of pipe next to highway 2
    - GWE is doing a more detailed review of the video and will include in the PER

- GWE will attend the Saco February Meeting with Alternatives Costs Estimates:
    - Treatment Upgrade considerations:
        - Do nothing
        - Remove sludge. All lagoon options will include. Different ways to do.
        - T-2 Lagoon Rehabilitation – Keep batch discharging (Upgrade Slopes, Keep Same Size, Add UV System)
        - T-3 Lagoon Rehabilitation – total retention system (Increase lagoon area/new lagoon, No UV System)

    - Collection System

        - Phased Collection Improvement Plans – starting with most critical areas
    - Lift Station:
        - Install a completely new submersible packaged lift station and abandon the old problematic dry pit type station
    - Immediate Schedule:
        - Draft Alternatives/Costs Presented to Town – Feb and March 2022
        - Public hearings on PER findings - March/April 2022
        - Startup on Phase 1 Design Contracts – Feb/March 2022
        - Finish PER and Submit State Grant (DNRC/RRGL) Applications – May 2022
        - Start Phase 1 Design – March/April 2022

- Town Action Requested:
    - GWE is requesting input on any major sewer issues including but not limited to:
        - Areas where sewer backups have/tend to occur
        - Location, information, and/or photos of the major manhole degradation
        - These and other sewer information marked on a planning map
        - Flooding impacts on sewer infrastructure? Lagoons, Inflows into sewer pipe, etc?
        - **Start getting letters or statement of support for the project grant applications.**
    - PER Startup Checklist Items: Need list of outstanding sewer loans Town has
    - **Town to sign grant management plan**

County Rod Section to be resurfaced. Has bad manholes..maybe bad pipes too?

LEGEND

- 8" SANITARY SEWER LINE (14,048 FT.)
- SANITARY SEWER SERVICE LINE
- SANITARY SEWER MANHOLE (58)
- FUTURE SANITARY SEWER LINE
- SEWER FORCE MAIN - 8" CAST IRON (1,070 FT.)

NOTE:

1. FUTURE SEWER LINES ARE PLANNED FOR THE EASTERN PORTION OF ORIGINAL TOWN SITE, NORTH OF FOURTH AVE AND EAST OF FIRST STREET.

BEAVER CREEK
U.S. HWY 2
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CHERRY ST.
MAPLE ST.
ELM ST.
WASHINGTON AVE.
CHESTNUT ST.
WILSON AVE.
WELLINGTON AVE.
WALNUT ST.
FIRST AVE.
VAGG ST.
BLUE ST.
MILLS ST.
NELSON ST.
STEVENS ST.
TAYLOR ST.
SECOND ST.
THIRD ST.
FIRST ST.
SECOND AVE.
THIRD AVE.
FOURTH AVE.
CONANT ST.
FRONT ST.
COUNTY RD.
MONTANA ST.
SHAW ST.
JORDAN ST.
RIDER ST.
LIFT STATION
FM
EXISTING LIFT STATION
EXISTING LAGOON (2 CELL FACULTATIVE/DISCHARGING) SEE FIG 02
7 8 18 17
NORTH
0 200 400
SCALE IN FEET

Figure 1
Existing Wastewater
Town of Saco

Town of Saco, Montana
Wastewater PER

GreatWest ENGINEERING

Y:\Shared\Helena Projects\1-21222-Saco On-Call 2021-2026\T02 - WW PER\CADD 1-21222-T002\Exhibits\1-21222-T02-FIG01.dwg

Town of Saco
Wastewater System Improvements
ARPA Grant Management Plan

1. Administrative Structure

The Town of Saco is a Town with a Mayor and Council form of government. The persons identified in the attached ARPA Administrative Assignments Chart will have lead responsibility for administering the ARPA grant award for the Saco Wastewater System Improvements.

Wayne Woodall, as the Town of Saco's Mayor, will have responsibility for all official contacts with the Montana Department of Natural Resources and Conservation (DNRC). The Mayor and Council will have ultimate authority and responsibility for the management of project activities and expenditure of ARPA Water & Sewer Infrastructure funds. The approval of all contracts and request for reimbursements will be the responsibility of the Commission. See attached Administrative Assignments Chart for assignment and contact information.

Kirsten Albus, as the Town of Saco's chief Clerk/Grant Manager, will be responsible for management of, and record keeping for, the ARPA Water & Sewer Infrastructure funds and other funds involved in the financing of the Saco Wastewater System Improvements Project. See attached Administrative Assignments Chart for assignment and contact information.

LaNette Jones, as the Town of Saco's Grant Administrator, will be designated as Grant Administrator and be responsible for overall grant administration and assuring compliance with applicable federal and state requirements for the ARPA project. The Grant Administrator will serve as the Town of Saco's liaison with the Department for the project, ensure all grant administration tasks are completed. See attached Administrative Assignments Chart for assignment and contact information.

[Legal Counsel Name and Title], as the [Subrecipient Organization]'s legal counsel, will review and advise the [Chief Elected Official] and [Commission/Council/Board] regarding any proposed contractual agreements associated with the ARPA project and provide any other legal guidance as requested. See attached Administrative Assignments Chart for assignment and contact information.

Matt Mudd, PE, with Great West Engineering, will be responsible for construction-related activities including preparation of preliminary engineering, final design plans and specifications, and construction inspection. Contractor compliance, scheduling, and payment requests will also be subject to the Project Engineer's review and approval. See attached Administrative Assignments Chart for assignment and contact information.

2. Grant Administration

a. The Grant Administrator will be responsible the following:

i. Serving as the primary liaison between DNRC and all other project partners for the project (ensuring effective communication).
ii. Ensuring all grant administration tasks are completed.
iii. Ensuring compliance with any applicable environmental requirements.
iv. Assisting the subrecipient with all requirements related to effective project start-up and implementation and developing a contract with DNRC.

v. Preparing any legal notices required to be published, and processing and conducting any required public hearings or informational meetings.
vi. Establishing and maintaining complete and accurate project files and preparing all documentation and reports incidental to administration of the grant.
vii. In cooperation with the subrecipient Grant Manager, processing payment requests and preparing requests for reimbursement to DNRC, including the Request for Payment, Status of Funds Report, Invoice Tracking Spreadsheet and the Project Progress Report.
viii. Monitoring the contractor selection process, including the bid advertising, tabulation and award process, and construction contract provisions in conformance with applicable laws.
ix. Attending the preconstruction meetings.
x. Monitoring contractor compliance with applicable requirements.
xi. Assuring compliance with all state labor standards requirements. Responsibilities will include the review of weekly payroll reports to assure compliance with state prevailing wage requirements; periodic visits to the construction site to assure that required equal opportunity, labor standards, and prevailing wage determinations have been posted; and conducting on-site interviews with construction personnel to assure prevailing wage compliance.
xii. Assuring compliance with applicable equal opportunity requirements.
xiii. Preparing all required performance reports and project closeout documents for submittal to DNRC.

b. The Project Engineer (see assignment in attached chart) will be responsible for:

i. Design and construction engineering.
ii. Preparation of the construction bid package in conformance with applicable requirements and supervision of the bid advertising, tabulation, and award process, including the preparation of the advertisements for bid solicitation, conducting the bid opening, and issuance of the notice to proceed.
iii. Conducting the preconstruction conference, with the assistance of the Grant Manager.
iv. Supervision of construction work and preparation of inspection reports.
v. Reviewing and approving all contractor requests for payment and submitting the approved requests to the subrecipient.
vi. Attending subrecipient leadership's meetings (e.g., Commission Meetings) to provide project status reports and representing the ARPA project at any other public meetings, as deemed necessary.

3. Financial Management

a. The subrecipient Clerk/Grant Manager's (see assignment in attached chart) responsibilities will be as follows:

i. Reviewing all proposed project expenditures or requests for payment to ensure their propriety and proper allocation of expenditures to the ARPA budget.
ii. Managing the transfer of ARPA funds from DNRC to the subrecipient's bank account and disbursing ARPA funds based on claims and supporting documents approved by the grant manager, project engineer, and contractor.

iii. Entering all project transactions into the subrecipient's existing accounting system and preparing checks/warrants for approved expenditures.
iv. Receiving official project complaints and ensuring that complaints are reasonably addressed in a timely manner.
v. With the assistance of the Grant Administrator, reviewing the final financial reports for project closeout.

b. The Grant Administrator and subrecipient Clerk/Grant Manager will review all proposed expenditures of ARPA funds and prepare requests for reimbursement, which will be signed by the official(s) cited in the signatory form. All disbursements will be handled in accordance with the subrecipient's established claim review procedures. Before submitting the claim to the Clerk/Grant Manager. The Project and Funding Authority will review all claims before approving them.

c. Financial record keeping will be done in conformance with state law. The original financial documents (claims with attached supporting material) will be retained in the subrecipient's offices.

d. Appropriate documentation of administrative costs will be maintained by the Grant Administrator and the Clerk/Grant Manager to document all time worked on the ARPA project that will be compensated with ARPA funds.

This management plan has been approved by the subrecipient organization. The individuals named within have been informed of the responsibilities stated within this plan.

Subrecipient Organization Designee

Name (Printed): Kirsten Albus

Title: Clerk/Grant Manager

Signature: _____ Date: _____

ARPA Water & Sewer Infrastructure Grant Program

ADMINISTRATIVE ASSIGNMENTS CHART

Subrecipient Role	Description of Duties	Name	Title	Email	Phone Number
Grant Administrator	• DNRC's main contact for the grant. Serves as the liaison between DNRC and project partners for the ARPA project. • Responsible for overall grant administration and assuring compliance with applicable federal and state requirements for the ARPA project.	LaNette Jones	Grant Administrator	ljones@greatwesteng.com	(406) 207-7682
Project and Funding Authority (elected official, board, etc.)	• Responsible for all official contacts with DNRC. • Has ultimate authority and responsibility for project management and the expenditure of ARPA funds. • Responsible for the approval of all contracts and requests for reimbursement.	Clint Simpson	Mayor	townsaco@nemont.net	(406) 527-3312
Clerk/ Grant Manager	• Responsible for the management of, and record keeping for, the ARPA funds and other funds involved in the financing of the ARPA project. • Submits all forms in Submittable throughout project period, ensures information is updated.	Kirsten Albus	Clerk/Grant Manager	townsaco@nemont.net	(406) 527-3312
Legal Counsel	• Reviews and advises the subrecipient leadership regarding any proposed contractual agreements associated with the ARPA project and provides other legal guidance as requested.				
Project Engineer	• Responsible for construction-related activities including preparation of	Matt Mudd	PE	mmudd@greatwesteng.com	(406) 495-6196

	preliminary engineering, final design plans and specifications, as well as construction inspection. • Contractor compliance, scheduling, and payment requests will also be subject to the Project Engineer's review and approval.				

Saco Council Meeting – March 9, 2022

Great West Engineering

Wastewater Project Updates

Status:

- Phase 1 Wastewater Project
    - DNRC is allowing the Town to proceed with a $1.6 mil (phase 1) project using only ARPA grant funding
        - Phase 1 Scope: Lift Station Upgrades, Replace Pipe under the County Road (950 ft)
        - Town would still need to get the items done listed in the ARPA competitive grant scope (lagoon improvements) in the Phase 2 project
    - The ARPA project startup and contracting for Phase 1 is in progress with DNRC
    - GWE performed site survey (shared trip with Malta Project)

- Wastewater Preliminary Engineering Report (PER)
    - Reminder of what a PER is and why required
    - Problem Definition Review (See Attached)
    - Sewer Cleaning/Video work (completed and upcoming)

- Potential Project Alternatives (Phase 2 Project):
    - Collection Upgrade considerations:
        - C-3: Phase 2 Collection System Improvements (Est. Cost=1.15 Mil.)
            - Total project costs include const, contingency, inflation to 2024, engineering, permitting
            - Highway and RR Crossing, 1,800 feet of new pipes, manholes, service reconnections

    - Treatment Upgrade considerations:
        - Screened out: mechanical treatment, storage and irrigation system
        - T-1: Do nothing
        - T-2: Lagoon Reconstruction w/ UV Disinfection (Est. Cost =$2.6 mil)
            - Remove sludge, earthwork, reconstruct lagoons, rip rap piping, structures, UV building, fencing, power
            - O&M increase=+/-$4,000 year (power, maintenance, testing, etc)
        - T-3: Total retention system (Est. Cost=$3 mil)
            - New lagoon cell adjacent to existing (7.5-8 acres water area) Land acquisition needed
            - Remove sludge, earthwork, reconstruct lagoons, rip rap piping, structures, fencing
            - No O&M increase, no power, no discharge needed

- Draft Funding Scenario and Rate Impacts
    - Target Sewer Rate (MHI $42,500, Target=$81.46,LMI=55%) Ex sewer/water combined=$80

  - $4.15 mil. project
  - Funding: MCEP, DNRC, CDBG, RD

- Schedule:
  - Public hearings on PER findings - April 2022
  - Startup/Contracting on Phase 1 Design – March/April 2022
  - Finish PER and Submit State Grant (DNRC/RRGL) Applications – May 2022
  - Start Phase 1 Design – April 2022
  - Federal Grant Application – Fall 2022

- Grant Application Services and Fees

- Rural Water and GWE Dinner (WASACT Training)

- Town website: www.sacoinfrastructure.com

- Town Action Requested:
  - GWE is requesting input on any major sewer issues including but not limited to:
    - Determine "Project" to apply for
    - Determine public hearing date/location
    - Letters or statement of support for the project grant applications. (or statement confirming problems)

Saco Wastewater PER
Problem Summary

Treatment System

- Discharge Permit Violations. The lagoons are not meeting MPDES discharge permit effluent limits, and the Town regularly receives violations for TSS, BOD and E.coli when discharging. Both the Beaver Creek-Nelson South Canal (watershed 100500140704) and the downstream Milk River-Dry Stinky Creek (watershed 100500042101), as listed on the EPA source (https://mywaterway.epa.gov/community), are impaired for nutrients, metals and flows.

- Excessive sludge accumulation. Sludge has never been removed (over 60 years of accumulation) from both of the existing lagoons and is visible from the surface of the lagoons in both cells. The lagoon sludge needs to be removed to allow for sufficient treatment capacity and improved discharged water quality of the treatment system. There is 10,000 to 15,000 cubic yards of in-situ (wet) sludge is needed to be removed from each cell, then dewatered and legally disposed of using DEQ and EPA 503 criteria. Sludge removal is also one of the top priorities recommended the wastewater system by the DEQ study. Up to 70% of the treatment volume has been observed to be occupied by sludge. A small water cap creates diminished treatment capacity and creates noticeable odor, leaves no room for sufficient settling, and creates problems for BOD and TSS removal.

- Failed lagoon valves and degrading structures. The lagoon control valve structures have failed, and the system is stuck in parallel lagoon operation mode where raw wastewater is split into both cells, as opposed to in-series. This operation mode, in addition to the excessive sludge, does not permit optimal treatment and detention time of the wastewater to meet the Town's discharge permit requirements. Insufficiently treated wastewater will continue to negatively impact the receiving waters and the Town will continue to receive discharge permit violations for water quality. The concrete structures are subject to corrosion and degradation to the point of the reinforcement being exposed.

- Security Fencing not Sufficient. The lagoon and lift station sites are not surrounded by sufficient security fencing to protect the public from any safety hazards and prevent any tampering of the facility. There is no fencing around the lift station and the fencing around the lagoons is delipidated and requires replacement. The fencing at the lagoon is also not sufficient to prevent game from jumping over and into the site.

Lift Station

- Power to the lift station site. There is currently no permanent emergency backup power provided. The Town presently transports their temporary trailer-mounted backup generator to operate the lift station during power outages. With power outages and delayed response time, the wet well levels are subject to causing sewer overflows (SSOs). SSOs create a risk for both the general public and the operations staff to have direct contact with raw sewer. According to an email from Northwestern Energy distribution planning engineer, Amerlyn Walsh, the lift station site (premise 32143) has an average of 4-5 outages per year with an average "maximum minutes out" of 271 minutes (range 86 to 867 minutes)
- Corrosion Concerns. The metal piping, fittings, and steel dry well enclosure are susceptible to corrosion from within the humid subsurface dry well space, and externally given the corrosive nature typical of the Milk River area soils. The concrete wet well is also susceptible to H_2S corrosion from within the wet well. If these conditions are left unaddressed then infiltration and ultimate failure will develop in both the wet well and dry well. Exfiltration potential contamination of the groundwater also poses risk of corrosion degradation in the wet well.
- Lacking Force Main Isolation Valve. The force main lacks functioning isolation valves. Valves are required to provide lift station isolation to prevent backflow into the dry well area to allow replacement and maintenance of the pumps and fittings.
- No bypass piping system. The lift station does not currently have a bypass pumping connection to be able to direct flows around the existing wet well if servicing of the existing wet well is needed. To work in the existing wet well for longer durations, the sewer needs to be "backed-up" into the existing collection system and/or a pumper truck is required to bypass the system. Both of these options are costly and have a high risk of causing SSOs into the collection system.
- Alarm System Issues. No Automated Emergency Notification. The lift station does not have a permanent emergency auto dialer call-out system to notify the owners and operators in the event of an emergency situation. The alarm relies entirely on the periodic visits by the operator and reports from the nearby homeowner to call the Town when the lift station is off. This is also problematic given there is no backup power available. If a pump or power failure occurs while this resident is not home for an extended period, or if

this resident moves out, then the lift station and sewer lines will fill and overflow upstream collection pipes. The current situation of a homeowner reporting issues is not a reliable alarm system.

- End of useful design life. The lift station is operating beyond the end of its useful life typical for lift stations. Future leaks or ruptures could result in repeated pump failures within the dry well space.
- Capacity and inflow impacts on lift station. The Town reports that the lift station is unable to keep up with flows during high rainfall and runoff events. The collection system is susceptible to high infiltration creating very high peak instantaneous flows at the lift station. While collection system improvements are needed to reduce the impacts of I/I, new lift station pumps that will sufficiently handle the peak flow events and offer buffer capacity will need to be considered.
- Confined space access and operator safety concerns. The existing lift station drywell is a very small and tight space (24" entry tube with a 48" base section), below-ground confined access space. Because of the small interior space, it is very difficult to operate and/or control the pumps properly or to perform routine maintenance. Moving equipment parts, entanglements, slips, and falls from the ladder are all concerns. It is also possible for toxic fumes and gasses to accumulate in the dry well. The operators are working in hazardous conditions and must ensure they always follow the confined space entry protocols. Confined space entry requires planning to arrange for repairs and maintenance coordinated with installers. It is Great West Engineering's experience that many pump repair companies will not enter these types of lift stations anymore due to the nature of the confined space risks.

Collection System

- Several sections of the old clay collection piping and manholes are in a deteriorating and corroding state. The existing clay pipes are demonstrated to be sagging, cracked, or with significant root intrusion. This is confirmed by video inspection, sewer cleaning reports, maintenance logs, and site reconnaissance investigations.
- Sanitary Sewer Overflows SSO's have been documented to occur in over [we need a list from the Town]. The occurrences of SSOs presents a very serious public health and safety issue. Because of direct human contact with raw sewage, these occurrences present the

possibility of not only acute illness from bacterial and viral pathogens, but also potential chronic illness from recurring exposure to potential organic (volatile organics, endocrine disruptors, pharmaceutical products) and inorganic (heavy metals) contaminants.

- This PER determined that Infiltration and Inflow (I/I) flows contributes over 30% of total sewer system flows on an annual average basis. The sewer system experiences a direct response to rain events.

Work session 3/28/22

Talking points for work session with Saco

- Scope and cost of Phase 1 contract
    - Lift station and pipe
    - No more confined space
- Backup power supply for the lift station
- Grant application contract Amendment
- Contaminated soils in HWY 243
- Problems that help make Saco competitive
    - Video footage of pipe condition
    - Permit violations
    - Sludge
    - Lagoon pipe and condition (internal/external freeboard), eroding banks
    - Upcoming flood plain mapping
    - Need documentation of where/how many sewer overflows occur. Need statements from impacted users. This is very important to make the project competitive. **Documentation.**
- Potential scope/cost of Phase 2 project for state grant applications
    - Pipe improvements – potential reduction in length to save costs
    - Storage and irrigation option, DEQ standards and concerns
    - Lagoon Improvements and UV System
    - Phase 2 Option 1 – Total Retention System with 1200' of collection pipe replaced
        - $4.15 mil. Total Project
        - $2.939 in grants (MCEP, CDBG, RD)
        - $15-20 rate increase for loan, no O&M increase
    - Phase 2 Option 2 – Total Retention System with 1000' feet of collection pipe replaced
        - $3.85 mil. Total Project
        - $2.406 in grants(MCEP, CDBG, RD)
        - $10-12 increase, no O&M increase
    - Phase 2 Option 3 – Lagoon Upgrade w/ UV System with 1000' of collection pipe replaced
        - 3.455 mil project
        - $2.229 in grants(MCEP, CDBG, RD)
        - $6-9 increase, some O&M increase
- Eligibility of Grant
    - Target Rate and Current Rate

-

Saco - Sewer Overflow Map
Locations of Documented Sewer Overflows
Legend
SSOs -
Chestnut St
SSOs - 602 Wellington
Walnut St
St Francis Assisi Church
Wilson Ave
SSOs - 204 1st St. W.
Taylor St
Mill St
Vagg St
United States Postal Service
Saco
Saco
SSOs - United Methodist Church
SSOs - 114 3rd St
Taylor St
Saco Mercantile
SSOs - 511 4th Ave
Conoco
Bitter Creek Pipelines
Saco LS
SSOs - 222 Jordan St
Taylor St
Larb Creek Rd
Google Earth
N
1000 ft

APPENDIX K

DEQ Inspections

Matthew Mudd

From: Marsh, Michele <MMarsh@mt.gov>
Sent: Thursday, July 8, 2021 1:17 PM
To: Matthew Mudd; Abrahamson, Michael
Subject: RE: Saco Wastewater System Information
Attachments: SacoInspect2000.pdf

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

There isn't a 2008 inspection report in the file. Attached is a scan of the 2000 inspection report by Bill that I found in the file. I found a note in the file that I left a message for the operator in June of 2019, trying to set up an inspection with the operator, but he didn't call me back.

Michele Marsh, PE
Environmental Engineer
Engineering Bureau, Water Quality Division
MT Department of Environmental Quality
(406) 444-5322

From: Matthew Mudd <mmudd@greatwesteng.com>
Sent: Thursday, July 08, 2021 9:33 AM
To: Abrahamson, Michael <MAbrahamson@mt.gov>
Cc: Marsh, Michele <MMarsh@mt.gov>
Subject: [EXTERNAL] RE: Saco Wastewater System Information

Thats fine. They wanted to do an arpa app, with the understanding we will do a per to follow. Thanks Mike

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: "Abrahamson, Michael" <MAbrahamson@mt.gov>
Date: 7/8/21 9:07 AM (GMT-07:00)
To: Matthew Mudd <mmudd@greatwesteng.com>
Cc: "Marsh, Michele" <MMarsh@mt.gov>
Subject: RE: Saco Wastewater System Information

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hey Matt,

I can check if there is a hard copy of the report in the O&M inspection file. It looks like we last visited that site in 2008. Michele is scheduled to do an inspection this year and Steve Harris is going do an assessment as well. I know that doesn't help you meet a July 15th deadline.

Mike

From: Matthew Mudd <mmudd@greatwesteng.com>
Sent: Thursday, July 08, 2021 7:06 AM
To: Abrahamson, Michael <MAbrahamson@mt.gov>
Subject: [EXTERNAL] Saco Wastewater System Information

Hi Mike:

I have a question/favor to ask if by chance the information is readily available to you. Do you have any records of the Saco system for any technical or compliance inspections on their wastewater system? We were just recently hired and they want to make an 11th hour ARPA application for some pressing know issues. At this time, we have to rely on operator feedback. We spoke on the phone yesterday and it sounds like DEQ is coming out there in August, but for now, do you have a past file for them?

Your assistance is appreciated.

Thanks,

GreatWest ENGINEERING
[greatwesteng.com]

[greatwesteng.com]
[facebook.com]
[instagram.com]
[linkedin.com]

Matthew Mudd, PE
Project Manager

d: (406) 495-6196
c: (406) 490-3909

Montana Department of
ENVIRONMENTAL QUALITY
Marc Racicot, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • E-mail: www.deq.state.mt.us

July 26, 2000

David Dopp, Mayor
110 Nelson
PO Box 330
Saco, MT 59261

R.E.: Inspection of Wastewater Treatment System

Honorable Mayor Dopp:

On April 26, 2000 I inspected the wastewater treatment system serving the Town of Saco and performed a cursory user charge review of the wastewater system budget. Express my gratitude to Kori Pray, Clerk, and Les Schaaf, PWS, for their assistance during these inspections. I was interested in following up on an inspection conducted in 1994 that identified a variety of problems with the lagoons. I am pleased to report that the public works staff has accomplished a number of the improvements necessary for the system to continue to function well.

In particular, cattail growth had inundated the cells in the past years; however, they have nearly been eradicated from inside the cells. The lagoon system will provide better treatment with the cells open and there will fewer scum mat problems without the weed and cattail growths to support them.

The lagoon hydraulic structures have been repaired and cleaned, the outfall pipe has been unplugged and the flow measurement structure has been improved. The access road is gravelled, so equipment can be brought to the cells for weed and dike maintenance. There are plans to have the lift station pumps rebuilt. While you have not established a Repair & Replacement Fund for system equipment, the community has raised rates to $8.00/month to provide the income necessary to pay for wastewater system costs. The operators check the lift station daily to see that the bubbler level control system works and that the alarm conditions are normal.

If you have any questions about this report, contact me at 444-5337.

Sincerely,

Earl William Bahr
Environmental Specialist

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL & FINANCIAL ASSISTANCE BUREAU FACULTATIVE LAGOON INSPECTION FORM

A. General Information

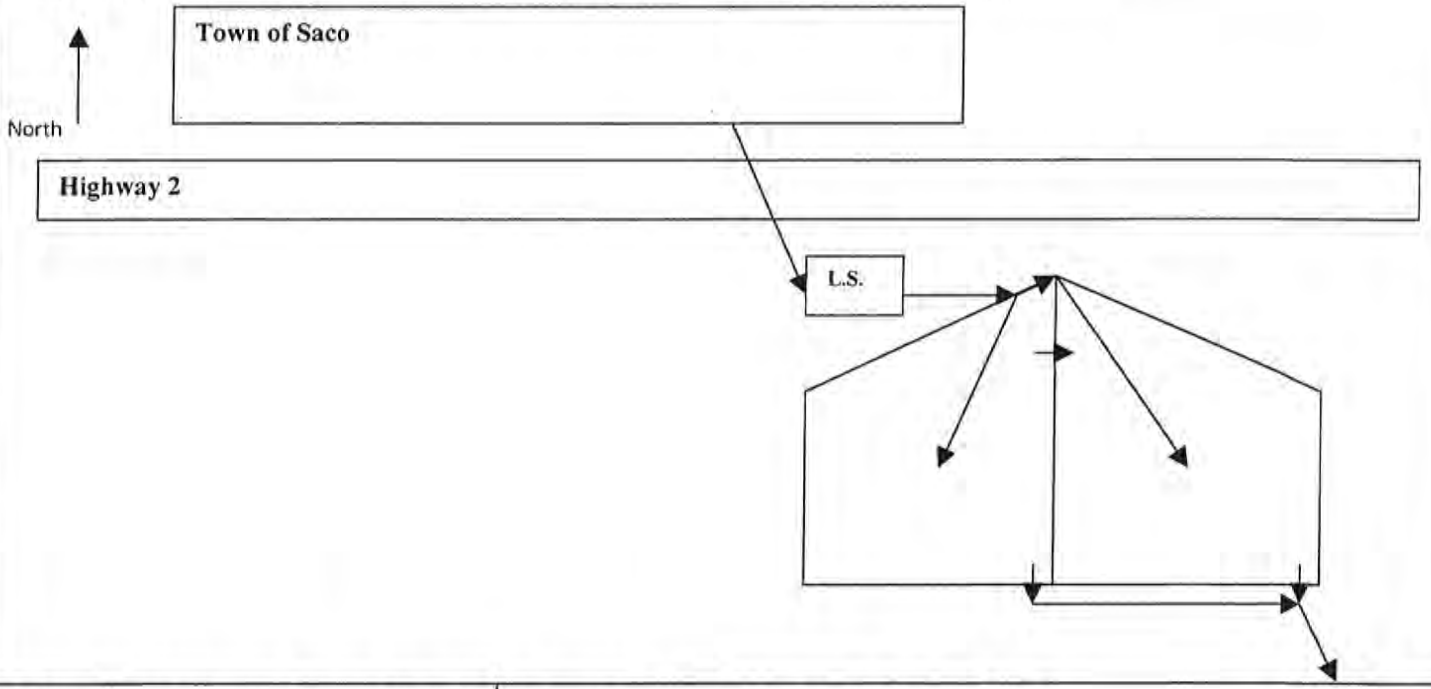
Inspection Date 4/26/2000

1. Location: **Saco**	2. Facility Type: **Fac. Lagoon**	3. Owner: **Town of Saco**
4. Owner Address: **PO Box 330 Saco, MT 59261-0242**	5. Owner Phone #: **527-3312**	6. Contact: **Les Schaaf**
	7. Facility Phone #: **527-3317 Cell: 654-4104**	8. MPDES Permit #: **MT-G580012**
9. Design Engineer	10. Average Design Flow: **0.067mgd**	11. Peak Design Flow:
12. Design Population Equivalent: **490**	13. Collection System Type: **WWtr** Combined ___ Separate **X** Both ___	14. Date Plant Began Operation: **1959**
15. Type of System: **X** Discharging ___ Non-discharging	16. Number of Cells: **2**	17. Dimensions of Each Cell: **@400x250 Irr**
18. Total Surface Area: **4.92** Acres	19. Total Volume: **1.0 M** Cubic Feet = **7.5MG Tot Vol or 4.5MG Trt Vol (2' sludge)**	
20. Population served: **180**	21. Ann Ave Daily Flow (MGD): **0.023** **'94 data show @ 130gpcd**	22. Peak Flow (MGD) Dry Weather ___ Wet Weather ___
23. Annual Average BOD_5 of Influent	24. Annual Average TSS of Influent	25. Principal Types of Industrial Waste Received
26. Det Time (Design) **112** Days **(Tot Vol)**	27. Det Time (Act) **196** Days **(Trt Vol)**	28. Average Operating Depth **5** Feet
29. Design BOD_5 Loading (lbs/day): **98**	30. Actual BOD_5 Loading (Actual) : **36**	31. Actual TSS Loading (lbs/day): **40**
32. Population Equivalent (BOD) of Industrial Waste	33. Population Equivalent (TSS) of Industrial Waste	34. Volume of Industrial Waste (MGD)

35. Infiltration/Inflow Problems: **Town contracts to have collection system cleaned and surveyed over a period of 3-5 years.**

No significant problems noted with collection system or I/I.

36. In the space below draw a plant flow diagram, or provide a written description of the plant unit processes.



37. Identify receiving waters: **Beaver Creek to Milk River**	38. Identify pertinent stream standards or uses: **B-3**

B. Plant Performance

1. Operation and Maintenance			
I. Operations ___ Dual Feed ___ Generator _X_ None	1. Plant or lift station alternate electric power source?	2. Adequate alarm system for power or equipment failure? _X_ Yes ___ No	3. Is plant effluent being chlorinated? **No**
4. Does sewage by-pass plant in wet weather? ___ Yes _X_ No	5. Does sewage by-pass plant in dry weather? ___ Yes _X_ No	6. Agencies notified of each by-pass?	
7. By-pass frequency:	8. Average duration of by-pass: _____ hours	9. Reason for by-passing:	10. Can by-pass sewage be chlorinated? ___ Yes ___ No
11. Disinfection type	12. Number of Disinfection Units	13. Disinfection Required: ___ Yes _X_ No	
14. Do sewer overflows occur upstream of plant? ___ Yes ___ No		15. Any odor complaints beyond plant property? (If Yes, explain) ___ Yes ___ No	
16. Observed appearance of effluent, receiving stream or drainage way: **Greenish, no objectionable odor.**			
17. Does plant receive industrial waste? ___ Yes _X_ No	18. Does industrial waste cause plant or process upsets? ___ Yes ___ No	19. Describe main difficulties caused by industrial wastes.	
20. Any reports of ground water contamination from pond? (If Yes, give details) ___ Yes _X_ No			
21. Adequate depth control _X_ Yes ___ No	22. Discharge is? ___ Continuous ___ Intermittent _X_ Seasonal ___ None		
23. Type of Flow measurement? ___ Auto _X_ Manual **Rectangular weir**			

II. Maintenance: 1. Are the following documents kept at the plant? **N/A** i. Plant Operations and Maintenance Manual? ___ Yes _X_ No ii. As Built Plans and Specifications _X_ Yes ___ No iii. Manufacturers O&M Specifications _X_ Yes ___ No iv. Flow Charts ___ Yes _X_ No			2. Is a consulting engineer retained or available for consultation on operating and maintenance problems? ___ Yes ___ No **N/A** (If Yes, check one of the following) ___ Continuing contract basis ___ Request basis only		
3. Equipment program	Adequate		4. Operations and Maintenance Annual Budget **N/A**		
	Yes	No	Salaries/Wages $_____	Electricity $_____	
i. Routine Maintenance Schedule	X		Staff Training $_____	Chemicals $_____	
ii. Records of Maintenance and Repairs/Replace **N/A**			Maintenance $_____	Other $_____	
iii. Spare Parts Inventory **N/A**			TOTAL O & M BUDGET $_____ Estimated Revenues $_____ Monthly User Cost $ 8.00 **Some from water/No R&R**		
5. Grounds: a. Weeds/vegetation in ponds removed? **Partially. Cattails nearly gone since 1994.**	b. Banks/dikes maintained? _X_ Yes ___ No		c. Seepage Reported? ___ Yes _X_ No		
COMMENTS ON O&M PRACTICES: **System is getting attention it needs. Much improvement since '94: Cattails almost gone.**					
Road to lagoon is gravelled and built up. Dikes are in good shape. Staff has done a lot of maintenance and it shows.					

C. Unit Process Visual Observations

RATING CODES: S = SATISFACTORY; U = UNSATISFACTORY; M = MARGINAL; IN = IN OPERATION; OUT = OUT OF OPERATION

Condition or Appearance	Rating	Comments
General: Grounds	S	Well-kept
Buildings		
Potable Water Supply Protection		
Safety Features		
Bypasses		
Storm Water Overflows		
Preliminary: Pump Station	S	Safety warning sign; pumps to be rebuilt
Ventilation	S	Cantex station - adequate ventilation
Bar Screen		
Disposal of Screenings		
Comminutor		
Grit Chamber		
Disposal of Grit		
Secondary: (List items as required)		
Dikes	S	Good condition; access road helps with weed control
Hydraulic Structures	S	Replaced cross-over pipe; repaired & cleaned valves
Fencing/Signs	S	Warning signs in place, gate locked, woven wire w/ barbed
Flow Measurement	S	Replaced boards w/ plastic pipe; cleared discharge pipe
Process Flexibility	S	Can use either or both cells; some level control; seasonal discharge
Chlorination: Effluent		
Chlorinators		
Effective Dosage		
Contact Time		
Contact Tank		

D. Plant Personnel Inventory

Personnel Classification	Employment				Certification		Training Required Next 2 Months	
					Voluntary			
					Mandatory	4C		
	Actual		Number Budgeted	No. Re-commended	No. Recommended or required by State	Actual No. Certified	New Hires	Upgrade (promotion or skill improve-ment)
	Man-hours per week	Number						
1. Management/Supervisor								
2. Operator					1	2		
3. Laboratory/Testing								
4.Laboratory/Recordkeeping								
5. Maintenance								
6. Other Plant Workers								
7. Other Office/Clerical								
8. TOTAL					1	2		

E. Previous Inspection Data

1. Compliance Schedule in Effect? __ Yes _X_ No	2. Compliance Date:
3. Compliance Problems in Last 12 Month? __ Yes __ No (If Yes, explain below)	
4. Corrective Actions Required / Deficiencies Noted During Inspection:	
5. Actions Taken / Deficiencies Resolved? __ Yes __ No (If No, explain below)	

F. Notations by Evaluator

Operation and Maintenance Problems/Deficiencies
(Check each of the following items in terms of their estimated impact on the performance of the plant)

Item	Major	Minor	None	Item	Major	Minor	None
Staff Complement				Overloads (type)			
Personnel Training				Hydraulic			
Operating Budget				Periodic			
Instrumentation				Continuous			
Industrial Waste				Organic			
Plant Obsolescence				Periodic			
				Continuous			
Equipment Failure:				Overload Cause(s):			
Treatment Process				Infiltration			
				Combined Sewers			
Equipment Maintenance				Industrial Growth			
Spare Parts Inventory				Rapid Population Growth			
Power Failure				Increased Service Area			
Additional Limiting Factors:							

Describe briefly the major problems on the problems/deficiencies checklist: **None**

G. General Comments and Assessment

1. Purpose of Inspection ___ Grant Compliance ___ Permit Compliance X O&M Inspection ___ Other			
2. General Rating X Acceptable ___ Conditional Acceptance ___ Unacceptable			
3. Evaluation Performed by:	Title	Organization	Date
Bill Bahr	**Environmental Spec.**	**DEQ**	**4/26/2000**
4. Information Provided by:	Title	Organization	Date
Les Schaaf	**PWS**	**Town of Saco**	**4/26/2000**
Kori Pray	**Town Clerk**	**Town of Saco**	**4/26/2000**

5. General Comments, Recommendations, or Actions to be Taken: **None recommended at this time.**

DEQ
Montana Department of Environmental Quality

* How often to Discharge

* How will the conditions be met Going forward

*

May 25, 2021

VIOLATION LETTER

The Honorable Craig Robinson
Town of Saco
110 Nelson
Saco, MT 59261

RE: Compliance Evaluation Inspection Report for Town of Saco, Montana Pollutant Discharge Elimination System (MPDES) Permit Authorization #MTG580012: Town of Saco WWTF

Dear Mayor Craig Robinson:

The Department of Environmental Quality (DEQ) conducted a compliance evaluation inspection (CEI) for Town of Saco, MPDES Permit Authorization #MTG580012: Town of Saco WWTF, located in Saco, Montana, on April 29, 2021. Please review the enclosed inspection report for detailed information about the inspection.

Based on the findings in the inspection report, DEQ is requiring the following information be submitted:

1.) A written explanation detailing how Town of Saco has corrected each of the lettered findings (a to i) in the Records Review section of the inspection report.

Please submit the written responses by June 25, 2021. The written responses can be submitted electronically through your **FACTS** account. If you do not have a **FACTS** account, please contact Gina Self with the MPDES Data Management Team at (406) 444-5388 or Gself@mt.gov. Alternatively, the written responses can be mailed to: Montana Department of Environmental Quality, MPDES Data Management Team, PO Box 200901, Helena, MT 59620-0901, Attn: Dan Freeland.

The written explanations are required to address the following violations and return to compliance:

- Failure to maintain monitoring records is a violation section 75-5-605(1)(b) of Montana Code Annotated (MCA), section 17.30.1342(1) of the Administrative Rules of Montana (ARM), and Part IV.K of the General Permit for Domestic Sewage Treatment Lagoons – Batch Dischargers (General Permit) and MPDES Permit Authorization MTG580012.
- Failure to conduct inspections is a violation of section 75-5-605(1)(b) of MCA, section 17.30.1342(1) of ARM, and Part III.A.4 of the General Permit and MPDES Permit Authorization MTG580012.
- Failure to monitor flow rates at the required frequency is a violation of section 75-5-605(1)(b) of MCA, section 17.30.1342(1) of ARM, and Part III.A.4 of the General Permit and MPDES Permit Authorization MTG580012. 3 X wk
- Failure to properly report analytical data is a violation of section 75-5-605(1)(b) of MCA, section 17.30.1342(1) of ARM, and Part IV.S of the General Permit and MPDES Permit Authorization MTG580012.
- Failure to notify DEQ of signatory changes is a violation of section 75-5-605(1)(b) of MCA, section 17.30.1342(1) of ARM, and Part IV.O of the General Permit and MPDES Permit Authorization MTG580012.

This letter is intended to inform Town of Saco of violations of the Montana Water Quality Act so appropriate steps can be taken to return to compliance. Failure to comply with the timeframes listed in this letter can result in

additional enforcement action. If you cannot meet the defined timeframes to complete corrective actions, please contact me immediately upon receipt of this letter. Per Section 75-5-516(2) MCA, this letter will result in the loss of your eligibility for a 25% reduction in your annual fee.

If there are any questions, please contact me at (406) 256-7655.

Sincerely,

Dan Freeland
Compliance Inspector
Compliance, Training, and Technical Assistance
Water Quality Division
Montana Department of Environmental Quality
dfreeland@mt.gov

Enclosures: 3560 Form, Inspection Report, Photo Report, Attachment A
cc: FACTS

MPDES 3560 Compliance Inspection Report

DEQ MONTANA

Section A: Facility and Contact Information

MPDES # / Programmatic ID: MTG580012
MPDES Permit Type: Domestic Lagoon (Batch)
Facility / Project Name: Town of Saco WWTF
Address / Location: 1/2 Mile Southeast of Saco
Latitude and Longitude: 48.45253, -107.33603
Facility Site Contact (Permittee): The Honorable Craig Robinson, Mayor
Mailing Address: 110 Nelson
City, State, Zip Code: Saco, MT 59261
Phone / Email: (406) 654-4395 / townsaco@nemont.net
SIC Code: 4952 - Sewrage Systems

Section B: Compliance Inspection Information

Compliance Monitoring Activity Name: Town of Saco WWTF
Program: NPDES - Base Program (Limits, Reporting, Schedule)
Compliance Monitoring Type: Evaluation
MPDES # / Programmatic ID: MTG580012

Complaince Monitoring Date(s):	Compliance Monitoring Reason:	Compliance Monitoring Agency Type / Name:
Actual Start: 04/29/2021 Actual End: 04/29/2021	Core Program	State / MT DEQ

Compliance Monitoring Details:		Compliance Monitoring Information:	
Did EPA Assist?	No	Number of Days Conducting Activity?	1
State, Federal, or Joint Inspection?	State	Number of Hours Conducting the Activity?	2
Purpose of the Other Party?	State	Compliance Monitoring Action Outcome?	Not Immediately Corrected
Which Party was the Lead?	State	Compliance Monitoring Code?	Unsatisfactory
Government Contacts: Dan Freeland		Written Response Due Date: 6/25/2021	

Section C: Compliance Inspection Outcome

MPDES # / Programmatic ID: NTG580012
Violations Identified: Yes

Violation Code: B0012 - Failure to Conduct Inspections **Single Event Violation Date:** 04/29/2021 **Violation Code:** B0041 - Failure to Maintain Records **Single Event Violation Date:** 04/29/2021 **Violation Code:** C0015 - Frequency of Sampling Violation **Single Event Violation Date:** 04/29/2021 **Violation Code:** E0017- Failure to Notify **Single Event Violation Date:** 04/29/2021	**Violation Code:** E0013- Improper/ Incorrect Reporting **Single Event Violation Date:** 04/29/2021

Section D: Signatory

Name and Signature of Inspector Dan Freeland	Date 5/24/2021
Name and Signature of Inspector	Date Click or tap to enter a date.
Name and Signature of QA Inspector / Manager C.S	Date 5/24/2021

Montana Department of Environmental Quality
Water Quality Division
Compliance, Training, and Technical Assistance
Phone (406) 444-5546

INSPECTION REPORT

Entry/Introduction

The Compliance Evaluation Inspection (CEI) of the Saco wastewater treatment facility was completed on April 29, 2021, from 1:15 p.m. until 2:45 p.m. The following personnel were in attendance during the CEI: Mayor of the Town of Saco, Craig Robinson, Dale Plouffe, Wastewater Superintendent, Joe Brookie, Operator in Training, and Dan Freeland – Montana Department of Environmental Quality (DEQ) Compliance Inspector.

The Town of Saco (town) operates a two-celled facultative lagoon wastewater treatment facility (facility). The two cells are operated in a series. Each cell is about 2.5 acres in size with a designed average flow rate or 0.015 MGD. Discharge from the facility occurs once a year. The next planned discharge will be in May or June 2021. There is one lift station located about 1000 feet to the west of the lagoons located on the access road to the lagoons. There are two pumps in the lift station which are checked daily and run ties of each pump is documented. Outfall 001 is located south of the Cell #2 and discharges into Beaver Creek. A rectangular weir located in a manhole near the outfall is used to measure the flow rate at the outfall.

There are no current planned upgrades to the facility, but riprap is being added to the inside of the lagoon banks to help control erosion. The north bank on Cell #2 was recently repaired due to deteriorating conditions from erosion. The facility is scheduled to meet with a representative a Montana Rural Water Systems in June to review operations and conduct a sludge test of the lagoons.

During the inspection, the town requested information on land applying treated wastewater from the lagoons. The town will need to have a professional engineer prepare a report before starting any land application from the lagoons. The wastewater would also have to be applied at agronomic rates so a soil scientist may also need to be consulted. The town needs DEQ approval for the design of any irrigation system and would need to comply with Chapter 120 of DEQ Circular #2.

Records Review

The following records were requested for review:

- Copy of the General Permit for Domestic Sewage Treatment Lagoons
- Copy of Montana Department of Environmental Quality (DEQ)Confirmation Letter
- Copy of the Completed Notice of Intent (NOI)
- In-House Bench Sheets, Chain of Custodies (COCs), and Laboratory Analytical Reports
    - Data was requested for monitoring periods data was reported for including:
        - January 31, 2019
        - May 31, 2019

- October 31, 2019
- April 30, 2020
  - There was no monitoring data made available for review during the inspection.
  - The town faxed an incomplete copy of analytical data for the request monitoring periods
  - Energy Laboratory in Billings provided copies of analytical data to DEQ for the requested monitoring periods
- Equipment Calibration Records
- Operation and Maintenance Manual
- Routine and Follow Up Inspections

The above requested records were available for review during the inspection. The following findings were identified with the above requested records:

a) The town is not maintaining records. Specifically, the following monitoring and reported records were not available for review at the time of the inspection:
   a. Calibrations of the pH meter
   b. Flow monitoring measurements including weir measurements, flow rate calculations, and days of discharge documentation
   c. In-house pH monitoring data
   d. Contract laboratory analytical data

   The town must obtain and keep copies of all data that can be recovered ~~for at least the last three years~~. Any future data collected at the facility must be maintained for a minimum of three years. The town shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application as require by Part IV.K of the general permit. The monitoring records must also include the record keeping contents as required by Part IV.L of the general permit.

b) The town is not conducting monthly inspections. Specifically, monthly inspections had not been documented since December 2020. The town must conduct and document monthly inspections and maintain records of the routine inspections including any follow-up inspections. The records must be maintained for at least 3 years, and available for an inspector upon request. The town must conduct and document inspections and include the minimum required elements as required by Part III.A.4 of the general permit.

c) The town did not conduct analysis. Specifically, for monitoring period ending January 3, 2019, ray sewage influent samples were not collected. The DMR for the monitoring period included a comment that the operator forgot to collect the influent samples. Samples must be collected at the required frequency while discharge is occurring as required by Part II.B of the general permit.

d) The town is not monitoring flow rates at the required frequency. Specifically, based on the reported data, DEQ determined that flow rates are not being measured at least 3 times a week as required by the permit. For any future discharge, the town must measure and document the

discharge flow rate at least 3 times a week. The town must also accurately calculate and report the monthly average and monthly maximum flow rates. The town must monitor and document the discharge flow rate as required by Part II.B of the permit and as specified in Attachment B of the authorization letter.

e) The town is not properly reporting loading values. Specifically, loading values were calculated by the monthly maximum and monthly average flow values to calculate the BOD_5 and TSS loading values. To properly calculate loading values, the actual daily discharge flow rate on the day the sample was collected must be used to calculate the loading values. Mass-based load values must be calculated as required by Part II.A of the general permit.

f) The town did not properly report analytical data. Specifically, for monitoring periods ending January 31, 2019, and May 31, 2019, BOD_5 and TSS values for concentration and loading were reported as the same values. The town must update the DMR reports to accurately reflect the proper loading and concentration values for BOD_5 and TSS for the January and May 2019 reporting periods. Analytical data must be accurately reported on the DMRs as required by Part IV.S of the general permit.

g) The town did not properly report oil and grease results. Specifically, for monitoring periods ending January 31, 2019, May 31, 2019, and October 31, 2019, oil and grease monitoring results were not reported properly. The following data corrections must be made in NetDMR:
   a. January 31, 2019 – Reported Value: 1mg/L - correct data to be submitted: NODI Code "B-Below Detection Limit"
   b. May 31, 2019 – Reported Value: 0 mg/L – correct data to be submitted: NODI Code "9-Conditional Monitoring – Not required this period"
   c. October 31, 2019 – Reported Value: NODI Code "B-below detection limit," correct data to be submitted: NODI Code "9-Conditional Monitoring – not required this period"

   The permit requires an oil and grease sample to be collected if an oil sheen is observed in the discharge. If a sheen is not observed and no sample collected the proper reporting NODI Code is "9-Conditional Monitoring – not required this period." If a sample is collected the results of the analytical data must be accurately reported. Data must be reported as require by Part IV.S of the general permit.

h) The town did not notify DEQ of changes of the duly authorized signatory for the facility. Specifically, the previous operator, Audie Simpson, had retired in November 2020, but the current operator was using Audie's credentials to sign in and report NetDMR monitoring data. Anyone reporting information to DEQ on behalf of the town of Saco must be a ranking elected official or an authorized representative of that individual. Since the CEI, Dale Plouffe has been authorized to submit DMRs through NetDMR. All applications, reports, or information submitted to DEQ shall be signed and certified as required by Part IV.O of the general permit.

i) The town did not meet percent removal limits for BOD_5 for monitoring periods ending May 31, 2018*, May 31, 2019* and April 30, 2020*. The town did not meet BOD_5 concentration limits for monitoring periods ending May 31, 2019**, and April 30, 2020*. The town also did not meet *E. coli* limits for monitoring periods ending May 31, 2018*, January 31, 2019*, and April 30, 2020*. A complete list of effluent limits violations can be found in Attachment A. Numeric effluent limits are required to be met per Part II.A of the general permit.

**DEQ considers these exceedances to be Significant Noncompliance (SNC). An exceedance is a SNC when the numeric effluent limit violation is in excess of 40% or greater for Group I Pollutants or an exceedance of 20% or greater for Group II Pollutants. Group I and II Pollutants are defined in 40 CFR 123.45. A list is*

provided after the conclusion in this inspection report. A SNC is considered the most serious level of violation because the violation or noncompliance event may pose a more severe level of concern for the environment or program integrity. SNCs can result in DEQ initiating a formal enforcement action.

***DEQ considers this exceedance to be Reportable Noncompliance (RNC). An exceedance is a RNC when the numeric effluent violation is below the 40% threshold for Group I Pollutants or the exceedance is below the 20% threshold for Group II Pollutants. Group I and II Pollutants are defined in 40 CFR 123.45. A list is provided after the conclusion in this inspection report. Although the gravity of a RNC is not as severe as a SNC, RNC is considered a violation or noncompliance event that may represent operation and maintenance problems, design inadequacies, improper treatment, or other that items that may impact the environment. A history of RNCs can result in DEQ initiating a formal enforcement action.*

Facility Site Evaluation

The following areas were reviewed during the facility site evaluation:

- Cell #1 (Photo 1)
- Cell #2 (Photo 2)
- Discharge vaults located on the southeast corner of Cell #2 (Photos 3 and 4)
- Northern bank of Cell #2 that had recently been repaired (Photo 5)
- Lift station located at the entrance to the west of the lagoons (Photo 6)
- Outfall 001 into Beaver Creek
- Flow monitoring weir located inside the manhole near the outfall (Photo 8)

There were no findings identified in the areas evaluated.

Conclusion

In order to return to the compliance, DEQ is requiring the following corrective actions be completed:

1.) Submit a written explanation detailing how the Town of Saco has corrected each of the lettered findings (Items a to i) in the Records Review section of the inspection report.

Inspector Signature

5/24/2021
Date

***Group I Pollutants**

Oxygen Demand
Biochemical Oxygen Demand
Chemical Oxygen Demand
Total Oxygen Demands
Total Organic Carbon
Other

Solids
Total Suspended Solids (Residues)
Total Dissolved Solids (Residues)
Other

Nutrients
Inorganic Phosphorus Compounds
Inorganic Nitrogen Compounds
Other

Detergents and Oils
MBAS
NTA
Oil and Grease
Other detergents or algicides

Minerals
Calcium
Chloride
Fluoride
Magnesium
Sodium
Potassium
Sulfur
Sulfate
Total Alkalinity
Total Hardness
Other Minerals

pH –
pH of 0.5 SU above or below permit limit is a Group I Pollutant - SNC

Metals
Aluminum
Cobalt
Iron
Vanadium

****Group II Pollutants**

Metals (all forms)
Other metals not specifically listed under Group I

Inorganic
Cyanide
Total Residual Chlorine

Organics
All organics are Group II except those specifically listed under Group I.

Montana Department of Environmental Quality – Compliance, Training, and Technical Assistance Photo Form

Permit Number: NTG580012	
Facility/Permittee: Town of Saco WWTF / Town of Saco	Weather: Clear/60°F/Dry
Location: 1/2 Mile Southeast of Saco	Photographer: Dan Freeland
County: Phillips County	Camera: Apple iPhone 7
	Page 1

Photo 1:

Cell #1 looking along the north bank facing west

Photo 2:

Cell #2 looking along the north bank facing east. The

Photo 3:

Discharge vault located on the southeast corner of Cell #3

Photo 4:

Discharge vault located on the southeast corner of Cell #3

Signature:

Date: 05/24/2021

Montana Department of Environmental Quality – Compliance, Training, and Technical Assistance Photo For m

Permit Number: NTG580012	Weather: Clear/60°F/Dry
Facility/Permittee: Town of Saco WWTF / Town of Saco	Photographer: Dan Freeland
Location: 1/2 Mile Southeast of Saco	Camera: Apple iPhone 7
County: Phillips County	Page 2

Photo 5:

The erosion on the northern bank of Cell #2 had recently been repaired

Photo 6:

Lift station located along the entrance road to the lagoons.

Photo 7:

Outfall 001 discharge into Beaver Creek

Photo 8:

Flow monitoring flume is in the manhole near the outfall.

Signature:

Date: 05/24/2021

RESPONDENT: TOWN OF SACO
ATTACHMENT A : Effluent Limitation Exceedance Violations
MTG580012

2020

Outfall	Parameter Desc	Statistical Base Short Desc	Monitoring Period End Date	Permit Limits		DMR VALUE	Percent Exceedence		SNC*
001-A	BOD, 5-day, 20 deg. C	MO AVG	04/30/2020	30	mg/L	63.5	112	I	Yes
001-A	BOD, 5-day, 20 deg. C	WKLY MAX	04/30/2020	45	mg/L	93.	107	I	Yes
001-A	BOD, 5-day, percent removal	MINIMUM	04/30/2020	85	%	64.	140	I	Yes
001-A	E. coli, MTEC-MF	DAILY MX	04/30/2020	252	#/100 (3)	6750.	2579		Yes
001-A	E. coli, MTEC-MF	GEO MEAN	04/30/2020	126	#/100mL	2846.05	2159		Yes

2019

Outfall	Parameter Desc	Statistical Base Short Desc	Monitoring Period End Date	Permit Limits		DMR VALUE	Percent Exceedence		SNC*
001-A	E. coli, MTEC-MF	DAILY MX	01/31/2019	1260	#/100 (3)	24196.	99999		Yes
001-A	E. coli, MTEC-MF	GEO MEAN	01/31/2019	630	#/100mL	24196.	99999		Yes
001-A	BOD, 5-day, 20 deg. C	MO AVG	05/31/2019	17	lb/d	19.	12		
001-A	BOD, 5-day, percent removal	MINIMUM	05/31/2019	85	%	64.96	134	I	Yes

2018

Outfall	Parameter Desc	Statistical Base Short Desc	Monitoring Period End Date	Permit Limits		DMR VALUE	Percent Exceedence		SNC*
001-A	BOD, 5-day, percent removal	MINIMUM	05/31/2018	85	%	76.	60	I	Yes
001-A	E. coli, MTEC-MF	DAILY MX	05/31/2018	252	#/100 (3)	960.	281		Yes
001-A	E. coli, MTEC-MF	GEO MEAN	05/31/2018	126	#/100mL	960.	662		Yes

APPENDIX L

Lift Station Flow Analysis

Influent Flows from Main Lift Station

Pump Flow Rate 440 GPM

	Pump 1 Total Hours	Pump 1 Hours	Pump 1 Total Gallons	Pump 2 Total Hours	Pump 2 Hours	Pump 2 Total Gallons	Gallons Per Day
1/1/2019	3877.14	2.47	65,208	3689.64	1.22	32,208	97,416
1/2/2019	3879.02	1.88	49,632	3690.65	1.01	26,664	76,296
1/3/2019	3881.16	2.14	56,496	3691.76	1.11	29,304	85,800
1/4/2019	3883.24	2.08	54,912	3692.85	1.09	28,776	83,688
1/5/2019	3885.59	2.35	62,040	3694.05	1.20	31,680	93,720
1/6/2019	3887.77	2.18	57,552	3695.20	1.15	30,360	87,912
1/7/2019	3889.61	1.84	48,576	3696.18	0.98	25,872	74,448
1/8/2019	3891.67	2.06	54,384	3697.24	1.06	27,984	82,368
1/9/2019	3893.96	2.29	60,456	3698.45	1.21	31,944	92,400
1/10/2019	3895.67	1.71	45,144	3699.36	0.91	24,024	69,168
1/11/2019	3897.80	2.13	56,232	3700.51	1.15	30,360	86,592
1/12/2019	3899.55	1.75	46,200	3701.41	0.90	23,760	69,960
1/13/2019	3901.68	2.13	56,232	3702.39	0.98	25,872	82,104
1/14/2019	3903.52	1.84	48,576	3703.57	1.18	31,152	79,728
1/15/2019	3905.52	2.00	52,800	3704.61	1.04	27,456	80,256
1/16/2019	3907.48	1.96	51,744	3705.64	1.03	27,192	78,936
1/17/2019	3909.26	1.78	46,992	3706.65	1.01	26,664	73,656
1/18/2019	3911.21	1.95	51,480	3707.67	1.02	26,928	78,408
1/19/2019	3913.64	2.43	64,152	3708.91	1.24	32,736	96,888
1/20/2019	3915.61	1.97	52,008	3709.86	0.95	25,080	77,088
1/21/2019	3917.55	1.94	51,216	3710.81	0.95	25,080	76,296
1/22/2019	3919.90	2.35	62,040	3711.93	1.12	29,568	91,608
1/23/2019	3921.97	2.07	54,648	3712.90	0.97	25,608	80,256
1/24/2019	3924.18	2.21	58,344	3713.90	1.00	26,400	84,744
1/25/2019	3926.52	2.34	61,776	3714.96	1.06	27,984	89,760
1/26/2019	3928.98	2.46	64,944	3715.49	0.53	13,992	78,936

Monthly High
Monthly Low
Varied from raw data

1/27/2019	3931.42	2.44	64,416	3717.17	1.68	44,352	108,768
1/28/2019	3934.17	2.75	72,600	3718.30	1.13	29,832	102,432
1/29/2019	3936.29	2.12	55,968	3719.37	1.07	28,248	84,216
1/30/2019	3938.47	2.18	57,552	3720.38	1.01	26,664	84,216
1/31/2019	3940.58	2.11	55,704	3721.41	1.03	27,192	82,896
		Average GPD from Lift Station					83,785
2/1/2019	3942.30	1.72	45,408	3722.44	1.03	27,192	72,600
2/2/2019	3945.00	2.70	71,280	3723.56	1.12	29,568	100,848
2/3/2019	3946.74	1.74	45,936	3724.42	0.86	22,704	68,640
2/4/2019	3948.79	2.05	54,120	3725.45	1.03	27,192	81,312
2/5/2019	3950.58	1.79	47,256	3726.37	0.92	24,288	71,544
2/6/2019	3952.60	2.02	53,328	3727.40	1.03	27,192	80,520
2/7/2019	3954.61	2.01	53,064	3728.44	1.04	27,456	80,520
2/8/2019	3956.70	2.09	55,176	3729.50	1.06	27,984	83,160
2/9/2019	3958.72	2.02	53,328	3730.54	1.04	27,456	80,784
2/10/2019	3961.01	2.29	60,456	3731.62	1.08	28,512	88,968
2/11/2019	3964.16	3.15	83,160	3733.06	1.44	38,016	121,176
2/12/2019	3966.41	2.25	59,400	3734.18	1.12	29,568	88,968
2/13/2019	3968.54	2.13	56,232	3735.25	1.07	28,248	84,480
2/14/2019	3970.77	2.23	58,872	3736.34	1.09	28,776	87,648
2/15/2019	3972.75	1.98	52,272	3737.31	0.97	25,608	77,880
2/16/2019	3974.10	1.35	35,640	3737.99	0.68	17,952	53,592
2/17/2019	3975.78	1.68	44,352	3738.86	0.87	22,968	67,320
2/18/2019	3976.85	1.07	28,248	3739.38	0.52	13,728	41,976
2/19/2019	3978.47	1.62	42,768	3740.17	0.79	20,856	63,624
2/20/2019	3979.71	1.24	32,736	3740.81	0.64	16,896	49,632
2/21/2019	3981.12	1.41	37,224	3741.51	0.70	18,480	55,704
2/22/2019	3982.61	1.49	39,336	3742.22	0.71	18,744	58,080
2/23/2019	3984.21	1.60	42,240	3742.96	0.74	19,536	61,776
2/24/2019	3985.65	1.44	38,016	3743.66	0.70	18,480	56,496
2/25/2019	3987.10	1.45	38,280	3744.36	0.70	18,480	56,760
2/26/2019	3988.60	1.50	39,600	3745.07	0.71	18,744	58,344
2/27/2019	3989.95	1.35	35,640	3745.72	0.65	17,160	52,800
2/28/2019	3991.29	1.34	35,376	3746.28	0.56	14,784	50,160

		Average GPD from Lift Station					71,261
3/1/2019	3992.57	1.28	33,792	3747.04	0.76	20,064	53,856
3/2/2019	3993.92	1.35	35,640	3747.72	0.68	17,952	53,592
3/3/2019	3995.20	1.28	33,792	3748.41	0.69	18,216	52,008
3/4/2019	3996.69	1.49	39,336	3749.11	0.70	18,480	57,816
3/5/2019	3998.02	1.33	35,112	3749.78	0.67	17,688	52,800
3/6/2019	3999.35	1.33	35,112	3750.45	0.67	17,688	52,800
3/7/2019	4000.67	1.32	34,848	3751.13	0.68	17,952	52,800
3/8/2019	4001.91	1.24	32,736	3751.80	0.67	17,688	50,424
3/9/2019	4003.30	1.39	36,696	3752.51	0.71	18,744	55,440
3/10/2019	4004.48	1.18	31,152	3753.15	0.64	16,896	48,048
3/11/2019	4005.58	1.10	29,040	3753.73	0.58	15,312	44,352
3/12/2019	4006.97	1.39	36,696	3754.48	0.75	19,800	56,496
3/13/2019	4008.27	1.30	34,320	3755.18	0.70	18,480	52,800
3/14/2019	4009.58	1.31	34,584	3755.86	0.68	17,952	52,536
3/15/2019	4010.89	1.31	34,584	3756.56	0.70	18,480	53,064
3/16/2019	4012.46	1.57	41,448	3757.40	0.84	22,176	63,624
3/17/2019	4013.81	1.35	35,640	3758.17	0.77	20,328	55,968
3/18/2019	4014.95	1.14	30,096	3758.77	0.60	15,840	45,936
3/19/2019	4016.56	1.61	42,504	3759.62	0.85	22,440	64,944
3/20/2019	4020.11	3.55	93,720	3761.02	1.40	36,960	130,680
3/21/2019	4025.01	4.90	129,360	3762.65	1.63	43,032	172,392
3/22/2019	4031.14	6.13	161,832	3764.28	1.63	43,032	204,864
3/23/2019	4035.29	4.15	109,560	3765.99	1.71	45,144	154,704
3/24/2019	4038.84	3.55	93,720	3767.58	1.59	41,976	135,696
3/25/2019	4042.52	3.68	97,152	3769.12	1.54	40,656	137,808
3/26/2019	4046.45	3.93	103,752	3771.01	1.89	49,896	153,648
3/27/2019	4049.72	3.27	86,328	3772.57	1.56	41,184	127,512
3/28/2019	4052.46	2.74	72,336	3773.92	1.35	35,640	107,976
3/29/2019	4054.75	2.29	60,456	3775.09	1.17	30,888	91,344
3/30/2019	4056.66	1.91	50,424	3776.11	1.02	26,928	77,352
3/31/2019	4058.42	1.76	46,464	3777.08	0.97	25,608	72,072
		Average GPD from Lift Station					83,398
4/1/2019	4060.11	1.69	44,616	3777.95	0.87	22,968	67,584

4/2/2019	4061.73	1.62	42,768	3778.82	0.87	22,968	65,736
4/3/2019	4063.42	1.69	44,616	3779.72	0.90	23,760	68,376
4/4/2019	4065.06	1.64	43,296	3780.59	0.87	22,968	66,264
4/5/2019	4066.69	1.63	43,032	3781.43	0.84	22,176	65,208
4/6/2019	4068.21	1.52	40,128	3782.20	0.77	20,328	60,456
4/7/2019	4069.74	1.53	40,392	3783.02	0.82	21,648	62,040
4/8/2019	4071.27	1.53	40,392	3783.82	0.80	21,120	61,512
4/9/2019	4072.81	1.54	40,656	3784.63	0.81	21,384	62,040
4/10/2019	4074.34	1.53	40,392	3785.41	0.78	20,592	60,984
4/11/2019	4075.70	1.36	35,904	3786.17	0.76	20,064	55,968
4/12/2019	4077.22	1.52	40,128	3787.02	0.85	22,440	62,568
4/13/2019	4078.49	1.27	33,528	3787.76	0.74	19,536	53,064
4/14/2019	4079.90	1.41	37,224	3788.59	0.83	21,912	59,136
4/15/2019	4081.12	1.22	32,208	3789.78	1.19	31,416	63,624
4/16/2019	4082.51	1.39	36,696	3790.06	0.28	7,392	44,088
4/17/2019	4083.85	1.34	35,376	3790.82	0.76	20,064	55,440
4/18/2019	4085.22	1.37	36,168	3791.64	0.82	21,648	57,816
4/19/2019	4086.66	1.44	38,016	3792.44	0.80	21,120	59,136
4/20/2019	4088.01	1.35	35,640	3793.28	0.84	22,176	57,816
4/21/2019	4089.61	1.60	42,240	3794.27	0.99	26,136	68,376
4/22/2019	4090.97	1.36	35,904	3795.10	0.83	21,912	57,816
4/23/2019	4092.50	1.53	40,392	3796.05	0.95	25,080	65,472
4/24/2019	4093.97	1.47	38,808	3796.95	0.90	23,760	62,568
4/25/2019	4095.57	1.60	42,240	3797.95	1.00	26,400	68,640
4/26/2019	4096.96	1.39	36,696	3798.77	0.82	21,648	58,344
4/27/2019	4098.27	1.31	34,584	3799.55	0.78	20,592	55,176
4/28/2019	4099.94	1.67	44,088	3800.49	0.94	24,816	68,904
4/29/2019	4101.76	1.82	48,048	3801.28	0.79	20,856	68,904
4/30/2019	4103.38	1.62	42,768	3802.41	1.13	29,832	72,600
		Average GPD from Lift Station					61,855
5/1/2019	4104.86	1.48	39,072	3803.23	0.82	21,648	60,720
5/2/2019	4106.40	1.54	40,656	3804.10	0.87	22,968	63,624
5/3/2019	4107.87	1.47	38,808	3804.89	0.79	20,856	59,664
5/4/2019	4109.80	1.93	50,952	3805.72	0.83	21,912	72,864

5/5/2019	4110.87	1.07	28,248	3806.50	0.78	20,592	48,840
5/6/2019	4112.26	1.39	36,696	3807.32	0.82	21,648	58,344
5/7/2019	4113.64	1.38	36,432	3808.11	0.79	20,856	57,288
5/8/2019	4115.08	1.44	38,016	3808.91	0.80	21,120	59,136
5/9/2019	4116.64	1.56	41,184	3809.75	0.84	22,176	63,360
5/10/2019	4117.98	1.34	35,376	3810.51	0.76	20,064	55,440
5/11/2019	4119.41	1.43	37,752	3811.20	0.69	18,216	55,968
5/12/2019	4120.77	1.36	35,904	3812.08	0.88	23,232	59,136
5/13/2019	4122.15	1.38	36,432	3812.85	0.77	20,328	56,760
5/14/2019	4123.46	1.31	34,584	3813.55	0.70	18,480	53,064
5/15/2019	4124.31	0.85	22,440	3814.02	0.47	12,408	34,848
5/16/2019	4125.02	0.71	18,744	3814.40	0.38	10,032	28,776
5/17/2019	4125.71	0.69	18,216	3814.78	0.38	10,032	28,248
5/18/2019	4127.51	1.80	47,520	3815.69	0.91	24,024	71,544
5/19/2019	4129.38	1.87	49,368	3816.58	0.89	23,496	72,864
5/20/2019	4130.78	1.40	36,960	3817.12	0.54	14,256	51,216
5/21/2019	4131.07	0.29	7,656	3817.60	0.48	12,672	20,328
5/22/2019	4131.87	0.80	21,120	3818.08	0.48	12,672	33,792
5/23/2019	4132.59	0.72	19,008	3818.49	0.41	10,824	29,832
5/24/2019	4133.23	0.64	16,896	3818.86	0.37	9,768	26,664
5/25/2019	4133.89	0.66	17,424	3819.23	0.37	9,768	27,192
5/26/2019	4134.56	0.67	17,688	3819.65	0.42	11,088	28,776
5/27/2019	4135.13	0.57	15,048	3819.98	0.33	8,712	23,760
5/28/2019	4135.66	0.53	13,992	3820.28	0.30	7,920	21,912
5/29/2019	4136.45	0.79	20,856	3820.72	0.44	11,616	32,472
5/30/2019	4137.06	0.61	16,104	3821.02	0.30	7,920	24,024
5/31/2019	4137.78	0.72	19,008	3821.37	0.35	9,240	28,248
		Average GPD from Lift Station					45,442
6/1/2019	4138.40	0.62	16368	3821.70	0.33	8,712	25,080
6/2/2019	4139.02	0.62	16368	3822.03	0.33	8,712	25,080
6/3/2019	4139.70	0.68	17952	3822.38	0.35	9,240	27,192
6/4/2019	4140.22	0.52	13728	3822.73	0.35	9,240	22,968
6/5/2019	4141.01	0.79	20856	3823.07	0.34	8,976	29,832
6/6/2019	4141.57	0.56	14784	3823.37	0.30	7,920	22,704

6/7/2019	4142.35	0.78	20592	3823.75	0.38	10,032	30,624
6/8/2019	4142.97	0.62	16368	3824.10	0.35	9,240	25,608
6/9/2019	4143.79	0.82	21648	3824.48	0.38	10,032	31,680
6/10/2019	4144.34	0.55	14520	3824.78	0.30	7,920	22,440
6/11/2019	4144.97	0.63	16632	3825.10	0.32	8,448	25,080
6/12/2019	4145.70	0.73	19272	3825.48	0.38	10,032	29,304
6/13/2019	4146.31	0.61	16104	3825.79	0.31	8,184	24,288
6/14/2019	4146.96	0.65	17160	3826.15	0.36	9,504	26,664
6/15/2019	4147.72	0.76	20064	3826.54	0.39	10,296	30,360
6/16/2019	4148.24	0.52	13728	3826.81	0.27	7,128	20,856
6/17/2019	4148.85	0.61	16104	3827.16	0.35	9,240	25,344
6/18/2019	4149.50	0.65	17160	3827.49	0.33	8,712	25,872
6/19/2019	4150.15	0.65	17160	3827.86	0.37	9,768	26,928
6/20/2019	4150.79	0.64	16896	3828.19	0.33	8,712	25,608
6/21/2019	4151.82	1.03	27192	3828.74	0.55	14,520	41,712
6/22/2019	4154.90	3.08	81312	3830.12	1.38	36,432	117,744
6/23/2019	4156.89	1.99	52536	3831.07	0.95	25,080	77,616
6/24/2019	4157.97	1.08	28512	3831.61	0.54	14,256	42,768
6/25/2019	4159.11	1.14	30096	3832.16	0.55	14,520	44,616
6/26/2019	4160.04	0.93	24552	3832.62	0.46	12,144	36,696
6/27/2019	4160.91	0.87	22968	3833.05	0.43	11,352	34,320
6/28/2019	4162.00	1.09	28776	3833.59	0.54	14,256	43,032
6/29/2019	4171.20	9.20	242880	3839.42	5.83	153,912	396,792
6/30/2019	4175.64	4.44	117216	3840.79	1.37	36,168	153,384
		Average GPD from Lift Station					50,406
7/1/2019	4177.56	1.92	50688	3841.54	0.75	19,800	70,488
7/2/2019	4179.41	1.85	48840	3842.25	0.71	18,744	67,584
7/3/2019	4181.24	1.83	48312	3842.98	0.73	19,272	67,584
7/4/2019	4182.96	1.72	45408	3843.73	0.75	19,800	65,208
7/5/2019	4184.26	1.30	34320	3844.32	0.59	15,576	49,896
7/6/2019	4185.38	1.12	29568	3844.87	0.55	14,520	44,088
7/7/2019	4186.49	1.11	29304	3845.41	0.54	14,256	43,560
7/8/2019	4187.24	0.75	19800	3845.88	0.47	12,408	32,208
7/9/2019	4188.12	0.88	23232	3846.37	0.49	12,936	36,168

7/10/2019	4188.99	0.87	22968	3846.85	0.48	12,672	35,640
7/11/2019	4189.97	0.98	25872	3847.39	0.54	14,256	40,128
7/12/2019	4190.81	0.84	22176	3847.85	0.46	12,144	34,320
7/13/2019	4191.69	0.88	23232	3848.35	0.50	13,200	36,432
7/14/2019	4192.41	0.72	19008	3848.74	0.39	10,296	29,304
7/15/2019	4193.39	0.98	25872	3849.27	0.53	13,992	39,864
7/16/2019	4194.34	0.95	25080	3849.76	0.49	12,936	38,016
7/17/2019	4197.99	3.65	96360	3850.57	0.81	21,384	117,744
7/18/2019	4199.56	1.57	41448	3851.26	0.69	18,216	59,664
7/19/2019	4200.60	1.04	27456	3851.75	0.49	12,936	40,392
7/20/2019	4201.50	0.90	23760	3852.16	0.41	10,824	34,584
7/21/2019	4202.48	0.98	25872	3852.60	0.44	11,616	37,488
7/22/2019	4203.50	1.02	26928	3853.06	0.46	12,144	39,072
7/23/2019	4204.37	0.87	22968	3853.47	0.41	10,824	33,792
7/24/2019	4205.24	0.87	22968	3853.85	0.38	10,032	33,000
7/25/2019	4206.11	0.87	22968	3854.25	0.40	10,560	33,528
7/26/2019	4206.94	0.83	21912	3854.62	0.37	9,768	31,680
7/27/2019	4207.89	0.95	25080	3855.02	0.40	10,560	35,640
7/28/2019	4208.71	0.82	21648	3855.42	0.40	10,560	32,208
7/29/2019	4209.77	1.06	27984	3855.87	0.45	11,880	39,864
7/30/2019	4210.54	0.77	20328	3856.21	0.34	8,976	29,304
7/31/2019	4211.25	0.71	18744	3856.53	0.32	8,448	27,192
		Average GPD from Lift Station					43,730
8/1/2019	4211.92	0.67	17688	3856.84	0.31	8,184	25,872
8/2/2019	4212.68	0.76	20064	3857.18	0.34	8,976	29,040
8/3/2019	4213.41	0.73	19272	3857.51	0.33	8,712	27,984
8/4/2019	4214.10	0.69	18216	3857.84	0.33	8,712	26,928
8/5/2019	4214.74	0.64	16896	3858.16	0.32	8,448	25,344
8/6/2019	4215.41	0.67	17688	3858.49	0.33	8,712	26,400
8/7/2019	4216.18	0.77	20328	3858.84	0.35	9,240	29,568
8/8/2019	4216.96	0.78	20592	3859.16	0.32	8,448	29,040
8/9/2019	4217.65	0.69	18216	3859.45	0.29	7,656	25,872
8/10/2019	4218.36	0.71	18744	3859.77	0.32	8,448	27,192
8/11/2019	4219.15	0.79	20856	3860.09	0.32	8,448	29,304

8/12/2019	4222.67	3.52	92928	3860.68	0.59	15,576	108,504
8/13/2019	4223.30	0.63	16632	3861.40	0.72	19,008	35,640
8/14/2019	4223.44	0.14	3696	3861.93	0.53	13,992	17,688
8/15/2019	4224.43	0.99	26136	3862.45	0.52	13,728	39,864
8/16/2019	4225.56	1.13	29832	3863.02	0.57	15,048	44,880
8/17/2019	4226.67	1.11	29304	3863.58	0.56	14,784	44,088
8/18/2019	4227.52	0.85	22440	3864.01	0.43	11,352	33,792
8/19/2019	4228.61	1.09	28776	3864.56	0.55	14,520	43,296
8/20/2019	4229.65	1.04	27456	3865.11	0.55	14,520	41,976
8/21/2019	4230.64	0.99	26136	3865.61	0.50	13,200	39,336
8/22/2019	4231.66	1.02	26928	3866.13	0.52	13,728	40,656
8/23/2019	4233.89	2.23	58872	3866.84	0.71	18,744	77,616
8/24/2019	4235.40	1.51	39864	3867.31	0.47	12,408	52,272
8/25/2019	4236.24	0.84	22176	3867.92	0.61	16,104	38,280
8/26/2019	4237.06	0.82	21648	3868.34	0.42	11,088	32,736
8/27/2019	4238.20	1.14	30096	3868.87	0.53	13,992	44,088
8/28/2019	4238.94	0.74	19536	3869.22	0.35	9,240	28,776
8/29/2019	4239.70	0.76	20064	3869.58	0.36	9,504	29,568
8/30/2019	4240.56	0.86	22704	3869.98	0.40	10,560	33,264
8/31/2019	4241.54	0.98	25872	3870.42	0.44	11,616	37,488
		Average GPD from Lift Station					37,624
9/1/2019	4242.51	0.97	25608	3870.85	0.43	11,352	36,960
9/2/2019	4243.34	0.83	21912	3871.23	0.38	10,032	31,944
9/3/2019	4244.37	1.03	27192	3871.68	0.45	11,880	39,072
9/4/2019	4245.06	0.69	18216	3871.99	0.31	8,184	26,400
9/5/2019	4245.78	0.72	19008	3872.32	0.33	8,712	27,720
9/6/2019	4246.52	0.74	19536	3872.67	0.35	9,240	28,776
9/7/2019	4248.52	2.00	52800	3873.54	0.87	22,968	75,768
9/8/2019	4249.41	0.89	23496	3873.97	0.43	11,352	34,848
9/9/2019	4250.40	0.99	26136	3874.46	0.49	12,936	39,072
9/10/2019	4252.74	2.34	61776	3875.38	0.92	24,288	86,064
9/11/2019	4253.86	1.12	29568	3875.90	0.52	13,728	43,296
9/12/2019	4255.16	1.30	34320	3876.52	0.62	16,368	50,688
9/13/2019	4256.46	1.30	34320	3877.19	0.67	17,688	52,008

9/14/2019	4257.64	1.18	31152	3877.80	0.61	16,104	47,256
9/15/2019	4258.42	0.78	20592	3878.21	0.41	10,824	31,416
9/16/2019	4259.23	0.81	21384	3878.61	0.40	10,560	31,944
9/17/2019	4260.08	0.85	22440	3879.03	0.42	11,088	33,528
9/18/2019	4260.87	0.79	20856	3879.46	0.43	11,352	32,208
9/19/2019	4261.78	0.91	24024	3879.87	0.41	10,824	34,848
9/20/2019	4262.50	0.72	19008	3880.27	0.40	10,560	29,568
9/21/2019	4263.31	0.81	21384	3880.66	0.39	10,296	31,680
9/22/2019	4264.08	0.77	20328	3881.05	0.39	10,296	30,624
9/23/2019	4264.82	0.74	19536	3881.42	0.37	9,768	29,304
9/24/2019	4265.57	0.75	19800	3881.82	0.40	10,560	30,360
9/25/2019	4266.37	0.80	21120	3882.23	0.41	10,824	31,944
9/26/2019	4267.11	0.74	19536	3882.60	0.37	9,768	29,304
9/27/2019	4267.97	0.86	22704	3883.04	0.44	11,616	34,320
9/28/2019	4268.86	0.89	23496	3883.51	0.47	12,408	35,904
9/29/2019	4271.97	3.11	82104	3884.88	1.37	36,168	118,272
9/30/2019	4277.27	5.30	139920	3886.89	2.01	53,064	192,984
		Average GPD from Lift Station					45,936
10/1/2019	4278.74	1.47	38808	3887.79	0.90	23,760	62,568
10/2/2019	4279.86	1.12	29568	3888.47	0.68	17,952	47,520
10/3/2019	4280.87	1.01	26664	3889.07	0.60	15,840	42,504
10/4/2019	4281.80	0.93	24552	3889.65	0.58	15,312	39,864
10/5/2019	4282.51	0.71	18744	3890.17	0.52	13,728	32,472
10/6/2019	4283.34	0.83	21912	3890.67	0.50	13,200	35,112
10/7/2019	4283.98	0.64	16896	3891.09	0.42	11,088	27,984
10/8/2019	4284.64	0.66	17424	3891.56	0.47	12,408	29,832
10/9/2019	4285.36	0.72	19008	3891.99	0.43	11,352	30,360
10/10/2019	4286.04	0.68	17952	3892.42	0.43	11,352	29,304
10/11/2019	4286.67	0.63	16632	3892.96	0.54	14,256	30,888
10/12/2019	4287.39	0.72	19008	3893.22	0.26	6,864	25,872
10/13/2019	4288.19	0.80	21120	3893.84	0.62	16,368	37,488
10/14/2019	4289.01	0.82	21648	3894.40	0.56	14,784	36,432
10/15/2019	4289.62	0.61	16104	3894.83	0.43	11,352	27,456
10/16/2019	4290.39	0.77	20328	3895.27	0.44	11,616	31,944

10/17/2019	4291.02	0.63	16632	3895.66	0.39	10,296	26,928
10/18/2019	4291.69	0.67	17688	3896.02	0.36	9,504	27,192
10/19/2019	4292.37	0.68	17952	3896.41	0.39	10,296	28,248
10/20/2019	4293.05	0.68	17952	3896.79	0.38	10,032	27,984
10/21/2019	4293.77	0.72	19008	3897.21	0.42	11,088	30,096
10/22/2019	4294.42	0.65	17160	3897.57	0.36	9,504	26,664
10/23/2019	4295.08	0.66	17424	3897.95	0.38	10,032	27,456
10/24/2019	4295.91	0.83	21912	3898.43	0.48	12,672	34,584
10/25/2019	4296.64	0.73	19272	3898.84	0.41	10,824	30,096
10/26/2019	4297.40	0.76	20064	3899.27	0.43	11,352	31,416
10/27/2019	4298.17	0.77	20328	3899.72	0.45	11,880	32,208
10/28/2019	4298.84	0.67	17688	3900.12	0.40	10,560	28,248
10/29/2019	4299.52	0.68	17952	3900.53	0.41	10,824	28,776
10/30/2019	4300.19	0.67	17688	3900.97	0.44	11,616	29,304
10/31/2019	4300.84	0.65	17160	3901.37	0.40	10,560	27,720
		Average GPD from Lift Station					32,404
11/1/2019	4301.42	0.58	15312	3901.74	0.37	9,768	25,080
11/2/2019	4302.09	0.67	17688	3902.15	0.41	10,824	28,512
11/3/2019	4302.96	0.87	22968	3902.55	0.40	10,560	33,528
11/4/2019	4303.61	0.65	17160	3903.01	0.46	12,144	29,304
11/5/2019	4304.31	0.70	18480	3903.41	0.40	10,560	29,040
11/6/2019	4305.04	0.73	19272	3903.81	0.40	10,560	29,832
11/7/2019	4305.73	0.69	18216	3904.22	0.41	10,824	29,040
11/8/2019	4306.39	0.66	17424	3904.60	0.38	10,032	27,456
11/9/2019	4307.10	0.71	18744	3905.05	0.45	11,880	30,624
11/10/2019	4307.77	0.67	17688	3905.47	0.42	11,088	28,776
11/11/2019	4308.49	0.72	19008	3905.91	0.44	11,616	30,624
11/12/2019	4309.21	0.72	19008	3906.34	0.43	11,352	30,360
11/13/2019	4310.04	0.83	21912	3906.75	0.41	10,824	32,736
11/14/2019	4310.64	0.60	15840	3907.10	0.35	9,240	25,080
11/15/2019	4311.28	0.64	16896	3907.48	0.38	10,032	26,928
11/16/2019	4311.98	0.70	18480	3907.90	0.42	11,088	29,568
11/17/2019	4312.92	0.94	24816	3908.19	0.29	7,656	32,472
11/18/2019	4313.92	1.00	26400	3909.11	0.92	24,288	50,688

11/19/2019	4314.91	0.99	26136	3909.69	0.58	15,312	41,448
11/20/2019	4315.77	0.86	22704	3910.21	0.52	13,728	36,432
11/21/2019	4316.66	0.89	23496	3910.80	0.59	15,576	39,072
11/22/2019	4317.54	0.88	23232	3911.37	0.57	15,048	38,280
11/23/2019	4318.51	0.97	25608	3911.97	0.60	15,840	41,448
11/24/2019	4319.72	1.21	31944	3912.68	0.71	18,744	50,688
11/25/2019	4321.45	1.73	45672	3913.66	0.98	25,872	71,544
11/26/2019	4322.62	1.17	30888	3914.33	0.67	17,688	48,576
11/27/2019	4323.67	1.05	27720	3914.95	0.62	16,368	44,088
11/28/2019	4324.64	0.97	25608	3915.55	0.60	15,840	41,448
11/29/2019	4325.61	0.97	25608	3916.14	0.59	15,576	41,184
11/30/2019	4326.58	0.97	25608	3916.67	0.53	13,992	39,600
		Average GPD from Lift Station					36,115
12/1/2019	4327.53	0.95	25080	3917.21	0.54	14,256	39,336
12/2/2019	4328.49	0.96	25344	3917.75	0.54	14,256	39,600
12/3/2019	4329.43	0.94	24816	3918.26	0.51	13,464	38,280
12/4/2019	4330.21	0.78	20592	3918.75	0.49	12,936	33,528
12/5/2019	4331.10	0.89	23496	3919.26	0.51	13,464	36,960
12/6/2019	4331.90	0.80	21120	3919.72	0.46	12,144	33,264
12/7/2019	4332.82	0.92	24288	3920.19	0.47	12,408	36,696
12/8/2019	4333.59	0.77	20328	3920.62	0.43	11,352	31,680
12/9/2019	4334.44	0.85	22440	3921.09	0.47	12,408	34,848
12/10/2019	4335.27	0.83	21912	3921.57	0.48	12,672	34,584
12/11/2019	4336.05	0.78	20592	3922.03	0.46	12,144	32,736
12/12/2019	4336.87	0.82	21648	3922.47	0.44	11,616	33,264
12/13/2019	4337.71	0.84	22176	3922.98	0.51	13,464	35,640
12/14/2019	4338.55	0.84	22176	3923.44	0.46	12,144	34,320
12/15/2019	4339.24	0.69	18216	3923.82	0.38	10,032	28,248
12/16/2019	4339.97	0.73	19272	3924.23	0.41	10,824	30,096
12/17/2019	4340.77	0.80	21120	3924.69	0.46	12,144	33,264
12/18/2019	4341.56	0.79	20856	3925.11	0.42	11,088	31,944
12/19/2019	4342.35	0.79	20856	3925.55	0.44	11,616	32,472
12/20/2019	4343.26	0.91	24024	3926.00	0.45	11,880	35,904
12/21/2019	4343.90	0.64	16896	3926.34	0.34	8,976	25,872

12/22/2019	4344.59	0.69	18216	3926.69	0.35	9,240	27,456
12/23/2019	4345.24	0.65	17160	3927.07	0.38	10,032	27,192
12/24/2019	4345.84	0.60	15840	3927.38	0.31	8,184	24,024
12/25/2019	4346.46	0.62	16368	3927.71	0.33	8,712	25,080
12/26/2019	4347.16	0.70	18480	3928.05	0.34	8,976	27,456
12/27/2019	4347.78	0.62	16368	3928.41	0.36	9,504	25,872
12/28/2019	4348.37	0.59	15576	3928.72	0.31	8,184	23,760
12/29/2019	4349.09	0.72	19008	3929.09	0.37	9,768	28,776
12/30/2019	4349.67	0.58	15312	3929.39	0.30	7,920	23,232
12/31/2019	4350.27	0.60	15840	3929.72	0.33	8,712	24,552
		Average GPD from Lift Station					31,288

Influent Flows from Main Lift Station

Pump Flow Rate 440 GPM

	Pump 1 Total Hours	Pump 1 Hours	Pump 1 Total Gallons	Pump 2 Total Hours	Pump 2 Hours	Pump 2 Total Gallons	Gallons Per Day
1/1/2020	4351.14	0.87	22,968	3930.19	0.47	12,408	35,376
1/2/2020	4351.62	0.48	12,672	3930.46	0.27	7,128	19,800
1/3/2020	4352.28	0.66	17,424	3930.80	0.34	8,976	26,400
1/4/2020	4352.90	0.62	16,368	3931.14	0.34	8,976	25,344
1/5/2020	4353.78	0.88	23,232	3931.58	0.44	11,616	34,848
1/6/2020	4354.40	0.62	16,368	3931.91	0.33	8,712	25,080
1/7/2020	4355.03	0.63	16,632	3932.35	0.44	11,616	28,248
1/8/2020	4355.65	0.62	16,368	3932.57	0.22	5,808	22,176
1/9/2020	4356.25	0.60	15,840	3932.88	0.31	8,184	24,024
1/10/2020	4356.89	0.64	16,896	3933.21	0.33	8,712	25,608
1/11/2020	4357.53	0.64	16,896	3933.54	0.33	8,712	25,608
1/12/2020	4358.27	0.74	19,536	3933.86	0.32	8,448	27,984
1/13/2020	4358.77	0.50	13,200	3934.20	0.34	8,976	22,176
1/14/2020	4359.51	0.74	19,536	3934.59	0.39	10,296	29,832
1/15/2020	4360.13	0.62	16,368	3934.94	0.35	9,240	25,608
1/16/2020	4360.86	0.73	19,272	3935.32	0.38	10,032	29,304
1/17/2020	4361.58	0.72	19,008	3935.71	0.39	10,296	29,304
1/18/2020	4362.29	0.71	18,744	3936.10	0.39	10,296	29,040
1/19/2020	4363.03	0.74	19,536	3936.48	0.38	10,032	29,568
1/20/2020	4363.84	0.81	21,384	3936.87	0.39	10,296	31,680
1/21/2020	4364.65	0.81	21,384	3937.33	0.46	12,144	33,528
1/22/2020	4365.30	0.65	17,160	3937.57	0.24	6,336	23,496
1/23/2020	4365.97	0.67	17,688	3937.80	0.23	6,072	23,760
1/24/2020	4366.67	0.70	18,480	3938.21	0.41	10,824	29,304
1/25/2020	4367.38	0.71	18,744	3938.52	0.31	8,184	26,928
1/26/2020	4368.51	1.13	29,832	3938.95	0.43	11,352	41,184
1/27/2020	4369.42	0.91	24,024	3939.40	0.45	11,880	35,904

Monthly High
Monthly Low
Varied from raw data

1/28/2020	4370.31	0.89	23,496	3939.77	0.37	9,768	33,264	
1/29/2020	4371.13	0.82	21,648	3940.13	0.36	9,504	31,152	
1/30/2020	4372.05	0.92	24,288	3940.49	0.36	9,504	33,792	
1/31/2020	4373.31	1.26	33,264	3940.99	0.50	13,200	46,464	
Average GPD from Lift Station							29,014	
2/1/2020	4374.75	1.44	38,016	3941.56	0.57	15,048	53,064	
2/2/2020	4386.58	11.83	312,312	3942.49	0.93	24,552		336,864.00 high no reliable and omited fron
2/3/2020	4388.94	2.36	62,304	3943.16	0.67	17,688	79,992	
2/4/2020	4390.45	1.51	39,864	3943.66	0.50	13,200	53,064	
2/5/2020	4391.71	1.26	33,264	3944.08	0.42	11,088	44,352	
2/6/2020	4393.02	1.31	34,584	3944.50	0.42	11,088	45,672	
2/7/2020	4394.21	1.19	31,416	3944.91	0.41	10,824	42,240	
2/8/2020	4395.39	1.18	31,152	3945.29	0.38	10,032	41,184	
2/9/2020	4396.60	1.21	31,944	3945.67	0.38	10,032	41,976	
2/10/2020	4397.64	1.04	27,456	3946.03	0.36	9,504	36,960	
2/11/2020	4398.70	1.06	27,984	3946.40	0.37	9,768	37,752	
2/12/2020	4399.78	1.08	28,512	3946.82	0.42	11,088	39,600	
2/13/2020	4400.77	0.99	26,136	3947.27	0.45	11,880	38,016	
2/14/2020	4401.62	0.85	22,440	3947.55	0.28	7,392	29,832	
2/15/2020	4402.57	0.95	25,080	3947.90	0.35	9,240	34,320	
2/16/2020	4403.51	0.94	24,816	3948.24	0.34	8,976	33,792	
2/17/2020	4404.36	0.85	22,440	3948.38	0.14	3,696	26,136	
2/18/2020	4405.90	1.54	40,656	3949.26	0.88	23,232	63,888	
2/19/2020	4406.72	0.82	21,648	3949.81	0.55	14,520	36,168	
2/20/2020	4407.44	0.72	19,008	3949.93	0.12	3,168	22,176	
2/21/2020	4408.17	0.73	19,272	3950.26	0.33	8,712	27,984	
2/22/2020	4408.98	0.81	21,384	3950.65	0.39	10,296	31,680	
2/23/2020	4410.40	1.42	37,488	3951.22	0.57	15,048	52,536	
2/24/2020	4411.30	0.90	23,760	3951.64	0.42	11,088	34,848	
2/25/2020	4412.15	0.85	22,440	3952.04	0.40	10,560	33,000	
2/26/2020	4412.74	0.59	15,576	3952.32	0.28	7,392	22,968	
2/27/2020	4413.53	0.79	20,856	3952.68	0.36	9,504	30,360	
2/28/2020	4414.70	1.17	30,888	3953.22	0.54	14,256	45,144	
2/29/2020	4416.89	2.19	57,816	3954.11	0.89	23,496	81,312	
Average GPD from Lift Station							41,001	

3/1/2020	4421.50	4.61	121,704	3955.26	1.15	30,360	152,064
3/2/2020	4422.97	1.47	38,808	3955.85	0.59	15,576	54,384
3/3/2020	4424.51	1.54	40,656	3956.52	0.67	17,688	58,344
3/4/2020	4427.89	3.38	89,232	3957.70	1.18	31,152	120,384
3/5/2020	4434.64	6.75	178,200	3958.62	0.92	24,288	
3/6/2020	4436.65	2.01	53,064	3959.45	0.83	21,912	74,976
3/7/2020	4438.66	2.01	53,064	3960.22	0.77	20,328	73,392
3/8/2020	4442.52	3.86	101,904	3961.20	0.98	25,872	127,776
3/9/2020	4443.72	1.20	31,680	3961.68	0.48	12,672	44,352
3/10/2020	4444.70	0.98	25,872	3962.12	0.44	11,616	37,488
3/11/2020	4445.67	0.97	25,608	3962.55	0.43	11,352	36,960
3/12/2020	4446.96	1.29	34,056	3963.09	0.54	14,256	48,312
3/13/2020	4448.17	1.21	31,944	3963.62	0.53	13,992	45,936
3/14/2020	4449.18	1.01	26,664	3964.07	0.45	11,880	38,544
3/15/2020	4449.97	0.79	20,856	3964.42	0.35	9,240	30,096
3/16/2020	4450.73	0.76	20,064	3964.70	0.28	7,392	27,456
3/17/2020	4451.49	0.76	20,064	3965.07	0.37	9,768	29,832
3/18/2020	4452.29	0.80	21,120	3965.41	0.34	8,976	30,096
3/19/2020	4453.04	0.75	19,800	3965.74	0.33	8,712	28,512
3/20/2020	4453.84	0.80	21,120	3966.11	0.37	9,768	30,888
3/21/2020	4454.71	0.87	22,968	3966.51	0.40	10,560	33,528
3/22/2020	4455.44	0.73	19,272	3966.83	0.32	8,448	27,720
3/23/2020	4456.24	0.80	21,120	3967.20	0.37	9,768	30,888
3/24/2020	4457.37	1.13	29,832	3967.76	0.56	14,784	44,616
3/25/2020	4458.28	0.91	24,024	3968.19	0.43	11,352	35,376
3/26/2020	4459.05	0.77	20,328	3968.58	0.39	10,296	30,624
3/27/2020	4459.89	0.84	22,176	3969.02	0.44	11,616	33,792
3/28/2020	4460.66	0.77	20,328	3969.46	0.44	11,616	31,944
3/29/2020	4461.46	0.80	21,120	3969.90	0.44	11,616	32,736
3/30/2020	4462.12	0.66	17,424	3970.25	0.35	9,240	26,664
3/31/2020	4462.92	0.80	21,120	3970.72	0.47	12,408	33,528
Average GPD from Lift Station							44,798
4/1/2020	4463.66	0.74	19,536	3971.14	0.42	11,088	30,624
4/2/2020	4464.45	0.79	20,856	3971.56	0.42	11,088	31,944
4/3/2020	4465.17	0.72	19,008	3971.95	0.39	10,296	29,304

202488 not reliable and taken from data

4/4/2020	4465.97	0.80	21,120	3972.40	0.45	11,880	33,000
4/5/2020	4466.61	0.64	16,896	3972.74	0.34	8,976	25,872
4/6/2020	4467.31	0.70	18,480	3973.11	0.37	9,768	28,248
4/7/2020	4467.98	0.67	17,688	3973.50	0.39	10,296	27,984
4/8/2020	4468.64	0.66	17,424	3973.88	0.38	10,032	27,456
4/9/2020	4469.34	0.70	18,480	3974.24	0.36	9,504	27,984
4/10/2020	4469.94	0.60	15,840	3974.58	0.34	8,976	24,816
4/11/2020	4470.60	0.66	17,424	3974.95	0.37	9,768	27,192
4/12/2020	4471.25	0.65	17,160	3975.33	0.38	10,032	27,192
4/13/2020	4471.87	0.62	16,368	3975.68	0.35	9,240	25,608
4/14/2020	4472.52	0.65	17,160	3976.05	0.37	9,768	26,928
4/15/2020	4473.06	0.54	14,256	3976.39	0.34	8,976	23,232
4/16/2020	4473.24	0.18	4,752	3976.48	0.09	2,376	7,128
4/17/2020	4474.09	0.85	22,440	3977.33	0.85	22,440	44,880
4/18/2020	4474.52	0.43	11,352	3977.76	0.43	11,352	22,704
4/19/2020	4475.38	0.86	22,704	3978.63	0.87	22,968	45,672
4/20/2020	4475.81	0.43	11,352	3979.02	0.39	10,296	21,648
4/21/2020	4476.75	0.94	24,816	3979.77	0.75	19,800	44,616
4/22/2020	4477.37	0.62	16,368	3980.12	0.35	9,240	25,608
4/23/2020	4477.97	0.60	15,840	3980.49	0.37	9,768	25,608
4/24/2020	4478.55	0.58	15,312	3980.84	0.35	9,240	24,552
4/25/2020	4479.21	0.66	17,424	3981.22	0.38	10,032	27,456
4/26/2020	4479.81	0.60	15,840	3981.55	0.33	8,712	24,552
4/27/2020	4480.47	0.66	17,424	3981.95	0.40	10,560	27,984
4/28/2020	4481.08	0.61	16,104	3982.30	0.35	9,240	25,344
4/29/2020	4481.68	0.60	15,840	3982.64	0.34	8,976	24,816
4/30/2020	4482.27	0.59	15,576	3982.98	0.34	8,976	24,552
		Average GPD from Lift Station					27,817
5/1/2020	4482.94	0.67	17,688	3983.35	0.37	9,768	27,456
5/2/2020	4483.67	0.73	19,272	3983.76	0.41	10,824	30,096
5/3/2020	4484.03	0.36	9,504	3984.18	0.42	11,088	20,592
5/4/2020	4485.61	1.58	41,712	3984.79	0.61	16,104	57,816
5/5/2020	4486.76	1.15	30,360	3985.33	0.54	14,256	44,616
5/6/2020	4487.82	1.06	27,984	3985.76	0.43	11,352	39,336
5/7/2020	4488.62	0.80	21,120	3986.25	0.49	12,936	34,056

5/8/2020	4489.34	0.72	19,008	3986.67	0.42	11,088	30,096
5/9/2020	4490.21	0.87	22,968	3987.13	0.46	12,144	35,112
5/10/2020	4491.11	0.90	23,760	3987.60	0.47	12,408	36,168
5/11/2020	4491.97	0.86	22,704	3988.07	0.47	12,408	35,112
5/12/2020	4492.69	0.72	19,008	3988.45	0.38	10,032	29,040
5/13/2020	4493.72	1.03	27,192	3988.99	0.54	14,256	41,448
5/14/2020	4495.33	1.61	42,504	3989.60	0.61	16,104	58,608
5/15/2020	4496.45	1.12	29,568	3990.08	0.48	12,672	42,240
5/16/2020	4497.59	1.14	30,096	3990.62	0.54	14,256	44,352
5/17/2020	4498.93	1.34	35,376	3991.25	0.63	16,632	52,008
5/18/2020	4499.79	0.86	22,704	3991.63	0.38	10,032	32,736
5/19/2020	4500.88	1.09	28,776	3992.18	0.55	14,520	43,296
5/20/2020	4502.09	1.21	31,944	3992.77	0.59	15,576	47,520
5/21/2020	4505.42	3.33	87,912	3993.44	0.67	17,688	105,600
5/22/2020	4506.78	1.36	35,904	3994.34	0.90	23,760	59,664
5/23/2020	4507.72	0.94	24,816	3994.97	0.63	16,632	41,448
5/24/2020	4508.48	0.76	20,064	3995.48	0.51	13,464	33,528
5/25/2020	4509.17	0.69	18,216	3995.97	0.49	12,936	31,152
5/26/2020	4509.97	0.80	21,120	3996.60	0.63	16,632	37,752
5/27/2020	4510.71	0.74	19,536	3997.02	0.42	11,088	30,624
5/28/2020	4511.34	0.63	16,632	3997.51	0.49	12,936	29,568
5/29/2020	4511.98	0.64	16,896	3997.97	0.46	12,144	29,040
5/30/2020	4512.85	0.87	22,968	3998.60	0.63	16,632	39,600
5/31/2020	4513.69	0.84	22,176	3999.24	0.64	16,896	39,072
Average GPD from Lift Station							41,043
6/1/2020	4514.42	0.73	19,272	3999.81	0.57	15,048	34,320
6/2/2020	4515.14	0.72	19,008	4000.38	0.57	15,048	34,056
6/3/2020	4515.80	0.66	17,424	4000.87	0.49	12,936	30,360
6/4/2020	4516.31	0.51	13,464	4001.28	0.41	10,824	24,288
6/5/2020	4516.85	0.54	14,256	4001.69	0.41	10,824	25,080
6/6/2020	4517.26	0.41	10,824	4002.00	0.31	8,184	19,008
6/7/2020	4517.78	0.52	13,728	4002.40	0.40	10,560	24,288
6/8/2020	4518.36	0.58	15,312	4002.83	0.43	11,352	26,664
6/9/2020	4519.41	1.05	27,720	4003.68	0.85	22,440	50,160
6/10/2020	4519.92	0.51	13,464	4004.12	0.44	11,616	25,080

6/11/2020	4520.42	0.50	13,200	4004.52	0.40	10,560	23,760
6/12/2020	4520.92	0.50	13,200	4004.92	0.40	10,560	23,760
6/13/2020	4521.39	0.47	12,408	4005.29	0.37	9,768	22,176
6/14/2020	4521.91	0.52	13,728	4005.70	0.41	10,824	24,552
6/15/2020	4522.41	0.50	13,200	4006.08	0.38	10,032	23,232
6/16/2020	4522.91	0.50	13,200	4006.47	0.39	10,296	23,496
6/17/2020	4523.38	0.47	12,408	4006.82	0.35	9,240	21,648
6/18/2020	4524.02	0.64	16,896	4007.32	0.50	13,200	30,096
6/19/2020	4524.70	0.68	17,952	4007.81	0.49	12,936	30,888
6/20/2020	4525.44	0.74	19,536	4008.39	0.58	15,312	34,848
6/21/2020	4525.87	0.43	11,352	4008.71	0.32	8,448	19,800
6/22/2020	4526.30	0.43	11,352	4009.02	0.31	8,184	19,536
6/23/2020	4526.80	0.50	13,200	4009.40	0.38	10,032	23,232
6/24/2020	4527.33	0.53	13,992	4009.80	0.40	10,560	24,552
6/25/2020	4527.85	0.52	13,728	4010.19	0.39	10,296	24,024
6/26/2020	4528.31	0.46	12,144	4010.53	0.34	8,976	21,120
6/27/2020	4528.89	0.58	15,312	4010.95	0.42	11,088	26,400
6/28/2020	4529.58	0.69	18,216	4012.89	1.94	51,216	69,432
6/29/2020	4529.58	0.00	0	4014.37	1.48	39,072	39,072
6/30/2020	4529.58	0.00	0	4017.66	3.29	86,856	86,856
Average GPD from Lift Station							30,193
7/1/2020	4529.82	0.24	6,336	4018.82	1.16	30,624	36,960
7/2/2020	4529.96	0.14	3,696	4019.84	1.02	26,928	30,624
7/3/2020	4529.96	0.00	0	4020.86	1.02	26,928	26,928
7/4/2020	4529.96	0.00	0	4021.87	1.01	26,664	26,664
7/5/2020	4529.96	0.00	0	4022.85	0.98	25,872	25,872
7/6/2020	4529.96	0.00	0	4023.38	0.53	13,992	13,992
7/7/2020	4529.96	0.00	0	4024.37	0.99	26,136	26,136
7/8/2020	4529.96	0.00	0	4025.92	1.55	40,920	40,920
7/9/2020	4529.96	0.00	0	4027.44	1.52	40,128	40,128
7/10/2020	4529.96	0.00	0	4027.94	0.50	13,200	13,200
7/11/2020	4529.96	0.00	0	4028.94	1.00	26,400	26,400
7/12/2020	4529.96	0.00	0	4029.94	1.00	26,400	26,400
7/13/2020	4529.96	0.00	0	4030.92	0.98	25,872	25,872
7/14/2020	4529.96	0.00	0	4031.44	0.52	13,728	13,728

7/15/2020	4529.96	0.00	0	4031.94	0.50	13,200	13,200
7/16/2020	4529.96	0.00	0	4032.92	0.98	25,872	25,872
7/17/2020	4529.96	0.00	0	4033.43	0.51	13,464	13,464
7/18/2020	4529.96	0.00	0	4033.92	0.49	12,936	12,936
7/19/2020	4529.96	0.00	0	4034.42	0.50	13,200	13,200
7/20/2020	4529.96	0.00	0	4035.42	1.00	26,400	26,400
7/21/2020	4529.96	0.00	0	4035.91	0.49	12,936	12,936
7/22/2020	4529.96	0.00	0	4036.91	1.00	26,400	26,400
7/23/2020	4529.96	0.00	0	4037.40	0.49	12,936	12,936
7/24/2020	4529.96	0.00	0	4037.90	0.50	13,200	13,200
7/25/2020	4529.96	0.00	0	4038.89	0.99	26,136	26,136
7/26/2020	4529.96	0.00	0	4039.38	0.49	12,936	12,936
7/27/2020	4529.96	0.00	0	4039.88	0.50	13,200	13,200
7/28/2020	4529.96	0.00	0	4040.37	0.49	12,936	12,936
7/29/2020	4529.96	0.00	0	4041.08	0.71	18,744	18,744
7/30/2020	4529.96	0.00	0	4041.57	0.49	12,936	12,936
7/31/2020	4529.96	0.00	0	4042.56	0.99	26,136	26,136
Average GPD from Lift Station							21,014
8/1/2020	4529.96	0.00	0	4043.06	0.50	13,200	13,200
8/2/2020	4529.96	0.00	0	4043.56	0.50	13,200	13,200
8/3/2020	4529.96	0.00	0	4044.55	0.99	26,136	26,136
8/4/2020	4529.96	0.00	0	4045.05	0.50	13,200	13,200
8/5/2020	4529.96	0.00	0	4045.54	0.49	12,936	12,936
8/6/2020	4529.96	0.00	0	4046.51	0.97	25,608	25,608
8/7/2020	4529.96	0.00	0	4050.38	3.87	102,168	102,168
8/8/2020	4529.96	0.00	0	4055.26	4.88	128,832	128,832
8/9/2020	4529.96	0.00	0	4059.28	4.02	106,128	106,128
8/10/2020	4529.96	0.00	0	4062.45	3.17	83,688	83,688
8/11/2020	4529.96	0.00	0	4064.77	2.32	61,248	61,248
8/12/2020	4529.96	0.00	0	4065.63	0.86	22,704	22,704
8/13/2020	4529.96	0.00	0	4067.34	1.71	45,144	45,144
8/14/2020	4529.96	0.00	0	4068.07	0.73	19,272	19,272
8/15/2020	4529.96	0.00	0	4069.37	1.30	34,320	34,320
8/16/2020	4529.96	0.00	0	4069.69	0.32	8,448	8,448
8/17/2020	4529.96	0.00	0	4070.43	0.74	19,536	19,536

8/18/2020	4529.96	0.00	0	4071.43	1.00	26,400	26,400
8/19/2020	4529.96	0.00	0	4071.94	0.51	13,464	13,464
8/20/2020	4529.96	0.00	0	4072.45	0.51	13,464	13,464
8/21/2020	4529.96	0.00	0	4073.46	1.01	26,664	26,664
8/22/2020	4529.96	0.00	0	4073.97	0.51	13,464	13,464
8/23/2020	4529.96	0.00	0	4074.48	0.51	13,464	13,464
8/24/2020	4529.96	0.00	0	4075.60	1.12	29,568	29,568
8/25/2020	4529.96	0.00	0	4076.08	0.48	12,672	12,672
8/26/2020	4529.96	0.00	0	4077.25	1.17	30,888	30,888
8/27/2020	4529.96	0.00	0	4077.84	0.59	15,576	15,576
8/28/2020	4529.96	0.00	0	4078.42	0.58	15,312	15,312
8/29/2020	4529.96	0.00	0	4079.61	1.19	31,416	31,416
8/30/2020	4529.96	0.00	0	4080.22	0.61	16,104	16,104
8/31/2020	4529.96	0.00	0	4081.43	1.21	31,944	31,944
Average GPD from Lift Station							33,766
9/1/2020	4529.96	0.00	0	4082.14	0.71	18,744	18,744
9/2/2020	4529.96	0.00	0	4083.39	1.25	33,000	33,000
9/3/2020	4529.96	0.00	0	4084.11	0.72	19,008	19,008
9/4/2020	4529.96	0.00	0	4084.77	0.66	17,424	17,424
9/5/2020	4529.96	0.00	0	4085.48	0.71	18,744	18,744
9/6/2020	4529.96	0.00	0	4086.76	1.28	33,792	33,792
9/7/2020	4529.96	0.00	0	4088.12	1.36	35,904	35,904
9/8/2020	4529.96	0.00	0	4090.12	2.00	52,800	52,800
9/9/2020	4529.96	0.00	0	4090.80	0.68	17,952	17,952
9/10/2020	4529.96	0.00	0	4092.29	1.49	39,336	39,336
9/11/2020	4529.96	0.00	0	4093.09	0.80	21,120	21,120
9/12/2020	4529.96	0.00	0	4094.22	1.13	29,832	29,832
9/13/2020	4529.96	0.00	0	4095.24	1.02	26,928	26,928
9/14/2020	4529.96	0.00	0	4096.44	1.20	31,680	31,680
9/15/2020	4529.96	0.00	0	4097.52	1.08	28,512	28,512
9/16/2020	4529.96	0.00	0	4102.49	4.97	131,208	131,208
9/17/2020	4529.96	0.00	0	4103.26	0.77	20,328	20,328
9/18/2020	4529.96	0.00	0	4104.07	0.81	21,384	21,384
9/19/2020	4529.96	0.00	0	4104.91	0.84	22,176	22,176
9/20/2020	4529.96	0.00	0	4105.95	1.04	27,456	27,456

9/21/2020	4529.96	0.00	0	4106.86	0.91	24,024	24,024
9/22/2020	4529.96	0.00	0	4107.82	0.96	25,344	25,344
9/23/2020	4529.96	0.00	0	4108.76	0.94	24,816	24,816
9/24/2020	4529.96	0.00	0	4109.75	0.99	26,136	26,136
9/25/2020	4529.96	0.00	0	4111.45	1.70	44,880	44,880
9/26/2020	4529.96	0.00	0	4112.24	0.79	20,856	20,856
9/27/2020	4529.96	0.00	0	4112.92	0.68	17,952	17,952
9/28/2020	4529.96	0.00	0	4113.52	0.60	15,840	15,840
9/29/2020	4529.96	0.00	0	4114.16	0.64	16,896	16,896
9/30/2020	4529.96	0.00	0	4114.77	0.61	16,104	16,104
Average GPD from Lift Station							29,339
10/1/2020	4529.96	0.00	0	4115.48	0.71	18,744	18,744
10/2/2020	4529.96	0.00	0	4116.10	0.62	16,368	16,368
10/3/2020	4529.96	0.00	0	4116.74	0.64	16,896	16,896
10/4/2020	4529.96	0.00	0	4117.41	0.67	17,688	17,688
10/5/2020	4529.96	0.00	0	4118.00	0.59	15,576	15,576
10/6/2020	4530.01	0.05	1,320	4118.71	0.71	18,744	20,064
10/7/2020	4530.01	0.00	0	4119.29	0.58	15,312	15,312
10/8/2020	4530.01	0.00	0	4119.86	0.57	15,048	15,048
10/9/2020	4530.01	0.00	0	4120.66	0.80	21,120	21,120
10/10/2020	4530.01	0.00	0	4121.40	0.74	19,536	19,536
10/11/2020	4530.01	0.00	0	4122.11	0.71	18,744	18,744
10/12/2020	4530.01	0.00	0	4122.85	0.74	19,536	19,536
10/13/2020	4530.01	0.00	0	4123.58	0.73	19,272	19,272
10/14/2020	4530.01	0.00	0	4124.30	0.72	19,008	19,008
10/15/2020	4530.01	0.00	0	4125.01	0.71	18,744	18,744
10/16/2020	4530.01	0.00	0	4125.82	0.81	21,384	21,384
10/17/2020	4530.01	0.00	0	4126.62	0.80	21,120	21,120
10/18/2020	4530.01	0.00	0	4127.40	0.78	20,592	20,592
10/19/2020	4530.01	0.00	0	4128.20	0.80	21,120	21,120
10/20/2020	4530.01	0.00	0	4129.10	0.90	23,760	23,760
10/21/2020	4530.01	0.00	0	4130.02	0.92	24,288	24,288
10/22/2020	4530.01	0.00	0	4130.99	0.97	25,608	25,608
10/23/2020	4530.01	0.00	0	4131.82	0.83	21,912	21,912
10/24/2020	4530.01	0.00	0	4132.55	0.73	19,272	19,272

10/25/2020	4530.01	0.00	0	4133.19	0.64	16,896	16,896
10/26/2020	4530.01	0.00	0	4133.83	0.64	16,896	16,896
10/27/2020	4530.01	0.00	0	4134.52	0.69	18,216	18,216
10/28/2020	4530.01	0.00	0	4135.70	1.18	31,152	31,152
10/29/2020	4530.01	0.00	0	4136.65	0.95	25,080	25,080
10/30/2020	4530.01	0.00	0	4137.68	1.03	27,192	27,192
10/31/2020	4530.01	0.00	0	4138.67	0.99	26,136	26,136
Average GPD from Lift Station							20,451
11/1/2020	4530.01	0.00	0	4139.35	0.68	17,952	17,952
11/2/2020	4530.01	0.00	0	4140.18	0.83	21,912	21,912
11/3/2020	4530.01	0.00	0	4140.93	0.75	19,800	19,800
11/4/2020	4530.01	0.00	0	4141.68	0.75	19,800	19,800
11/5/2020	4530.01	0.00	0	4142.42	0.74	19,536	19,536
11/6/2020	4530.01	0.00	0	4143.12	0.70	18,480	18,480
11/7/2020	4530.01	0.00	0	4143.94	0.82	21,648	21,648
11/8/2020	4530.01	0.00	0	4144.59	0.65	17,160	17,160
11/9/2020	4530.01	0.00	0	4145.55	0.96	25,344	25,344
11/10/2020	4530.01	0.00	0	4146.12	0.57	15,048	15,048
11/11/2020	4530.01	0.00	0	4146.87	0.75	19,800	19,800
11/12/2020	4530.01	0.00	0	4147.60	0.73	19,272	19,272
11/13/2020	4530.01	0.00	0	4148.31	0.71	18,744	18,744
11/14/2020	4530.01	0.00	0	4149.05	0.74	19,536	19,536
11/15/2020	4530.01	0.00	0	4149.92	0.87	22,968	22,968
11/16/2020	4530.01	0.00	0	4151.12	1.20	31,680	31,680
11/17/2020	4530.01	0.00	0	4152.42	1.30	34,320	34,320
11/18/2020	4530.01	0.00	0	4153.66	1.24	32,736	32,736
11/19/2020	4530.01	0.00	0	4154.72	1.06	27,984	27,984
11/20/2020	4530.01	0.00	0	4155.85	1.13	29,832	29,832
11/21/2020	4530.01	0.00	0	4156.66	0.81	21,384	21,384
11/22/2020	4530.01	0.00	0	4157.46	0.80	21,120	21,120
11/23/2020	4530.01	0.00	0	4158.35	0.89	23,496	23,496
11/24/2020	4530.01	0.00	0	4159.17	0.82	21,648	21,648
11/25/2020	4530.01	0.00	0	4159.89	0.72	19,008	19,008
11/26/2020	4530.01	0.00	0	4160.64	0.75	19,800	19,800
11/27/2020	4530.01	0.00	0	4161.44	0.80	21,120	21,120

11/28/2020	4530.01	0.00	0	4162.16	0.72	19,008	19,008
11/29/2020	4530.01	0.00	0	4163.10	0.94	24,816	24,816
11/30/2020	4530.01	0.00	0	4163.82	0.72	19,008	19,008
Average GPD from Lift Station							22,132
12/1/2020	4530.01	0.00	0	4164.52	0.70	18,480	18,480
12/2/2020	4530.01	0.00	0	4165.12	0.60	15,840	15,840
12/3/2020	4530.01	0.00	0	4165.78	0.66	17,424	17,424
12/4/2020	4530.01	0.00	0	4166.52	0.74	19,536	19,536
12/5/2020	4530.01	0.00	0	4167.18	0.66	17,424	17,424
12/6/2020	4530.01	0.00	0	4167.84	0.66	17,424	17,424
12/7/2020	4530.01	0.00	0	4168.51	0.67	17,688	17,688
12/8/2020	4530.01	0.00	0	4169.19	0.68	17,952	17,952
12/9/2020	4530.01	0.00	0	4169.84	0.65	17,160	17,160
12/10/2020	4530.01	0.00	0	4170.47	0.63	16,632	16,632
12/11/2020	4530.01	0.00	0	4171.11	0.64	16,896	16,896
12/12/2020	4530.01	0.00	0	4171.73	0.62	16,368	16,368
12/13/2020	4530.01	0.00	0	4172.39	0.66	17,424	17,424
12/14/2020	4530.01	0.00	0	4172.97	0.58	15,312	15,312
12/15/2020	4530.01	0.00	0	4173.60	0.63	16,632	16,632
12/16/2020	4530.01	0.00	0	4174.21	0.61	16,104	16,104
12/17/2020	4530.01	0.00	0	4174.79	0.58	15,312	15,312
12/18/2020	4530.01	0.00	0	4175.39	0.60	15,840	15,840
12/19/2020	4530.01	0.00	0	4176.06	0.67	17,688	17,688
12/20/2020	4530.01	0.00	0	4176.71	0.65	17,160	17,160
12/21/2020	4530.01	0.00	0	4177.47	0.76	20,064	20,064
12/22/2020	4530.01	0.00	0	4178.07	0.60	15,840	15,840
12/23/2020	4530.01	0.00	0	4178.71	0.64	16,896	16,896
12/24/2020	4530.01	0.00	0	4179.33	0.62	16,368	16,368
12/25/2020	4530.01	0.00	0	4179.97	0.64	16,896	16,896
12/26/2020	4530.01	0.00	0	4180.55	0.58	15,312	15,312
12/27/2020	4530.01	0.00	0	4181.06	0.51	13,464	13,464
12/28/2020	4530.01	0.00	0	4181.63	0.57	15,048	15,048
12/29/2020	4530.01	0.00	0	4182.29	0.66	17,424	17,424
12/30/2020	4530.01	0.00	0	4182.85	0.56	14,784	14,784
12/31/2020	4530.01	0.00	0	4183.47	0.62	16,368	16,368

Influent Flows from Main Lift Station

Pump Flow Rate 440 GPM

	Pump 1 Total Hours	Pump 1 Hours	Pump 1 Total Gallons	Pump 2 Total Hours	Pump 2 Hours	Pump 2 Total Gallons	Gallons Per Day
1/1/2021	4530.01	0.00	0	4184.12	0.65	17,160	17,160
1/2/2021	4530.01	0.00	0	4184.72	0.60	15,840	15,840
1/3/2021	4530.01	0.00	0	4185.29	0.57	15,048	15,048
1/4/2021	4530.01	0.00	0	4185.92	0.63	16,632	16,632
1/5/2021	4530.01	0.00	0	4186.60	0.68	17,952	17,952
1/6/2021	4530.01	0.00	0	4187.27	0.67	17,688	17,688
1/7/2021	4530.01	0.00	0	4187.93	0.66	17,424	17,424
1/8/2021	4530.01	0.00	0	4188.53	0.60	15,840	15,840
1/9/2021	4530.01	0.00	0	4189.15	0.62	16,368	16,368
1/10/2021	4530.01	0.00	0	4189.84	0.69	18,216	18,216
1/11/2021	4530.01	0.00	0	4190.47	0.63	16,632	16,632
1/12/2021	4530.01	0.00	0	4191.06	0.59	15,576	15,576
1/13/2021	4530.01	0.00	0	4191.66	0.60	15,840	15,840
1/14/2021	4530.01	0.00	0	4192.58	0.92	24,288	24,288
1/15/2021	4530.01	0.00	0	4193.52	0.94	24,816	24,816
1/16/2021	4530.01	0.00	0	4194.56	1.04	27,456	27,456
1/17/2021	4530.01	0.00	0	4195.48	0.92	24,288	24,288
1/18/2021	4530.01	0.00	0	4196.47	0.99	26,136	26,136
1/19/2021	4530.01	0.00	0	4197.32	0.85	22,440	22,440
1/20/2021	4530.01	0.00	0	4198.27	0.95	25,080	25,080
1/21/2021	4530.01	0.00	0	4199.14	0.87	22,968	22,968
1/22/2021	4530.01	0.00	0	4200.11	0.97	25,608	25,608
1/23/2021	4530.01	0.00	0	4201.12	1.01	26,664	26,664
1/24/2021	4530.01	0.00	0	4202.12	1.00	26,400	26,400
1/25/2021	4530.01	0.00	0	4202.98	0.86	22,704	22,704
1/26/2021	4530.01	0.00	0	4204.56	1.58	41,712	41,712

Monthly High
Monthly Low
Varied from raw data

1/27/2021	4530.07	0.06	1,584	4204.81	0.25	6,600	8,184
1/28/2021	4531.12	1.05	27,720	4206.00	1.19	31,416	59,136
1/29/2021	4531.44	0.32	8,448	4206.35	0.35	9,240	17,688
1/30/2021	4531.77	0.33	8,712	4206.68	0.33	8,712	17,424
1/31/2021	4532.11	0.34	8,976	4207.03	0.35	9,240	18,216
		Average GPD from Lift Station					22,009
2/1/2021	4532.41	0.30	7,920	4207.36	0.33	8,712	16,632
2/2/2021	4532.75	0.34	8,976	4207.75	0.39	10,296	19,272
2/3/2021	4532.99	0.24	6,336	4208.01	0.26	6,864	13,200
2/4/2021	4533.29	0.30	7,920	4208.29	0.28	7,392	15,312
2/5/2021	4533.52	0.23	6,072	4208.62	0.33	8,712	14,784
2/6/2021	4533.94	0.42	11,088	4209.04	0.42	11,088	22,176
2/7/2021	4534.24	0.30	7,920	4209.37	0.33	8,712	16,632
2/8/2021	4534.51	0.27	7,128	4209.66	0.29	7,656	14,784
2/9/2021	4534.87	0.36	9,504	4210.06	0.40	10,560	20,064
2/10/2021	4535.23	0.36	9,504	4210.45	0.39	10,296	19,800
2/11/2021	4535.64	0.41	10,824	4210.90	0.45	11,880	22,704
2/12/2021	4536.02	0.38	10,032	4211.32	0.42	11,088	21,120
2/13/2021	4536.48	0.46	12,144	4211.77	0.45	11,880	24,024
2/14/2021	4536.84	0.36	9,504	4212.24	0.47	12,408	21,912
2/15/2021	4537.29	0.45	11,880	4212.69	0.45	11,880	23,760
2/16/2021	4537.77	0.48	12,672	4213.21	0.52	13,728	26,400
2/17/2021	4538.21	0.44	11,616	4213.61	0.40	10,560	22,176
2/18/2021	4538.58	0.37	9,768	4214.05	0.44	11,616	21,384
2/19/2021	4539.01	0.43	11,352	4214.58	0.53	13,992	25,344
2/20/2021	4539.55	0.54	14,256	4215.11	0.53	13,992	28,248
2/21/2021	4540.18	0.63	16,632	4215.80	0.69	18,216	34,848
2/22/2021	4540.75	0.57	15,048	4216.49	0.69	18,216	33,264
2/23/2021	4541.46	0.71	18,744	4217.20	0.71	18,744	37,488
2/24/2021	4542.10	0.64	16,896	4217.91	0.71	18,744	35,640
2/25/2021	4542.72	0.62	16,368	4218.65	0.74	19,536	35,904
2/26/2021	4543.39	0.67	17,688	4219.29	0.64	16,896	34,584
2/27/2021	4543.92	0.53	13,992	4219.89	0.60	15,840	29,832
2/28/2021	4544.29	0.37	9,768	4220.38	0.49	12,936	22,704

		Average GPD from Lift Station					24,071
3/1/2021	4544.78	0.49	12,936	4220.85	0.47	12,408	25,344
3/2/2021	4545.27	0.49	12,936	4221.38	0.53	13,992	26,928
3/3/2021	4545.80	0.53	13,992	4222.02	0.64	16,896	30,888
3/4/2021	4546.20	0.40	10,560	4222.55	0.53	13,992	24,552
3/5/2021	4546.79	0.59	15,576	4223.07	0.52	13,728	29,304
3/6/2021	4547.41	0.62	16,368	4223.65	0.58	15,312	31,680
3/7/2021	4547.82	0.41	10,824	4224.19	0.54	14,256	25,080
3/8/2021	4548.34	0.52	13,728	4224.75	0.56	14,784	28,512
3/9/2021	4548.88	0.54	14,256	4225.31	0.56	14,784	29,040
3/10/2021	4549.51	0.63	16,632	4225.90	0.59	15,576	32,208
3/11/2021	4550.26	0.75	19,800	4226.71	0.81	21,384	41,184
3/12/2021	4550.85	0.59	15,576	4227.40	0.69	18,216	33,792
3/13/2021	4551.49	0.64	16,896	4228.01	0.61	16,104	33,000
3/14/2021	4552.01	0.52	13,728	4228.61	0.60	15,840	29,568
3/15/2021	4552.49	0.48	12,672	4229.11	0.50	13,200	25,872
3/16/2021	4553.02	0.53	13,992	4229.61	0.50	13,200	27,192
3/17/2021	4553.45	0.43	11,352	4230.04	0.43	11,352	22,704
3/18/2021	4553.75	0.30	7,920	4230.41	0.37	9,768	17,688
3/19/2021	4554.07	0.32	8,448	4230.72	0.31	8,184	16,632
3/20/2021	4554.45	0.38	10,032	4231.05	0.33	8,712	18,744
3/21/2021	4554.73	0.28	7,392	4231.37	0.32	8,448	15,840
3/22/2021	4555.04	0.31	8,184	4231.76	0.39	10,296	18,480
3/23/2021	4555.46	0.42	11,088	4232.20	0.44	11,616	22,704
3/24/2021	4555.82	0.36	9,504	4232.58	0.38	10,032	19,536
3/25/2021	4556.25	0.43	11,352	4232.99	0.41	10,824	22,176
3/26/2021	4556.54	0.29	7,656	4233.40	0.41	10,824	18,480
3/27/2021	4556.92	0.38	10,032	4233.78	0.38	10,032	20,064
3/28/2021	4557.22	0.30	7,920	4234.05	0.27	7,128	15,048
3/29/2021	4557.52	0.30	7,920	4234.37	0.32	8,448	16,368
3/30/2021	4557.89	0.37	9,768	4234.76	0.39	10,296	20,064
3/31/2021	4558.19	0.30	7,920	4235.18	0.42	11,088	19,008
		Average GPD from Lift Station					24,441
4/1/2021	4558.56	0.37	9,768	4235.51	0.33	8,712	18,480

4/2/2021	4558.85	0.29	7,656	4235.85	0.34	8,976	16,632
4/3/2021	4559.35	0.50	13,200	4236.39	0.54	14,256	27,456
4/4/2021	4559.71	0.36	9,504	4236.85	0.46	12,144	21,648
4/5/2021	4560.04	0.33	8,712	4237.18	0.33	8,712	17,424
4/6/2021	4560.34	0.30	7,920	4237.52	0.34	8,976	16,896
4/7/2021	4560.71	0.37	9,768	4237.85	0.33	8,712	18,480
4/8/2021	4561.02	0.31	8,184	4238.20	0.35	9,240	17,424
4/9/2021	4561.35	0.33	8,712	4238.56	0.36	9,504	18,216
4/10/2021	4561.74	0.39	10,296	4238.90	0.34	8,976	19,272
4/11/2021	4562.00	0.26	6,864	4239.17	0.27	7,128	13,992
4/12/2021	4562.32	0.32	8,448	4239.51	0.34	8,976	17,424
4/13/2021	4562.63	0.31	8,184	4239.84	0.33	8,712	16,896
4/14/2021	4562.95	0.32	8,448	4240.17	0.33	8,712	17,160
4/15/2021	4563.32	0.37	9,768	4240.64	0.47	12,408	22,176
4/16/2021	4563.69	0.37	9,768	4241.00	0.36	9,504	19,272
4/17/2021							
4/18/2021	4564.37	0.68	17,952	4241.79	0.79	20,856	38,808
4/19/2021	4564.75	0.38	10,032	4242.24	0.45	11,880	21,912
4/20/2021	4565.06	0.31	8,184	4242.61	0.37	9,768	17,952
4/21/2021	4565.43	0.37	9,768	4243.01	0.40	10,560	20,328
4/22/2021	4565.80	0.37	9,768	4243.32	0.31	8,184	17,952
4/23/2021	4566.07	0.27	7,128	4243.72	0.40	10,560	17,688
4/24/2021	4566.40	0.33	8,712	4244.00	0.28	7,392	16,104
4/25/2021	4566.74	0.34	8,976	4244.45	0.45	11,880	20,856
4/26/2021	4567.06	0.32	8,448	4244.81	0.36	9,504	17,952
4/27/2021	4567.39	0.33	8,712	4245.10	0.29	7,656	16,368
4/28/2021	4567.66	0.27	7,128	4245.47	0.37	9,768	16,896
4/29/2021	4567.99	0.33	8,712	4245.86	0.39	10,296	19,008
4/30/2021	4568.32	0.33	8,712	4246.15	0.29	7,656	16,368
		Average GPD from Lift Station					19,208
5/1/2021	4568.62	0.30	7,920	4246.46	0.31	8,184	16,104
5/2/2021	4568.93	0.31	8,184	4246.75	0.29	7,656	15,840
5/3/2021	4569.23	0.30	7,920	4247.05	0.30	7,920	15,840
5/4/2021	4569.56	0.33	8,712	4247.40	0.35	9,240	17,952

5/5/2021	4569.82	0.26	6,864	4247.77	0.37	9,768	16,632
5/6/2021	4570.16	0.34	8,976	4248.14	0.37	9,768	18,744
5/7/2021	4570.49	0.33	8,712	4248.50	0.36	9,504	18,216
5/8/2021	4570.82	0.33	8,712	4248.90	0.40	10,560	19,272
5/9/2021	4572.11	1.29	34,056	4250.29	1.39	36,696	70,752
5/10/2021	4572.51	0.40	10,560	4250.71	0.42	11,088	21,648
5/11/2021	4572.96	0.45	11,880	4251.22	0.51	13,464	25,344
5/12/2021	4573.37	0.41	10,824	4251.58	0.36	9,504	20,328
5/13/2021	4573.70	0.33	8,712	4252.01	0.43	11,352	20,064
5/14/2021	4574.09	0.39	10,296	4252.36	0.35	9,240	19,536
5/15/2021	4574.40	0.31	8,184	4252.85	0.49	12,936	21,120
5/16/2021	4574.79	0.39	10,296	4253.36	0.51	13,464	23,760
5/17/2021	4575.17	0.38	10,032	4253.70	0.34	8,976	19,008
5/18/2021	4575.51	0.34	8,976	4254.13	0.43	11,352	20,328
5/19/2021	4575.91	0.40	10,560	4254.49	0.36	9,504	20,064
5/20/2021	4576.24	0.33	8,712	4254.86	0.37	9,768	18,480
5/21/2021	4576.77	0.53	13,992	4255.46	0.60	15,840	29,832
5/22/2021	4577.30	0.53	13,992	4256.05	0.59	15,576	29,568
5/23/2021	4577.62	0.32	8,448	4256.47	0.42	11,088	19,536
5/24/2021	4578.16	0.54	14,256	4257.02	0.55	14,520	28,776
5/25/2021	4578.61	0.45	11,880	4257.52	0.50	13,200	25,080
5/26/2021	4579.01	0.40	10,560	4257.88	0.36	9,504	20,064
5/27/2021	4579.35	0.34	8,976	4258.31	0.43	11,352	20,328
5/28/2021	4579.77	0.42	11,088	4258.75	0.44	11,616	22,704
5/29/2021	4580.20	0.43	11,352	4259.22	0.47	12,408	23,760
5/30/2021	4580.70	0.50	13,200	4259.71	0.49	12,936	26,136
5/31/2021	4581.15	0.45	11,880	4260.26	0.55	14,520	26,400
		Average GPD from Lift Station					22,942
6/1/2021	4581.60	0.45	11880	4260.72	0.46	12,144	24,024
6/2/2021	4582.12	0.52	13728	4261.27	0.55	14,520	28,248
6/3/2021	4582.51	0.39	10296	4261.61	0.34	8,976	19,272
6/4/2021	4582.86	0.35	9240	4261.95	0.34	8,976	18,216
6/5/2021	4583.22	0.36	9504	4262.36	0.41	10,824	20,328
6/6/2021	4583.54	0.32	8448	4262.78	0.42	11,088	19,536

6/7/2021	4583.93	0.39	10296	4263.19	0.41	10,824	21,120
6/8/2021	4584.32	0.39	10296	4263.56	0.37	9,768	20,064
6/9/2021	4585.45	1.13	29832	4264.92	1.36	35,904	65,736
6/10/2021	4586.15	0.70	18480	4265.66	0.74	19,536	38,016
6/11/2021	4586.70	0.55	14520	4266.25	0.59	15,576	30,096
6/12/2021	4587.27	0.57	15048	4266.79	0.54	14,256	29,304
6/13/2021	4587.62	0.35	9240	4267.26	0.47	12,408	21,648
6/14/2021	4588.06	0.44	11616	4267.67	0.41	10,824	22,440
6/15/2021	4588.49	0.43	11352	4268.13	0.46	12,144	23,496
6/16/2021	4588.85	0.36	9504	4268.59	0.46	12,144	21,648
6/17/2021	4589.22	0.37	9768	4268.92	0.33	8,712	18,480
6/18/2021	4589.55	0.33	8712	4269.34	0.42	11,088	19,800
6/19/2021	4589.80	0.25	6600	4269.60	0.26	6,864	13,464
6/20/2021	4590.17	0.37	9768	4269.98	0.38	10,032	19,800
6/21/2021	4590.54	0.37	9768	4270.30	0.32	8,448	18,216
6/22/2021	4590.89	0.35	9240	4270.68	0.38	10,032	19,272
6/23/2021	4591.20	0.31	8184	4271.08	0.40	10,560	18,744
6/24/2021	4591.56	0.36	9504	4271.41	0.33	8,712	18,216
6/25/2021	4591.91	0.35	9240	4271.81	0.40	10,560	19,800
6/26/2021	4592.23	0.32	8448	4272.16	0.35	9,240	17,688
6/27/2021	4592.52	0.29	7656	4272.44	0.28	7,392	15,048
6/28/2021	4592.88	0.36	9504	4272.90	0.46	12,144	21,648
6/29/2021	4593.25	0.37	9768	4273.21	0.31	8,184	17,952
6/30/2021	4593.62	0.37	9768	4273.69	0.48	12,672	22,440
		Average GPD from Lift Station					22,792
7/1/2021	4593.98	0.36	9504	4274.07	0.38	10,032	19,536
7/2/2021	4594.39	0.41	10824	4274.45	0.38	10,032	20,856
7/3/2021	4594.70	0.31	8184	4274.84	0.39	10,296	18,480
7/4/2021	4595.07	0.37	9768	4275.18	0.34	8,976	18,744
7/5/2021	4595.60	0.53	13992	4275.51	0.33	8,712	22,704
7/6/2021	4595.74	0.14	3696	4275.95	0.44	11,616	15,312
7/7/2021	4596.14	0.40	10560	4276.36	0.41	10,824	21,384
7/8/2021	4596.44	0.30	7920	4276.68	0.32	8,448	16,368
7/9/2021	4597.00	0.56	14784	4277.44	0.76	20,064	34,848

7/10/2021	4597.54	0.54	14256	4278.01	0.57	15,048	29,304
7/11/2021	4597.92	0.38	10032	4278.41	0.40	10,560	20,592
7/12/2021	4598.27	0.35	9240	4278.80	0.39	10,296	19,536
7/13/2021	4598.74	0.47	12408	4279.24	0.44	11,616	24,024
7/14/2021	4599.08	0.34	8976	4279.58	0.34	8,976	17,952
7/15/2021	4599.44	0.36	9504	4279.99	0.41	10,824	20,328
7/16/2021	4599.81	0.37	9768	4280.43	0.44	11,616	21,384
7/17/2021	4600.24	0.43	11352	4280.90	0.47	12,408	23,760
7/18/2021	4600.62	0.38	10032	4281.24	0.34	8,976	19,008
7/19/2021	4600.92	0.30	7920	4281.65	0.41	10,824	18,744
7/20/2021	4601.28	0.36	9504	4281.95	0.30	7,920	17,424
7/21/2021	4601.68	0.40	10560	4282.41	0.46	12,144	22,704
7/22/2021	4601.99	0.31	8184	4282.80	0.39	10,296	18,480
7/23/2021	4602.36	0.37	9768	4283.18	0.38	10,032	19,800
7/24/2021	4602.72	0.36	9504	4283.52	0.34	8,976	18,480
7/25/2021	4603.02	0.30	7920	4283.92	0.40	10,560	18,480
7/26/2021	4603.31	0.29	7656	4284.25	0.33	8,712	16,368
7/27/2021	4603.64	0.33	8712	4284.57	0.32	8,448	17,160
7/28/2021	4603.99	0.35	9240	4284.96	0.39	10,296	19,536
7/29/2021	4604.34	0.35	9240	4285.36	0.40	10,560	19,800
7/30/2021	4604.71	0.37	9768	4285.72	0.36	9,504	19,272
7/31/2021	4605.02	0.31	8184	4286.10	0.38	10,032	18,216
		Average GPD from Lift Station					20,277
8/1/2021	4605.39	0.37	9768	4286.46	0.36	9,504	19,272
8/2/2021	4605.69	0.30	7920	4286.77	0.31	8,184	16,104
8/3/2021	4606.05	0.36	9504	4287.15	0.38	10,032	19,536
8/4/2021	4606.39	0.34	8976	4287.52	0.37	9,768	18,744
8/5/2021	4606.75	0.36	9504	4287.81	0.29	7,656	17,160
8/6/2021	4607.11	0.36	9504	4288.19	0.38	10,032	19,536
8/7/2021	4607.35	0.24	6336	4288.52	0.33	8,712	15,048
8/8/2021	4607.71	0.36	9504	4288.84	0.32	8,448	17,952
8/9/2021	4608.01	0.30	7920	4289.16	0.32	8,448	16,368
8/10/2021	4608.54	0.53	13992	4289.74	0.58	15,312	29,304
8/11/2021	4608.97	0.43	11352	4290.25	0.51	13,464	24,816

8/12/2021	4609.40	0.43	11352	4290.68	0.43	11,352	22,704
8/13/2021	4609.74	0.34	8976	4291.12	0.44	11,616	20,592
8/14/2021	4610.10	0.36	9504	4291.45	0.33	8,712	18,216
8/15/2021	4610.38	0.28	7392	4291.82	0.37	9,768	17,160
8/16/2021	4610.77	0.39	10296	4292.17	0.35	9,240	19,536
8/17/2021	4611.17	0.40	10560	4292.62	0.45	11,880	22,440
8/18/2021	4611.47	0.30	7920	4293.02	0.40	10,560	18,480
8/19/2021	4611.81	0.34	8976	4293.35	0.33	8,712	17,688
8/20/2021	4612.40	0.59	15576	4294.09	0.74	19,536	35,112
8/21/2021	4613.15	0.75	19800	4294.88	0.79	20,856	40,656
8/22/2021	4614.00	0.85	22440	4295.71	0.83	21,912	44,352
8/23/2021	4615.07	1.07	28248	4296.92	1.21	31,944	60,192
8/24/2021	4615.57	0.50	13200	4297.55	0.63	16,632	29,832
8/25/2021	4615.94	0.37	9768	4298.06	0.51	13,464	23,232
8/26/2021	4616.36	0.42	11088	4298.44	0.38	10,032	21,120
8/27/2021	4617.50	1.14	30096	4299.58	1.14	30,096	60,192
8/28/2021	4618.19	0.69	18216	4300.32	0.74	19,536	37,752
8/29/2021	4618.72	0.53	13992	4300.99	0.67	17,688	31,680
8/30/2021	4619.18	0.46	12144	4301.48	0.49	12,936	25,080
8/31/2021	4619.64	0.46	12144	4301.95	0.47	12,408	24,552
		Average GPD from Lift Station					25,949
9/1/2021	4620.07	0.43	11352	4302.39	0.44	11,616	22,968
9/2/2021	4620.50	0.43	11352	4302.79	0.40	10,560	21,912
9/3/2021	4620.95	0.45	11880	4303.27	0.48	12,672	24,552
9/4/2021	4621.34	0.39	10296	4303.68	0.41	10,824	21,120
9/5/2021	4621.75	0.41	10824	4304.03	0.35	9,240	20,064
9/6/2021	4622.12	0.37	9768	4304.46	0.43	11,352	21,120
9/7/2021	4622.64	0.52	13728	4304.89	0.43	11,352	25,080
9/8/2021	4623.12	0.48	12672	4305.40	0.51	13,464	26,136
9/9/2021	4623.58	0.46	12144	4305.88	0.48	12,672	24,816
9/10/2021	4624.12	0.54	14256	4306.43	0.55	14,520	28,776
9/11/2021	4624.66	0.54	14256	4306.92	0.49	12,936	27,192
9/12/2021	4625.07	0.41	10824	4307.36	0.44	11,616	22,440
9/13/2021	4625.54	0.47	12408	4307.78	0.42	11,088	23,496

9/14/2021	4626.00	0.46	12144	4308.30	0.52	13,728	25,872
9/15/2021	4626.42	0.42	11088	4308.78	0.48	12,672	23,760
9/16/2021	4626.88	0.46	12144	4309.17	0.39	10,296	22,440
9/17/2021	4627.47	0.59	15576	4309.81	0.64	16,896	32,472
9/18/2021	4627.99	0.52	13728	4310.28	0.47	12,408	26,136
9/19/2021	4628.51	0.52	13728	4310.78	0.50	13,200	26,928
9/20/2021	4628.90	0.39	10296	4311.16	0.38	10,032	20,328
9/21/2021	4629.21	0.31	8184	4311.52	0.36	9,504	17,688
9/22/2021	4629.50	0.29	7656	4311.94	0.42	11,088	18,744
9/23/2021	4629.84	0.34	8976	4312.28	0.34	8,976	17,952
9/24/2021	4630.20	0.36	9504	4312.63	0.35	9,240	18,744
9/25/2021	4630.55	0.35	9240	4312.92	0.29	7,656	16,896
9/26/2021	4630.82	0.27	7128	4313.29	0.37	9,768	16,896
9/27/2021	4631.16	0.34	8976	4313.59	0.30	7,920	16,896
9/28/2021	4631.50	0.34	8976	4313.97	0.38	10,032	19,008
9/29/2021	4631.84	0.34	8976	4314.36	0.39	10,296	19,272
9/30/2021	4632.17	0.33	8712	4314.65	0.29	7,656	16,368
		Average GPD from Lift Station					22,202

Monthly Summary Flows					
	Avg Lift Station Flows (TGD)	High Lift Station Flows (TGD)	Low Lift Station Flows (TGD)		
Jan-19	83.785	108.768	69.168		
Feb-19	71.261	121.176	41.976		
Mar-19	83.398	204.864	44.352		
Apr-19	61.855	72.600	44.088		
May-19	45.442	72.864	21.912		
Jun-19	50.406	396.792	20.856		
Jul-19	43.730	117.744	27.192		
Aug-19	37.624	108.504	17.688		
Sep-19	45.936	192.984	26.400	blue dates appear to be off. Hours skewed and data not used	
Oct-19	32.404	62.568	25.872		
Nov-19	36.115	71.544	25.080		
Dec-19	31.288	39.600	23.232		
Jan-20	29.014	46.464	19.800		
Feb-20	41.001	63.888	22.176	high not reliable as each day before/after are in the 50k gpd	
Mar-20	44.798	48.312	26.664	high not reliable as each day before/after are in the 50k gpd	
Apr-20	27.817	44.880	7.128		
May-20	41.043	105.600	20.592		
Jun-20	30.193	86.856	19.008		
Jul-20	21.014	40.920	12.936		
Aug-20	33.766	128.832	8.448		
Sep-20	29.339	131.208	15.840		
Oct-20	20.451	27.192	15.048		
Nov-20	22.132	34.320	15.048		
Dec-20	16.676	20.064	13.464		
Jan-21	22.009	59.136	8.184		
Feb-21	24.071	37.488	14.784		
Mar-21	24.441	41.184	15.048	Winter 19/20	35.770
Apr-21	19.208	38.808	13.992	Spring/summe	30.529
May-21	22.942	70.752	15.840	FW 20/21	21.630
Jun-21	22.792	65.736	13.464	SS21	22.228
Jul-21	20.277	34.848	16.368		
Aug-21	25.949	60.192	15.048		
Sep-21	22.202	32.472	16.368		

Saco Lagoon Lift Station Pumping Record

MONTH September YEAR 2021

DAY	TIME	PUMP 1 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:41AM	462007	.43		430239	.44		57°
2	7:42AM	462050	.43		430279	.40		48°
3	9:06AM	462095	.45		430327	.48		57
4	7:30AM	462134	.39		430368	.41		52°
5	9:26AM	462175	.41		430403	.35		60°
6	8:25AM	462212	.37		430446	.43		59°
7	7:40AM	462264	.52		430489	.43		48°
8	7:33AM	462312	.48		430540	.51		46°
9	7:23AM	462358	.46		430588	.48		49
10	9:24AM	462412	.54		430643	.55		59°
11	10:30AM	462466	.54		430692	.49		66°
12	9:17AM	462507	.41		430736	.44		59°
13	7:11AM	462554	.47		430778	.42		48°
14	7:27AM	462600	.54		430830	.52		51°
15	7:08AM	462642	.42		430878	.48		48°
16	7:19AM	462688	.46		430917	.39		50°
17	8:50AM	462747	.59		430981	.64		47°
18	8:32AM	462799	.52		431028	.47		43°
19	8:00AM	462851	.52		431078	.50		46°
20	7:54AM	462890	.39		431116	.38		40°
21	8:50AM	462921	.31		431152	.36		43°
22	7:45AM	462950	.39		431194	.42		45°
23	7:37AM	462984	.34		431228	.34		52°
24	8:33AM	463020	.36		431263	.35		47°
25	7:35AM	463055	.35		431292	.29		43°
26	9:29AM	463082	.27		431329	.37		60°
27	7:15AM	463116	.34		431359	.30		44°
28	7:38AM	463150	.34		431397	.38		45°
29	7:22AM	463184	.34		431436	.39		50°
30	7:29AM	463217	.33		431465	.29		34°
31								

#1 Pumping Rate_____gal/hr

#2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH AUGUST YEAR 2021

DAY	TIME	PUMP 1 460502 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 428610 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	9:10 AM	460539	.37		428646	.36		77°
2	7:16AM	460569	.30		428677	.31		67°
3	7:14 AM	460605	.36		428715	.38		73°
4	7:14AM	460639	.34		428752	.37		69°
5	7:14AM	460675	.36		428781	.29		65°
6	8:52AM	460711	.36		428819	.38		73°
7	7:32AM	460735	.24		428852	.33		75°
8	10:39AM	460771	.36		428884	.32		84°
9	7:35AM	460801	.30		428916	.32		62°
10	8:07AM	460854	.53		428974	.58		59°
11	7:23AM	460897	.43		429025	.51		63°
12	7:29AM	460940	.43		429068	.43		63°
13	7:53AM	460974	.34		429112	.44		69°
14	8:43AM	461010	.36		429145	.33		77°
15	7:49AM	461038	.28		429182	.37		74°
16	7:14AM	461077	.39		429217	.35		58°
17	7:15AM	461117	.40		429262	.45		62°
18	7:18AM	461147	.30		429302	.40		58°
19	7:26AM	461181	.34		429335	.33		57°
20	8:26AM	461240	.59		429409	.74		56°
21	7:30AM	461315	.75		429488	.79		60°
22	9:23AM	461400	.85		429571	.83		58°
23	7:24AM	461507	.07		429692	.21		54°
24	7:15AM	461557	.50		429755	.53		50°
25	7:24AM	461594	.37		429806	.61		45°
26	7:29AM	461636	.42		429844	.38		55°
27	9:24AM	461750	1.14		429958	1.14		60°
28	7:50AM	461819	.69		430032	.74		55°
29	9:03AM	461872	.53		430099	.67		65°
30	7:38AM	461918	.46		430148	.49		53°
31	8:01AM	461964	.46		430195	.47		65°

#1 Pumping Rate _____ gal/hr

#2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH July YEAR 2021

DAY	TIME	PUMP 1 Totalizer Hrs	PUMP 1 Daily Hrs	PUMP 1 Daily Gallons	PUMP 2 Totalizer Hrs	PUMP 2 Daily Hrs	PUMP 2 Daily Gallons	Comments
1	7:20 AM	459398	.36		427407	.38		80°
2	6:43 AM	459439	.41		427445	.38		79°
3	8:35 AM	459470	.31		427484	.39		83°
4	8 AM	459507	.37		427518	.34		76°
5	8:45 AM	459560	.53		427551	.33		75°
6	7:23 AM	459574	.14		427595	.44		63°
7	7:36 AM	459614	.40		427636	.41		63°
8	7:29 AM	459644	.30		427668	.32		73°
9	9:35 AM	459700	.54		427744	.76		61°
10	10:30 AM	459754	.54		427801	.57		75°
11	9:30 AM	459792	.38		427841	.40		63°
12	7:10 AM	459827	.35		427880	.39		63°
13	10:00 AM	459874	.47		427924	.44		82°
14	9:20 AM	459908	.34		427958	.34		73°
15	7:32 AM	459944	.36		427999	.41		69°
16	7:31 AM	459981	.37		428043	.44		71°
17	9:14 AM	460024	.43		428090	.47		79°
18	10:13 AM	460062	.38		428124	.34		86°
19	9:54 AM	460092	.30		428165	.41		84°
20	7:17 AM	460128	.36		428195	.30		76°
21	7:18 AM	460168	.40		428241	.46		71°
22	7:27 AM	460199	.31		428280	.39		73°
23	9:25 AM	460236	.37		428318	.38		75°
24	8:41 AM	460272	.36		428352	.34		70°
25	7:05 AM	460302	.30		428392	.40		62°
26	7:00 AM	460331	.29		428425	.33		60°
27	7:10 AM	460364	.33		428457	.32		68°
28	7:12 AM	460399	.35		428496	.39		76°
29	7:27 AM	460434	.35		428536	.40		71°
30	8:39 AM	460471	.37		428572	.36		78°
31	10:20 AM	460502	.31		428610	.38		68°

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH June YEAR 2021

DAY	TIME	PUMP 1 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:33 AM	458160	.45		426072	.46		60°
2	7:01 AM	458212	.52		426127	.55		61°
3	7:15 AM	458251	.39		426161	.34		68°
4	6:40 AM	458286	.35		426195	.34		69°
5	7:48 AM	458322	.36		426236	.41		76°
6	8:35 AM	458354	.32		426278	.42		61°
7	7:15 AM	458393	.39		426319	.41		55°
8	7:19 AM	458432	.39		426356	.37		60°
9	7:44 AM	458545	1.03		426492	1.36		62°
10	7:12 AM	458615	.70		426566	.74		67°
11	8:15 AM	458670	.55		426625	.59		65°
12	9:30 AM	458727	.57		426679	.54		70°
13	9:30 AM	458762	.35		426726	.47		65°
14	7:17 AM	458806	.44		426767	.41		70°
15	7:22 AM	458849	.43		426813	.46		80°
16	7:09 AM	458885	.36		426859	.46		70°
17	7:42 AM	458922	.37		426892	.33		70°
18	10:20 AM	458955	.33		426934	.42		75°
19	6:40 AM	458980	.25		426960	.26		57°
20	8:33 AM	459017	.37		426998	.38		68°
21	7:17 AM	459054	.37		427030	.32		52°
22	7:42 AM	459089	.35		427068	.38		67°
23	7:21 AM	459120	.31		427108	.40		70°
24	7:28 AM	459156	.36		427141	.33		65°
25		459191			427181			60°
26		459223			427216			65°
27		459252			427244			60°
	9:20 AM	459288			427290	.46		76°
	7:08 AM	459325	.37		427321	.31		65°
	7:37 AM	459362	.37		427369	.48		75°

#1 Pumping Rate _____ gal/hr

#2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH May YEAR 2021

DAY	TIME	PUMP 1 456832 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 424615 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	9:30am	456862	.30		424646	.31		63°
2	9:03AM	456893	.31		424675	.29		59°
3	7:43AM	456923	.30		424705	.30		36°
4	7:58AM	456956	.33		424740	.35		41°
5	7:24AM	456982	.26		424777	.37		39°
6	7:43AM	457016	.34		424814	.37		34°
7	9:07AM	457049	.33		424850	.36		42°
8	9:07AM	457082	.33		424890	.40		36°
9	10:30AM	457211	.29		425029	.39		37°
10	7:29AM	457251	.40		425071	.42		32°
11	7:55AM	457296	.45		425122	.51		38°
12	7:38AM	457337	.41		425158	.36		44°
13	7:32AM	457370	.33		425201	.43		41°
14	7:30AM	457409	.39		425236	.35		47°
15	7:05AM	457440	.31		425285	.49		46°
16	6:54AM	457479	.39		425336	.51		46°
17	7:12AM	457517	.38		425370	.34		55°
18	7:21AM	457551	.34		425413	.43		58°
19	7:57AM	457591	.40		425449	.36		54°
20	7:22AM	457624	.33		425486	.37		44°
21	7:29AM	457677	.53		425546	.60		33°
22	9:29AM	457730	.53		425605	.59		39°
23	7:35AM	457762	.32		425647	.42		44°
24	7:23AM	457816	.54		425702	.55		46°
25	7:27AM	457861	.45		425752	.50		45°
26	7:24AM	457901	.40		425788	.36		43°
27	7:25AM	457935	.34		425831	.43		46°
28	8:00AM	457977	.42		425875	.44		50°
29	7:30AM	458020	.43		425922	.47		55°
30	9:06AM	458070	.50		425971	.49		54°
31	8:48AM	45815	.45		426026	.55		53°

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH April YEAR 2021

DAY	TIME	PUMP 1 455819 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 423518 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:50AM	455856	.37		423551	.33		28°
2	7:30AM	455885	.29		423585	.34		40°
3	8:48AM	455935	.60		423639	.64		39°
4	10:00AM	455971	.36		423685	.46		46°
5	7:42AM	456004	.33		423718	.33		41°
6	7:37AM	456034	.30		423752	34		28°
7	7:51AM	456071	.37		423785	.33		31°
8	7:26AM	456102	.31		423820	.35		32°
9	7:25AM	456135	.33		423856	.36		23°
10	10:18 AM	456174	.39		423890	.34		49°
11	8:43 AM	456200	.26		423917	.27		31°
12	7:41AM	456232	.32		423951	.34		29°
13	6:49AM	456263	.31		423984	.33		28°
14	7:37AM	456295	.32		424017	.33		27°
15	7:48AM	456332	.37		424064	.47		30°
16	7:36AM	456369	.37		424100	.36		25°
17		4						
18		456437			424179			
19	8:14AM	456475	.38		424224	.45		23°
20	7:37AM	456506	.31		424261	.37		25°
21	7:37AM	456543	.37		424301	.40		31°
22	7:30AM	456580	.37		424332	.31		27°
23	7:24AM	456607	.27		424372	.40		27°
24	6:24AM	456640	.33		424406	.38		31°
25	9:58 AM	456674	.34		424445	.45		39°
26	7:36AM	456706	.32		424481	.36		31°
27	7:20 AM	456739	.33		424510	.29		31°
28	7:16AM	456766	.27		424547	.37		48°
29	7:24AM	456799	.33		424586	.39		49°
30	7:30AM	456832	.33		424615	.29		44°
31	~~———~~	~~456862~~	~~.30~~	~~———~~	~~424646~~	~~.31~~	~~———~~	~~63°~~

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH March YEAR 2021

DAY	TIME	PUMP 1			PUMP 2			
		454429 Totalizer Hrs	Daily Hrs	Daily Gallons	422038 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:48AM	454478	.49		422085		.47	15°
2	7:27AM	454527	.49		422138		.53	30°
* 3	7:20 AM	454580	.53		422202		.64	33°
4	7:30AM	454620	.60		422255		.53	21°
5	7:18 AM	454679	.59		422307		.52	23°
6	9:41 AM	454741	.62		422365	.58		40°
7	9:24 AM	454782	.41		422419	.54		40°
8	7:23AM	454834	.52		422475	.56		31°
9	7:32AM	454888	.54		422531		.56	30°
10	7:22AM	454951	.63		422590		.59	20°
11	8:11AM	455026	.75		422671		.81	23°
12	8:30 AM	455085	.59		422740		.69	25°
13	9:47 AM	455149	.64		422801	.61		38°
14	8:45 AM	455201	.52		422861	.60		35°
15	7:30 AM	455249	.48		422911	.50		31°
16	7:31AM	455302	.53		422961	.50		32°
17	8:21AM	455345	.43		423004	.43		23°
18	7:32AM	455375	.30		423041	.37		18°
19	7:19AM	455407	.32		423072	.31		27°
20	9:50AM	455445	.38		423105	.33		43°
21	9:33AM	455473	.28		423137	.32		38°
22	7:43AM	455504	.31		423176	.29		32°
23	8:53 AM	455546	.42		423220	.44		35°
24	7:30 AM	455582	.36		423258	.38		20°
25	7:36AM	455625	.43		423299	.41		32°
26	7:42AM	455654	.29		423340	.41		22°
27	8:39 AM	455692	.38		423378	.38		27°
28	9 AM	455722	.30		423405	.27		40°
29	7:34AM	455752	.30		423437	.32		45°
30	7:35AM	455789	.37		423476	.39		18°
31	7:28AM	455819	.30		423518	.42		13°

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH Feb YEAR 2021

DAY	TIME	PUMP 1 453211 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 420703 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:11 AM	453241	.30		420736	.33		15°
2	7:20AM	453275	.34		420775	.39		22
3	7:25AM	453299	.24		420801	.26		20°
4	7:28AM	453329	.30		420829	.28		-3°
5	7:28 AM	453352	.23		420862	.33		0°
6	9:38AM	453394	.42		420904	.42		-12
7	10:15AM	453424	.30		420937	.33		-8
8	7:22AM	453451	.27		420966	.29		-25
9	7:35 a	453487	.36		421006	.40		-23
10	7:52 AM	453523	.36		421045	.39		-23
11	7:59AM	453564	.41		421090	.45		-26
12	7:38AM	453602	.38		421132	.42		-18
13	8:38 AM	453648	.46		421177	.45		-24°
14	8:38 AM	453684	.36		421224	.47		-29°
15	7:27AM	453729	.45		421269	.45		-10°
16	7:57AM	453777	.48		421321	.52		5°
17	7:39AM	453821	.44		421361	.40		4°
18	7:39AM	453858	.37		421405	.44		-10°
19	7:32AM	453901	.43		421458	.53		5°
20	9:42AM	453955	.54		421511	.53		22°
21	9:43AM	454018	.63		421580	.69		23°
22	7:44AM	454075	.57		421649	.69		40°
23	7:18AM	454146	.71		421720	.71		36°
24	7:25AM	454210	.64		421791	.71		22°
25	7:40AM	454272	.62		421865	.74		24°
26	7:30AM	454339	.67		421929	.64		31°
27	10:05AM	454392	.53		421989	.60		12°
28	8:34 AM	454429	.37		422038	.49		19°
29								
30								
31								

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH JAN. YEAR 2021

DAY	TIME	PUMP 1 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 418347 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	9:50AM	453001			418412	[illegible]	[illegible]	22°
2	8:40AM	453001			418472	[illegible]	.60	37°
3	9:32AM	453001			418529	.57		40°
4	7:26AM	453001			418592	.63		33°
5	7:58AM	453001			418660	.68		40°
6	7:33AM	453001			418727	.67		20°
7	7:34AM	453001			418793	.65		25°
8	7:28AM	453001			418853	.60		18°
9	7:50AM	453001			418915	.62		22°
10	9:11AM	453001			418984	.69		24°
11	7:25AM	453001			419047	.63		24°
12	7:31AM	453001			419106	.59		27°
13	7:44AM	453001			419166	.60		40°
14	7:42AM	453001			419258	.92		32°
15	7:41AM	453081			419352	.94		17°
16	9:02AM	453001			419456	1.04		36°
17	8:55AM	453001			419548	.92		32°
18	9:45AM	453001			419647	.99		27°
19	8:18AM	453001			419732	.85		30°
20	7:34AM	453001			419827	.95		32°
21	7:29AM	453001			419914	.87		28°
22	7:24AM	453001			420011	.97		14°
23	8:11AM	453001			420012	1.01		17°
24	9:21AM	453001			420212	1.00		18°
25	7:33AM	453001			420298	.86		2°
26	7:29AM	453001			420456	1.58		2°
27	7:22AM	453007			420481	.25		5°
28	7:32AM	453112	1.05		420600	1.19		10°
29	7:40AM	453144	.32		420635	.35		14°
30	10:07AM	453177	.33		420668	.33		15°
31	10:09AM	453211	.34		420703	.35		18°

#1 Pumping Rate _____ gal/hr

#2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH DEC. YEAR 2020

DAY	TIME	PUMP 1 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 4/6382 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:30 AM	453001			416452	.70		26°
2	7:34 AM	453001			416512	.60		8°
3	7:30AM	453001			416578	.66		15°
4	7:25 AM	453001			416652	.74		20°
5	9:05AM	453001			416718	.66		20°
6	9:04 AM	453001			416784	.66		13°
7	7:41 AM	453001			416851	.67		16°
8	7:27AM	453001			416919	.68		40°
9	8:00AM	453001			416984	.65		26°
10	8:10AM	453001			417047	.63		22°
11	8:37AM	453001			417111	.64		20°
12	7:30 AM	453001			417173	.66		26°
13	6:30AM	453001			417239	.66		5°
14	7:27AM	453001			417297	.58		5°
15	8:05AM	453001			417360	.63		12°
16	7:40AM	453001			417421	.61		26°
17	7:35AM	453001			417479	.58		25°
18	7:30AM	453001			417539	.60		15°
19	8:02AM	453001			417606	.67		44° 30W
20	8:25 AM	453001			417671	.65		40° 20W
21	7:30AM	453001			417747	.76		25°
22	7:30AM	453001			417807	.60		27°
23	7:25AM	453001			417871	.64		14°
24	8:15AM	453001			417933	.62		35°
25	8:45AM	453001			417997	.64		25°
26	8:10 AM	453001			418055	.58		24°
27	7:45AM	453001			418106	.51		20°
28	7:50AM	453001			418163	.57		25°
29	7:30AM	453001			418229	.66		17°
30	7:30AM	453001			418285	.56		10°
31	7:30AM	453001			418347	.62		27°

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH NOV. YEAR 2020

DAY	TIME	PUMP 1 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 413567 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	5:45 AM	453001	—		413935	.68		
2	6:43 PM	453001	—		414018	.83		
3	7:42 AM	453001	—		414093	.75		
4	6:33 AM	453001	—		414168	.75		44°
5	8:04 AM	453001	—		414242	.74		47°
6	7:14 AM	453001	—		414312	.70		43°
7	6:55 AM	453001	—		414394	.82		34°
8	7:40 AM	453001	—		414459	.65		31° SNOW
9	12 PM	453001	—		414535	.96		
10	7:20 AM	453001	—		414612	.57		-5
11	6:35 AM	453001	—		414687	.75		
12	7:40 AM	453001	—		414760	.73		-10
13	7:40 AM	453001	—		414831	.71		9
14	6:42 AM	453001	—		414905	.74		
15	8:30 AM	453001	—		414992	.87		
16	7:37 AM	453001	—		415112	1.20		
17	6:55 AM	453001	—		415242	1.30		27°
18	7:18 AM	453001	—		415366	1.24		27°
19	8:05 AM	453001	—		415472	1.06		24°
20	7:23 AM	453001	—		415585	1.13		5°
21	5:50 AM	453001	—		415666	.81		
22	8:05 AM	453001	—		415746	.80		
23	7:37 AM	453001	—		415835	.89		
24	9:40 AM	453001	—		415917	.82		18°
25	7:30 AM	453001	—		415989	.72		31°
26	7:45 AM	453001	—		416064	.75		31°
27	8:24 AM	453001	—		416144	.80		30°
28	6:05 AM	453001	—		416216	.72		41°
29	8:38 AM	453001	—		416310	.94		16°
	8:02 AM	453001	—		416382	.72		15°

Pumping Rate _____ gal/hr #2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH Oct. YEAR 2020

DAY	TIME	PUMP 1 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 411477 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:2 AM	452996	✓		411548	.71		22°
2	7:05 AM	452996	—		411610	.62		41°
3	4:50 AM	452996	—		411674	.64		
4	9:20 AM	452996	—		411741	.67		
5	7:10 AM	452996	—		411800	.59		
6	6:50 AM	453001	—		411871	.71		31°
7	7:00 AM	453001	—		411929	.58		32°
8	7:00 AM	453001	—		411986	.57		42°
9	7:01 AM	453001	—		412066	.80		43°
10	9:50 AM	453001	—		412140	.74		52°
11	6:38 AM	453001	—		412211	.71		55 15
12	6:33 AM	453001			412285	.74		
13	7:14 AM	453001			412358	.73		
14	7:30 AM	453001			412430	.72		
15	7:17 AM	453001			412501	.71		
16	7:30 AM	453001			412582	.81		
17	6:56 AM	453001			412662	.80		
18	8 AM	453001			412740	.78		
19	7:36 AM	453001			412820	.80		
20	7:20 AM	453001			412910	.90		32°
21	7: AM	453001			413002	.92		22°
22	9 AM	453001			413099	.97		26°
23	7:30 AM	453001			413182	.83		0°
24	7:20 AM	453001	—		413255	.73		15°
25	8:2 AM	453001	—		413319	.64		17°
26	7:15 AM	453001			413383	.64		
27	7 AM	453001			413452	.69		31°
28	7:05 AM	453001			413570	1.18		35°
	6:48 AM	453001			413665	.95		32°
	7:38 AM	453001			413768	1.03		33°
	6:5 AM	453001			413867	.99		

#1 Pumping Rate _____ gal/hr #2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH Sept. YEAR 2020

DAY	TIME	PUMP 1 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:05 AM	452996	—		408214	.71		45°
2	7:00 AM	452996	—		408359	1.25		46°
3	6:40 AM	452996	—		408411	.72		46°
4	7:15 AM	452996	—		408477	.66		54°
5	7:05 AM	452996	—		408548	.71		
6	9:36 AM	452996	—		408676	1.28		
7	7:20 AM	452996	—		408812	1.36		
8	7:13 AM	452996	—		409012	2.00		
9	6:56 AM	452996	—		409080	.68		35°
10	7:05 AM	452996	—		409229	1.49		38°
11	7:05 AM	452996	—		409309	.80		37°
12	7:05 AM	452996	—		409422	1.13		
13	7:10 AM	452996	—		409524	1.02		
14	7:09 AM	452996	—		409644	1.20		
15	6:57 AM	452996	—		409752	3.08		41°
16	7:06 AM	452996	—		410249	4.97		42°
17	7:10 AM	452996	—		410326	.77		39°
18	7:05 AM	452996	—		410407	.81		40°
19	7:03 AM	452996	—		410491	.84		49°
20	9:27 AM	452996	—		410595	1.04		57°
21	7:05 AM	452996	—		410686	.91		57°
22	7:11 AM	452996	—		410782	.96		39°
23	7:15 AM	452996	—		410876	.94		44°
24	7:05 AM	452996	—		410975	.99		46°
25	6:55 AM	452996	—		411145	1.70		45°
26	7:32 AM	452996	—		411224	.79		55°
27	9:28 AM	452996	—		411292	.68		57°
28	7 AM	452996	—		411352	.60		30°
	7:05 AM	452996	—		411416	.64		43°
	7:15 AM	452996	—		411477	.61		39°

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH AUGUST YEAR 2020

DAY	TIME	PUMP 1 Totalizer Hrs 452996	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs 404256	Daily Hrs	Daily Gallons	Comments
1	10:37 AM	452996	—		404306	.50		79°
2	8:23 AM	452996	—		404356	.50		68°
3	7:13 AM	452996	—		404455	.99		
4	7:05 AM	452996	—		404505	.50		60°
5	6:58 AM	452996	—		404554	.49		55°
6	7:05 AM	452996	—		404651	.97		62°
7	7:11 AM	452996	—		405038	3.87		70°
8	7:25 AM	452996	—		405526	4.88		
9	6:32 AM	452996	—		405928	4.02		
10	6:53 AM	452996	—		406245	3.17		
11	7:00 AM	452996	—		406477	2.32		57°
12	6:45 AM	452996	—		406563	.86		60°
13	7:05 AM	452996	—		406734	1.71		57°
14	6:53 AM	452996	—	*	406807	.73		57°
15	8:20 AM	452996	—		406937	1.30		55°
16	10:00 AM	452996	—		406969	.32		77°
17	6:48 AM	452996	—	FIXED ✓	407043	.74		
18	7:06 AM	452996	—		407143	1.00		60°
19	7:09 AM	452996	—		407194	.51		59°
20	7:00 AM	452996	—		407245	.51		56°
21	7:10 AM	452996	—		407346	1.01		63°
22	8:47 AM	452996	—		407397	.51		
23	6:07 AM	452996	—		407448	.51		
24	7:09 AM	452996	—		407560	1.12		
25	7:15 AM	452996	—		407608	.48		58°
26	7:00 AM	452996	—		407725	1.17		65°
	7:03 AM	452996	—		407784	.59		56°
	7:10 AM	452996	—		407842	.58		46°
29	7:25 AM	452996	—		407961	1.19		63°
	7:00 AM	452996	—		408072	1.11		60°
	8 AM	452996	—		408143	1.21		

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH July YEAR 2020

DAY	TIME	PUMP 1 Totalizer Hrs 452958	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs 401766	Daily Hrs	Daily Gallons	Comments
1	7:06 AM	452982	.24		401882	1.16		60°
2	6:35 AM	452996	.14		401984	1.02		57°
3	7:10 AM	452996	—		402086	1.02		57°
4	9:33 AM	452996	—		402187	1.01		
5	10:30 AM	452996	—		402285	.98		
6	6:15 AM	452996	—		402338	.53		57°
7	7:13 AM	452996	—		402437	.99		61°
8	7:19 AM	452996	—		402592	1.55		59°
9	7:05 AM	452996	—		402744	1.52		57°
10	6:55 AM	452996	—		402794	.50		56°
11	8:38 AM	452996	—		402894	1.00		70°
12	8:04 AM	452996	—		402994	1.00		64°
13	7:18 AM	452996	—		403092	.98		
14	7:05 AM	452996	—		403144	.52		51°
15	7: AM	452996	—		403194	.50		48°
16	7:15 AM	452996	—		403292	.98		58°
17	7:23 AM	452996	—		403343	.51		60°
18	6:42 AM	452996	—		403392	.49		58°
19	9:30 AM	452996	—		403442	.50		70°
20	7:14 AM	452996	—		403542	1.00		
21	7:05 AM	452996	—		403591	.49		56°
22	9:20 AM	452996	—		403691	1.00		78°
23	7:05 AM	452996	—		403740	.49		71°
24	6:47 AM	452996	—		403790	.50		60°
25	9:30 AM	452996	—		403889	.99		75°
26	6:35 AM	452996	—		403938	.49		50°
27	7:20 AM	452996	—		403988	.50		
28	6:35 AM	452996	—		404037	.49		55°
29	7:16 AM	452996	—		404108	.71		65°
30	7:22 AM	452996	—		404157	.49		67°
31	6:40 AM	452996			404256	.99		65°

#1 Pumping Rate _____ gal/hr

#2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH JUNE YEAR 2020

DAY	TIME	PUMP 1 Totalizer Hrs 451369	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs 399924	Daily Hrs	Daily Gallons	Comments
1	6:53 AM	451442	.73		399981	.57		
2	7:05 AM	451514	.72		400038	.57		63°
3	7:05 AM	451580	.66		400087	.49		68°
4	7:20 AM	451631	.51		400128	.41		65°
5	11:15 AM	451685	.52		400169	.41		77°
6	8:31 AM	451726	.41		400200	.31		64°
7	9:50 AM	451778	.52		400240	.40		64°
8	7:05 AM	451836	.58		400283	.43		
9	7:55 AM	451941	1.05		400368	.85		50°
10	7:00 AM	451992	.51		400412	.44		56°
11	7:00 AM	452042	.50		400452	.40		51°
12	8:12 AM	452092	.50		400492	.40		69°
13	8:16 AM	452139	.47		400529	.37		
14	8:20 AM	452191	.52		400570	.41		
15	6:15 AM	452241	.50		400608	.38		
16	7:00 AM	452291	.50		400647	.39		56°
17	7:26 AM	452358	.47		400682	.35		54°
18	7:33 AM	452402	.64		400732	.50		49°
19	6:50 AM	452470	.68		400781	.49		44°
20	1:00 PM	452544	.74		400839	.58		73°
21	10:16 AM	452587	.43		400871	.32		
22	7:20 AM	452630	.43		400902	.31		
23	7:23 AM	452680	.50		400940	.38		
24	7:00 AM	452733	.53		400980	.40		63°
25	7:01 AM	452785	.52		401019	.39		65°
26	7:02 AM	452831	.46		401053	.34		57°
27	9 AM	452889	.58		401095	.42		
28	9:08 AM	452958	.69		401289	1.94		
29	9:15 AM	452958	0		401437	1.48		
30	7:00 AM	452958	0		401766	3.29		56°
31								

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH MAY YEAR 2020

DAY	TIME	PUMP 1 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
		448227			398298			
1	7:20 AM	448294	.67	13,400	398335	.37	7,400	45°
2	6:05 AM	448367	.73	14,600	398376	.41	8,200	
3	7:10 AM	448403	.36	7,200	398418	.42	8,400	
4	7:11 AM	448561	1.58	31,600	398479	.61	12,200	
5	7:20 AM	448676	1.15	23,000	398533	.54	10,800	43°
6	7:45 AM	448782	1.06	21,200	398576	.43	8,600	48°
7	10:45 AM	448862	.80	16,000	398625	.49	9,800	64°
8	10:50 AM	448934	.72	14,400	398667	.42	8,400	63°
9	9:55 AM	449021	.87	17,400	398713	.46	9,200	47°
10	6:40 AM	449111	.90	18,000	398760	.47	9,400	36°
11	6:50 AM	449199	.86	17200	398895	.47		-34°
12	6:50 AM	449269	.72		398945	.38		31°
13	7:00 AM	449372	1.03		398979	.54		40°
14	7:00 AM	449533	1.61		398960	.61		36°
15	7:20 AM	449645	1.12		399008	.48		44°
16	6:27 AM	449759	1.14		399062	.54		
17	11:25 AM	449893	1.34		399125	.63		
18	7:17 AM	449979	.86		399163	.38		
19	6:57 AM	450088	1.09		399218	.55		58°
20	12:10 PM	450209	1.21		399277	.59		70°
21	7:10 AM	450542	3.33		399344	.77		57°
22	7:10 AM	450678	1.36		399434	.90		46°
23	6:53 AM	450772	.94		399497	.63		46°
24	6:15 AM	450848	.76		399548	.51		44°
25	5:34 AM	450917	.69		399597	.49		
26	7:05 AM	450997	.80		399660	.63		
27	7:00 AM	451071	.74		399702	.42		52°
28	6:55 AM	451134	.63		399751	.49		45°
29	7:00 AM	451198	.64		399797	.46		50°
30	7:45 AM	451285	.87		399860	.63		
31	7:40 AM	451369	.84		399924	.64		

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH APRIL YEAR 2020

DAY	TIME	PUMP 1 Totalizer Hrs 446292	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs 397072	Daily Hrs	Daily Gallons	Comments
1	7:15 AM	446366	.74	7,400	397114	.42	8,400	19°
2	7:05 AM	446445	.79	7,900	397156	.42	8,400	0°
3	7:18 AM	446517	.72	7,200	397195	.39	7,800	12°
4	11:09 AM	446597	.80	8,000	397240	.45	9,000	
5	9:04 AM	446661	.64	6400	397274	.34	6,800	
6	7:05 AM	446731	.70	7000	397311	.37	7,400	
7	7:20 AM	446798	.67	6700	397350	.39	7,800	35°
8	7:00 AM	446864	.66	6600	397388	.38	7,600	29°
9	7:13 AM	446934	.70	7000	397424	.36	7,200	22°
10	7:25 AM	446994	.60	6000	397458	.34	6,800	29°
11	8:10 AM	447060	.66	6600	397495	.37	7,400	31°
12	8:33 AM	447125	.65	6500	397533	.38	7,600	25°
13	7:13 AM	447187	.62	6200	397568	.35	7,000	
14	7:20 AM	447252	.65	6,500	397605	.37	7,400	19°
15	7:36 AM	447306	.54	5,400	397639	.34	6,800	32°
16	6:54 AM	447324	.18	1,800	397648	.09	1,800	17°
17	7:19 AM	447409	.85	8,500	397733	.85		25°
18	8:20 AM	447452	.43	4,300	397776	.43		
19	7:34 AM	447538	.86	8,600	397863	.87		
20	7:12 AM	447581	.43	4,300	397902	.39		
21	7:15 AM	447675	.94	9,400	397977	.75		46°
22	7:02 AM	447737	.62	6,200	398012	.35		30°
23	7:15 AM	447797	.60	6,000	398049	.37		45°
24	7:51 AM	447855	.58	5,800	398084	.35		
25	8:00 AM	447921	.66	6600	398122	.38		41°
26	9:07 AM	447981	.60	6000	398155	.33		53°
27	7:20 AM	448047	.66		398195	.40		
28	7:12 AM	448108	.61		398230	.35		47°
29	7:11 AM	448168	.60		398264	.34		43°
30	7:05 AM	448227	.59		398298	.34		51°
31								

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH MARCH YEAR 2020

DAY	TIME	PUMP 1 Totalizer Hrs 441689	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs 395411	Daily Hrs	Daily Gallons	Comments
1	8:47 AM	442150	4.61		395526	1.15		26° 10W
2	7:25 AM	442297	1.47		395585	.59		
3	7:32 AM	442451	1.54		395652	.67		30°
4	7:30 AM	442789	3.38		395770	1.18		34°
5	7:20 AM	443464	6.75		395862	.92		23°
6	7:40 AM	443665	2.01		395945	.83		32°
7	6:50 AM	443866	2.01		396022	.77		
8	9:12 AM	444252	3.86		396120	.98		
9	7:20 AM	444372	1.20		396168	.48		
10	7:20 AM	444470	.98		396212	.44		24°
11	7:15 AM	444567	.97		396255	.43		38°
12	7:15 AM	444696	1.29		396309	.54		23°
13	7:40 AM	444817	1.21		396362	.53		19°
14	9:30 AM	444918	1.01		396407	.45		32° W 30
15	9:35 AM	444997	.79		396442	.35		14°
16	7:19 AM	445073	.76		396470	.28		
17	7:20 AM	445149	.76		396507	.37		3°
18	7:25 AM	445229	.80		396541	.34		18°
19	7:20 AM	445304	.75		396574	.33		20°
20	7:55 AM	445384	.80		396611	.37		13°
21	10:05 AM	445471	.87		396651	.40		
22	7:48 AM	445544	.73		396683	.32		
23	7:06 AM	445624	.80		396720	.37		
24	7:37 AM	445737	1.13		396776	.56		40°
25	6:30 AM	445828	.91		396819	.43		27°
26	7:20 AM	445905	.77		396858	.39		25°
27	7:25 AM	445989	.84		396902	.44		29°
28	8:28 AM	446066	.77		396946	.44		35°
29	9:15 AM	446146	.80		396990	.44		39°
30	7:09 AM	446212	.66		397025	.35		
31	6:55 AM	446272	.80		397072	.47		41°

#1 Pumping Rate _____ gal/hr

#2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH FEBRUARY YEAR 2020

DAY	TIME	PUMP 1 Totalizer Hrs 437331	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs 394099	Daily Hrs	Daily Gallons	Comments
1	10:15AM	437475	1.44		394156	.57		50 20
2	9:05AM	438638	2.53		394249	.93		28 10
3	7:19AM	438894	2.36		394316	.67		9°
4	7:20AM	439045	1.51		394366	.50		6°
5	7:11AM	439171	1.26		394408	.42		26°
6	6:52AM	439302	1.31		394450	.42		24°
7	8:00AM	439421	1.19		394491	.41		21°
8	8:40AM	439539	1.18		394529	.38		24°
9	8:24AM	439666	1.21		394567	.38		18°
10	7:36AM	439764	1.04		394603	.36		
11	7:18AM	439870	1.06		394640	.37		24°
12	7:34AM	439978	1.08		394682	.42		6°
13	7:40AM	440077	.99		394727	.45		-6°
14	7:38AM	440162	.85		394755	.28		21°
15	5:10AM	440257	.95		394890	.35		19°
16	10:00AM	440351	.94		394924	.34		22°
17	7:24AM	440436	.85		394938	.14		
18	7:16AM	440590	1.54		394976	.88		
19	7:23AM	440672	.82		395081	.55		-6°
20	7:25AM	440744	.72		394993	.12		
21	7:15AM	440817	.73		395026	.33		18°
22	5:43AM	440898	.81		395065	.39		
23	7:25AM	441040	1.42		395122	.57		
24	7:15AM	441130	.90		395164	.42		
25	10:33AM	441215	.85		395204	.40		
26	6:05AM	441274	.59		395232	.28		16°
27	7:31AM	441353	.79		395268	.36		29°
28	7:23AM	441470	1.17		395322	.54		24°
29	7:03AM	441689	2.19		395411	.89		30°
30								
31								

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH JANUARY YEAR 2020

DAY	TIME	PUMP 1 435027 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 392972 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	11:43 AM	435114	.87		393019	.47		
2	7:30 AM	435162	.48		393046	.27		38°
3	7:15 AM	435228	.66		393080	.34		
4	7:18 AM	435290	.62		393114	.34		41°
5	10:19 AM	435378	.88		393158	.44		27°
6	6:55 AM	435440	.62		393191	.33		
7	7:03 AM	435503	.63		393235	.44		18°
8	7:35 AM	435565	.62		393257	.22		21°
9	7:25 AM	435625	.60		393288	.31		11°
10	7:30 AM	435689	.64		393321	.33		-6°
11	6:16 AM	435753	.64		393354	.33		
12	8:12 AM	435827	.74		393386	.32		
13	7:20 AM	435877	.50		393420	.34		
14	7:22 AM	435951	.74		393459	.39		-10°
15	6:55 AM	436013	.62		393494	.35		-15°
16	8:23 AM	436086	.73		393532	.38		-9 W20
17	7:30 AM	436158	.72		393571	.39		3 W15
18	7:50 AM	436229	.71		393610	.39		-12 W5
19	7:16 AM	436303	.74		393648	.38		-8
20	9:11 AM	436384	.81		393687	.39		2°
21	7:49 AM	436465	.81		393733	.46		
22	6:55 AM	436536	.65		393757	.24		17°
23	7:25 AM	436597	.67		393780	.23		4°
24	7:20 AM	436667	.70		393821	.41		24°
25	5:44 AM	436738	.71		393852	.31		
26	9:40 AM	436857	1.19		393895	.43		
27	7:50 AM	436942	.91		393940	.45		29°
28	8:05 AM	437031	.89		393977	.37		25°
29	7:20 AM	437113	.82		394013	.36		20°
30	7:20 AM	437205	.92		394049	.36		31°
31	7:27 AM	437331	1.26		394099	.50		30°

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH DECEMBER YEAR 2019

DAY	TIME	PUMP 1 Totalizer Hrs 432658	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs 391667	Daily Hrs	Daily Gallons	Comments
1	6:49 AM	432753	.95		391721	.54		
2	7:09 AM	432849	.96		391775	.54		
3	7:20 AM	432943	.94		391826	.51		13°
4	6:45 AM	433021	.78		391875	.49		17°
5	7:30 AM	433110	.89		391926	.51		23°
6	7:25 AM	433190	.80		391972	.46		17°
7	8:35 AM	433282	.92		392019	.47		29°
8	7:35 AM	433359	.77		392062	.43		14°
9	7:36 AM	433444	.85		392109	.47		
10	6:55 AM	433527	.83		392157	.48		0
11	7:30 AM	433605	.78		392203	.46		10°
12	7:30 AM	433687	.82		392247	.44		3°
13	7:35 AM	433771	.84		392298	.51		11°
14	10:20 AM	433855	.84		392344	.46		10°
15	8:45 AM	433924	.69		392382	.38		13°
16	7:16 AM	433997	.73		392423	.41		
17	7:15 AM	434077	.80		392469	.46		0°
18	7:30 AM	434156	.79		392511	.42		31°
19	7:30 AM	434235	.79		392555	.44		6°
20	9:30 AM	434326	.91		392600	.45		15°
21	7:55 AM	434390	.64		392634	.34		22°
22	8:25 AM	434459	.69		392669	.35		28°
23	7:20 AM	434524	.65		392707	.38		
24	7:14 AM	434584	.60		392738	.31		
25	6:05 AM	434646	.62		392771	.33		
26	9:18 AM	434716	.70		392805	.34		
27	7:40 AM	434778	.62		392841	.36		-2°
28	5:25 AM	434837	.59		392872	.31		
29	7:44 AM	434909	.72		392909	.37		
30	7:25 AM	434967	.58		392939	.30		-1°
31	7:43 AM	435027	.60		392972	.33		6°

#1 Pumping Rate _____ gal/hr

#2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH Nov. YEAR 2019

DAY	TIME	PUMP 1 430084 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 390137 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:20 AM	430142	.58		390174	.37		40°
2	7:20 AM	430209	.67		390215	.41		
3	9:46 AM	430296	.87		390255	.40		
4	7:14 AM	430361	.65		390301	.46		
5	7:19 AM	430431	.70		390341	.40		30°
6	7:20 AM	430504	.73		390381	.40		10°
7	7:38 AM	430573	.69		390422	.41		5°
8	7:25 AM	430639	.66		390460	.38		13°
9	8:05 AM	430710	.71		390505	.45		35°
10	9:14 AM	430777	.67		390547	.42		13°
11	7:22 AM	430849	.72		390591	.44		
12	7:24 AM	430921	.72		390634	.43		
13	7:26 AM	431004	.83		390675	.41		26°
14	7:02 AM	431064	.60		390710	.35		15°
15	7:20 AM	431128	.64		390748	.38		22°
16	6:05 AM	431198	.70		390790	.42		
17	1:00 PM	431292	.94		390819	.29		
18	7:14 AM	431392	1.00		390911	.92		
19	7:12 AM	431491	.99		390969	.58		26°
20	7:20 AM	431577	.86		391021	.52		31°
21	7:24 AM	431666	.89		391080	.59		26°
22	7:40 AM	431754	.88		391137	.57		16°
23	7:32 AM	431851	.97		391197	.60		22°
24	8:00 AM	431972	1.21		391268	.71		33°
25	7:20 AM	432145	1.73		391366	.98		
26	7:35 AM	432262	1.17		391433	.67		17°
27	7:25 AM	432367	1.05		391495	.62		22°
28	7:45 AM	432464	.97		391555	.60		22°
29	8:06 AM	432561	.97		391614	.59		18°
30	8:10 AM	432658	.97		391667	.53		
31								

#1 Pumping Rate_____gal/hr

#2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH Oct YEAR 2019

DAY	TIME	PUMP 1 Totalizer Hrs 427727	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs 388689	Daily Hrs	Daily Gallons	Comments
1	7:00 AM	427874	1.47		388779	.90		35°
2	7:07 AM	427986	1.12		388847	.68		42°
3	7:13 AM	428087	1.01		388907	.60		38°
4	7:05 AM	428180	.93		388965	.58		41°
5	6:59 AM	428251	.71		389017	.52		
6	8:14 AM	428334	.83		389067	.50		
7	6:57 AM	428398	.64		389109	.42		
8	7:01 AM	428464	.66		389156	.47		.41°
9	7:12 AM	428536	.72		389199	.43		31°
10	6:50 AM	428604	.68		389242	.43		30°
11	7:09 AM	428667	.63		389296	.54		
12	6:40 AM	428739	.72		389322	.26		
13	7:10 AM	428819	.80		389384	.62		
14	9:24 AM	428901	.82		389440	.56		
15	7:21 AM	428962	.61		389483	.43		
16	8:41 AM	429039	.77		389527	.44		39°
17	7:17 AM	429102	.63		389566	.39		
18	7:24 AM	429169	.67		389602	.36		46°
19	7:35 AM	429237	.68		389641	.39		
20	7:41 AM	429305	.68		389679	.38		
21	7:55 AM	429377	.72		389721	.42		
22	7:20 AM	429442	.65		389757	.36		23°
23	6:50 AM	429508	.66		389795	.38		35°
24	7:05 AM	429591	.83		389843	.48		32°
25	7:25 AM	429664	.73		389884	.41		40°
26	7:27 AM	429740	.76		389927	.43		36°
27	8:36 AM	429817	.77		389972	.45		18°
28	7:22 AM	429884	.67		390012	.40		
29	7:27 AM	429952	.68		390053	.41		20°
30	7:37 AM	430019	.67		390097	.44		6°
31	7:36 AM	430084	.65		390137	.40		38°

#1 Pumping Rate _____ gal/hr

#2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH SEPT. YEAR 2019

DAY	TIME	PUMP 1 Totalizer Hrs 424154	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs 387042	Daily Hrs	Daily Gallons	Comments
1	9:00 AM	424251	.97		387085	.43		59°
2	8:00 AM	424334	.83		387123	.38		
3	10:30 AM	424437	1.03		387168	.45		
4	6:54 AM	424506	.69		387199	.31		52°
5	6:56 AM	424578	.72		387232	.33		47°
6	7:07 AM	424652	.74		387267	.35		51°
7	1:49 PM	424852	2.00		387354	.87		
8	7:51 AM	424941	.89		387397	.43		
9	7:17 AM	425040	.99		387446	.49		
10	7:16 AM	425274	2.34		387538	.92		53°
11	7:34 AM	425386	1.12		387590	.52		52°
12	7:04 AM	425516	1.30		387652	.62		52°
13	7:17 AM	425646	1.30		387719	.67		43°
14	10:51 AM	425764	1.18		387780	.61		70°
15	9:00 AM	425842	.78		387821	.41		65°
16	6:55 AM	425923	.81		387861	.40		
17	7:00 AM	426008	.85		387903	.42		61°
18	7:11 AM	426087	.79		387946	.43		31°
19	6:53 AM	426178	.91		387987	.41		48°
20	7:05 AM	426250	.72		388027	.40		54°
21	6:45 AM	426331	.81		388066	.39		
22	8:50 AM	426408	.77		388105	.39		
23	7:15 AM	426482	.74		388142	.37		45°
24	6:59 AM	426557	.75		388182	.40		58°
25	7:15 AM	426637	.80		388223	.41		45°
26	7:06 AM	426711	.74		388260	.37		47°
27	7:11 AM	426797	.86		388304	.44		41°
28	11:28 AM	426886	.89		388351	.47		37°
29	9:06 AM	427197	3.11		388488	1.37		35°
30	7:06 AM	427727	5.30		388689	2.01		
31								

#1 Pumping Rate _____ gal/hr

#2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH AUGUST YEAR 2019

DAY	TIME	PUMP 1 Totalizer Hrs 421125	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs 385653	Daily Hrs	Daily Gallons	Comments
1	7:01 AM	421192	.67		385684	.31		71°
2	7:57 AM	421268	.76		385718	.34		74°
3	6:40 AM	421341	.73		385751	.33		72°
4	9:20 AM	421410	.69		385784	.33		79°
5	6:58 AM	421474	.64		385816	.32		
6	6:56 AM	421541	.67		385849	.33		59°
7	7:07 AM	421618	.77		385884	.35		56°
8	7:04 AM	421696	.78		385916	.32		59°
9	7:10 AM	421765	.69		385945	.29		61°
10	8:38 AM	421836	.71		385977	.32		64°
11	8:43 AM	421915	.79		386009	.32		68°
12	7:09 AM	422267	3.52		386068	.59		
13	6:58 AM	422330	.63		386140	.72		58°
14	7:00 AM	422344	1.14		386193	.43		52°
15	7:00 AM	422443	.99		386245	.52		54°
16	8:41 AM	422556	1.13		386302	.57		74°
17	10:45 AM	422667	1.11		386358	.56		56°
18	7:06 AM	422752	.85		386401	.43		48°
19	7:17 AM	422861	1.09		386456	.55		
20	6:57 AM	422965	1.04		386511	.55		50°
21	6:54 AM	423064	.99		386561	.50		53°
22	6:51 AM	423166	1.02		386613	.52		63°
23	7:09 AM	423389	2.23		386684	.71		61°
24	8:30 AM	423540	1.51		386731	.47		
25	7:50 AM	423624	.84		386792	.61		
26	6:52 AM	423706	.82		386834	.42		
27	10:13 AM	423820	1.14		386887	.53		63°
28	7:15 AM	423894	.74		386922	.35		43°
29	7:11 AM	423970	.76		386958	.36		53°
30	7:08 AM	424056	.86		386998	.40		53°
31	9:38 AM	424154	.98		387042	.44		64°

#1 Pumping Rate _____ gal/hr

#2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH JULY YEAR 2019

DAY	TIME	PUMP 1 417564 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 384079 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:05 AM	417756	1.92		384154	.75		
2	7:02 AM	417941	1.85		384225	.71		51°
3	7:00 AM	418124	1.83		384298	.73		51°
4	10:05 AM	418296	1.72		384373	.75		
5	7:25 AM	418426	1.30		384432	.59		59°
6	8:58 AM	418538	1.12		384487	.55		
7	7:40 AM	418649	1.11		384541	.54		
8	7:16 AM	418724	.75		384588	.47		64°
9	7:04 AM	418812	.88		384637	.49		61°
10	7:09 AM	418899	.87		384685	.48		57°
11	6:57 AM	418997	.98		384739	.54		63°
12	7:57 AM	419081	.84		384785	.46		71°
13	9:54 AM	419169	.78		384835	.50		84°
14	6:55 AM	419241	.72		384874	.39		61°
15	7:13 AM	419339	.98		384927	.53		
16	6:59 AM	419434	.95		384976	.49		61°
17	7:00 AM	419799	3.65		385057	.81		62°
18	6:54 AM	419956	1.57		385126	.69		63°
19	7:09 AM	420060	1.04		385175	.49		57°
20	6:33 AM	420150	.90		385216	.41		54°
21	7:55 AM	420248	.98		385260	.44		56°
22	7:12 AM	420350	1.02		385306	.46		
23	6:38 AM	420437	.87		385347	.41		60°
24	6:37 AM	420524	.87		385385	.38		68°
25	6:41 AM	420611	.87		385425	.40		56°
26	7:03 AM	420694	.83		385462	.37		55°
27	9:19 AM	420789	.95		385502	.40		
28	6:00 AM	420871	.82		385542	.40		
29	7:40 AM	420977	1.06		385587	.45		
30	6:58 AM	421054	.77		385621	.34		60°
31	7:09 AM	421125	.71		385653	.32		62°

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH JUNE YEAR 2019

DAY	TIME	PUMP 1 Totalizer Hrs 413708	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs 382137	Daily Hrs	Daily Gallons	Comments
1	7:08 AM	413840	.62		382170	.33		49°
2	9:33 AM	413902	.62		382203	.33		69°
3	7:45 AM	413970	.68		382238	.35		
4	6:59 AM	414022	.52		382273	.35		60°
5	6:55 AM	414101	.79		382307	.34		65°
6	7:01 AM	414157	.56		382337	.30		59°
7	7:17 AM	414235	.78		382375	.38		59°
8	7:02 AM	414297	.62		382410	.35		
9	7:00 AM	414379	.82		382448	.38		
10	7:02 AM	414434	.55		382478	.30		47°
11	6:59 AM	414497	.63		382510	.32		55°
12	7:04 AM	414570	.73		382548	.38		52°
13	6:40 AM	414631	.61		382579	.31		62°
14	7:08 AM	414696	.65		382615	.36		60°
15	9:30 AM	414772	.76		382654	.39		73°
16	5:49 AM	414824	.52		382681	.27		48°
17	7:26 AM	414885	.61		382716	.35		
18	6:47 AM	414950	.65		382749	.33		60°
19	6:54 AM	415015	.65		382786	.37		56°
20	6:53 AM	415079	.64		382819	.33		51°
21	7:10 AM	415182	1.03		382874	.55		49°
22	10:00 AM	415490	3.08		383012	1.38		52°
23	8:42 AM	415689	1.99		383107	.95		67°
24	7:06 AM	415797	1.08		383161	.54		
25	6:37 AM	415911	1.14		383216	.55		58° PFC
26	7:01 AM	416004	.93		383262	.46		60° SUNNY
27	6:58 AM	416091	.87		383305	.43		68° SUNNY
28	6:53 AM	416200	1.09		383359	.54		63°
29	7:19 AM	417120	9.20		383942	5.83		2.5" RAIN
30	6:57 AM	417564	4.44		384079	1.37		
31								

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH MAY YEAR 2019

DAY	TIME	PUMP 1 410338 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 380241 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:04 AM	410486	1.48		380323	.82		23°
2	7:16 AM	410640	1.54		380410	.87		36°
3	6:55 AM	410787	1.47		380489	.79		
4	8:10 AM	410980	1.93		380572	.83		
5	8:13 AM	411087	1.07		380650	.78		
6	7:09 AM	411226	1.39		380732	.82		
7	6:57 AM	411364	1.38		380811	.79		35°
8	6:49 AM	411508	1.44		380891	.80		39°
9	7:17 AM	411664	1.56		380975	.84		33°
10	7:14 AM	411798	1.34		381051	.76		45°
11	7:18 AM	411941	1.43		381120	.69		44°
12	7:51 AM	412077	1.36		381208	.88		46°
13	7:13 AM	412215	1.38		381285	.77		
14	6:51 AM	412346	1.31		381355	.70		46°
15	6:55 AM	412431	.85		381402	.47		50°
16	7:06 AM	412502	.71		381440	.38		46°
17	7:15 AM	412571	.69		381478	.38		42°
18	8:03 AM	412751	1.80		381569	.91		RAIN
19	8:30 AM	412938	1.87		381658	.89		
20	6:56 AM	413078	1.40		381712	.54		
21	6:53 AM	413107	.29		381760	.48		43°
22	6:51 AM	413187	.80		381808	.48		44°
23	6:49 AM	413259	.72		381849	.41		43°
24	7:10 AM	413323	.64		381886	.37		48°
25	7:20 AM	413389	.66		381923	.37		
26	10:10 AM	413456	.67		381965	.42		
27	8:16 AM	413513	.57		381998	.33		
28	8:02 AM	413566	.53		382028	.30		
29	12:00 NOON	413645	.79		382072	.44		
30	6:54 AM	413706	.61		382102	.30		
31	6:54 AM	413778	.72		382137	.35		

#1 Pumping Rate _____ gal/hr

#2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH APRIL YEAR 2019

DAY	TIME	PUMP 1 405842 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 377708 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:17 AM	406011	1.69		377795	.87		27°
2	7:27 AM	406173	1.62		377882	.87		29°
3	7:10 AM	406342	1.69		377972	.90		30°
4	7:01 AM	406506	1.64		378059	.87		35°
5	7:21 AM	406669	1.63		378143	.84		38°
6	6:57 AM	406821	1.52		378220	.77		
7	7:34 AM	406974	1.53		378302	.82		
8	7:14 AM	407127	1.53		378382	.80		
9	7:14 AM	407281	1.54		378463	.81		35°
10	7:22 AM	407434	1.53		378541	.78		31°
11	7:10 AM	407570	1.36		378617	.76		21°
12	7:45 AM	407722	1.52		378702	.85		
13	7:41 AM	407849	1.27		378776	.74		30°
14	9:26 AM	407990	1.41		378859	.83		51°
15	6:15 AM	408112	1.22		378978	1.19		
16	7:12 AM	408251	1.39		379006	.28		26°
17	7:01 AM	408385	1.34		379082	.76		33°
18	6:54 AM	408522	1.37		379164	.82		35°
19	7:08 AM	408666	1.44		379244	.80		44°
20	8:00 AM	408801	1.35		379328	.84		
21	9:00 AM	408961	1.60		379427	.99		
22	7:05 AM	409097	1.36		379510	.83		
23	7:23 AM	409250	1.53		379605	.95		50°
24	6:53 AM	409397	1.47		379695	.90		42°
25	8:40 AM	409557	1.60		379795	1.00		45°
26	7:25 AM	409696	1.39		379877	.82		40° RAIN
27	6:48 AM	409827	1.31		379955	.78		35°
28	6:31 AM	409994	1.67		380049	.94		40° RAIN
29	7:16 AM	410176	1.82		380128	.79		30°
30	7:40 AM	410338	1.62		380241	1.13		20°
31								

#1 Pumping Rate _____ gal/hr

#2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH MARCH YEAR 2019

DAY	TIME	PUMP 1 399129 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 374628 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:13 AM	399257	1.28		374704	.76		12°
2	8:42 AM	399392	1.35		374772	.68		-18°
3	7:42 AM	399520	1.28		374841	.69		-17°
4	7:30 AM	399669	1.49		374911	.70		
5	7:09 AM	399802	1.33		374978	.67		8°
6	6:30 AM	399935	1.33		375045	.67		-7°
7	6:51 AM	400067	1.32		375113	.68		4° W-10
8	7:21 AM	400191	1.24		375180	.67		-6°
9	9:00 AM	400330	1.39		375251	.71		
10	9:27 AM	400448	1.18		375315	.64		
11	7:19 AM	400558	1.10		375373	.58		6°
12	7:25 AM	400697	1.39		375448	.75		6°
13	7:05 AM	400827	1.30		375518	.70		17°
[illegible]	7:13 AM	400958	1.31		375586	.68		16°
15	7:12 AM	401089	1.31		375656	.70		5°
16	10:10 AM	401246	1.57		375740	.84	.84	11°
17	10:21 AM	401381	1.35		375817	.77		20°
18	7:22 AM	401495	1.14		375877	.60		8°
19	7:35 AM	401656	1.61		375962	.85		17°
20	7:00 AM	402011	3.55		376102	1.40		19°
21	7:05 AM	402501	4.90		376265	1.63		22°
22	6:52 AM	403114	6.13		376428	1.63		25°
23	6:13 AM	403529	4.15		376599	1.71		
24	8:55 AM	403884	3.55		376758	1.59		
25	7:19 AM	404252	3.78		376912	1.54		
26	6:59 AM	404645	3.93		377101	1.89		31°
27	7:50 AM	404972	3.27		377257	1.56		34°
28	7:10 AM	405246	2.74		377392	1.35		32°
29	7:04 AM	405475	2.29		377509	1.17		22°
30	7:13 AM	405666	1.91		377611	.92		24°
31	8:30 AM	405842	1.76		377708	.97		33°

#1 Pumping Rate _____ gal/hr #2 Pumping Rate _____ gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH FEB. YEAR 2019

DAY	TIME	PUMP 1 394058 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 372141 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	7:26 AM	394230	1.72		372244	1.03		
2	10:30 AM	394500	2.70		372356	1.12		
3	6:50 AM	394674	1.74		372442	.86		
4	8:52 AM	394879	2.05		372545	1.03		
5	6:33 AM	395058	1.79		372637	.92		-7°
6	7:04 AM	395260	2.02		372740	1.03		-10°
7	7:06 AM	395461	2.01		372844	1.04		-38°
8	7:48 AM	395670	2.09		372950	1.06		-35°
9	8:17 AM	395872	2.02		373054	1.04		-8°
10	9:04 AM	396101	2.29		373162	1.08		-12°
11	7:20 AM	396416	3.15		373306	1.44		
12	6:46 AM	396641	2.25		373418	1.12		-20°
13	6:58 AM	396854	2.13		373525	1.07		1°
14	6:47 AM	397077	2.23		373634	1.09		-22°
15	7:14 AM	397275	1.98		373731	.97		-8°
16	6:34 AM	397410	1.35		373799	.68		
17	12:12 PM	397578	1.68		373886	.87		
18	6:44 AM	397685	1.07		373938	.52		
19	9:23 AM	397847	1.62		374017	.79		-24°
20	7:15 AM	397971	1.24		374081	.64		-23°
21	7:41 AM	398112	1.41		374151	.70		1°
22	7:16 AM	398261	1.49		374222	.71		-18°
23	8:26 AM	398421	1.60		374296	.74		-10°
24	8:35 AM	398565	1.44		374366	.70		-10°
25	7:05 AM	398710	1.45		374436	.70		
26	6:50 AM	398860	1.50		374507	.71		-7°
27	6:48 AM	398995	1.35		374572	.65		-11°
28	6:57 AM	399129	1.34		374628	.56		11°
29	~~7:10~~	~~405246~~			~~377392~~			
30								
31								

#1 Pumping Rate_____gal/hr #2 Pumping Rate_____gal/hr

Saco Lagoon Lift Station Pumping Record

MONTH Jan. YEAR 2019

DAY	TIME	PUMP 1 Totalizer Hrs	Daily Hrs	Daily Gallons	PUMP 2 Totalizer Hrs	Daily Hrs	Daily Gallons	Comments
1	9:11 AM	387714	2.47		368964	1.22		
2	6:51 AM	387902	1.88		369065	1.11		
3	7:17 AM	388116	2.04		369176	1.09		30°
4	7:07 AM	388324	2.08		369285	1.09		39°
5	8:27 AM	388559	2.35		369405	1.10		25°
6	9:51 AM	388777	2.18		369520	1.15		36°
7	7:09 AM	388961	1.84		369618	.98		21°
8	7:03 AM	389167	2.06		369724	1.06		17° WIND?
9	10:07 AM	389396	2.29		369845	1.21		20° E WIND
10	6:57 AM	389567	1.71		369936	.91		13°
11	8:37 AM	389780	2.13		370051	1.15		
12	6:08 AM	389955	1.75		370141	.90		
13	8:26 AM	390168	2.13		370239	.98		
14	6:50 AM	390352	1.84		370357	1.18		
15	7:00 AM	390552	2.00		370461	1.04		26°
16	7:00 AM	390748	1.96		370564	1.03		23°
17	6:58 AM	390926	1.78		370665	1.01		19°
18	6:42 AM	391121	1.95		370767	1.02		7°
19	9:52 AM	391364	2.43		370891	1.24		8°
20	8:28 AM	391561	1.97		370986	.95		-3°
21	6:17 AM	391755	1.94		371081	.95		
22	7:05 AM	391990	2.35		371193	1.12		
23	7:18 AM	392197	2.07		371290	.97		20°
24	9:03 AM	392418	2.21		371390	1.00		-15°
25	6:31 AM	392652	2.34		371496	1.06		19°
26	5:29 AM	392898	2.46		371549	.53		
27	9:46 AM	393142	2.44		371717	1.68		
28	7:10 AM	393417	2.75		371830	1.13		
29	6:55 AM	393629	2.12		371937	1.07		-3°
30	6:54 AM	393847	2.18		372038	1.01		0° WIND
31	7:02 AM	394058	2.11		372141	1.03		18°

#1 Pumping Rate _____ gal/hr

#2 Pumping Rate _____ gal/hr

APPENDIX M

Sewer Collection Cleaning and Video Reports

— Cleaned

— T. V.

County Road Section to be resurfaced. Has bad manholes..maybe bad pipes too?

No Pipe

CHESTNUT ST.
WASHINGTON AVE.
WILSON AVE.
WELLINGTON AVE.
WALNUT ST.
CHERRY ST.
FOURTH ST. W.
THIRD ST. W.
SECOND ST. W.
FIRST ST. W.
MAPLE ST.
ELM ST.
TAYLOR ST.
VAGG ST.
FIRST AVE.
SECOND AVE.
THIRD AVE.
FOURTH AVE.
BLUE ST.
MILLS ST.
NELSON ST.
STEVENS ST.
FIRST ST.
SECOND ST.
THIRD ST.
CONANT ST.
FRONT ST.
MONTANA ST.
JORDAN ST.
SHAW ST.
RIDER ST.
COUNTY RD.
U.S. HWY 2
BEAVER CREEK
EXISTING LIFT STATION
EXISTING LAGOON
(2 CELL FACULTATIVE/DISCHARGING)
SEE FIG 02

LEGEND

- 8" SANITARY SEWER LINE (14,048 FT.)
- SANITARY SEWER SERVICE LINE
- SANITARY SEWER MANHOLE
- FUTURE SANITARY SEWER LINE
- SEWER FORCE MAIN - 8" CAST IRON (1,070 FT.)

NOTE:

1. FUTURE SEWER LINES ARE PLANNED FOR THE EASTERN PORTION OF ORIGINAL TOWN SITE, NORTH OF FOURTH AVE AND EAST OF FIRST STREET.

0 200 400
SCALE IN FEET

Figure 1
Existing Wastewater
Town of Saco

Town of Saco, Montana
Wastewater PER

GreatWest ENGINEERING

Lakeside Excavation Inc.
220 22nd Ave W
Havre, MT 59501
(P)406-265-9401 (F)406-265-5693

Invoice

Date	Invoice #
12/3/2021	5523

Billed By Tyler Smith 406-265-9401
tyler@lakesideexcavation.com

Bill To:

Town of Saco
P.O. Box 330
Saco Mt 59261

visit www.lakesideexcavation.com

Project site.	Terms	Start date
Town of Saco	net 10th	12/1/21

Quantity	Description	Rate	Amount
4,142	Clean and TV sewer mains as per Email form Matt Mudd. Cleaning 8" Sewer Main This price is based on two passes Additional passes billed out at 325.00 Per hour. This price is based on free water from a fire hydrant and a free place to dump debris. Manhole covers must be uncovered and readily accessible.	2.00	8,284.00
7	Cleaning of Liftstation and extra time on lines.	325.00	2,275.00
2,793	Kenworth Camera Truck	1.44	4,021.92

Thank you for choosing Lakeside Excavation.

LATE PAYMENT: A 1.5% time pay differential will be charged on all past due accounts. This represents an annual service charge of 18%.
COLLECTION COSTS: Interest costs, collection costs and reasonable attorney fees will be paid by the debtor if collection proceedings are necessary with or without suit.
INVOICES NOT PAID within 90 days of work performed will result in a Construction Lien filed against the real property.

Total	$14,580.92
Payments/Credits	$0.00
Balance Due	$14,580.92

We now accept VISA, MasterCard & Discover
Credit card transactions over $500 may be subject to a convenience fee.

SEWER CLEANING OBSERVATIONS & MAN HOLE REPORT

Work performed by
Lakeside Excavation Inc.
220 22nd Ave West
Havre, MT 59501
(406)-265-9401
tyler@lakesideexcavation.com

Work being done for: Town of Saco

Cleaning d<draw		Truck operator			
Truck Hours. Starting		Truck Hours. Ending		Total Hours	
Water meter reading in		Water meter reading out		Total water used	

Location of M/H: Cherry + Hwy 243 — M/H Number: 21 to 22

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom
OK	OK	fair	OK

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
E	W	clay	8

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ☒ Sludge ☐ Sand ☐ Gravel ☐ Debris ☒ Grease ☒ Roots ☐ Line jetted to the next MH? ☐

Extra Vac Truck time (in hours):
Need to be Televised:
Total liner feet cleaned: 0
Previous feet cleaned: 0
Comments: mostly clean, some grease + debris
Total feet this and previous: 308

Location of M/H: Maple st - Hwy 243 — M/H Number: 20 - 21

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom
OK	poor	NONE	poor

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
S	N	clay	8

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ☐ Sludge ☐ Sand ☐ Gravel ☒ Debris ☐ Grease ☐ Roots ☐ Line jetted to the next MH? ☐

Extra Vac Truck time (in hours): 1 HR
Need to be Televised:
Total liner feet cleaned: 340
Previous feet cleaned: 308
Comments: Lots of Rocks / CAUTION with Camera
Total feet this and previous: 648

HAD HOSE Stuck About 3' from M/H

Location of M/H: Hwy 243 | M/H Number: 18 to 20

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom
OK	Poor	Poor	Poor

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
S	N	Clay	8

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ☒ Sand ☒ Gravel ☒ Debris ☒ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours): 1 1/2 HRS | Need to be Televised: YES | Total liner feet cleaned: 310 | Previous feet cleaned: 648 | Total feet this and previous: 958

Comments: Lots of Gravel + Debris

Location of M/H: Taylor St. | M/H Number: 18 to 19

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom
OK	Poor	Poor	Poor

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
N	S	Clay	8

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ☒ Sand ☒ Gravel ☒ Debris ☒ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours): | Need to be Televised: | Total liner feet cleaned: 205 | Previous feet cleaned: 958 | Total feet this and previous: 1163

Comments: M/H 19 is Abandoned - cant enter

Location of M/H: | M/H Number: 17 to 18

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom
OK	BAD	NONE	BAD

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
E	W	Clay	8

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ○ Sand ○ Gravel ○ Debris ○ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours): | Need to be Televised: | Total liner feet cleaned: 160 | Previous feet cleaned: 1163 | Total feet this and previous: 1323

Comments: MAN Hole bottom is bad + pipe is up off the bottom - do not run camera in M/H Can not get through (only 160') Head comes back w/ mud on it

Location of M/H | | M/H Number | 16 to 17

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom
OK	BAD	BAD	BAD

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
E	W	Clay	8

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ☒ Sand ☒ Gravel ☒ Debris ☒ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours): 1 HR | Need to be Televised: | Total liner feet cleaned: 250 | Previous feet cleaned: 1323

Comments: HARD TIME GETTING THROUGH | Total feet this and previous: 1573

Location of M/H | SAME HOLE | M/H Number | 16 to 36

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom
OK	BAD	BAD	BAD

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
S	N	Clay	8

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ○ Sand ☒ Gravel ☒ Debris ☒ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours): 1/2 HRS | Need to be Televised: | Total liner feet cleaned: 180 | Previous feet cleaned: 1573

Comments: | Total feet this and previous: 1753

Location of M/H | TAYLOR ST. | M/H Number | 15 to 16

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom
OK	BAD	BAD	BAD

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
S	N	Clay	10

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ☒ Sludge ☒ Sand ○ Gravel ○ Debris ☒ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours): | Need to be Televised: | Total liner feet cleaned: 166 | Previous feet cleaned: 1753

Comments: Cleanest one yet | Total feet this and previous: 1919

Location of M/H: TAYLOR ST | M/H Number: 14 to 15

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom
OK	BAD	BAD	BAD

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
E	W	Clay	10

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ☒ Sand ☒ Gravel ☒ Debris ○ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours): | Need to be Televised: | Total liner feet cleaned: 350 | Previous feet cleaned: 1919

Comments: Mostly Sludge some Sand & Gravel | Total feet this and previous: 2269

Location of M/H: First St + Vagg St | M/H Number: 23 to 24

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom
OK ish	BAD	NONE	VERY BAD

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
S	N	Clay	8

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ☒ Sand ☒ Gravel ☒ Debris ☒ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours): | Need to be Televised: | Total liner feet cleaned: 148 | Previous feet cleaned: 2269

Comments: | Total feet this and previous: 2417

Location of M/H: First St. | M/H Number: 12 to 23

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom
OK	BAD	NONE	BAD

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
S	N	Clay	8

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ☒ Sand ☒ Gravel ☒ Debris ☒ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours): 1 HR | Need to be Televised: | Total liner feet cleaned: 205 | Previous feet cleaned: 2417

Comments: Ran two Extra times cause of pipe being pulled back. | Total feet this and previous: 2622

Location of M/H: FRONT St. | M/H Number: 11 to 12

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom
OK	BAD	NONE	BAD

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
S	N	Clay	8

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ☒ Sand ☒ Gravel ☒ Debris ☒ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours): | Need to be Televised: | Total liner feet cleaned: 175 | Previous feet cleaned: 2622

Comments: | Total feet this and previous: 2797

Location of M/H: SAME HOLE | M/H Number: 11 to 14

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom
OK	BAD	NONE	BAD

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
E	W	CLAY	10

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ☒ Sand ☒ Gravel ☒ Debris ☒ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours): 1 HR | Need to be Televised: | Total liner feet cleaned: 530 | Previous feet cleaned: 2797

Comments: RAN TWO EXTRA TIMES | Total feet this and previous: 3327

Location of M/H: MONTANA St. Lift station | M/H Number: Lift station to 11

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom

Water Flow direction	Jetting direction	Type of Line	Size of sewer main

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ☒ Sand ○ Gravel ☒ Debris ☒ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours): | Need to be Televised: | Total liner feet cleaned: 300 | Previous feet cleaned: 3327

Comments: | Total feet this and previous: 3627

S27-7427

Location of M/H | M/H Number 2 to 7

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom

Water Flow direction	Jetting direction	Type of Line	Size of sewer main
N	S	Clay	10

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ○ Sand ○ Gravel ○ Debris ○ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours) | Need to be Televised | Total liner feet cleaned 515 | Previous feet cleaned 3627

Comments | Total feet this and previous 4142

Location of M/H | M/H Number

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom

Water Flow direction	Jetting direction	Type of Line	Size of sewer main

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ○ Sand ○ Gravel ○ Debris ○ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours) 1 HR | Need to be Televised | Total liner feet cleaned | Previous feet cleaned

Comments Cleaned lift station | Total feet this and previous

Location of M/H | M/H Number

Condition of ring and cover	Condition neck	Condition of the steps	Condition of Walls & bottom

Water Flow direction	Jetting direction	Type of Line	Size of sewer main

WHAT WAS SEEN AS THE LINE WAS BEING JETTED.

clean ○ Sludge ○ Sand ○ Gravel ○ Debris ○ Grease ○ Roots ○ Line jetted to the next MH? ○

Extra Vac Truck time (in hours) | Need to be Televised | Total liner feet cleaned | Previous feet cleaned

Comments | Total feet this and previous

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	18
Downstream MH:	17

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Alley of Vagg ST, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

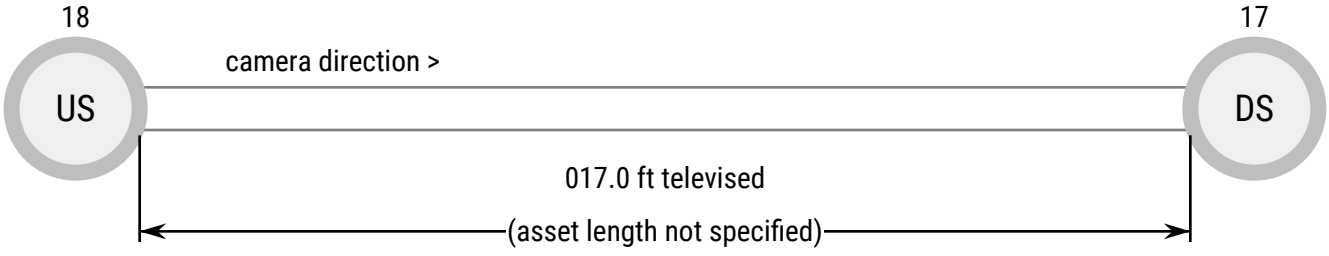
Media Date/Time:	01 • Dec • 2021 15:23
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	No Pre-Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	017.0 ft
Weather:	Dry - No Precipitation During Survey

Ratings

	Structural	O & M	Overall
Quick:			
$\sum_{i=1}^{5} SG_i$ Pipe Rating:			
Rating Index:			

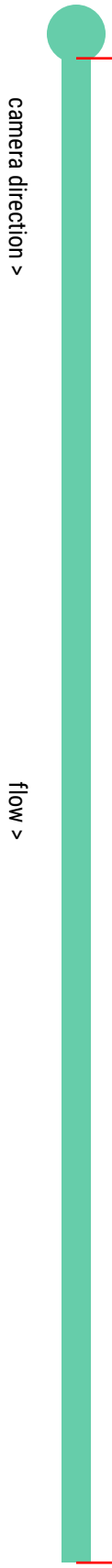
Consequence of Failure:

Summary



Observations

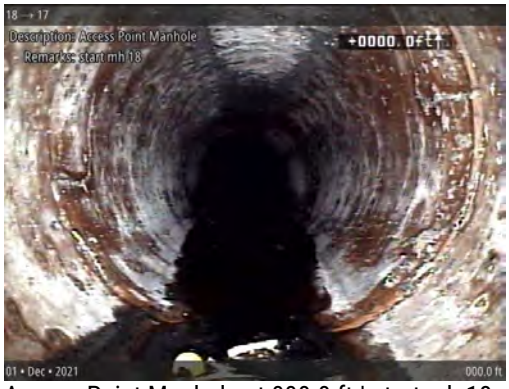
18



Feet	Code		Clock	Value	Grade	Description	Remarks
000.0	AMH					Access Point Manhole	start mh 18
	MWL			0%		Miscellaneous Water Level	
017.0	DSGV		4 - 8	25%		Deposits Settled Gravel	inspection ends
	MSA					Miscellaneous Survey Abandoned	Gravel blocked

17

Snapshots



Access Point Manhole at 000.0 ft | start mh 18

Miscellaneous Water Level at 000.0 ft

Deposits Settled Gravel at 017.0 ft, 4 - 8 o'clock | inspection ends

Miscellaneous Survey Abandoned at 017.0 ft | Gravel blocked

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	19
Downstream MH:	18

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	County Road, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

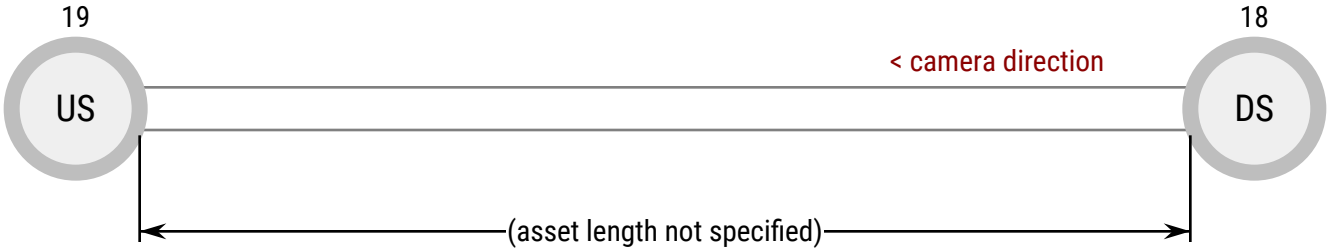
Media Date/Time:	01 • Dec • 2021 16:09
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Upstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	000.0 ft
Weather:	Dry - No Precipitation During Survey

Ratings

	Structural	O & M	Overall
Quick:	0000	0000	0000
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	0	0	0
Rating Index:	0	0	0

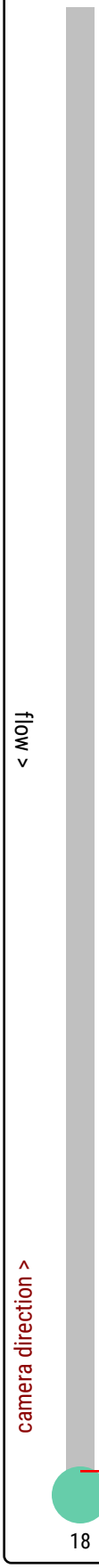
Consequence of Failure:

Summary



Observations

19



18

Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	MSA				Miscellaneous Survey Abandoned	45 bend in main, not able to camera
	MWL		0%		Miscellaneous Water Level	
	AMH				Access Point Manhole	start mh 18

Snapshots

Access Point Manhole at 000.0 ft | start mh 18

Miscellaneous Water Level at 000.0 ft

Miscellaneous Survey Abandoned at 000.0 ft | 45 bend in main, not able to camera

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	20
Downstream MH:	18

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	County Road, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

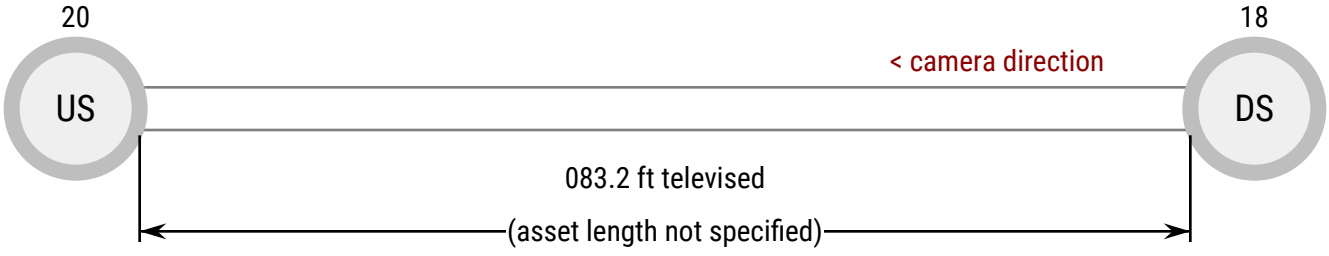
Media Date/Time:	01 • Dec • 2021 15:36
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Upstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	083.2 ft
Weather:	Dry - No Precipitation During Survey

Ratings

	Structural	O & M	Overall
Quick:	2100	4132	4132
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	2	10	12
Rating Index:	2	3.3	3

Consequence of Failure:

Summary



Observations

20

Feet	Code	Clock	Value	Grade	Description	Remarks
083.2	MSA				Miscellaneous Survey Abandoned	blocked on service camera wont advance
082.9	TBD	12	4 in | 3 in	3	Tap Break-in/Hammer Defective	Intruting service
071.5	TFC	2	6 in		Tap Factory Capped	
039.3	TFC	2	6 in		Tap Factory Capped	
029.6	LD		25%	4	Alignment Down	
014.7	MWLS		10%	2	Miscellaneous Water Level Sag	
011.1	TBI	10	4 in | 1 in	3	Tap Break-in Intruding	may not be in service
009.2	TFC	10	6 in		Tap Factory Capped	
006.5	TFC	2	6 in		Tap Factory Capped	
000.0	MWL AMH		10%		Miscellaneous Water Level Access Point Manhole	start mh 18

18

Snapshots

Access Point Manhole at 000.0 ft | start mh 18

Miscellaneous Water Level at 000.0 ft

Tap Factory Capped at 006.5 ft, 2 o'clock

Tap Factory Capped at 009.2 ft, 10 o'clock

Tap Break-in Intruding at 011.1 ft, 10 o'clock | may not be in service

Miscellaneous Water Level Sag at 014.7 ft

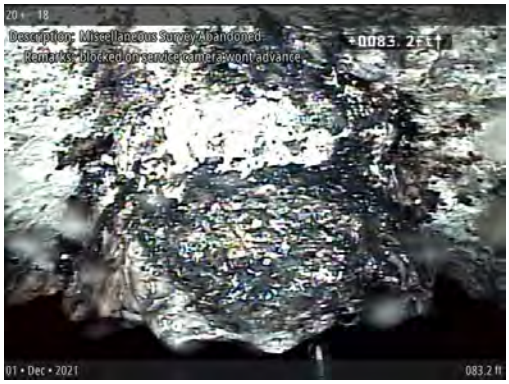
Alignment Down at 029.6 ft

Tap Factory Capped at 039.3 ft, 2 o'clock

Snapshots

Tap Factory Capped at 071.5 ft, 2 o'clock

Tap Break-in/Hammer Defective at 082.9 ft, 12 o'clock | Intruting service



Miscellaneous Survey Abandoned at 083.2 ft | blocked on service camera wont advance

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	20
Downstream MH:	18

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	County Road, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

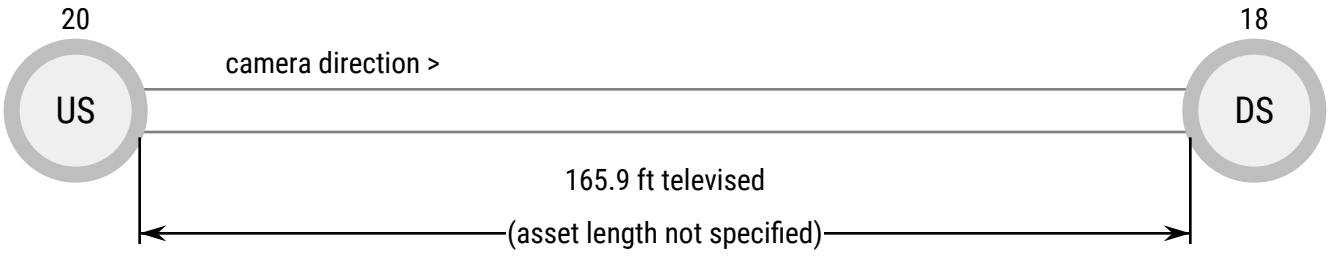
Media Date/Time:	01 • Dec • 2021 16:32
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	165.9 ft
Weather:	Dry - No Precipitation During Survey

Ratings

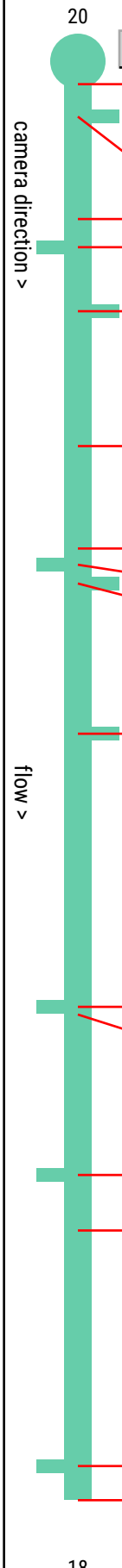
$\sum_{i=1}^{5} SG_i$	Structural	O & M	Overall
Quick:	4133	5132	5141
Pipe Rating:	17	11	28
Rating Index:	2.8	3.7	3.1

Consequence of Failure:

Summary



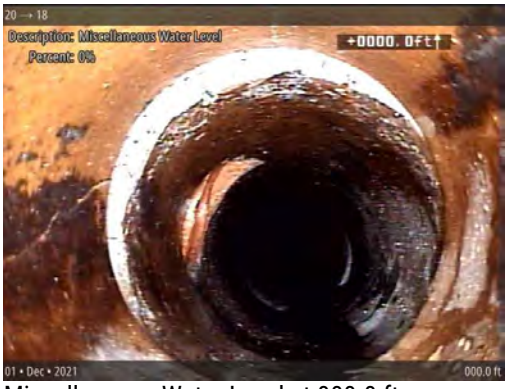
Observations



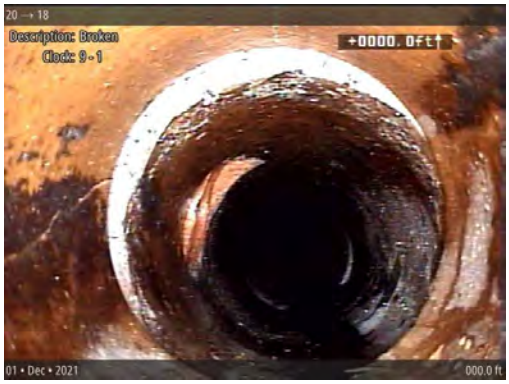
Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 20
	MWL		0%		Miscellaneous Water Level	
	B	9 - 1		4	Broken	
003.8	TBD	9	4 in	3	Tap Break-in/Hammer Defective	
015.8	MWLS		10%	2	Miscellaneous Water Level Sag	
019.1	TBD	3	4 in	3	Tap Break-in/Hammer Defective	
026.6	TFC	9	6 in		Tap Factory Capped	
042.4	CM	11 - 1		3	Crack Multiple	
054.4	MWLS		20%	2	Miscellaneous Water Level Sag	
056.3	TFC	2	6 in		Tap Factory Capped	
058.5	TFC	10	6 in		Tap Factory Capped	
076.1	TFC	10	6 in		Tap Factory Capped	
108.1	TFC	2	6 in		Tap Factory Capped	
109.0	CM	10 - 1		3	Crack Multiple	
127.8	TBI	1	4 in | 3 in	5	Tap Break-in Intruding	
134.3	MWLS		40%	3	Miscellaneous Water Level Sag	
161.9	TFC	2	6 in		Tap Factory Capped	
165.9	MSA				Miscellaneous Survey Abandoned	camera under waterblocked.

Snapshots

Access Point Manhole at 000.0 ft | start mh 20



Miscellaneous Water Level at 000.0 ft



Broken at 000.0 ft, 9 - 1 o'clock

Tap Break-in/Hammer Defective at 003.8 ft, 9 o'clock

Miscellaneous Water Level Sag at 015.8 ft

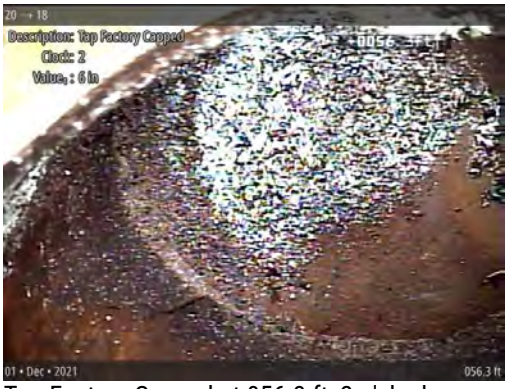
Tap Break-in/Hammer Defective at 019.1 ft, 3 o'clock

Tap Factory Capped at 026.6 ft, 9 o'clock

Crack Multiple at 042.4 ft, 11 - 1 o'clock

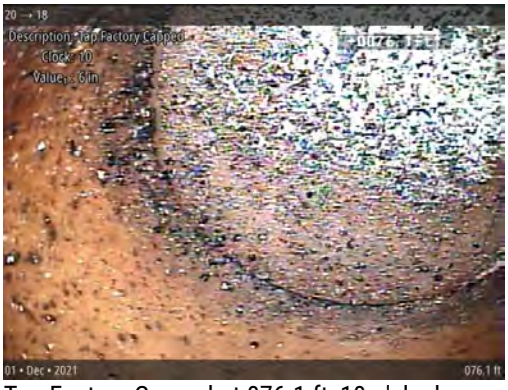
Snapshots

Miscellaneous Water Level Sag at 054.4 ft



Tap Factory Capped at 056.3 ft, 2 o'clock

Tap Factory Capped at 058.5 ft, 10 o'clock



Tap Factory Capped at 076.1 ft, 10 o'clock

Tap Factory Capped at 108.1 ft, 2 o'clock

Crack Multiple at 109.0 ft, 10 - 1 o'clock

Tap Break-in Intruding at 127.8 ft, 1 o'clock

Miscellaneous Water Level Sag at 134.3 ft

Snapshots

Tap Factory Capped at 161.9 ft, 2 o'clock

Miscellaneous Survey Abandoned at 165.9 ft | camera under waterblocked.

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	21
Downstream MH:	20

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	County Road, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

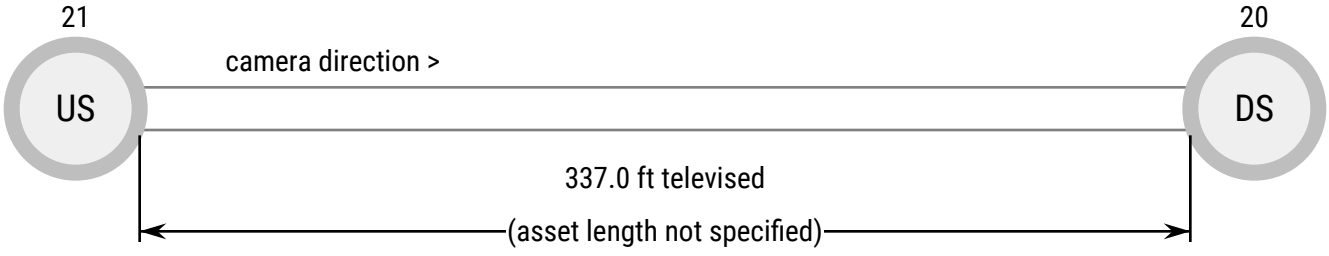
Media Date/Time:	01 • Dec • 2021 13:56
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	Capital Improvement Program
Technology:	CCTV
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	01 • Dec • 2021
Flow Control:	Not Controlled
Length Surveyed:	337.0 ft
Weather:	Dry - No Precipitation During Survey

Ratings

$\sum_{i=1}^{5} SG_i$	Structural	O & M	Overall
Quick:	5141	4332	5144
Pipe Rating:	51	20	71
Rating Index:	2.7	3.3	2.8

Consequence of Failure:

Summary



Observations

Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 21
	MWL		10%		Miscellaneous Water Level	
010.4	TBD	8	4 in	3	Tap Break-in/Hammer Defective	
012.0	CM	11 - 2		3	Crack Multiple	
019.4	CM	10 - 1		3	Crack Multiple	
023.4	MWLS		10%	2	Miscellaneous Water Level Sag	
043.2	TFC	2	6 in		Tap Factory Capped	
045.4	TFC	10	6 in		Tap Factory Capped	
046.2	CM	11 - 5		3	Crack Multiple	
077.3	MWLS		5%	2	Miscellaneous Water Level Sag	
080.1	TBI	3	4 in | 2 in	4	Tap Break-in Intruding	
091.1	TFC	2	6 in		Tap Factory Capped	
093.5	TFC	10	6 in		Tap Factory Capped	
096.8	CM	11 - 1		3	Crack Multiple	
104.4	CM	11 - 2		3	Crack Multiple	
106.4	MWLS		10%	2	Miscellaneous Water Level Sag	
141.6	TFC	2	6 in		Tap Factory Capped	
146.6	TBI	1	4 in | 2 in	4	Tap Break-in Intruding	
147.7	H	2		4	Hole	with metal on outside?
161.3	TBI	10	4 in | 0.5 in	2	Tap Break-in Intruding	in a capped wye
173.0	CM	10 - 1		3	Crack Multiple	
177.2	MWLS		15%	2	Miscellaneous Water Level Sag	
191.6	TFC	10	6 in		Tap Factory Capped	
194.0	TFC	2	6 in		Tap Factory Capped	
196.9	TBA	3	4 in		Tap Break-in Activity	Break in Sewer Conncetion Looks to be not in use should verfi
202.9	CM	10 - 1		3	Crack Multiple	
221.4	TFC	10	6 in		Tap Factory Capped	
	MWLS		10%	2	Miscellaneous Water Level Sag	
244.7	TFC	2	6 in		Tap Factory Capped	
247.4	TBA	2	4 in		Tap Break-in Activity	Break in Sewer Conncetion
251.7	TFC	10	6 in		Tap Factory Capped	
269.5	MWLS		7.5%	2	Miscellaneous Water Level Sag	
279.5	TBD	10	4 in | 0.5 in	3	Tap Break-in/Hammer Defective	
	MWLS		15%	2	Miscellaneous Water Level Sag	
289.7	MCU			4	Miscellaneous Camera Underwater	
292.4	TFC	2	6 in		Tap Factory Capped	
294.4	TFC	10	6 in		Tap Factory Capped	
297.5	MWLS		0%	2	Miscellaneous Water Level Sag	sag ends here
310.3	MWLS		10%	2	Miscellaneous Water Level Sag	
321.5	MWLS		50%	3	Miscellaneous Water Level Sag	
332.9	TFC	10	6 in		Tap Factory Capped	
333.4	BSV	5 - 7		5	Broken Soil Visible	
337.0	AMH				Access Point Manhole	end mh20 pipe broken outside manhole light was from manhole

Snapshots

Access Point Manhole at 000.0 ft | start mh 21

Miscellaneous Water Level at 000.0 ft

Tap Break-in/Hammer Defective at 010.4 ft, 8 o'clock

Crack Multiple at 012.0 ft, 11 - 2 o'clock

Crack Multiple at 019.4 ft, 10 - 1 o'clock

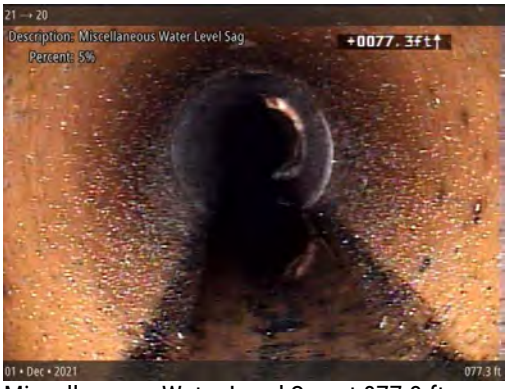
Miscellaneous Water Level Sag at 023.4 ft

Tap Factory Capped at 043.2 ft, 2 o'clock

Tap Factory Capped at 045.4 ft, 10 o'clock

Snapshots

Crack Multiple at 046.2 ft, 11 - 5 o'clock



Miscellaneous Water Level Sag at 077.3 ft

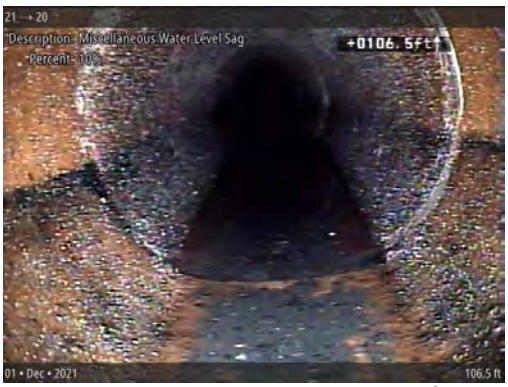
Tap Break-in Intruding at 080.1 ft, 3 o'clock

Tap Factory Capped at 091.1 ft, 2 o'clock

Tap Factory Capped at 093.5 ft, 10 o'clock

Crack Multiple at 096.8 ft, 11 - 1 o'clock

Crack Multiple at 104.4 ft, 11 - 2 o'clock



Miscellaneous Water Level Sag at 106.4 ft

Snapshots

Tap Factory Capped at 141.6 ft, 2 o'clock

Tap Break-in Intruding at 146.6 ft, 1 o'clock

Hole at 147.7 ft, 2 o'clock | with metal on outside?

Tap Break-in Intruding at 161.3 ft, 10 o'clock | in a capped wye

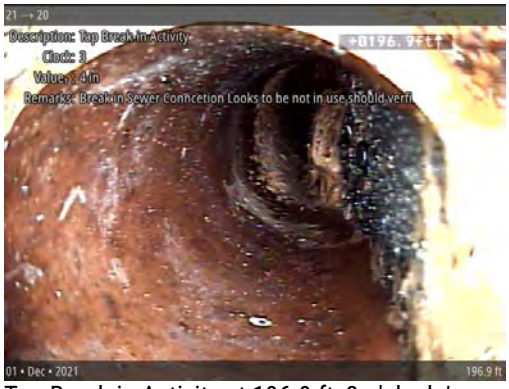
Crack Multiple at 173.0 ft, 10 - 1 o'clock

Miscellaneous Water Level Sag at 177.2 ft

Tap Factory Capped at 191.6 ft, 10 o'clock

Tap Factory Capped at 194.0 ft, 2 o'clock

Snapshots



Tap Break-in Activity at 196.9 ft, 3 o'clock | Break in Sewer Conncetion Looks to be not in

Crack Multiple at 202.9 ft, 10 - 1 o'clock

Tap Factory Capped at 221.4 ft, 10 o'clock

Miscellaneous Water Level Sag at 221.4 ft

Tap Factory Capped at 244.7 ft, 2 o'clock

Tap Break-in Activity at 247.4 ft, 2 o'clock | Break in Sewer Conncetion

Tap Factory Capped at 251.7 ft, 10 o'clock

Miscellaneous Water Level Sag at 269.5 ft

Snapshots

Tap Break-in/Hammer Defective at 279.5 ft, 10 o'clock

Miscellaneous Water Level Sag at 279.5 ft

Miscellaneous Camera Underwater at 289.7 ft

Tap Factory Capped at 292.4 ft, 2 o'clock

Tap Factory Capped at 294.4 ft, 10 o'clock

Miscellaneous Water Level Sag at 297.5 ft | sag ends here

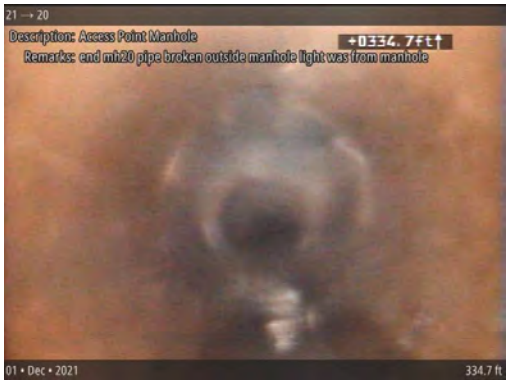
Miscellaneous Water Level Sag at 310.3 ft

Miscellaneous Water Level Sag at 321.5 ft

Snapshots

Tap Factory Capped at 332.9 ft, 10 o'clock

Broken Soil Visible at 333.4 ft, 5 - 7 o'clock



Access Point Manhole at 337.0 ft | end mh20 pipe broken outside manhole light was from

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	22
Downstream MH:	21

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Polyvinyl Chloride
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Cherry Street, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	
PO Number:	
Additional Info:	

Inspection

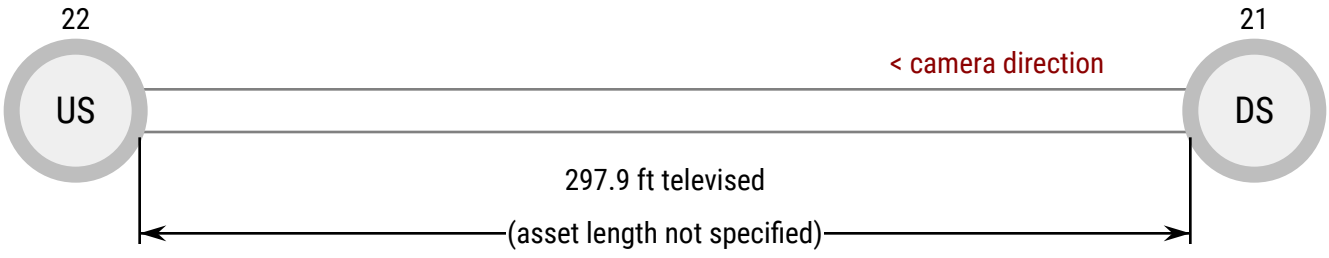
Media Date/Time:	01 • Dec • 2021 13:26
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Upstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	297.9 ft
Weather:	

Ratings

$\sum_{i=1}^{5} SG_i$	Structural	O & M	Overall
Quick:	5125	0000	5125
Pipe Rating:	15	0	15
Rating Index:	2.5	0	2.5

Consequence of Failure:

Summary



Observations

22

Feet	Code	Clock	Value	Grade	Description	Remarks
297.9	AMH				Access Point Manhole	end mh 22
227.0	MWLS		10%	2	Miscellaneous Water Level Sag	
194.5	MWLS		10%	2	Miscellaneous Water Level Sag	
167.8	MWLS		10%	2	Miscellaneous Water Level Sag	
070.8	MWLS		10%	2	Miscellaneous Water Level Sag	
017.5	DR		20%	5	Deformed Rigid	pipe deformed @ 3 & 9?
015.0	MWLS		5%	2	Miscellaneous Water Level Sag	
000.0	MWL		0%		Miscellaneous Water Level	
	AMH				Access Point Manhole	start mh 21

flow >

camera direction >

21

Snapshots

Access Point Manhole at 000.0 ft | start mh 21

Miscellaneous Water Level at 000.0 ft

Miscellaneous Water Level Sag at 015.0 ft

Deformed Rigid at 017.5 ft | pipe deformed @ 3 & 9?

Miscellaneous Water Level Sag at 070.8 ft

Miscellaneous Water Level Sag at 167.8 ft

Miscellaneous Water Level Sag at 194.5 ft

Miscellaneous Water Level Sag at 227.0 ft

Snapshots

Access Point Manhole at 297.9 ft | end mh 22

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	North
Downstream MH:	21

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	County Road, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

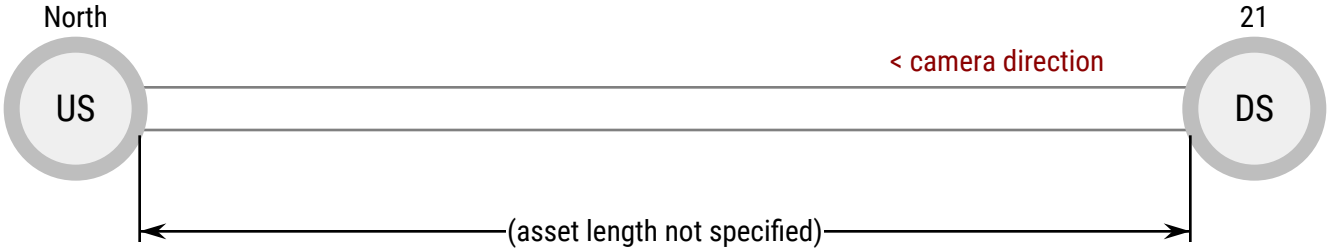
Media Date/Time:	01 • Dec • 2021 15:07
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Upstream
Purpose:	Capital Improvement Program
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	Not Controlled
Length Surveyed:	000.0 ft
Weather:	Dry - No Precipitation During Survey

Ratings

	Structural	O & M	Overall
Quick:	0000	0000	0000
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	0	0	0
Rating Index:	0	0	0

Consequence of Failure:

Summary



Observations

North

Feet	Code		Clock	Value	Grade	Description	Remarks
000.0	AMH					Access Point Manhole	end mh north Manhole a chamber to north. in poor condition
	MWL			0%		Miscellaneous Water Level	
21	AMH					Access Point Manhole	start mh 21

< flow >

< camera direction >

Snapshots

Access Point Manhole at 000.0 ft | start mh 21

Access Point Manhole at 000.0 ft | end mh north Manhole a chamber to north. in poor

Miscellaneous Water Level at 000.0 ft

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	11
Downstream MH:	Lift Station

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	10 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	First, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

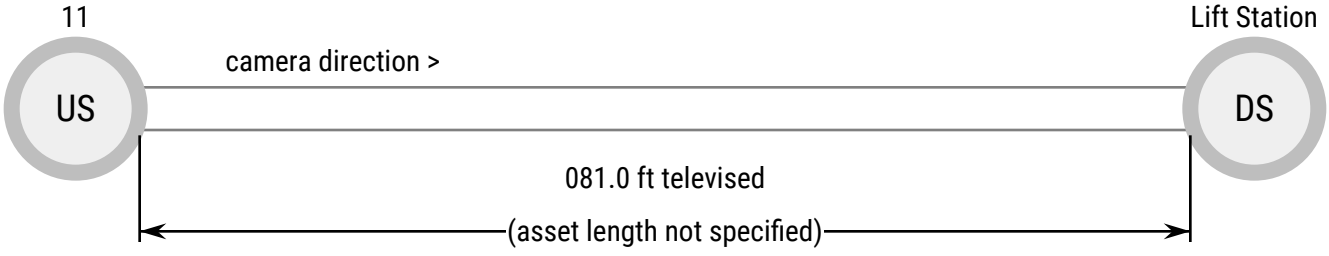
Media Date/Time:	02 • Dec • 2021 17:27
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	081.0 ft
Weather:	Dry - No Precipitation During Survey

Ratings

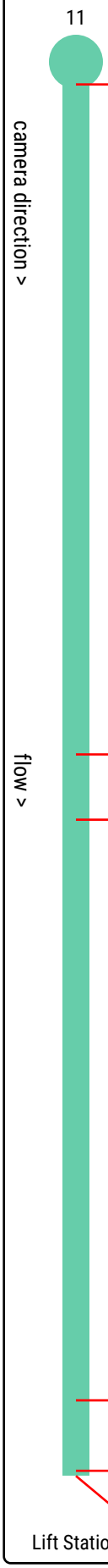
	Structural	O & M	Overall
Quick:	3121	4200	4231
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	5	8	13
Rating Index:	2.5	4	3.2

Consequence of Failure:

Summary

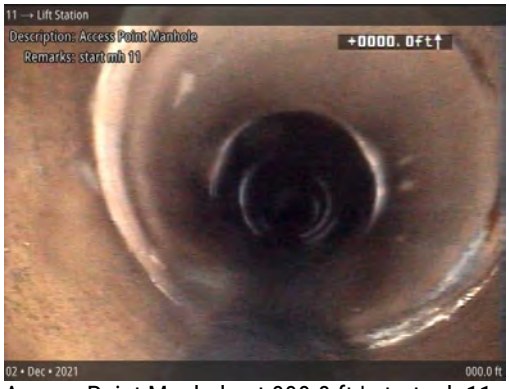


Observations

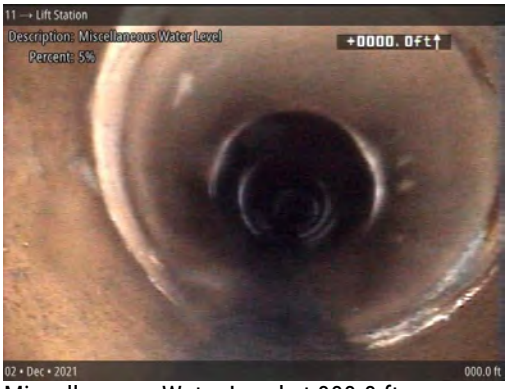


Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 11
	MWL		5%		Miscellaneous Water Level	
039.0	IRJ	7 - 4		4	Infiltration Runner Joint	encrustation
042.8	CM	1 - 2		3	Crack Multiple	
076.6	MWLS		20%	2	Miscellaneous Water Level Sag	
080.7	MCU			4	Miscellaneous Camera Underwater	
081.0	MSA				Miscellaneous Survey Abandoned	camera underwater not able to advance

Snapshots

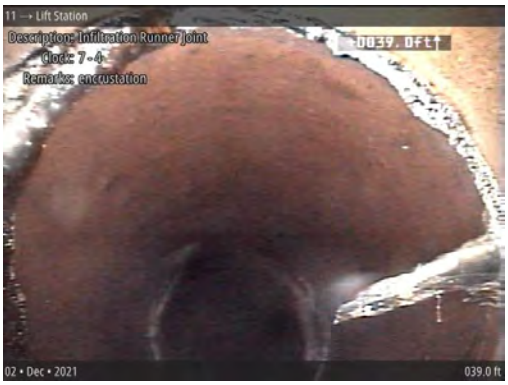


Access Point Manhole at 000.0 ft | start mh 11



Miscellaneous Water Level at 000.0 ft

Miscellaneous Survey Abandoned at 081.0 ft | camera underwater not able to advance



Infiltration Runner Joint at 039.0 ft, 7 - 4 o'clock | encrustation

Crack Multiple at 042.8 ft, 1 - 2 o'clock

Miscellaneous Water Level Sag at 076.6 ft

Miscellaneous Camera Underwater at 080.7 ft

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	12
Downstream MH:	11

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	10 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	First, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

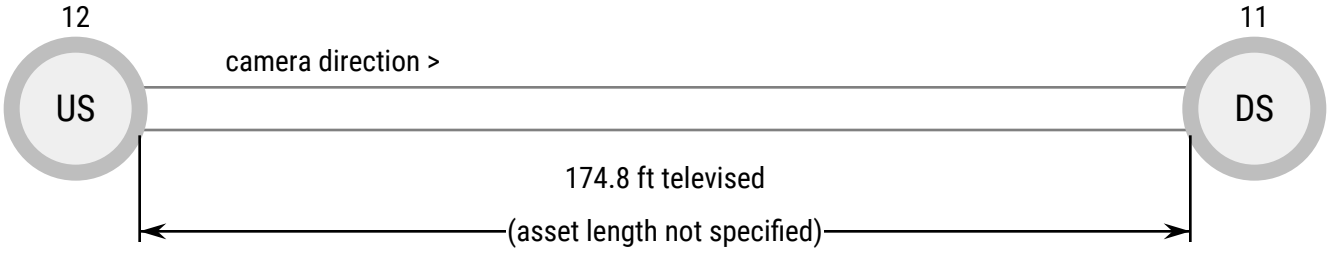
Media Date/Time:	02 • Dec • 2021 17:12
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	174.8 ft
Weather:	Dry - No Precipitation During Survey

Ratings

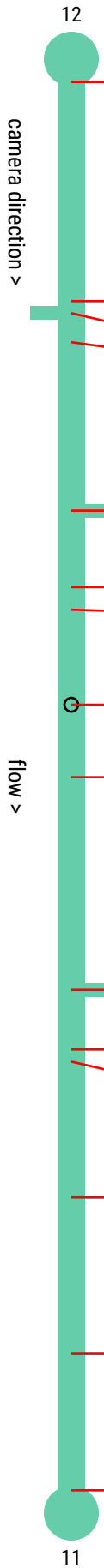
	Structural	O & M	Overall
Quick:	4137	4132	4239
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	25	10	35
Rating Index:	3.1	3.3	3.2

Consequence of Failure:

Summary

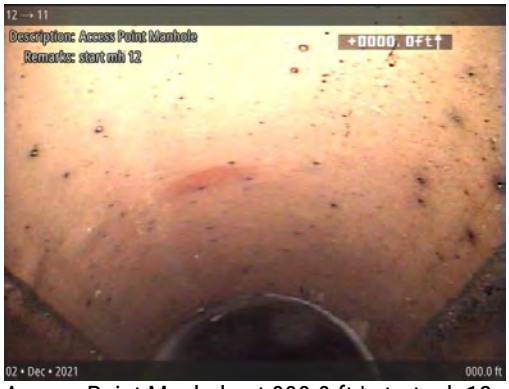


Observations



Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 12
	MWL		20%		Miscellaneous Water Level	
027.2	CM	10 - 3		3	Crack Multiple	
028.7	TFC	1	6 in		Tap Factory Capped	
032.3	CM	10 - 2		3	Crack Multiple	
053.2	TBD	10	4 in	3	Tap Break-in/Hammer Defective	
062.7	CM	10 - 1		3	Crack Multiple	
065.5	CM	11 - 1		3	Crack Multiple	
077.3	TBD	12	4 in	3	Tap Break-in/Hammer Defective	out of service
086.3	CM	10 - 2		3	Crack Multiple	
112.7	TBA	10	4 in		Tap Break-in Activity	Break in Sewer Conncetion
120.1	MWLS		50%	3	Miscellaneous Water Level Sag	
121.6	H	1		4	Hole	
138.4	CM	11 - 1		3	Crack Multiple	
157.8	MCU			4	Miscellaneous Camera Underwater	
174.8	AMH				Access Point Manhole	end mh 11

Snapshots



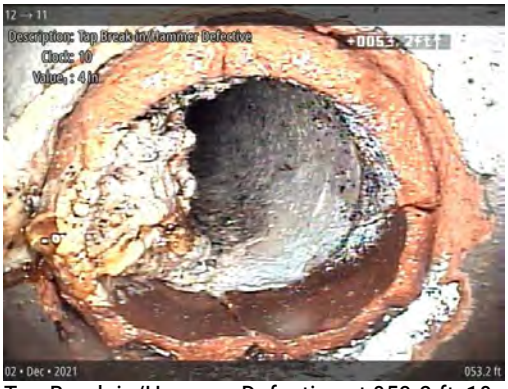
Access Point Manhole at 000.0 ft | start mh 12

Miscellaneous Water Level at 000.0 ft

Crack Multiple at 027.2 ft, 10 - 3 o'clock

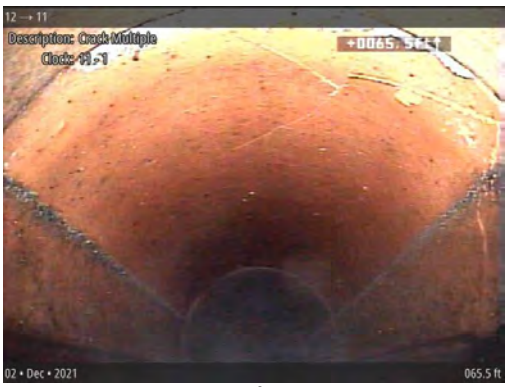
Tap Factory Capped at 028.7 ft, 1 o'clock

Crack Multiple at 032.3 ft, 10 - 2 o'clock



Tap Break-in/Hammer Defective at 053.2 ft, 10 o'clock

Crack Multiple at 062.7 ft, 10 - 1 o'clock



Crack Multiple at 065.5 ft, 11 - 1 o'clock

Snapshots

Tap Break-in/Hammer Defective at 077.3 ft, 12 o'clock | out of service

Crack Multiple at 086.3 ft, 10 - 2 o'clock

Tap Break-in Activity at 112.7 ft, 10 o'clock | Break in Sewer Conncetion

Miscellaneous Water Level Sag at 120.1 ft

Hole at 121.6 ft, 1 o'clock

Crack Multiple at 138.4 ft, 11 - 1 o'clock

Miscellaneous Camera Underwater at 157.8 ft

Access Point Manhole at 174.8 ft | end mh 11

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	14
Downstream MH:	11

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	10 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Taylor, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

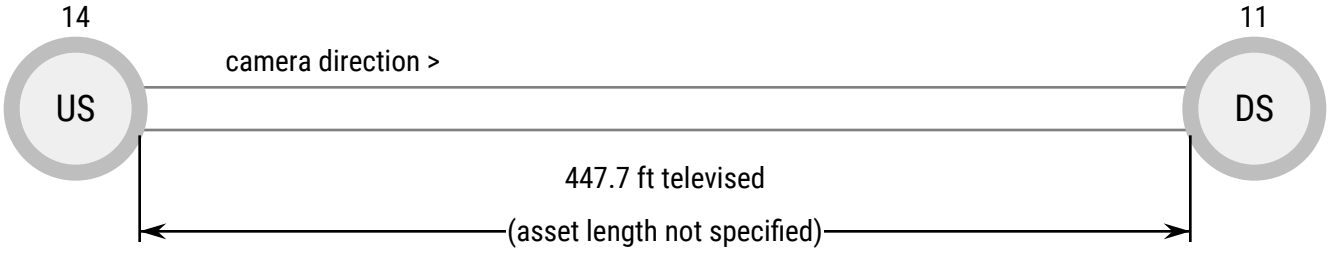
Media Date/Time:	02 • Dec • 2021 14:50
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	447.7 ft
Weather:	Dry - No Precipitation During Survey

Ratings

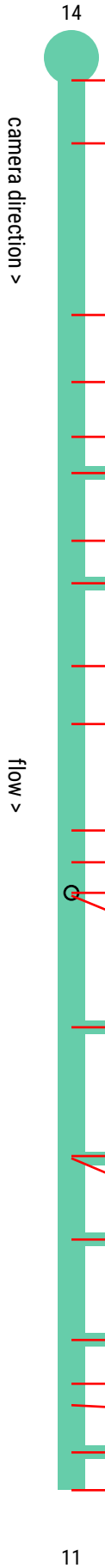
	Structural	O & M	Overall
Quick:	4135	3221	4137
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	23	8	31
Rating Index:	2.6	2.7	2.6

Consequence of Failure:

Summary

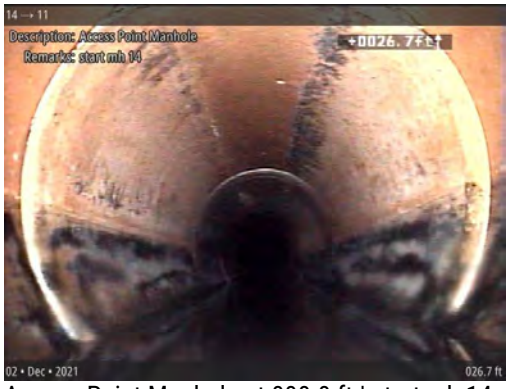


Observations

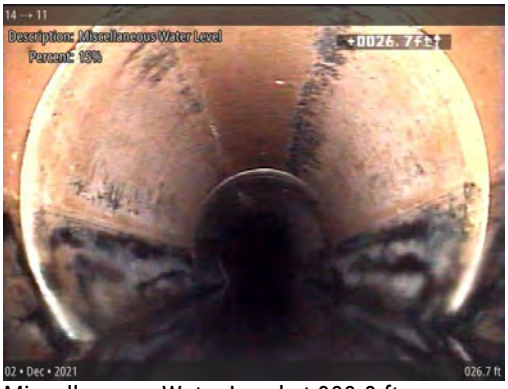


Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 14
	MWL		15%		Miscellaneous Water Level	
020.0	CC	10 - 12		1	Crack Circumferential	
074.5	CM	10 - 11		3	Crack Multiple	
095.8	CM	12 - 2		3	Crack Multiple	
113.2	CM	8 - 3		3	Crack Multiple	
124.7	TF	10	4 in		Tap Factory	does not look active
146.2	CC	9 - 12		1	Crack Circumferential	
159.7	TFC	10	6 in		Tap Factory Capped	
186.0	H	12		4	Hole	
204.4	MMC				Miscellaneous Material Change	change to PVC
238.2	MWLS		15%	2	Miscellaneous Water Level Sag	
248.3	MMC				Miscellaneous Material Change	VCP
258.0	TBI	12	4 in | 1 in	2	Tap Break-in Intruding	
258.9	CM	3 - 8		3	Crack Multiple	
300.7	TFC	10	6 in		Tap Factory Capped	
341.6	DSGV	5 - 7	20%	3	Deposits Settled Gravel	
342.3	TFC	10	6 in		Tap Factory Capped	
368.1	TFC	10	6 in		Tap Factory Capped	
400.0	TFC	10	6 in		Tap Factory Capped	
413.9	DAE	7 - 10	20%	3	Deposits Attached Encrustation	
420.7	CM	9 - 2		3	Crack Multiple	
435.7	TFC	10	6 in		Tap Factory Capped	
447.7	MSA				Miscellaneous Survey Abandoned	pipe blocking survey

Snapshots



Access Point Manhole at 000.0 ft | start mh 14



Miscellaneous Water Level at 000.0 ft

Crack Circumferential at 020.0 ft, 10 - 12 o'clock

Crack Multiple at 074.5 ft, 10 - 11 o'clock

Crack Multiple at 095.8 ft, 12 - 2 o'clock

Crack Multiple at 113.2 ft, 8 - 3 o'clock

Tap Factory at 124.7 ft, 10 o'clock | does not look active

Crack Circumferential at 146.2 ft, 9 - 12 o'clock

Snapshots

Tap Factory Capped at 159.7 ft, 10 o'clock

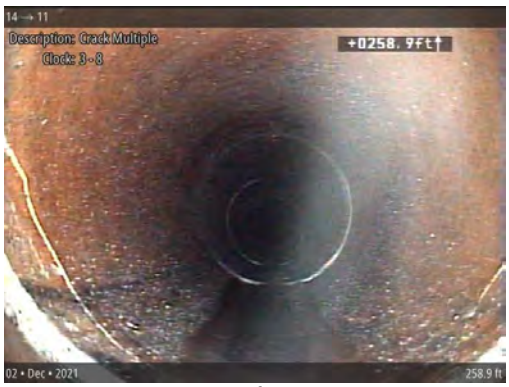
Hole at 186.0 ft, 12 o'clock

Miscellaneous Material Change at 204.4 ft | change to PVC

Miscellaneous Water Level Sag at 238.2 ft

Miscellaneous Material Change at 248.3 ft | VCP

Tap Break-in Intruding at 258.0 ft, 12 o'clock



Crack Multiple at 258.9 ft, 3 - 8 o'clock

Tap Factory Capped at 300.7 ft, 10 o'clock

Snapshots

Deposits Settled Gravel at 341.6 ft, 5 - 7 o'clock

Tap Factory Capped at 342.3 ft, 10 o'clock

Tap Factory Capped at 368.1 ft, 10 o'clock

Tap Factory Capped at 400.0 ft, 10 o'clock

Deposits Attached Encrustation at 413.9 ft, 7 - 10 o'clock

Crack Multiple at 420.7 ft, 9 - 2 o'clock

Tap Factory Capped at 435.7 ft, 10 o'clock

Miscellaneous Survey Abandoned at 447.7 ft | pipe blocking survey

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	15
Downstream MH:	14

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	10 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Taylor, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

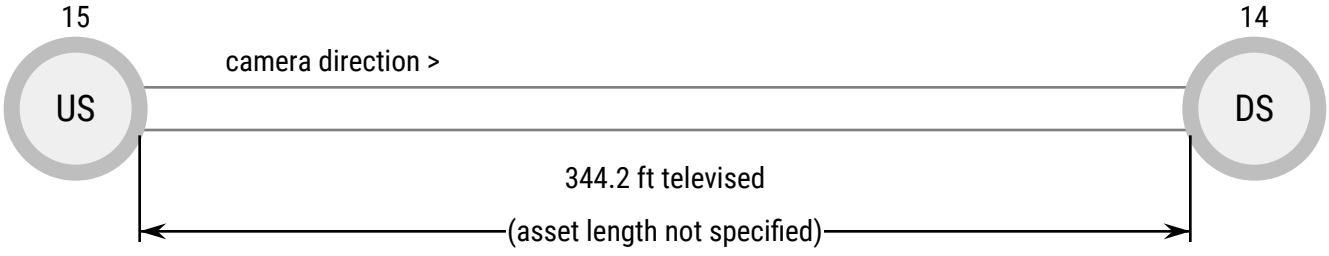
Media Date/Time:	02 • Dec • 2021 14:03
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	344.2 ft
Weather:	Dry - No Precipitation During Survey

Ratings

	Structural	O & M	Overall
Quick:	3A22	5143	5143
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	35	20	55
Rating Index:	2.7	4	3.1

Consequence of Failure:

Summary



Observations

15

camera direction >

flow >

Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 15
	MWL		10%		Miscellaneous Water Level	
003.1	TBI	1	4 in | 3 in	4	Tap Break-in Intruding	this goes under HWY 2 (dead?)
009.5	MWLS		35%	3	Miscellaneous Water Level Sag	
	CM	8 - 3		3	Crack Multiple	
025.2	CM	7 - 9		3	Crack Multiple	
052.2	CM	8 - 3		3	Crack Multiple	
076.5	CM	8 - 4		3	Crack Multiple	
086.7	TBI	11	4 in | 3 in	4	Tap Break-in Intruding	dead service with encrustion
099.1	TFC	10	6 in		Tap Factory Capped	
135.5	CC	8 - 3		1	Crack Circumferential	
162.5	TBI	11	4 in | 2 in	3	Tap Break-in Intruding	Maybe active
172.5	CM	10 - 2		3	Crack Multiple	
183.4	MWLS		40%	3	Miscellaneous Water Level Sag	
189.0	TFC	11	6 in		Tap Factory Capped	
221.3	TFC	11	6 in		Tap Factory Capped	
231.2	MWLS		0%	2	Miscellaneous Water Level Sag	sag ends
242.7	CM	7 - 2		3	Crack Multiple	
253.6	TFC	11	6 in		Tap Factory Capped	
283.1	TF	11	4 in		Tap Factory	Planned sewer Connection
286.0	CM	11 - 3		3	Crack Multiple	
315.5	TFC	11	6 in		Tap Factory Capped	
318.9	CM	10 - 12		3	Crack Multiple	
323.7	TBI	11	4 in | 4 in	5	Tap Break-in Intruding	
327.9	MWLS		30%	2	Miscellaneous Water Level Sag	
332.3	MCU			4	Miscellaneous Camera Underwater	
344.2	MSA				Miscellaneous Survey Abandoned	the hole that you can see is the Man hole #14 a 4 lip is on the bottom of the pipe very poor condition

14

Snapshots

Access Point Manhole at 000.0 ft | start mh 15

Miscellaneous Water Level at 000.0 ft

Tap Break-in Intruding at 003.1 ft, 1 o'clock | this goes under HWY 2 (dead?)

Miscellaneous Water Level Sag at 009.5 ft

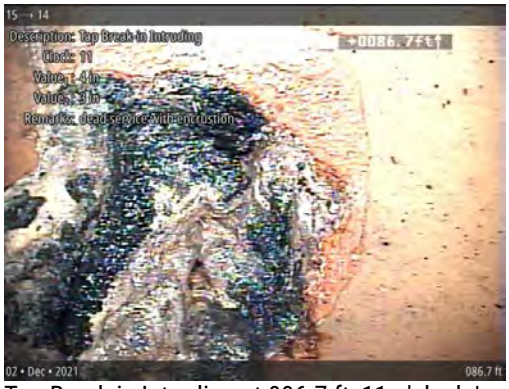
Crack Multiple at 009.5 ft, 8 - 3 o'clock

Crack Multiple at 025.2 ft, 7 - 9 o'clock

Crack Multiple at 052.2 ft, 8 - 3 o'clock

Crack Multiple at 076.5 ft, 8 - 4 o'clock

Snapshots



Tap Break-in Intruding at 086.7 ft, 11 o'clock | dead service with encrustion

Tap Factory Capped at 099.1 ft, 10 o'clock

Crack Circumferential at 135.5 ft, 8 - 3 o'clock

Tap Break-in Intruding at 162.5 ft, 11 o'clock | Maybe active

Crack Multiple at 172.5 ft, 10 - 2 o'clock

Miscellaneous Water Level Sag at 183.4 ft

Tap Factory Capped at 189.0 ft, 11 o'clock

Tap Factory Capped at 221.3 ft, 11 o'clock

Snapshots

Miscellaneous Water Level Sag at 231.2 ft | sag ends

Crack Multiple at 242.7 ft, 7 - 2 o'clock

Tap Factory Capped at 253.6 ft, 11 o'clock

Tap Factory at 283.1 ft, 11 o'clock | Planned sewer Connection

Crack Multiple at 286.0 ft, 11 - 3 o'clock

Tap Factory Capped at 315.5 ft, 11 o'clock

Crack Multiple at 318.9 ft, 10 - 12 o'clock

Tap Break-in Intruding at 323.7 ft, 11 o'clock

Snapshots

Miscellaneous Water Level Sag at 327.9 ft

Miscellaneous Camera Underwater at 332.3 ft

Miscellaneous Survey Abandoned at 344.2 ft | the hole that you can see is the Man hole #14 a

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	16
Downstream MH:	15

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	10 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Nelson ST, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

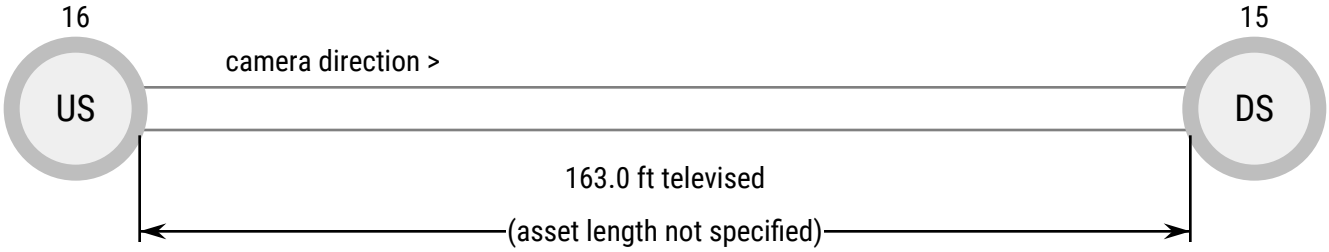
Media Date/Time:	02 • Dec • 2021 12:21
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	Capital Improvement Program
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	Not Controlled
Length Surveyed:	163.0 ft
Weather:	Dry - No Precipitation During Survey

Ratings

$\sum_{i=1}^{5} SG_i$	Structural	O & M	Overall
Quick:	3111	4131	4132
Pipe Rating:	4	13	17
Rating Index:	2	1.9	1.9

Consequence of Failure:

Summary



Observations

16

camera direction >

flow >

15

Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 16
	MWL		10%		Miscellaneous Water Level	
032.0	TFC	10	6 in		Tap Factory Capped	
035.7	DAE	9 - 1	5%	2	Deposits Attached Encrustation	
036.9	TBD	10	4 in	3	Tap Break-in/Hammer Defective	Encrustation
050.7	CC	1 - 3		1	Crack Circumferential	
061.2	LD		10%	1	Alignment Down	belly Start
061.5	TFC	10	6 in		Tap Factory Capped	
068.9	MCU			4	Miscellaneous Camera Underwater	
077.8	LD		0%	1	Alignment Down	sag ends
093.4	TFC	10	6 in		Tap Factory Capped	
097.8	LD		10%	1	Alignment Down	sag starts
144.1	LD		0%	1	Alignment Down	sag ends
159.7	CM	8 - 4		3	Crack Multiple	just before manhole
163.0	AMH				Access Point Manhole	end mh 15

Snapshots

Access Point Manhole at 000.0 ft | start mh 16

Miscellaneous Water Level at 000.0 ft

Tap Factory Capped at 032.0 ft, 10 o'clock

Deposits Attached Encrustation at 035.7 ft, 9 - 1 o'clock

Tap Break-in/Hammer Defective at 036.9 ft, 10 o'clock | Encrustation

Crack Circumferential at 050.7 ft, 1 - 3 o'clock

Alignment Down at 061.2 ft | belly Start

Tap Factory Capped at 061.5 ft, 10 o'clock

Snapshots

Miscellaneous Camera Underwater at 068.9 ft

Alignment Down at 077.8 ft | sag ends

Tap Factory Capped at 093.4 ft, 10 o'clock

Alignment Down at 097.8 ft | sag starts

Alignment Down at 144.1 ft | sag ends

Crack Multiple at 159.7 ft, 8 - 4 o'clock | just before manhole

Access Point Manhole at 163.0 ft | end mh 15

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	17
Downstream MH:	16

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Taylor St Alley, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

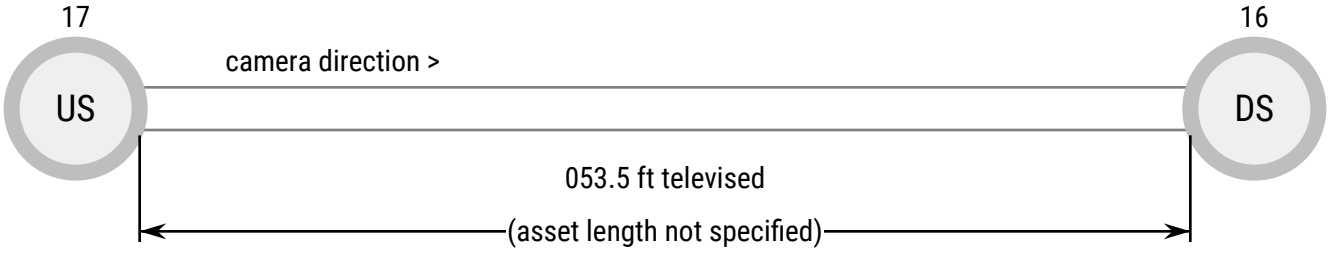
Media Date/Time:	02 • Dec • 2021 11:18
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	Capital Improvement Program
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	Not Controlled
Length Surveyed:	053.5 ft
Weather:	Dry - No Precipitation During Survey

Ratings

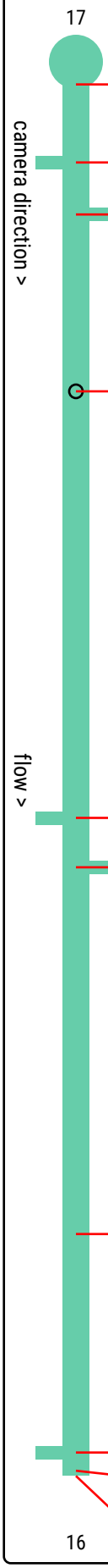
	Structural	O & M	Overall
Quick:	2100	4131	4131
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	2	7	9
Rating Index:	2	3.5	3

Consequence of Failure:

Summary

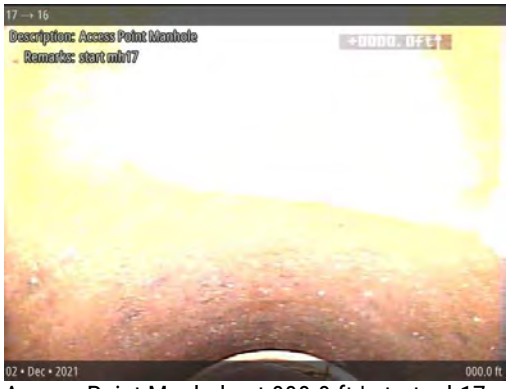


Observations



Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh17
	MWL		0%		Miscellaneous Water Level	
003.0	TFC	1	4 in		Tap Factory Capped	
005.0	TFC	10	4 in		Tap Factory Capped	
011.8	TBD	12	4 in	3	Tap Break-in/Hammer Defective	
028.2	TFC	2	4 in		Tap Factory Capped	
030.1	TFC	10	4 in		Tap Factory Capped	
044.2	MWLS		25%	2	Miscellaneous Water Level Sag	
052.6	TFC	2	4 in		Tap Factory Capped	
053.3	MCU			4	Miscellaneous Camera Underwater	
053.5	MSA				Miscellaneous Survey Abandoned	camera blocked underwater

Snapshots



Access Point Manhole at 000.0 ft | start mh17

Miscellaneous Water Level at 000.0 ft

Tap Factory Capped at 003.0 ft, 1 o'clock

Tap Factory Capped at 005.0 ft, 10 o'clock

Tap Break-in/Hammer Defective at 011.8 ft, 12 o'clock

Tap Factory Capped at 028.2 ft, 2 o'clock

Tap Factory Capped at 030.1 ft, 10 o'clock

Miscellaneous Water Level Sag at 044.2 ft

Snapshots

Tap Factory Capped at 052.6 ft, 2 o'clock

Miscellaneous Camera Underwater at 053.3 ft

Miscellaneous Survey Abandoned at 053.5 ft | camera blocked underwater

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	17
Downstream MH:	16

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Taylor Street Alley, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

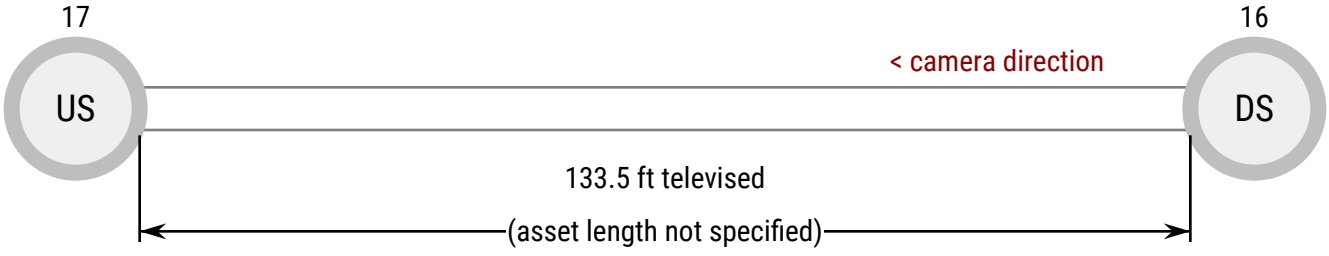
Media Date/Time:	02 • Dec • 2021 13:36
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Upstream
Purpose:	Capital Improvement Program
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	Not Controlled
Length Surveyed:	133.5 ft
Weather:	Dry - No Precipitation During Survey

Ratings

	Structural	O & M	Overall
Quick:	3121	3100	3221
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	5	3	8
Rating Index:	2.5	3	2.7

Consequence of Failure:

Summary



Observations

17

Feet	Code	Clock	Value	Grade	Description	Remarks
133.5	MSA				Miscellaneous Survey Abandoned	camera blocked
	TBD	12	4 in	3	Tap Break-in/Hammer Defective	intruding
128.6	MWLS		50%	3	Miscellaneous Water Level Sag	
115.7	TBA	2	4 in		Tap Break-in Activity	Break in Sewer Conncetion
098.1	TFC	11	6 in		Tap Factory Capped	
083.7	TFC	1	6 in		Tap Factory Capped	
070.5	MWLS		15%	2	Miscellaneous Water Level Sag	
066.3	TFC	11	6 in		Tap Factory Capped	
064.0	TFC	1	6 in		Tap Factory Capped	
026.0	TFC	11	6 in		Tap Factory Capped	
024.0	TFC	1	6 in		Tap Factory Capped	
000.0	MWL		5%		Miscellaneous Water Level	
	AMH				Access Point Manhole	start mh 16

flow >

camera direction >

16

Snapshots

Access Point Manhole at 000.0 ft | start mh 16

Miscellaneous Water Level at 000.0 ft

Tap Factory Capped at 024.0 ft, 1 o'clock

Tap Factory Capped at 026.0 ft, 11 o'clock

Tap Factory Capped at 064.0 ft, 1 o'clock

Tap Factory Capped at 066.3 ft, 11 o'clock

Miscellaneous Water Level Sag at 070.5 ft

Tap Factory Capped at 083.7 ft, 1 o'clock

Snapshots

Tap Factory Capped at 098.1 ft, 11 o'clock

Tap Break-in Activity at 115.7 ft, 2 o'clock | Break in Sewer Conncetion

Miscellaneous Water Level Sag at 128.6 ft

Tap Break-in/Hammer Defective at 133.5 ft, 12 o'clock | intruding

Miscellaneous Survey Abandoned at 133.5 ft | camera blocked

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	18
Downstream MH:	17

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Taylor St Alley, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

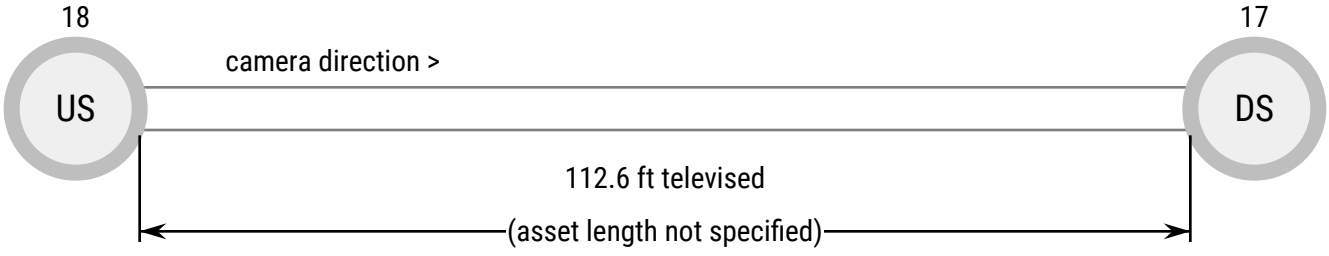
Media Date/Time:	02 • Dec • 2021 10:27
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	Capital Improvement Program
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	01 • Dec • 2021
Flow Control:	Not Controlled
Length Surveyed:	112.6 ft
Weather:	Dry - No Precipitation During Survey

Ratings

$\sum_{i=1}^{5} SG_i$	Structural	O & M	Overall
Quick:	5241	4236	5243
Pipe Rating:	19	28	47
Rating Index:	3.8	3.1	3.4

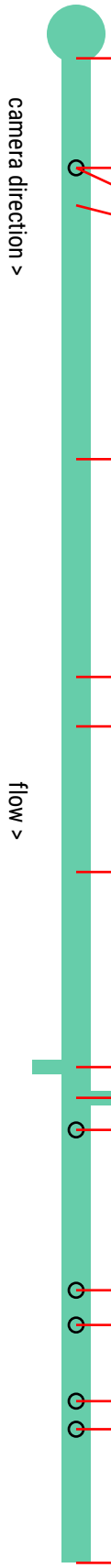
Consequence of Failure:

Summary



Observations

18



Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 17 No bottom in manhole Manhole in poor condition
	MWL		10%		Miscellaneous Water Level	
008.2	BVV	11 - 12		5	Broken Void Visible	
008.2	TBD	12	4 in	3	Tap Break-in/Hammer Defective	broken can see the void
011.0	BVV	12		5	Broken Void Visible	large hole
	CM	9 - 3		3	Crack Multiple	
030.0	MWLS		15%	2	Miscellaneous Water Level Sag	
046.3	LD		20%	2	Alignment Down	
050.0	MCU			4	Miscellaneous Camera Underwater	
060.9	MCU			4	Miscellaneous Camera Underwater	
075.5	TFC	2	6 in		Tap Factory Capped	
077.8	TFC	10	4 in		Tap Factory Capped	
080.2	TBD	12	4 in	3	Tap Break-in/Hammer Defective	intruding
092.2	TBD	12	4 in	3	Tap Break-in/Hammer Defective	
094.8	TBD	12	4 in	3	Tap Break-in/Hammer Defective	
100.5	TBD	12	4 in	3	Tap Break-in/Hammer Defective	
102.6	TBD	12	4 in	3	Tap Break-in/Hammer Defective	
112.6	B	6		4	Broken	broken pipe!
	MSA				Miscellaneous Survey Abandoned	pipe blocking camera end of survey

17

Snapshots

Access Point Manhole at 000.0 ft | start mh 17
No bottom in manhole Manhole in poor

Miscellaneous Water Level at 000.0 ft

Broken Void Visible at 008.2 ft, 11 - 12 o'clock

Tap Break-in/Hammer Defective at 008.2 ft, 12 o'clock | broken can see the void

Broken Void Visible at 011.0 ft, 12 o'clock | large hole

Crack Multiple at 011.0 ft, 9 - 3 o'clock

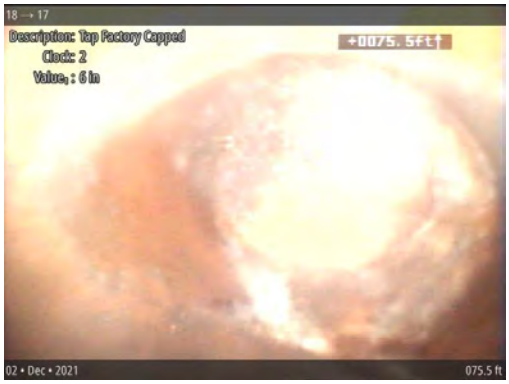
Miscellaneous Water Level Sag at 030.0 ft

Alignment Down at 046.3 ft

Snapshots

Miscellaneous Camera Underwater at 050.0 ft

Miscellaneous Camera Underwater at 060.9 ft

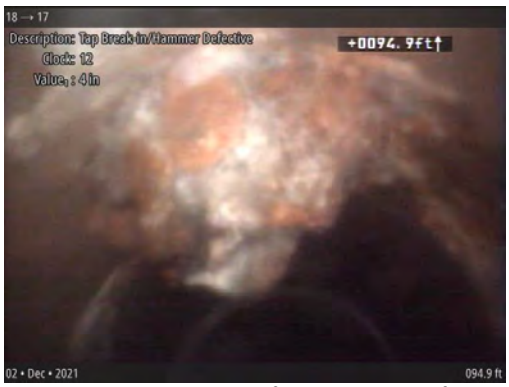


Tap Factory Capped at 075.5 ft, 2 o'clock

Tap Factory Capped at 077.8 ft, 10 o'clock

Tap Break-in/Hammer Defective at 080.2 ft, 12 o'clock | intruding

Tap Break-in/Hammer Defective at 092.2 ft, 12 o'clock



Tap Break-in/Hammer Defective at 094.8 ft, 12 o'clock

Tap Break-in/Hammer Defective at 100.5 ft, 12 o'clock

Snapshots

Tap Break-in/Hammer Defective at 102.6 ft, 12 o'clock

Broken at 112.6 ft, 6 o'clock | broken pipe!

Miscellaneous Survey Abandoned at 112.6 ft | pipe blocking camera end of survey

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	23
Downstream MH:	12

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	10 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	First, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

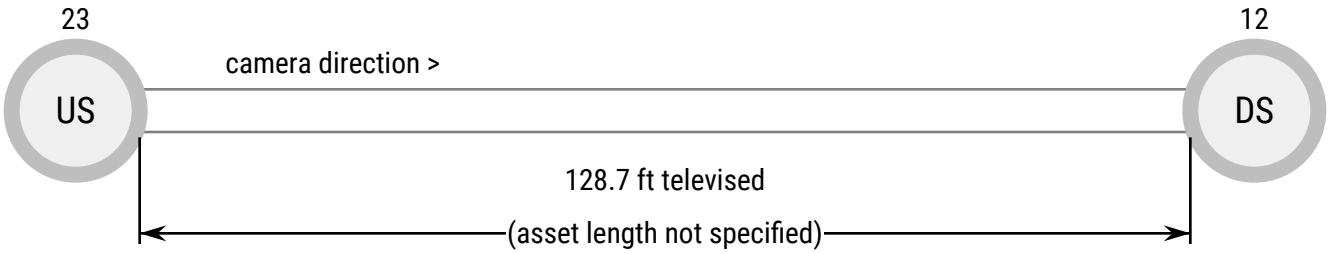
Media Date/Time:	02 • Dec • 2021 16:25
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	128.7 ft
Weather:	Dry - No Precipitation During Survey

Ratings

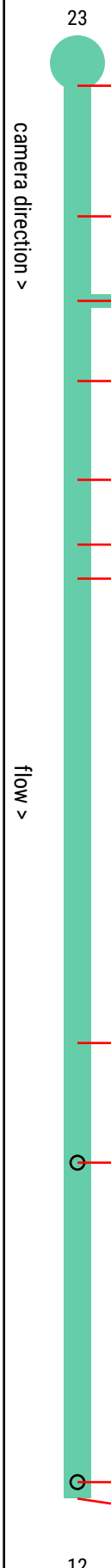
	Structural	O & M	Overall
Quick:	3600	3200	3800
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	18	6	24
Rating Index:	3	3	3

Consequence of Failure:

Summary



Observations



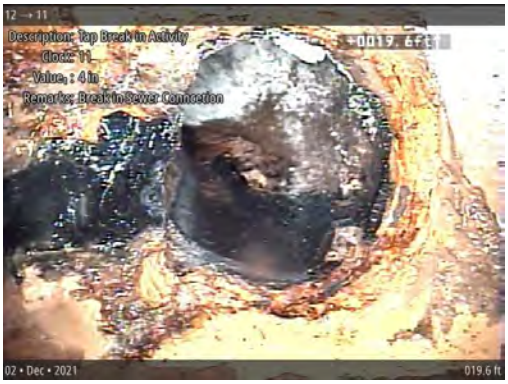
Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 12
	MWL		10%		Miscellaneous Water Level	
011.9	CM	12 - 2		3	Crack Multiple	
019.6	TBA	11	4 in		Tap Break-in Activity	Break in Sewer Conncetion
026.9	CM	8 - 1		3	Crack Multiple	
035.9	CM	11 - 1		3	Crack Multiple	
041.8	CM	7 - 4		3	Crack Multiple	
044.9	CM	11 - 3		3	Crack Multiple	
087.2	CM	8 - 4		3	Crack Multiple	
098.1	TBD	12	6 in	3	Tap Break-in/Hammer Defective	encrusted
127.2	TBD	12	4 in	3	Tap Break-in/Hammer Defective	encrusted
128.7	MSA				Miscellaneous Survey Abandoned	camera blocked inspection abonded

Snapshots

Access Point Manhole at 000.0 ft | start mh 12

Miscellaneous Water Level at 000.0 ft

Crack Multiple at 011.9 ft, 12 - 2 o'clock



Tap Break-in Activity at 019.6 ft, 11 o'clock | Break in Sewer Conncetion

Crack Multiple at 026.9 ft, 8 - 1 o'clock

Crack Multiple at 035.9 ft, 11 - 1 o'clock

Crack Multiple at 041.8 ft, 7 - 4 o'clock

Crack Multiple at 044.9 ft, 11 - 3 o'clock

Snapshots

Crack Multiple at 087.2 ft, 8 - 4 o'clock

Tap Break-in/Hammer Defective at 098.1 ft, 12 o'clock | encrusted

Tap Break-in/Hammer Defective at 127.2 ft, 12 o'clock | encrusted

Miscellaneous Survey Abandoned at 128.7 ft | camera blocked inspection abonded

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	23
Downstream MH:	12

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	10 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	First, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

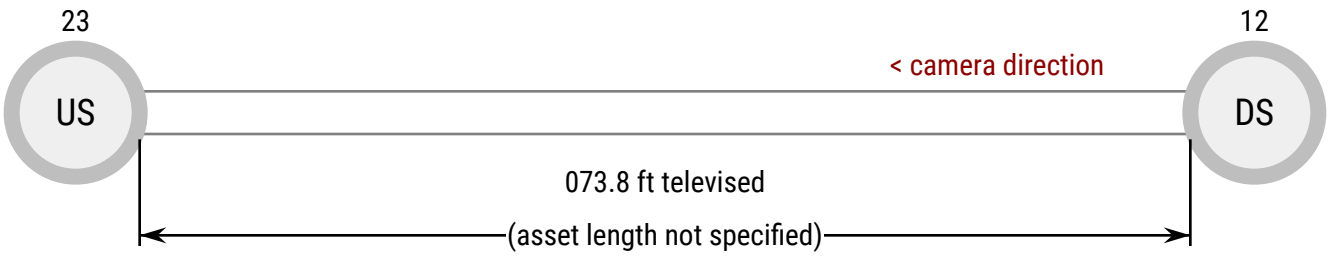
Media Date/Time:	02 • Dec • 2021 16:54
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Upstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	073.8 ft
Weather:	Dry - No Precipitation During Survey

Ratings

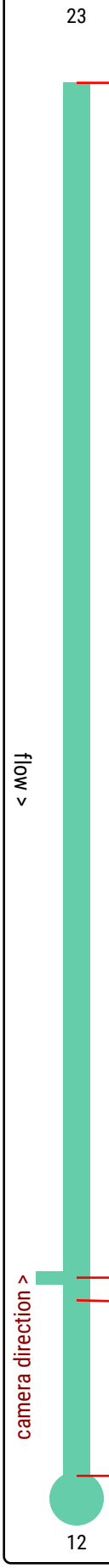
	Structural	O & M	Overall
Quick:	3100	0000	3100
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	3	0	3
Rating Index:	3	0	3

Consequence of Failure:

Summary



Observations



Feet	Code		Clock	Value	Grade	Description	Remarks
073.8	MSA					Miscellaneous Survey Abandoned	this is the point we got to from the other side.
010.5	TFC		10	6 in		Tap Factory Capped	
009.3	CM		10 - 12		3	Crack Multiple	
000.0	MWL			15%		Miscellaneous Water Level	
	AMH					Access Point Manhole	start mh 11

Snapshots

Access Point Manhole at 000.0 ft | start mh 11

Miscellaneous Water Level at 000.0 ft

Crack Multiple at 009.3 ft, 10 - 12 o'clock

Tap Factory Capped at 010.5 ft, 10 o'clock

Miscellaneous Survey Abandoned at 073.8 ft | this is the point we got to from the other side.

PipeTech®

Asset

Owner:	City of Saco
PSR:	
Upstream MH:	36
Downstream MH:	16

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Nelson ST, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

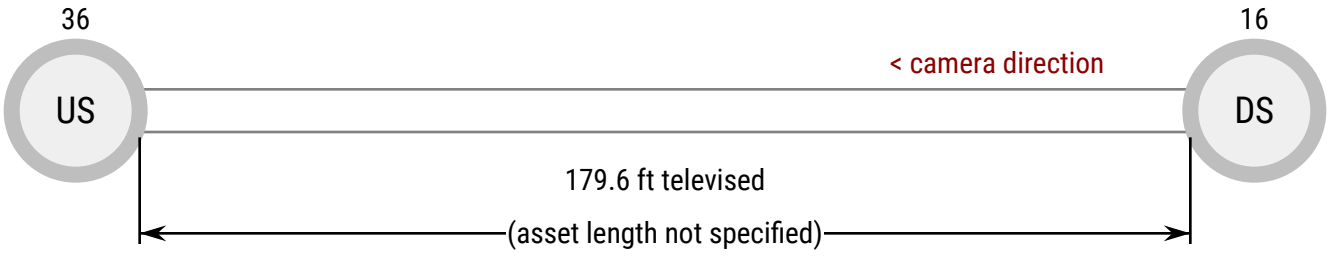
Media Date/Time:	02 • Dec • 2021 11:54
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Upstream
Purpose:	Capital Improvement Program
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	Not Controlled
Length Surveyed:	179.6 ft
Weather:	Dry - No Precipitation During Survey

Ratings

	Structural	O & M	Overall
Quick:	3121	3413	3521
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	5	15	20
Rating Index:	2.5	2.1	2.2

Consequence of Failure:

Summary



Observations

36

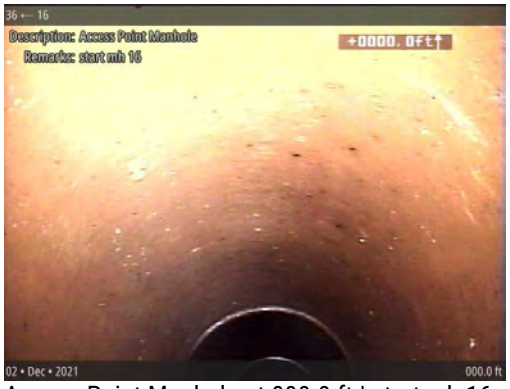
Feet	Code	Clock	Value	Grade	Description	Remarks
179.6	AMH				Access Point Manhole	end mh 36
176.1	CM	8 - 3		3	Crack Multiple	right before MH
173.8	LU		10%	1	Alignment Up	sag ends
155.1	LD		10%	1	Alignment Down	sag starts
140.9	TFC	2	6 in		Tap Factory Capped	
136.0	LU		10%	1	Alignment Up	end of sag
120.0	TBD	1	4 in	3	Tap Break-in/Hammer Defective	intruding
115.8	TBA	12	4 in		Tap Break-in Activity	Break in Sewer Conncetion
110.3	TFD	2	6 in	3	Tap Factory Defective	4" pushed into 6" wye
103.6	MWLS		15%	2	Miscellaneous Water Level Sag	
080.6	TFC	2	4 in		Tap Factory Capped	
071.9	MMC				Miscellaneous Material Change	Back To VCP
069.1	TFD	10	4 in	3	Tap Factory Defective	
066.7	MMC				Miscellaneous Material Change	PVC settled out with defective tap
061.9	TBA	11	4 in		Tap Break-in Activity	Break in Sewer Conncetion
049.6	TFC	2	4 in		Tap Factory Capped	
024.1	TBD	12	4 in	3	Tap Break-in/Hammer Defective	
017.0	TFC	2	4 in		Tap Factory Capped	
000.0	MWL		7.5%		Miscellaneous Water Level	
	AMH				Access Point Manhole	start mh 16

< flow >

camera direction >

16

Snapshots



Access Point Manhole at 000.0 ft | start mh 16

Miscellaneous Water Level at 000.0 ft

Tap Factory Capped at 017.0 ft, 2 o'clock

Tap Break-in/Hammer Defective at 024.1 ft, 12 o'clock

Tap Factory Capped at 049.6 ft, 2 o'clock

Tap Break-in Activity at 061.9 ft, 11 o'clock | Break in Sewer Conncetion

Miscellaneous Material Change at 066.7 ft | PVC settled out with defective tap

Tap Factory Defective at 069.1 ft, 10 o'clock

Snapshots

Miscellaneous Material Change at 071.9 ft | Back To VCP

Tap Factory Capped at 080.6 ft, 2 o'clock

Miscellaneous Water Level Sag at 103.6 ft

Tap Factory Defective at 110.3 ft, 2 o'clock | 4" pushed into 6" wye

Tap Break-in Activity at 115.8 ft, 12 o'clock | Break in Sewer Conncetion

Tap Break-in/Hammer Defective at 120.0 ft, 1 o'clock | intruding

Alignment Up at 136.0 ft | end of sag

Tap Factory Capped at 140.9 ft, 2 o'clock

Snapshots

Alignment Down at 155.1 ft | sag starts

Alignment Up at 173.8 ft | sag ends

Crack Multiple at 176.1 ft, 8 - 3 o'clock | right before MH

Access Point Manhole at 179.6 ft | end mh 36

Lakeside Excavation Inc.
220 22nd Ave West
Havre, MT 59501
Tel (406)-265-9401

INSPECTION SUMMERY

Date	Owner	Weather	Inspection reaston	Cleaning
4/7/2022	Town of Saco	Clear	Pre-Construction	Heavy

Rmark:

Inspection Date	Start MH	Ending MH	Inspected LF	Running total
4/7/2022	47	46	11.9	11.9
4/7/2022	46	47	339.3	351.2
4/7/2022	49	48	223.1	574.3
4/7/2022	50	49	33.3	607.6
4/7/2022	49	50	107.2	714.8
4/7/2022	51	48	3	717.8
4/7/2022	52	51	172.2	890
4/7/2022	51	52	1	891
4/7/2022	52	53	1	892
4/7/2022	53	52	30.7	922.7
4/11/2022	34	33	371.7	1294.4
4/11/2022	35	33	516	1810.4
4/11/2022	44	35	189.4	1999.8
4/11/2022	45	44	158.2	2158
4/11/2022	45	46	115.8	2273.8
4/11/2022	46	45	101.9	2375.7
4/11/2022	48	44	112.1	2487.8
4/11/2022	48	45	0	2487.8
4/11/2022	51	48	0	2487.8
			Total length inspected	2487.8

LEGEND

- 8" SANITARY SEWER LINE (14,048 FT.)
- SANITARY SEWER SERVICE LINE (734 FT.)
- SANITARY SEWER MANHOLE (58)
- FUTURE SANITARY SEWER LINE
- SEWER FORCE MAIN - 8" CAST IRON (1,070 FT.)
- VIDEO
- CLEANED

NOTE:

1. FUTURE SEWER LINES ARE PLANNED FOR THE EASTERN PORTION OF ORIGINAL TOWN SITE, NORTH OF FOURTH AVE AND EAST OF FIRST STREET.

NORTH

0 200 400
SCALE IN FEET

Figure 03
Existing Wastewater
Town of Saco April Footage

Town of Saco, Montana
Wastewater PER

GreatWest ENGINEERING

Y:\Shared\Helena Projects\1-21222-Saco On-Call 2021-2026\T02 - WW PER\CADD 1-21222-T002\Exhibits\1-21222-T02-FIG03.dwg

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	47
Downstream MH:	46

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Wellington AVE, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Town Saco
PO Number:	
Additional Info:	

Inspection

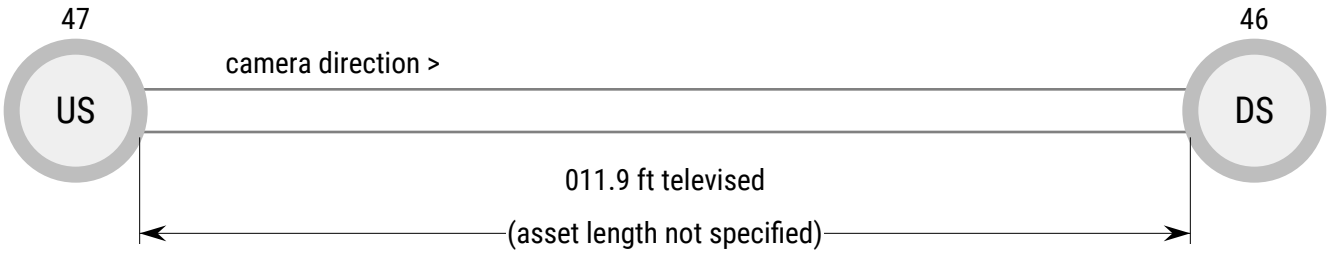
Media Date/Time:	07 • Apr • 2022 15:35
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	011.9 ft
Weather:	Dry - No Precipitation During Survey

Ratings

	Structural	O & M	Overall
Quick:	0000	5100	5100
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	0	5	5
Rating Index:	0	5	5

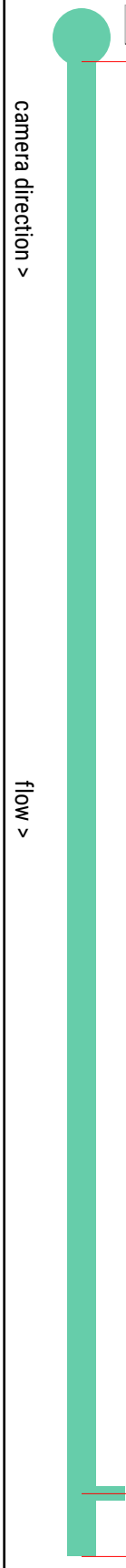
Consequence of Failure:

Summary



Observations

47



Feet	Code		Clock	Value	Grade	Description	Remarks
000.0	AMH					Access Point Manhole	start mh 47
	MWL			5%		Miscellaneous Water Level	
011.4	TBI		10	4 in	4 in | 5	Tap Break-in Intruding	
011.9	MSA					Miscellaneous Survey Abandoned	camera blocked

46

Snapshots

Access Point Manhole at 000.0 ft | start mh 47

Miscellaneous Water Level at 000.0 ft

Tap Break-in Intruding at 011.4 ft, 10 o'clock

Miscellaneous Survey Abandoned at 011.9 ft | camera blocked

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	47
Downstream MH:	46

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Wellington AVE, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Town Saco
PO Number:	
Additional Info:	

Inspection

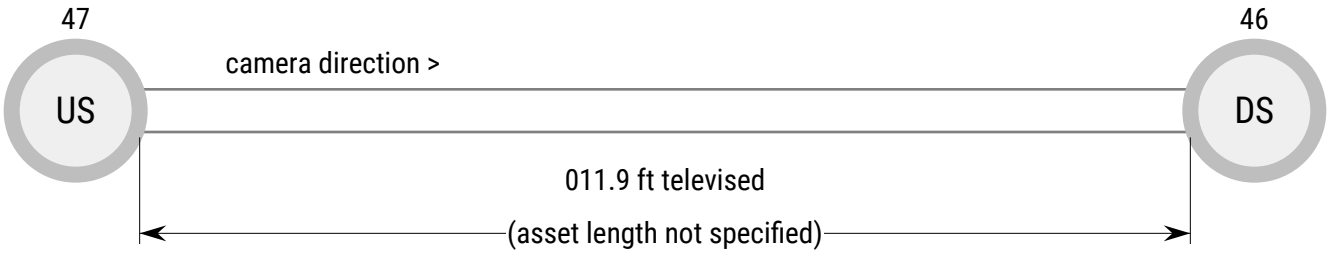
Media Date/Time:	07 • Apr • 2022 15:35
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	011.9 ft
Weather:	Dry - No Precipitation During Survey

Ratings

	Structural	O & M	Overall
Quick:	0000	5100	5100
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	0	5	5
Rating Index:	0	5	5

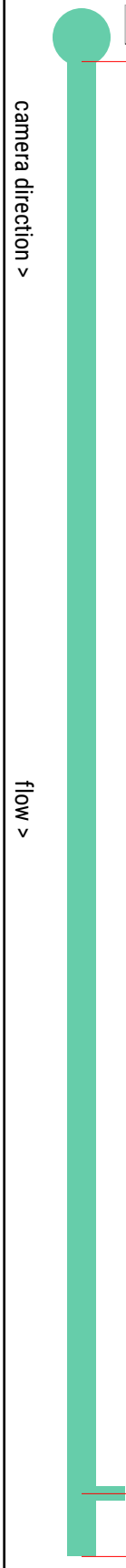
Consequence of Failure:

Summary



Observations

47



Feet	Code		Clock	Value	Grade	Description	Remarks
000.0	AMH					Access Point Manhole	start mh 47
	MWL			5%		Miscellaneous Water Level	
011.4	TBI		10	4 in	4 in | 5	Tap Break-in Intruding	
011.9	MSA					Miscellaneous Survey Abandoned	camera blocked

46

Snapshots

Access Point Manhole at 000.0 ft | start mh 47

Miscellaneous Water Level at 000.0 ft

Tap Break-in Intruding at 011.4 ft, 10 o'clock

Miscellaneous Survey Abandoned at 011.9 ft | camera blocked

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	47
Downstream MH:	46

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Wellington, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Town Saco
PO Number:	
Additional Info:	

Inspection

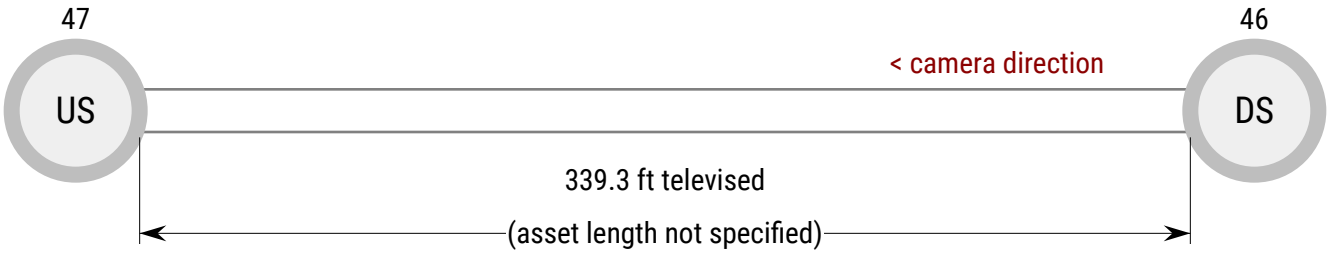
Media Date/Time:	07 • Apr • 2022 15:48
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Upstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	339.3 ft
Weather:	Dry - No Precipitation During Survey

Ratings

	Structural	O & M	Overall
Quick:	5141	5142	5243
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	10	22	32
Rating Index:	3.3	3.7	3.6

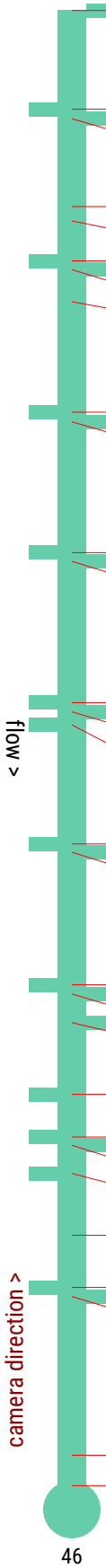
Consequence of Failure:

Summary



Observations

47



Feet	Code	Clock	Value	Grade	Description	Remarks
339.3	MSA				Miscellaneous Survey Abandoned	tap blocking
	TBI	2	4 in 4 in	5	Tap Break-in Intruding	
316.6	TFC	10	4 in		Tap Factory Capped	
314.4	TFC	2	4 in		Tap Factory Capped	
294.2	CC	9 - 2		1	Crack Circumferential	
290.9	TBI	12	4 in 2 in	4	Tap Break-in Intruding	
281.7	TFC	10	4 in		Tap Factory Capped	
279.7	TFC	2	4 in		Tap Factory Capped	
272.3	HSV	12	4 in 1 in	5	Hole Soil Visible	
246.9	TFC	10	4 in		Tap Factory Capped	
244.7	TFC	1	4 in		Tap Factory Capped	
214.6	TFC	10	4 in		Tap Factory Capped	
212.6	TFC	2	4 in		Tap Factory Capped	
180.1	TFC	11	4 in		Tap Factory Capped	
178.0	TFC	2	4 in		Tap Factory Capped	
175.0	TBI	10	4 in 1.4 in	3	Tap Break-in Intruding	
147.6	TFC	10	4 in		Tap Factory Capped	
145.7	TFC	2	4 in		Tap Factory Capped	
115.2	TFC	10	4 in		Tap Factory Capped	
113.1	TFC	2	4 in		Tap Factory Capped	
106.5	TBI	2	4 in 1 in	3	Tap Break-in Intruding	
090.0	TBI	10	4 in 1 in	3	Tap Break-in Intruding	
080.2	TFC	10	4 in		Tap Factory Capped	
078.3	TFC	2	4 in		Tap Factory Capped	
071.8	TBA	10	4 in		Tap Break-in Activity	Break in Sewer Conncetion
057.6	TBI	12	4 in 2 in	4	Tap Break-in Intruding	
045.6	TFC	10	4 in		Tap Factory Capped	
043.5	TFC	2	4 in		Tap Factory Capped	
007.0	JOLD			4	Joint Offset Large Defective	open to the soil
000.0	MWL		0%		Miscellaneous Water Level	
	AMH				Access Point Manhole	start mh 46

46

Snapshots

Access Point Manhole at 000.0 ft | start mh 46

Miscellaneous Water Level at 000.0 ft

Joint Offset Large Defective at 007.0 ft | open to the soil

Tap Factory Capped at 043.5 ft, 2 o'clock

Tap Factory Capped at 045.6 ft, 10 o'clock

Tap Break-in Intruding at 057.6 ft, 12 o'clock

Tap Break-in Activity at 071.8 ft, 10 o'clock | Break in Sewer Conncetion

Tap Factory Capped at 078.3 ft, 2 o'clock

Snapshots

Tap Factory Capped at 080.2 ft, 10 o'clock

Tap Break-in Intruding at 090.0 ft, 10 o'clock

Tap Break-in Intruding at 106.5 ft, 2 o'clock

Tap Factory Capped at 113.1 ft, 2 o'clock

Tap Factory Capped at 115.2 ft, 10 o'clock

Tap Factory Capped at 145.7 ft, 2 o'clock

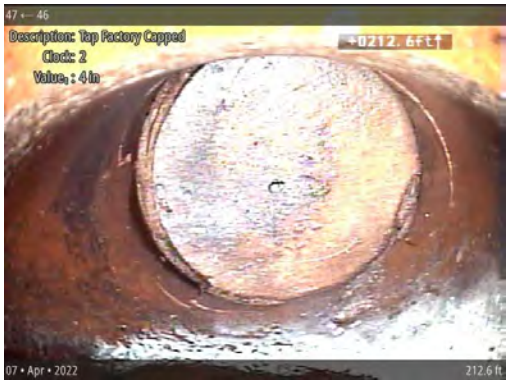
Tap Factory Capped at 147.6 ft, 10 o'clock

Tap Break-in Intruding at 175.0 ft, 10 o'clock

Snapshots

Tap Factory Capped at 178.0 ft, 2 o'clock

Tap Factory Capped at 180.1 ft, 11 o'clock



Tap Factory Capped at 212.6 ft, 2 o'clock

Tap Factory Capped at 214.6 ft, 10 o'clock

Tap Factory Capped at 244.7 ft, 1 o'clock

Tap Factory Capped at 246.9 ft, 10 o'clock

Hole Soil Visible at 272.3 ft, 12 o'clock

Tap Factory Capped at 279.7 ft, 2 o'clock

Snapshots

Tap Factory Capped at 281.7 ft, 10 o'clock

Tap Break-in Intruding at 290.9 ft, 12 o'clock

Crack Circumferential at 294.2 ft, 9 - 2 o'clock

Tap Factory Capped at 314.4 ft, 2 o'clock

Tap Factory Capped at 316.6 ft, 10 o'clock

Tap Break-in Intruding at 339.3 ft, 2 o'clock

Miscellaneous Survey Abandoned at 339.3 ft | tap blocking

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	49
Downstream MH:	48

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Wilson AVE, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Town Saco
PO Number:	
Additional Info:	

Inspection

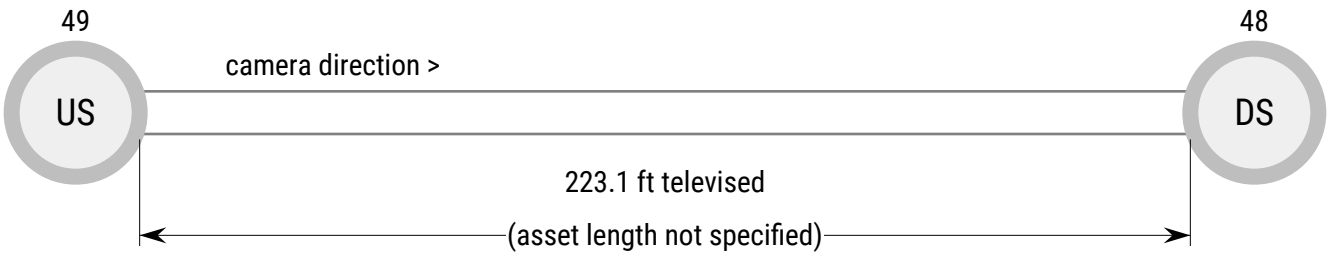
Media Date/Time:	07 • Apr • 2022 14:56
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	223.1 ft
Weather:	Dry - No Precipitation During Survey

Ratings

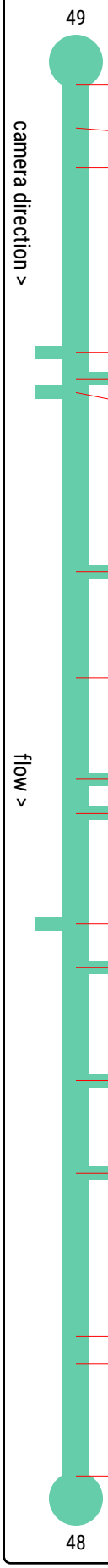
	Structural	O & M	Overall
Quick:	3123	4133	4134
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	9	13	22
Rating Index:	2.2	3.2	2.8

Consequence of Failure:

Summary



Observations

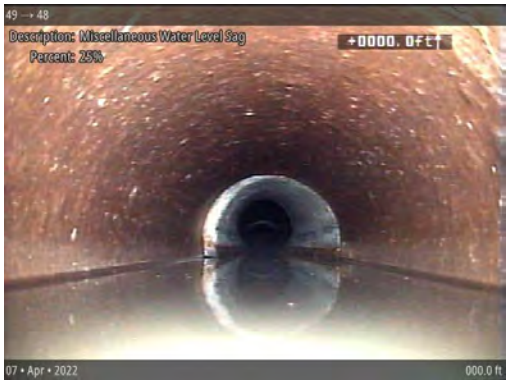


Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 49
	MWL		15%		Miscellaneous Water Level	
007.0	MWLS		25%	2	Miscellaneous Water Level Sag	
013.3	MWLS		0%	2	Miscellaneous Water Level Sag	
043.0	TBA	2	4 in		Tap Break-in Activity	Break in Sewer Conncetion
047.2	TFC	10	4 in		Tap Factory Capped	
049.4	TBA	3	6 in		Tap Break-in Activity	Break in Sewer Conncetion
078.1	TBA	9	4 in		Tap Break-in Activity	Break in Sewer Conncetion
095.1	MWLS		20%	2	Miscellaneous Water Level Sag	
111.4	TFC	10	4 in		Tap Factory Capped	
116.9	TBI	10	4 in | 1 in	3	Tap Break-in Intruding	split serivce one side capped
134.6	TBI	1	4 in | 1 in	3	Tap Break-in Intruding	
141.6	TFC	10	4 in		Tap Factory Capped	
159.7	TBI	11	4 in | 1 in	3	Tap Break-in Intruding	
174.6	TFC	11	4 in		Tap Factory Capped	
200.7	MWLS		50%	3	Miscellaneous Water Level Sag	
205.1	MCU			4	Miscellaneous Camera Underwater	
223.1	AMH				Access Point Manhole	end mh 48

Snapshots

Access Point Manhole at 000.0 ft | start mh 49

Miscellaneous Water Level at 000.0 ft



Miscellaneous Water Level Sag at 007.0 ft

Miscellaneous Water Level Sag at 013.3 ft

Tap Break-in Activity at 043.0 ft, 2 o'clock | Break in Sewer Conncetion

Tap Factory Capped at 047.2 ft, 10 o'clock

Tap Break-in Activity at 049.4 ft, 3 o'clock | Break in Sewer Conncetion

Tap Break-in Activity at 078.1 ft, 9 o'clock | Break in Sewer Conncetion

Snapshots

Miscellaneous Water Level Sag at 095.1 ft

Tap Factory Capped at 111.4 ft, 10 o'clock

Tap Break-in Intruding at 116.9 ft, 10 o'clock | split serivce one side capped

Tap Break-in Intruding at 134.6 ft, 1 o'clock

Tap Factory Capped at 141.6 ft, 10 o'clock

Tap Break-in Intruding at 159.7 ft, 11 o'clock

Tap Factory Capped at 174.6 ft, 11 o'clock

Miscellaneous Water Level Sag at 200.7 ft

Snapshots

Miscellaneous Camera Underwater at 205.1 ft

Access Point Manhole at 223.1 ft | end mh 48

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	50
Downstream MH:	49

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Wilson AVE, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Town Saco
PO Number:	
Additional Info:	

Inspection

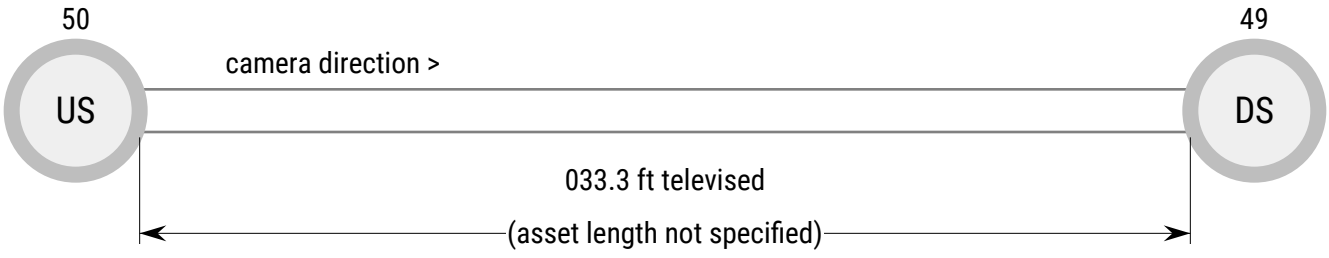
Media Date/Time:	07 • Apr • 2022 14:05
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	Capital Improvement Program
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	Not Controlled
Length Surveyed:	033.3 ft
Weather:	Dry - No Precipitation During Survey

Ratings

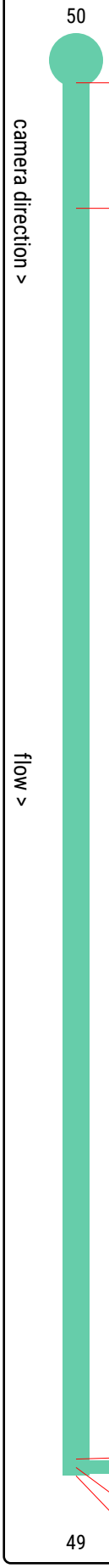
$\sum_{i=1}^{5} SG_i$	Structural	O & M	Overall
Quick:	5300	3100	5331
Pipe Rating:	15	3	18
Rating Index:	5	3	4.5

Consequence of Failure:

Summary



Observations



Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 50
	MWL		0%		Miscellaneous Water Level	
003.0	BVV	10 - 2	12 in	5	Broken Void Visible	
032.9	BVV	10	3 in	5	Broken Void Visible	main line is broken and missing at this point
033.1	TFD	9	4 in	3	Tap Factory Defective	main broken
033.3	BVV	6		5	Broken Void Visible	hole in bottom
	MSA				Miscellaneous Survey Abandoned	hole in bottom of pipe

Snapshots

Access Point Manhole at 000.0 ft | start mh 50

Miscellaneous Water Level at 000.0 ft

Broken Void Visible at 003.0 ft, 10 - 2 o'clock

Broken Void Visible at 032.9 ft, 10 o'clock | main line is broken and missing at this point

Tap Factory Defective at 033.1 ft, 9 o'clock | main broken

Broken Void Visible at 033.3 ft, 6 o'clock | hole in bottom

Miscellaneous Survey Abandoned at 033.3 ft | hole in bottom of pipe

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	50
Downstream MH:	49

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Wilson AVE, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Town Saco
PO Number:	
Additional Info:	

Inspection

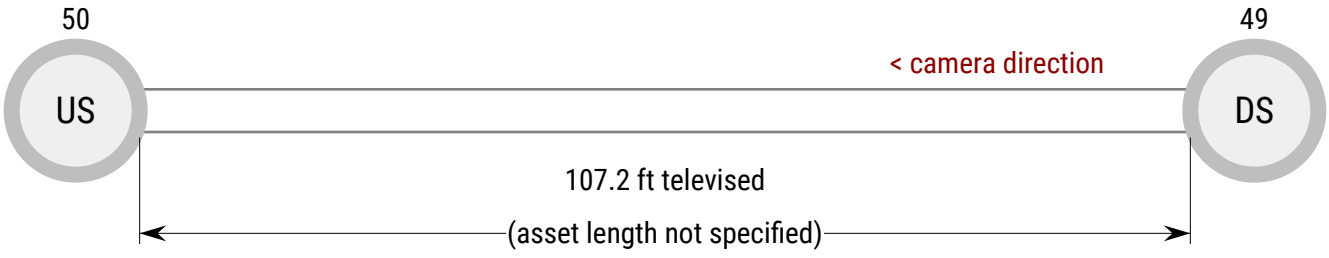
Media Date/Time:	07 • Apr • 2022 14:32
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Upstream
Purpose:	Capital Improvement Program
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	Not Controlled
Length Surveyed:	107.2 ft
Weather:	Dry - No Precipitation During Survey

Ratings

$\sum_{i=1}^{5} SG_i$	Structural	O & M	Overall
Quick:	5223	5100	5323
Pipe Rating:	16	5	21
Rating Index:	3.2	5	3.5

Consequence of Failure:

Summary



Observations

50

Feet	Code	Clock	Value	Grade	Description	Remarks
107.2	MSA				Miscellaneous Survey Abandoned	BLOCKED ON SERVICE
106.2	TBI	2	4 in | 3 in	5	Tap Break-in Intruding	
104.7	MWLS		0%	2	Miscellaneous Water Level Sag	
098.9	TFC	10	4 in		Tap Factory Capped	
097.0	TFC	2	4 in		Tap Factory Capped	
089.6	MWLS		15%	2	Miscellaneous Water Level Sag	
081.7	BVV	11 - 12		5	Broken Void Visible	
066.2	TFC	10	4 in		Tap Factory Capped	
064.1	TFC	2	4 in		Tap Factory Capped	
034.6	BVV	10 - 1	12 in | 6 in	5	Broken Void Visible	
033.5	TFC	10	4 in		Tap Factory Capped	
031.4	TFC	2	4 in		Tap Factory Capped	
028.2	TBA	3	4 in		Tap Break-in Activity	
022.3	MWLS		0%	2	Miscellaneous Water Level Sag	end of sag
000.0	MWL		10%		Miscellaneous Water Level	
	AMH				Access Point Manhole	start mh 49

flow >

camera direction >

49

Snapshots

Access Point Manhole at 000.0 ft | start mh 49

Miscellaneous Water Level at 000.0 ft

Miscellaneous Water Level Sag at 022.3 ft | end of sag

Tap Break-in Activity at 028.2 ft, 3 o'clock

Tap Factory Capped at 031.4 ft, 2 o'clock

Tap Factory Capped at 033.5 ft, 10 o'clock

Broken Void Visible at 034.6 ft, 10 - 1 o'clock

Tap Factory Capped at 064.1 ft, 2 o'clock

Snapshots

Tap Factory Capped at 066.2 ft, 10 o'clock

Broken Void Visible at 081.7 ft, 11 - 12 o'clock

Miscellaneous Water Level Sag at 089.6 ft

Tap Factory Capped at 097.0 ft, 2 o'clock

Tap Factory Capped at 098.9 ft, 10 o'clock

Miscellaneous Water Level Sag at 104.7 ft

Tap Break-in Intruding at 106.2 ft, 2 o'clock

Miscellaneous Survey Abandoned at 107.2 ft | BLOCKED ON SERVICE

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	51
Downstream MH:	48

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Alley of 1st Ave, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Town Saco
PO Number:	
Additional Info:	

Inspection

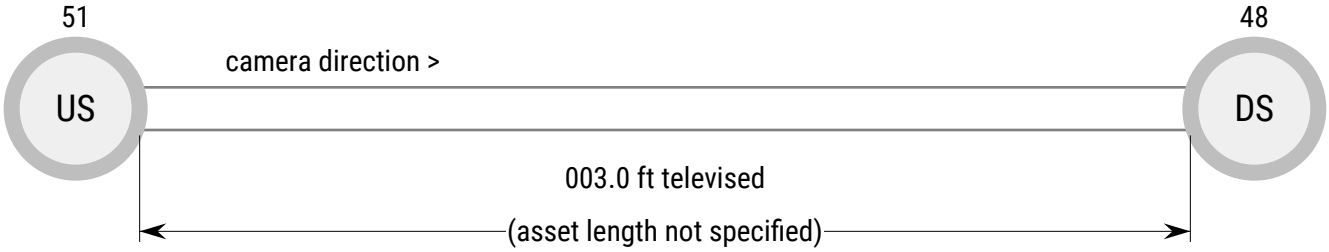
Media Date/Time:	07 • Apr • 2022 13:50
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	Capital Improvement Program
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	Not Controlled
Length Surveyed:	003.0 ft
Weather:	Dry - No Precipitation During Survey

Ratings

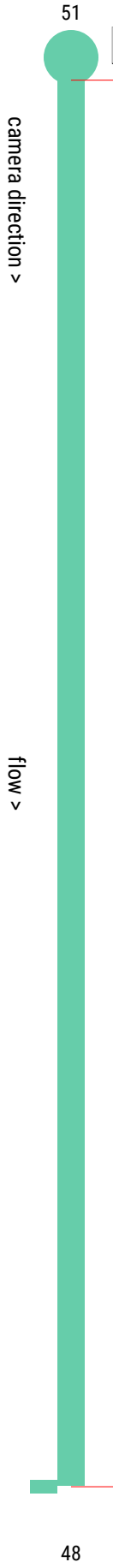
	Structural	O & M	Overall
Quick:	0000	4100	4100
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	0	4	4
Rating Index:	0	4	4

Consequence of Failure:

Summary



Observations



Feet	Code		Clock	Value	Grade	Description	Remarks
000.0	AMH					Access Point Manhole	start mh 51
	MWL			5%		Miscellaneous Water Level	
003.0	TBI		2	4 in	2 in 4	Tap Break-in Intruding	
	MSA					Miscellaneous Survey Abandoned	will tip camera over inspection blocked

Snapshots

Access Point Manhole at 000.0 ft | start mh 51

Miscellaneous Water Level at 000.0 ft

Miscellaneous Survey Abandoned at 003.0 ft | will tip camera over inspection blocked

Tap Break-in Intruding at 003.0 ft, 2 o'clock

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	52
Downstream MH:	51

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Walnut Street Going South, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Town Saco
PO Number:	
Additional Info:	

Inspection

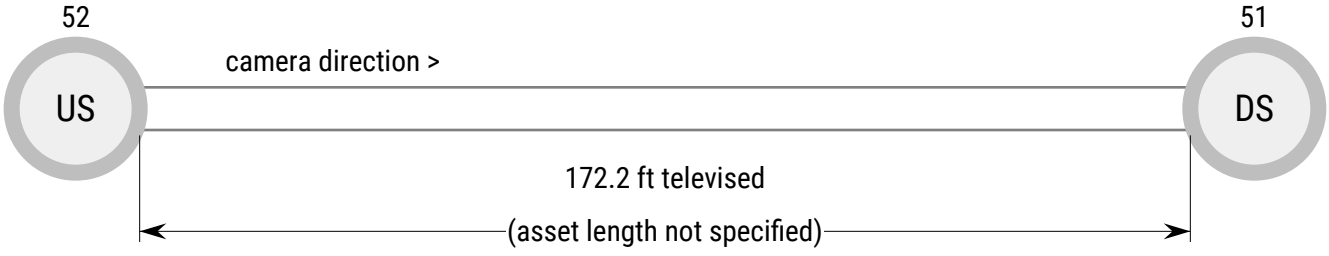
Media Date/Time:	07 • Apr • 2022 12:26
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	Capital Improvement Program
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	Not Controlled
Length Surveyed:	172.2 ft
Weather:	Dry - No Precipitation During Survey

Ratings

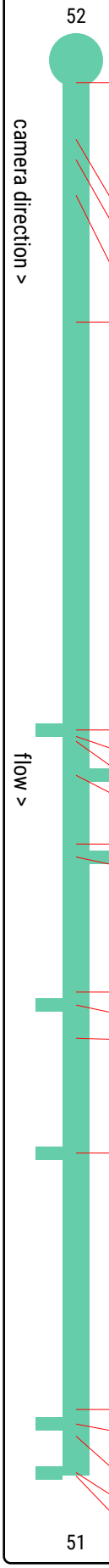
$\sum_{i=1}^{5} SG_i$	Structural	O & M	Overall
Quick:	5231	4132	5241
Pipe Rating:	16	13	29
Rating Index:	3.2	2.2	2.6

Consequence of Failure:

Summary



Observations



Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 52
	MWL		15%		Miscellaneous Water Level	
	MWL		70%		Miscellaneous Water Level	
	MWL		30%		Miscellaneous Water Level	
	MWL		5%		Miscellaneous Water Level	sag ends here
	MWL		20%		Miscellaneous Water Level	
007.0	CC	7 - 1		1	Crack Circumferential	
009.5	MCU			4	Miscellaneous Camera Underwater	
013.9	SMW	8 - 3		5	Surface Damage Missing Wall	clay pipe missing
029.6	MWL		5%		Miscellaneous Water Level	sag ends here
080.0	TBA	1	4 in		Tap Break-in Activity	Break in Sewer Conncetion
080.8	CL	12		2	Crack Longitudinal	
081.4	RFJ	3 - 8		1	Roots Fine Joint	
085.6	TFI	9	4 in | 1 in	3	Tap Factory Intruding	break in
094.1	RFJ	3 - 5		1	Roots Fine Joint	
095.7	TBA	10	4 in		Tap Break-in Activity	Break in Sewer Conncetion
112.4	RFJ	3 - 8		1	Roots Fine Joint	
114.0	TBA	1	4 in		Tap Break-in Activity	Break in Sewer Conncetion
118.1	CM	10 - 1		3	Crack Multiple	
132.3	TBA	1	4 in		Tap Break-in Activity	Break in Sewer Conncetion
164.0	MMC				Miscellaneous Material Change	PVC, main repaired PVC not round
165.8	TBA	1	4 in		Tap Break-in Activity	Break in Sewer Conncetion PVC main not round
167.3	MMC				Miscellaneous Material Change	VCP
171.8	TBI	3	4 in | 1 in	3	Tap Break-in Intruding	
172.2	SMW	9 - 1		5	Surface Damage Missing Wall	VCP missing looks repaired with metal
	MSA				Miscellaneous Survey Abandoned	Intruding service blocking Camera

Snapshots

Access Point Manhole at 000.0 ft | start mh 52

Miscellaneous Water Level at 000.0 ft

Miscellaneous Water Level at 000.0 ft

Miscellaneous Water Level at 000.0 ft

Miscellaneous Water Level at 000.0 ft | sag ends here

Miscellaneous Water Level at 000.0 ft

Crack Circumferential at 007.0 ft, 7 - 1 o'clock

Miscellaneous Camera Underwater at 009.5 ft

Snapshots

Surface Damage Missing Wall at 013.9 ft, 8 - 3 o'clock | clay pipe missing

Miscellaneous Water Level at 029.6 ft | sag ends here

Tap Break-in Activity at 080.0 ft, 1 o'clock | Break in Sewer Conncetion

Crack Longitudinal at 080.8 ft, 12 o'clock

Roots Fine Joint at 081.4 ft, 3 - 8 o'clock

Tap Factory Intruding at 085.6 ft, 9 o'clock | break in

Roots Fine Joint at 094.1 ft, 3 - 5 o'clock

Tap Break-in Activity at 095.7 ft, 10 o'clock | Break in Sewer Conncetion

Snapshots

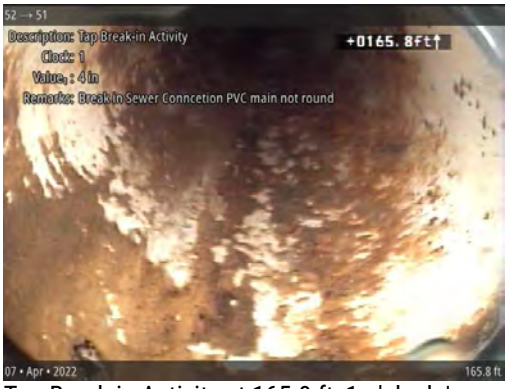
Roots Fine Joint at 112.4 ft, 3 - 8 o'clock

Tap Break-in Activity at 114.0 ft, 1 o'clock | Break in Sewer Conncetion

Crack Multiple at 118.1 ft, 10 - 1 o'clock

Tap Break-in Activity at 132.3 ft, 1 o'clock | Break in Sewer Conncetion

Miscellaneous Material Change at 164.0 ft | PVC, main repaired PVC not round



Tap Break-in Activity at 165.8 ft, 1 o'clock | Break in Sewer Conncetion PVC main not round

Miscellaneous Material Change at 167.3 ft | VCP

Tap Break-in Intruding at 171.8 ft, 3 o'clock

Snapshots

Surface Damage Missing Wall at 172.2 ft, 9 - 1 o'clock | VCP missing looks repaired with metal

Miscellaneous Survey Abandoned at 172.2 ft | Intruding service blocking Camera

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	52
Downstream MH:	51

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Alley of 1st Ave, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Town Saco
PO Number:	
Additional Info:	

Inspection

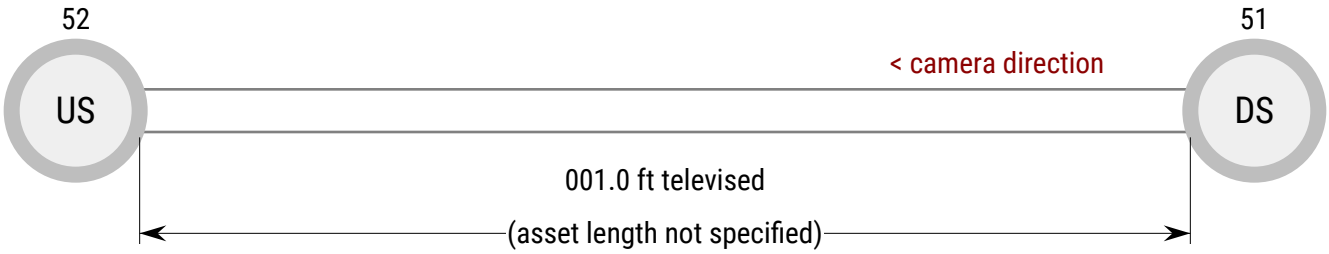
Media Date/Time:	07 • Apr • 2022 13:42
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Upstream
Purpose:	Capital Improvement Program
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	Not Controlled
Length Surveyed:	001.0 ft
Weather:	Dry - No Precipitation During Survey

Ratings

	Structural	O & M	Overall
Quick:	4100	0000	4100
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	4	0	4
Rating Index:	4	0	4

Consequence of Failure:

Summary



Observations

52

Feet	Code	Clock	Value	Grade	Description	Remarks
001.0	MSA				Miscellaneous Survey Abandoned	camera blocked
	JOLD			4	Joint Offset Large Defective	

camera direction >

000.0	MWL		5%		Miscellaneous Water Level	
	AMH				Access Point Manhole	start mh 51

51

Snapshots

Access Point Manhole at 000.0 ft | start mh 51

Miscellaneous Water Level at 000.0 ft

Joint Offset Large Defective at 001.0 ft

Miscellaneous Survey Abandoned at 001.0 ft | camera blocked

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	53
Downstream MH:	52

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Walnut Street, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Town Saco
PO Number:	
Additional Info:	

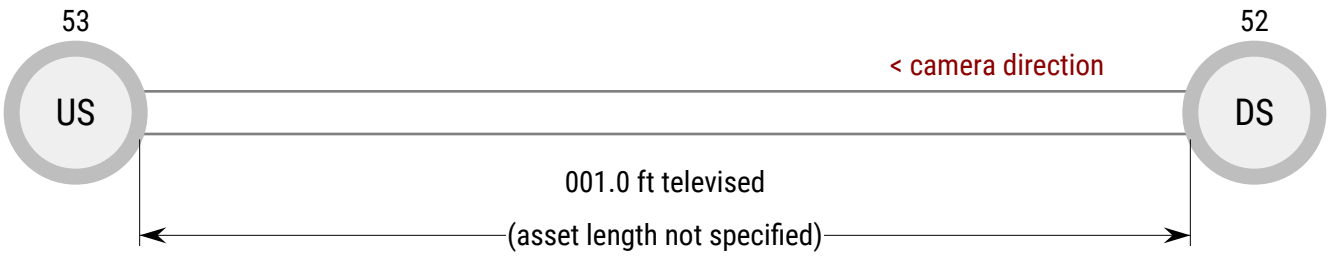
Inspection

Media Date/Time:	07 • Apr • 2022 12:01
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Upstream
Purpose:	Capital Improvement Program
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	07 • Apr • 2022
Flow Control:	Not Controlled
Length Surveyed:	001.0 ft
Weather:	Dry - No Precipitation During Survey

Ratings

$\sum_{i=1}^{5} SG_i$	Structural	O & M	Overall
Quick:	4100	0000	4100
Pipe Rating:	4	0	4
Rating Index:	4	0	4
Consequence of Failure:			

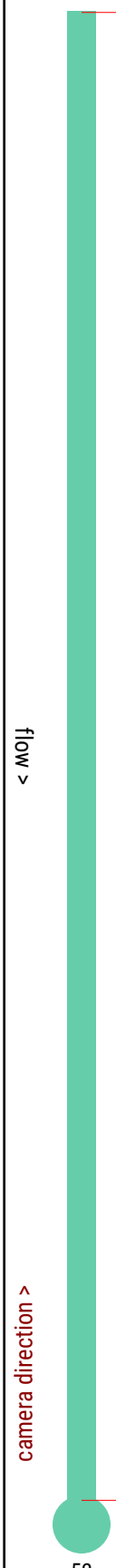
Summary



Observations

53

Feet	Code	Clock	Value	Grade	Description	Remarks
001.0	MSA JOL		3 in	4	Miscellaneous Survey Abandoned Joint Offset Large	camera could not advance main settled
000.0	MWL AMH		30%		Miscellaneous Water Level Access Point Manhole	camera still in manhole start mh 52



52

Snapshots

Access Point Manhole at 000.0 ft | start mh 52

Miscellaneous Water Level at 000.0 ft | camera still in manhole

Miscellaneous Survey Abandoned at 001.0 ft | camera could not advance

Joint Offset Large at 001.0 ft | main settled

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	53
Downstream MH:	52

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Walnut Street, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Town Saco
PO Number:	
Additional Info:	

Inspection

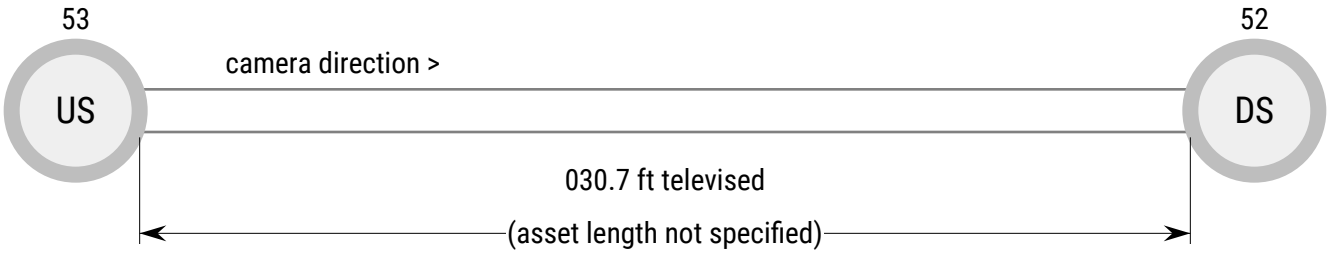
Media Date/Time:	07 • Apr • 2022 13:20
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	Capital Improvement Program
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	Not Controlled
Length Surveyed:	030.7 ft
Weather:	Dry - No Precipitation During Survey

Ratings

$\sum_{i=1}^{5} SG_i$	Structural	O & M	Overall
Quick:	3100	4100	4131
Pipe Rating:	3	4	7
Rating Index:	3	4	3.5

Consequence of Failure:

Summary



Observations

53

camera direction >

flow >

Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 53 in HWY
	MWL		0%		Miscellaneous Water Level	
	MWL		15%		Miscellaneous Water Level	
007.0	TBA	10	4 in		Tap Break-in Activity	Break in Sewer Conncetion
023.2	CM	8 - 1		3	Crack Multiple	pipe very damaged
029.3	TBI	10	6 in | 2 in	4	Tap Break-in Intruding	
030.7	MSA				Miscellaneous Survey Abandoned	blocked by service

52

Snapshots

Access Point Manhole at 000.0 ft | start mh 53 in HWY

Miscellaneous Water Level at 000.0 ft

Miscellaneous Water Level at 000.0 ft

Tap Break-in Activity at 007.0 ft, 10 o'clock | Break in Sewer Conncetion

Crack Multiple at 023.2 ft, 8 - 1 o'clock | pipe very damaged

Tap Break-in Intruding at 029.3 ft, 10 o'clock

Miscellaneous Survey Abandoned at 030.7 ft | blocked by service

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	34
Downstream MH:	33

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	10 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Stevens Street Alley, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

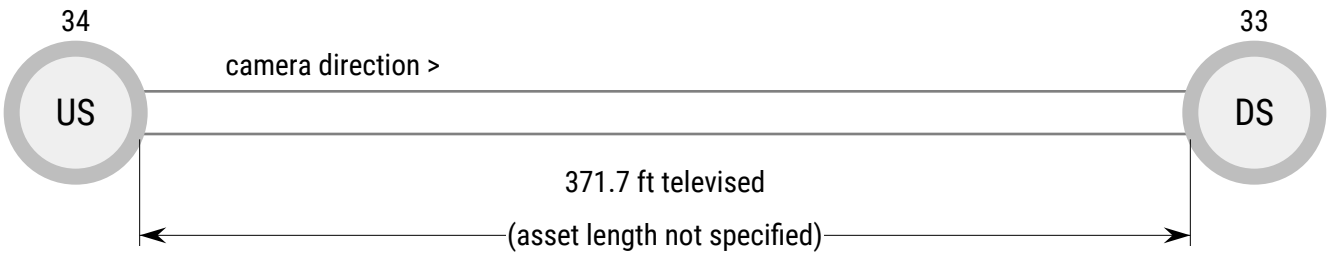
Media Date/Time:	11 • Apr • 2022 12:27
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	371.7 ft
Weather:	

Ratings

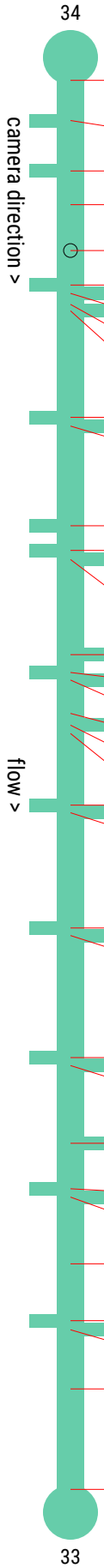
	Structural	O & M	Overall
Quick:	2600	4132	4132
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	12	16	28
Rating Index:	2	2.7	2.3

Consequence of Failure:

Summary



Observations



Feet	Code		Clock	Value	Grade	Description	Remarks
000.0	AMH					Access Point Manhole	start mh 34
	MWL			5%		Miscellaneous Water Level	
010.6	TFI		2	4 in | 1.5 in	3	Tap Factory Intruding	
023.9	TFI		1	4 in | 1 in	2	Tap Factory Intruding	broken
032.8	MWLS	01		25%	2	Miscellaneous Water Level Sag	
044.9	TBA		12	6 in		Tap Break-in Activity	Break in Sewer Conncetion
054.0	TFC		2	4 in		Tap Factory Capped	
056.2	TFC		10	4 in		Tap Factory Capped	
059.1	MWLS			5%	2	Miscellaneous Water Level Sag	end of sag
060.8	TBA		10	4 in		Tap Break-in Activity	Break in Sewer Conncetion has main broken
088.9	TFC		2	4 in		Tap Factory Capped	
091.2	TFC		10	4 in		Tap Factory Capped	
117.5	TBA		1	4 in		Tap Break-in Activity	Break in Sewer Conncetion
124.0	TFC		2	4 in		Tap Factory Capped	
	MWLS			5%	2	Miscellaneous Water Level Sag	sag ends here
126.4	TFC		10	4 in		Tap Factory Capped	
151.5	TFI		10	4 in | 2 in	3	Tap Factory Intruding	main broken here
156.2	TBA		2	4 in		Tap Break-in Activity	Break in Sewer Conncetion
158.2	TFC		10	4 in		Tap Factory Capped	
167.0	MMC					Miscellaneous Material Change	to PVC sagged
170.1	TFI		10	4 in | 0.5 in	2	Tap Factory Intruding	main line broken here
172.3	MMC					Miscellaneous Material Change	Back to VCP
191.2	TFC		2	4 in		Tap Factory Capped	
193.2	TFI		10	4 in | 1 in	2	Tap Factory Intruding	
223.6	TFC		2	4 in		Tap Factory Capped	
225.6	TFC		10	4 in		Tap Factory Capped	
257.8	TFC		2	4 in		Tap Factory Capped	
259.9	TFC		10	4 in		Tap Factory Capped	
	MWLS			20%	2	Miscellaneous Water Level Sag	
280.4	MWLS			5%	2	Miscellaneous Water Level Sag	
	TBA		11	4 in		Tap Break-in Activity	Break in Sewer Conncetion
292.4	TFC		2	4 in		Tap Factory Capped	
294.6	TFC		10	4 in		Tap Factory Capped	
312.2	MWLS			25%	2	Miscellaneous Water Level Sag	
327.2	TFC		2	4 in		Tap Factory Capped	
329.6	TFC		10	4 in		Tap Factory Capped	
345.2	MCU				4	Miscellaneous Camera Underwater	
371.7	AMH					Access Point Manhole	end mh 33

Snapshots

Access Point Manhole at 000.0 ft | start mh 34

Miscellaneous Water Level at 000.0 ft

Tap Factory Intruding at 010.6 ft, 2 o'clock

Tap Factory Intruding at 023.9 ft, 1 o'clock | broken

Miscellaneous Water Level Sag at 032.8 ft

Tap Break-in Activity at 044.9 ft, 12 o'clock | Break in Sewer Conncetion

Tap Factory Capped at 054.0 ft, 2 o'clock

Tap Factory Capped at 056.2 ft, 10 o'clock

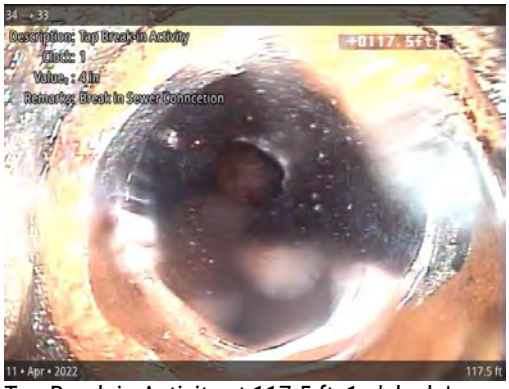
Snapshots

Miscellaneous Water Level Sag at 059.1 ft | end of sag

Tap Break-in Activity at 060.8 ft, 10 o'clock | Break in Sewer Conncetion has main broken

Tap Factory Capped at 088.9 ft, 2 o'clock

Tap Factory Capped at 091.2 ft, 10 o'clock



Tap Break-in Activity at 117.5 ft, 1 o'clock | Break in Sewer Conncetion

Tap Factory Capped at 124.0 ft, 2 o'clock

Miscellaneous Water Level Sag at 124.0 ft | sag ends here

Tap Factory Capped at 126.4 ft, 10 o'clock

Snapshots

Tap Factory Intruding at 151.5 ft, 10 o'clock | main broken here

Tap Break-in Activity at 156.2 ft, 2 o'clock | Break in Sewer Conncetion

Tap Factory Capped at 158.2 ft, 10 o'clock

Miscellaneous Material Change at 167.0 ft | to PVC sagged

Tap Factory Intruding at 170.1 ft, 10 o'clock | main line broken here

Miscellaneous Material Change at 172.3 ft | Back to VCP

Tap Factory Capped at 191.2 ft, 2 o'clock

Tap Factory Intruding at 193.2 ft, 10 o'clock

Snapshots

Tap Factory Capped at 223.6 ft, 2 o'clock

Tap Factory Capped at 225.6 ft, 10 o'clock

Tap Factory Capped at 257.8 ft, 2 o'clock

Tap Factory Capped at 259.9 ft, 10 o'clock

Miscellaneous Water Level Sag at 259.9 ft

Tap Break-in Activity at 280.4 ft, 11 o'clock | Break in Sewer Conncetion

Miscellaneous Water Level Sag at 280.4 ft

Tap Factory Capped at 292.4 ft, 2 o'clock

Snapshots

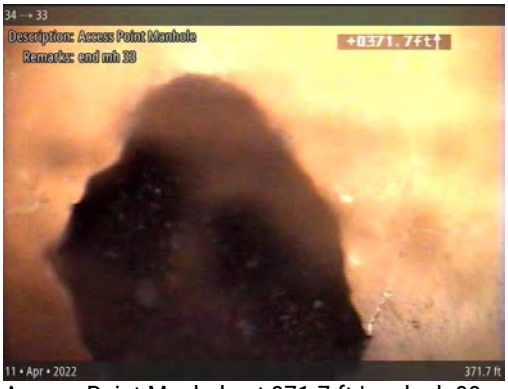
Tap Factory Capped at 294.6 ft, 10 o'clock

Miscellaneous Water Level Sag at 312.2 ft |

Tap Factory Capped at 327.2 ft, 2 o'clock

Tap Factory Capped at 329.6 ft, 10 o'clock

Miscellaneous Camera Underwater at 345.2 ft



Access Point Manhole at 371.7 ft | end mh 33

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	35
Downstream MH:	33

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	10 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Stevens Street Alley, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

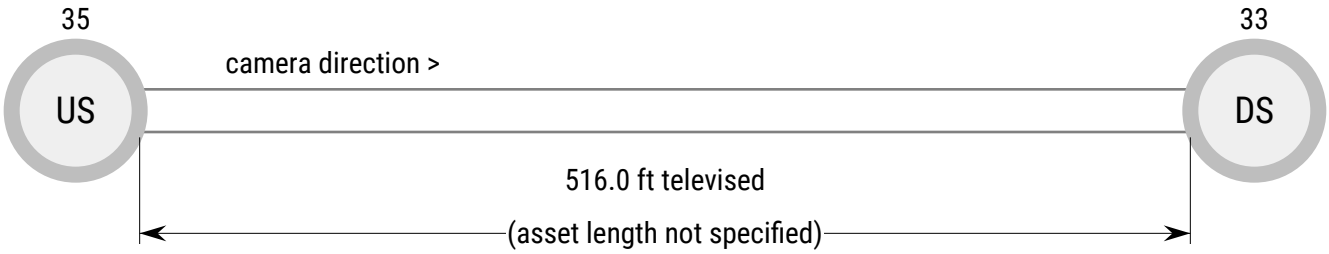
Media Date/Time:	11 • Apr • 2022 11:31
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	516.0 ft
Weather:	

Ratings

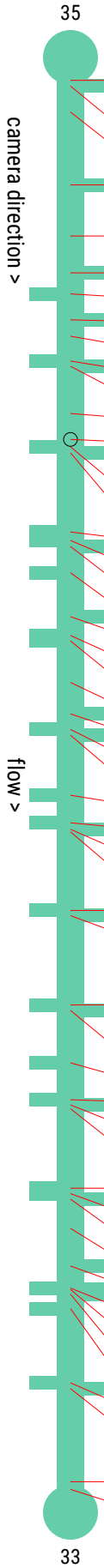
	Structural	O & M	Overall
Quick:	412A	3623	4136
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	24	24	48
Rating Index:	2.2	2.7	2.4

Consequence of Failure:

Summary



Observations



Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 35
	MWL		5%		Miscellaneous Water Level	
002.1	TBA	11	4 in		Tap Break-in Activity	Break in Sewer Conncetion OB
011.6	MWLS		20%	2	Miscellaneous Water Level Sag	
038.3	TFC	10	4 in		Tap Factory Capped	
057.0	MWLS		5%	2	Miscellaneous Water Level Sag	sag ends
070.5	TFC	10	4 in		Tap Factory Capped	
078.2	TBA	2	4 in		Tap Break-in Activity	Break in Sewer Conncetion
087.7	TBI	10	4 in 1 in	2	Tap Break-in Intruding	
093.7	MWLS		20%	2	Miscellaneous Water Level Sag	
102.8	TFC	2	4 in		Tap Factory Capped	
104.7	TFC	10	4 in		Tap Factory Capped	
122.0	MWLS		0%	2	Miscellaneous Water Level Sag	
131.5	B	9 - 2		4	Broken	12 service broken main
	TBA	12	4 in		Tap Break-in Activity	Break in Sewer Conncetion
134.2	TFC	2	4 in		Tap Factory Capped	
136.4	TFC	10	4 in		Tap Factory Capped	
165.4	TFI	2	4 in 2 in	3	Tap Factory Intruding	
168.5	TFC	2	4 in		Tap Factory Capped	
170.7	TFC	10	4 in		Tap Factory Capped	
180.3	TBA	1	4 in		Tap Break-in Activity	Break in Sewer Conncetion
196.4	TFI	11	4 in 2 in	3	Tap Factory Intruding	
203.3	TFC	2	4 in		Tap Factory Capped	
205.3	TFC	2	4 in		Tap Factory Capped	
220.5	MWLS		20%	2	Miscellaneous Water Level Sag	
232.0	TBI	10	4 in 2 in	3	Tap Break-in Intruding	
237.7	TFC	2	4 in		Tap Factory Capped	
239.8	TFC	10	4 in		Tap Factory Capped	
261.8	TFI	1	4 in 1.5 in	3	Tap Factory Intruding	
271.9	TFC	2	4 in		Tap Factory Capped	
274.3	TFC	10	4 in		Tap Factory Capped	
275.2	MWLS		0%	2	Miscellaneous Water Level Sag	
304.0	TFC	2	4 in		Tap Factory Capped	
305.9	TFC	10	4 in		Tap Factory Capped	
338.6	TFC	2	4 in		Tap Factory Capped	
	MWLS		20%	2	Miscellaneous Water Level Sag	
340.6	TFC	10	4 in		Tap Factory Capped	
359.8	TFI	2	6 in 2 in	3	Tap Factory Intruding	
373.3	TFC	2	4 in		Tap Factory Capped	
375.2	TFC	10	4 in		Tap Factory Capped	
376.6	MWLS		5%	2	Miscellaneous Water Level Sag	
405.7	TFI	2	4 in 2 in	3	Tap Factory Intruding	
407.7	TFC	2	4 in		Tap Factory Capped	
409.7	TFC	10	4 in		Tap Factory Capped	
420.4	MWLS		20%	2	Miscellaneous Water Level Sag	
434.2	TBA	10	4 in		Tap Break-in Activity	Break in Sewer Conncetion
442.3	TFC	2	4 in		Tap Factory Capped	
442.8	TFI	11	4 in 1 in	2	Tap Factory Intruding	
444.5	TFC	10	4 in		Tap Factory Capped	
449.8	TFI	1	4 in 1 in	2	Tap Factory Intruding	
477.0	TFC	2	4 in		Tap Factory Capped	
479.1	TFC	10	4 in		Tap Factory Capped	
513.2	MWLS		0%	2	Miscellaneous Water Level Sag	
516.0	AMH				Access Point Manhole	end mh 34

Snapshots

Access Point Manhole at 000.0 ft | start mh 35

Miscellaneous Water Level at 000.0 ft

Tap Break-in Activity at 002.1 ft, 11 o'clock | Break in Sewer Conncetion OB

Miscellaneous Water Level Sag at 011.6 ft

Tap Factory Capped at 038.3 ft, 10 o'clock

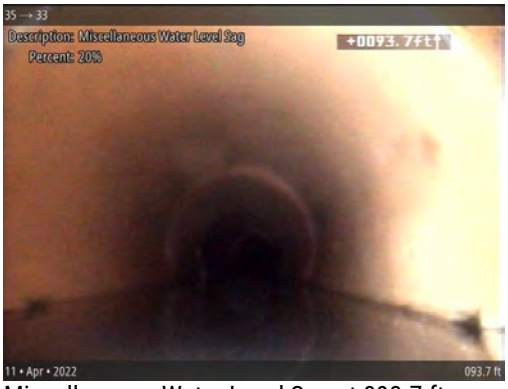
Miscellaneous Water Level Sag at 057.0 ft | sag ends

Tap Factory Capped at 070.5 ft, 10 o'clock

Tap Break-in Activity at 078.2 ft, 2 o'clock | Break in Sewer Conncetion

Snapshots

Tap Break-in Intruding at 087.7 ft, 10 o'clock

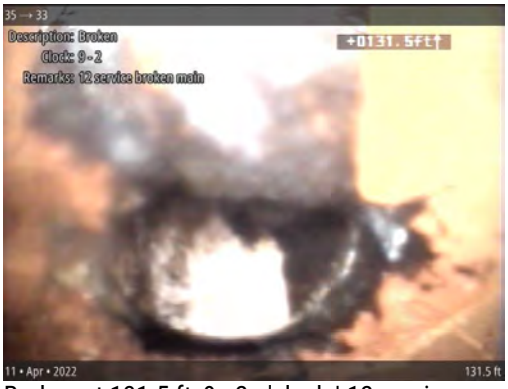


Miscellaneous Water Level Sag at 093.7 ft

Tap Factory Capped at 102.8 ft, 2 o'clock

Tap Factory Capped at 104.7 ft, 10 o'clock

Miscellaneous Water Level Sag at 122.0 ft



Broken at 131.5 ft, 9 - 2 o'clock | 12 service broken main

Tap Break-in Activity at 131.5 ft, 12 o'clock | Break in Sewer Conncetion

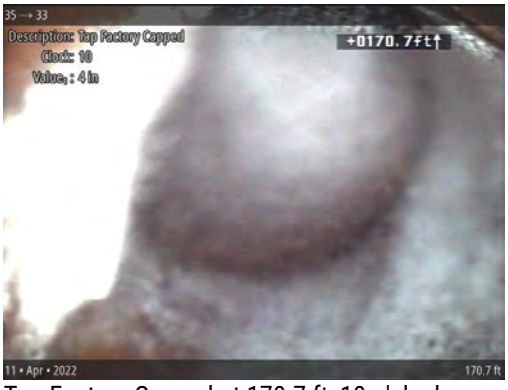
Tap Factory Capped at 134.2 ft, 2 o'clock

Snapshots

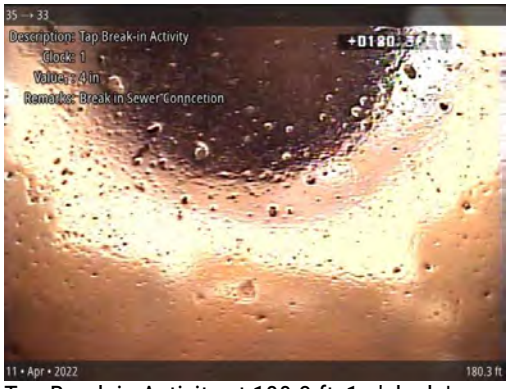
Tap Factory Capped at 136.4 ft, 10 o'clock

Tap Factory Intruding at 165.4 ft, 2 o'clock

Tap Factory Capped at 168.5 ft, 2 o'clock

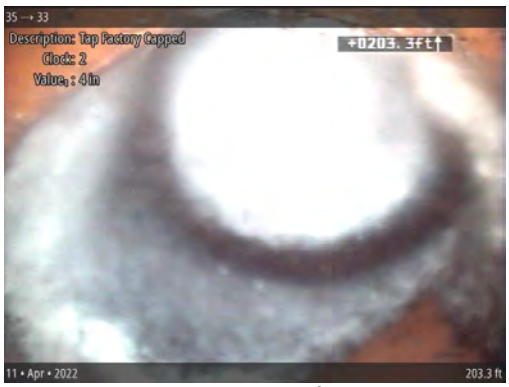


Tap Factory Capped at 170.7 ft, 10 o'clock



Tap Break-in Activity at 180.3 ft, 1 o'clock | Break in Sewer Conncetion

Tap Factory Intruding at 196.4 ft, 11 o'clock



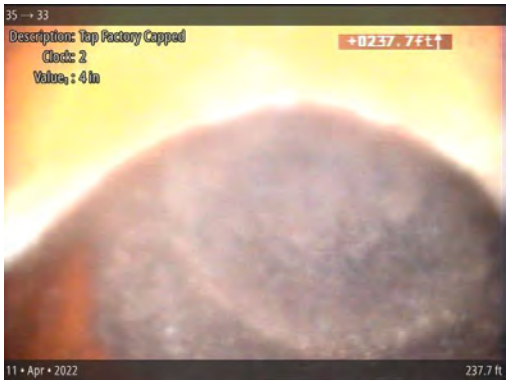
Tap Factory Capped at 203.3 ft, 2 o'clock

Tap Factory Capped at 205.3 ft, 2 o'clock

Snapshots

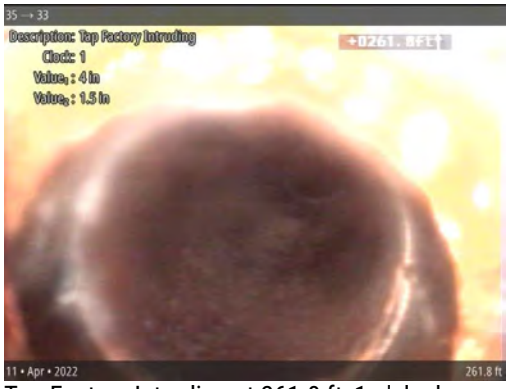
Miscellaneous Water Level Sag at 220.5 ft

Tap Break-in Intruding at 232.0 ft, 10 o'clock

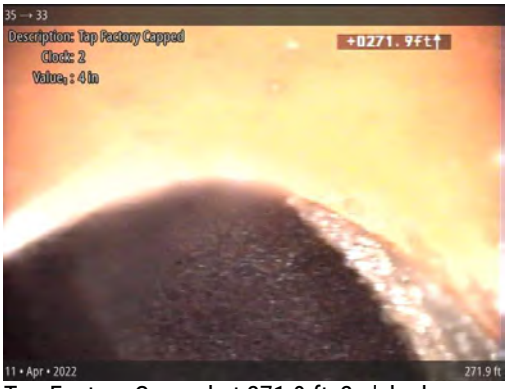


Tap Factory Capped at 237.7 ft, 2 o'clock

Tap Factory Capped at 239.8 ft, 10 o'clock

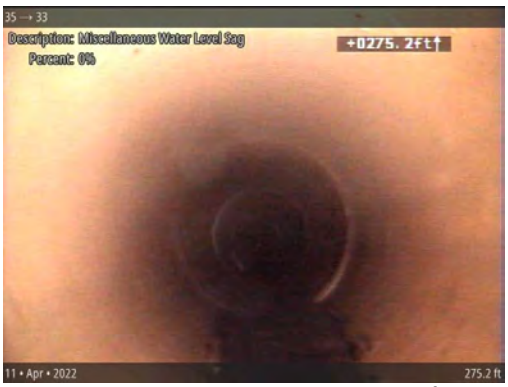


Tap Factory Intruding at 261.8 ft, 1 o'clock



Tap Factory Capped at 271.9 ft, 2 o'clock

Tap Factory Capped at 274.3 ft, 10 o'clock



Miscellaneous Water Level Sag at 275.2 ft

Snapshots

Tap Factory Capped at 304.0 ft, 2 o'clock

Tap Factory Capped at 305.9 ft, 10 o'clock

Tap Factory Capped at 338.6 ft, 2 o'clock

Miscellaneous Water Level Sag at 338.6 ft

Tap Factory Capped at 340.6 ft, 10 o'clock

Tap Factory Intruding at 359.8 ft, 2 o'clock

Tap Factory Capped at 373.3 ft, 2 o'clock

Tap Factory Capped at 375.2 ft, 10 o'clock

Snapshots

Miscellaneous Water Level Sag at 376.6 ft

Tap Factory Intruding at 405.7 ft, 2 o'clock

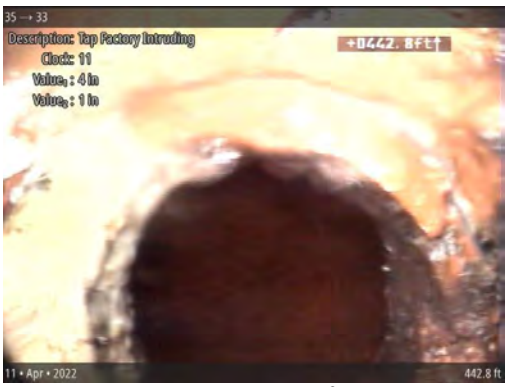
Tap Factory Capped at 407.7 ft, 2 o'clock

Tap Factory Capped at 409.7 ft, 10 o'clock

Miscellaneous Water Level Sag at 420.4 ft

Tap Break-in Activity at 434.2 ft, 10 o'clock | Break in Sewer Conncetion

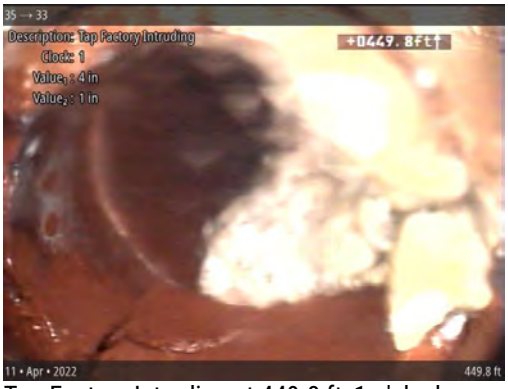
Tap Factory Capped at 442.3 ft, 2 o'clock



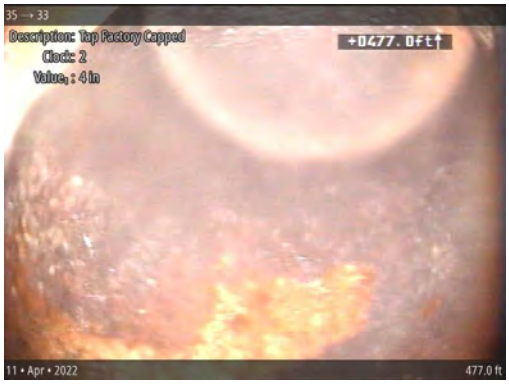
Tap Factory Intruding at 442.8 ft, 11 o'clock

Snapshots

Tap Factory Capped at 444.5 ft, 10 o'clock

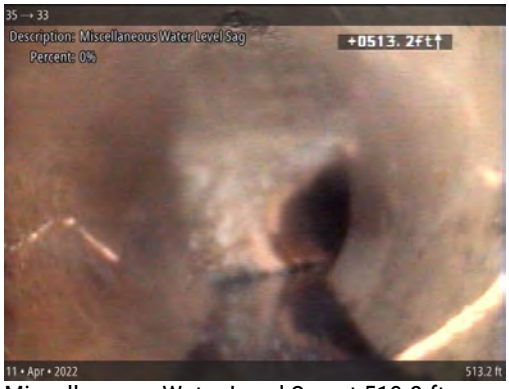


Tap Factory Intruding at 449.8 ft, 1 o'clock



Tap Factory Capped at 477.0 ft, 2 o'clock

Tap Factory Capped at 479.1 ft, 10 o'clock



Miscellaneous Water Level Sag at 513.2 ft

Access Point Manhole at 516.0 ft | end mh 34

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	44
Downstream MH:	35

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	10 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	1st Ave , Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

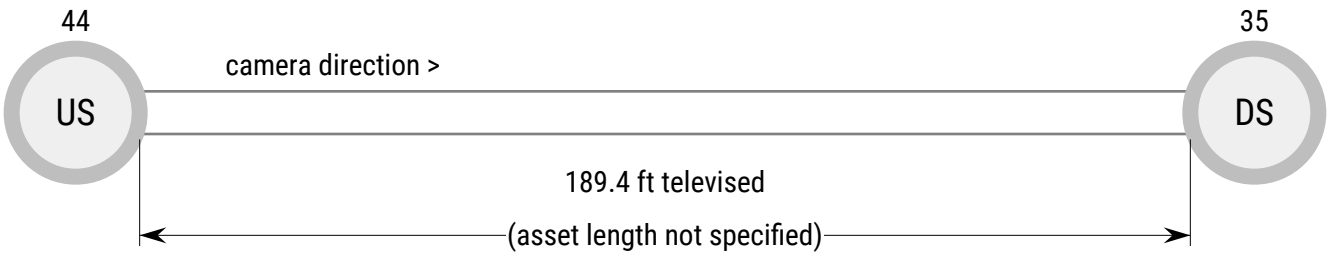
Media Date/Time:	11 • Apr • 2022 11:08
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	189.4 ft
Weather:	

Ratings

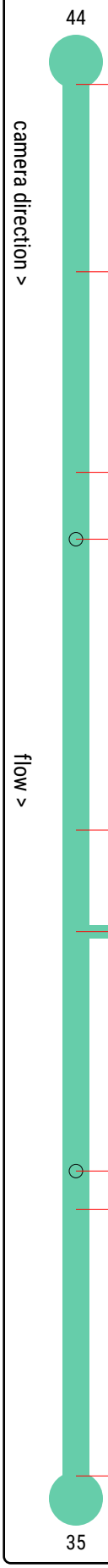
$\sum_{i=1}^{5} SG_i$	Structural	O & M	Overall
Quick:	2112	4121	4122
Pipe Rating:	4	6	10
Rating Index:	1.3	3	2

Consequence of Failure:

Summary



Observations



Feet	Code		Clock	Value	Grade	Description	Remarks
000.0	AMH MWL			 5%		Access Point Manhole Miscellaneous Water Level	start mh 44
025.5	MWLS			25%	2	Miscellaneous Water Level Sag	
052.8	CC		10 - 2		1	Crack Circumferential	
061.9	TBI		12	4 in | 1 in	2	Tap Break-in Intruding	
101.5	CC		10 - 2		1	Crack Circumferential	
115.3	TFC		10	4 in		Tap Factory Capped	
147.9	TBA		12	4 in		Tap Break-in Activity	Break in Sewer Conncetion
153.1	MCU				4	Miscellaneous Camera Underwater	
189.4	AMH					Access Point Manhole	end mh 35

Snapshots

Access Point Manhole at 000.0 ft | start mh 44

Miscellaneous Water Level at 000.0 ft

Miscellaneous Water Level Sag at 025.5 ft

Crack Circumferential at 052.8 ft, 10 - 2 o'clock

Tap Break-in Intruding at 061.9 ft, 12 o'clock

Crack Circumferential at 101.5 ft, 10 - 2 o'clock

Tap Factory Capped at 115.3 ft, 10 o'clock

Tap Break-in Activity at 147.9 ft, 12 o'clock | Break in Sewer Conncetion

Snapshots

Miscellaneous Camera Underwater at 153.1 ft

Access Point Manhole at 189.4 ft | end mh 35

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	45
Downstream MH:	44

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	10 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Wellington, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

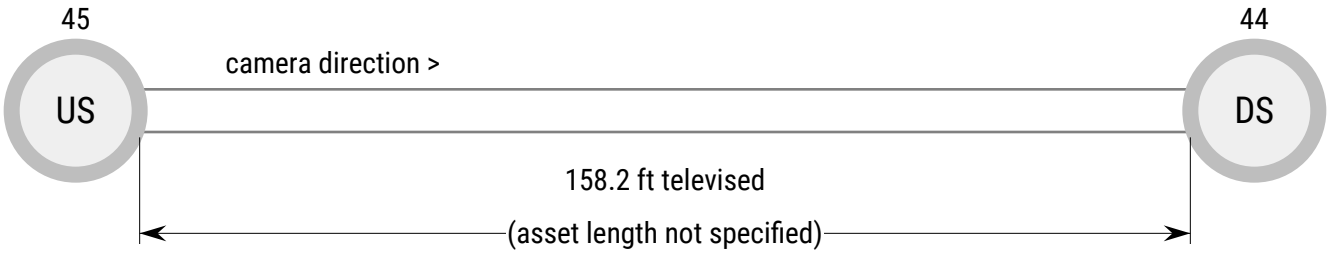
Media Date/Time:	11 • Apr • 2022 10:10
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	158.2 ft
Weather:	

Ratings

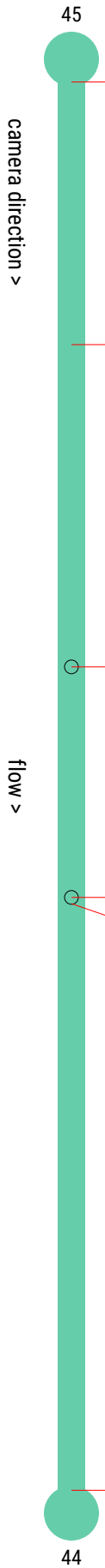
	Structural	O & M	Overall
Quick:	0000	4121	4121
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	0	6	6
Rating Index:	0	3	3

Consequence of Failure:

Summary



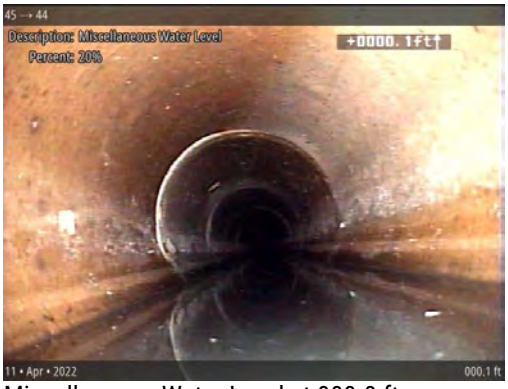
Observations



Feet	Code		Clock	Value		Grade	Description	Remarks
000.0	AMH						Access Point Manhole	start mh 45
	MWL			20%			Miscellaneous Water Level	
029.5	MCU					4	Miscellaneous Camera Underwater	
065.7	TBI		12	4 in	1 in	2	Tap Break-in Intruding	
091.6	TBA		12	4 in			Tap Break-in Activity	Break in Sewer Conncetion
092.3	MMC						Miscellaneous Material Change	PVC point repair
158.2	AMH						Access Point Manhole	end mh 44

Snapshots

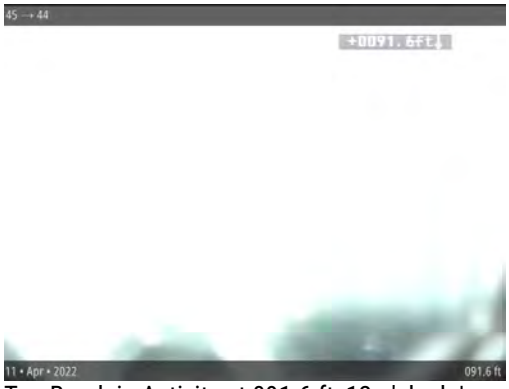
Access Point Manhole at 000.0 ft | start mh 45



Miscellaneous Water Level at 000.0 ft

Miscellaneous Camera Underwater at 029.5 ft

Tap Break-in Intruding at 065.7 ft, 12 o'clock



Tap Break-in Activity at 091.6 ft, 12 o'clock | Break in Sewer Conncetion

Miscellaneous Material Change at 092.3 ft | PVC point repair

Access Point Manhole at 158.2 ft | end mh 44

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	46
Downstream MH:	45

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Wellington, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

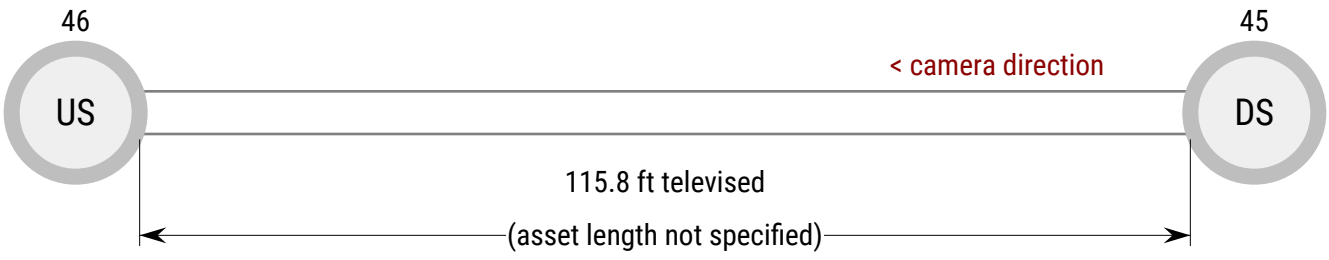
Media Date/Time:	11 • Apr • 2022 09:34
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Upstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	115.8 ft
Weather:	

Ratings

	Structural	O & M	Overall
Quick:	0000	5144	5144
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	0	27	27
Rating Index:	0	3.9	3.9

Consequence of Failure:

Summary



Observations

46

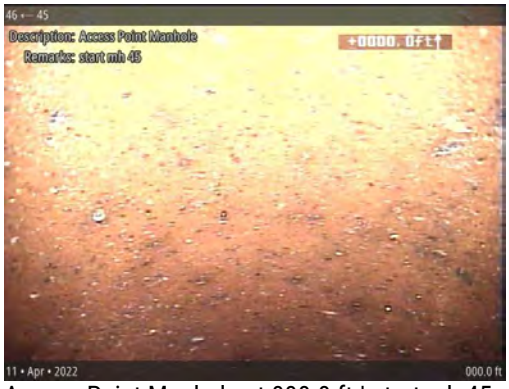
Feet	Code	Clock	Value	Grade	Description	Remarks
115.8	MSA				Miscellaneous Survey Abandoned	blocked on service in the main
114.7	TBI	10	6 in | 4 in	5	Tap Break-in Intruding	
110.9	MCU			4	Miscellaneous Camera Underwater	camera out of water at this point
093.5	TBI	2	4 in | 1 in	3	Tap Break-in Intruding	
088.4	TBI	1	6 in | 1 in	3	Tap Break-in Intruding	
082.6	TFC	2	4 in		Tap Factory Capped	
081.1	TFC	11	4 in		Tap Factory Capped	
048.5	TFC	1	4 in		Tap Factory Capped	
046.2	TFC	11	4 in		Tap Factory Capped	
030.1	TBI	12	4 in | 2 in	4	Tap Break-in Intruding	
028.6	TBI	11	4 in | 2 in	4	Tap Break-in Intruding	
025.1	MCU			4	Miscellaneous Camera Underwater	
014.2	TFC	2	6 in		Tap Factory Capped	
011.9	TFC	10	6 in		Tap Factory Capped	
000.0	MWL		50%		Miscellaneous Water Level	
	AMH				Access Point Manhole	start mh 45

flow >

camera direction >

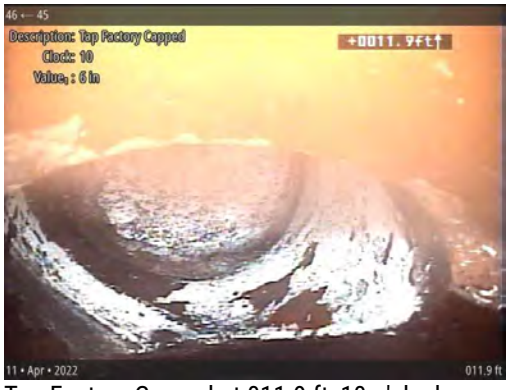
45

Snapshots



Access Point Manhole at 000.0 ft | start mh 45

Miscellaneous Water Level at 000.0 ft



Tap Factory Capped at 011.9 ft, 10 o'clock

Tap Factory Capped at 014.2 ft, 2 o'clock

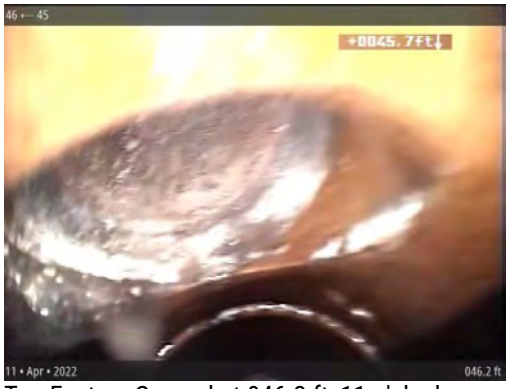
Miscellaneous Camera Underwater at 025.1 ft

Tap Break-in Intruding at 028.6 ft, 11 o'clock

Tap Break-in Intruding at 030.1 ft, 12 o'clock

Tap Factory Capped at 048.5 ft, 1 o'clock

Snapshots



Tap Factory Capped at 046.2 ft, 11 o'clock

Tap Factory Capped at 081.1 ft, 11 o'clock

Tap Factory Capped at 082.6 ft, 2 o'clock

Tap Break-in Intruding at 088.4 ft, 1 o'clock

Tap Break-in Intruding at 093.5 ft, 2 o'clock

Miscellaneous Camera Underwater at 110.9 ft | camera out of water at this point

Tap Break-in Intruding at 114.7 ft, 10 o'clock

Miscellaneous Survey Abandoned at 115.8 ft | blocked on service in the main

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	46
Downstream MH:	45

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	Wellington, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

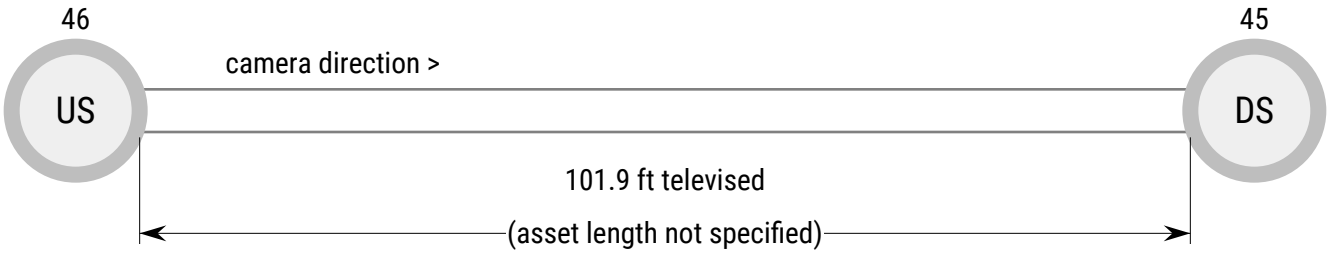
Media Date/Time:	11 • Apr • 2022 10:32
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	101.9 ft
Weather:	

Ratings

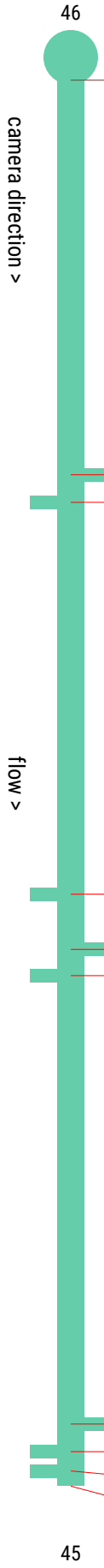
	Structural	O & M	Overall
Quick:	0000	5121	5121
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	0	7	7
Rating Index:	0	3.5	3.5

Consequence of Failure:

Summary



Observations



Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 46
	MWL		10%		Miscellaneous Water Level	
028.6	TFC	11	4 in		Tap Factory Capped	
030.6	TFC	2	4 in		Tap Factory Capped	
059.0	TBI	1	4 in | 0.5 in	2	Tap Break-in Intruding	
063.0	TFC	10	4 in		Tap Factory Capped	
064.9	TFC	1	4 in		Tap Factory Capped	
097.4	TFC	10	4 in		Tap Factory Capped	
099.4	TFC	2	4 in		Tap Factory Capped	
100.8	TFI	2	4 in | 3 in	5	Tap Factory Intruding	main broken can see soil
101.9	MSA				Miscellaneous Survey Abandoned	service stoped camera

Snapshots

Access Point Manhole at 000.0 ft | start mh 46

Miscellaneous Water Level at 000.0 ft

Tap Factory Capped at 028.6 ft, 11 o'clock

Tap Factory Capped at 030.6 ft, 2 o'clock

Tap Break-in Intruding at 059.0 ft, 1 o'clock

Tap Factory Capped at 063.0 ft, 10 o'clock

Tap Factory Capped at 064.9 ft, 1 o'clock

Tap Factory Capped at 097.4 ft, 10 o'clock

Snapshots

Tap Factory Capped at 099.4 ft, 2 o'clock

Tap Factory Intruding at 100.8 ft, 2 o'clock | main broken can see soil

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	48
Downstream MH:	44

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	1st Ave Alley, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

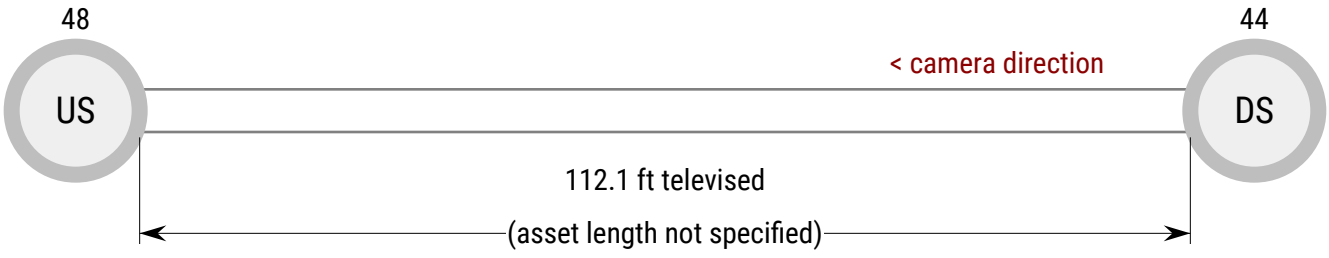
Media Date/Time:	11 • Apr • 2022 09:59
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Upstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	112.1 ft
Weather:	

Ratings

	Structural	O & M	Overall
Quick:	0000	5100	5100
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	0	5	5
Rating Index:	0	5	5

Consequence of Failure:

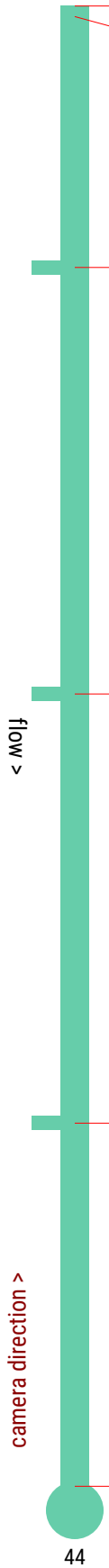
Summary



Observations

48

Feet	Code		Clock	Value	Grade	Description	Remarks
112.1	MSA					Miscellaneous Survey Abandoned	camera blocked
111.3	TBI		12	4 in | 3 in	5	Tap Break-in Intruding	
092.3	TFC		10	4 in		Tap Factory Capped	
060.0	TFC		10	4 in		Tap Factory Capped	
027.5	TFC		10	4 in		Tap Factory Capped	
000.0	MWL			25%		Miscellaneous Water Level	
	AMH					Access Point Manhole	start mh45



44

Snapshots

Access Point Manhole at 000.0 ft | start mh45

Miscellaneous Water Level at 000.0 ft

Tap Factory Capped at 027.5 ft, 10 o'clock

Tap Factory Capped at 060.0 ft, 10 o'clock

Tap Factory Capped at 092.3 ft, 10 o'clock

Tap Break-in Intruding at 111.3 ft, 12 o'clock

Miscellaneous Survey Abandoned at 112.1 ft | camera blocked

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	48
Downstream MH:	45

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	1st Ave Alley, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

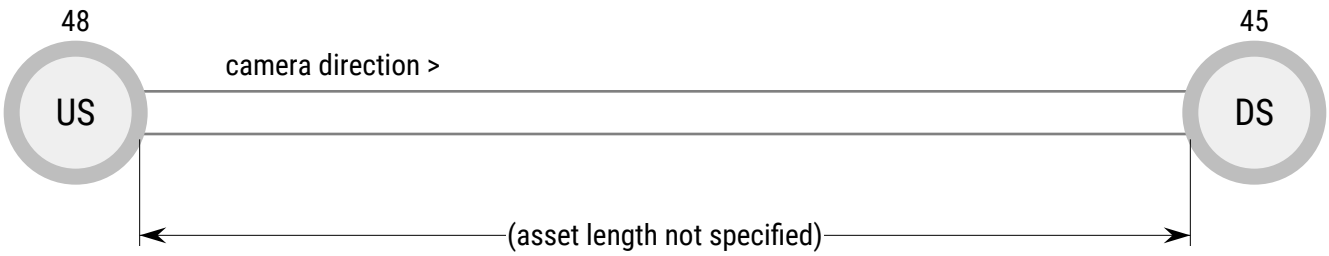
Media Date/Time:	11 • Apr • 2022 10:59
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	000.0 ft
Weather:	

Ratings

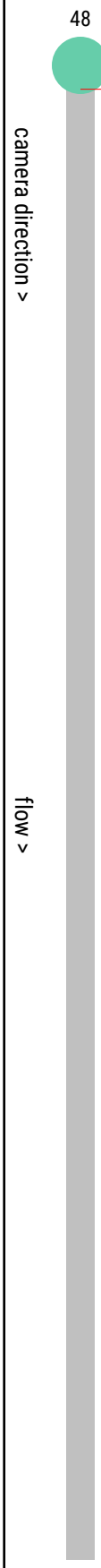
	Structural	O & M	Overall
Quick:	0000	0000	0000
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	0	0	0
Rating Index:	0	0	0

Consequence of Failure:

Summary



Observations

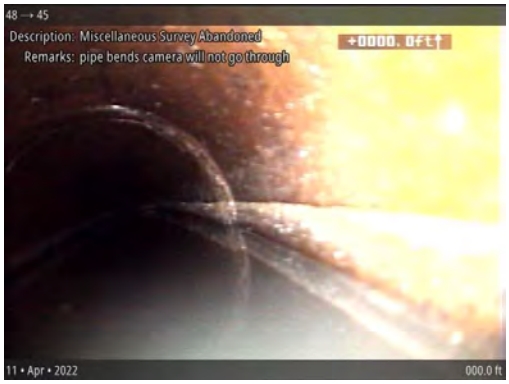


Feet	Code	Clock	Value	Grade	Description	Remarks
000.0	AMH				Access Point Manhole	start mh 48
	MWL		20%		Miscellaneous Water Level	
	MSA				Miscellaneous Survey Abandoned	pipe bends camera will not go through

Snapshots

Access Point Manhole at 000.0 ft | start mh 48

Miscellaneous Water Level at 000.0 ft



Miscellaneous Survey Abandoned at 000.0 ft | pipe bends camera will not go through

PipeTech®

Asset

Owner:	Town of Saco
PSR:	
Upstream MH:	51
Downstream MH:	48

	USMH	DSMH
Rim to Invert:		
Rim to Grade:		

Pipe Geometry:	8 in (Circular)
Material:	Vitrified Clay Pipe
Lining Method:	
Coating Method:	
Year Constructed:	
Pipe Use:	Sanitary Sewage Pipe
Total Length:	(unspecified)

Location

Address:	1st Ave Alley, Saco
Drainage Area:	
Latitude:	
Longitude:	
Elevation:	
GPS Accuracy:	
Location Code:	
Location Details:	

Project

Project:	
Work Order:	
Customer:	Great West
PO Number:	
Additional Info:	

Inspection

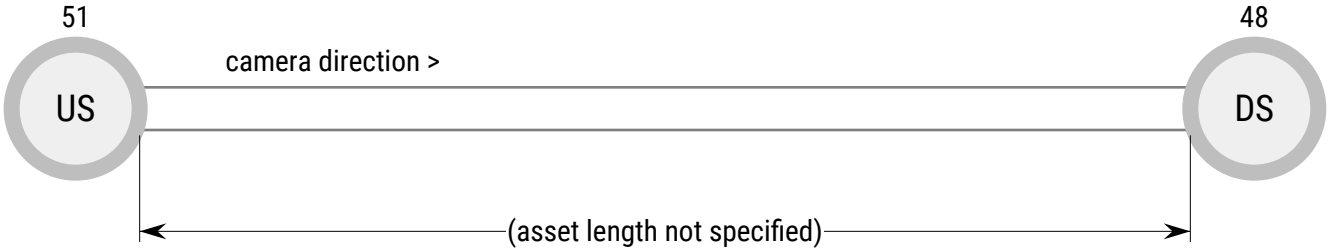
Media Date/Time:	11 • Apr • 2022 10:55
Surveyed By:	Tyler Smith
Reviewed By:	
Camera Direction:	Downstream
Purpose:	
Technology:	
Pre-Cleaning:	Heavy Cleaning
Date Cleaned:	
Flow Control:	
Length Surveyed:	000.0 ft
Weather:	

Ratings

	Structural	O & M	Overall
Quick:	0000	0000	0000
$\sum_{i=1}^{5} SG_i$ Pipe Rating:	0	0	0
Rating Index:	0	0	0

Consequence of Failure:

Summary



Observations

51

Feet	Code		Clock	Value	Grade	Description	Remarks
000.0	AMH					Access Point Manhole	start mh 48
	MWL			30%		Miscellaneous Water Level	
	MSA					Miscellaneous Survey Abandoned	pipe bends into manhole can not inpect

48

Snapshots

Access Point Manhole at 000.0 ft | start mh 48

Miscellaneous Water Level at 000.0 ft

Miscellaneous Survey Abandoned at 000.0 ft | pipe bends into manhole can not inpect

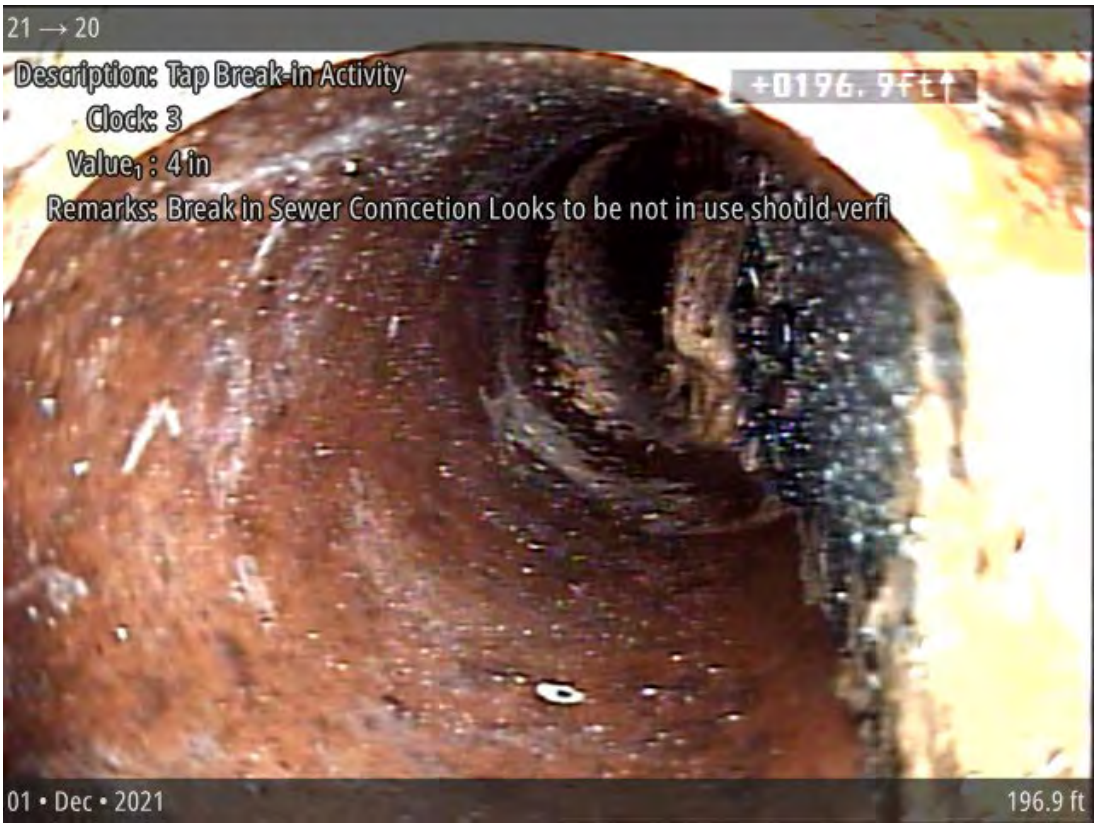
18 → 17
Owner: City of Plentywood
City: Saco
Surveyed By: Tyler Smith
Certificate Number: 1
+0017.0ft
01 • Dec • 2021
017.0 ft

20 ← 18
Description: Miscellaneous Survey Abandoned
Remarks: blocked on service camera wont advance
+0083. 2ft
01 • Dec • 2021
083.2 ft

20 → 18
Description: Access Point Manhole
Remarks: start mh 20
01 • Dec • 2021
000.0 ft

20 → 18
Description: Tap Break-in Intruding
Clock: 1
Value$_1$: 4 in
Value$_2$: 3 in
+0127.8ft
01 • Dec • 2021
127.8 ft

21 → 20
Description: Hole
Clock: 10
Remarks: with metal on outside?
+0147.7ft
01 • Dec • 2021
147.7 ft


21 → 20
Description: Tap Break-in Activity
Clock: 3
Value$_1$: 4 in
Remarks: Break in Sewer Conncetion Looks to be not in use should verfi
+0196.9ft
01 • Dec • 2021
196.9 ft

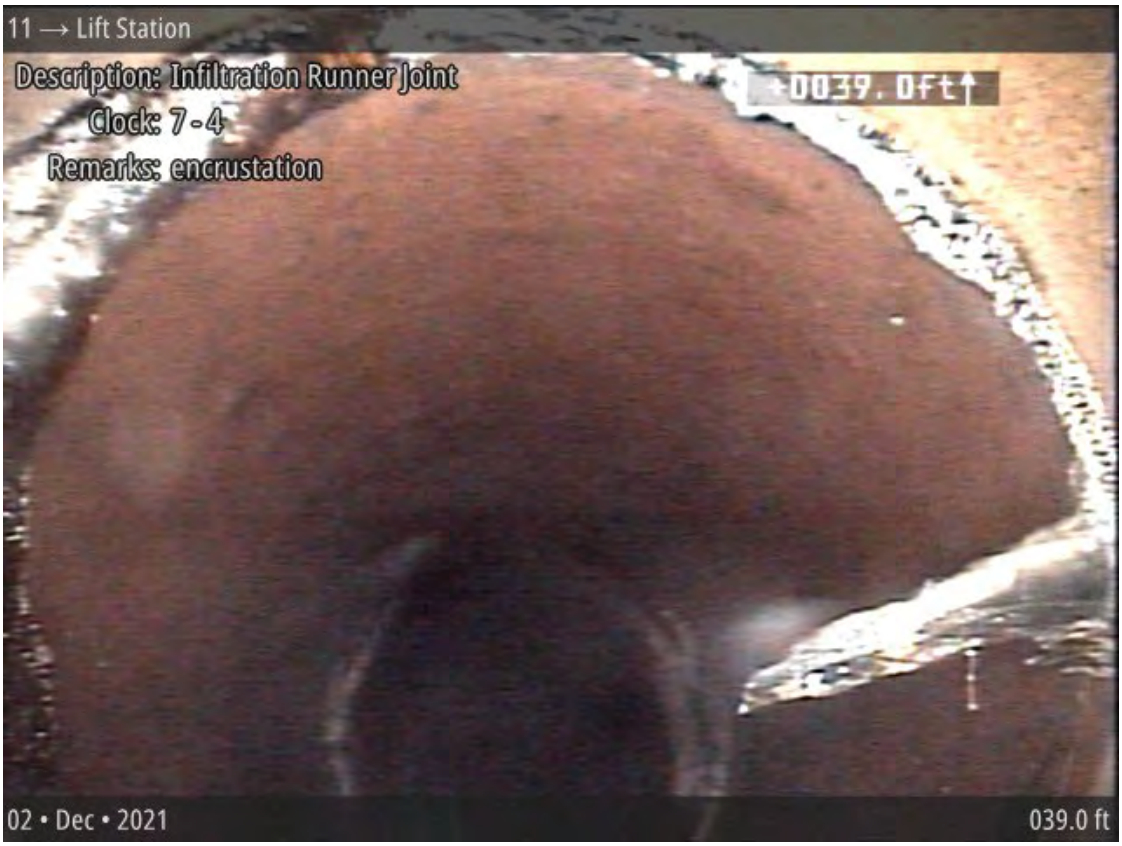
21 → 20
Description: Miscellaneous Water Level Sag
Percent: 15%
+0279.5ft
01 • Dec • 2021
279.5 ft

21 → 20
Description: Broken Soil Visible
Clock: 5 - 7
+0333. 4ft
01 • Dec • 2021
333.4 ft

21 → 20
Description: Crack Multiple
Clock: 10 - 1
+0202. 9ft
01 • Dec • 2021
202.9 ft

22 ← 21
Description: Deformed Rigid
Percent: 20%
Remarks: pipe deformed @ 3 & 9?
+0017.5ft
01 • Dec • 2021
017.5 ft

22 ← 21
Description: Access Point Manhole
Remarks: end mh 22
+0297.9ft
01 • Dec • 2021
297.9 ft


11 → Lift Station
Description: Infiltration Runner Joint
Clock: 7 - 4
Remarks: encrustation
+0039.0ft
02 • Dec • 2021
039.0 ft

12 → 11
Description: Tap Break-in/Hammer Defective
Clock: 10
Value1 : 4 in
+0053.2ft
02 • Dec • 2021
053.2 ft

12 → 11
Description: Access Point Manhole
Remarks: end mh 11
+0174.8ft
02 • Dec • 2021
174.8 ft

14 → 11
Description: Crack Circumferential
Clock: 10 - 12
+0020.0ft
02 • Dec • 2021
020.0 ft

14 → 11
Description: Hole
Clock: 12
+0186.0ft
02 • Dec • 2021
186.0 ft

14 → 11
Description: Deposits Attached Encrustation
Clock: 7 - 10
Percent: 20%
+0413.9ft
02 • Dec • 2021
413.9 ft

15 → 14
Description: Tap Factory
Clock: 11
Value$_1$: 4 in
Remarks: Planned sewer Connection
+0283. 1ft
02 • Dec • 2021
283.1 ft

15 → 14
Description: Crack Multiple
Clock: 10 - 12
+0318. 9ft
02 • Dec • 2021
318.9 ft

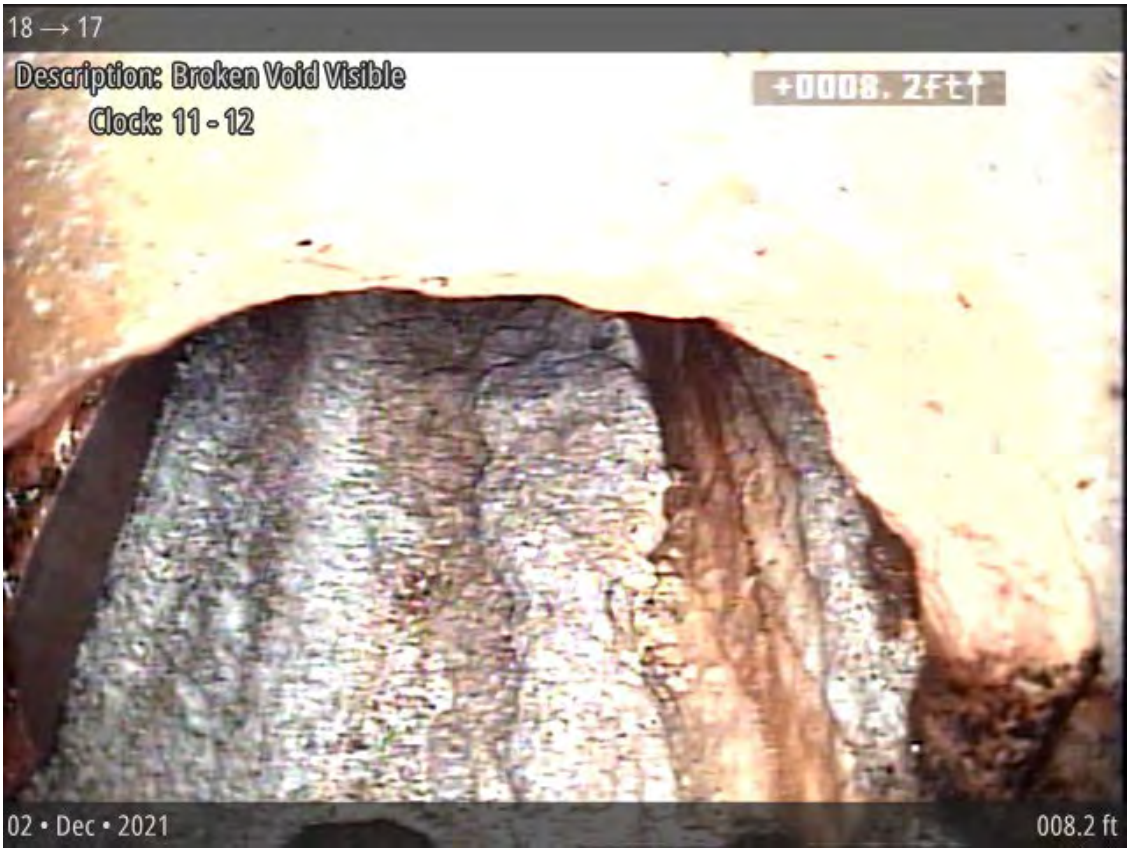
15 → 14
Description: Tap Break-in Intruding
Clock: 11
Value1 : 4 in
Value2 : 4 in
+0323.7ft
02 • Dec • 2021
323.7 ft

15 → 14
Description: Miscellaneous Survey Abandoned
Remarks: the hole that you can see is the Man hole #14 a 4 lip is on the bottom of the pipe very poor condition
+0344.2ft
02 • Dec • 2021
344.2 ft

MH #15-hole/puddle between end of pipe and manhole, visible at bottom of photo

17 ← 16
Description: Miscellaneous Water Level Sag
Percent: 50%
+0128. 6ft
02 • Dec • 2021
128.6 ft

17 ← 16
Description: Miscellaneous Survey Abandoned
Remarks: camera blocked
+0133.5ft
02 • Dec • 2021
133.5 ft


18 → 17
Description: Broken Void Visible
Clock: 11 - 12
+0008.2ft
02 • Dec • 2021
008.2 ft

18 → 17
+0008. 2ft
02 • Dec • 2021
008.2 ft

18 → 17
+0110. 4ft
02 • Dec • 2021
110.3 ft

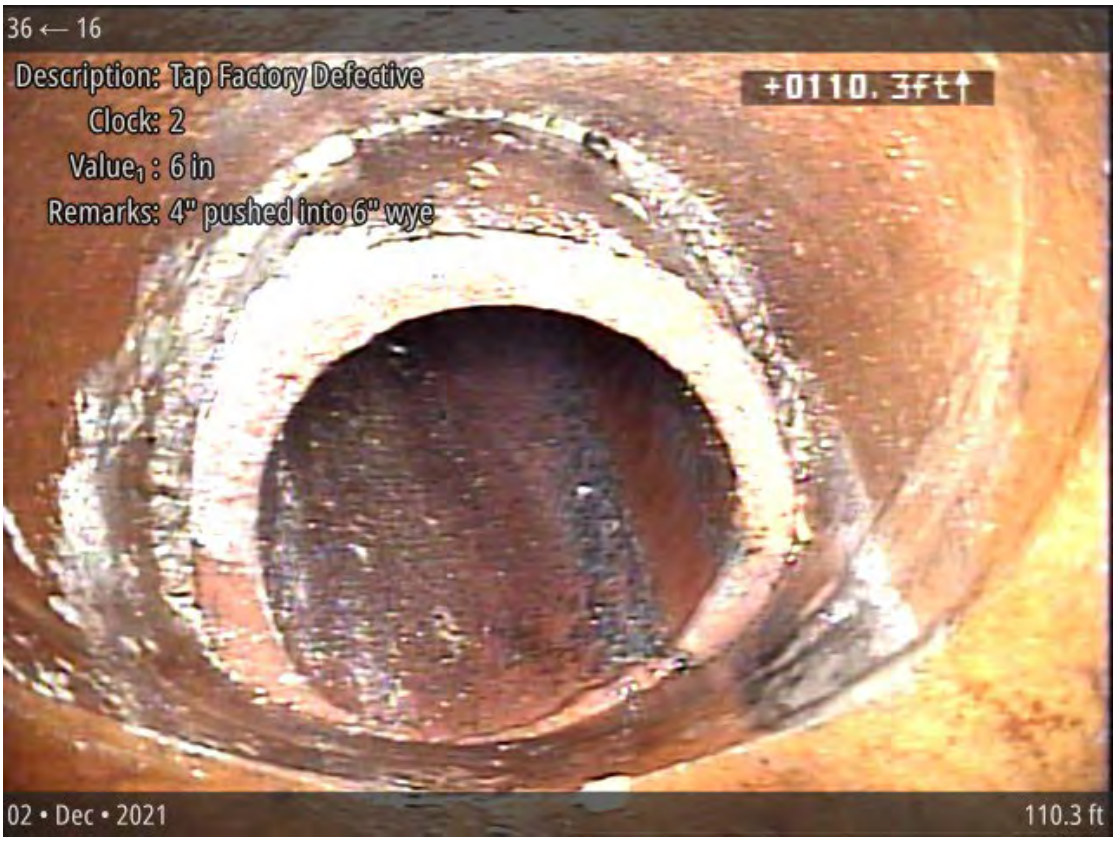
Fallen portion of pipe.

12 ← 11
Description: Access Point Manhole
Remarks: start mh 11
+0009.3ft
02 • Dec • 2021
009.3 ft

12 ← 11
Description: Miscellaneous Survey Abandoned
Remarks: this is the point we got to from the other side.
+0073.9ft
02 • Dec • 2021
073.9 ft

36 ← 16
+0065. 0ft
02 • Dec • 2021
065.0 ft

36 ← 16
Description: Miscellaneous Material Change
Remarks: PVC settled out with defective tap
+0066. 7ft
02 • Dec • 2021
066.7 ft


36 ← 16
Description: Tap Factory Defective
Clock: 2
Value$_1$: 6 in
Remarks: 4" pushed into 6" wye
+0110. 3ft
02 • Dec • 2021
110.3 ft

36 ← 16
Description: Tap Break-in/Hammer Defective
Clock: 1
Value$_1$: 4 in
Remarks: intruding
+0120. 0ft
02 • Dec • 2021
120.0 ft

36 ← 16
Description: Crack Multiple
Clock: 8 - 3
Remarks: right before MH
+0176.1ft
02 • Dec • 2021
176.1 ft

36 ← 16
+0178.6ft
02 • Dec • 2021
178.5 ft

MH# 36

APPENDIX N

Northwestern Energy Power Outage Information

Matthew Mudd

From: Hibl, Charlie <Charlie.Hibl@northwestern.com>
Sent: Thursday, February 3, 2022 3:42 PM
To: Matthew Mudd
Subject: FW: Contact for Saco Power

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Matthew,

The outage information for the Saco lift station is listed below. Please let me know if you have any questions.

Thanks.

Charlie Hibl, PE
Manager District Operations | Havre
NorthWestern Energy
charlie.hibl@northwestern.com
(406) 262-2201 Office | (406) 544-4348 Cell

From: Walsh, Amerlyn <Amerlyn.Walsh@northwestern.com>
Sent: Thursday, February 3, 2022 1:51 PM
To: Hibl, Charlie <Charlie.Hibl@northwestern.com>
Subject: RE: Contact for Saco Power

Hi Charlie,

Thank you for providing an example of the outage information. I tried to replicate the format since you were already familiar with it. It took me some time to locate the source of this data and get it together but I will have an idea of what I'm doing for future requests like this now. Thank you for your patience and for reaching out to me. I'm happy to help where I can.

Below is the outage information as requested. In the far right two columns "Maximum Minutes Out" & "Comments", I listed the cause for the longest outage that occurred in each year as well as the duration of that single, corresponding outage. Please contact me if you have any questions.

Premise 326143 (SACO 1)

Year	Number of Outages	Total Minutes Out	Maximum Minutes Out	Comments (cause of longest outage in each year)
2016	9	1,860	867	42 customers out due to lightning/thunderstorm
2017	4	444	236	vehicle hit transmission pole
2018	3	233	100	cows rubbing on guy wires
2019	1	86	86	tree in transmission lines
2020	3	355	204	tree in line
2021	7	527	131	equipment failure/failed arrestor

Thanks,
Amer

Amerlyn Walsh
Distribution Planning Engineer
amerlyn.walsh@northwestern.com
C: 406-422-3047
400 Oxford Street I Butte, MT 59701

NorthWestern Energy

From: Hibl, Charlie <Charlie.Hibl@northwestern.com>
Sent: Tuesday, February 1, 2022 10:09 AM
To: Walsh, Amerlyn <Amerlyn.Walsh@northwestern.com>
Subject: FW: Contact for Saco Power

Amer,

We are looking to provide information similar to that in the attached report. They need this information for premise 326143. If this is information that the planning department doesn't typically provide for operations, I can take a shot at mining it out of outage viewer myself. I thought you might receive requests similar to this from time to time and be able to pull the data more quickly than I can.

Thanks.

Charlie

From: Matthew Mudd <mmudd@greatwesteng.com>
Sent: Friday, January 28, 2022 9:04 AM
To: Hibl, Charlie <Charlie.Hibl@northwestern.com>
Cc: Kinsee Dodge <kdodge@greatwesteng.com>
Subject: [EXTERNAL] FW: Contact for Saco Power

CAUTION: This Email is from an EXTERNAL source outside of NorthWestern Energy.
The Original Sender of this email is mmudd@greatwesteng.com.
Are you expecting the message? Is this different from the message sender displayed above?
Do not click on links or open attachments unless you are sure you recognize the sender and you know the contents are safe.
If you believe the email to be malicious and/or phishing email, please use the **Report Phish** button.

Good Morning, Charlie:

Similar to requests and coordination we have completed with Adam on a few lift station projects in the Havre area, I would like to inquire about some information related to the existing lift station site in Saco.

We are doing a study on their on their wastewater system right now to secure grants and then also move into the design phase of a project to completely upgrade their lift station site (as a phase). I am including a couple of pictures of the existing lift station site. We are also proposing to add a backup generator to the facility.

A useful piece of information that Adam provided before was some statistics about the duration/frequency of past power outages for the power supply to (other) lift stations. This helps make a case for backup power. See attached. Would you be able to provide similar information? Also, with your knowledge of the existing site, do other upgrades to the power infrastructure need to be done – i.e. new power pole, main, meter, etc? Is natural gas nearby (for generator type considerations) This is more of a final design detail, but good to capture if we know now.

Thanks,

Matthew Mudd, PE
Project Manager

d: (406) 495-6196
c: (406) 490-3909

From: Johnson, Adam <Adam.Johnson@northwestern.com>
Sent: Tuesday, January 25, 2022 11:49 AM
To: Matthew Mudd <mmudd@greatwesteng.com>
Cc: Hibl, Charlie <Charlie.Hibl@northwestern.com>
Subject: RE: Contact for Saco Power

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Charlie Hibl is the engineer for Saco. I have attached him to this email.

Thanks,

Adam

From: Matthew Mudd <mmudd@greatwesteng.com>
Sent: Tuesday, January 25, 2022 10:38 AM
To: Johnson, Adam <Adam.Johnson@northwestern.com>
Subject: [EXTERNAL] Contact for Saco Power

CAUTION: This Email is from an EXTERNAL source outside of NorthWestern Energy.
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If you believe the email to be malicious and/or phishing email, please use the **Report Phish** button.

Hi Adam:

Do you have a contact for who handles power related questions in Saco? Similar to questions/information I had on projects in Havre for Hill County. (i.e. for the grant apps…power outage information, then more detailed information for design if needed by our Electrical Engineer) We will be designing a new lift station.

Thanks,

Matthew Mudd, PE
Project Manager

d: (406) 495-6196
c: (406) 490-3909

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APPENDIX O

MPDES Permit and Fact Sheet

DEQ
Montana Department
of Environmental Quality

January 18, 2018

Clinton Simpson, Mayor
Town of Saco
110 Nelson Street
PO Box 330
Saco, MT 59261

RE: Authorization Number **MTG580012** under the Montana Pollutant Discharge Elimination System Domestic Sewage Treatment Lagoons - Batch Dischargers General Permit - Saco WWTF

Dear Mayor Simpson:

The Town of Saco is authorized to discharge from the Wastewater Treatment Facility (WWTF) under the Montana Pollutant Discharge Elimination System (MPDES) *General Permit for Domestic Sewage Treatment Lagoons-Batch Dischargers* to the specified receiving waterbody at the outfall(s) listed below.

Outfall Number	Latitude	Longitude	State Water Body
001	48.44608	-107.33433	Beaver Creek

This authorization is effective immediately and expires on **December 31, 2022**. Authorization to discharge under this General Permit is valid only when accompanied by this authorization letter (including attachments), and both must be available on-site. Based on the information in the Notice of Intent application form, the Town of Saco WWTF must meet the following General Permit requirements: Tables 3 and 4 effluent limits (**Attachment A**), Tables 5 and 6 monitoring requirements (**Attachment B**), and applicable special conditions in Part III (**Attachment C**). Please especially note that coverage under **this GP does not allow discharge between June 16th through September 30th**.

Please read the General Permit to ensure you understand how to comply with the conditions. You can access the permit here: http://deq.mt.gov/Water/WQINFO/mpdes/domestictreatmentlagoons. Coverage under this General Permit remains in effect until the expiration on December 31, 2022, unless the owner/operator submits a Notice of Termination form or an individual permit is issued.

DEQ is no longer providing or accepting paper Discharge Monitoring Reports (DMRs). Permittees must submit DMRs electronically via NetDMR at https://netdmr.zendesk.com/hc/en-us. Call Gina Self at (406) 444-0574 if you have questions.

Thank you for your efforts in protecting Montana state waters. If you have any questions or concerns, please contact the Water Protection Bureau at (406) 444-3080 as soon as possible.

Sincerely,

Jon Kenning, Bureau Chief
Water Protection Bureau

Cc: Audie Simpson, WW Operator, Town of Saco [same address]

ATTACHMENT A: Effluent Limits for the Town of Saco WWTF
Effective January 1, 2018 (MTG580012)

Upon authorization and lasting through the term of the permit, the quality of effluent discharged through Outfall 001 as a minimum, must meet the limitations as set forth below:

Outfall 001 Effluent Limits for Group C.1 from Tables 3 and 4 [1]				
Parameter	Units	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit
5-Day Biochemical Oxygen Demand (BOD_5)	mg/L	30	45	--
	lb/day	17	25	--
	% Removal	85	--	--
Total Suspended Solids (TSS)	mg/L	100	135	--
	lb/day	56	75	--
pH	s.u.	6.0 – 9.0 at all times		
E. coli bacteria – summer [2]	# organisms/100 mL	126	252	--
E. coli bacteria – winter [2]	# organisms/100 mL	630	1,260	--
Oil & Grease	mg/L	--	--	10 [3]

Footnotes:

(1) See Definitions section at end of permit for explanation of terms.

(2) Summertime *Escherichia coli (E. coli)* bacteria limit from April 1 through October 31 and wintertime limit from November 1 through March 31st. The geometric mean must be reported if more than one sample is collected during the reporting period.

(3) If visual monitoring indicates the presence of oil & grease, a grab sample must be submitted for analysis and discharge must cease if the concentration if found to be > 10 mg/L.

There shall be no discharge which causes a visible oil film (or to be present at concentrations at or in excess of 10 mg/L).

There shall be no discharge between **June 16th and September 30th** (the period when numeric nutrient criteria in Circular DEQ-12A apply to the facility's receiving waterbody in Northwestern Glaciated Plains ecoregion 42j).

ATTACHMENT B: Monitoring Required for the Town of Saco WWTF
Effective January 1, 2018 (MTG580012)

Upon authorization the following constituents shall be monitored, at a minimum, at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge.

Influent monitoring shall be conducted at the lift station.

Effluent monitoring shall be conducted at the outfall structure at 48.44608, -107.33433.

Samples shall be collected, preserved, and analyzed in accordance with approved procedures listed in 40 CFR Part 136, unless another test procedure has been specified in this permit. All analytical procedures must meet any Required Reporting Values (RRVs) listed in Department Circular DEQ-7 as specified below.

Outfall 001 - Monitoring and Reporting Requirements from Table 5 and 6 (1)

Parameter	Monitoring Location	Units	Sample Type	Minimum Sample Frequency (2)	Reporting Metric	Required Reporting Level (3)
Discharge Flow Rate	Effluent	mgd	Instantaneous or Continuous	3/Week	Daily Maximum and Monthly Average	+/- 10% of actual
Number of Days with Discharge	Effluent	# Days	Calculation	1/Day	Monthly Count	1
5-Day Biochemical Oxygen Demand (BOD_5)	Influent	mg/L	Composite	1/Month	NA	NA
	Effluent	mg/L	Grab	1/Month	Weekly Maximum	2
	Effluent	lb/day (4)	Calculated	1/Month	Monthly Average	0.1
	NA	% Removal (4)	Calculated	1/Month	Minimum Monthly	0.1
Total Suspended Solids (TSS)	Effluent	mg/L	Grab	1/Month	Weekly Maximum	10
	Effluent	lb/day (4)	Calculated	1/Month	Monthly Average	0.1
pH	Effluent	s.u.	Instantaneous	3/Week	Daily Minimum and Daily Maximum	0.1
E. coli bacteria (5)	Effluent	number of organisms / 100 mL	Grab	1/Month	Daily Maximum and Geometric Mean	1
Oil and Grease	Effluent	Present/ Not Present	Visual (6)	3/Week	Monthly	NA
	Effluent	mg/L	Grab	(6)	Daily Maximum	1

Footnotes: NA=Not applicable

(1) See definition section at end of permit for explanation of terms.

(2) **Monitoring is required only for any calendar period where there is a discharge.**

(3) RL = minimum reporting level. Analytical results reported as less than detection must achieve the required reporting values (RRV) in Department Circular DEQ-7 unless a different RL is specified.

(4) Methods for calculating mass load (lb/day) and % removal are provided in the General Permit.

(5) *Escherichia coli (E. coli)* bacteria. Reporting in number of organisms per 100 mL (equivalent to either colony forming units (cfu) per 100 mL or most probable number (mpn) per 100 mL). Report the geometric mean if more than one sample is collected during the reporting period.

(6) If visual monitoring indicates the presence of oil & grease, a grab sample must be submitted for analysis and discharge must cease if the concentration is found to be > 10 mg/L.

ATTACHMENT C: Applicable Special Conditions for the Town of Saco WWTF Effective January 1, 2018 (MTG580012)

A. Lagoon Operation & Maintenance (O&M) Requirements

The Town of Saco must:

1. Maintain an up-to-date O&M manual for the domestic sewage treatment lagoon system;
2. Follow the procedures in the O&M manual;
3. Conduct inspections at least monthly to ensure the O&M procedures are being followed and are working; and
4. Maintain records of the routine inspections and any follow-up. Records from the routine inspections must be maintained for at least three (3) years, and available for an inspector upon request. At a minimum, the records shall include:
   - Date and time of inspection;
   - Name of the inspector(s);
   - Weather conditions during inspection;
   - Visual observation of lagoon conditions, including wastewater observations (water level, odor, and visible appearance) and dike condition (signs of leakage, erosion, rodents burrowing, and/or vegetation growth);
   - Discharge flow rate, if occurring;
   - Identification of O&M problems;
   - Recommendations, as appropriate, to rectify identified O&M problems;
   - A brief description of any actions taken with regards to identified problems; and
   - Other information, as appropriate (e.g., effluent sample and measurement location).

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

GENERAL PERMIT

For

DOMESTIC SEWAGE TREATMENT LAGOONS – BATCH DISCHARGERS

Permit No.: MTG580000

AUTHORIZATION TO DISCHARGE UNDER THE
MONTANA POLLUTANT DISCHARGE ELIMINATION SYSTEM (MPDES)

In compliance with Montana Water Quality Act, Title 75, Chapter 5, Montana Code Annotated (MCA), and the federal Water Pollution Control Act (the "Clean Water Act"), 33 U.S.C. 1251 *et. seq*., applicants issued an authorization letter for this General Permit for Domestic Sewage Treatment Lagoons – Batch Dischargers, are authorized to discharge wastewater to state waters in accordance with effluent limits, monitoring requirements and other conditions set forth herein.

A copy of this General Permit and the written authorization letter from DEQ must be kept on site at all times. The General Permit is not valid without a current letter from DEQ.

This permit shall become effective: **January 1, 2018**

This permit and the authorization to discharge shall expire at midnight, **December 31, 2022**

FOR THE MONTANA DEPARTMENT OF
ENVIRONMENTAL QUALITY

Jon Kenning, Chief
Water Protection Bureau
Water Quality Division

Issuance Date: October 4, 2017

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I. COVERAGE UNDER THIS GENERAL PERMIT

A. Coverage Area

This General Permit for batch domestic sewage treatment lagoons applies to all areas of the State of Montana, except for within the boundaries of Indian Lands, National Parks, and excluded waterbodies listed in Part I.C.

B. Sources Eligible for Coverage Under This General Permit

To be eligible for authorization under this 2017-issued GP the domestic sewage treatment lagoon must:

- Be classified as a minor with no pretreatment program and no categorical industrial users (CIU) or significant industrial users (SIU);
- Be designed with an average daily flow less than 1.0 million gallons per day;
- Discharge effluent as batch or with a periodic discharge strategy; and
- Discharge nine months each year or less.

C. Sources Ineligible for Coverage Under This General Permit

1. DEQ may deny a general permit application for discharge for any of the following:
   a. The specific source applying for authorization appears unable to comply with:
      - effluent limitations or other terms and conditions of the permit;
      - water quality standards; or
      - prohibition of any discharges to which the EPA regional administrator has objected in writing.
   b. The discharge is different in degree or nature from discharges reasonably expected from sources or activities within the category described in the General Permit.
   c. An MPDES permit or authorization for the same operation has previously been denied or revoked.
   d. The discharge to be authorized under a general MPDES permit is also included within an application or is subject to review under the Major Facility Siting Act.
   e. The point source will be located in an area of unique ecological or recreational significance. Such determination must be based upon considerations of Montana stream classifications, impacts on fishery resources, local conditions at proposed discharge sites, and designations of wilderness areas under 16 USC 1132 or of wild and scenic rivers under 16 USC 1274.
2. In addition, the following sources are excluded from coverage from this GP:
   a. Discharges to Outstanding Resource Waters or to those waterbodies classified as A-1 or A-Closed waters.
   b. The facility is a "new or increased source" that discharges to "high quality water," as defined in the Nondegradation of Water Quality Subchapter 7.

c. The facility is required to have a pretreatment program (see 40 CFR 403.3), or accepts discharge from users that are CIU or SIU.

d. Any facility covered under an individual MPDES permit with site-specific WQBELs cannot request coverage under this GP.

D. Requirements for Continuing Authorization under this General Permit

All authorizations under the 2013-issued GP expire on December 31, 2017, along with the expiration of the GP. For coverage under the 2017-issued General Permit permittees must submit a complete renewal application package. A complete renewal application package must include:

- A complete Notice of Intent application form (NOI-580) provided by DEQ,
- A copy of the consultation letter from the Montana Sage Grouse Habitat Conservation Program (if applicable), and
- Renewal application fee of $800 per outfall

DEQ must receive the complete application package on or before **December 31, 2017** at the following address:

Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901

A facility's coverage under the 2017-issued GP is effective January 1, 2018, or later, upon receiving an Authorization Letter from DEQ.

E. Requirements for New Authorizations under this General Permit

Existing facilities with coverage under an Individual MPDES permit may obtain first-time coverage under the 2017-issued GP by submitting a complete application package. The application package must include:

- A complete application form Notice of Intent (NOI-580) provided by DEQ,
- A copy of the consultation letter from the Montana Sage Grouse Habitat Conservation Program (if applicable), and
- The appropriate application fee.

A facility's coverage under the 2017-issued GP is effective January 1, 2018, or later, upon receiving an Authorization Letter from DEQ.

F. Termination of General Permit Coverage

Permittees under the 2017-issued GP may terminate coverage. The permittee must submit a Notice of Termination (NOT) form to DEQ indicating the reason why permit coverage is no longer required. The permittee remains responsible for all applicable fees including annual fees until DEQ processes and notifies the permittee that permit coverage is terminated. Failure to submit a termination request shall result in accrual of annual fees.

Replace General Permit coverage with an Individual MPDES permit

Permittees under the 2017-issued GP may apply for coverage under an Individual MPDES permit. A facility remains covered under the General Permit until the effective date of the Individual MPDES Permit. Authorization under the General Permit will terminate on the effective date of the Individual MPDES permit.

G. Transfer of Coverage

To transfer permit coverage under the General Permit to a different entity, the owner or operator must submit a complete Permit Transfer Notification form provided by DEQ and a $500 permit transfer fee. The original owner or operator is responsible for all terms and conditions of the permit until DEQ notifies the new owner.

II. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

A. Effluent Limits

Each facility's effluent limits will include (1) the appropriate Technology-based Effluent Limits (TBELs) and (2) Water Quality-based Effluent Limits (WQBELs). These limits and the outfall location for each facility will be identified in an authorization letter.

1. TBELs:

Each facility will be assigned TBELs based on the appropriate Total Suspended Solids (TSS) Group (A, B, or C) and the appropriate 5-Day Biochemical Oxygen Demand (BOD_5) subgroup (1 or 2).

Group A – Total Suspended Solids (TSS) -National Secondary Standards

Each facility assigned to TSS Group A must meet the appropriate effluent limits listed in **Table 1**, beginning on the effective date of the permit and lasting until the end of the permit term:

Table 1. Technology-based Effluent Limits Group A-Total Suspended Solids – *National Secondary Standards* (1)

Parameter	Units	Average Monthly Limit	Average Weekly Limit
Choices for 5-day Biochemical Oxygen Demand (BOD_5) (2)			
A.1. BOD_5 - National Secondary Standards	mg/L	30	45
	lbs/day	(3)	(3)
	% removal	85 (4)	NA
A.2. BOD_5 - Treatment Equivalent to Secondary	mg/L	45	65
	lbs/day	(3)	(3)
	% removal	65 (4)	NA
Total Suspended Solids			
Total Suspended Solids	mg/L	30	45
	lbs/day	(3)	(3)
	% removal	NA (4)	NA
pH (5)	s.u.	6.0-9.0 (instantaneous)	

Footnotes:
(1) See Definitions section at end of permit for explanation of terms.
(2) $CBOD_5$ limits contained in 40 CFR 133.102(a)(4) may replace BOD_5 limits if requested by the permittee as part of the renewal application process or a modification request and approved by DEQ.
(3) Mass-based limits calculations shown below.
(4) BOD_5 percent removal calculation shown below. TSS mass limits are a substitute for TSS percent removal.
(5) Effluent pH shall remain between 6.0 and 9.0 s.u. For compliance purposes, any single analysis and/or measurement beyond this limitation shall be considered a violation of the conditions of this permit.

Group B – Total Suspended Solids (TSS) - Treatment Equivalent to Secondary

Each facility assigned to TSS Group B must meet the appropriate effluent limits listed in **Table 2**, beginning on the effective date of the permit and lasting until the end of the permit term:

Table 2. Technology-based Effluent Limits Group B-
Total Suspended Solids – *Treatment Equivalent to Secondary* (1)

Parameter	Units	Average Monthly Limit	Average Weekly Limit
Choices for 5-day Biochemical Oxygen Demand (BOD_5) (2)			
B.1. BOD_5 - National Secondary Standards	mg/L	30	45
	lbs/day	(3)	(3)
	% removal	85 (4)	NA
B.2. BOD_5 - Treatment Equivalent to Secondary	mg/L	45	65
	lbs/day	(3)	(3)
	% removal	65 (4)	NA
Total Suspended Solids			
Total Suspended Solids	mg/L	45	60
	lbs/day	(3)	(3)
	% removal	NA (4)	NA
pH (5)	s.u.	6.0-9.0 (instantaneous)	

Footnotes:
(1) See Definitions section at end of permit for explanation of terms.
(2) $CBOD_5$ limits contained in 40 CFR 133.102(a)(4) may replace BOD_5 limits if requested by the permittee as part of the renewal application process or a modification request and approved by DEQ.
(3) Mass-based limits calculations shown below.
(4) BOD_5 percent removal calculation shown below. TSS mass limits are a substitute for TSS percent removal.
(5) Effluent pH shall remain between 6.0 and 9.0 s.u. For compliance purposes, any single analysis and/or measurement beyond this limitation shall be considered a violation of the conditions of this permit.

Group C – Total Suspended Solids (TSS) - Alternate State Requirements

Each facility assigned to TSS Group C must meet the appropriate effluent limits listed in **Table 3**, beginning on the effective date of the permit and lasting until the end of the permit term:

Table 3. Technology-based Effluent Limits Group C - Total Suspended Solids – *Alternate State Requirements* (1)

Parameter	Units	Average Monthly Limit	Average Weekly Limit
Choices for 5-day Biochemical Oxygen Demand (BOD_5) (2)			
C.1. BOD_5 - National Secondary Standards	mg/L	30	45
	lbs/day	(3)	(3)
	% removal	85 (4)	NA
C.2. BOD_5 - Treatment Equivalent to Secondary	mg/L	45	65
	lbs/day	(3)	(3)
	% removal	65 (4)	NA
Total Suspended Solids			
Total Suspended Solids	mg/L	100	135
	lbs/day	(3)	(3)
	% removal	NA (4)	NA
pH (5)	s.u.	6.0-9.0 (instantaneous)	

Footnotes:
(1) See Definitions section at end of permit for explanation of terms.
(2) $CBOD_5$ limits contained in 40 CFR 133.102(a)(4) may replace BOD_5 limits if requested by the permittee as part of the renewal application process or a modification request and approved by DEQ.
(3) Mass-based limits calculations shown below.
(4) BOD_5 percent removal calculation shown below. TSS mass limits are a substitute for TSS percent removal.
(5) Effluent pH shall remain between 6.0 and 9.0 s.u. For compliance purposes, any single analysis and/or measurement beyond this limitation shall be considered a violation of the conditions of this permit.

Mass-based Load Limits Equation

The following equations must be used by the facility for reporting on Discharge Monitoring Reports (DMRs):

Monthly load (lb/day) – *average of all loading values calculated within the month:*

= Monthly average [actual daily discharge (mgd) x actual daily concentration (mg/L) x 8.34]

Weekly load (lb/day) – *highest average weekly loading value calculated in the month:*

= Highest (average weekly [actual daily discharge (mgd) x actual daily concentration (mg/L) x 8.34])

Percent Removal Equation

The following equation is used for a facility to determine their percent removal for a given month (or other time period):

$$\textbf{\% Removal} = \frac{[\textit{Influent Concentration}]-[\textit{Effluent Concentration}]}{[\textit{Influent Concentration}]} \times 100$$

Where:

Influent Concentration = Corresponding monthly average influent concentration based on the analytical results of the reporting period.

Effluent Concentration = Corresponding monthly average effluent concentration based on the analytical results of the reporting period.

2. WQBEL:

Beginning on the effective date of the permit and lasting until the of the permit term, each facility will be subject to WQBELs as shown below in **Table 4** and below:

Table 4. Water Quality-based Effluent Limits for All Batch Dischargers (1)

Parameter	Units	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit
E. coli bacteria – summer (2)	Number of organisms/100 mL	126	252	--
E. coli bacteria – winter (2)	Number of organisms/100 mL	630	1,260	--
Oil & Grease	mg/L	--	--	10 (3)
Other Parameters (WLA and other previous permit limits)	mg/L or µg/L	(4)	--	(4)

Footnotes:
(1) See Definitions section at end of permit for explanation of terms. WQBELs are in addition to TBELs for all batch dischargers.
(2) All facilities are required to comply with the summertime *E.coli* bacteria limit from April 1 through October 31 and the wintertime limit from November 1 through March 31st on an annual basis. The geometric mean must be reported if more than one sample is collected during the reporting period.
(3) If visual monitoring indicates the presence of oil & grease, a grab sample must be submitted for analysis and discharge must cease if the concentration is found to be > 10 mg/L.
(4) Any facility with an existing WLA or effluent limit will be required to continue to meet these limits. The additional requirements will be specified in the authorization letter to the facility.

In addition to **Table 4**, all batch discharging facilities must meet the following restrictions:

1. There shall be no discharge which causes a visible oil film (or to be present at concentrations at or in excess of 10 mg/L), and
2. There shall be **no discharge during the period when numeric nutrient criteria in Circular DEQ-12A apply to the facility's receiving waterbody** -- typically between July 1st – September 30th, with the following exceptions that must be specified in the authorization letter:

a. If DEQ determines the discharge is to an ephemeral waterbody or other waterbody that does not have numeric nutrient criteria, or
b. If another time period is determined to be appropriate for a specific facility's ecoregion or large river.

B. Monitoring Requirements

Each facility is required to monitor their discharge at the last point of control before the discharge enters the initial receiving water. All facilities must ensure flow monitoring is representative of the nature and volume of the discharge. DEQ requires monitoring to occur on a calendar basis (i.e., calendar week, calendar month, calendar quarter). When monitoring is required twice per month, the two samples must be taken at least one week apart during the calendar month. When monitoring is required more than once a week, each sample must be taken on a unique calendar day.

Samples must be representative of the volume and quality of the effluent. Samples shall be collected, preserved and analyzed in accordance with approved procedures listed in 40 CFR 136 unless otherwise specified by DEQ. Analytical results reported as less than detection must achieve the required reporting values (RRV) in Department Circular DEQ-7 unless a different reporting level (RL) is specified in the 2017-issued GP.

Reporting frequency shall be monthly, and each facility must submit the results on their DMR for each month by the 28th of the following month. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR. Review of the universe of facilities potentially covered under the 2017-issued GP indicates that monitoring frequency is more appropriately separated into the following:

1. Dischargers ≤ 0.1 million gallons per day (mgd) average daily design flow – **Table 5 (Influent)** and **Table 6 (Effluent)**
2. Dischargers > 0.1 mgd average daily design flow - **Table 5 (Influent)** and **Table 7 (Effluent)**

Table 5 presents the influent monitoring requirements for all batch dischargers:

Table 5: Influent Monitoring and Reporting Requirements for Batch Dischargers (1)

Parameter	Units	Sample Type	Minimum Sampling Frequency (2)	Reporting Requirements	Reporting Level (3)
5-Day Biochemical Oxygen Demand (BOD_5) (4)	mg/L	Composite	1/Month	None	2

Footnotes:
(1) See Definitions section in the permit. Influent monitoring required for all dischargers.
(2) The influent concentration of BOD_5 is used to calculate the percent removal. Monthly influent samples are required whenever there is a discharge for that month.
(3) Reporting Level (RL) is the minimum reporting level required for the analysis.
(4) BOD_5 unless facility has requested to sample for Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)

1. Effluent Monitoring and Reporting for Dischargers less than or equal to 0.1 mgd

Table 6 presents the effluent monitoring requirements for batch dischargers (less than or equal to 0.1 mgd average daily design flow) under the 2017-issued GP.

Table 6: Effluent Monitoring and Reporting Requirements for ≤0.1 mgd Batch Dischargers (1)

Parameter	Units	Sample Type	Minimum Sampling Frequency (2)	Reporting Requirements	Reporting Level (3)
Discharge Flow Rate	mgd	Instantaneous *or* Continuous	3/Week	Daily Maximum and Monthly Average	± 10% of actual
Number of Days with Discharge	#Days	Calculated	1/Day	Monthly Count	1
5-Day Biochemical Oxygen Demand (4)	mg/L	Grab	1/Month	Weekly Maximum and Monthly Average	2
	lb/day	Calculated	1/Month		0.1
	% Removal	Calculated	1/Month	Minimum Monthly	0.1
Total Suspended Solids	mg/L	Grab	1/Month	Weekly Maximum and Monthly Average	10
	lb/day	Calculated	1/Month		0.1
pH	s.u.	Instantaneous	3/Week	Daily Minimum and Daily Maximum	0.1
Oil & Grease	Yes / No	Visual (5)	3/Week	Monthly	--
	mg/L	Grab	(5)	Daily Maximum	1
E. coli Bacteria (6)	# organisms/ 100 mL	Grab	1/Month	Daily Maximum and Geometric Mean	1
PARAMETERS W/ LIMITS OR MONITORING	µg/L	Grab	TBD (7)	Daily Maximum and Monthly Average	DEQ-7

Footnotes:

(1) See Definitions section in the permit.

(2) **Monitoring is required only for any calendar period where there is a discharge.** Methods for calculating mass load (lb/day) and % removal are provided in this permit. Permittees are allowed to either conduct grab or composite effluent sampling: composite samples are 24-hour composite samples using a minimum of four grab samples. *DEQ will presume the permittees will comply with the monitoring requirement by taking one grab sample unless otherwise indicated in the NOI and specified in the authorization letter.*

(3) RL = minimum reporting level. Analytical results reported as less than detection must achieve the required reporting values (RRV) in Department Circular DEQ-7 unless a different RL is specified.

(4) BOD_5 unless the facility is authorized to demonstrate compliance with carbonaceous biochemical oxygen demand ($CBOD_5$).

(5) If visual monitoring indicates the presence of oil & grease, a grab sample must be submitted for analysis and discharge must cease if the concentration is found to be > 10 mg/L.

(6) *Escherichia coli (E. coli)* bacteria. Reporting in #organisms per 100 mL (equivalent to either colony forming units (cfu) per 100 mL or most probable number (mpn) per 100 mL). Report the geometric mean if more than one sample is collected during the reporting period.

(7) To be determined – the monitoring frequency depends upon the Total Maximum Daily Load (TMDL) Wastelaod Allocation or previous permit requirements.

2. Effluent Monitoring and Reporting for Dischargers greater than 0.1 mgd

Table 7 presents the effluent monitoring requirements for batch dischargers greater than 0.1 mgd average daily design flow under the 2017-issued GP.

Table 7: Effluent Monitoring and Reporting Requirements for > 0.1 mgd Dischargers [1]

Parameter	Units	Sample Type	Minimum Sampling Frequency [2]	Reporting Requirements	Reporting Level [3]
Discharge Flow Rate	mgd	Instantaneous *or* Continuous	5/Week	Daily Maximum and Monthly Average	± 10% of actual
Number of Days with Discharge	#Days	Calculated	1/Day	Monthly Count	1
5-Day Biochemical Oxygen Demand [4]	mg/L	Grab	2/Month	Weekly Maximum and Monthly Average	2
	lb/day	Calculated	1/Month		0.1
	% Removal	Calculated	1/Month	Monthly Minimum	0.1
Total Suspended Solids	mg/L	Grab	2/Month	Weekly Maximum & Monthly Average	10
	lb/day	Calculated	1/Month		0.1
pH	s.u.	Instantaneous	3/Week	Daily Minimum and Daily Maximum	0.1
Oil & Grease	Yes / No	Visual [5]	5/Week	Monthly	--
	mg/L	Grab	[5]	Daily Maximum	1
E. coli Bacteria [6]	# organisms/ 100 mL	Grab	2/Month	Daily Maximum and Geometric Mean	1
PARAMETERS W/ LIMITS or MONITORING	µg/L	Grab	TBD [7]	Daily Maximum and Monthly Average	DEQ-7

Footnotes:

(1) See Definitions section in the permit.

(2) **Monitoring is required only for any calendar period where there is a discharge.** Methods for calculating mass load (lb/day) and % removal are provided in Parts IV.E.1 & 2. Permittees are allowed to either conduct grab or composite effluent sampling: composite samples are 24-hour composite samples using a minimum of four grab samples. *DEQ will presume the permittees will comply with the monitoring requirement by taking one grab sample unless otherwise indicated in the NOI and specified in the authorization letter.*

(3) RL = minimum reporting level. Analytical results reported as less than detection must achieve the required reporting values (RRV) in Department Circular DEQ-7 unless a different RL is specified.

(4) BOD_5 unless the facility is authorized to demonstrate compliance with carbonaceous biochemical oxygen demand ($CBOD_5$).

(5) If visual monitoring indicates the presence of oil & grease, a grab sample must be submitted for analysis and discharge must cease if the concentration is found to be > 10 mg/L.

(6) *Escherichia coli (E. coli)* bacteria. Reporting in #organisms per 100 mL (equivalent to either colony forming units (cfu) per 100 mL or most probable number (mpn) per 100 mL). Report the geometric mean if more than one sample is collected during the reporting period.

(7) To be determined – the monitoring frequency depends upon the Total Maximum Daily Load (TMDL) Wastelaod Allocation or previous permit requirements.

III. SPECIAL CONDITIONS/COMPLIANCE SCHEDULE

A. Lagoon O&M Requirements – All Facilities

All facilities must:

1. Maintain an up-to-date O&M manual for the domestic sewage treatment lagoon system;
2. Follow the procedures in the O&M manual;
3. **Conduct inspections at least monthly** to ensure the O&M procedures are being followed and are working; and
4. Maintain records of the routine inspections and any follow-up. Records from the routine inspections must be maintained for at least three (3) years, and available for an inspector upon request. At a minimum, the records shall include:
   - Date and time of inspection;
   - Name of the inspector(s);
   - Weather conditions during inspection;
   - Visual observation of lagoon conditions, including wastewater observations (water level, odor, and visible appearance) and dike condition (signs of leakage, erosion, rodents burrowing, and/or vegetation growth);
   - Discharge flow rate, if occurring;
   - Identification of O&M problems;
   - Recommendations, as appropriate, to rectify identified O&M problems;
   - A brief description of any actions taken with regards to identified problems; and
   - Other information, as appropriate (e.g., effluent sample and measurement location).

B. Seasonal Land Application of Treated Effluent

Any authorized facilities that employ land application are required to incorporate good operating procedures for the treated effluent land application system into the facility's final O&M manual as a Land Application Nutrient Management Plan (NMP). The NMP shall be designed to minimize the potential for release of pollutants to state waters. The plan shall detail how the facility will control land-applied effluent to optimize nutrient uptake and eliminate the risk of runoff to surface water or ground water infiltration/ percolation. Each facility shall maintain land application records for three (3) years and make them available for inspection by DEQ personnel upon request.

C. Additional Requirement for Facilities with average daily design flow greater than 0.1 mgd average daily design flow) - Inflow/Infiltration

Each facility with an average daily design flow greater than 0.1 mgd must submit an updated status of the facility's Infiltration/Inflow (I/I) during the last year of the permit cycle. This status update must include at a minimum:

- date of the most recent I/I assessment (which may be before this permit cycle),
- work completed since the most recent I/I assessment,
- work planned to reduce I/I over the next five years, if any, and
- best estimate of the current amount and sources of I/I into the collection system.

A summary of the facility's most recent I/I review must be completed by **July 1, 2022** and submitted to DEQ.

D. Special Conditions Summary

Table 8 presents a summary of Special Conditions due dates.

Table 8: Summary of Special Conditions and Due Dates

Action	Action Completion Due Date[1]	Report Due Date[2]
Batch Dischargers - ALL		
Operation & Maintenance Plan and records.	Continual	Maintain for three years.
Land application – Plan and records (*if applicable*)	Continual	Maintain for three years.
Additional Requirements for Dischargers with average daily design flow greater than 0.1 mgd		
Review I/I and provide status update.	July 1, 2022	July 14, 2022

Footnotes:
(1) The actions must be completed on or before the scheduled completion dates.
(2) This notification must be received by DEQ on or before the scheduled due date.

E. Sludge Requirements

The use or disposal of sewage sludge must be in conformance with 40 CFR Part 503.

F. Pretreatment Program

Facilities that operate under the EPA Pretreatment Program or accept discharge from categorical industrial users, significant industrial users, or other users that may cause pass through or interference, cannot be covered under the 2017-issued GP.

1. The Permittee shall not allow any user to introduce into a POTW any pollutants which cause Pass Through or Interference. These general prohibitions and the specific prohibitions in Part III.F.2 of this permit apply to all non-domestic sources introducing pollutants into a POTW whether or not the source is subject to other national pretreatment standards or any national, state or local pretreatment requirements.
2. In addition, the following pollutants may not be introduced into a POTW:
   a. Pollutants which create a fire or explosion hazard in the POTW, including waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Celsius using the test methods specified in 40 CFR 261.21;
   b. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the works is specifically designed to accommodate such discharges;
   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;

d. Any pollutant, including oxygen-demanding pollutants (BOD, etc.), released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW;

e. Heat in amounts which will inhibit biological activity in the POTW resulting in interference, but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 degrees Celsius (104 degrees Fahrenheit) unless DEQ, upon request of the POTW, approves alternative temperature limits;

f. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;

g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and

h. Any trucked or hauled pollutants, except at discharge points designated by the POTW.

3. Publicly-Owned Treatment Works. All POTWs must provide adequate notice to DEQ of the following:

   a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to federal effluent guidelines and standards [40 CFR Subchapter N] if it were directly discharging those pollutants; and

   b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

   c. For the purposes of this paragraph, adequate notice shall include information on:

      (1) the quality and quantity of effluent introduced into the POTW, and

      (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

IV. STANDARD CONDITIONS

The permittee shall meet the following standard conditions of MPDES permits.

A. Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Montana Water Quality Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

The permittee shall comply with effluent standards or prohibitions established under ARM 17.30.1206 for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

The Montana Water Quality Act at MCA 75-5-631 provides that in an action initiated by DEQ to collect civil penalties against a person who is found to have violated a permit condition, the person is subject to a civil penalty not to exceed $25,000. Each day of violation constitutes a separate violation.

MCA 75-5-632 provides that any person who willfully or negligently violates a prohibition or permit condition is subject, upon conviction, to criminal penalties not to exceed $25,000 per day or one year in prison, or both, for the first conviction, and $50,000 per day of violation or by imprisonment for not more than two years, or both, for subsequent convictions.

MCA 75-5-611(9)(a) also provides for administrative penalties not to exceed $10,000 for each day of violation and up to a maximum not to exceed $100,000 for any related series of violations

B. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must first apply for and obtain a new permit.

C. Need to Halt or Reduce Activity Not a Defense

It may not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

G. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

H. Duty to Provide Information

The permittee shall furnish to DEQ, within a reasonable time, any information that DEQ may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to DEQ, upon request, copies of records required to be kept by this permit.

I. Inspection and Entry

The permittee shall allow the head of DEQ, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

- Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Montana Water Quality Act, any substances or parameters at any location.

J. Monitoring and Records—Representative Sampling

Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity.

K. Monitoring and Records—Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application.

L. Monitoring and Records—Records Contents

Records of monitoring information must include:

- the date, exact place, and time of sampling or measurements;
- the individual(s) who performed the sampling or measurements;
- the date(s) analyses were performed;
- the individual(s) who performed the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

M. Monitoring and Records—Test Procedures

Monitoring must be conducted according to test procedures approved under Title 40 of the Code of Federal Regulations (40 CFR) Part 136, unless other test procedures have been specified in this permit.

N. Monitoring and Records—Falsification and Tampering

The Montana Water Quality Act at MCA 75-5-633 provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $25,000, or by imprisonment for not more than six months, or by both.

O. Signatory Requirement

All applications, reports or information submitted to DEQ shall be signed and certified. (See ARM 17.30.1323.) In accordance with ARM 17.30.1323, all permit applications must be signed as follows:

- *For a corporation*: By a responsible corporate officer, which means
  - A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or
  - The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- *For a partnership or sole proprietorship*: By a general partner or the proprietor, respectively.

- *For a municipality, state, federal, or other public agency*: By either a principal executive officer or ranking elected official. A principal executive office of a federal agency includes:
  - The chief executive officer of the agency; or
  - A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

Authorized representatives. All reports required by the permit and other information requested by DEQ shall be signed by a person described above or by a duly authorized representative of that person. A person is considered a duly authorized representative only if:

- The authorization is made in writing by a person described above;
- The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters (a duly authorized representative may thus be either a named individual or an individual occupying a named position); and
- The written authorization is submitted to DEQ.

Changes to authorization. If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements above must be submitted to DEQ prior to or together with any reports, information, or applications to be signed by an authorized representative.

Certification. Any person signing a document under this section shall make the following certification:

> "*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*"

P. Reporting Requirements—Planned Changes

The permittee shall give notice to DEQ as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

- The alteration or addition to the permitted facility may meet one of the criteria for determining whether a facility is a new source under ARM 17.30.1340(2); or
- The alteration or addition could significantly change the nature or increase the quantity of pollutant discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements under ARM 17.30.1343(1)(a).

Q. Reporting Requirements—Anticipated Noncompliance

The permittee shall give advance notice to DEQ of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

R. Reporting Requirements—Transfers

This permit is not transferable to any person except after notice to DEQ. DEQ may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Montana Water Quality Act. (See ARM 17.30.1360; in some cases, modification or revocation and reissuance is mandatory.)

In accordance with ARM 17.30.1360(2), this permit may be automatically transferred to a new permittee if:

- The current permittee notifies DEQ at least 30 days in advance of the proposed transfer date;
- The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them;
- DEQ does not notify the existing permittee and the proposed new permittee of an intent to revoke or modify and reissue the permit. A modification may also be a minor modification under ARM 17.30.1362. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned above.

S. Reporting Requirements—Monitoring Reports

Monitoring results shall be reported at the intervals specified elsewhere in this permit.

- Monitoring results must be reported on a Discharge Monitoring Report (DMR) form.
- If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report.
- Calculations for all limitations that require averaging of measurements must use an arithmetic mean unless otherwise specified by DEQ in the permit.

T. Reporting Requirements—Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

U. Reporting Requirements—Twenty-four Hour Reporting

The permittee shall report any noncompliance that might endanger health or the environment. Any information must be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

- A description of the noncompliance and its cause;
- The period of noncompliance, including exact dates and times;
- The estimated time noncompliance is expected to continue if it has not been corrected; and
- Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following are included as information that must be reported within 24 hours under this provision:

- Any unanticipated bypass that exceeds any effluent limitation in the permit of this permit (see ARM 17.30.1342(7) and "Bypass" below);
- Any upset that exceeds any effluent limitation in the permit (see "Upset" below) and;
- Violation of a maximum daily discharge limitation for any of the pollutants listed by DEQ in this permit (see ARM 17.30.1344 and 40 CFR 122.44(g)).

Oral notification. The report shall be made orally to the Water Protection Bureau at (406) 444-3080 or the Office of Disaster and Emergency Services at (406) 324-4777.

Written notification requirements. DEQ may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Water Protection Bureau, by phone, (406) 444-3080. Written reports shall be submitted to the following address:

Montana Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, Montana 59620-0901

V. Reporting Requirements—Other Noncompliance

Instances of noncompliance not required to be reported within 24 hours shall be reported at the time monitoring reports are submitted. The reports shall contain the information listed above for written submissions under "Reporting Requirements—Twenty-four Hour Reporting."

W. Reporting Requirements—Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to DEQ, it shall promptly submit such facts or information.

X. Bypass

Definitions. ARM 17.30.1304(11) defines *bypass* as the intentional diversion of waste streams from any portion of a treatment facility. ARM 17.30.1304(53) defines *severe property damage* as substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent damage to natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur that does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions under "Notice" and "Prohibition of Bypass" below.

Notice. *Anticipated Bypass*: If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of the bypass. *Unanticipated Bypass*. The permittee shall submit notice of an unanticipated bypass as required under "Reporting Requirements—Twenty-four Hour Reporting" above.

Prohibition of Bypass. Bypass is prohibited and DEQ may take enforcement action against a permittee for a bypass, unless:

- The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and
- The permittee submitted notices as required under "Notice" above.

DEQ may approve an anticipated bypass, after considering its adverse effects, if DEQ determines that it will meet these three conditions.

Y. Upset

Definition. ARM 17.30.1304(63) defines *upset* as an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements outlined below under "Conditions Necessary for Demonstration of an Upset" below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

Conditions Necessary for a Demonstration of Upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- An upset occurred and that the permittee can identify the cause(s) of the upset;
- The permitted facility was at the time being properly operated;
- The permittee submitted notice of the upset as required under "Reporting Requirements—Twenty-four Hour Reporting" above and

- The permittee complied with any remedial measures required under "Duty to Mitigate" above.

Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Z. Fees

The permittee is required to submit payment of an annual fee as set forth in ARM 17.30.201. If the permittee fails to pay the annual fee within 90 days after the due date for the payment, DEQ may:

- Impose additional fee assessment(s) computed at the rates established under 75-5-516(5)(a), MCA and ARM 17.30.201(9), or
- Suspend the processing of the application for a permit or authorization or, if the nonpayment involves an annual permit fee, suspend the permit, certificate or authorization for which the fee is required. DEQ may lift suspension at any time up to one year after the suspension occurs if the holder has paid all outstanding fees, including all penalties, assessments and interest imposed under this section. Suspensions are limited to one year, after which the permit will be terminated.

V. DEFINITIONS and ABBREVIATIONS

1. **"Act"** means the Montana Water Quality Act, Title 75, chapter 5, MCA.
2. **"Acute Toxicity"** occurs when, during an acute toxicity test, 50 percent mortality is observed for any tested species at any effluent concentration (i.e., $LC_{50} \leq 100\%$ effluent).
3. **"Arithmetic Mean" or "Arithmetic Average"** for any set of related values means the summation of the individual values divided by the number of individual values.
4. **"Average Monthly Limitation"** (AML) means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.
5. "**Average Weekly Limitation**" (AWL) means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.
6. **"BOD_5"** means the five-day measure of pollutant parameter biochemical oxygen demand.
7. **"Bypass"** means the intentional diversion of waste streams from any portion of a treatment facility.
8. **"Chronic Toxicity"** occurs when, during a chronic toxicity test, the 25% inhibition concentration (IC_{25}) for any tested species is less than or equal to the percent effluent represented by the effluent concentration in the receiving water after accounting for any allowable mixing zone.
9. **"CFR"** means the Code of Federal Regulations
10. **"cfu/100 mL"** is a measurement of pathogens, and means colony-forming units per 100 milliliters.
11. "**Composite sample**" means a sample composed of four or more discrete aliquots over a 24-hour period. However, a minimum of one grab sample may be taken for effluents from holding ponds or other impoundments with a retention period greater than 24 hours. In addition, DEQ may waive composite sampling for any outfall for which the applicant demonstrates that the use of an automatic sampler is infeasible and that the minimum of four grab samples will be a representative sample of the effluent being discharged.
12. **"Daily Discharge"** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.
13. **"department"** means the Montana Department of Environmental Quality (DEQ, or department). Established by 2-15-3501, MCA.
14. **"Director"** means the Director of the Montana Department of Environmental Quality.

15. **"Discharge"** means the injection, deposit, dumping, spilling, leaking, placing, or failing to remove any pollutant so that it or any constituent thereof may enter into state waters, including ground water.
16. **"EPA"** means the United States Environmental Protection Agency.
17. **"Federal Clean Water Act"** means the federal legislation at 33 USC 1251, *et seq.*
18. "**Geometric mean**" means the value obtained by taking the Nth root of the product of the measured values.
19. **"Grab Sample"** means a sample which is taken from a waste stream on a one-time basis without consideration of flow rate of the effluent or without consideration for time.
20. "**Indirect discharge**" means the introduction of pollutants into a POTW from any non-domestic source regulated under section 307(b), (c) or (d) of the Clean Water Act.
21. "**Industrial User**" means a source of Indirect Discharge.
22. **"Instantaneous Maximum Limit"** means the maximum allowable concentration of a pollutant determined from the analysis of any discrete or composite sample collected, independent of the flow rate and the duration of the sampling event.
23. **"Instantaneous Measurement"**, for monitoring requirements, means a single reading, observation, or measurement.
24. "**Maximum Daily Limit**" (MDL) means the highest allowable discharge of a pollutant during a calendar day. Expressed as units of mass, the daily discharge is cumulative mass discharged over the course of the day. Expressed as a concentration, it is the arithmetic average of all measurements taken that day.
25. **"Minimum Level"** (ML) of quantitation means the lowest level at which the entire analytical system gives a recognizable signal and acceptable calibration point for the analyte, as determined by the procedure set forth at 40 CFR 136. In most cases the ML is equivalent to the Required Reporting Value (RRV) unless otherwise specified in the permit.
26. **"Mixing zone"** means a limited area of a surface water body or aquifer where initial dilution of a discharge takes place and where certain water quality standards may be exceeded.
27. **"Nondegradation"** means the prevention of a significant change in water quality that lowers the quality of high-quality water for one or more parameters. Also, the prohibition of any increase in discharge that exceeds the limits established under or determined from a permit or approval issued by DEQ prior to April 29, 1993.
28. "**Outfall**" means the place where a point source discharges effluent into the receiving water. For each outfall, there typically is at least one monitoring location. Although the monitoring location might or might not be at the actual point of discharge, samples taken at the monitoring location should be representative of the discharge.
29. **"Percent removal**" means a percentage expression of the removal efficiency across a treatment plant for a given pollutant parameter, as determined from the average values of the raw wastewater influent pollutant concentrations to the facility and the average values of the effluent pollutant concentrations for a given time period.
30. "**Publicly-owned treatment works**" (POTW) means any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial

wastes of a liquid nature that is owned by a state or municipality. This definition includes: sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment; and a city, town, county, district, or other political subdivision created by or under state law that has jurisdiction over indirect discharges to and the discharges from a treatment works.

31. "**Required Reporting Values**" (RRVs) means the values listed as reporting values in department Circular DEQ-7. RRVs are the required minimum levels (see definition above) that must be achieved in reporting all monitoring results unless otherwise specified in this permit.
32. **"Regional Administrator"** means the administrator of Region VIII of EPA, which has jurisdiction over federal water pollution control activities in the state of Montana.
33. **"Severe property damage"** means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
34. "**Sewage sludge**" means any solid, semi-solid or liquid residue generated during the treatment of domestic sewage and/or a combination of domestic sewage and industrial waste of a liquid nature in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the incineration of sewage sludge or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.
35. "**Significant biological treatment**" means the use of an aerobic or anaerobic biological treatment process in a treatment works to consistently achieve a monthly average of at least 65 percent removal of BOD_5.
36. **"TMDL"** means the total maximum daily load limitation of a parameter, representing the estimated assimilative capacity for a water body before other designated uses are adversely affected. Mathematically, it is the sum of wasteload allocations for point sources, load allocations for non-point and natural background sources, and a margin of safety.
37. **"TSS"** means the pollutant parameter total suspended solids.
38. **"Upset"** means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
WATER PROTECTION BUREAU
MONTANA POLLUTANT DISCHARGE ELIMINATION SYSTEM

Fact Sheet

General Permit for Domestic Sewage Treatment Lagoons– BATCH DISCHARGERS

FACILITY:	Minor Publicly- and Privately- Owned Treatment Works
PERMIT NUMBER:	MTG580000
LOCATION:	Statewide, except for *Indian Country*
CONTACT:	Applicant
RECEIVING WATER:	Statewide

I. Status of Permit

This permitting action is the renewal of the Montana Pollutant Discharge Elimination System (MPDES) *General Permit for Domestic Sewage Treatment Lagoons*. This GP has been renewed four times since it was first issued in March 1983. The most recent renewal of this GP became effective on January 1, 2013, and will expire on December 31, 2017 ("2013-issued GP").

DEQ proposes the following changes with this renewal:

1. The Domestic Lagoon GP will be divided into two General Permits:
   - *Batch Dischargers*. MTG580000 will encompass any control and release dischargers that discharge for *all or part of nine months per year or less*. This fact sheet outlines the methods, facts, and conclusions to support the 2017-issued GP for batch dischargers.
   - *Continuous Dischargers*. DEQ will develop a separate fact sheet and general permit for Domestic Sewage Treatment Lagoons that discharge continuously.
2. DEQ modified the Technology-based Effluent Limits (TBELs). The 2017-issued GP includes the option for Treatment Equivalent to Secondary (TES) limits for 5-Day Biochemical Oxygen Demand (BOD_5) for qualifying facilities. In addition, mass-based Total Suspended Solids (TSS) limits will be allowed to substitute for TSS percent removal for qualifying batch facilities.
3. DEQ updated the units associated with *Escherichia coli* (*E. coli*) effluent limits from colony-forming units (cfu) to number of organisms per 100 mL based on changes in Montana's Water Quality Standards.

4. Batch dischargers will be prohibited from discharging during the summer period when numeric nutrient criteria apply to their receiving waterbody (typically July 1st to September 30th) (Montana Department Circular DEQ-12A).

II. Description of Discharge and Discharging Facilities

Montana facilities eligible for coverage under the general permit for domestic sewage treatment lagoons have historically been minor facilities with an average daily design flow less than one million gallons per day (mgd). The facilities can be either facultative or aerated lagoon systems. **Attachment A** contains design criteria and receiving water information for the 25 facilities currently authorized under the 2013-issued GP as of April 2017 (all batch and continuous discharging facilities currently permitted under MTG580000, excluding Town of Columbus which has requested individual coverage). In addition, there may be additional lagoon facilities with individual MPDES permits eligible for coverage under the 2017-issued GP.

This permitting action is for the renewal of the Domestic Sewage Treatment Lagoons GP for only **batch dischargers**. A "batch" is a controlled, hold and release periodic discharge strategy that is often seasonal in nature. The 2017-issued GP for batch dischargers will be available for those facilities discharging part or all of nine months per year or less.

A. Description of Facilities

All lagoon systems have different engineering designs based on requirements in existence at the time of construction and/or modification:

- *Pre-1995*: the September 1, 1981, Memorandum *Wastewater Treatment Pond Design Guidelines*, from Donald G. Willems, Administrator, Environmental Sciences Division of the Department of Health and Human Services contained requirements for facilities to meet specific design criteria listed in the 1978 Ten States Standards.
- *After 1995*: design criteria contained in the *Circular WQB-2, Montana Department of Environmental Quality, Design Standards for Wastewater Facilities* which was replaced by *Circular DEQ-2, Montana Department of Environmental Quality, Design Standards for Wastewater Facilities* in 1999 and updated several times. The most recent version was issued in 2016.

Facultative Lagoon Systems

A facultative lagoon treatment system consists of treatment ponds, usually constructed of earthen materials. Facultative lagoons are not mechanically mixed or aerated and are designed to provide long detention times. Montana has required 180 days detention for discharging facultative lagoons as part of the design requirements since the early 1980s. According to the *Principles of Design and Operations of Wastewater Treatment Pond Systems for Plant Operators, Engineers, and Managers*, EPA/600/R-11/088, August 2011, facultative lagoons provide significant pollutant reductions through passive aerobic/anaerobic treatment, as follows:

- Five-day biochemical oxygen demand (BOD_5): effluent concentrations may range from 20 – 60 mg/L although < 30 mg/L 'can usually be achieved.'
- Total suspended solids (TSS): effluent concentration range from less than 30 mg/L to greater than 150 mg/L depending on algal concentrations and design parameters.
- Ammonia removal: up to 90% removal is achievable; however this removal rate is not sustainable during colder months.
- Phosphorus removal: approximately 50% removal can be expected under high pH conditions.

Aerated Lagoon Systems and Partial Mix Systems

Aeration is provided by either mechanical surface aerators or submerged diffused aeration systems. Aerated lagoons typically are classified by the amount of mixing provided. A partial mix system provides only enough aeration to satisfy the oxygen requirements of the system and does not provide energy to keep all TSS in suspension. Complete mix systems use approximately ten times the amount of energy as partial mix systems.

According to the 2011 *Principles of Design and Operations of Wastewater Treatment Pond Systems for Plant Operators, Engineers, and Managers*, aerated lagoons provide significant pollutant reductions, as follows:

- BOD_5: the EPA literature claims that effluent concentration of < 30 mg/L is typical with up to 95% removal expected.
- TSS: effluent concentrations typically range from 20 – 60 mg/L.
- Significant nitrification occurs during the summer if there is adequate Dissolved Oxygen.
- Phosphorus removal: 15 – 25% expected.

Other Lagoon System Operations – Land Application

A Montana Pollutant Discharge Elimination System (MPDES) permit is not required for facilities that land-apply treated effluent *unless* the facility discharges any treated effluent to state surface water. MPDES permitting is not required for land application alone since DEQ does not consider the use of treated effluent by a properly designed and operated land application system (i.e., in accordance with Circular DEQ-2) to be a discharge.

Facilities must reduce the risk of runoff to surface water or infiltration to ground water by managing the quantity and quality of the land-applied effluent. Applying at agronomic rates in this manner will optimize plant nutrient uptake. To ensure optimal land application conditions, facilities that are otherwise required to have a MPDES permit must also comply with the land application requirements under the Special Conditions section in the 2017-issued GP, as discussed in Part VII.B.2 of this Fact Sheet.

B. Effluent limits

The 2013-issued GP included the following numeric limits on effluent quality (**Table 1**):

Table 1: Numeric Effluent Limits Contained in the "2013-Issued GP"

Technology-Based Effluent Limits					
Parameter	Units		Monthly Average	Weekly Average	% Removal (1)
5-day Biochemical Oxygen Demand (2)	mg/L		30	45	85%
	lb/day		*Equation 1*	*Equation 1*	--
Total suspended solids (3)	mg/L	*a. NSS*	30	45	85%
		b. TES	45	65	65%
		c. ASR	100	135	65%
	lb/day		*Equation 1*	*Equation 1*	--
pH	s.u.		6.0 – 9.0		--
Water Quality-Based Effluent Limits					
Parameter	Units		Monthly Average	Weekly Average	Maximum Daily
E. coli bacteria – summer (4,5)	cfu/100 mL		126	252	--
E. coli bacteria – winter (5,6)	cfu/100 mL		630	1,260	--
Total Residual Chlorine	µg/L		11	--	19
Other Parameters (WLA and other previous permit limits)	(7)		(7)	(7)	(7)

Footnotes:
(1) Monitoring for % removal was required beginning January 1, 2017.
(2) Carbonaceous biochemical oxygen demand ($CBOD_5$) in leiu of 5-day Biochemical Oxygen Demand (BOD_5) was permitted upon request of the permittee.
(3) Facilities' TSS limits were classified under one of the following categories:
(a) National Secondary Standards (NSS),
(b) Treatment Equivalent to Secondary (TES), or
(c) Alternate State Requirements (ASR).
(4) After January 1, 2017, all facilities were required to comply with these *E.coli* limits from April 1st through October 31st on an annual basis.
(5) Facilities required to report geometric mean if more than one sample collected during the reporting period.
(6) After January 1, 2017, all facilities were required to comply with these *E.coli* limit from November 1st to March 31st on an annual basis.
(7) Any facility with an existing Wasteload Allocation or effluent limit was required to continue to meet those limits.

C. Summary of Facility Discharges and Compliance

Table 2, below, summarizes the monthly average BOD_5 and TSS effluent concentrations for the 25 currently permitted under the 2013-Domestic Sewage Lagoon General Permit:

Table 2: Summary of Monthly Average Effluent Concentrations January 2013 – December 2016

Facility Type	# Facilities	Units	BOD_5		TSS	
			Range	95th	Range	95th
GP Authorizations	**19**					
Batch Discharge	12	mg/L	7 - 40	40	30 - 95	92
No Discharge	7 (1)	mg/L	**ND**	**ND**	**ND**	**ND**

Footnote: ND = no data.
(1) Two of the 'no discharge' facilities had one or more discharges in 2013 but have since ceased: one had a discharge in January 2013; the other discharged three times in 2013.

The 95th percentile of the monthly average BOD_5 concentration was 40 mg/L for batch dischargers. The calculated 95th percentile for five of the 12 batch discharging facilities could not meet the BOD_5 limit of 30 mg/L for the Period of Record (POR). See Part IV.A.1 of this Fact Sheet for further discussion on BOD_5.

The 95th percentile of the monthly average TSS concentration was 92 mg/L for batch dischargers. See Part IV.A.2 of this Fact Sheet for further discussion on TSS.

The monthly DMRs show an effluent pH range of 5.0 – 10.8 s.u. (the 95th percentile pH range was 5.4 – 9.5 s.u.) Two facilities had a total of three excursions below 6.0 s.u. There were a total of 10 facilities with a total of 34 excursions above 9.0 s.u.

III. Permit Coverage

A. Coverage Area

This GP for batch domestic sewage treatment lagoons applies to all areas of the State of Montana, except for within the boundaries of Indian Lands, National Parks, and excluded waterbodies listed in III.D.

B. Regulatory Authority

Montana prohibits the discharge of sewage, industrial wastes or other wastes into and state waters without a current permit from DEQ. The authority for DEQ to issue MPDES permits is contained in 75-5-101, Montana Code Annotated (MCA) et seq., with implementing regulations in Administrative Rules of Montana (ARM) 17.30 Subchapter 13.

C. Sources Eligible for Coverage

To be eligible for authorization under this 2017-issued GP the domestic sewage treatment lagoon must:

- Be classified as a minor with no pretreatment program and no categorical industrial users (CIU) or significant industrial users (SIU);
- Be designed with an average daily flow less than 1.0 million gallons per day (mgd);
- Discharge effluent as batch or with a periodic discharge strategy; and
- Discharge nine months each year or less.

D. Sources Ineligible for Coverage

1. DEQ may deny a general permit application for discharge for any of the following:
    a. The specific source applying for authorization appears unable to comply with:
        - effluent limitations or other terms and conditions of the permit;
        - water quality standards; or
        - prohibition of any discharges to which the EPA regional administrator has objected in writing.
    b. The discharge is different in degree or nature from discharges reasonably expected from sources or activities within the category described in the General Permit.
    c. An MPDES permit or authorization for the same operation has previously been denied or revoked.
    d. The discharge to be authorized under a general MPDES permit is also included within an application or is subject to review under the Major Facility Siting Act.
    e. The point source will be located in an area of unique ecological or recreational significance. Such determination must be based upon considerations of Montana stream classifications, impacts on fishery resources, local conditions at proposed discharge sites, and designations of wilderness areas under 16 USC 1132 or of wild and scenic rivers under 16 USC 1274.

2. In addition, the following sources are excluded from coverage from this GP:
   a. Discharges to Outstanding Resource Waters or to those waterbodies classified as A-1 or A-Closed waters [ARM 17.30.601 *et seq*].
   b. The facility is a "new or increased source" that discharges to "high quality water," as defined in the Nondegradation of Water Quality Subchapter 7 [ARM 17.30.701 *et seq*].
   c. The facility is required to have a pretreatment program (see 40 CFR 403.3), or accepts discharge from users that are CIU or SIU.
   d. Any facility covered under an individual MPDES permit with site-specific WQBELs cannot request coverage under this GP.

E. Requirements for Continuing Authorization under the GP

All authorizations under the 2013-issued GP expire on December 31, 2017, along with the expiration of the GP. For coverage under the 2017-issued General Permit permittees must submit a complete renewal application package. A complete renewal application package must include:

- A complete Notice of Intent application form (NOI-580) provided by DEQ,
- A copy of the consultation letter from the Montana Sage Grouse Habitat Conservation Program (if applicable), and
- Renewal application fee of $800 per outfall

DEQ must receive the complete application package on or before **December 31, 2017** at the following address:

Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901

A facility's coverage under the 2017-issued GP is effective January 1, 2017, or later, upon receiving an Authorization Letter from DEQ.

F. Requirements for New Authorizations under the General Permit

Existing facilities with coverage under an Individual MPDES permit may obtain first-time coverage under the 2017-issued GP by submitting a complete application package. The application package must include:

- A complete application form Notice of Intent (NOI-580) provided by DEQ,
- A copy of the consultation letter from the Montana Sage Grouse Habitat Conservation Program (if applicable), and
- The appropriate application fee.

A facility's coverage under the 2017-issued GP is effective January 1, 2017, or later, upon receiving an Authorization Letter from DEQ.

G. Termination of General Permit Coverage

Permittees under the 2017-issued GP may terminate coverage. The permittee must submit a Notice of Termination (NOT) form to DEQ indicating the reason why permit coverage is no longer

required. The permittee remains responsible for all applicable fees including annual fees until DEQ processes and notifies the permittee that permit coverage is terminated. Failure to submit a termination request shall result in accrual of annual fees.

Replace General Permit coverage with an Individual MPDES permit

Permittees under the 2017-issued GP may apply for coverage under an Individual MPDES permit. A facility remains covered under the General Permit until the effective date of the Individual MPDES Permit. Authorization under the General Permit will terminate on the effective date of the Individual MPDES permit.

H. Transfer of Coverage

To transfer permit coverage under the General Permit to a different entity, the owner or operator must submit a complete Permit Transfer Notification form provided by DEQ and a $500 permit transfer fee. The original owner or operator is responsible for all terms and conditions of the permit until DEQ notifies the new owner.

IV. Technology-based Effluent Limitations

A. Concentration and Mass-based Limits

Technology-based Effluent Limits (TBELs) for POTWs are set forth in 40 CFR 133 -- minimum treatment requirements for secondary treatment or equivalent. Secondary treatment is defined in terms of effluent quality as typically measured by BOD_5, TSS, percent removal of BOD_5 and TSS, and pH. Domestic sewage treatment lagoons may be regulated by one of three levels of treatment contained in 40 CFR 133, which DEQ identifies as follows:

- National Secondary Standards (NSS) – default minimum level of effluent quality attainable by secondary treatment [40 CFR 133.102];
- Treatment Equivalent-to-Secondary (TES) – minimum level of effluent quality attainable by *facilities eligible for treatment equivalent to secondary treatment* (a waste stabilization pond that achieves a 30-day average of at least 65% removal of BOD_5 and the facility's discharge has been shown to meet the *effluent concentration consistently achievable through proper operation and maintenance (O&M)* [40 CFR 133.105]; or
- Alternative State Requirements (ASR) – further adjusted minimum level of TSS for wastewater treatment *that may be allowed when* the principal process for secondary treatment is a waste stabilization pond system that achieves a 30-day average concentration of 45 mg/L BOD_5 or less [40 CFR 133.103(c)].

"Waste stabilization ponds" as referenced in the Secondary Treatment Regulations are now commonly referred to as "wastewater treatment lagoons" which includes both facultative and aerated lagoons.

When EPA has not promulgated a standard for a specific industry, permit limits may be based on best professional judgment (BPJ). Privately-owned sewage treatment works provide the same function and would not have any unique factors or significant technical differences from POTWs that would affect the information published in 49 Federal Register (FR) 37006, September 20, 1984. DEQ determined that BPJ for privately-owned treatment works is the 40 CFR 133 requirements for POTWs.

1. 5-day Biochemical Oxygen Demand concentration-based limits

All of the general permits renewals issued since the original *General Discharge Permit for Facultative Sewage Lagoons* issued in 1983 have required National Secondary Standards (NSS) for 5-day biochemical oxygen demand (BOD_5). Based on literature review, both facultative and aerated lagoons *should* be able to achieve NSS (monthly average of less than 30 mg/L) for effluent BOD_5 concentrations with good design and proper O&M (see Part II.A). However, review of effluent quality between January 2013 and December 2016 shows that the 95th percentile for five of the 12 batch dischargers could not meet NSS for BOD_5 (see **Table 2**).

There is no basis for excluding wastewater treatment lagoon facilities from the TES option. The data shows that the effluent concentration consistently achievable by over a third of the facilities covered under the GP cannot achieve NSS -- as long as proper O&M has been conducted, these facilities would be more appropriately permitted under TES.

Therefore, in order to provide the appropriate regulatory flexibility, DEQ will allow a facility using wastewater treatment lagoons as the primary treatment to comply with TES rather than NSS, provided it meets all of the following criteria as specified under 40 CFR 133.101(g):

- the facility certifies that they have applied good operation & maintenance (O&M),
- the monthly average 95th percentile for the last two to four years is greater than 30 mg/L BOD_5 (except for values attributable to upsets, bypasses, and operational errors or other unusual conditions) and/or the weekly average for the same period is greater than 45 mg/L, and
- the facility achieves a 30-day average of at least 65% removal of BOD_5. The 2013-issued GP included the requirement for all facilities to demonstrate compliance with the BOD_5 (or, if appropriate, $CBOD_5$) percent removal requirement of 85% no later than January 1, 2017. The removal efficiencies for the 25 authorized facilities were not available at the time of drafting this fact sheet. The equation for percent removal is shown in Part IV.E of this Fact Sheet.

Therefore, each facility covered under this GP will be assigned either NSS or TES for BOD_5, as appropriate. The BOD_5 effluent limits for both categories are listed below.

a. National Secondary Standards

Montana's domestic sewage lagoon general permit has required facilities to meet NSS for BOD_5 since 1983, and it will continue to be the baseline (default) requirement for BOD_5:

- 30 mg/L monthly average,
- 45 mg/L weekly average, and
- 85% removal (see Part IV.E for equation).

b. Treatment Equivalent to Secondary

Treatment Equivalent to Secondary (TES) requirements are contained in 40 CFR 133.105, and allow facilities to meet limits that are slightly relaxed from the NSS. Specifically, facilities subject to TES have the following BOD_5 effluent limits:

- 45 mg/L monthly average;
- 65 mg/L weekly average; and
- 65% removal (see Part IV.E for equation).

c. Carbonaceous Biochemical Oxygen Demand

The total biological oxygen demand of a wastewater is composed of two components – a carbonaceous oxygen demand and a nitrogenous oxygen demand. It has been reported that as much as 60 percent of the BOD_5 violations nationally may have been caused by nitrification in the BOD_5 test rather than by improper design or operation (Hall and Foxen 1983), *Aerated Lagoon Technology*, by Linvil G. Rich, Alumni Professor Emeritus, Dept of Environ. Eng. and Science, Clemson University http://www.lagoonsonline.com/technote1.htm

In lieu of BOD_5 limits, a permittee may request 5-day carbonaceous biochemical oxygen demand ($CBOD_5$) limits, as follows:

- NSS: 25 mg/L monthly average and 40 mg/L weekly average $CBOD_5$ [40 CFR 133.102(a)(4)].
- TES: 40 mg/L monthly average and 60 mg/L weekly average $CBOD_5$ [40 CFR 133.105(e)].

The permittee may make this request as part of the renewal process or a separate modification.

2. Total Suspended Solids concentration-based limits

Until 2013, all of the general permits renewals issued since the original General Discharge Permit for *Facultative Sewage Lagoons* (changed to *Domestic Sewage Treatment Lagoons* in 1999) required facilities to meet the Alternate State Requirements (ASR) effluent limits for Total Suspended Solids (TSS) monthly average of 100 mg/L and weekly average 135 mg/L TSS, without a TSS percent removal requirement. Subsequently, the 2013-issued GP required all applicable facilities, which included both batch and continuous dischargers, to meet NSS effluent limits, unless *they demonstrate their eligibility* to meet TES or ASR, and added monitoring to meet the TSS percent removal requirement beginning January 1, 2017.

Algal blooms and design problems can cause elevated TSS concentrations even with proper O&M. Based on a review of the DMR data for facilities authorized under the 2013-issued GP, none of the batch discharging facilities could meet NSS (all had the 95th percentile greater than 30 mg/L monthly and/or 45 mg/L weekly averages). The TSS effluent data shows that of the 12 discharging batch facilities, three facilities could meet TES and nine facilities could meet ASR.

For the 2017-issued GP, DEQ will continue to require all facilities to meet NSS for TSS *unless they demonstrate their eligibility to meet TES or ASR* as detailed below. However, since this GP is proposed to apply only for batch dischargers, DEQ has determined that is not appropriate to continue the TSS percent removal requirement that became effective January 1, 2017. The TSS percent removal requirements in 40 CFR 133 were developed primarily for continuous dischargers. Percent removal loses its significance and is difficult to determine objectively when applied to batch dischargers. Substituting the TSS mass limit for the TSS percent removal limit for batch dischargers is more appropriate.

In summary, the following effluent limits will apply to facilities authorized under the 2017-issued GP for batch dischargers based on their demonstration in the Notice of Intent:

a. National Secondary Standards

The baseline (default) TSS requirement for batch dischargers is NSS effluent limits of:

- 30 mg/L monthly average
- 45 mg/L weekly average, and
- Monthly average mass limit as a substitute for percent removal (see equation in Part IV.E of this Fact Sheet.)

b. Treatment Equivalent to Secondary

Treatment Equivalent to Secondary requirements are contained in 40 CFR 133.105, and allow facilities to meet limits that are slightly relaxed from the National Secondary

Standards. Specifically, batch facilities subject to TES have the following Total Suspended Solids effluent limits:

- 45 mg/L monthly average;
- 65 mg/L weekly average; and
- Monthly average mass limit as a substitute for percent removal (see equation in Part IV.E of this Fact Sheet.)

DEQ has determined that in order to qualify for TES, a facility under the 2017-issued GP must meet all of the following:

i. The TSS *effluent concentrations consistently achievable through proper operation and maintenance* exceeds the minimum level of effluent quality set forth as NSS [40 CFR 133.101(g)(1)]. This criterion is satisfied if the 95th percentile value for the monthly average TSS concentration in a period of at least two years is greater than 30 mg/L. In addition the applicant must certify that O&M is properly performed on the facility;

ii. The facility uses a waste stabilization pond as the principle treatment process. Waste stabilization ponds include both facultative and aerated lagoons; and

iii. The facility provides significant biological treatment. To assure that significant biological treatment is provided, the facility must achieve greater than 65% BOD_5 removal.

c. Alternate State Requirements

Alternate State Requirements for Total Suspended Solids are contained in 40 CFR 133.103(c). The Montana-specific ASR was published in the Federal Register on September 20, 1984 (49 *FR* 37005). Specifically, facilities covered under the 2017-issued GP for batch dischargers that are subject to ASR have the following TSS effluent limits:

- 100 mg/L monthly average;
- 135 mg/L weekly average; and
- Monthly average mass limit as a substitute for percent removal (see equation in Part IV.E of this Fact Sheet.)

DEQ has determined that in order to qualify for TSS ASR, a facility under the 2017-issued GP must meet all of the following:

i. The TSS *effluent concentrations consistently achievable through proper operation and maintenance* exceeds the minimum level of effluent quality set forth as TES. This criterion is satisfied if the 95th percentile value for the monthly average TSS concentration in a period of at least two years is greater than 45 mg/L. In addition the applicant must certify that O&M is properly performed on the facility;

ii. The facility uses a waste stabilization pond system. Waste stabilization ponds include both facultative and aerated lagoons; and

iii. The facility provides significant biological treatment. To assure that significant biological treatment is provided, the facility must achieve 45 mg/L or less BOD_5 concentration on a monthly average basis.

3. Mass-based Effluent Limits (BOD_5/$CBOD_5$ and TSS)

Facilities are required to meet both concentration-based and mass-based limits [ARM 17.30.1345(8)(a)]. Both monthly and weekly average mass-based (load) limits for BOD_5 (or $CBOD_5$) and TSS will be calculated individually for each facility, based on a facility's average daily design flow and the monthly and weekly average concentration limits. The equation for calculating mass-based load limits is shown in Part IV.E of this Fact Sheet.

The monthly average mass-based limits for BOD_5 and TSS will be compared against the nondegradation allocated loads and the most stringent for each will be included as the monthly average permit limit.

B. pH

The 2013-issued GP required effluent pH to remain within the range of 6.0 – 9.0 s.u. unless a variation occurred which was due to natural biological processes. The domestic lagoon GP has historically allowed this deviation. However, there is no way for facilities regulated under this GP to demonstrate compliance with this exception. DEQ will remove this exclusion and maintain the pH effluent limit to remain within the range of 6.0 – 9.0 s.u. at all times.

C. Nondegradation Allocated Loads

New or increased sources as defined in Montana's Nondegradation Policy are not eligible for coverage under the 2017-issued GP. Therefore, a new or increased source must apply and obtain coverage under an individual MPDES permit.

Sources that are in compliance with the conditions of their permit and do not exceed the limitations established in the permit or determined from a permit previously issued by DEQ are not considered new or increased sources.

DEQ calculates nondegradation load allocations for parameters with permit limitations in place on April 29, 1993. DEQ has addressed this requirement in the 2013-issued GP by maintaining monthly average BOD_5 and TSS load allocations for each facility based on the most stringent average daily design flow and monthly average BOD_5 and TSS concentration limits since 1993. The 2013-issued GP included BOD_5 and TSS nondegradation allocations for each facility using the equation used to calculate mass-loading (see Part IV.E):

Monthly Average Load Allocation (lb/day) = Most Stringent [avg daily design flow (mgd) x monthly avg concentration limit (mg/L) x 8.34]

If a municipality has seen an increase in either their average design flow or monthly average concentration limit for either BOD_5 or TSS since 1993, resulting in increase in their calculated monthly average load, the more stringent average monthly load will be maintained.

D. Proposed Technology Based Effluent Limits

Technology-based Effluent Limits (TBELs) are required to be met after treatment, prior to any dilution with groundwater or surface water. Compliance monitoring must be conducted at the end-of-pipe, prior to release into any channel or receiving water.

DEQ will assign one of the following TBEL subcategories to each facility as part of their renewal authorization letter, based on the information provided as part of the renewal:

Group A – Total Suspended Solids (TSS) -National Secondary Standards (see **Table 3)**

5-Day Biochemical Oxygen Demand (BOD_5)

A.1. National Secondary Standards

A.2. Treatment Equivalent to Secondary

Group B – Total Suspended Solids (TSS) - Treatment Equivalent to Secondary (see **Table 4)**

5-Day Biochemical Oxygen Demand (BOD_5)

B.1. National Secondary Standards

B.2. Treatment Equivalent to Secondary

Group C – Total Suspended Solids (TSS) - Alternate State Requirements (see **Table 5)**

5-Day Biochemical Oxygen Demand (BOD_5)

C.1. National Secondary Standards

C.2. Treatment Equivalent to Secondary

Table 3. Proposed **Technology-based Effluent Limits Group A-**
Total Suspended Solids – *National Secondary Standards* (1)

Parameter	Units	Average Monthly Limit	Average Weekly Limit	Rationale
Choices for 5-day Biochemical Oxygen Demand (BOD_5) (2)				
A.1. BOD_5 - National Secondary Standards	mg/L	30	45	40 CFR 133.102(a)
	lbs/day	(3)	(3)	
	% removal	85 (4)	NA	
A.2. BOD_5 - Treatment Equivalent to Secondary	mg/L	45	65	40 CFR 133.105(a)
	lbs/day	(3)	(3)	
	% removal	65 (4)	NA	
Total Suspended Solids				
Total Suspended Solids	mg/L	30	45	40 CFR 133.102(b)
	lbs/day	(3)	(3)	
	% removal	NA (4)	NA	
pH (5)	s.u.	6.0-9.0 (instantaneous)		40 CFR 133.102(c)

Footnotes:
1. See Definitions section at end of permit for explanation of terms.
2. $CBOD_5$ limits contained in 40 CFR 133.102(a)(4) may replace BOD_5 limits if requested by the permittee as part of the renewal application process or a modification request and approved by DEQ.
3. Mass-based limits calculations shown below in Part IV.E.
4. BOD_5 percent removal calculation shown below in Part IV.E. TSS mass limits are a substitute for TSS percent removal.
5. Effluent pH shall remain between 6.0 and 9.0 s.u. For compliance purposes, any single analysis and/or measurement beyond this limitation shall be considered a violation of the conditions of this permit.

Table 4. Proposed **Technology-based Effluent Limits Group B - Total Suspended Solids *Treatment Equivalent to Secondary*** [1]

Parameter	Units	Average Monthly Limit	Average Weekly Limit	Rationale
Choices for 5-day Biochemical Oxygen Demand (BOD_5) [2]				
B.1. BOD_5 - National Secondary Standards	mg/L	30	45	40 CFR 133.102(a)
	lbs/day	[3]	[3]	
	% removal	85[4]	NA	
B.2. BOD_5 - Treatment Equivalent to Secondary	mg/L	45	65	40 CFR 133.105(a)
	lbs/day	[3]	[3]	
	% removal	65[4]	NA	
Total Suspended Solids (TSS)				
Total Suspended Solids	mg/L	45	65	40 CFR 133.105(b)
	lbs/day	[3]	[3]	
	% removal	NA [4]	NA	
pH [5]	s.u.	6.0-9.0 (instantaneous)		40 CFR 133.102(c)

Footnotes:
1. See Definitions section at end of permit for explanation of terms.
2. $CBOD_5$ limits contained in 40 CFR 133.102(a)(4) may replace BOD_5 limits if requested by the permittee as part of the renewal application process or a modification request and approved by DEQ.
3. Mass-based limits calculations shown below in Part IV.E.
4. BOD_5 percent removal calculation shown below in Part IV.E. TSS mass limits are a substitute for TSS percent removal.
5. Effluent pH shall remain between 6.0 and 9.0 s.u. For compliance purposes, any single analysis and/or measurement beyond this limitation shall be considered a violation of the conditions of this permit.

Table 5. Proposed **Technology-based Effluent Limits Group C - Total Suspended Solids *Alternate State Requirements*** [1]

Parameter	Units	Average Monthly Limit	Average Weekly Limit	Rationale
Choices for 5-day Biochemical Oxygen Demand (BOD_5) [2]				
C.1. BOD_5 - National Secondary Standards	mg/L	30	45	40 CFR 133.102(a)
	lbs/day	[3]	[3]	
	% removal	85 [4]	NA	
C.2. BOD_5 - Treatment Equivalent to Secondary	mg/L	45	65	40 CFR 133.105(a)
	lbs/day	[3]	[3]	
	% removal	65 [4]	NA	
Total Suspended Solids (TSS)				
Total Suspended Solids	mg/L	100	135	40 CFR 133.103(c)
	lbs/day	[3]	[3]	
	% removal	NA [4]	NA	
pH [5]	s.u.	6.0-9.0 (instantaneous)		40 CFR 133.102(c)

Footnotes:
1. See Definitions section at end of permit for explanation of terms.
2. $CBOD_5$ limits contained in 40 CFR 133.102(a)(4) may replace BOD_5 limits if requested by the permittee as part of the renewal application process or a modification request and approved by DEQ.
3. Mass-based limits calculations shown below in Part IV.E.
4. Percent BOD_5 percent removal calculation shown below in Part IV.E. TSS mass limits are a substitute for TSS percent removal.
5. Effluent pH shall remain between 6.0 and 9.0 s.u. For compliance purposes, any single analysis and/or measurement beyond this limitation shall be considered a violation of the conditions of this permit.

E. TBEL Equations

The following two equations – mass-based load and percent removal calculations -- will be included as part of the 2017-issued GP to clarify how authorized facilities must demonstrate compliance.

1. Mass-based Load Limits Equation

The following equations are used by DEQ to develop a facility's mass-based load limits:

Monthly average load limit (lb/day) [1]

= avg daily design flow (mgd) x monthly avg concentration limit (mg/L) x 8.34 conversion

Weekly average load limit (lb/day)

= avg daily design flow (mgd) x weekly avg concentration limit (mg/L) x 8.34 conversion

Footnote: (1) If a facility's nondegradation allocated load is more restrictive (for instance the average design flow for the facility anytime since 1993 was lower than the current design flow), then the nondegradation allocated load for that facility will supersede the mass-based monthly average load limit. Limiting each facility to the nondegradation monthly load allocation will ensure nonsignificance.

The same basic equations are used by the facility to calculate their actual loads for a given period of time, typically for monthly DMRs:

Monthly load (lb/day) – *average of all loading values calculated within the month:*

= Monthly average [actual daily discharge (mgd) x actual daily concentration (mg/L) x 8.34]

Weekly load (lb/day) – *highest average weekly loading value calculated within the month:*

= Highest (average weekly [actual daily discharge (mgd) x actual daily concentration (mg/L) x 8.34])

2. Percent Removal Equation

The following equation is used for a facility to determine their percent removal for a given month (or other time period):

$$\textbf{\% Removal} = \frac{[\textit{Influent Concentration}]-[\textit{Effluent Concentration}]}{[\textit{Influent Concentration}]} \times 100$$

Where:

Influent Concentration = Corresponding monthly average influent concentration based on the analytical results of the reporting period.

Effluent Concentration = Corresponding monthly average effluent concentration based on the analytical results of the reporting period.

V. Water Quality-Based Effluent Limitations

A. Scope and Authority

No permit may be issued when the imposition of conditions cannot ensure compliance with the applicable water quality requirements. In addition, Montana water quality standards require that no wastes may be discharged such that the waste either alone or in combination with other wastes will violate or can reasonably be expected to violate any standard. DEQ develops Water Quality-based Effluent Limits (WQBELs) when a discharge has the reasonable potential to exceed any state water quality standard and TBELs are not adequate to achieve water quality standards.

B. Receiving Waters

The 2017-issued GP covers facility discharges outside the boundaries of Indian Lands to any *state surface waters* except for Outstanding Resource Waters or those classified as A-1 or A-Closed waters (see Fact Sheet Part III.D.2).

'State waters' are defined as any body of water, irrigation system or drainage system either on the surface or underground. State waters do not include ponds or lagoons used solely for treating, transporting, or impounding pollutants; or irrigation waters or land application disposal waters when the waters are used up within the irrigation or land application disposal system and the waters are not returned to state waters. Channels used solely for conveyance of wastewater discharges are considered part of the domestic lagoon system and are not regulated as state surface waters; therefore, compliance monitoring for any water-quality based effluent limits may be conducted at any location after treatment but prior to mixing with state surface water.

C. Applicable Water Quality Standards

Applicable discharges to state surface waters are subject to the specific water quality standards in ARM 17.30.623 - .629, Department Circulars DEQ-7 (Numeric Water Quality Standards) and -12A (Base Numeric Nutrient Standards), and the general provisions of ARM 17.30.635 through 637. All dischargers must ensure that state waters are free from substances which will:

(i) settle to form objectionable sludge deposits or emulsions beneath the surface of the water or upon adjoining shorelines;

(ii) create floating debris, scum, a visible oil film (or be present in concentrations at or in excess of 10 mg/L), or globules of grease or other floating materials;

(iii) produce odors, colors, or other conditions as to which create a nuisance or render undesirable tastes to fish flesh or make fish inedible;

(iv) create concentrations or combinations of materials which are toxic or harmful to human, animal, plant, or aquatic life; and

(v) create conditions which produce undesirable aquatic life.

Total Maximum Daily Load

For this renewal, the 2016 Integrated Report listed 16 authorized facilities' receiving waterbodies as impaired. The 2016 Integrated Report list of impaired waterbodies includes both those waterbodies where beneficial uses are impaired by a pollutant (e.g., sediment, nutrients, metals, temperature) and waterbodies impaired by a non-pollutant (e.g., alteration in stream-side or littoral vegetative covers, low flow alterations). DEQ develops Total Maximum Daily Loads (TMDLs) for waterbodies with pollutant impairments. Wasteload Allocations (WLAs) that are assigned to point sources in the TMDL are incorporated into MPDES permits, consistent with the assumptions and requirements in the TMDL document.

DEQ reviewed those TMDLs and WLAs that impact the 19 currently authorized facilities which are expected to apply for renewal under the 2017-issued GP. There were three batch discharges that had a narrative WLA in one or more TMDLs. The TMDLs conclude that lagoons are small contributors when properly designed and operated. Therefore, proper operation and maintenance achieves the WLAs of the applicable facilities. The 2017-issued GP includes conditions requiring the proper operation and maintenance of the facility.

D. Mixing Zones

A mixing zone is an area where the effluent mixes with the receiving water and certain water quality standards may be exceeded [ARM 17.30 Subchapter 5 *et seq*]. No mixing zone will be granted that will impair beneficial uses. When mixing zones are granted they are on a parameter-by-parameter basis.

No mixing zones were granted for any of the authorized facilities as part of the 2013-issued GP; instead, monitoring was required for parameters of concern. For this renewal cycle, DEQ evaluated the dischargers eligible for coverage under the batch discharger GP. Any mixing zones given to facilities will be discussed in Part V.E.2 of this Fact Sheet.

E. Basis for Water Quality Based Effluent Limits

DEQ develops Water Quality Based Effluent Limits (WQBELs) for any pollutant of concern (POC) for which there is reasonable potential (RP) to cause or contribute to exceedances of instream numeric or narrative water quality standards. Pollutants and parameters are identified as POC for one or more of the following reasons:

- listed Technology-based Effluent Limits;
- identified as needing limits in the previous permit;
- identified as present in the effluent through monitoring or otherwise expected present in the discharge; or
- associated with a pollutant impairment (with or without a wasteload allocation [WLA]) in a Total Maximum Daily Load document.

DEQ evaluated pollutants for the domestic sewage lagoon category in **Table 7**.

Table 7. Identification of Pollutants of Concern	
Parameter	**Basis for Pollutant of Concern Identification**
5-day Biochemical Oxygen Demand (1)	Technology based Effluent Limits, previous permit
Total Suspended Solids	Technology based Effluent Limits, previous permit
pH	Technology based Effluent Limits, previous permit
Oil & Grease	Known present
E.coli	Previous permit, known present
Total Residual Chlorine	Previous permit, known present
Ammonia, as N	Known present
Nitrate+Nitrite, as N	Known present
Total Nitrogen, Total Phosphorus	Known present
Other Parameters (WLA and other previous permit limits)	Previous permit

Footnotes:
(1) Permittees may request 5-day carbonaceous biochemical oxygen demand ($CBOD_5$) in lieu of BOD_5.
(2) Numeric nutrient standards have been implemented for wadeable streams and two (2) downstream segments of the Yellowstone River, as of April 2017.

1. Reasonable Potential (RP)

The following subsections discuss the basis for the RP analyses and WQBELs in this permit.

a. TSS, $CBOD_5$/BOD_5, and pH –

Each facility regulated under this GP will be required to meet TBELs which provide a significant reduction in solids and biological material through the TSS and $CBOD_5$/BOD_5 effluent limits (see Part IV). In addition, the TBEL effluent limitation for pH of 6.0 – 9.0 s.u. is protective of any receiving water quality. No additional WQBELs are required for these parameters.

b. Oil and Grease –

Discharges are prohibited from creating floating debris, scum, a visible oil sheen (or creates oil present in concentrations at or in excess of 10 mg/L), or globules of grease or other floating material in the receiving stream. Sewage treatment lagoons covered under this GP include minor batch dischargers with no significant industrial contribution. However, oil & grease (O&G) is a parameter that could be present at a relatively low level in the wastewater from miscellaneous commercial sources.

Each authorized facility was required to analyze oil and grease concentrations annually during the current period of record. The highest concentration observed for the four years (2013 through 2016) was 12 mg/L oil & grease by one facility; however this facility had non-detects for the following two years. Other facilities ranged from nondetect up to 5.0 mg/L with the overall average oil & grease concentration at 2.3 mg/L.

Based on this data, the batch discharging facilities authorized under the 2013-GP do not have RP to exceed 10 mg/L oil. Each facility authorized under this GP will be required to

visually monitor their discharge a minimum of three times per week during periods of discharge. If there is a visual sign of an oil sheen or presence of oil, the facility must immediately take an oil & grease sample for analysis. The facility must also take all necessary steps to prevent the discharge of oil and grease, including but not limited to ceasing discharge.

c. *Escherichia coli*–

State surface water must be free from substances attributable to discharges that will create conditions harmful to human health. This includes pathogens. Pathogen limits are defined in terms of *Escherichia coli* (*E. coli*).

E.coli standards are a surrogate for all human pathogens including bacteria and viruses. Water quality criteria for *E. coli* are expressed in colony forming units per 100 milliliters of water (cfu/100 mL) or as most probable number (MPN), which is a statistical representation of the number of organisms in a sample, as incorporated by reference in 40 CFR 136.3(b). The standards are expressed as follows:

- April 1 through October 31 of each year - the geometric mean number of *E. coli* must not exceed 126 colony forming units (cfu) per 100 milliliters (mL) and 10% of the total samples may not exceed 252 cfu per 100 mL during any monthly period; and
- November 1 through March 31 of each year - the geometric mean number of *E. coli* must not exceed 630 cfu per 100 mL and 10% of the total samples may not exceed 1,260 cfu per 100 mL during any monthly period.

DEQ required all discharges covered by the 2013-issued GP to meet the *E. coli* effluent limits at the last point of control as of January 1, 2017. DEQ proposes to retain these limits for the 2017-issued GP, but will change the associated units to read "number of organisms/100 mL," which will incorporate both cfu and MPN. DEQ has determined that in order to protect human health, *all* discharges must meet the *E. coli* limit after treatment but prior to discharge into state waters. **Table 8** provides the *E.coli* effluent limits that will be included in each authorization:

Table 8: Proposed *Escherichia Coli* Bacteria Effluent Limits [(1)]

Parameter	Units	Average Monthly Limit	Average Weekly Limit
E. coli Bacteria – summer [(2,3)]	# organisms/100 mL	126	252
E. coli Bacteria – winter [(3,4)]	# organisms /100 mL	630	1,260

Footnote:
(1) See Definitions section at end of permit for explanation of terms.
(2) This limit applies during the period April 1 through October 31, annually.
(3) Report the geometric mean if more than one sample collected during the reporting period.
(4) This limit applies during the period November 1 through March 31, annually.

d. Total Residual Chlorine –

Facilities may disinfect with chlorine. The total residual chlorine (TRC) chronic aquatic life standard is 0.011 mg/L (11 µg/L) and the acute aquatic life standard is 0.019 mg/L (19 µg/L) [Department Circular DEQ-7]. The TRC standards were included as end-of-pipe TRC

effluent limits in the 2013-issued GP. No facility had TRC concentrations above the 2012 Required Reporting Value (RRV) of 0.10 mg/L (100 µg/L).

TRC analysis was based on the size of the facility.

- ***≤0.10 mgd batch dischargers*** –this subcategory includes batch dischargers with an average daily design flow up to 0.10 mgd. Half of the facilities can be considered non-discharging, and the other half discharge less than 3 months annually. Of those that discharge, their discharge is so miniscule that it infiltrates upon release or in some cases enters such a large river that impact would be undetectable. As a result, there is no reasonable potential to cause or contribute to a TRC exceedance.
- ***>0.10 mgd batch dischargers*** – this subcategory includes batch dischargers with an average daily design flow greater than 0.10 mgd. Currently, the majority of the facilities in this category do not have reasonable potential because they either do not discharge, their discharge would immediately infiltrate given the low volume, or their discharge enters such a large river compared to the discharge that the impact would be undetectable.

  A couple facilities discharge to predominantly dry waterbodies that are occasionally wet due to seasonally high ground water. Given the hold and release nature of these dischargers and that no facility has ever exceeded the RRV, each of these facilities can be managed such that the discharges infiltrate or are of such low volume that TRC would rapidly decay to where there is no reasonable potential to cause or contribute to an TRC exceedance.

Effluent limits and monitoring will not be required in the 2017-issued GP.

e. Nutrients –

For the 2017-issued GP for batch dischargers, all facilities authorized under the batch Domestic Sewage Treatment Lagoon GP are prohibited from discharging to state surface water during the time period that the nutrient criteria apply to a given receiving waterbody (**July 1st – September 30th** unless otherwise noted in the facility's authorization letter).

f. Total Ammonia as Nitrogen (Ammonia) –

Ammonia aquatic life acute and chronic toxicity are dependent on ambient pH and water temperature data for the receiving water body as well as the type of fishery present as presented in Circular DEQ-7. The 2013-issued GP did not include ammonia limits, but did require upstream and effluent monitoring.

Ammonia analysis will be based on the size of the facility.

- ***≤0.10 mgd batch dischargers*** –this subcategory includes batch dischargers with an average daily design flow up to 0.10 mgd. Half of the facilities can be considered non-discharging and the other half discharge less than 3 months annually. Of those that discharge, their discharge is so miniscule that it infiltrates upon release or in some cases enters such a large river that impact would be undetectable. As a result, there is no reasonable potential to cause or contribute to an ammonia exceedance.

- ***<u>≥0.10 mgd batch dischargers</u>*** – this subcategory includes batch dischargers with an average daily design flow greater than 0.10 mgd. Currently, the majority of the facilities in this category do not have reasonable potential because they either do not discharge, their discharge would immediately infiltrate given the low volume, or their discharge enters such a large river compared to the discharge that the impact would be undetectable.

  A couple facilities discharge to predominantly dry waterbodies that are occasionally wet due to seasonally high ground water. Given the hold and release nature of these dischargers, each of these facilities can be managed such that the discharges infiltrate or are of such low volume that ammonia would rapidly decay to where there is no reasonable potential to cause or contribute to an ammonia exceedance.

Effluent limits and monitoring will not be required in the 2017-issued GP.

g. Nitrate + Nitrite –

The human health standard (HHS) for nitrate + nitrite is 10 mg/L. The 2013-issued GP required each permittee to monitor their effluent and upstream nitrate + nitrite concentrations during this permit cycle. Nitrate+nitrite analysis will be based on the size of the facility.

- ***<u>≤0.10 mgd batch dischargers</u>*** –this subcategory includes batch dischargers with an average daily design flow up to 0.10 mgd. Half of the facilities can be considered non-discharging and the other half discharge less than 3 months annually. Of those that discharge, their discharge is so miniscule that it infiltrates upon release or in some cases enters such a large river that impact would be undetectable. As a result, there is no reasonable potential to cause or contribute to a nitrate + nitrite exceedance.
- ***<u>≥0.10 mgd batch dischargers</u>*** – this subcategory includes batch dischargers with an average daily design flow greater than 0.10 mgd. Currently, the majority of the facilities in this category do not have reasonable potential because they either do not discharge, their discharge would immediately infiltrate given the low volume, or their discharge enters such a large river compared to the discharge that the impact would be undetectable.

  A couple facilities discharge to predominantly dry waterbodies that are occasionally wet due to seasonally high ground water. These facilities are on average well below the HHS for nitrate + nitrite. Given the low concentration in the discharges and the hold and release nature of these dischargers, each of these facilities can be managed such that there is no reasonable potential to cause or contribute to a nitrate + nitrite exceedance.

Effluent limits and monitoring will not be required in the 2017-issued GP.

h. Whole Effluent Toxicity (WET) –

Facilities that maintain authorization to discharge under the 2017-issued GP do not require WET limits or testing based on the following rationale:

- No industrial users and indirect dischargers contributing to the influent;
- The requirement that facilities have flows of less than 1 mgd; and
- Other applicable effluent limits contained in this permit.

VI. Effluent Limits

Effluent limitations or conditions in reissued permits are required to be at least as stringent as those in the existing permit, with certain exceptions. DEQ considered the proposed permit limits to ensure that they were as stringent as previous limits, or met the anti-backsliding requirements.

Beginning on the effective date and lasting through the term of the 2017-issued GP, the discharge from each facility shall, at a minimum, meet the effluent limits presented below. The limits for each are comprised of the appropriate TBELs and WQBELs. These limits and the outfall location for each facility will be identified in a authorization letter.

A. TBELs:

Each facility will be assigned BOD_5, TSS, and pH limits in their authorization letter, based on the appropriate TBEL category (i.e. Group A.1, A.2, B.1, etc.).

Group A – Total Suspended Solids (TSS) -National Secondary Standards (see **Table 3)**

5-Day Biochemical Oxygen Demand (BOD_5)

A.1. National Secondary Standards

A.2. Treatment Equivalent to Secondary

Group B – Total Suspended Solids (TSS) - Treatment Equivalent to Secondary (see **Table 4)**

5-Day Biochemical Oxygen Demand (BOD_5)

B.1. National Secondary Standards

B.2. Treatment Equivalent to Secondary

Group C – Total Suspended Solids (TSS) - Alternate State Requirements (see **Table 5)**

5-Day Biochemical Oxygen Demand (BOD_5)

C.1. National Secondary Standards

C.2. Treatment Equivalent to Secondary

B. WQBELs:

In addition to the TBELs, each facility is also subject to WQBELs. Beginning on the effective date of the permit and ending with the expiration of this permit, each facility will be subject to WQBELs as shown below in **Table 9 and below**. These limits apply to *all* batch dischargers (both ≤0.10 mgd and >0.10 mgd).

Table 9. Water Quality-based Effluent Limits for All Batch Dischargers (1)

Parameter	Units	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit
E. coli bacteria – summer (2)	# organisms/100 mL	126	252	--
E. coli bacteria – winter (2)	# organisms/100 mL	630	1,260	--
Oil & Grease	mg/L	--	--	10 (3)
Other Parameters (WLA and other previous permit limits)	mg/L or µg/L	(4)	--	(4)

Footnotes:
(1) See Definitions section at end of permit for explanation of terms. WQBELs are in addition to TBELs for all batch dischargers.
(2) All facilities are required to comply with the summertime *E.coli* bacteria limit from April 1 through October 31 and the wintertime limit from November 1 through March 31st on an annual basis. The geometric mean must be reported if more than one sample is collected during the reporting period.
(3) If visual monitoring indicates the presence of oil & grease, a grab sample must be submitted for analysis and discharge must cease if the concentration if found to be > 10 mg/L.
(4) Any facility with an existing WLA or effluent limit will be required to continue to meet these limits. The additional requirements will be specified in the authorization letter to the facility.

In addition to **Table 9**, all batch discharging facilities must meet the following restrictions:

1. There shall be no discharge which causes a visible oil film (or to be present at concentrations at or in excess of 10 mg/L), and
2. There shall be **no discharge during the period when numeric nutrient criteria in Circular DEQ-12A apply to the facility's receiving waterbody** -- typically between July 1st – September 30th, with the following exceptions that must be specified in the authorization letter:
   a. If DEQ determines the discharge is to an ephemeral waterbody or other waterbody that does not have numeric nutrient criteria, or
   b. If another time period is determined to be appropriate for a specific facility's ecoregion.

VII. Monitoring and Reporting Requirements and Special Conditions

A. Effluent Monitoring

Each facility is required to monitor their discharge at the last point of control before the discharge enters the initial receiving water. All facilities must ensure flow monitoring is representative of the nature and volume of the discharge. DEQ requires monitoring to occur on a calendar basis (i.e., calendar week, calendar month, calendar quarter). When monitoring is required twice per month, the two samples must be taken at least one week apart during the calendar month. When monitoring is required more than once a week, each sample must be taken on a unique calendar day.

Samples must be representative of the volume and quality of the effluent. Samples shall be collected, preserved and analyzed in accordance with approved procedures listed in 40 CFR 136 unless otherwise specified by DEQ. Analytical results reported as less than detection must achieve the required reporting values (RRV) in Department Circular DEQ-7 unless a different reporting level (RL) is specified in the 2017-issued GP.

Reporting frequency shall be monthly, and each facility must submit the results on their DMR for each month by the 28th of the following month. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

Review of the universe of facilities potentially covered under the 2017-issued GP indicates that monitoring frequency is more appropriately separated into the following:

1. Dischargers ≤ 0.1 mgd average daily design flow – **Table 10 (Influent)** and **Table 11 (Effluent)**
2. Dischargers > 0.1 mgd average daily design flow - **Table 10 (Influent)** and **Table 12 (Effluent)**

Table 10 presents the influent monitoring requirements for all batch dischargers:

Table 10: Influent Monitoring and Reporting Requirements for Batch Dischargers (1)

Parameter	Units	Sample Type	Minimum Sampling Frequency (2)	Reporting Requirements	Reporting Level (3)
5-Day Biochemical Oxygen Demand (BOD_5) (4)	mg/L	Composite	1/Month	None	2

Footnotes:
(1) See Definitions section in the permit. Influent monitoring required for both all dischargers.
(2) The influent concentration of BOD_5 is used to calculate the percent removal. Monthly influent samples are required whenever there is a discharge for that month.
(3) Reporting Level (RL) is the minimum reporting level required for the analysis.
(4) BOD_5 unless facility has requested to sample for Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)

2. Effluent Monitoring and Reporting for Dischargers less than or equal to 0.1 mgd

Table 11 presents the proposed monitoring requirements for batch dischargers (less than or equal to 0.1 mgd average daily design flow) under the 2017-issued GP.

Table 11: Effluent Monitoring and Reporting Requirements for ≤0.1 mgd Batch Dischargers [1]

Parameter	Units	Sample Type	Minimum Sampling Frequency [2]	Reporting Requirements	Reporting Level [3]
Discharge Flow Rate	mgd	Instantaneous *or* Continuous	3/Week	Daily Maximum and Monthly Average	± 10% of actual
Number of Days with Discharge	#Days	Calculated	1/Day	Monthly Count	1
5-Day Biochemical Oxygen Demand [4]	mg/L	Grab	1/Month	Weekly Maximum and Monthly Average	2
	lb/day	Calculated	1/Month		0.1
	% Removal	Calculated	1/Month	Minimum Monthly	0.1
Total Suspended Solids	mg/L	Grab	1/Month	Weekly Maximum and Monthly Average	10
	lb/day	Calculated	1/Month		0.1
pH	s.u.	Instantaneous	3/Week	Daily Minimum and Daily Maximum	0.1
Oil & Grease	Yes / No	Visual [5]	3/Week	Monthly	--
	mg/L	Grab	[5]	Daily Maximum	1
E. coli Bacteria [6]	# organisms/ 100 mL	Grab	1/Month	Daily Maximum and Geometric Mean	1
PARAMETERS W/ LIMITS OR MONITORING	µg/L	Grab	TBD [7]	Daily Maximum and Monthly Average	DEQ-7

Footnotes:

(1) See Definitions section in the permit.

(2) **Monitoring is required only for any calendar period where there is a discharge.** Methods for calculating mass load (lb/day) and % removal are provided in Parts IV.E.1 & 2. Permittees are allowed to either conduct grab or composite effluent sampling: composite samples are 24-hour composite samples using a minimum of four grab samples. *DEQ will presume the permittees will comply with the monitoring requirement by taking one grab sample unless otherwise indicated in the NOI and specified in the authorization letter.*

(3) RL = minimum reporting level. Analytical results reported as less than detection must achieve the required reporting values (RRV) in Department Circular DEQ-7 unless a different RL is specified.

(4) BOD_5 unless the facility is authorized to demonstrate compliance with carbonaceous biochemical oxygen demand ($CBOD_5$).

(5) If visual monitoring indicates the presence of oil & grease, a grab sample must be submitted for analysis and discharge must cease if the concentration if found to be > 10 mg/L.

(6) *Escherichia coli (E. coli)* bacteria. Reporting in #organisms per 100 mL (equivalent to either colony forming units (cfu) per 100 mL or most probable number (mpn) per 100 mL). Report the geometric mean if more than one sample is collected during the reporting period.

(7) To be determined – the monitoring frequency depends upon the TMDL WLA or previous permit requirements.

3. Effluent Monitoring and Reporting for Dischargers greater than 0.1 mgd

Table 12 presents the proposed monitoring requirements for batch dischargers greater than 0.1 mgd average daily design flow under the 2017-issued GP.

Table 12: Effluent Monitoring and Reporting Requirements for >0.1 mgd Dischargers (1)

Parameter	Units	Sample Type	Minimum Sampling Frequency (2)	Reporting Requirements	Reporting Level (3)
Discharge Flow Rate	mgd	Instantaneous *or* Continuous	5/Week	Daily Maximum and Monthly Average	± 10% of actual
Number of Days with Discharge	#Days	Calculated	1/Day	Monthly Count	1
5-Day Biochemical Oxygen Demand (4)	mg/L	Grab	2/Month	Weekly Maximum and Monthly Average	2
	lb/day	Calculated	1/Month		0.1
	% Removal	Calculated	1/Month	Monthly Minimum	0.1
Total Suspended Solids	mg/L	Grab	2/Month	Weekly Maximum & Monthly Average	10
	lb/day	Calculated	1/Month		0.1
pH	s.u.	Instantaneous	5/Week	Daily Minimum and Daily Maximum	0.1
Oil & Grease	Yes / No	Visual (5)	5/Week	Monthly	--
	mg/L	Grab	(5)	Daily Maximum	1
E. coli Bacteria (6)	# organisms/ 100 mL	Grab	2/Month	Daily Maximum and Geometric Mean	1
PARAMETERS W/ LIMITS or MONITORING	µg/L	Grab	TBD (7)	Daily Maximum and Monthly Average	DEQ-7

Footnotes:

(1) See Definitions section in the permit.

(2) **Monitoring is required only for any calendar period where there is a discharge.** Methods for calculating mass load (lb/day) and % removal are provided in Parts IV.E.1 & 2. Permittees are allowed to either conduct grab or composite effluent sampling: composite samples are 24-hour composite samples using a minimum of four grab samples. *DEQ will presume the permittees will comply with the monitoring requirement by taking one grab sample unless otherwise indicated in the NOI and specified in the authorization letter.*

(3) RL = minimum reporting level. Analytical results reported as less than detection must achieve the required reporting values (RRV) in Department Circular DEQ-7 unless a different RL is specified.

(4) BOD_5 unless the facility is authorized to demonstrate compliance with carbonaceous biochemical oxygen demand ($CBOD_5$).

(5) If visual monitoring indicates the presence of oil & grease, a grab sample must be submitted for analysis and discharge must cease if the concentration if found to be > 10 mg/L.

(6) *Escherichia coli (E. coli)* bacteria. Reporting in #organisms per 100 mL (equivalent to either colony forming units (cfu) per 100 mL or most probable number (mpn) per 100 mL). Report the geometric mean if more than one sample is collected during the reporting period.

(7) To be determined – the monitoring frequency depends upon the TMDL WLA or previous permit requirements.

B. Special Conditions/Compliance Schedule

1. Lagoon O&M Requirements – All Facilities

ARM 17.30.1342(5) states that a permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit. One of the Special Conditions under the 2013-issued GP, as well as the proposed 2017-issued GP for batch dischargers, is the requirement for every facility to maintain and operate in accordance with an up-to-date Operations & Management (O & M) Plan. Therefore, DEQ proposes to continue to include the requirement for each permitted facility to:

a. Maintain an up-to-date O&M manual for the domestic sewage treatment lagoon system;
b. Follow the procedures in the O&M manual;
c. **Conduct inspections at least monthly** to ensure the O&M procedures are being followed and are working; and
d. Maintain records of the routine inspections and any follow-up. Records from the routine inspections must be maintained for at least three (3) years, and available for an inspector upon request. At a minimum, the records shall include:
    - Date and time of inspection;
    - Name of the inspector(s);
    - Weather conditions during inspection;
    - Visual observation of lagoon conditions, including wastewater observations (water level, odor, and visible appearance) and dike condition (signs of leakage, erosion, rodents burrowing, and/or vegetation growth);
    - Discharge flow rate, if occurring;
    - Identification of O&M problems;
    - Recommendations, as appropriate, to rectify identified O&M problems;
    - A brief description of any actions taken with regards to identified problems; and
    - Other information, as appropriate (e.g., effluent sample and measurement location).

2. Seasonal Land Application of Treated Effluent

Any authorized facilities that employ land application are required to incorporate good operating procedures for the treated effluent land application system into the facility's final O&M manual as a Land Application Nutrient Management Plan (NMP). The NMP shall be designed to minimize the potential for release of pollutants to state waters. The plan shall detail how the facility will control land-applied effluent to optimize nutrient uptake and eliminate the risk of runoff to surface water or ground water infiltration/ percolation. Each facility shall maintain land application records for three (3) years and make them available for inspection by DEQ personnel upon request.

3. Additional Requirement for Facilities with average daily design flow greater than 0.1 mgd average daily design flow) - Inflow/Infiltration

The 2017-issued GP will require an update on the status of Infiltration/Inflow (I/I) for batch facilities with an average daily design flow greater than 0.1 mgd. The status update must be submitted during the last year of the permit cycle and include at a minimum:

- date of the most recent I/I assessment (which may be before this permit cycle),
- work completed since the most recent I/I assessment,
- work planned to reduce I/I over the next five years, and
- best estimate of the current amount and sources of I/I into the collection system.

A summary of the facility's most recent I/I review must be completed by **July 1, 2022** and submitted to DEQ.

4. Special Conditions Summary

Table 13 presents a summary of Special Conditions due dates.

Table 13: Summary of Special Conditions and Due Dates

Action	Action Completion Due Date[1]	Report Due Date[2]
Batch Dischargers - ALL		
Operation & Maintenance Plan and records.	Continual	Maintain for three years.
Land application – Plan and records (*if applicable*)	Continual	Maintain for three years.
Additional Requirements for Dischargers with average daily design flow greater than 0.1 mgd		
Review I/I and provide status update.	July 1, 2022	July 14, 2022

Footnotes:
(1) The actions must be completed on or before the scheduled completion dates.
(2) This notification must be received by DEQ on or before the scheduled due date.

C. Sludge Requirements

The use or disposal of sewage sludge must be in conformance with 40 CFR Part 503.

D. Pretreatment Program

Facilities that operate under the EPA Pretreatment Program or accept discharge from categorical industrial users, significant industrial users, or other users that may cause pass through or interference, cannot be covered under the 2017-issued GP. The GP will include standard language restricting the introduction of certain pollutants into the authorized facilities and requiring a facility to provide adequate notice to DEQ if a new source, volume, or character of industrial pollutant is introduced into the system.

VIII. Information Sources

1. Montana Code Annotated Title 75 - Chapter 5 - Water Quality
2. Administrative Rules of Montana Title 17 Chapter 30 - Water Quality
   a. Subchapter 2 - Water Quality Permit and Application Fees
   b. Subchapter 5 - Mixing Zones in Surface and Ground Water
   c. Subchapter 6 - Montana Surface Water Quality Standards and Procedures
   d. Subchapter 7- Nondegradation of Water Quality
   e. Subchapter 11 - Storm Water Discharges
   f. Subchapter 12 - MPDES Standards
   g. Subchapter 13 - MPDES Permits
3. Montana Department of Environmental Quality Circular DEQ-2, Design Standards for Wastewater Facilities, September 2016.
4. Montana Department of Environmental Quality Circular DEQ-7, Montana Numeric Water Quality Standards, May 2017.
5. Montana Department of Environmental Quality Circular DEQ-12A, Montana Base Numeric Nutrient Standards, July 2014
6. Montana Pollutant Discharge Elimination System (MPDES) Permit Number MTG580000: Administrative Record.
7. Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. §§ 1251-1387, October 18, 1972, as amended 1973-1983, 1987, 1988, 1990-1992, 1994, 1995 and 1996.
8. Federal Water Pollution Control Act (Clean Water Act), § 303(d), 33 USC 1313(d) Montana List of Waterbodies in Need of Total Maximum Daily Load Development, 2016.
9. Federal Register, 49 FR 37005Alternative State Requirements for Montana, September 20, 1984.
10. US Code of Federal Regulations, 40 CFR Parts 122-125, 130-133, & 136.
11. US Code of Federal Regulations, 40 CFR Part 403 – General Pretreatment Regulations for Existing and New Sources of Pollution.
12. US Code of Federal Regulations, 40 CFR Part 503 – Standards for the Use or Disposal of Sewage Sludge.
13. US Department of the Interior US Geological Survey, Statistical Summaries of Streamflow in Montana and Adjacent Areas, Water Years 1900 through 2002, Scientific Investigations Report 2004-5266, 2004 and final electronic update through 2009, dated 2016.
14. US EPA. Office of Water. Design Manual for Municipal Wastewater Stabilization Ponds, EPA 625-1-83-015. October 1983.
15. US EPA. Principles of Design and Operations of Wastewater Treatment Pond Systems for Plant Operators, Engineers, and Managers, EPA/600/R-11/088, August 2011.
16. US EPA Technical Support Document for Water Quality-Based Toxics Control, EPA/505/2-30-001, March 1991.
17. US EPA NPDES Permit Writers' Manual, EPA 833-K-10-001, September 2010.

Fact Sheet Developed: July 2017

APPENDIX P

H&S Lagoon Performance Evaluation

H&S Environmental, LLC.

- Performance Evaluations
- Troubleshooting & Optimization
- Hydraulics Optimization
- Training

2122 East Leland Circle Mesa, AZ 85213 1 (480) 314-8410

Date: September 28, 2021

Pete Boettcher
Technical Assistance Specialist
Compliance, Training, and Technical Assistance Section
Water Quality Division
Montana Department of Environmental Quality
(406) 247-4453, pboettcher@mt.gov

Re: Performance Evaluation of the Saco Montana Wastewater Lagoon System

Pete,

Enclosed is the September 28, 2021 report for H&S Environmental's (H&S) performance evaluation of the Saco Montana (Saco) Wastewater Lagoon System

The purpose of this report is to identify operational conditions and practices that should prevail to keep the effluent of the Saco Wastewater Lagoon System within permit limits.

All facility data, sludge depth data, and other field data used in this report were compiled by Saco, the State of Montana (DEQ), and H&S Environmental, LLC (H&S).

The conclusions reached in this performance evaluation are based on four (4) primary data sources:

1) The results of intra-pond biological oxygen demand (BOD_5) testing by Energy Labs, Billings
2) The analysis of eight (8) discharges over four (4) years and eight (8) months (4.5 years) of US EPA ECHO and ICIS Data
3) Field-testing of Ammonia, Nitrate, Alkalinity, Dissolved Oxygen, and pH results by the the State of Montana (DEQ) and H&S Environmental, LLC
4) Sludge judging results by the State of Montana and H&S Environmental, LLC

Performance Evaluation of the Saco Montana Wastewater Lagoon System

The Town of Saco Montana wastewater facility is located at 48 27 10.37N, 107 20 11.07 W

September 28, 2021

Prepared for

The State of Montana

Prepared by
H&S Environmental, LLC
Steve Harris, President

This document was prepared under contract with the Montana Department of Environmental Quality

Disclaimer

This document assumes basic wastewater operations knowledge, skills, understanding, and compliance with all applicable federal and state permit limits.

Acknowledgments

This performance evaluation was prepared with assistance from Josh Viall and Pete Boetcher with the Montana Department of Environmental Quality

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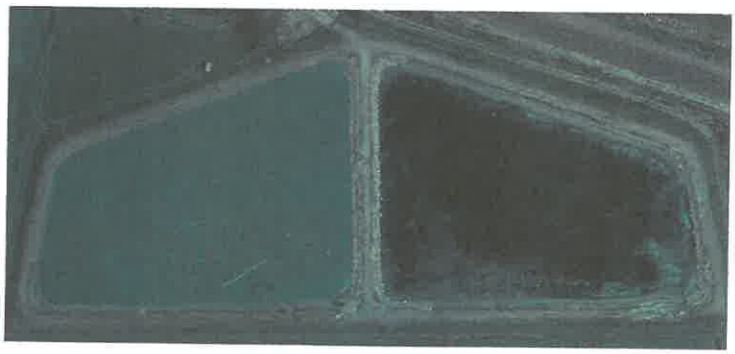


Figure 1. The Saco Montana Wastewater Lagoon System

Executive Summary:

There have been only eight (8) discharge events since January 2016. The last discharge event was recorded on June 30, 2020. This report will focus on the results of field nutrient testing by Montana DEQ, sludge judging by H&S and Montana DEQ, DMR results, and laboratory analysis by Energy Laboratories, Billings Montana, for recommendations on optimizing the Saco wastewater lagoon system. Statistical analysis will not be possible using Saco's limited DMR data.

Saco discharges once to twice annually. The Saco lagoon system was designed to be an intermittently discharging lagoon system. This report assumes Saco is a batch-discharging lagoon system.

Because of a lack of flow, field laboratory samples were taken directly from the pond's treatment cells themselves except for the influent sample. The influent sample was taken from the flow through the lift station closest to the lagoon system. The data from these samples show that final effluent BOD_5 is compliant with permit limits (23 mg/l). Effluent Ammonia was 0.60 mg/l, and Soluble BOD was six point seven (6.8) mg/l. Total Phosphorous was 6.12 mg/l. Effluent BOD_5 and TSS and pH would have

met permit limits if discharge were required on August 4, 2021. The presence of Nitrates in the field testing results indicates the primary Ammonia removal pathway is Nitrification, but volatilization through high pH and assimilation by algae are two (2) other Ammonia removal pathways for Saco.

Using a design flow rate of .015 MGD and five (5) foot operating levels, retention time is 260 days in Cell # 1 and Cell # 2 for a total theoretical retention time of 521 days.

Field testing of Dissolved Oxygen (DO) showed low (0.84 to 0.13) mg/l of Dissolved Oxygen in Cell # 1. In Cell # 2, dissolved oxygen ranges from 1.44 mg/l at the surface to 0.20 one (1) foot below the water's surface. This makes both Cell # 1 and Cell # 2 anoxic. This is to be expected due to the drought conditions, minimal water cap, and a sludge blanket over one (1) foot in thickness.

Ammonia showed a reduction of ninety-eight point four (98.4) percent. Effluent Ammonia measured 0.575 mg/l in the field and 0.60 by lab analysis at Energy Labs Billings.

Plans for desludging Cell # 1 should begin soon. Sludge has accumulated in Cell # 1 to an average of 1.58 feet. Cell # 2 has accumulated sludge to a thickness of 1.18 feet. Over time sludge will feed nutrients back to the water column, making meeting BOD and TSS limits problematic.

If required to discharge on August 4, 2021, the Saco system would have met its pH permit limit of 9 SI units and its permitted limits of 100 mg/l for TSS and 30 mg/l for BOD_5. It would also have met its mass limits for BOD and TSS.

At a current average theoretical water depths of five (5) feet, Cell # 1 has a retention time of two-hundred sixty days (260) days for each Cell. At an average daily flow of 0.015 MGD flow (DMR Data) and an average influent BOD_5 loading of 167.5 mg/l (Average from DMR Data), loading into the Saco lagoon system is 8.73 to 11.98 lbs/acre/day. This pond system was probably designed to treat 10 to 22 lbs/acre/day.

DMR data show an increasing trend in effluent BOD_5, TSS, and Raw Influent BOD_5, TSS, pH, and effluent flow.

There are too little data to establish trends in Total Nitrogen, Ammonia, and Total Phosphorous. *E.coli* and BOD_5 removal efficiency are consistently over permit limits.

Figure 2. Cell # 1 of the Saco Montana Wastewater Lagoon System

Sincerely,

Steve Harris
President
H&S Environmental, LLC

PERFORMANCE EVALUATION REPORT

Facility Name: The Town of Saco Montana Wastewater Lagoon System

Client: The Town of Saco Montana and the State of Montana DEQ

Date of Field Sampling: August 4, 2021

Data Review:
Dissolved Oxygen, pH, Ammonia and Sludge Field Sampling Results
Intra-Pond BOD and Ammonia, Energy Labs, August 2021
Field Dissolved oxygen, pH, Temperature, Ammonia, Nitrate, Nitrite, and Alkalinity, by Montana DEQ and H&S Environmental, LLC, August 2021
January 2016 to June 2021 DMR data from US EPA ECHO

Montana Department of Environmental Quality:

Pete Boettcher, Technical Assistance Specialist, Compliance, Training, and Technical Assistance Section
Josh Viall, Wastewater Training and Technical Assistance
Water Protection Bureau | Water Quality Division
Daniel Cogden, CTTA, DEQ

Saco: Dale Plouffe, Wastewater Operator

H&S Environmental, LLC: Steve Harris, President, Mesa, AZ

Report Prepared By:
Steve Harris,
President, H&S Environmental, LLC
September 28, 2021

Section 1

Introduction and Background

1.0 Scope and Purpose

In August 2021, H&S Environmental and the Montana Department of Environmental Quality personnel met at the Saco wastewater lagoon system to test the system's water quality and take samples for Energy Laboratories testing. After thoroughly reviewing Saco's field, lab, and historical DMR data, Steve Harris of H&S Environmental, LLC (H&S) prepared this performance evaluation.

The information used in this performance and optimization evaluation includes the following:

- Phone interviews, email contact, and in-person interviews with Montana DEQ on the history and general condition of the Saco system
- Analysis of 2016 through 2021 DMR data through US EPA ECHO's database.
- Special intra-pond nutrient sampling by Montana DEQ, sludge judging by H&S and Montana DEQ, and Intra-pond BOD_5 testing by Energy Labs, Billings, in August 2021.

The purpose of this evaluation is to identify ways to improve the treatment process to meet permit limits in a long-term sustained manner.

This report will focus on methods to keep the Saco system within permit limits. To determine if in-pond optimization is possible, H&S Environmental will analyze and evaluate lagoon system performance with respect to (i) historical data reviewed, (ii) additional data gathered from field testing and sampling, and (iii) a review of sampling and testing protocols practiced by Saco Montana utility personnel.

This report covers Saco's Lagoon System performance as it existed up to August 2021.

Findings

Section 2 – Findings

2.0 Findings

The intra-pond sampling results performed by H&S and Montana DEQ (August 4, 2021) and DMR data are presented below.

Section 2 – Findings

1. Laboratory analysis by Energy Labs shows Effluent BOD_5 is within permit limits of 30 mg/l
2. Laboratory analysis by Energy Labs shows Effluent TSS is within the permitted limit of 100 mg/l
2. Effluent Ammonia measured 0.60 mg/l by Energy Labs and 0.575 mg/l by Montana DEQ
3. Effluent Total Phosphorous measured 6.12 mg/l
4. Effluent BOD_5 is caused by algae respiring in the BOD_5 test bottle and measures 16.2 mg/l
5. Dissolved Oxygen measured in the morning before the production of oxygen through photosynthesis measured just below one (1) mg/l at 0.84 through 0.13 mg/l. Cells 1 & 2 are anoxic.
6. The appearance of Nitrates suggests Nitrification is the major ammonia removal pathway. High pH and algae assimilation also appear to play a role in Ammonia removal at Saco.
7. Dissolved Oxygen for each treatment cell as measured in the morning before sunrise and again in the afternoon show dissolved oxygen levels insufficient to oxidize BOD, TSS, and Ammonia.
8. pH as measured morning and afternoon are within permit limits. pH is lower than the limit of 9 during the morning and afternoon.
9. Sludge averaged 1.58 feet in Cell # 1. Sludge volume in Cell # 1 is estimated to be 1,230,591 gallons. In Cell # 2, sludge thickness measured 1.18 feet.
10. Retention time, assuming a flow of 0.015 MGD and five (5) foot operating depth is 520 days
11 There were fourteen (14) permit exceedances from August 2016 to June 2021. Forty-three (43) percent for BOD_5 violations, Fifty-seven (57) percent for *E.coli* violations.
12 There is an increasing trend in Flow, mass, and concentration based Influent and Effluent TSS, BOD_5. UVB disinfection should be considered as Saco violates its *E.coli* limits almost every time it discharges.

Section 3 – Recommendations

RECOMMENDATIONS

Based on the analysis of Intra-pond Field Sampling results by Montana DEQ, H&S, and Energy Laboratories in Billings, and DMR data taken by Saco, below are recommendations for improved stabilization pond performance for long-term sustained compliance using the existing wastewater stabilization pond system.

Section 3 – Recommendations - Continued

The object of the recommended changes to the Saco wastewater lagoon system is intended to keep Saco permit compliant in a long-term sustainable manner.

Five (5) recommendations for the Saco Montana wastewater lagoon system are:

1) Prepare now for sludge removal from Cell # 1.
2) Add UVB to disinfect the effluent
3) Minimize the discharge of algae cells by pulling water a foot or two off the bottom of the discharge cell
4) Purchase a dissolved oxygen and pH meter and routinely record pH and DO, and water temperature
5) Quarterly perform intra-pond diagnostic BOD, TSS, Ammonia, and Nitrate to monitor the success of any changes. Remember, the lagoon system is subject to seasonal changes in the water temperature and length of the day and therefore look to yearly changes in pond behavior for success.

1) Prepare to Remove Sludge from Cell # 1

The accumulated sludge in Cell # 1 occupies thirty-two (32) percent of the treatment cell's volume if the water level were five (5) feet. Due to the drought, sludge currently occupies about seventy (70) percent of the treatment cell's volume. A small water cap creates problems for BOD_5 and TSS removal, and Cell # 1 is currently anoxic because of the minimal water cap over the sludge.

Sludge accumulation replaces valuable treatment capacity but also releases nutrients to grow algae cells. Algae is the number one (1) cause of BOD violations in the US because algae consume oxygen under dark conditions in the BOD_5 test bottle for five (5) days. Direct DO measurements of Cell # 1 show DO ranges between 0.84 to 0.13 mg/l from the top of the water to the top of the sludge blanket.

There is a 0.66 water cap over the Cell # 1 sludge blanket. With this thin of a water cap, there is no room to settle dead algae and bacteria cells. With five (5) feet of water, there is a 3.42-foot water cap. This makes for a very shallow lagoon system.

Loading to Cell # 1 appears to be right on and even low. The loading to Cell # 1 is about nine (9) to ten (11) lbs/acre/day. The engineer probably designed this system to treat between 10 and 22 lbs/acre/day.

Lab results show a sixty-nine (69) percent BOD_5 removal from Cell # 1. Cell # 1 should be removing eighty (80) percent of the influent BOD_5. Overall, BOD_5 removal efficiency is 90 percent from the influent to the effluent.

There is a positive link (correlation) between algae (TSS) and BOD_5. BOD_5 levels are typically lower when fewer algae cells are discharged.

As seen in Figure two above, the water level is way down because of the drought concentrating the Sodium and Chloride ions and increasing the sludge blanket's influence on the clear water above it.

Section 3 – Recommendations - Continued

2) **Add a UV System to the Effluent to Meet *E.coli* limits**

Sixty (60) percent or three out of five times the Saco system violates its *E.coli* permit. The Saco system will more than likely fail to meet its *E.coli* permit limits in the future. UV disinfection has proven effective all over the State of Montana to control *E.coli*. A UV system would be a practical and necessary addition to the treatment system.

3) **Minimize the Discharge of Algae Cells**

Algae grow in the upper three feet of a lagoon system where they can get the most sunlight. Much below that, algae cells will die because of the lack of light, a vital nutrient. The final Cell in the Saco system is five (5) feet deep (MT DNR). Arrange the effluent structure to discharge from one (1) to two (2) feet above the bottom of the treatment cell to avoid picking up sludge or dead algae cells. The discharge suction line should pull water from a foot (1) foot past the toe of the dike. Otherwise, it will pick up scum, dead algae cells, and other treatment debris causing TSS problems. A permanent effluent structure should be built and should look similar to the figure below:

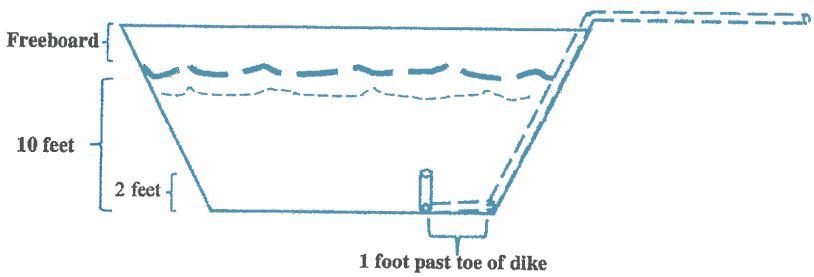


Figure 3. Discharge Structure Should be Pulling Effluent One (1) to Two (2) Feet Off the Bottom of the Cell

Algae is the number one (1) cause of BOD_5 violations in the USA. This is because algae respire or consume oxygen under dark conditions for five (5) days in the BOD_5 test bottle giving the appearance of BOD_5 or oxygen consumption/demand. The fewer algae cells discharged, the better. An operator's job is to discharge as few algae cells as possible and no ammonia. If an operator can do that, he will typically be in compliance.

Saco can see this in their laboratory data. Filtered BOD_5 ($SBOD_5$) is the BOD_5 test run without algae. In Saco's case, the SBOD is 6.8 mg/l, and the Effluent BOD_5 is 23 mg/l. In other words, 16.2 mg/l of BOD_5 results from algae respiring (consuming) oxygen in the BOD_5 test bottle. Discharge as close to the bottom of the pond as possible without pulling up the sludge. Discharge as few algae cells as possible and no sludge.

4) **Purchase a pH and Dissolved Oxygen Meter and Probe and Begin to Measure and Record pH, DO, and Water Temperature**

Measure the progress of improvements with a dissolved oxygen meter and probe. A dissolved oxygen and pH probe and meter are essential to maintaining a wastewater lagoon system. An operator should make daily Dissolved Oxygen, pH, and water temperature measurements and record them. The operator should then trend the data and watch for changes.

Section 3 – Recommendations - Continued

5) **Quarterly Perform Intra-pond Diagnostic BOD, TSS, Ammonia, and Nitrate to Monitor the Success of Any Changes.**

Intra-pond testing is how to evaluate changes made to a lagoon system. Start by measuring effluent BOD, Ammonia, Nitrate, and DO at the effluent of all cells. When changes to the treatment system are made, judge performance on intra-pond BOD_5, $CBOD_5$, Ammonia, Nitrate, and Dissolved Oxygen test results.

Operational Notes:

To evaluate and understand the effects of the changes that are made to the Saco Montana wastewater lagoon system, BOD_5, $CBOD_5$, Temperature, Ammonia, and Nitrate concentrations, DO, and pH must be routinely be made and recorded. These tests will enable the operators to make sound decisions when making changes to the system and monitor those changes for success.

Intra-pond testing will help operations staff focus on specific areas where problems (opportunities for optimization) occur. Pinpointing where, when, and why a problem occurs saves time and money and simplifies lagoon optimization for Ammonia and BOD_5 removal.

More than any other process control test, Cell # 1 effluent BOD_5 removal efficiency and ammonia removal efficiency through each Cell of the system will tell operations personnel when the influent loading is becoming a problem or if changes have taken effect. Determining removal efficiency requires pulling a BOD_5 sample from the Effluent of Cell # 1 while an influent BOD_5 sample is drawn and tested. Compare the two results. Cell # 1 removal efficiency should be at least eighty (80) percent. Operations staff should strive to keep Cell # 1 effluent BOD to less than 30 mg/l to ensure good ammonia removal from the other treatment Cells in the system.

$CBOD_5$ should also be measured from the effluents of Cells # 1 & 2. $BOD_5 - CBOD_5 = NBOD_5$. $NBOD_5$ is the relative number of nitrifying bacteria in a system and denotes Nitrification is or has the potential of occurring. The NBOD in Cell # 1 of the Saco system is sixteen (16) mg/l. (71 mg/l Cell # 1 Effluent BOD_5 minus 55 mg/l of Cell # 1 Effluent $CBOD_5$. There are nitrifying bacteria in the Saco system. Nitrifying bacteria convert ammonia to nitrate. Nitrate was noted in the field testing of the Saco system.

As much as possible, treatment should be "pushed back" to Cell # 1. Pushing BOD removal back to Cell # 1 is accomplished by adding sufficient DO to ensure DO is above two (2) mg/l at all times of the day and night, desludge, and stopping short-circuiting. Higher treatment levels in Cell # 1 will allow for better Ammonia and Nitrate removal in subsequent cells. Cell 2 should be for the conversion of Ammonia to Nitrate to Nitrogen gas and settling dead bacteria and algae cells clarifying the water. This objective is more easily accomplished by getting the most productivity out of Cell # 1 as possible.

Figure 4. Cell # 1 is Anoxic. Notice the Sludge on Pete's Oars and the Sludge and Gas Bubbles in the Boat's Wake

Figure 5. Low Cell # 2 Water Level Due to the Drought

Field Testing Data Analysis

Dissolved Oxygen Concentrations

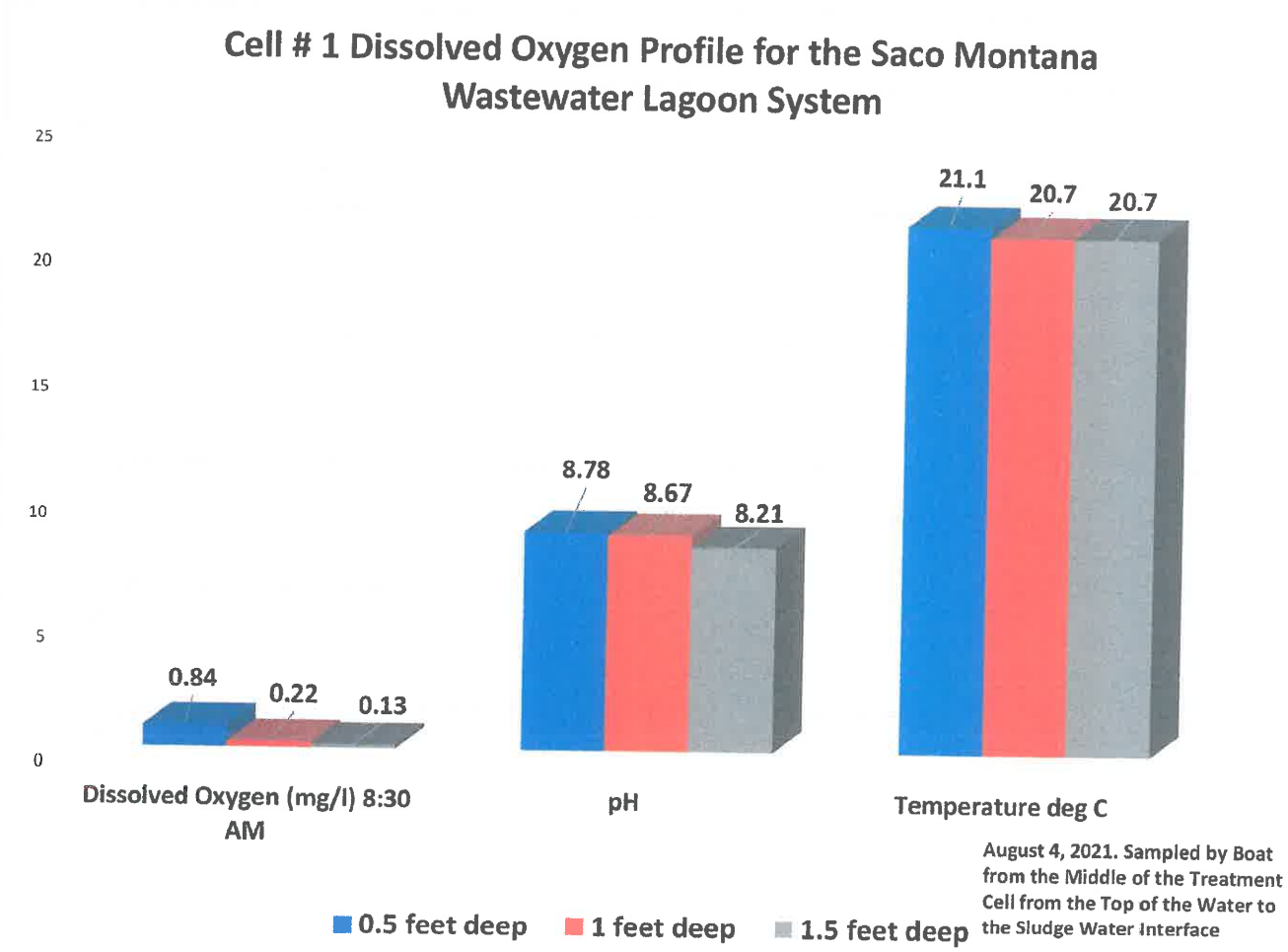


Figure 6. Dissolved Oxygen Concentrations Taken by Boat from the Middle of the Treatment Cell. From the Top of the Water to the Top of the Sludge Blanket

Always keep dissolved oxygen concentrations above two (2) mg/l for greater BOD_5 and Ammonia removal.

Cell # 1 and Cell # 2 are anoxic.—the swinging between anoxic and aerobic sets up inefficiencies in wastewater treatment performance.

Section 4 – Field Data Analysis

Dissolved Oxygen Profiles Taken by Boat from the Middle of Each Treatment Cell

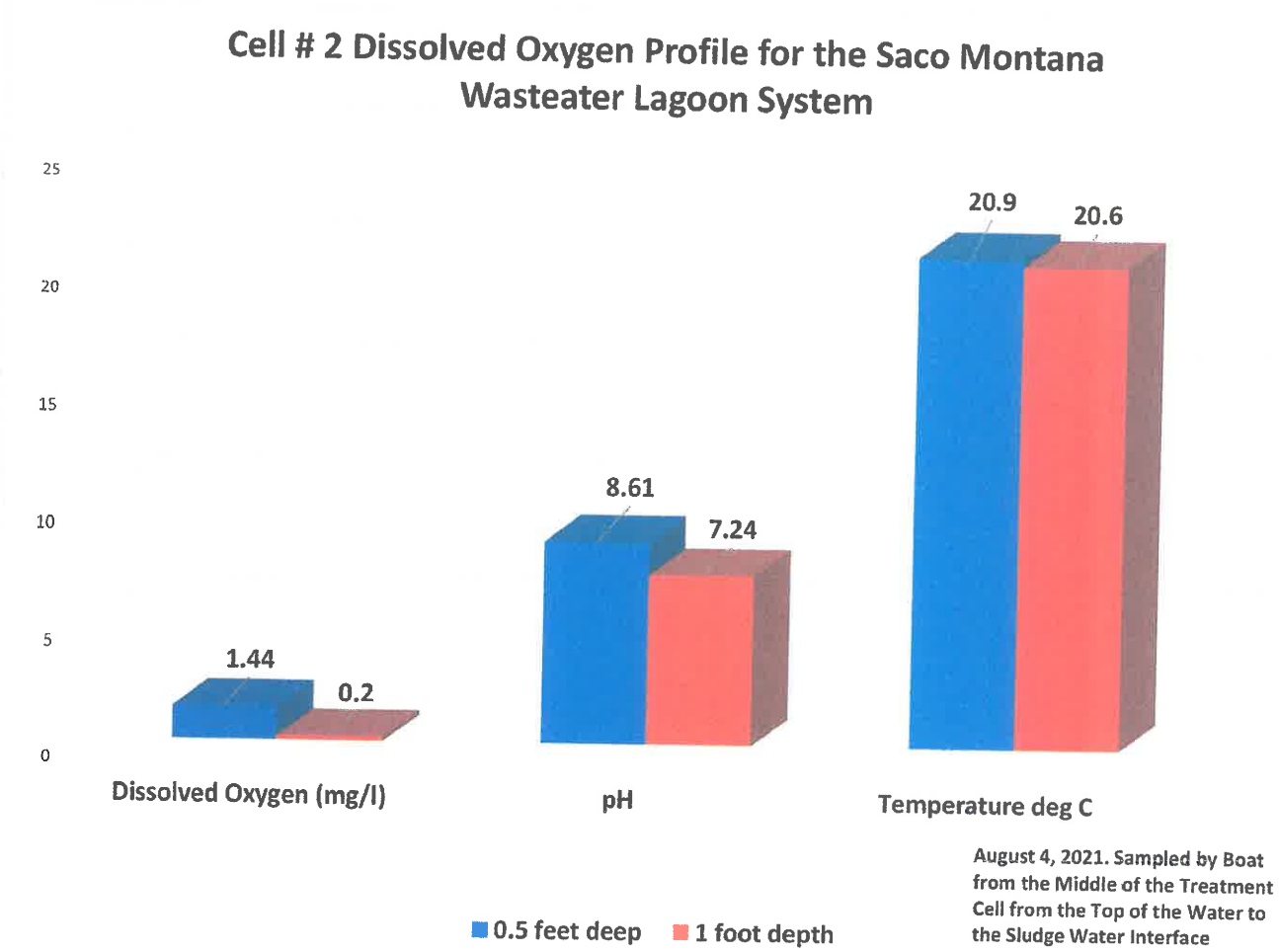


Figure 7. Dissolved Oxygen Concentrations Taken by Boat from the Middle of the Treatment Cell. From the Top of the Water to the Top of the Sludge Blanket

Section 4 – Field Data Analysis

Field Testing Results

Energy Laboratories Intra- Pond BOD_5 Test Results

On Wednesday, August 4, 2021, samples were delivered to Energy Labs Billings for intra-pond BOD_5 analysis. Below are the results.

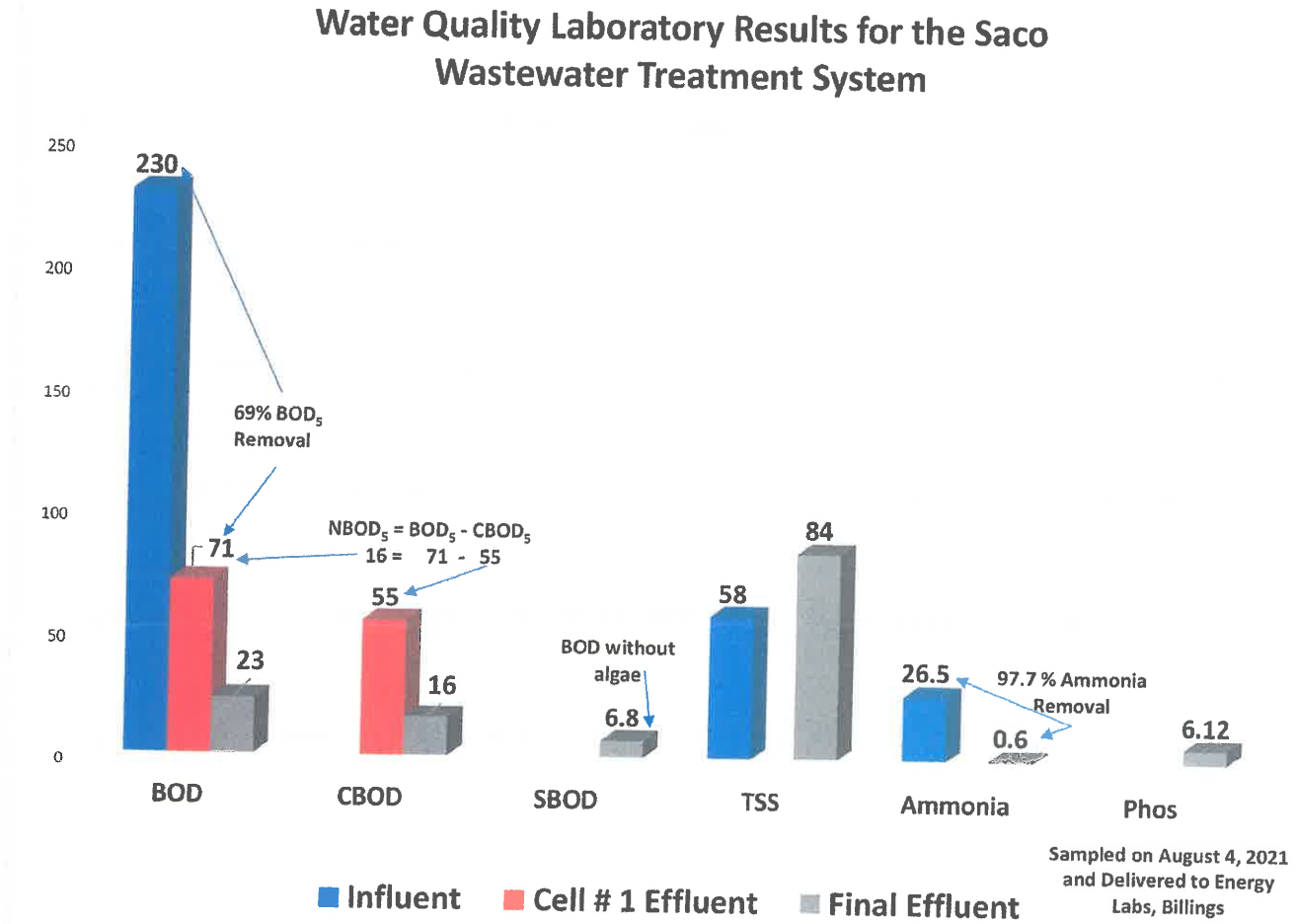


Figure 8. Intra-pond BOD_5, TSS, and Ammonia Results from Energy Labs Billings

Algae is the number one cause of BOD_5 violations in the US because algae consume oxygen for five (5) days under dark conditions in the BOD_5 test bottle and incubator.

When the lights are off algae, switch to oxygen consumption. That is why the most meaningful Dissolved Oxygen test is performed during the morning before sunlight hits the pond system.

Remember, an operator's job is to discharge as few algae cells as possible and no ammonia.

Section 4 – Field Data Analysis

Field Nutrient Testing

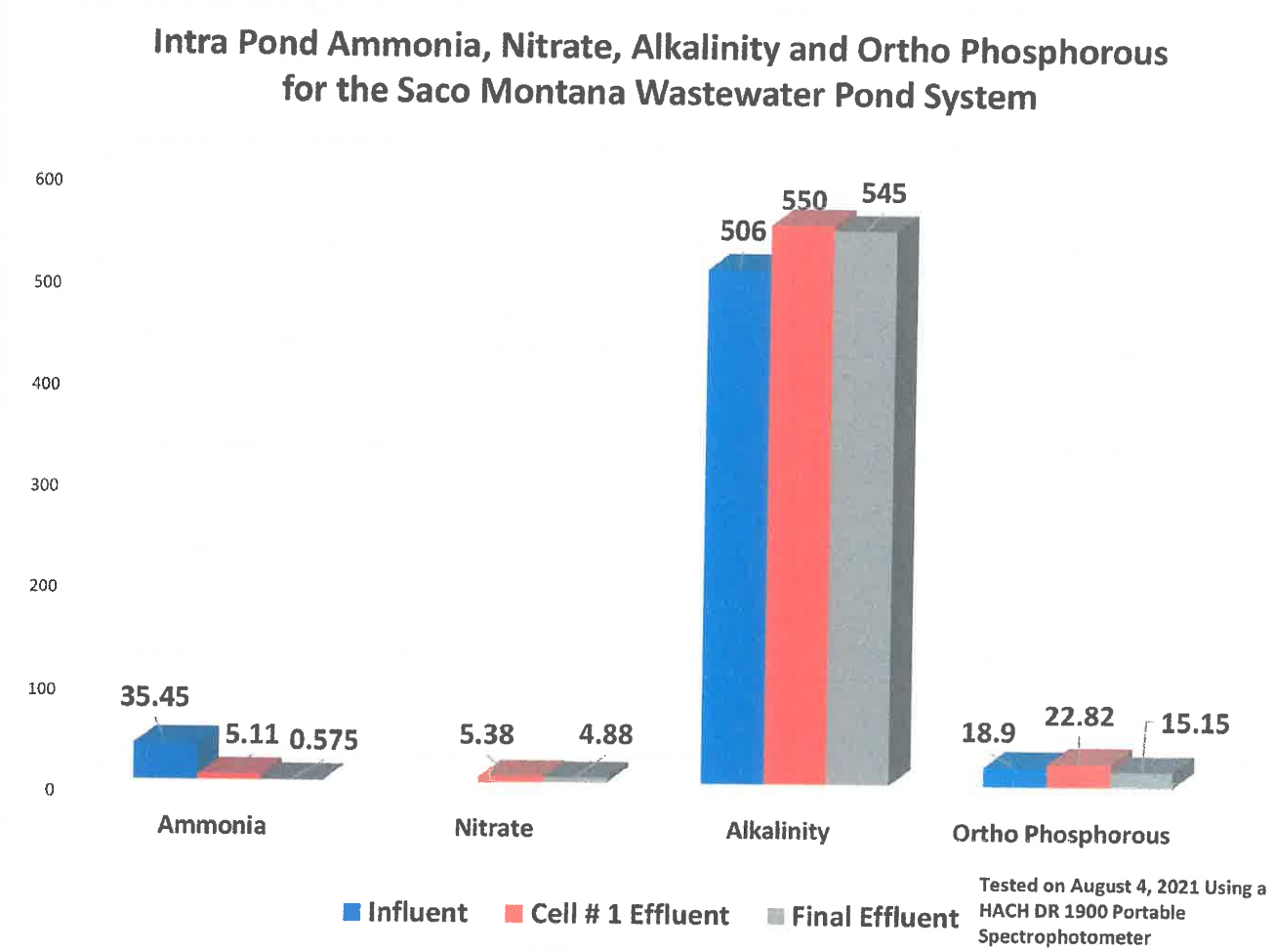


Figure 9. Intra-Pond Ammonia, Nitrate, Alkalinity, and Ortho-Phosphorous Results from Field Measurements

Ammonia removal is excellent. The primary ammonia removal pathway appears to be Nitrification followed by volatilization by high pH and then algae assimilation as shown by the nitrate production in Figure 9 above.

We note from the laboratory results above that Nitrification is occurring in Cells 1; BOD_5 (71) – $CBOD_5$ (55) = $NBOD_5$ (16).

NBOD is nitrogenous BOD and is considered to be the relative number of nitrifying bacteria in a system. NBOD is an indication of the system's potential to remove Ammonia through Nitrification.

Section 4 – Field Data Analysis

Saco Montana

Sludge Blanket Volume Summary & Retention Time Calculations

Item	Units	Cell # 1	Cell # 2	Totals
Bottom Length	feet			
Bottom Width	feet			
Side Slopes	1 to	3	3	
Average Sludge Depth	feet	2.24	1.18	
As-Built Bottom Elevation	feet	0.00	0.00	
As-Built Top-of-Bank Elevation	feet	7.00	7.00	
Bottom Area	sq ft	-	-	
Top of Sludge Length	feet			
Top of Sludge Width	feet			
Top of Sludge Area	sq ft			
Sludge Volume	cu ft	165,518	122,868	288,386
Sludge Volume	**gallons**	**1,238,075**	**919,053**	**2,157,127**

Retention time

Cell # 1: 104,125 x 5 x 7.48 / 15,000 GPD = 259.6 days After 1.58 feet sludge = 177.6 days

Days Lost Due to Sludge = 82 days

Cell # 2: 104,487 x 5 x 7.48 / 15,000 GPD = 260.5 days After 1.18 feet of Sludge = 199 days

Days Lost Due to Sludge = 61.5 days

Total Retention Time Lost Due to Sludge= 143.5 days

Notes & Cautions:
Used elevation from measured water depths
Dimensions are from Google Earth
Treatment Cell bottoms were uneven. Varied by an average of 12 inches
Rounded corners exist, square corners are used in the calculations above
Averages of water depths and average sludge blanket thickness are used
Slopes are assumed at 3:1
Freeboard needed is assumed

Figure 10. Sludge Volume and Retention Time for Saco Montana Wastewater Lagoon System

Sludge Accumulation

Aside from occupying valuable capacity and lowering a treatment cell's retention time, sludge releases nutrients and soluble BOD back into the water column. These nutrients feed TSS production through algae growth. Because they consume oxygen under the dark conditions of the BOD_5 test, algae can result in high BOD_5. The release of nutrients from sludge also feeds algae growth resulting in TSS permit violations.

Once sludge reaches about eighteen (18) inches in thickness, it is time to consider removal to prevent nutrient feedback causing problems with increases in algae growth leading to TSS problems.

Sludge removal options include dredging, pressing or centrifuging, and hauling off-site, as well as removing in situ with chemical oxidizing agents. Each method has its place. Sludge can also be pumped out and applied to a Geo-Tube or drying bed to dry on-site for two (2) years. Drying on-site allows for the removal of the water, reducing tipping fees and hauling costs. When dredging or drying, and scraping, the treatment cell must typically be taken offline.

Dredging mixes a treatment cell releasing Ammonia, Nitrates, phosphate, and CO_2 to stimulate algae and bacteria growth. The filtrate from a belt press will concentrate nutrients as it squeezes sludge, creating a stream of nutrient-rich water that will load the plant. This nutrient-rich filtrate stream will, in most cases, cause a crash in DO and create odors. Be aware of the centrate or filtrate coming off the centrifuge, press, or weepage from a Geo-tube or runoff from a drying bed. Add air to the remaining working treatment cells when desludging. Keeping air above two (2) mg/l will keep odors and nutrient loading to a minimum.

If time permitted, mixing a sludge blanket and adding agricultural stubble breakdown chemistries can remove several feet of sludge over time. Mixing and chemical agents will not remove sand grit or gravel and leave dead bacteria bodies (Humus). The disadvantage of treating in place by mixing and adding is that you run the risk of freeing Ammonia, Nitrate, phosphate, CO_2, and organic acids to feed an algae bloom. Consult an expert before mixing a treatment cell. There are proven chemical additives from the agricultural industry that can accelerate sludge removal on-site associated with mixing.

Aeration and Dissolved Oxygen

There are seven (7) indicators that the dissolved oxygen levels in Saco Montana pond system would be too low (or there is overloading):

1) Poor BOD_5 removal efficiency
2) Low ammonia removal efficiency
3) Odors
4) Popping sludge in the treatment Cells
5) *Daphnia* turned red in the treatment Cells
6) Low DO measurements both day **and** night. The best, most meaningful time to measure DO is before sunrise before algae have had the chance to produce dissolved oxygen
7) Increasing trends in effluent BOD_5 after all the Cells have been desludged

Dissolved oxygen measurements taken at the surface may not tell the whole story. While the surface water may appear to have sufficient DO, it may be anoxic just below the surface, beginning two to three feet below the surface. Measuring Dissolved Oxygen by boat in the middle of a treatment cell from the surface to the bottom at the sludge water interface is the best way to perform a DO profile. This type of DO profile is also best performed at or before sunrise.

Section 4 – Field Data Analysis-Continued

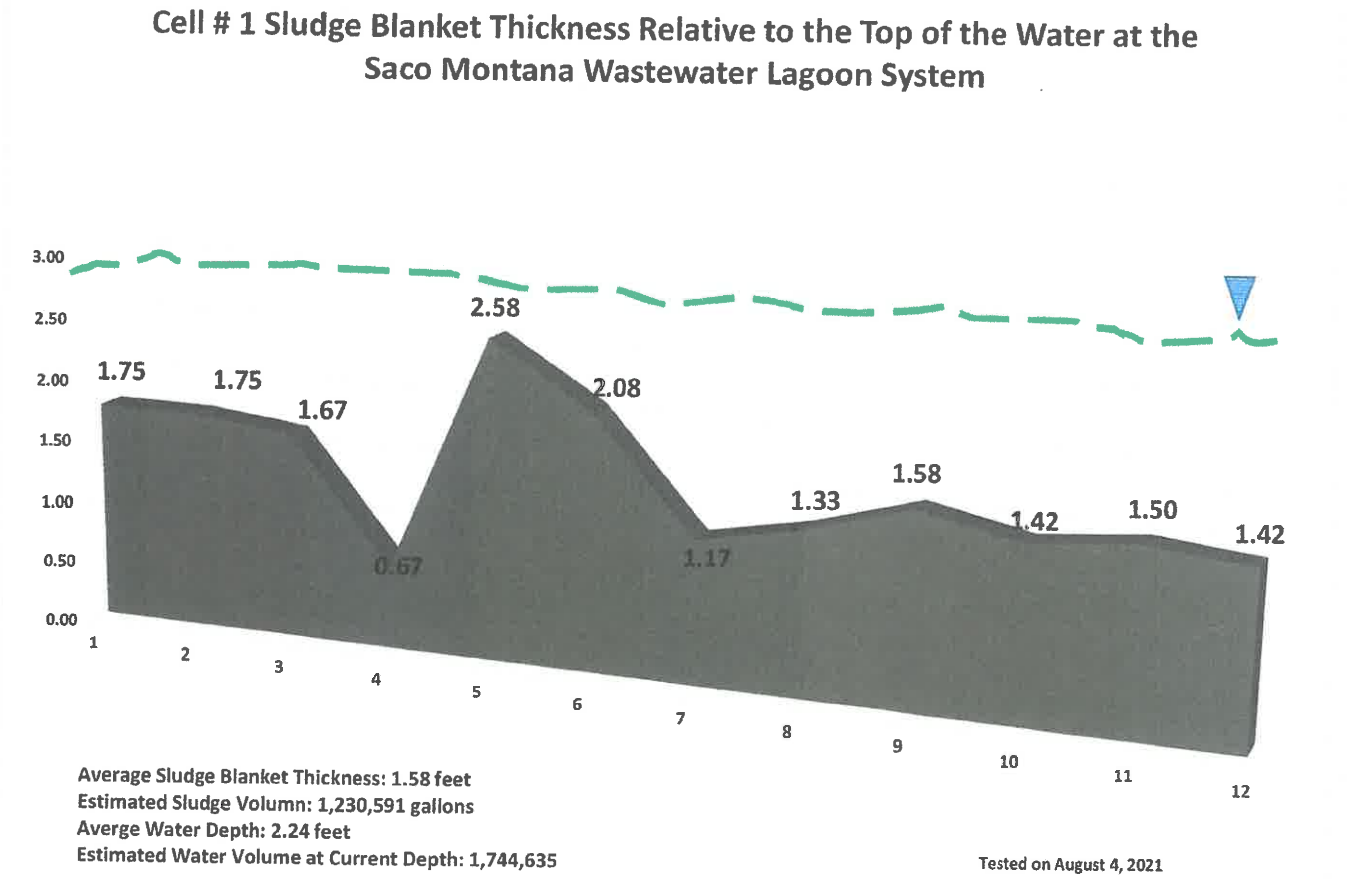


Figure 11. Cell # 1 Sludge Blanket Profile

Section 4 – Field Data Analysis-Continued

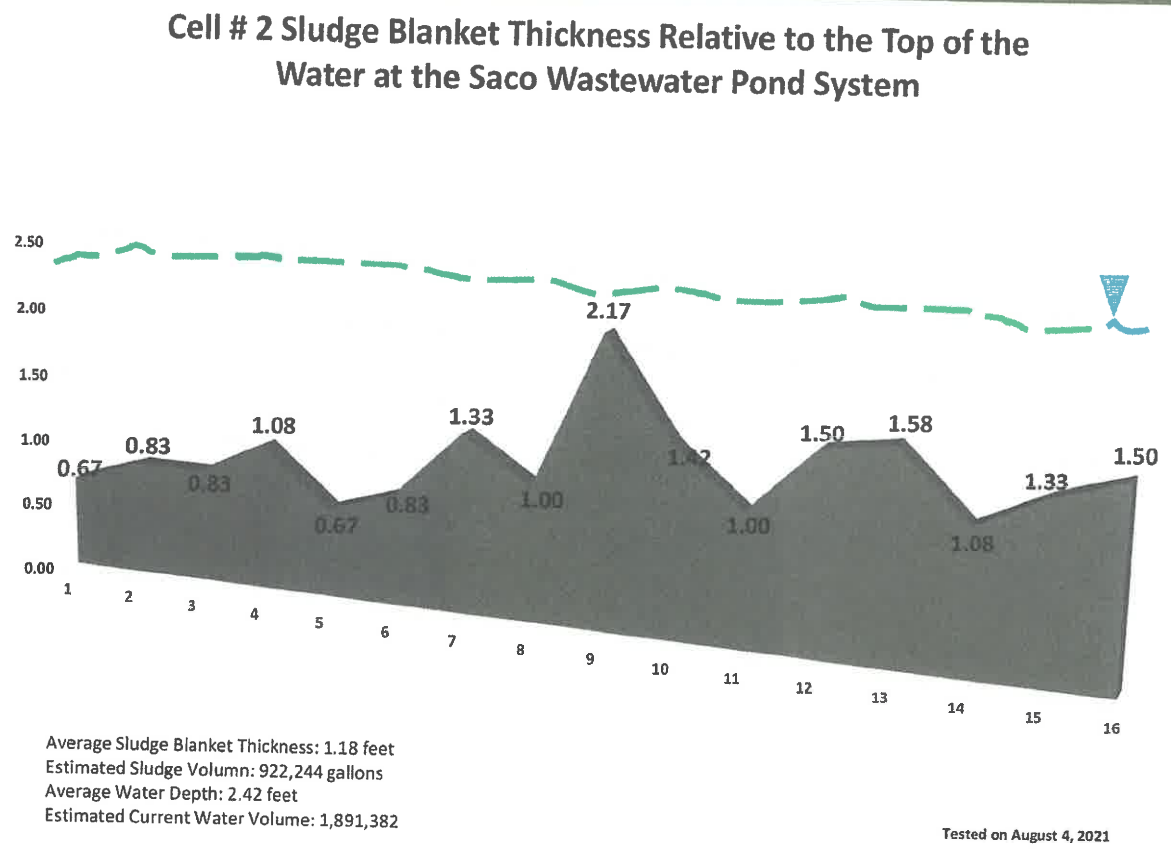


Figure 12. Cell # 2 Sludge Blanket Profile

Section 5 – DMR Data Analysis -

DMR Data Analysis

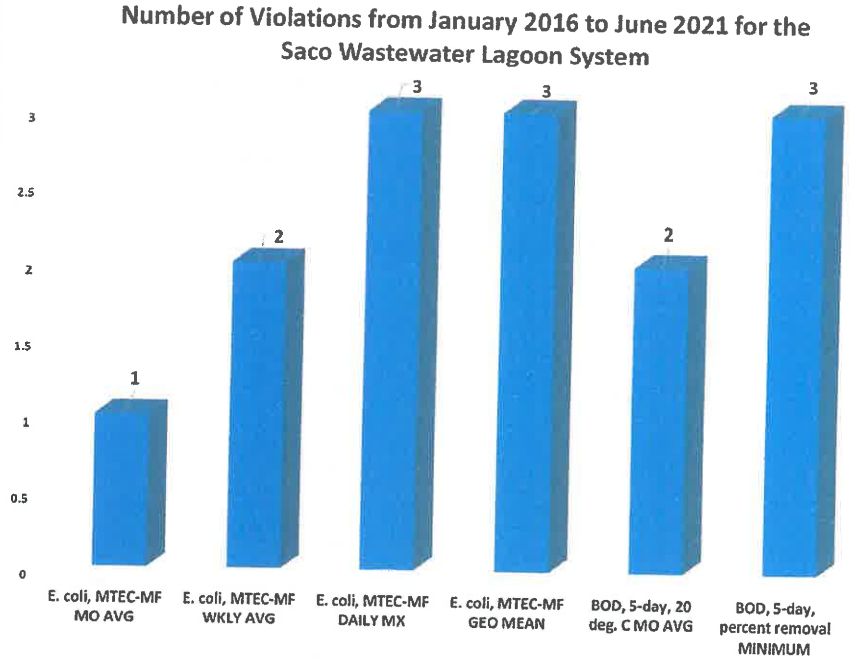


Figure 13. Number and Type of Violations Over 5.49 Years for Saco

Section 5 – DMR Data Analysis -

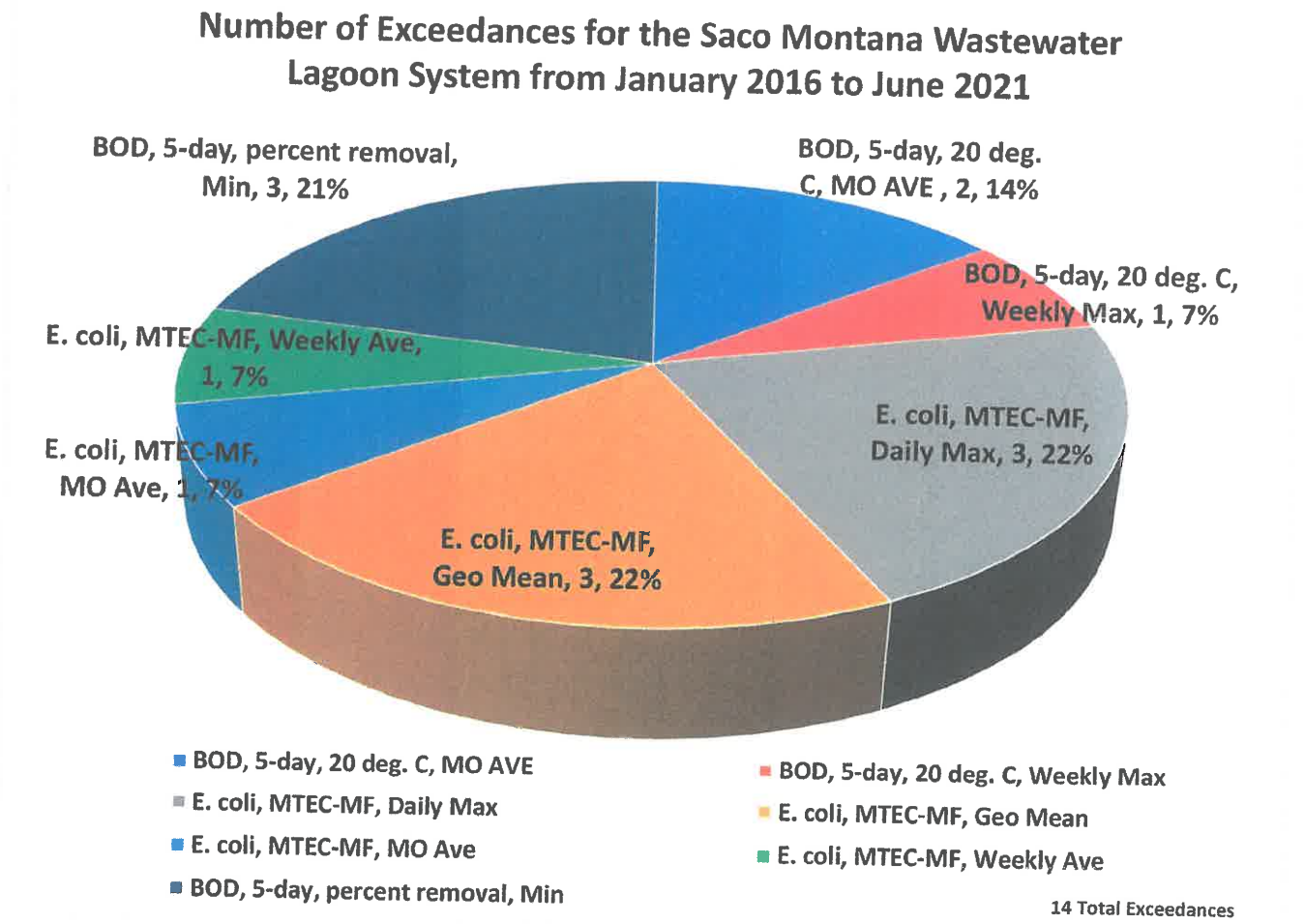


Figure 14. Fourteen Violations Over 5.49 Years

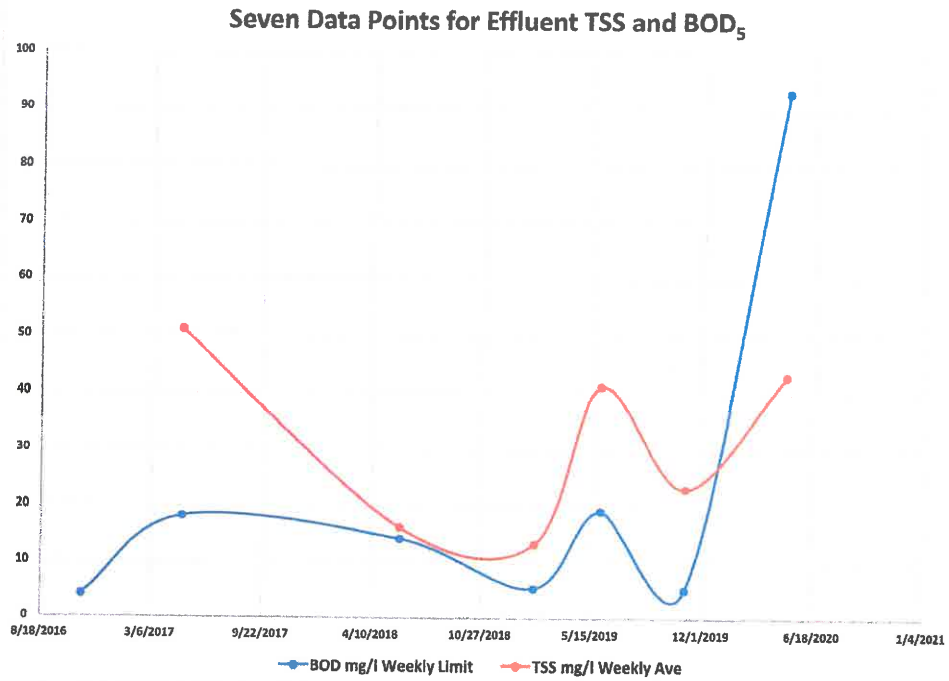
Date	Flow, Daily Max	Flow MO Ave	TSS lbs/day Mo Ave	TSS lbs/day Weekly Ave	TSS mg/l MO Ave	TSS mg/l Weekly Ave	BOD mg/l MO Ave	BOD mg/l Weekly Limit	BOD lbs/day MO Ave	BOD lbs/day Weekly Ave	BOD Influent Raw, MO Ave	BOD Raw Influent Weekly Max	BOD Percent Removal	pH Max	pH Min	E.coli, Daily Max	E.coli, GEO Mean
10/31/2016	0.016	0.015						4	4	0.47	0.53			8.5	8.3		
4/30/2017	0.016	0.015	4.14	6.8	35.5	51	24	18	9	2.8				7.98	7.16	3095	5500
5/31/2018	0.016	0.015	16	16	16	16	14	14	14	14	150			8.77	7.92	960	960
1/31/2019	0.156	0.156	10	13.01	13.01	13.01	5.2	5.2	4	5.2	59	59	76	8.9	8.45	24196	24196
5/31/2019	0.41	0.41	41	41	41	41	19	19	19	19	62	62	64.96	8.91	8.11	4	4
10/31/2019	0.156	0.156	29.92	29.92	23	23	5	5	6.51	6.51	160	160	97	8.7	8.7	67	67
4/30/2020	0.018	0.0134	5.18	5.7	40.5	43	63.5	93	8.83	13.9	175	210	64	8.1	7.6	6750	2846.1

Figure 15. Violations by Date and Type

A UV system for disinfection is an essential upgrade for the Saco lagoon system.

Section 5 – DMR Data Analysis Cont-

Because of the limited DMR data set, it is important to be careful when interpreting this data.



Figures 16. Effluent Weekly BOD_5 and TSS Trending Up

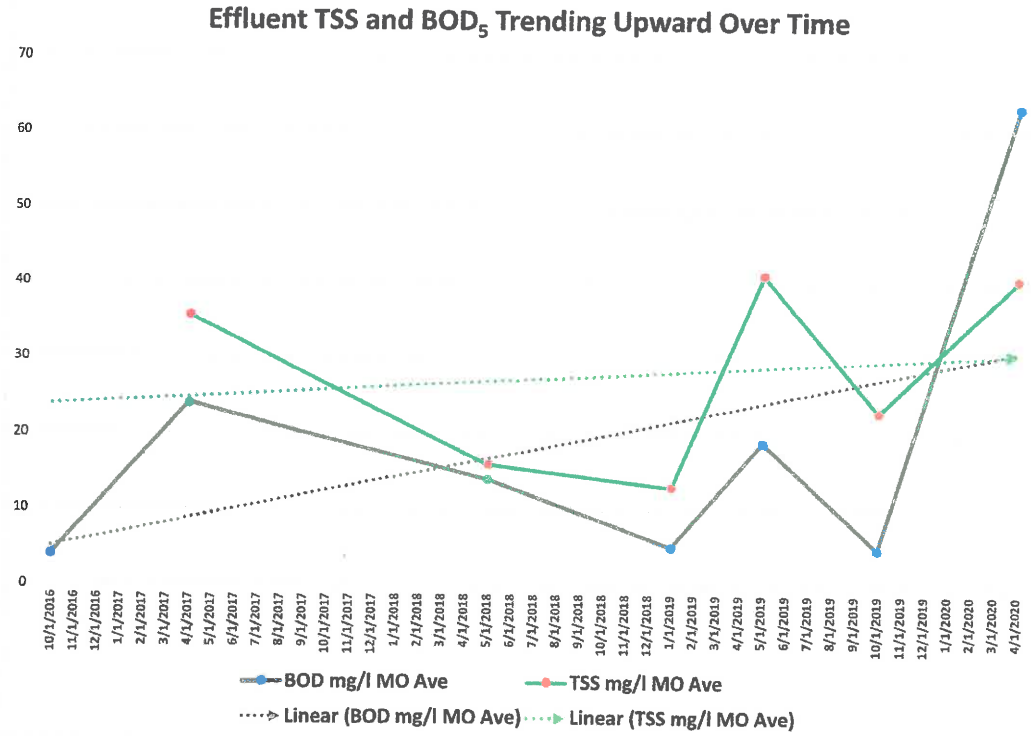
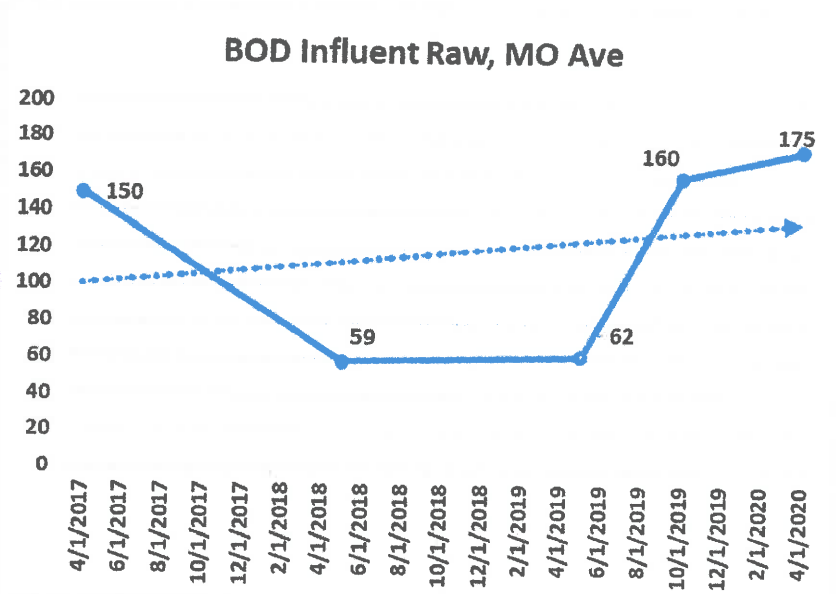
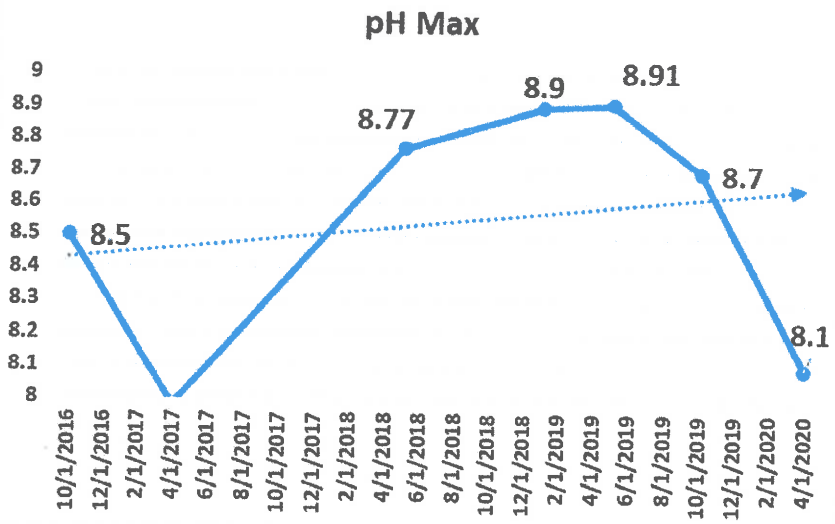


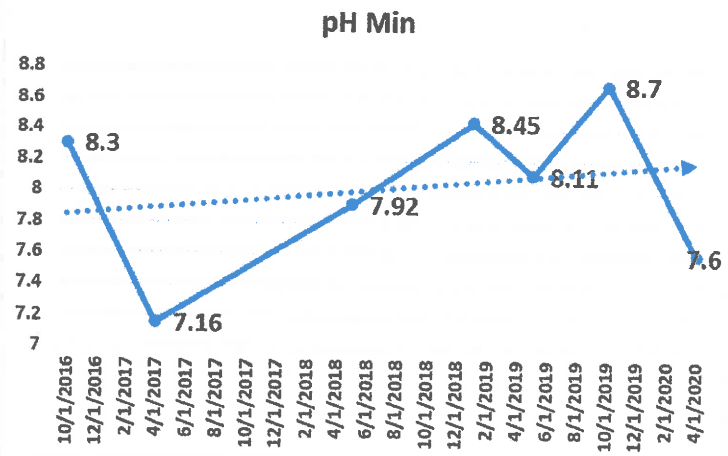
Figure 17. Monthly Average Effluent TSS and BOD_5

Section 5 – DMR Data Analysis Cont-



Figures 18, 19, 20. Influent BOD_5, Effluent pH, Min, Max





Section 6 – Summary

Saco Montana wastewater pond system would have met all permit requirements on the day of field testing. Sixty-four (64) percent of the time, the Town of Saco violates its *E.coli* limits. These violations need to be addressed through UV disinfection or chlorination.

Adding a permanent effluent discharge structure will avoid picking up scum and sludge resting on the side slope. Having the effluent discharge structure one (1) foot past the toe of the dike and one (1) to two (2) feet above the bottom of Cell # 4 is critical to success in meeting permit limits in a sustained manner over the long term.

The Saco system would benefit from having a pH/D.O. meter and probes.

Cell # 1 should be desludged.

Section 7 – Action Items

The recommendations outlined in this report offer solutions for meeting permit limits in a long-term sustainable fashion.

Four (4) Action Items are recommended for the Saco Montana wastewater lagoon system, and they are:

1) Begin planning for the desludging of Cell # 1
2) Construct a permanent effluent structure. This structure should discharge effluent one (1) to two (2) feet off the bottom and one (1) foot past the toe of the dike to keep the effluent free of wastewater debris.
3) Purchase a dissolved oxygen/pH meter and probe
4) Quarterly perform intra-pond diagnostic BOD, Ammonia, and Nitrate sampling between each treatment cell to understand the nature of the system.

Section 8 – Conclusions

CONCLUSIONS

There is a ***where,* a *when,* and a *why*** to lagoon problem solving and optimization. Determining where treatment is not occurring is essential to optimizing Saco Montana's wastewater lagoon system for continued sustainable permit compliance.

Please see Diagnostic BODs in the attachments and commit to routinely performing these kinds of tests.

Thank you for the opportunity to serve the good people of Saco, Montana.

Steve Harris
President
H&S Environmental, LLC

Attachments

1) Diagnostic BODs
2) Algae's Contribution to the BOD_5 Test Result
3) The Importance of Mixing Lagoon Sludge Blankets

References

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APPENDIX Q

EPA ECHO Data and Violations

Detailed Facility Report

Facility Summary

SACO TOWN OF

UNK, SACO, MT 59261

FRS (Facility Registry Service) ID: 110012940407
EPA Region: 08
Latitude: 48.484095
Longitude: -107.530734
Locational Data Source: Zip Code Centroid
Industries:
Indian Country: N

Enforcement and Compliance Summary

Statute	Compliance Monitoring Activities (5 years)	Date of Last Compliance Monitoring Activity	Compliance Status	Qtrs with NC (Noncompliance) (of 12)	Qtrs with Significant Violation	Informal Enforcement Actions (5 years)	Formal Enforcement Actions (5 years)	Penalties from Formal Enforcement Actions (5 years)	EPA Cases (5 years)	Penalties from EPA Cases (5 years)
SDWA	--	--	**No Violation Identified**	1	0	2	--	--	--	--

Regulatory Information

Clean Air Act (CAA): No Information
Clean Water Act (CWA): No Information
Resource Conservation and Recovery Act (RCRA): No Information
Safe Drinking Water Act (SDWA): OWNER:

Other Regulatory Reports

Air Emissions Inventory (EIS): No Information
Greenhouse Gas Emissions (eGGRT): No Information
Toxic Releases (TRI): No Information
Compliance and Emissions Data Reporting Interface (CEDRI): No Information

Local government, SOURCE: Ground water, TYPE: Community water system, Permit Active (MT0000323)

Known Data Problems

Facility/System Characteristics

Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110012940407					N		
SDWIS	SDWA	MT0000323	OWNER: Local government, SOURCE: Ground water, TYPE: Community water system	Active	Population Served: 180		N		

Facility Address

System	Statute	Identifier	Facility Name	Facility Address	Facility County
FRS		110012940407	SACO TOWN OF	UNK, SACO, MT 59261	Phillips County
SDWIS	SDWA	MT0000323	SACO TOWN OF	MT	

Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Description
No data records returned			

Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
No data records returned			

Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

Enforcement and Compliance

Compliance Monitoring History (5 years)

Statute	Source ID	System	Activity Type	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
SDWA	*MT0000323*	*SDWIS*		*Sanitary Survey, Complete*	*State*	*08/19/2021*	

Statute	Source ID	System	Activity Type	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
SDWA	*MT0000323*	*SDWIS*		*Sanitary Survey, Complete*	*State*	*11/27/2018*	

Entries in italics are not counted in EPA compliance monitoring strategies or annual results.

SDWA (Safe Drinking Water Act) Sanitary Survey Results (5 Years)

			Sanitary Survey Results										
Date	Type	Agency	Data Verification	Distribution	Management Operation	Finished Water Storage	Operator Compliance	Other Evaluation	Pumps	Security	Source	Financial	Treatment
SDWA (Source ID: MT0000323)													
08/19/2021	Sanitary Survey, Complete	State	R	N	N	R	N	Z	R	N	R	X	R
11/27/2018	Sanitary Survey, Complete	State	N	N	N	R	N	Z	N	N	R	X	N

Sanitary survey result codes: S = Significant Deficiencies R = Recommendations Made X = Not Evaluated -- = Not Reported to EPA

M = Minor Deficiencies N = No Deficiencies or Recommendations Z = Not Applicable

Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
SDWA	MT0000323	No	09/30/2021	1	01/14/2022

Three-Year Compliance History by Quarter

Statute	Violation Type/Category		QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12	QTR 13*
SDWA (Source ID: MT0000323)			10/01-12/31/18	01/01-03/31/19	04/01-06/30/19	07/01-09/30/19	10/01-12/31/19	01/01-03/31/20	04/01-06/30/20	07/01-09/30/20	10/01-12/31/20	01/01-03/31/21	04/01-06/30/21	07/01-09/30/21	10/01-12/31/21
	Facility-Level Status		**No Violation**	**No Violation**	**No Violation**	**No Violation**	**No Violation**	**No Violation**	**No Violation**	**No Violation**	**No Violation**	**No Violation**	**No Violation**	**Violation**	**No Violation**
	Category	**Violation Type**													
SDWA	Other (Other Violation)	Consumer Confidence Rule												07/01/2021 - 08/09/2021	

*Quarter 13 data is voluntarily entered and/or incomplete, and may not form a complete picture for that quarter. Read more

SDWA Compliance Data Last Reported: 12/16/2021

Informal Enforcement Actions (5 Years)

Statute	System	Source ID	Type of Action	Lead Agency	Date
SDWA	SDWIS	MT0000323	State Violation/Reminder Notice	State	07/19/2021
SDWA	SDWIS	MT0000323	State Violation/Reminder Notice	State	07/20/2017

Entries in italics are not counted as "informal enforcement actions" in EPA policies pertaining to enforcement response tools.

Formal Enforcement Actions (5 Years)

Statute	System	Law/Section	Source ID	Action Type	Case No.	Lead Agency	Case Name	Issued/Filed Date	Settlements/Actions	Settlement/Action Date	Federal Penalty Assessed	State/Local Penalty Assessed	Penalty Amount Collected	SEP Cost	Comp Action Cost
No data records returned															

SDWA (Safe Drinking Water Act) Violations and Enforcement Actions (5 Years)

Violations											Enforcement Actions			
Source ID	Compliance Period	Violation ID	Federal Rule	Contaminant	Category	Description	Measured Value	State MCL (Maximum Contaminant Level)	Federal MCL (Maximum Contaminant Level)	Status	Date	Category	Description	Agency
MT0000323	07/01/2021 -	1296221	Consumer Confidence Rule	Consumer Confidence Rule	Other	Other Violation				Resolved	08/09/2021	Resolving	State Compliance achieved	State
											07/19/2021	Informal	State Violation/Reminder Notice	State
MT0000323	07/01/2017 -	1296219	Consumer Confidence Rule	Consumer Confidence Rule	Other	Other Violation				Resolved	07/28/2017	Resolving	State Compliance achieved	State
											07/20/2017	Informal	State Violation/Reminder Notice	State

Environmental Conditions

Watershed(s)

12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Water Body Name (ICIS (Integrated Compliance Information System))	Beach Closures Within Last Year	Beach Closures Within Last Two Years	Pollutants Potentially Related to Impairment	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
No data records returned						

Assessed Waters From Latest State Submission (ATTAINS)

State	Report Cycle	Assessment Unit ID	Assessment Unit Name	Water Condition	Cause Groups Impaired	Drinking Water Use	Aquatic Life	Fish Consumption Use	Recreation Use	Other Use
No data records returned										

Air Quality Nonattainment Areas

Pollutant	Within Nonattainment Status Area?	Nonattainment Status Applicable Standard(s)	Within Maintenance Status Area?	Maintenance Status Applicable Standard(s)
No data records returned				

Pollutants

Toxics Release Inventory History of Reported Chemicals Released in Pounds per Year at Site

TRI Facility ID	Year	Total Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Releases to Land	Total On-site Releases	Total Off-site Transfers
No data records returned								

Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
No data records returned

SDWA (Safe Drinking Water Act) Lead and Copper (Last 5 years)

Source ID	Contaminant	Sample Dates	90th Percentile Sample Concentrations	Action Level	Number of Open Health-Based Violations

Source ID	Contaminant	Sample Dates	90th Percentile Sample Concentrations	Action Level	Number of Open Health-Based Violations
MT0000323	Lead	2017-01-01 - 2019-12-31	0.002 mg/L	0.015 mg/L	--
		2014-01-01 - 2016-12-31	0.002 mg/L		
MT0000323	Copper	No data records returned		1.3 mg/L	

Community

EJSCREEN EJ Indexes

Eleven primary environmental justice (EJ) indexes of EJSCREEN, EPA's screening tool for EJ concerns. EPA uses these indexes to identify geographic areas that may warrant further consideration or analysis for potential EJ concerns. The index values below are for the Census block group in which the facility is located. Note that use of these indexes does not designate an area as an "EJ community" or "EJ facility." EJSCREEN provides screening level indicators, not a determination of the existence or absence of EJ concerns. For more information, see the EJSCREEN home page.

Demographic Profile of Surrounding Area (1 Mile)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2010 U.S. Census and 2014 - 2018 American Community Survey (ACS) 5-year Summary and are accurate to the extent that the facility latitude and longitude listed below are correct. EPA's spatial processing methodology considers the overlap between the selected radii and the census blocks (for U.S. Census demographics) and census block groups (for ACS demographics) in determining the demographics surrounding the facility. For more detail about this methodology, see the DFR Data Dictionary.

No demographic profile information provided for this facility.

Statute	Source ID	System	Activity Type	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
CWA	MTG580012	ICIS-NPDES	Inspection/Evaluation	Base Program - Evaluation	State	04/29/2021	

Entries in italics are not counted in EPA compliance monitoring strategies or annual results.

Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
CWA	MTG580012	No	09/30/2021	8	01/28/2022

Three-Year Compliance History by Quarter

Statute	Program/Pollutant/Violation Type				QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12	QTR 13+
	CWA (Source ID: MTG580012)				10/01-12/31/18	01/01-03/31/19	04/01-06/30/19	07/01-09/30/19	10/01-12/31/19	01/01-03/31/20	04/01-06/30/20	07/01-09/30/20	10/01-12/31/20	01/01-03/31/21	04/01-06/30/21	07/01-09/30/21	10/01-01/28/22
	Facility-Level Status				**Significant/ Category I Noncompliance**	**Significant/ Category I Noncompliance**	**Significant/ Category I Noncompliance**	**Significant/ Category I Noncompliance**	**Significant/ Category I Noncompliance**	**Significant/ Category I Noncompliance**	**Significant/ Category I Noncompliance**	**Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**Undetermined**
	Quarterly Noncompliance Report History				Compliance/Permit Schedule - Violations	Compliance/Permit Schedule - Violations	Compliance/Permit Schedule - Violations	Compliance/Permit Schedule - Violations	Compliance/Permit Schedule - Violations	Compliance/Permit Schedule - Violations	Compliance/Permit Schedule - Violations	Reportable Noncompliance	Resolved		Resolved		
	Pollutant	**Disch Point**	**Mon Loc**	**Freq**													
CWA	BOD, 5-day, 20 deg. C E	001 - A	Effluent Gross	Mthly			282%				112%						
CWA	BOD, 5-day, 20 deg. C E	001 - A	Effluent Gross	NMth			160%				107%						
CWA	BOD, 5-day, percent removal E	001 - A	Percent Removal	Neither			134%				140%						
CWA	E. coli, MTEC-MF E	001 - A	Effluent Gross	NMth		LIMIT VIOLATION					2579%				3%		
CWA	Solids, total suspended E	001 - A	Effluent Gross	Mthly			22%										
	Single Event Violations		**NPDES Violation ID**	**Agency**													
CWA	Management Practice Violations - Failure to Conduct Inspections		3659635354	State											**04/29/2021-06/15/2021**		
CWA	Management Practice Violations - Failure to Maintain Records		3659635349	State											**04/29/2021-06/15/2021**		
CWA	Monitoring Violations - Frequency of Sampling Violation		3659635352	State											**04/29/2021-06/15/2021**		
CWA	Reporting Violations - Failure to Notify		3659635351	State											**04/29/2021-06/15/2021**		
	Late or Missing Discharge Monitoring Report (DMR) Measurements																
	Counts of Late DMR Measurements						7		5		1						

RESPONDENT: TOWN OF SACO
ATTACHMENT A : Effluent Limitation Exceedance Violations
MTG580012

2020

Outfall	Parameter Desc	Statistical Base Short Desc	Monitoring Period End Date	Permit Limits		DMR VALUE	Percent Exceedence		SNC*
001-A	BOD, 5-day, 20 deg. C	MO AVG	04/30/2020	30	mg/L	63.5	112	I	Yes
001-A	BOD, 5-day, 20 deg. C	WKLY MAX	04/30/2020	45	mg/L	93.	107	I	Yes
001-A	BOD, 5-day, percent removal	MINIMUM	04/30/2020	85	%	64.	140	I	Yes
001-A	E. coli, MTEC-MF	DAILY MX	04/30/2020	252	#/100 (3)	6750.	2579		Yes
001-A	E. coli, MTEC-MF	GEO MEAN	04/30/2020	126	#/100mL	2846.05	2159		Yes

2019

Outfall	Parameter Desc	Statistical Base Short Desc	Monitoring Period End Date	Permit Limits		DMR VALUE	Percent Exceedence		SNC*
001-A	E. coli, MTEC-MF	DAILY MX	01/31/2019	1260	#/100 (3)	24196.	99999		Yes
001-A	E. coli, MTEC-MF	GEO MEAN	01/31/2019	630	#/100mL	24196.	99999		Yes
001-A	BOD, 5-day, 20 deg. C	MO AVG	05/31/2019	17	lb/d	19.	12		
001-A	BOD, 5-day, percent removal	MINIMUM	05/31/2019	85	%	64.96	134	I	Yes

2018

Outfall	Parameter Desc	Statistical Base Short Desc	Monitoring Period End Date	Permit Limits		DMR VALUE	Percent Exceedence		SNC*
001-A	BOD, 5-day, percent removal	MINIMUM	05/31/2018	85	%	76.	60	I	Yes
001-A	E. coli, MTEC-MF	DAILY MX	05/31/2018	252	#/100 (3)	960.	281		Yes
001-A	E. coli, MTEC-MF	GEO MEAN	05/31/2018	126	#/100mL	960.	662		Yes

APPENDIX R

Preliminary Total Retention Lagoon Sizing

Saco PER
Preliminary Monthly Water Balance
Total Retention Lagoon Sizing

Design flow	**28,500 gpd**
Total Minimum Lagoon Surface Area	**12.4 acres**
Total Minimum Lagoon Area	**13.0 acres**
Max Annual Seepage Rate	**6 inches**

Month	Days	Wastewater Flows (gallons)	10-yr Wet Precip. (inches)	Precip. (gallons)	Evaporation (inches)	Evaporation (gallons)	Seepage (inches)	Seepage (gallons)	Net Volume (gallons)	Cumulative Volume (gallons)
January	31	883,500	0.46	163,254	0.7	230,071	0.51	171,105	645,578	1,771,927
February	29	826,500	0.34	119,131	1.0	345,107	0.48	160,066	440,458	2,212,385
March	31	883,500	0.54	189,727	1.9	632,696	0.51	171,105	269,426	2,481,811
April	30	855,000	1.25	441,227	3.2	1,092,839	0.49	165,585	37,802	2,519,613
May	31	883,500	2.54	895,690	5.0	1,696,777	0.51	171,105	-88,692	2,430,922
June	30	855,000	3.30	1,164,838	5.8	1,955,607	0.49	165,585	-101,354	2,329,567
July	31	883,500	1.80	635,366	8.0	2,703,339	0.51	171,105	-1,355,578	973,990
August	31	883,500	1.78	626,542	6.7	2,271,955	0.51	171,105	-933,018	40,971
September	30	855,000	1.60	564,770	3.9	1,322,911	0.49	165,585	-68,726	-27,755
October	31	883,500	0.85	300,034	2.6	862,768	0.51	171,105	149,662	**121,907**
November	30	855,000	0.54	189,727	1.2	402,625	0.49	165,585	476,517	476,517
December	31	883,500	0.64	225,026	0.9	287,589	0.51	171,105	649,832	1,126,349
Totals	366	10,431,000	**15.6**	5,515,331	**41.0**	13,804,286	**6.0**	2,020,139	**121,907**	

A 57.2:Ev 1/2

EVAPORATION POND

DESIGN FOR AGRICULTURAL WASTEWATER DISPOSAL

LIBRARY BOZEMAN
JAN 20 '89
MONT. STATE

SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE

FEBRUARY 1974
TECHNICAL NOTE: ENVIRONMENT NO.7

DOCUMENTS

TD 930 L7 1974

TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

ENVIRONMENT No. 7

Bozeman, Montana
February 15, 1974

RE: Agricultural Waste Management---Evaporation Pond Design

Disposal of polluted runoff by use of an evaporation pond is a successful method if the proper climatic and site conditions exist. This technical note will describe these desirable conditions and provide a basis for pond design.

Site Suitability

Effective functioning of the pond will require a mean annual evaporation of at least 10 inches per year greater than the average annual precipitation. The proposed site should be relatively flat to minimize earth-work costs. The soil should be of a very low permeability or one that may be made impervious. The seasonal high water table should be at least two feet below the proposed bottom of the sealed pond. The pond will produce odors. The site should be isolated to allow dissipation of odors before they reach the general public.

Design Considerations and Recommendations

A settling basin to remove eroded manure solids is recommended for feedlots with slopes exceeding 2 percent.

If a large pond is required and the land is suitable for crops or grazing, the pond may be divided into cells. This would allow use of portions of the pond during years of low runoff. Weir structures would provide water control from cell to cell.

Attempt to use marginal farmland such as saline or canal seep damaged areas. Pond locations in glacial till or in shallow soils underlain by shale should be investigated to prevent the aggregation or origination of a saline seep.

Consider the use of a salt-tolerant and emergent tolerant grass to reduce dust during dry periods. Western wheatgrass or reed canarygrass are suggested.

It is important to check infiltration rates at pond sites to determine if compaction or other sealing methods are needed.

Design Notes

The use of a 1.0 runoff coefficient was requested by state health authorities. This provides a safety factor for variables such as antecedent moisture, intensity of precipitation, depression (hoofprint) storage, frozen urine, etc.

The following design procedure determines the area of pond required to evaporate dry during a year of above normal precipitation and of below normal evaporation. Above normal precipitation was approximated from precipitation records as 1.3 times the average precipitation. Below normal evaporation was accommodated by using the mean shallow lake evaporation which is less than the evaporation of a shallow basin. The pond depth is determined by the storage required to hold winter and spring runoff for the higher summer evaporation period.

Design Procedure

1. From Appendix A determine the mean annual shallow lake evaporation, E.

2. From Appendix B determine the average annual total precipitation, P.

3. Check for practicality of evaporation pond: Is E > P by at least 10 inches per year?

4. Evaporation Pond area required:

$$A_p = \frac{1.3(PA_L) + R_O}{E-1.3P}$$

Where:

A_p = Required evaporation pond area in acres.
1.3 = Fa ctor to obtain non-average total precipitation.
P = Average annual total precipitation in inches (Appendix B).
A_L = Lot area in acres.
E = Mean annual shallow lake evaporation in inches (Appendix A).
R_O = Annual runoff from surfaces other than feedlot pens and feed storage areas in acre-inches.
Note: This is external runoff that is not diverted from entering the feedlot and may be computed as annual yield using the Engineering Field Manual.

5. Evaporation pond depth required:

$$D = \frac{P_w(PA_p) + P_w(PA_L) + P_w(R_O)}{A_p}$$

Where:

D = Required evaporation pond depth in inches.
P_w = Winter precipitation factor (Appendix C).
Others as above.

6. Increase design depth to next half foot or to desired freeboard.

APPENDIX A

Mean Annual Evaporation-
Shallow Lakes and Reservoirs

The following figures, 1 thru 3, were developed from evaporation data at individual weather stations. In western Montana, local experience and judgement should be used for particular locations to modify the 35" evaporation shown.

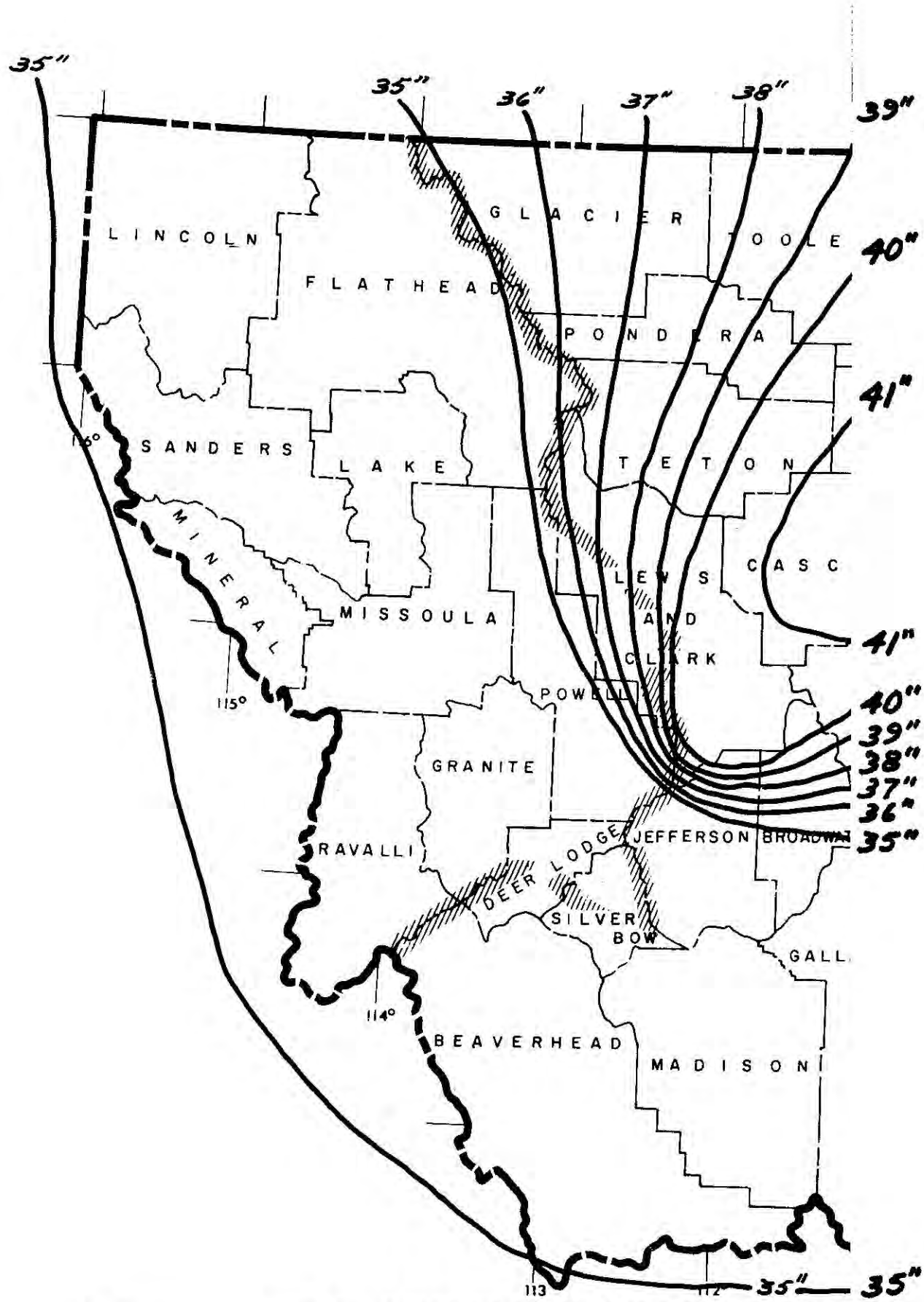


Fig. 1 MEAN ANNUAL EVAPORATION
SHALLOW LAKES AND RESERVOIRS

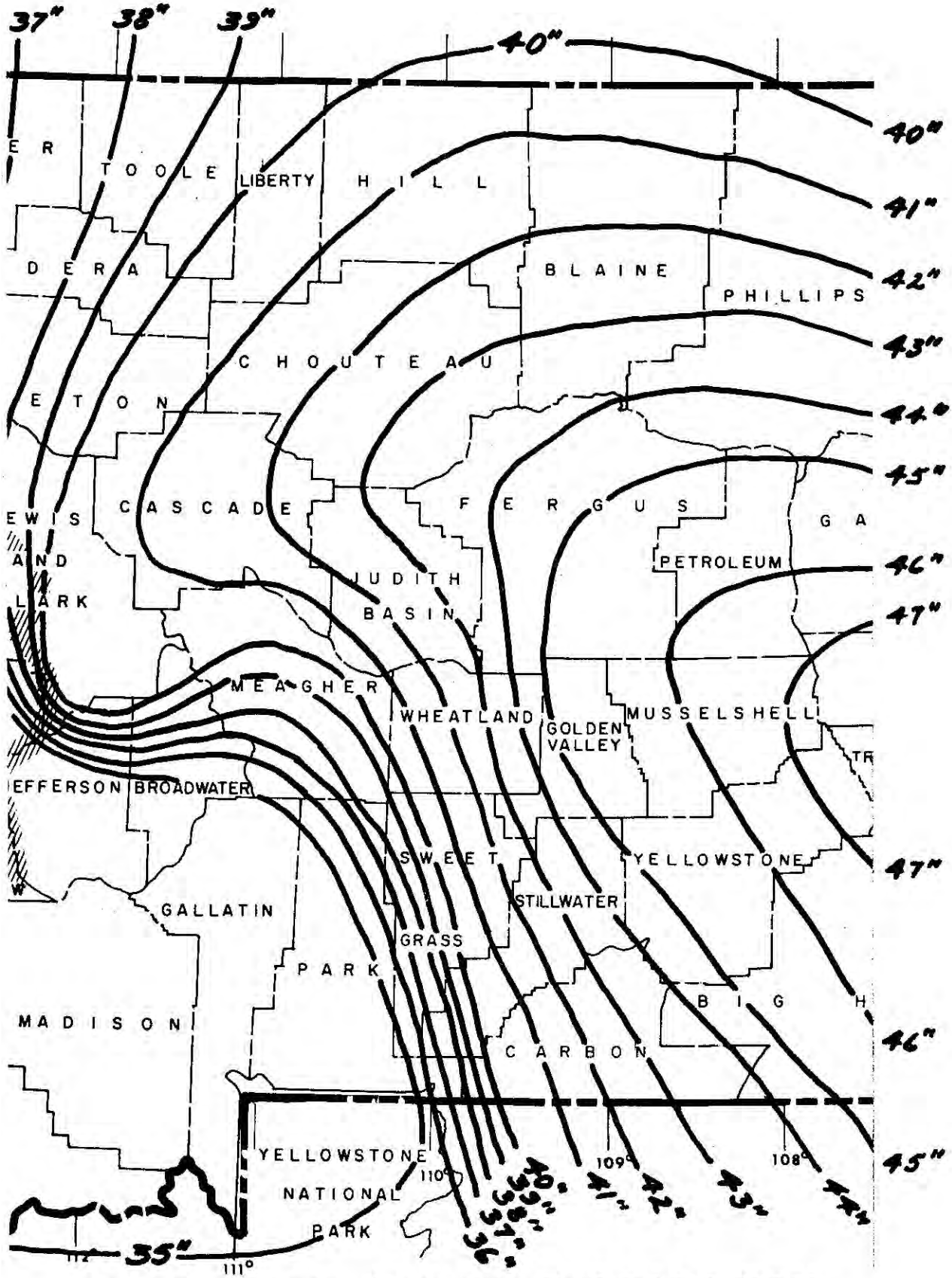


Fig. 2 MEAN ANNUAL EVAPORATION
SHALLOW LAKES AND RESERVOIRS

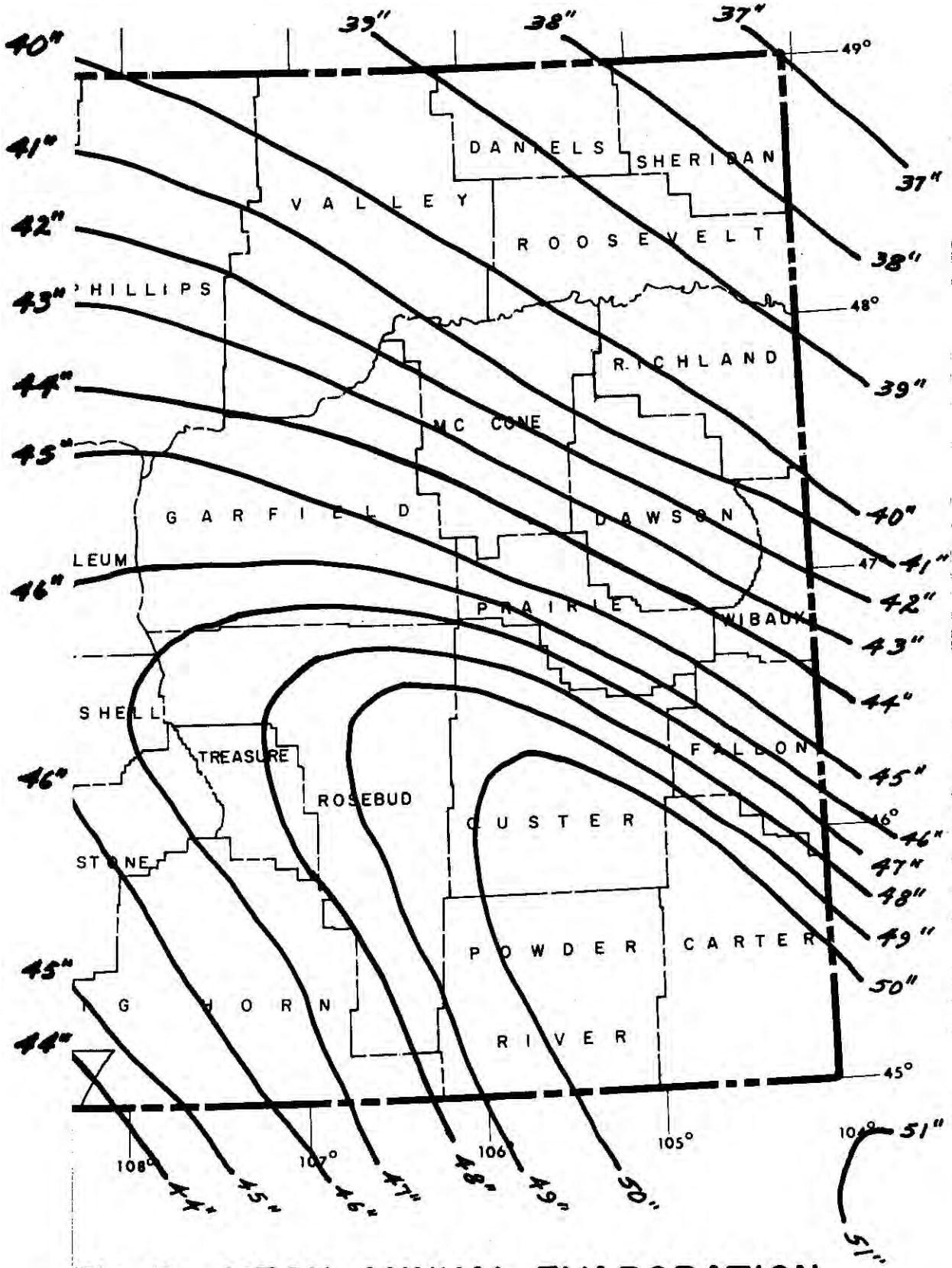


Fig. 3 MEAN ANNUAL EVAPORATION
SHALLOW LAKES AND RESERVOIRS

APPENDIX B

Average Annual Precipitation

From Figure 4, locate the precipitation sheet for your location. The sheets show total precipitation.

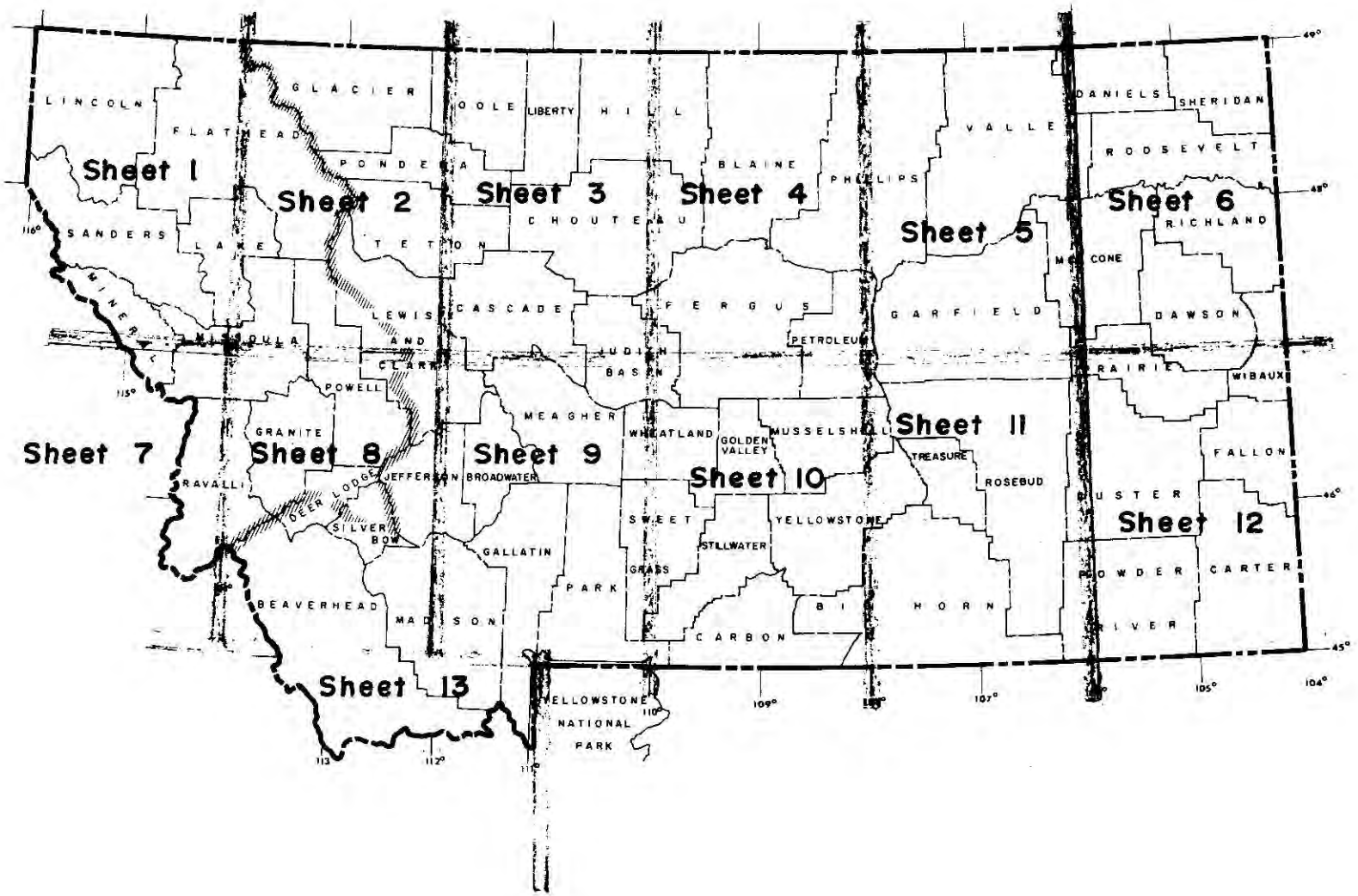
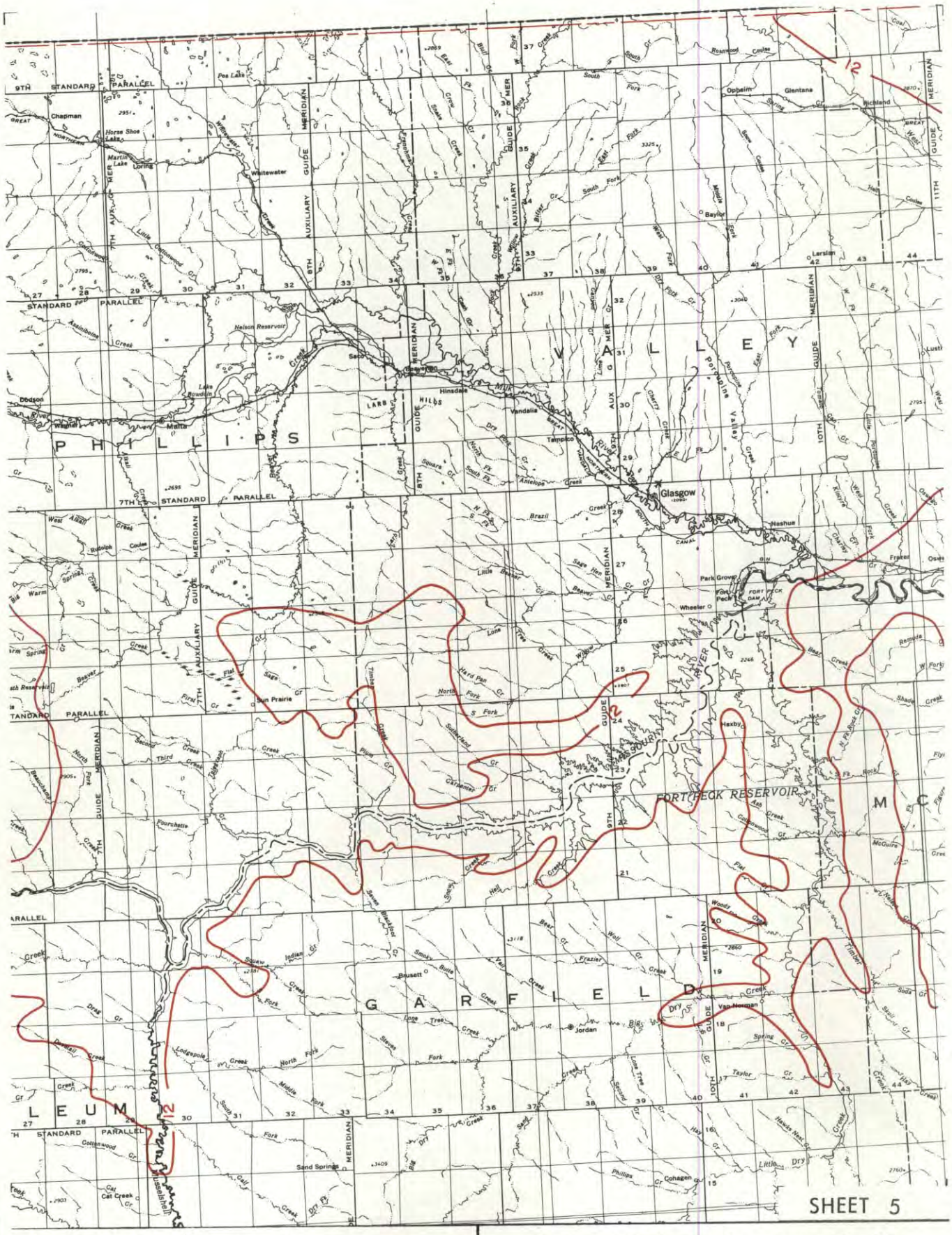


Fig. 4 DIRECTORY OF PRECIPITATION SHEETS



For In-Service use only until map based on 1941-70 period is prepared and released by SCS, National Weather Service and Montana Water Resources Board.
Prepared by: SCS, Box 970, Bozeman, MT.

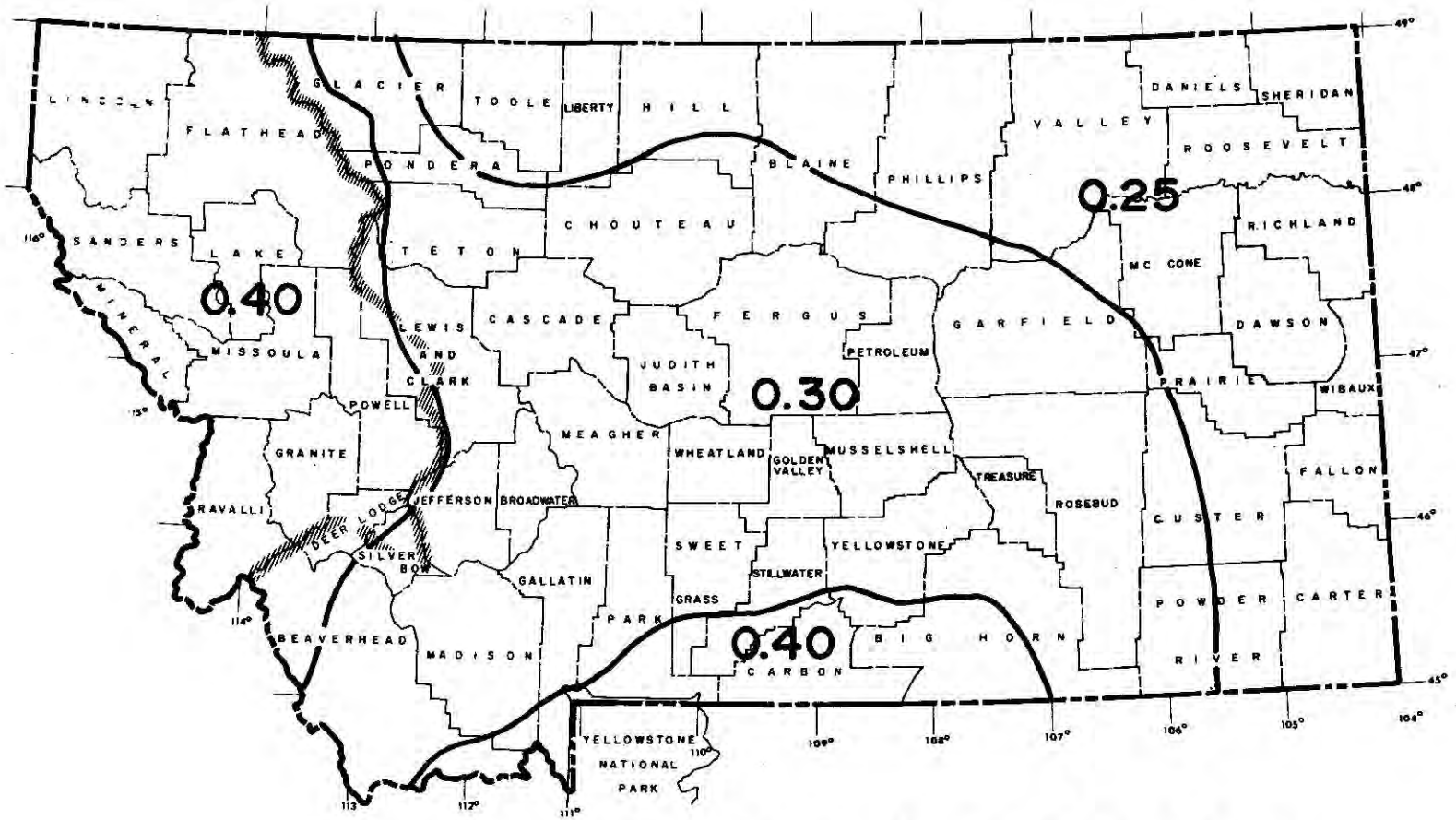
Scale: 1 inch equals approx. 16 miles

STATE OF MONTANA
AVERAGE ANNUAL PRECIPITATION
IN INCHES
Soil Conservation Service 1953-67 Base

APPENDIX C

Winter Precipitation

The Winter Precipitation Factor in Figure 5, approximates that fraction of the total annual precipitation that was recorded during November thru April. In each region the approximation is within $\pm$ 0.05 with a few exceptions. Local records, experience, or judgement may be used to modify the factor for your location.



P_w approximates that portion of the total annual precipitation that fell during November thru April for the 1931–1960 base period.

Fig. 5 P_W – WINTER PRECIPITATION FACTOR

APPENDIX S

Preliminary Irrigation Evaluation

Saco Wastewater PER

Notes on a potential storage and irrigation system and DEQ Standards

DEQ Circular 2. Chapter 120.

DEQ-2 121.1

The intention and purpose of the standards and methods described are for complete crop uptake of nutrients with no impact to groundwater and to prevent impacts to surface water from runoff. A Montana Ground Water Pollution Control System (MGWPCS) discharge permit from the Department will be required when the effluent does not meet the standards for class A-1 or class B-1 reclaimed wastewater and the system is designed or operated in a manner that applies wastewater effluent at rates greater than agronomic uptake rates.

A nutrient management plan (NMP) will be required for DEQ approval.

Nutrient management plan (NMP) is a written plan that establishes the operation, maintenance and sampling steps necessary to prevent the over-application of nutrients (primarily nitrogen and phosphorus) at an approved irrigation site. The strategy of the NMP is to prevent inadvertent runoff of nutrients to surface water or discharge to groundwater in quantities that could lead to degradation or impairment.

There are four classes (A through D) of reclaimed wastewater that are required for various irrigation uses. These four classes are differentiated by the degree of additional treatment provided following secondary treatment, which is defined in 40 CFR Part 133. With facultative lagoons that provide no disinfection, the Saco system would be a class D reclaimed water suitable for:

> *Class D reclaimed wastewater must, at all times, be oxidized and settled, as described below or defined in this chapter. Disinfection will generally not be required for Class D reclaimed wastewater; however, proximity to areas of public access or habitation may dictate that disinfection be provided in order to protect public health. The minimum monitoring level required during periods of use (including prior to seasonal startup) must include: monthly total nitrogen analysis. **

Class D can only be used on nonfood crops.

A 200-ft buffer (from all residential access and public access) applies for non-disinfected effluent (DEQ Table 121-3.)

121.7
Must be 50’ from all water wells.

No irrigating directly onto surface water

121.81
Fencing of irrigation site required

121.9 Control of Irrigation Site

When the irrigation site is not owned by the treatment facility, a 20-year lease or similar assurance must be negotiated in order to ensure control of irrigated land. Longer leases or purchasing of land is encouraged. A copy of the signed lease must be submitted to the Department for review and approval. A statement detailing responsibility of operation must be included in the lease agreement as outlined in Section 121.123 (Responsibility of Operation).

121.101Flow
The capability to measure the amount of water applied to the irrigation site on a daily basis must be provided. This can be accomplished with either a flow meter device or through the use of pump run time (e.g., hour meters) and pump capacity.

Must install a flow meter. Daily volumes must be recorded in the NMP log.

121.112 Chemical Quality Testing
Groundwater, soil, and agronomic information specific to the irrigation site must be provided that addresses the following: for total nitrogen, pH, organic matter, sodium adsorption ratio (SAR), phosphorus, potassium, and chloride.

121.112.4 Ground and Surface Water
The minimal depth to groundwater at the irrigation site must be at least 4 feet (1.2 m). The irrigation site **should not** be located within the 100-year floodplain.

121.112.5 Soil Water Holding Capacity
To avoid runoff and/or direct discharge to groundwater, the application rate must not exceed the infiltration rate of the soil and a single application must not exceed one-half of the soil water holding capacity within the root zone.

121.113 Irrigation Application Analysis
Justification and calculations associated with the hydraulic and nitrogen loading rates must be provided.

The loading rates analysis generally follows the recommended methods and procedures outlined in the "Process Design Manual for Land Treatment of Municipal Wastewater Effluents" (EPA 625/1-81-013) published by the U.S. Environmental Protection Agency.

121.6 Spray Irrigation Equipment
The use of low trajectory nozzles is required on spray irrigation equipment to reduce airborne aerosols. Effluent may not be disposed of through the use of an end gun or big gun due to the high potential for aerosol drift.

Carryover of treated wastewater effluent outside the buffer zone is not allowed. The irrigation system must contain a wind sensor that will shut down the system during periods of high winds. In general, the maximum allowable wind velocity during operation is 25 mph; however, the Department may require a lower maximum limit.

For grazing operations, the irrigation equipment (e.g., sprinklers, risers, pipes, monitoring wells, etc.) must be protected from damage caused by animals.

121.12 OPERATION AND MAINTENANCE PROCEDURES
Operation and maintenance procedures for the irrigation system must be approved by the Department prior to plan and specification approval and incorporated into the treatment system's final O&M manual. These procedures must contain information that addresses the following:

121.121 Startup and Shutdown Procedures of the Irrigation System
Startup and shutdown of the irrigation system, including cold weather operation, must be described.

121.122 Nutrient Management Plan
A nutrient management plan (NMP) must be developed in order to remain in compliance with the approved design.

Nutrient management must log the daily application area, log of inches applied, crop harvesting, monthly effluent nitrogen.

The nutrient management plan is part developing the plan in coordination with the engineering and agronomists and then carrying out the plan and logging and tracking information.

Questions for Town and DEQ:

- Can the Town have a discharging system that provides supplemental irrigation? With preference to irrigation. Effluent discharge and monitoring for the permit would only be done as needed for emergency. I need to confirm how this looks/works with how its classified and permitting. Would it be called a batch discharge system or an irrigation system or both on the record?

- Per DEQ, what constitutes the definition and difference between "end/big gun" vs. "sprinkler". Can a smaller hand-line sprinkler be used?

- Does DEQ see very many uses of hand lines and smaller (traveling) irrigation systems these days? New ones being approved? Gas powered vs. electric powered? (These are all questions the owner has in coming up with potential cost savings ideas) We have designed and installed several irrigation systems with floating pumps and center pivots, However, given they wouldn't need to irrigate more than 1-2 mo./year, a full-scale and more expensive fixed irrigation center-pivot might be a stretch for them.

- Can the irrigation site be in the flood plain if DEQ states "should" not be? The lagoons and the area around it is in the flood plain. In fact, the Town is surrounded completely by a levee system and the lagoons are outside the levee.

- Would the owner to the south be open to a 20 year lease with no grazing?

- Design parameters needed. Pump required for reel pump system? Flow rate and head. (single or 3 phase)
    - Feedback from supplier
    - Typical Maintenance

- Special material for equipment for effluent.
- Budgetary supply cost.

Matthew Mudd

From: Campbell, Terry <tcampbell@mt.gov>
Sent: Tuesday, March 22, 2022 10:40 AM
To: Matthew Mudd
Subject: RE: Saco Wastewater Treatment and Irrigation

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

I don't know as that we have kept a list of systems using UV, but the Montana Law Academy here in the valley is a good example of a fairly recent hand line system where UV disinfection was employed for farmer/operator safety and to reduce setbacks. With a center pivot, we would only require disinfection if the buffer distance was proposed to be less than 200-feet. Yes, I would think we would like to see the proposal involve some form of disinfection step if a hand line system were proposed. Also, that reduces the setback from roads, adjacent property owners and such to 50' which can help.

DEQ would also likely want to see a "long term" (typically 20-yr) lease with a private landowner that maintains the Town authority to control how the effluent is applied, how much, how long per application and such. They should also probably identify a back-up plan if private land is proposed in the event the lessee backs out. We have had that issue arise several times in the past 5-8 years and that can leave an entity in a bind. In this case because of the discharge permit it might not be as much of an issue.

Not sure which program will eventually review this project for you, so you might get a different take when I am gone later this year, but this is what I can offer for now. The PWS shop and engineering bureau are "in flux" right now with people leaving, moving to SRF and such, so several staff vacancies to be filled in the next 6-months. That will impact things here for a while.

Terry

From: Matthew Mudd <mmudd@greatwesteng.com>
Sent: Tuesday, March 22, 2022 10:05 AM
To: Campbell, Terry <tcampbell@mt.gov>
Subject: [EXTERNAL] RE: Saco Wastewater Treatment and Irrigation

We are having further discussion on this topic. I assume the raising the crop part would have to be accomplished with agreements from a nearby owner who shares supplemental watering. Its not clear to me, but would disinfection be required or highly recommended for irrigation methods that are more hands on for operators (hand lines, etc)? And if this is the case where disinfection is needed, then adding disinfection and continuing to discharge like they do to meet E.coli might be just as well. The owner has hesitations of installing a UV system vs. just irrigating, but these are becoming more and more common. Does DEQ have a list of small systems using UV?

Thanks,

GreatWest ENGINEERING
[greatwesteng.com]

Matthew Mudd, PE
Project Manager

d: (406) 495-6196
c: (406) 490-3909

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Helena, MT 59601

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From: Campbell, Terry <tcampbell@mt.gov>
Sent: Friday, March 18, 2022 6:56 AM
To: Matthew Mudd <mmudd@greatwesteng.com>
Subject: Re: Saco Wastewater Treatment and Irrigation

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hi Matt:
Yeah, sorry - the message was kind of garbled when you were leaving your name.

I think there is lots of flexibility with using irrigation to reduce the amount and frequency of discharge and it can be built into the discharge permit with Jon Kenning's group. So that isn't a problem, Saco would just end up having to have meters or flow measurement capable of tracking and reporting the volume to irrigation and to discharge so there is a good accounting for flows.

However I'll be honest with you - I personally don't like irrigation projects that just become surface dumping areas that folks use to surface discharge and sometimes these kind of projects become just that. If they will irrigate they "must" do it in a manner that supports and raises a crop. That crop must be capable of removing the nutrients from the field. Eastgate in E Helena is a very good example of a land application system that truly does not grow a viable crop, probably isn't anything more than a surface spreading groundwater discharging system.

We don't like hand line systems or any nozzle that projects spray out sideways to cover distance. Hand line systems tend to result in operator/farmer exposure that shouldn't happen. Have approved a few over the years, but when we inspect them, they tend to spill and pond around the connection pipes and we see some erosion and runoff. The spray heads should be primarily downward projecting and low pressure nozzles, otherwise aerosol dispersion becomes a concern. End guns of any kind are not good and wouldn't be approved.

I would push back pretty hard on placing an irrigation field in a flood plain, but if there were some constraints like only going to irrigate in mid and late summer and there was some good data on the depth to groundwater showing it isn't close to the surface (4' being the key there), we might be convinced that could work. On the "should" question, that somewhat depends on if DEQ is funding the work. If we were providing financing I think you would see us being a bit more firm on the "should" issues.

All that said, yes I think that could be a viable option for Saco in minimizing the discharge, but we become more concerned with the way these irrigation projects are designed and (primarily operated) all the time. It is still a good Water Quality outcome in most cases, but they do get misused.

I'm out of the office today, but back Monday if you want to chat further.

Terry

Terry Campbell, PE
DEQ WPCSRF Program
Engineering Bureau
(406) 444-7343

From: Matthew Mudd <mmudd@greatwesteng.com>
Sent: Thursday, March 17, 2022 4:52 PM
To: Campbell, Terry <tcampbell@mt.gov>
Cc: Abrahamson, Michael <MAbrahamson@mt.gov>
Subject: [EXTERNAL] Saco Wastewater Treatment and Irrigation

Hi Terry:

It was me who called and left a message. It must have cut off my name part. Either way, I did want to reach out with some general questions related to the current the Saco WW PER that we are working on. Just like any old system, there are issues with the old clay collection system with I/I, etc, and the treatment sytem has not had anything done with it since it was built. Sludge is excessive along with several other issues with the strucutres, berms, etc. It is a discharging system that according to the recent H&S assessment, will violate E Coli 60% (of their general batch permit) or more of the time. However, given its current capacity, the Town really only needs to discharge 1 or 2 times a year.

We are looking at 3 main alternatives for treatment: 1) rehab existing lagoons and install UV (keep as discharging), 2) Total retention (rehab existing, add new cell), 3) Supplemental irrigation (rehab existing), add small irrgation system, keep discharge permit. (Any epansion of either a new cell and/or irrigation would likely be to the south, see below).

They lean toward a simple/low O&M option, but they are also concerned about the capital cost of a total retention system.

Given the excessive capacity in the existing lagoons, the irrigation option may not need to add anothter storage cell. I had some quesitons in relation to the irrgation standards including:

- Can we have a discharging system that provides supplemental irrigation? With preference to irrigation. Effluent discharge and monitoring for the permit would only be done as needed for emergency. I need to confirm how this looks/works with how its classified and permitting. Would it be called a batch discharge system or an irrigation system or both?

- What constitutes the definition and difference between “end/big gun” vs. “sprinkler”. Can a smaller hand-line sprinkler be used? (Something like the image of the

- Does DEQ see very many uses of hand lines and smaller (traveling) irrigation systems these days? New ones being approved? Gas powered vs. electric powered? (These are all questions the owner has in coming up with potential cost savings ideas) We have designed and installed several irrigation systems with floating pumps and center pivots, However, given they wouldn’t need to irrigate more than 1-2 mo./year, a full-scale and more expensive fixed irrigation center-pivot might be a stretch for them.

- Can the irrigation site be in the flood plain if DEQ states “should” not be? The lagoons and the area around is in the flood plain. In fact, the Town is surrounded completely by a levee system and the lagoons are outside the levee.

Any other information and/or recommendations are appreciated.

Thanks,

GreatWest ENGINEERING

[greatwesteng.com]

Matthew Mudd, PE
Project Manager

d: (406) 495-6196
c: (406) 490-3909

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DRAFT

TOWN OF SACO

Monthly Water Balance / Irrigation Requirements

Preliminary Irrigation Site Calculations

Storage & Irrigation

I. Precipitation and Evaporation for Saco, MT

The Western Regional Climate Center (WRCC) station in Saco (247265) is listed in the table below along with respective average annual precipitation and station elevation. See attachments for NOAA and/or NRCS data summaries.

Table 1

Precipitation Data

Climatological Station	Station Elevation (ft)	Average Annual Precipitation (inch)	2 yr/10 yr Wet Precipitation (inch)
247265		11.50	= 14.38 in

The following precipitation and evaporation data will be used for this facility plan.

Average annual precipitation	**= 11.50 in**	
2 yr in 10 yr dry precipitation	= 9.04 in	
2 yr in 10 yr wet precipitation	= 14.38 in	
10-yr. frequency precipitation rate	**= 16.49 in**	
Evaporation:		***Input Precipitation and Evaporation Data***
Western regional Climate Center	= 41.00 in	
Average Annual Evaporation	**= 41.00 in**	

The annual precipitation data was taken directly from the Western Regional Climate Center (WRCC) website.

The evaporation value is extractd from the SCS design of wastewater disposal, reference book. The listed evaporation rate of about 41" is used

To allow the preparation of the a water balance, monthly 10-yr. return period precipitation rates are calculated by multiplying the 10-yr annual wet precipitation (16.49 inches) by the ratio of average monthly precipition. Consumptive use estimates are based on data from NRCS. Net irrigation requirements are based on the 50% chance year provided by

Table 2

Precipitation / Evaporation / Consumptive Use Data

Month	Precipitation	10-Year Annual / Monthly	Monthly Evaporation	Consumptive Use (Montly ET) Grass Hay	Consumptive Use (Montly ET) Alfalfa	Net Irrigation Requirement (50% Chance) Grass Hay	Net Irrigation Requirement (50% Chance) Alfalfa
Jan.	0.50"	0.70"	0.00"	0.00"	0.00"	0.00"	0.00"
Feb.	0.42"	0.58"	0.00"	0.00"	0.00"	0.00"	0.00"
Mar.	0.64"	0.90"	0.00"	0.00"	0.00"	0.00"	0.00"
Apr.	0.96"	1.33"	3.15"	0.72"	0.85"	0.03"	0.15"
May	1.74"	2.43"	5.04"	3.31"	3.98"	2.15"	2.78"
Jun.	2.70"	3.75"	6.21"	4.94"	6.04"	3.64"	4.65"
Jul.	1.06"	1.47"	7.91"	6.38"	7.67"	5.31"	6.53"
Aug.	1.08"	1.51"	7.04"	5.52"	6.46"	4.54"	5.43"
Sep.	1.02"	1.42"	4.18"	2.16"	2.47"	1.20"	1.50"
Oct.	0.67"	0.94"	1.93"	0.00"	0.00"	0.00"	0.00"
Nov.	0.54"	0.75"	0.00"	0.00"	0.00"	0.00"	0.00"
Dec.	0.52"	0.73"	0.00"	0.00"	0.00"	0.00"	0.00"
Annual	11.85"	16.51"	35.46"	23.03"	27.47"	16.87"	21.04"

II. Other Variables

Average Wastewater Flow (GPD):			
Winter	= 25,000	GPD	
Summer	= 30,000	GPD	***Input Flow and Pond Data***
Allowable Seepage (inches / year)	= 6.00	Inches	

Primary and Secondary Cells:

Primary Pond Water Surface Area (acres) =	= 2.40	Acres
Primary Pond Embankment Area (acres) =	= 2.50	Acres
Primary Treatment Volume (MG)	= 2.60	MG

Storage Cell:

Storage Pond Water Surface Area (acres) =	= 2.40	Acres
Storage Pond Embankment Area (acres) =	= 2.50	Acres
Storage Cell Available Volume (MG)	= 2.60	MG
All Cells Storage Volume (MG)	= 5.20	MG

III. Water Balance for Storage and Irrigation Treatment

Based on available information. Cell 1 is 2.4 acres Cell 2 is 2.4 acres. Both cells have a maximum water depth of 5-ft.

Table 3

Monthly Water Balance
Storage and Irrigation
(Volumes in 1,000 Gallons)

Month	Wastewater Inflow	Precipitation	Evaporation	Irrigation	Seepage	Net Volume	Cumulative Storage
October	775.00	127.62	251.54	0.00	65.17	585.91	585.91
November	750.00	101.82	0.00	0.00	65.17	786.66	1372.57
December	775.00	99.11	0.00	0.00	65.17	808.94	2181.51
January	775.00	95.03	0.00	0.00	65.17	804.87	2986.37
February	700.00	78.74	0.00	0.00	65.17	713.58	3699.95
March	775.00	122.19	0.00	0.00	65.17	832.02	4531.97
April	750.00	180.56	410.54	11.42	65.17	443.43	4975.40
1/2 May	387.50	164.95	328.44	409.28	32.58	-217.85	4757.55
Off-Season Subtotals	**5687.50**	**970.02**	**990.52**	**420.70**	**488.74**	**4757.55**	**4757.55**
1/2 May	387.50	164.95	328.44	409.28	32.58	-217.85	4539.70
June	900.00	509.11	809.36	1385.85	65.17	-851.27	3688.43
July	930.00	199.57	1030.92	2021.67	65.17	-1988.19	1700.25
August	930.00	205.00	917.53	1728.51	65.17	-1576.21	124.04
September	750.00	192.78	544.79	456.87	65.17	-124.04	0.00
Subtotals	**3897.50**	**1271.41**	**3631.04**	**6002.18**	**293.25**	**-4757.55**	**0.00**
Total Annual	**9585.00**	**2241.43**	**4621.56**	**6422.89**	**781.99**	**0.00**	**0.00**

Total Available Storage (MG) = 5.2
Total Required Storage (MG) = 5.0

The above water balance determined that nearly 5.0 million gallons of storage is required and approximately 5.2 million gallons would to be disposed of by irrigation.

IV. Irrigation Requirements

The following section evaluates the irrigation requirements for the system using different approaches. The irrigation of two crops was considered for each approach, grass hay/pasture and alfalfa. The first two evaluation techniques, hydraulic loading and nitrogen uptake, are EPA approaches to design that must be satisfied prior to receiving approval for construction. The irrigation requirement was distributed on a monthly basis based on monthly consumptive use data.

The equations used in the preparation of the following tables were taken from the "Process Design Manual, Land Application of Municipal Wastewater", and EPA publication. Percolation rates for soils were utilized for the hydraulic loading calculation. Only 4% of the selected percolation rate of .7 in/hr was allowed per the EPA manual. Estim nitrogen uptake for grass hay / pasture was set at 125 kg/ha/yr and the nitrogen uptake for alfalfa was set at 200 kg/ha/yr based on typical irrigated pasture grasses and DEQ Table 121-7 and lower grass hay uptake value. Effective precipitation was used in the tables to account for inefficiencies of light precipitation events (Bauder, MSU). Irrigation application efficiency is 100%, assuming all nitrogen reaches ground.

Table 4

Irrigation Based on Hydraulic Loading (EPA Formula)

Grass Hay / Pasture

Month	Consumptive Use (inch)	10-year Wet Precip. (inch)	Allowable Percolation (inch)	Maximum Irrigation Application (inch)
April	0.72"	1.33"	13.44"	15.09"
May	3.31"	2.43"	14.11"	17.64"
June	4.94"	3.75"	13.44"	17.21"
July	6.38"	1.47"	14.11"	22.38"
August	5.52"	1.51"	14.11"	21.32"
September	2.16"	1.42"	13.44"	16.68"
October	0.00"	0.94"	13.44"	14.71"
Total	**23.03"**	**12.85"**	**96.10"**	**125.03"**
Irrigation Volume Available (Gallons)				6,422,886
Irrigated Acreage Required (Acres)				1.89

Table 5

Irrigation Based on Hydraulic Loading (EPA Formula)

Alfalfa

Month	Net Consumptive Use (inch)	10-year Wet Precip. (inch)	Allowable Percolation (inch)	Maximum Irrigation Application (inch)
April	0.85"	1.33"	13.44"	12.96"
May	3.98"	2.43"	14.11"	15.66"
June	6.04"	3.75"	13.44"	15.73"
July	7.67"	1.47"	14.11"	20.31"
August	6.46"	1.51"	14.11"	19.06"
September	2.47"	1.42"	13.44"	14.49"
October	0.00"	0.00"	13.44"	15.81"

Total	**27.47"**	**11.91"**	**96.10"**	**114.03"**
Irrigation Volume Available (Gallons)				6,422,886
Irrigated Acreage Required (Acres)				2.07

Table 6
Irrigation Based on Nitrogen Uptake (EPA Formula)
Grass Hay / Pasture

Month	Consumptive Use (inch)	Nitrogen Uptake (kg/ha year)	Applied Nitrogen Concentration (mg/l)	Application Efficiency	f	Maximum Irrigation Application (inches)
April	0.72"	3.91	30	100%	20%	0.64"
May	3.31"	17.97	30	100%	20%	2.95"
June	4.94"	26.81	30	100%	20%	4.40"
July	6.38"	34.63	30	100%	20%	5.68"
August	5.52"	29.96	30	100%	20%	4.91"
September	2.16"	11.72	30	100%	20%	1.92"
October	0.00"	0.00	30	100%	20%	.00"
Total	**23.03"**	**125.0**				**20.51"**
Irrigation Volume Available (Gallons)						6,422,886
Irrigated Acreage Required (Acres)						11.54

Table 7
Irrigation Based on Nitrogen Uptake (EPA Formula)
Alfalfa

Month	Consumptive Use (inch)	Nitrogen Uptake (kg/ha year)	Applied Nitrogen Concentration (mg/l)	Application Efficiency	f	Maximum Irrigation Application (inches)
April	0.85"	6.19	30	100%	20%	1.02"
May	3.98"	28.98	30	100%	20%	4.75"
June	6.04"	43.98	30	100%	20%	7.21"
July	7.67"	55.84	30	100%	20%	9.16"
August	6.46"	47.03	30	100%	20%	7.72"

September	2.47"	17.98	30	100%	20%	2.95"
October	0.00"	0.00	30	100%	20%	.00"
Total	**27.47"**	**200.0**				**32.81"**
Irrigation Volume Available (Gallons)					6,422,885.80	
Irrigated Acreage Required (Acres)					7.21	

Table 8
Irrigation Based on Minimum Agricultural Needs
Grass Hay / Pasture

Month	Consumptive Use (inch)	Effective Precip. (50% Chance)	Irrigation Requirement (inch)	Irrigation Application w/ Efficiency Loss/Leaching (inches)
April	0.72	0.21	0.51"	0.73"
May	3.31"	1.21"	2.10"	3.00"
June	4.94"	1.43"	3.51"	5.01"
July	6.38"	0.94"	5.44"	7.77"
August	5.52"	0.90"	4.62"	6.60"
September	3.00"	0.48"	2.52"	3.60"
October	1.03"	0.00"	1.03"	1.47"
Total	**24.90"**	**5.17"**	**19.73"**	**28.19"**
Irrigation Volume Available (Gallons)				6,422,885.80
Irrigated Acreage Required (Acres)				8.39

Table 9
Irrigation Based on Minimum Agricultural Needs
Alfalfa

Month	Consumptive Use (inch)	Effective Precip. (50% Chance)	Irrigation Requirement (inch)	Irrigation Application w/ Efficiency Loss/Leaching
May	3.98"	0.60"	3.38"	4.83"
June	6.04"	1.05"	4.99"	7.13"
July	7.67"	0.87"	6.80"	9.71"

August	6.46"	0.78"	5.68"	8.11"
September	2.66"	0.39"	2.27"	3.24"
Total	**26.81"**	**3.69"**	**23.12"**	**33.03"**
Irrigation Volume Available (Gallons)				6,422,885.80
Irrigated Acreage Required (Acres)				7.16

The analysis shows the irrigation site is not hydraulically limited.

https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?mt7265

Back to:
State Map | Western U.S. map | Home Page

NOTE:
To print data frame (right side), click on right frame before printing.

1981 - 2010

- Daily Temp. & Precip.
- Daily Tabular data (~23 KB)
- Monthly Tabular data (~1 KB)
- NCDC 1981-2010 Normals (~3 KB)

1971 - 2000

- Daily Temp. & Precip.
- Daily Tabular data (~23 KB)

SACO 1 NNW, MONTANA (247265)

Period of Record Monthly Climate Summary

Period of Record : 07/01/1966 to 06/09/2016

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	23.3	30.4	42.9	58.8	68.5	76.1	84.3	83.3	72.8	58.8	41.4	28.1	55.7
Average Min. Temperature (F)	-1.0	5.3	17.2	29.0	39.5	49.2	54.0	51.6	40.8	28.8	15.0	3.1	27.7
Average Total Precipitation (in.)	0.38	0.28	0.48	0.95	1.83	2.40	1.47	0.95	1.14	0.75	0.47	0.42	11.51
Average Total SnowFall (in.)	1.4	0.5	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.0	4.6
Average Snow Depth (in.)	4	3	1	0	0	0	0	0	0	0	1	3	1

Percent of possible observations for period of record.
Max. Temp.: 96.4% Min. Temp.: 96.7% Precipitation: 97.4% Snowfall: 54% Snow Depth: 54.5%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

A 57.2:Ev 1/2

EVAPORATION POND

DESIGN FOR AGRICULTURAL WASTEWATER DISPOSAL

LIBRARY BOZEMAN
JAN 20 '89
MONT. STATE

SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE

FEBRUARY 1974
TECHNICAL NOTE: ENVIRONMENT NO.7

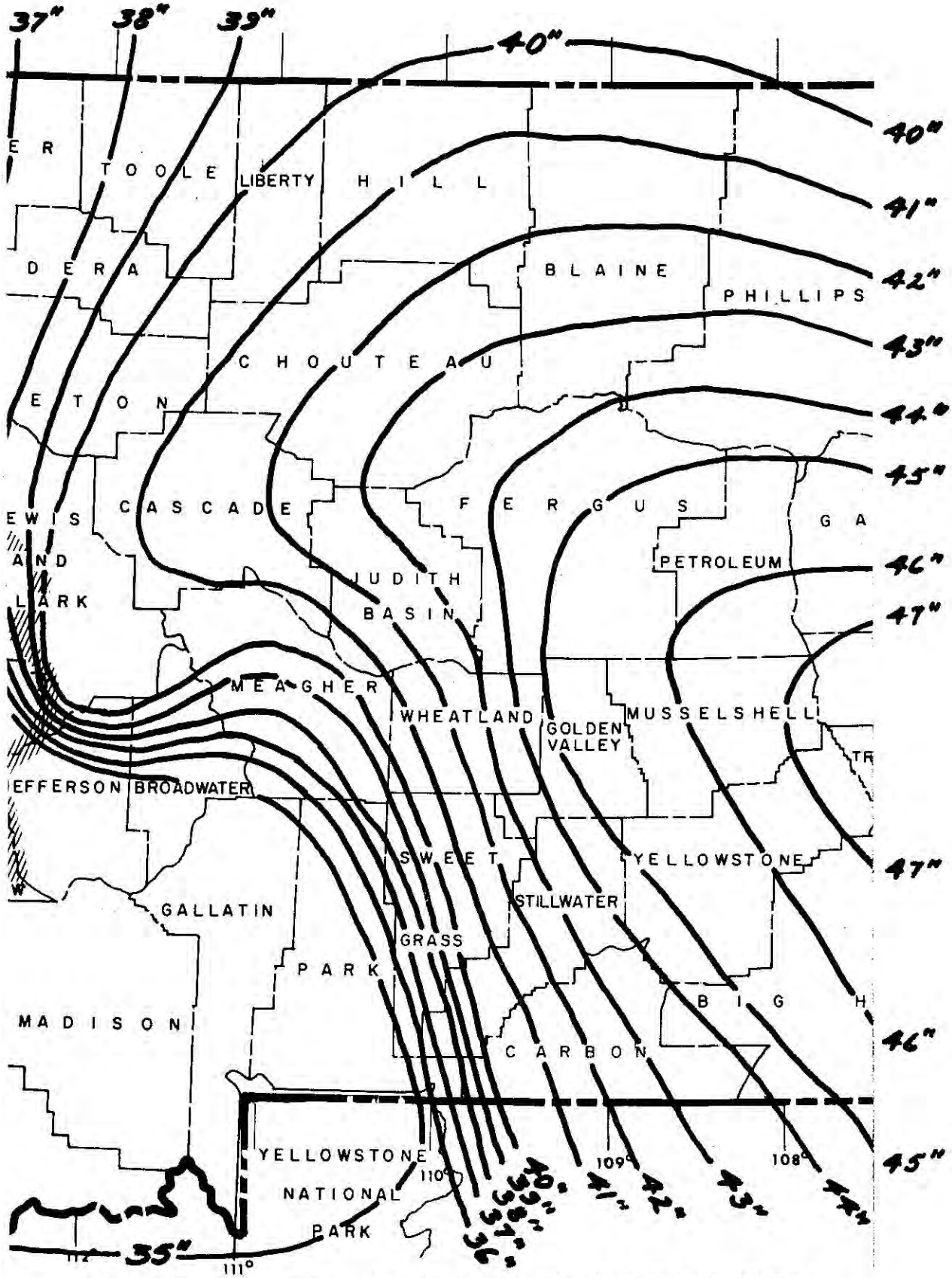


Fig. 2 MEAN ANNUAL EVAPORATION
SHALLOW LAKES AND RESERVOIRS

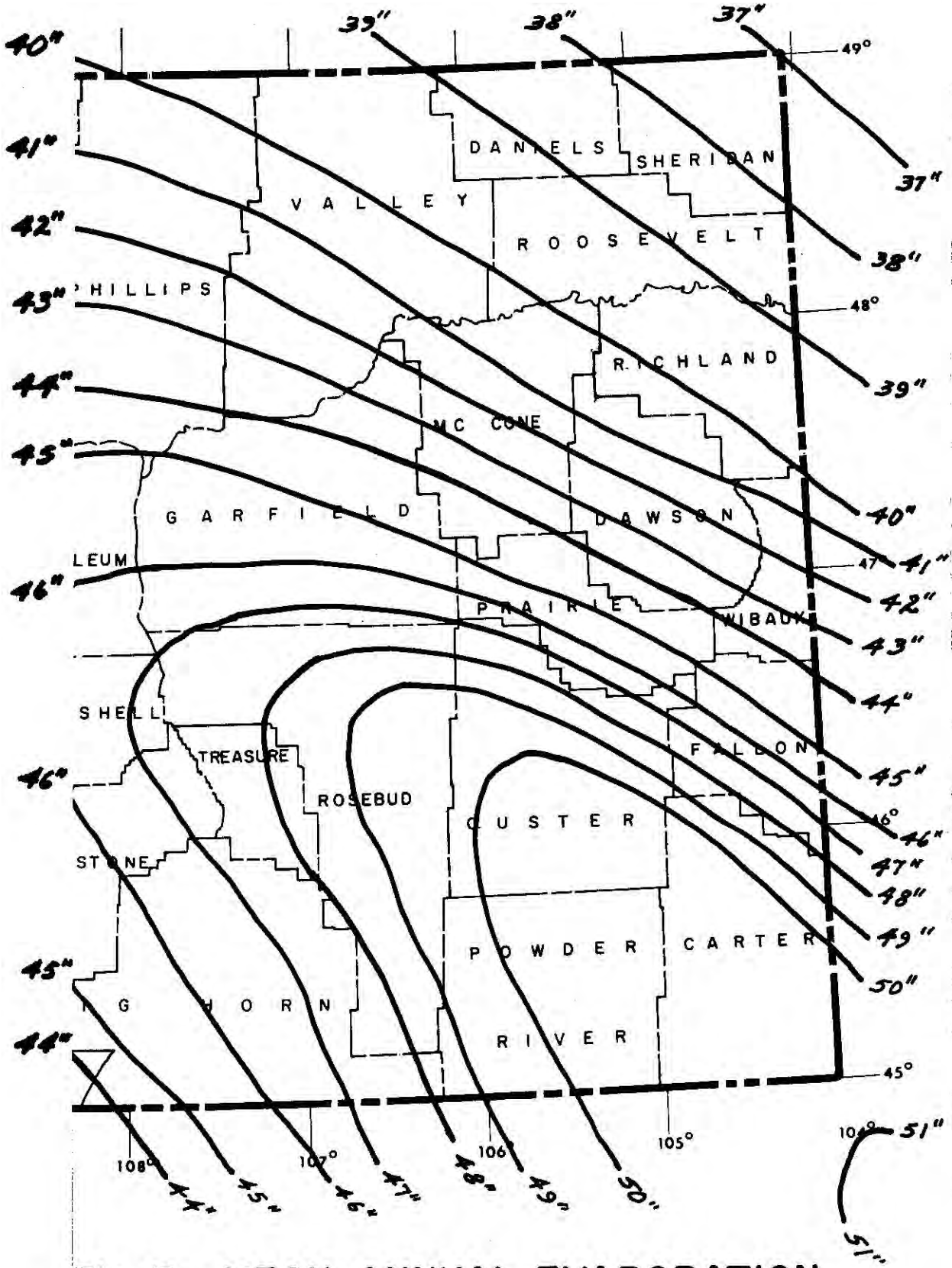


Fig. 3 MEAN ANNUAL EVAPORATION
SHALLOW LAKES AND RESERVOIRS

Matthew Mudd

From: Wayne Stahl (wstahl@nemont.net) <wstahl@nemont.net>
Sent: Tuesday, April 26, 2022 6:28 PM
To: Matthew Mudd
Subject: Re: Permission to Potentially Irrigate - Lands South of Lagoon site

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

landowner does not want irrigation. got the message this afternoon.n So I guess that is no longer an option. I thought Don had talked to her some time ago and she didn't mind. Changed her mind I guess.

> On April 26, 2022 5:10 PM Matthew Mudd <mmudd@greatwesteng.com> wrote:
>
> Good Afternoon:
>
> I have a question for the Town. Since we are moving forward with a potential alternative that includes supplemental irrigation on lands next to the lagoon, what is the land owner disposition of a potential irrigation/lease agreement? Are they open to it, would they state as much?
>
> Reason I ask, is grant application alternative could have a higher mark if we have some sort of statement that the land owner could be open to it. Or alternatively, you could score less due to the fact that we don't have something in writing.
>
> Do you have a relationship with the owner to the south? If you needed 10-15 acres to irrigate, would they be willing to state they are willing to have these discussions?
>
> I think it would help the PER technical feasibility.
>
> Thanks

GreatWest ENGINEERING

Matthew Mudd, PE
Project Manager

d: (406) 495-6196
c: (406) 490-3909

2501 Belt View Drive
Helena, MT 59601

We're Hiring!

This message has been sent to you as official business of Great West Engineering. This E-mail and any attachments may be considered confidential. If you are not the intended recipient, please be advised that you are legally prohibited from retaining, using, copying, distributing, or otherwise disclosing this information in any manner. If you have received this communication in error, please reply to the sender and then immediately delete it. Thank you for your cooperation.

APPENDIX T

UV Cut Sheets and Proposal

3020 Gore Road
London, Ontario N5V 4T7
1-888-220-6118
Tel: (519) 457-3400 / Fax: (519) 457-3030
www.trojanuv.com

Trojan System UV3000^{TM}PTP
Municipal Wastewater Disinfection Equipment

Project Name: Saco, MT WWTP

Quote Number:

Date: 3/8/2022

Prepared For:	**Kinsee Dodge**	**Phone:**	**406-495-6172**
Company:	**Great West Engineering**	**Fax:**	
		Email:	**kdodge@greatwesteng.com**

UV SYSTEM DESIGN PARAMETERS		**GUARANTEED PERFORMANCE**	
Peak Design Flow	131,000 GPD	Validated UV Dose	100,000 uWs/cm^2
UV Transmittance	40%, minimum	Disinfection Limit	< 126 / 100 ml E. Coli
TSS Concentration	100 mg/L, 30-day average		on a 30 day geometric mean

EQUIPMENT DETAILS ***Model Number 3300K PTP (2 Duty Banks)***

- One (1) Complete UV system supplied with Type 304 Stainless Steel Channel, Module Support Rack, Level Control Weir, Transition Boxes, Monitoring System, Spare Parts Package, Operators Kit and Maintenance Rack.
- Six (6) Type 316 Stainless Steel Modules per bank supplied, two (2) UV lamps each module– Total of 24 UV lamps in the UV system
- Each UV module weighs 30 pounds and is easily handled by one person
- Each UV module has a standard 120V plug and 10 foot weatherproof cable for connection to GFI receptacle
- Six (6) Outdoor-rated GFI Power Distribution Receptacles supplied (one for 2 modules)
- Each lamp consumes 87.5 Watts – Total system power requirement of 2,100 Watts (19.2 amps)
- Lamp on/off status indicated on each UV module using LED indicators
- Monitoring System provided for local indication of UV intensity, lamp age and alarms
- Remote indication of UV intensity and low UV intensity alarm available
- Monitoring System requires 120V, single phase, 2 wire plus ground, 5 amp power supply, 60 Hz
- Please refer to the enclosed drawings and specifications for full design details and requirements

COMMERCIAL DETAILS

- Comprehensive Lamp Warranty: Full replacement (non pro-rated) up to 12,000 hours or thirty-six (36) calendar months from shipment, whichever comes first
- System Warranty: 12 months after substantial completion or 18 months after shipment, whichever occurs first
- 3 Copies of Shop Drawings and O&M Manuals will be supplied
- Equipment Delivered 3-5 weeks after release for fabrication (approved shop drawings)
- Prices do not include any duties or taxes that may be applicable
- Prices are FOB factory, freight paid to jobsite
- Start-up and Training provided by Trojan-certified local service provider

Selling Price **$71,500 including one (1) spare module. $5100 ADDER for Turnbox**

Please contact me if you have any questions about this design. I look forward to working with you on this project.

Rep Name: Scott Forsling	Phone: 435-649-7199
Rep Company: Coombs Hopkins Co.	Fax:
Email: scott@chcwater.com	
Additional Information:	

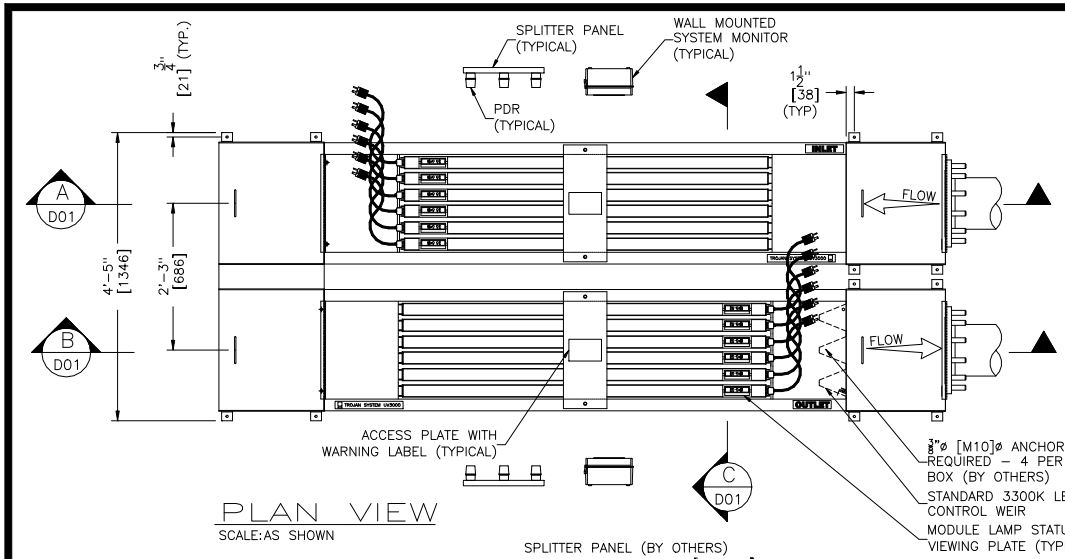
TROJAN UV3000™ PTP

EQUIPMENT INTERCONNECTIONS

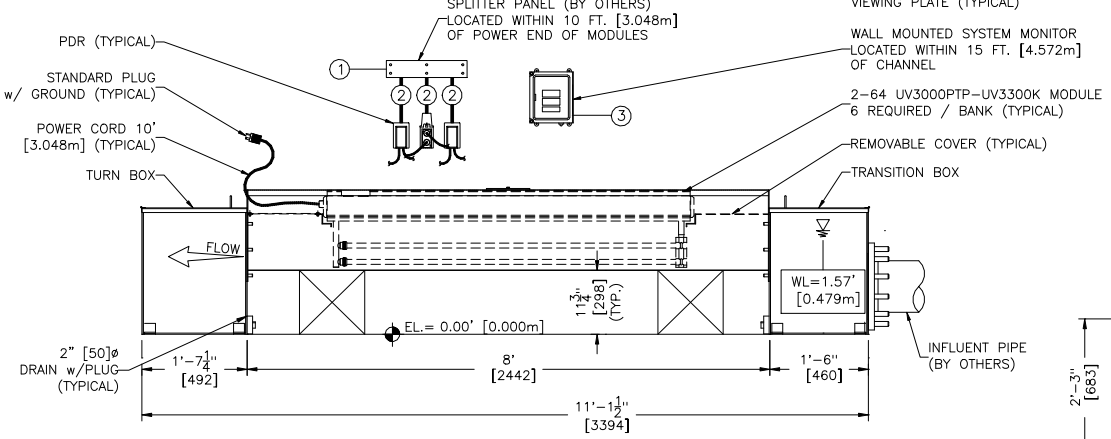
No.	DESCRIPTION	FROM	TO
1	SPLITTER PANEL POWER SUPPLY 120V, 1 PHASE, 2 WIRE, ACTUAL DRAW 9.6 AMPS / SPLITTER PANEL	DISTRIBUTION PANEL (DP) (NOT SHOWN) (BY OTHERS)	SPLITTER PANEL (BY OTHERS)
2	POWER DISTRIBUTION RECEPTACLE (PDR) POWER SUPPLY 120V, 1 PHASE, 2 WIRE, ACTUAL DRAW 3.2 AMPS / PDR	SPLITTER PANEL (BY OTHERS)	PDR
3	SYSTEM MONITOR POWER SUPPLY 120V, 1 PHASE, 2 WIRE, 5 AMPS	DP (NOT SHOWN) (BY OTHERS)	SYSTEM MONITOR

NOTES:

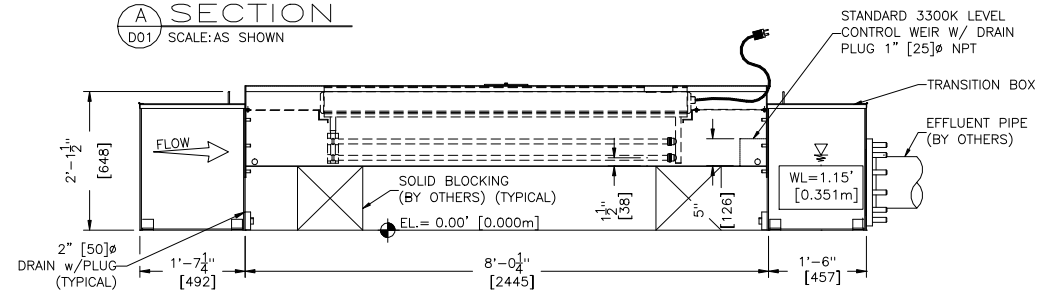
: DO NOT SLOPE CHANNEL FLOOR.
: CHANNEL WIDTH & DEPTH MUST BE KEPT WITHIN A TOLERANCE OF + OR – ¼" [6].
: ANCHOR BOLTS ARE NOT SUPPLIED BY TROJAN TECHNOLOGIES.
: BOLTS, WASHERS AND NUTS FOR CONNECTION OF CHANNELS AND TRANSITION BOXES TO CHANNELS ARE PROVIDED BY TROJAN TECHNOLOGIES.
: SYSTEM CONDUIT, WIRING, DISTRIBUTION PANELS & INTERCONNECTIONS BY OTHERS.
: ELECTRICAL REQUIREMENTS SHOWN ARE TO SUPPLY TROJAN UV EQUIPMENT ONLY. ELECTRICAL INRUSH FACTOR TO BE ADDED AS PER LOCAL CODE.
: ANY EXTRA OUTLETS NOT BEING USED BY TROJAN EQUIPMENT HAVE NOT BEEN INCLUDED IN THE INTERCONNECT AMPERAGE.
: CONTRACTOR TO REVIEW ALL TROJAN TECHNOLOGIES INSTALLATION INSTRUCTIONS PRIOR TO EQUIPMENT INSTALLATION.
: ACCESS IS REQUIRED FOR MODULE REMOVAL – NOTE THE CHANNEL WIDTH AND ENSURE ADEQUATE ACCESS IS PROVIDED TO ALL MODULES.
: DO NOT ENCASE THE STEEL CHANNEL IN CONCRETE.
: [ ] INDICATES MILLIMETERS UNLESS OTHERWISE SPECIFIED.



PLAN VIEW
SCALE:AS SHOWN

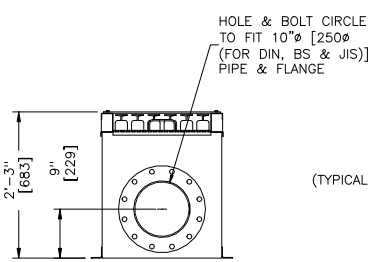


A D01 SECTION
SCALE:AS SHOWN

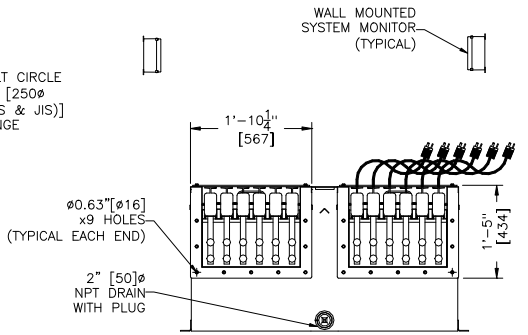


B D01 SECTION
SCALE:AS SHOWN

NOTE: PDR, SPLITTER PANEL (BY OTHERS) AND SYSTEM MONITOR NOT SHOWN FOR CLARITY



END VIEW (TYPICAL OF 2)
SCALE:AS SHOWN



C D01 SECTION
SCALE:AS SHOWN

NOTE: PDR AND SPLITTER PANEL (BY OTHERS) NOT SHOWN FOR CLARITY

MULTIPLE CHANNELS IN PARALLEL (OPTION):

: ADDITIONAL UNITS CAN BE INSTALLED PARALLEL TO THE UNIT SHOWN.
: ACCESS BETWEEN EVERY 2 PARALLEL CHANNELS IS REQUIRED FOR MODULE REMOVAL – NOTE THE CHANNEL WIDTH AND ENSURE ADEQUATE ACCESS IS PROVIDED BETWEEN TRANSITION BOXES AND CHANNELS.
: ACCESS BETWEEN A MAXIMUM OF 2 CHANNELS IS NOT REQUIRED FOR MODULE REMOVAL. TRANSITION BOXES CAN BE INSTALLED ADJACENT TO EACH OTHER.

TROJANUV

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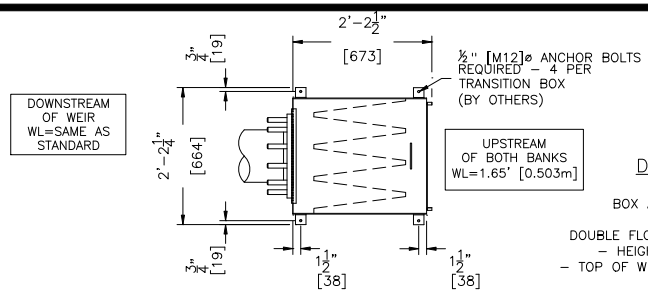
DESCRIPTION: LAYOUT, UV3000PTP–UV3300K 1 CHANNEL 2 BANKS 2 LAMPS WEIR TURNBOX		STANDARD DRAWING NO.	3M0602
DRAWN BY : SLO/JMM/CJB	DATE : 12JL17	REFERENCE NO.	N/A
CHECKED BY : SAH	DATE : 12JL19	DWG NO.	D01
APPROVED BY : CAP	DATE : 12JL19	REV.	C
SCALE (11x17) : NOT TO SCALE	LOG NUMBER : N/A		

TROJAN UV3000™ PTP
EQUIPMENT INTERCONNECTIONS

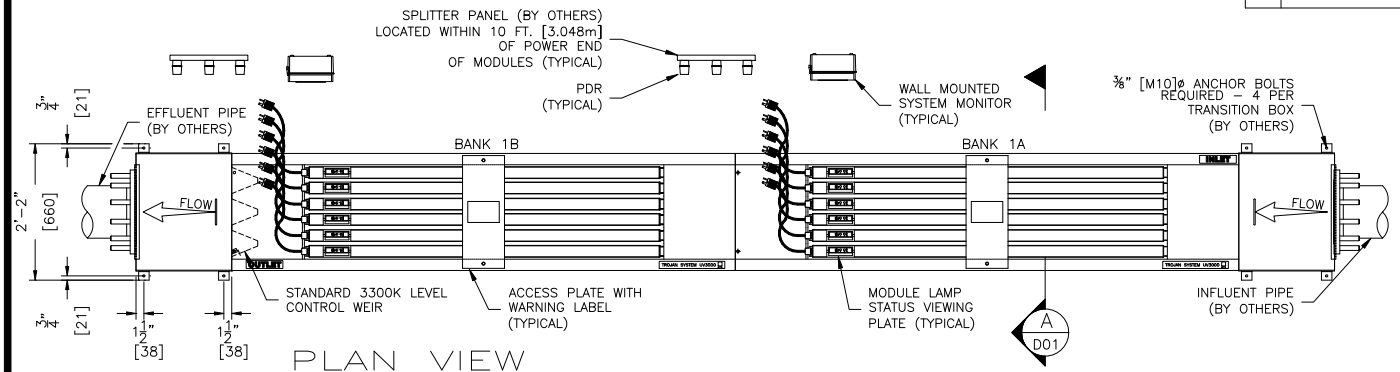
No.	DESCRIPTION	FROM	TO
1	SPLITTER PANEL POWER SUPPLY 120V, 1 PHASE, 2 WIRE, ACTUAL DRAW 9.6 AMPS / SPLITTER PANEL	DISTRIBUTION PANEL (DP) (NOT SHOWN) (BY OTHERS)	SPLITTER PANEL (BY OTHERS)
2	POWER DISTRIBUTION RECEPTACLE (PDR) POWER SUPPLY 120V, 1 PHASE, 2 WIRE, ACTUAL DRAW 3.2 AMPS / PDR	SPLITTER PANEL (BY OTHERS)	PDR
3	SYSTEM MONITOR POWER SUPPLY 120V, 1 PHASE, 2 WIRE, 5 AMPS	DP (NOT SHOWN) (BY OTHERS)	SYSTEM MONITOR



D3300K WEIR BOX (OPTION)

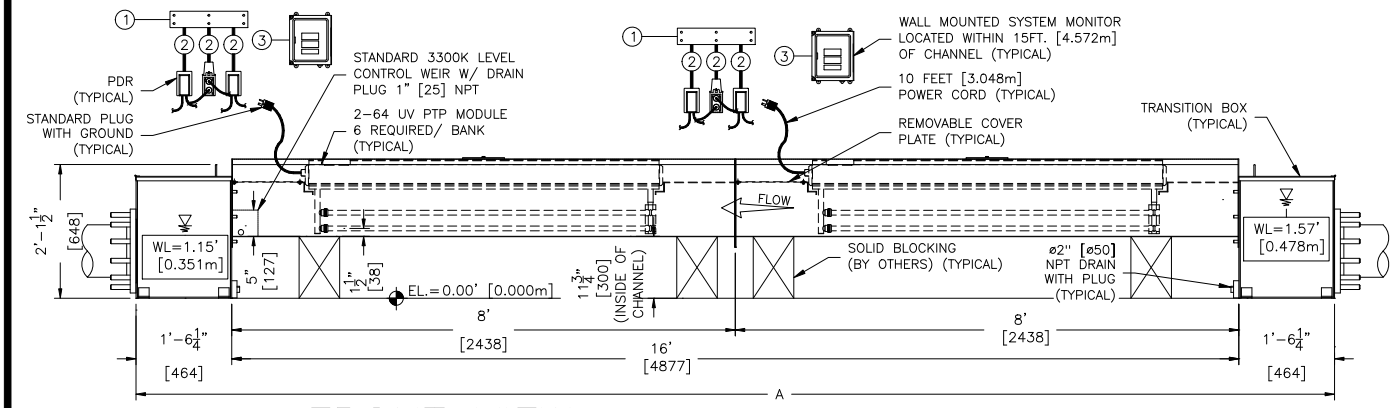
(REPLACES DOWNSTREAM TRANSITION BOX AND WEIR IN CHANNEL AS SHOWN BELOW)

DOUBLE FLOW WEIR BOX FRONT AND END VIEW NOT SHOWN
– HEIGHT OF WEIR BOX TO MATCH TRANSITION BOX
– TOP OF WEIR ELEVATION WILL NOT CHANGE FROM STANDARD FRONT VIEW



PLAN VIEW

SCALE: AS SHOWN

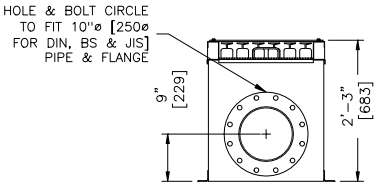


FRONT VIEW

SCALE: AS SHOWN

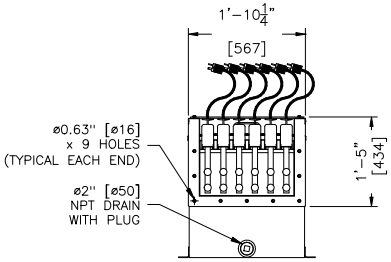
MULTIPLE CHANNELS IN PARALLEL (OPTION):

: ADDITIONAL UNITS CAN BE INSTALLED PARALLEL TO THE UNIT SHOWN.
: ACCESS BETWEEN EVERY 2 PARALLEL CHANNELS IS REQUIRED FOR MODULE REMOVAL – NOTE THE CHANNEL WIDTH AND ENSURE ADEQUATE ACCESS IS PROVIDED BETWEEN TRANSITION BOXES AND CHANNELS.
: ACCESS BETWEEN A MAXIMUM OF 2 CHANNELS IS NOT REQUIRED FOR MODULE REMOVAL. TRANSITION BOXES CAN BE INSTALLED ADJACENT TO EACH OTHER.



END VIEW (TYPICAL)

SCALE: AS SHOWN



A D01 SECTION

SCALE: AS SHOWN
NOTE: SYSTEM MONITOR, SPLITTER PANEL (BY OTHERS) & PDR NOT SHOWN FOR CLARITY

	DIM "A"
W/ WEIR IN TRANSITION BOX	19'-7¾" [5988]
W/ WEIR IN CHANNEL	19'-0½" [5804]

NOTES:

: DO NOT SLOPE CHANNEL FLOOR.
: CHANNEL WIDTH & DEPTH MUST BE KEPT WITHIN A TOLERANCE OF + OR – ¼" [6].
: ANCHOR BOLTS ARE NOT SUPPLIED BY TROJAN TECHNOLOGIES.
: BOLTS, WASHERS AND NUTS FOR CONNECTION OF CHANNELS AND TRANSITION BOXES TO CHANNELS ARE PROVIDED BY TROJAN TECHNOLOGIES.
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: [ ] INDICATES MILLIMETERS UNLESS OTHERWISE SPECIFIED.

TROJAN UV

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DESCRIPTION: LAYOUT, UV3000PTP–UV3300K 1 CHANNEL 2 BANK 2 LAMPS WEIR

DRAWN BY : LZ/JMM/SPM	DATE : 12JN21
CHECKED BY : SAH	DATE : 12JN22
APPROVED BY : CAP	DATE : 12JN22
SCALE (8½x11) : NOT TO SCALE	LOG NUMBER : N/A

STANDARD DRAWING NO.	3M0274
REFERENCE NO.	N/A
DWG NO.	D01
REV.	G

APPENDIX U

Financials

Some Notes from Financial reports

2021 AFR – Ending FY 2021, June 2021

Pdf pg 11 – sewer expenses $55,416, revenues 42,713

Personnel - $16,748

Supplies - $26,957

Services –11627

Fixed Charges - 84

Pg 27 – no depreciation expense listed for sewer

Pg 38 – budgeted vs actual

- Budgeted 21,670 supplies/services/materials – spent 3040
- No budget for personnel – spent 9860

Pg 63 – cash balance

- Starting balance July 2020 – 40,371
- Transfer in – 1,402
- Transfer out – 54,737
- Receipts – 41,554
- Balance July 2021 – 28,590

2020 AFR – Ending FY 2020, June 2020

Pdf Page 31, expenses $28,477, revenue is $39,950

Page 18

Personnel - $20,246

Supplies - $4474

Services – 3580

Fixed Charges – 78

2019 ARF – Ending FY 2019, June 2019

Pg 11, expenses $23,476, revenues $38,254

Page 18

Personnel - $19,915

Supplies - $422

Services – 3017

Fixed Charges – 74

-

Matthew Mudd

From: Kirsten Albus <townsaco@nemont.net>
Sent: Wednesday, April 27, 2022 10:13 AM
To: Matthew Mudd; LaNette Jones
Subject: saco sewer hook ups and min
Attachments: Minutes of 07-14-21.docx; Minutes of 12-08-21.docx; Minutes of 01-12-2022.docx; Minutes of 03-09-2022.docx; Minutes of 04-13-2022.docx

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Here's the minutes you requested. And the total number of sewer hook-ups is 144.
Thanks

Kirsten Albus
Town of Saco-Clerk
townsaco@nemont.net
1-406-527-3312

MONTANA DEPARTMENT OF ADMINISTRATION
State Financial Services Division
Local Government Services
Mitchell Building, Room 270, PO Box 200547, Helena, Montana 59620-0547

ENTITY # 023603

MONTANA
TOWN OF Saco
ADDRESS
CITY, STATE ZIP

ANNUAL FINANCIAL REPORT

FISCAL YEAR ENDING JUNE 30, 2019

FOR DEPARTMENT OF ADMINSTRATION USE ONLY

Entered into Database		**Date:**
Reviewed by System's Staff		

REVISED DECEMBER 2019/VERSION 19.2.1

ANNUAL FINANCIAL REPORT FILING FEE
FISCAL YEAR ENDING JUNE 30, 2019

023603 TOWN OF Saco ADDRESS CITY, STATE ZIP	If the local government entity name or mailing address on the Department's mailing list is inaccurate or has changed recently please note the correction below.

****If a filing fee is owed, please print the completed filing fee form and mail with your payment to:**

Montana Department of Administration
Local Government Services
Mitchell Bldg - Room 270
PO Box 200547
Helena, MT 59620-0547

****If no filing fee is owed, you must complete Part II to determine if an audit is required. *Please* assure a copy of the completed *Determination of Filing Fee & Audit Requirement* form is either included in your Annual Financial Report (AFR) or if not, a completed copy of the form is uploaded along with your AFR in the portal to ensure we enter the correct amount of adjusted debt proceeds in our system.**

PLEASE NOTE: The "Determination of Filing Fee Form" - page 2 of 2 - is designed to be self-calculating. If you choose to print this form and manually fill it in, please adjust the "Filing Fee Owed" in Box #1, based on the Filing Fee Schedule included below. Please revise Box #2 to "YES" if the adjusted debt proceeds and total revenues received by your government indicate that an audit will be required.

If there is an amount listed in BOX #1 of the Determination of Filing Fee Form (page 2 of 2), please include a check or warrant for that amount, made payable to "State Treasurer" in the amount of the required fee.

LOCAL GOVERNMENT ANNUAL FILING FEE SCHEDULE

The following filing fee schedule is required by Section 2-7-514, MCA, and has been adopted as Section 2.4.402 of the Administrative Rules of Montana.

Annual Resources In Excess of:	Annual Resources Equal to or Less Than	Filing Fee
$0	$750,000	$0
$750,000	$1,000,000	$550
$1,000,000	$1,500,000	$800
$1,500,000	$2,500,000	$950
$2,500,000	$5,000,000	$1,300
$5,000,000	$10,000,000	$1,700
$10,000,000	$50,000,000	$2,500
$50,000,000		$3,000

FOR DEPARTMENT OF ADMINISTRATION USE ONLY

GL#	**Amount Received:** **$** **Date:**
TD#	**By:**

REVISED 7-2017 VERSION 17.1

Determination of Filing Fee Form

Note: This form is self-calculating, with defaults of -0- and "NO" in box #1 and #2. Please adjust according if you print this form and enter information manually.

FEE REQUIREMENT: As provided by 2-7-514, MCA, each local government required to have an audit under 2-7-503, MCA, shall pay an annual filing fee to the department; the fee schedule shall be based upon the local government's annual revenue amounts. Administrative Rule 2.4.402 defines "revenue" as all receipts of a local government entity from any source excluding the proceeds from bond issuances and other long-term debt.
AUDIT REQUIREMENT: As provided by 2-7-503, MCA, each local government receiving revenue or financial assistance in excess of $750,000, regardless of the source of revenue or financial assistance, shall have an audit. "Financial Assistance" is defined as including assistance provided by a federal, state, or local government entity in the form of loans and loan guarantees.
Part II - Determination of Audit Requirement. Loan proceeds received in the fiscal year that were used to refinance (payoff) existing debt will not be considered as "Financial Assistance" when determining the current audit requirement.

GOVERNMENTAL FUNDS - PAGE 16 *(STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES)*		
Total Revenues	231,229.83	
Other Financing Sources - Proceeds from Sale of Capital Assets	0.00	
Special and/or Extraordinary Items (Revenues only)	0.00	
ENTERPRISE FUNDS - PAGE 19 *(STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET POSITION)*		
Note: Do not include revenues of Internal Service Funds		
Total Operating Revenues	242,342.44	**Box #1**
Non-Operating Revenues: (Do not include Gain on Sale of Capital Assets)		
Taxes/Assessments	0.00	
Licenses/Permits	0.00	
Intergovernmental Revenues	0.00	**Filing Fee Owed** **0**
Interest Revenues	0.00	
Other Non-operating Revenues not included above		
Capital Contributions	0.00	
Special and/or Extraordinary Items (Revenues only)	0.00	
ENTERPRISE FUNDS - PAGE 20 *(STATEMENT OF CASH FLOWS)*		
Proceeds from Sale of Capital Assets	0.00	
TRUST FUNDS - PAGE 22 *(STATEMENT OF CHANGES IN FIDUCIARY NET ASSETS)*		
NOTE: Do not include additions to Investment Trust Funds		
Total Additions to **Pension & Private Purpose** Trust Funds Only	0.00	
Total Revenues for Calculation of Filing Fee	**$473,572.27**	

If total revenues are equal to or less than $750,000, no filing fee is required to be paid. However, your entity may be subject to audit requirements.
Review Part II below to determine if there is an audit requirement. Manually subtract proceeds of debt received to refinance an existing debt to exclude from audit determination.
If total revenues plus adjusted debt proceeds exceeds $750,000, your entity will be subject to audit requirements.

Part II - Determination of Audit Requirement w/ No Filing Fee (Subtract Debt used to Refinance Manually)		
Add: Proceeds from Debt provided by a Federal agency, a State agency or another local government:		**Box #2**
Governmental Funds (from Statement of Revenues, Expenditures, and Changes in Fund Balances (Page 16) Proceeds from General Long-Term Debt)	0.00	
Proprietary Funds (from Statement of Cash Flows, Major & Non-Major Enterprise Funds (Page 20) Proceeds from Debt)	0.00	
Manually subtract debt proceeds received from non-governmental financial institutions (banks, savings & loans) included above *(Enter as a negative)*		**Audit Required?** **NO**
Subtotal - Proceeds received from Debt	0.00	
Manually subtract amount of proceeds received from governments used to refinance existing debt. *(Enter as a negative)*		
Total Adjusted Debt Proceeds	$0.00	
Total Revenues + Total Adjusted Debt Proceeds	**$473,572.27**	

If this amount is in excess of $750,000, you are required to have

TOWN OF Saco
COMPREHENSIVE ANNUAL FINANCIAL REPORT
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INTRODUCTORY

SECTION

LETTER OF TRANSMITTAL

TOWN OF Saco
ELECTED OFFICIALS/OFFICERS

OFFICE	NAME OF COUNTY OFFICIALS/OFFICERS	DATE TERM EXPIRES
Commissioner (Chairperson)		
Commissioner		
Commissioner		
Assessor		
Attorney		
Auditor		
Treasurer		
Clerk and recorder		
Clerk of district court		
Coroner		
Justice of the peace		
Justice of the peace		
Public administrator		
School superintendent		
Sheriff		

OFFICE	NAME OF CITY/TOWN OFFICIALS/OFFICERS	DATE TERM EXPIRES
Mayor	Clint Simpson	12/30/2021
Councilperson/Commissioner	Bill Haynes	12/30/2022
Councilperson/Commissioner	Wayne Woodall	12/30/2022
Councilperson/Commissioner	Roberta Christopherson	12/30/2021
Councilperson/Commissioner	Wayne Stahl	12/30/2021
Councilperson/Commissioner		
Councilperson/Commissioner		
Councilperson/Commissioner		
Councilperson/Commissioner		
City manager		
Attorney		
Chief of police		
Clerk		
Clerk/Treasurer		
Finance Director		
Police Judge		
Treasurer		
Utility billing/collection clerk		

IN ACCORDANCE WITH STATE LAW, I HEREBY TRANSMIT THE TOWN OF Saco ANNUAL FINANCIAL REPORT FOR THE FISCAL YEAR ENDING JUNE 30, 2019

Submitted by;

County Clerk and Recorder or City/Town Clerk-Treasurer

2/12/2020

Date

Preparers contact information:

Name: Edie Knoke
Email: edie.barnard56@gmail.com
Phone: 406-390-4907

FINANCIAL

SECTION

BASIC

FINANCIAL

STATEMENTS

TOWN OF Saco
STATEMENT OF NET POSITION
FISCAL YEAR ENDING JUNE 30, 2019

	Primary Government			Component Units	
	Governmental Activities	Business-type Activities	Total		
ASSETS					
Cash and cash equivalents	137,255.91	146,571.15	283,827.06		
Investments	0.00	0.00	0.00		
Petty Cash	400.00	0.00	400.00		
Restricted Assets:					
Cash and cash equivalents	0.00	40,000.00	40,000.00		
Investments (at fair value)	0.00	0.00	0.00		
Taxes/Assessments Receivable - (net of allowance for uncollectibles)	20,304.39	0.00	20,304.39		
Accounts/other receivables - (net of allowance for uncollectibles)	11,804.68	10,660.51	22,465.19		
Internal Balances	0.00	0.00	0.00		
Due from other governments	0.00	0.00	0.00		
Prepaid expense	0.00	0.00	0.00		
Inventories	0.00	0.00	0.00		
Other debits	0.00	0.00	0.00		
Capital assets not being depreciated					
Land	9,955.00	14,079.00	24,034.00		
Construction in progress	0.00	0.00	0.00		
Capital assets being depreciated (net of accumulated depreciation)	403,600.00	1,802,849.00	2,206,449.00		
Total Assets	583,319.98	2,014,159.66	2,597,479.64	0.00	0.00
DEFERRED OUTFLOWS OF RESOURCES					
Deferred Outflows of Resources - Pensions	0.00	0.00	0.00		
Deferred Outflows of Resources - OPEB	0.00	0.00	0.00		
Deferred Outflows of Resources	0.00	0.00	0.00		
Total Deferred Outflows of Resources	0.00	0.00	0.00	0.00	0.00
LIABILITIES					
Accounts payable and other current liabilities	0.00	0.00	0.00		
Matured bonds and interest payable	0.00	0.00	0.00		
Due to other governments	0.00	0.00	0.00		
Revenues collected in advance	0.00	0.00	0.00		
Contracts/Loans/Notes Payable	0.00	0.00	0.00		
Noncurrent liabilities:					
Due within one year	0.00	0.00	0.00		
Due in more than one year	234,337.48	790,380.63	1,024,718.11		
Pension Liability	0.00	0.00	0.00		
OPEB Liability	0.00	0.00	0.00		
Total Liabilities	234,337.48	790,380.63	1,024,718.11	0.00	0.00
DEFERRED INFLOWS OF RESOURCES					
Deferred Inflows of Resources - Pensions	0.00	0.00	0.00		
Deferred Inflows of Resources - OPEB	0.00	0.00	0.00		
Deferred Inflows of Resources	0.00	0.00	0.00		
Total Deferred Inflows of Resources	0.00	0.00	0.00	0.00	0.00
NET POSITION					
Net Investment in Capital Assets	181,266.52	1,031,344.37	1,212,610.89		
Restricted for:	0.00		0.00		
Debt Service			0.00		
Bond Indenture Requirements		0.00	0.00		
General Government			0.00		
Public Safety			0.00		
Public Works			0.00		
Public Health			0.00		
Culture/Recreation			0.00		
Economic Development			0.00		
Other:			0.00		
Non-spendable (other than Perm Fund)	0.00		0.00		
Permanent Fund principal			0.00		
Unrestricted	167,715.98	192,434.66	360,150.64		
Total Net Position	348,982.50	1,223,779.03	1,572,761.53	0.00	0.00
Balance check w/GW Statement (should equal zero):	0.00	0.00	0.00		

0.00 0.00 0.00

TOWN OF Saco
STATEMENT OF ACTIVITIES
FISCAL YEAR ENDING JUNE 30, 2019

Functions/Programs	Expenses	Program Revenues: Charges for Services, Fines, Forfeitures, etc.	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions	Net (Expense) Revenue and Changes in Net Position: Primary Government: Governmental Activities	Primary Government: Business-type Activities	Primary Government: Total	Component Units	
Primary government:									
Governmental activities:									
General government	67,652.69	0.00	0.00	0.00	(67,652.69)		(67,652.69)		
Public safety	2,130.69	0.00	0.00	0.00	(2,130.69)		(2,130.69)		
Public works	44,730.97	23,262.27	0.00	0.00	(21,468.70)		(21,468.70)		
Public health	22,191.70	0.00	0.00	0.00	(22,191.70)		(22,191.70)		
Social and economic services	0.00	0.00	0.00	0.00	0.00		0.00		
Culture and recreation	23,906.86	0.00	0.00	0.00	(23,906.86)		(23,906.86)		
Housing/Community Development	0.00	0.00	0.00	0.00	0.00		0.00		
Conservation of Natural Resources	0.00	0.00	0.00	0.00	0.00		0.00		
Interest on long-term debt	9,016.03	0.00	0.00	0.00	(9,016.03)		(9,016.03)		
Miscellaneous	2,610.33	0.00	0.00	0.00	(2,610.33)		(2,610.33)		
Unallocated costs	(174.00)				174.00		174.00		
Total governmental activities	172,065.27	23,262.27	0.00	0.00	(148,803.00)		(148,803.00)		
Business-type activities:									
Hospital						0.00	0.00		
Water	171,949.59	112,684.10				(59,265.49)	(59,265.49)		
Sewer	23,426.50	38,254.98				14,828.48	14,828.48		
Solid Waste/Landfill						0.00	0.00		
Ambulance						0.00	0.00		
Airport						0.00	0.00		
Gas/Electric	198,967.15	91,403.36				(107,563.79)	(107,563.79)		
Total business-type activities	394,343.24	242,342.44	0.00	0.00	0.00	(152,000.80)	(152,000.80)		
Total primary government	566,408.51	265,604.71	0.00	0.00	(148,803.00)	(152,000.80)	(300,803.80)		
Component Units:									
Total component units	0.00	0.00	0.00	0.00				0.00	0.00
General revenues:									
Property taxes					165,743.81	0.00	165,743.81		
Local option taxes					0.00		0.00		
Licenses and permits					190.00		190.00		
Unrestricted Federal/State shared revenues					44,588.21	0.00	44,588.21		
Unrestricted grants and contributions					0.00		0.00		
Unrestricted investment earnings					931.10	0.00	931.10		
Miscellaneous					1,320.00		1,320.00		
Gain on sale of capital assets					0.00	0.00	0.00		
Transfers					0.00	0.00	0.00		
Special/Extraordinary items					0.00	0.00	0.00		
							0.00		
Total general revenues and transfers					212,773.12	0.00	212,773.12	0.00	0.00
Change in net position					63,970.12	(152,000.80)	(88,030.68)	0.00	0.00
Total net position - July 1, 2018 as previously reported					285,012.38	1,378,174.83	1,663,187.21		
Prior period adjustments					0.00	(2,395.00)	(2,395.00)		
Total net position - July 1, 2018 as restated					285,012.38	1,375,779.83	1,660,792.21		
Total net position - June 30, 2019					348,982.50	1,223,779.03	1,572,761.53	0.00	0.00

TOWN OF Saco
BALANCE SHEET
GOVERNMENTAL FUNDS
FISCAL YEAR ENDING JUNE 30, 2019

Account Number	Description	Fund #1000 General	Other Governmental Funds	Total Governmental Funds
	ASSETS			
101000	Cash and cash equivalents	77,903.88	59,352.03	137,255.91
103000	Petty cash	400.00	0.00	400.00
101100	Investments		0.00	0.00
	Restricted Assets:			
102200	Cash and cash equivalents		0.00	0.00
102300	Investments		0.00	0.00
106000	Valuation of investments to fair value		0.00	0.00
110000	Tax/assessment receivable (net of allowance for uncollectibles)	16,329.64	3,974.75	20,304.39
120000	Accounts/other receivables - (net of allowance for uncollectibles)		11,804.68	11,804.68
131000	Due from other funds		0.00	0.00
132000	Due from other governments		0.00	0.00
133000	Advances to other funds		0.00	0.00
140000	Prepaid expense		0.00	0.00
150000	Inventories		0.00	0.00
170000	Other debits		0.00	0.00
	Total Assets	94,633.52	75,131.46	169,764.98
	DEFERRED OUTFLOWS OF RESOURCES			
190000	Deferred Outflows of Resources		0.00	0.00
19xxxx	Deferred Outflows of Resources		0.00	0.00
	Total Deferred Outflows of Resources	0.00	0.00	0.00
	LIABILITIES			
201000	Warrants payable		0.00	0.00
202100	Accounts payable		0.00	0.00
203100	Judgments payable		0.00	0.00
204000	Contracts/loans/notes payable		0.00	0.00
205200	Matured interest payable		0.00	0.00
206100	Other accrued payables		0.00	0.00
211000	Due to other funds		0.00	0.00
212000	Due to other governments		0.00	0.00
214000	Deposits payable		0.00	0.00
216000	Revenues collected in advance		0.00	0.00
233000	Advances from other funds		0.00	0.00
	Total Liabilities	0.00	0.00	0.00
	DEFERRED INFLOWS OF RESOURCES			
220000	Deferred Inflows of Resources		0.00	0.00
223000	Deferred Inflows of Tax Revenues	16,329.64	13,910.20	30,239.84
	Total Deferred Inflows of Resources	16,329.64	13,910.20	30,239.84
	FUND BALANCES:			
250100	Non-spendable		0.00	0.00
	Inventory			0.00
250200	Restricted		0.00	0.00
	General government			0.00
	Public Safety			0.00
	Public Works			0.00
	Culture and Recreation			0.00
	Other: (input explanation			0.00
260100	Committed		0.00	0.00
	General government			0.00
	Public Safety			0.00
	Public Works			0.00
	Culture and Recreation			0.00
	Other: (input explanation			0.00
260200	Assigned		0.00	0.00
				0.00
				0.00
				0.00
271000	Unassigned	78,303.88	61,221.26	139,525.14
	Total Fund Balances	78,303.88	61,221.26	139,525.14
	Total Liabilities, Deferred Inflows of Resources and Fund Balances	94,633.52	75,131.46	
	Balance check (Should equal zero):	*0.00*	*0.00*	
	Amounts reported for governmental activities in the statement of net			
	position are different because:			
	Capital assets used in governmental activities are not financial			
	resources and, therefore, are not reported in the funds.			413,555.00
	Other long-term assets are not available to pay current-period			
	expenditures and, therefore, are deferred outflows of resources in the funds.			30,239.84
	Internal service funds are used by management to charge the costs of			
	providing services within the government. The assets and liabilities of			
	the internal service funds are included in governmental activities in the			
	government-wide statement of net position.			
	Current assets		0.00	
	Accounts payable		0.00	
	Net amount allocated to business-type/external activ		0.00	0.00
	Long-term liabilities, including bonds payable, are not due and payable			
	in the current period and therefore are not reported in the funds.			(234,337.48)
				348,982.50

TOWN OF Saco

STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES

GOVERNMENTAL FUNDS

FISCAL YEAR ENDING JUNE 30, 2019

Account Number	Description	Fund #1000 General	Other Governmental Funds	Total Governmental Funds
	REVENUES			
310000/ 363000	Taxes/assessments	125,401.29	35,536.96	160,938.25
320000	Licenses and permits	190.00	0.00	190.00
330000	Intergovernmental revenues	23,744.72	20,843.49	44,588.21
340000	Charges for services	23,262.27	0.00	23,262.27
350000	Fines and forfeitures	0.00	0.00	0.00
360000	Miscellaneous	1,000.00	320.00	1,320.00
370000	Investment and royalty earnings	910.91	20.19	931.10
				0.00
	Total Revenues	174,509.19	56,720.64	231,229.83
	EXPENDITURES			
	Current:			
410000	General government	54,126.69	0.00	54,126.69
420000	Public safety	2,130.69	0.00	2,130.69
430000	Public works	21,157.94	23,573.03	44,730.97
440000	Public health	4,733.70	17,458.00	22,191.70
450000	Social and economic services	0.00	0.00	0.00
460000	Culture and recreation	23,906.86	0.00	23,906.86
470000	Housing and community development	0.00	0.00	0.00
480000	Conservation of natural resources	0.00	0.00	0.00
490000	Debt Service:			
	Principal	14,983.97	0.00	14,983.97
	Interest	9,016.03	0.00	9,016.03
				0.00
	Capital outlay	0.00	0.00	0.00
500000	Internal Services			0.00
510000	Miscellaneous	1,908.00	702.33	2,610.33
	Total Expenditures	131,963.88	41,733.36	173,697.24
	Excess of revenues (under) expenditures	42,545.31	14,987.28	57,532.59
	OTHER FINANCING SOURCES (USES):			
381010/40	Bonds issued	0.00	0.00	0.00
381010/40	Discount on bonds issued	0.00	0.00	0.00
381050	Inception of capital lease	0.00	0.00	0.00
381070	Notes/loans/intercap issued	0.00	0.00	0.00
382010	Sale of capital assets	0.00	0.00	0.00
383000	Transfers In	0.00	561.55	561.55
521000	Transfers out (Enter as negative)	(561.55)	0.00	(561.55)
384000	Special items - revenue	0.00	0.00	0.00
385000	Extraordinary items - revenue	0.00	0.00	0.00
524000	Special items - expenditure (Negative)	0.00	0.00	0.00
525000	Extraordinary items - expenditure (Negati	0.00	0.00	0.00
	Total other financing sources (uses)	(561.55)	561.55	0.00
	Net change in fund balances	41,983.76	15,548.83	57,532.59
	Fund balances - July 1, 2018 as previously reported	36,320.12	45,672.43	81,992.55
	Prior period adjustments	0.00	0.00	0.00
	Fund balances - July 1, 2018 as restated	36,320.12	45,672.43	81,992.55
	Fund balances - June 30, 2019	78,303.88	61,221.26	139,525.14

TOWN OF Saco
RECONCILIATION OF THE STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES OF GOVERNMENTAL FUNDS TO THE STATEMENT OF ACTIVITIES
FISCAL YEAR ENDING JUNE 30, 2019

Net change in fund balances - total governmental funds (page 16)		57,532.59
Amounts reported for governmental activities in the statement of activities (page) are different because:		
Governmental funds report capital outlays as expenditures while governmental activities report depreciation expense to allocate those expenditures over the life of the assets:		
Capital assets purchased		0.00
Depreciation expense		(13,526.00)
In the Statement of Activities, the loss or gain on the sale or disposal of capital assets is recognized. The fund financial statements recognize only the proceeds from the sale of these assets:		
Gain (loss) on the disposal of capital assets		
Proceeds from the sale of capital assets		0.00
Revenues in the Statement of Activities that do not provide current financial resources are not reported as revenues in the funds:		
Donated capital assets		
Long-term receivables (deferred inflow)		4,805.56
GASB68 recognition of On-behalf payments to Pension Plans		0.00
Long-term debt proceeds provide current financial resources to the governmental funds, but issuing debt increases long-term liabilities in the statement of net position:		
Capital lease proceeds		0.00
Bond sale proceeds		0.00
Loan proceeds		0.00
Repayment of debt principal is an expenditure in the governmental funds, but the repayment reduces long-term debt in the Statement of Net Position:		
Capital lease obligation principal payments		
Long-term loan/contract principal payments		14,983.97
Long-term bond principal payments		
Internal service funds are used by management to charge the costs of certain activities, such as insurance and data processing, to individual funds. The net revenue of the internal service funds is reported with the governmental activities of the government-wide statement of activities net of the amounts allocated to business-type activities and depreciation expense		
Change in net position	0.00	
Net of amount allocated to business-type/external activities	0.00	
Depreciation Expense	0.00	0.00
Some expenses reported in the Statement of Activities do not require the use of current financial resources and therefore are not reported as expenditures in governmental funds		
Accrued compensated absenses		174.00
Pension & OPEB expense		0.00
Other:		
Change in Net Position in Governmental Activities		63,970.12

Balance check: *0.00*

TOWN OF Saco
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
FISCAL YEAR ENDING JUNE 30, 2019

Account Number	Description	Business-type Activities: Major Enterprise Funds 5210 water	5310 sewer	5710 gas	Nonmajor Enterprise Funds	Totals	Governmental Activities: Internal Service
	ASSETS						
	Current Assets						
101000	Cash and cash equivalents	31,884.44	26,362.55	33,204.57	55,119.59	146,571.15	0.00
103000	Petty cash				0.00	0.00	0.00
101100	Investments (at fair value)				0.00	0.00	0.00
110000	Tax/assessment receivable (net of allowance for uncollectibles)				0.00	0.00	0.00
120000	Accounts/other receivables - (net of allowance for uncollectibles)	8,152.07	1,859.69	648.75	0.00	10,660.51	0.00
131000	Due from other funds				0.00	0.00	0.00
132000	Due from other governments				0.00	0.00	0.00
141000	Prepaid expense				0.00	0.00	0.00
150000	Inventories				0.00	0.00	0.00
	Total Current Assets	40,036.51	28,222.24	33,853.32	55,119.59	157,231.66	0.00
	Noncurrent Assets						
	Restricted Assets:						
102200	Cash and cash equivalents	40,000.00			0.00	40,000.00	0.00
102300	Investments				0.00	0.00	0.00
133000	Advances to other funds				0.00	0.00	0.00
170000	Other debits				0.00	0.00	0.00
180000	Capital assets:						
	Land			14,079.00	0.00	14,079.00	0.00
	Construction in progress				0.00	0.00	0.00
	Buildings			10,425.00	24,380.00	34,805.00	0.00
	Improvements other than buildings	2,580,446.00		1,305,447.00	0.00	3,885,893.00	0.00
	Machinery and equipment	31,823.00	19,690.00		163,935.00	215,448.00	0.00
	Infrastructure (utility systems)				0.00	0.00	0.00
	Less: accumulated depreciation	(1,229,642.00)	(19,690.00)	(978,830.00)	(105,135.00)	(2,333,297.00)	0.00
	Capital assets - net of accumulated depreciation	1,382,627.00	0.00	351,121.00	83,180.00	1,816,928.00	0.00
	Total Noncurrent Assets	1,422,627.00	0.00	351,121.00	83,180.00	1,856,928.00	0.00
	Total Assets	1,462,663.51	28,222.24	384,974.32	138,299.59	2,014,159.66	0.00
	DEFERRED OUTFLOWS OF RESOURCES						
199000	Deferred Outflows of Resources - Pensions				0.00	0.00	0.00
199xxx	Deferred Outflows of Resources - OPEB				0.00	0.00	0.00
199xxx	Deferred Outflow of Resources - Others				0.00	0.00	0.00
	Total Deferred Outflows of Resources	0.00	0.00	0.00	0.00	0.00	0.00
	LIABILITIES						
	Current Liabilities						
202100	Accounts payable				0.00	0.00	0.00
203100	Judgments payable				0.00	0.00	0.00
204000	Contracts/loans/notes payable				0.00	0.00	0.00
205200	Matured interest bonds payable				0.00	0.00	0.00
206100	Other accrued payables				0.00	0.00	0.00
209100	Compensated absences				0.00	0.00	0.00
211000	Due to other funds				0.00	0.00	0.00
212000	Due to other governments				0.00	0.00	0.00
214000	Deposits payable				0.00	0.00	0.00
216000	Revenues collected in advance				0.00	0.00	0.00
	Total Current Liabilities	0.00	0.00	0.00	0.00	0.00	0.00
	Noncurrent Liabilities						
231000	Bonds payable	218,000.00			0.00	218,000.00	0.00
233000	Advance from other funds				0.00	0.00	0.00
234000	Judgments payable				0.00	0.00	0.00
235000	Contracts/loans/notes payable	567,583.63			0.00	567,583.63	0.00
236000	Closure/postclosure care costs				0.00	0.00	0.00
237000	Pension Liability				0.00	0.00	0.00
238000	OPEB Liability				0.00	0.00	0.00
239000	Compensated absences	870.00	870.00	3,057.00	0.00	4,797.00	0.00
	Total Noncurrent Liabilities	786,453.63	870.00	3,057.00	0.00	790,380.63	0.00
	Total Liabilities	786,453.63	870.00	3,057.00	0.00	790,380.63	0.00
	DEFERRED INFLOWS OF RESOURCES						
220000	Deferred Inflows of Resources - Pensions				0.00	0.00	0.00
22xxxx	Deferred Inflows of Resources - OPEB				0.00	0.00	0.00
22xxxx	Deferred Inflows of Resources - Other				0.00	0.00	0.00
	Total Deferred Inflows of Resources	0.00	0.00	0.00	0.00	0.00	0.00
	NET POSITION						
	Net Investment in Capital Assets	597,043.37	0.00	351,121.00	83,180.00	1,031,344.37	0.00
	Restricted for:						
					0.00	0.00	0.00
					0.00	0.00	0.00
					0.00	0.00	
					0.00	0.00	
	Unrestricted	79,166.51	27,352.24	30,796.32	55,119.59	192,434.66	0.00
	Total Net Position	676,209.88	27,352.24	381,917.32	138,299.59	1,223,779.03	0.00
	Balance check (Should equal zero):	*0.00*	*0.00*	*0.00*	*0.00*		
			Reconciliation to government-wide statement of net position:				
			Adjustment to reflect the consolidations of internal service funds				
			activities related to enterprise funds				
			Net position of business-type activities			1,223,779.03	

TOWN OF Saco

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET POSITION

PROPRIETARY FUNDS

FISCAL YEAR ENDING JUNE 30, 2019

		Business-type Activities					Governmental Activities
		Major Enterprise Funds			Nonmajor		
Account Number	Description	5210 water	5310 sewer	5710 gas	Enterprise Funds	Totals	Internal Service
	OPERATING REVENUES						
340000	Charges for services	112,684.10	38,254.98	91,403.36	0.00	242,342.44	0.00
360000	Miscellaneous revenues				0.00	0.00	0.00
363000	Special assessments				0.00	0.00	0.00
					0.00	0.00	
	Total Operating Revenues	112,684.10	38,254.98	91,403.36	0.00	242,342.44	0.00
	OPERATING EXPENSES						
100	Personal services	18,872.98	19,914.64	70,530.32	0.00	109,317.94	0.00
200	Supplies	23,107.83	422.18	36,870.92	0.00	60,400.93	0.00
300	Purchased services	19,501.99	3,015.68	16,415.55	0.00	38,933.22	0.00
400	Building materials				0.00	0.00	0.00
500	Fixed charges	5,056.17	74.00	4,542.36	300.00	9,972.53	0.00
810	Loss/Bad debt expense				0.00	0.00	0.00
830	Depreciation	82,103.00		58,412.00	11,896.00	152,411.00	0.00
					0.00	0.00	
	Total Operating Expenses	148,641.97	23,426.50	186,771.15	12,196.00	371,035.62	0.00
	Operating Income (Loss)	(35,957.87)	14,828.48	(95,367.79)	(12,196.00)	(128,693.18)	0.00
	NONOPERATING REVENUES (EXPENSES)						
310000	Taxes/assessment revenue				0.00	0.00	0.00
320000	Licenses/permits revenue				0.00	0.00	0.00
330000	Intergovernmental revenue				0.00	0.00	0.00
371000	Interest revenue				0.00	0.00	0.00
382030	Gain/Loss on Sale of Capital Assets (Loss is negative)				0.00	0.00	0.00
490000	Debt service interest expense (Enter as negative)	(23,307.62)			0.00	(23,307.62)	0.00
384000	Special items - revenue				0.00	0.00	0.00
385000	Extraordinary items - revenue				0.00	0.00	0.00
524000	Special items - expense (enter as negative)				0.00	0.00	0.00
525000	Extraordinary items - expense (enter as negative)				0.00	0.00	0.00
	Total Non-Operating Revenues (Expenses)	(23,307.62)	0.00	0.00	0.00	(23,307.62)	0.00
	Income (Loss) before contributions and transfers	(59,265.49)	14,828.48	(95,367.79)	(12,196.00)	(152,000.80)	0.00
	Capital contributions				0.00	0.00	0.00
	Transfers in (out)				0.00	0.00	0.00
	Change in net position	(59,265.49)	14,828.48	(95,367.79)	(12,196.00)	(152,000.80)	0.00
	Total net position - July 1, 2018 as previously reported	735,925.37	13,093.76	478,660.11	150,495.59	1,378,174.83	0.00
	Prior period adjustments	(450.00)	(570.00)	(1,375.00)	0.00	(2,395.00)	0.00
	Total net position - July 1, 2018 as restated	735,475.37	12,523.76	477,285.11	150,495.59	1,375,779.83	0.00
	Total net position - June 30, 2019	676,209.88	27,352.24	381,917.32	138,299.59	1,223,779.03	0.00
			Reconciliation to government-wide statement of activities:				
			Adjustment to reflect the consolidation of internal service fund				
			activities related to enterprise funds				
			Change in net position of business-type activities			(152,000.80)	

TOWN OF Saco

STATEMENT OF CASH FLOWS

PROPRIETARY FUNDS

FISCAL YEAR ENDING JUNE 30, 2019

	Business-type Activities					Governmental Activities
	Major Enterprise Funds			Nonmajor		
Description	5210 water	5310 sewer	5710 gas	Enterprise Funds	Totals	Internal Service
CASH FLOWS FROM OPERATING ACTIVITIES						
Cash received from customers	127,748.36	41,753.38	100,631.39	0.00	270,133.13	0.00
Cash paid to suppliers	(47,665.99)	(3,511.86)	(57,828.83)	(300.00)	(109,306.68)	0.00
Cash paid to employees	(18,872.98)	(19,914.64)	(70,530.32)	0.00	(109,317.94)	0.00
Cash received from interfund services provided				0.00	0.00	0.00
Cash paid for interfund services used				0.00	0.00	0.00
Net cash provided (used) by operating activities	61,209.39	18,326.88	(27,727.76)	(300.00)	51,508.51	0.00
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES						
Transfers from (to) other funds	0.00	0.00	0.00	0.00	0.00	0.00
Advances from (to) other funds				0.00	0.00	0.00
Subsidies from taxes and other governments	0.00	0.00	0.00	0.00	0.00	0.00
Net cash provided (used) by capital and related financing activities	0.00	0.00	0.00	0.00	0.00	0.00
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES						
Proceeds from debt				0.00	0.00	0.00
Capital contributions	0.00	0.00	0.00	0.00	0.00	0.00
Purchases/acquisition/construction of capital assets				0.00	0.00	0.00
Principal on debt (Enter as a negative)	(22,685.38)			0.00	(22,685.38)	0.00
Interest paid on debt (Negative)	(23,307.62)	0.00	0.00	0.00	(23,307.62)	0.00
Capital lease down payment				0.00	0.00	0.00
Proceeds from sales of capital assets				0.00	0.00	0.00
Net cash provided (used) by capital and related financing activities	(45,993.00)	0.00	0.00	0.00	(45,993.00)	0.00
CASH FLOWS FROM INVESTING ACTIVITIES						
Proceeds from sales of investments				0.00	0.00	0.00
Purchase of investments (Enter as negative)				0.00	0.00	0.00
Interest earnings	0.00	0.00	0.00	0.00	0.00	0.00
Net cash provided (used) by investing activities	0.00	0.00	0.00	0.00	0.00	0.00
Net increase (decrease) in cash and cash equivalents	15,216.39	18,326.88	(27,727.76)	(300.00)	5,515.51	0.00
Cash and cash equivalents - July 1, 2017	56,668.05	8,035.67	60,932.33	55,419.59	181,055.64	0.00
Cash and cash equivalents - June 30, 2018	71,884.44	26,362.55	33,204.57	55,119.59	186,571.15	0.00
Reconciliation of operating income to net cash provided (used by operating activities:						
Operating income	(35,957.87)	14,828.48	(95,367.79)	(12,196.00)	(128,693.18)	0.00
Adjustments to reconcile operating income to net cash provided (used) by operating activities						
Depreciation expense	82,103.00	0.00	58,412.00	11,896.00	152,411.00	0.00
(Increase) Decrease in accounts receivable	15,064.26	2,498.40	9,228.03	0.00	26,790.69	0.00
(Increase) Decrease in intergovernmental receivables				0.00	0.00	0.00
(Increase) Decrease in due to/from other funds				0.00	0.00	0.00
Increase in allowance for uncollectible accounts				0.00	0.00	0.00
(Increase) decrease in inventories				0.00	0.00	0.00
(Increase) decrease in prepaid items				0.00	0.00	0.00
Increase (decrease) in customer deposits				0.00	0.00	0.00
Increase (decrease) in accounts payable				0.00	0.00	0.00
Increase (decrease) in compensated absences pay.	450.00	570.00	1,375.00	0.00	2,395.00	0.00
Increase (decrease) in intergovernmental payables	(450.00)	(570.00)	(1,375.00)	0.00	(2,395.00)	0.00
Increase (decrease) in GASB68 pension expense				0.00	0.00	0.00
Total adjustments	97,167.26	2,498.40	67,640.03	11,896.00	179,201.69	0.00
Net cash provided (used) by operating activities	61,209.39	17,326.88	(27,727.76)	(300.00)	50,508.51	0.00
Noncash investing, capital, and financing activities:						
Borrowing under capital lease				0.00	0.00	0.00
Contributions of capital assets from government				0.00	0.00	0.00
Purchase of equipment on account				0.00	0.00	0.00
Increase in fair value of investments				0.00	0.00	0.00
Capital asset trade-ins				0.00	0.00	0.00

TOWN OF Saco

STATEMENT OF FIDUCIARY NET POSITION

FIDUCIARY FUNDS

FISCAL YEAR ENDING JUNE 30, 2019

Account Number	Description	Trust Funds: Pension Trust Funds (7000-7005)	Trust Funds: Investment Trust Funds (7006-7009)	Trust Funds: Private Purpose Trust Funds (7010-7099)	Agency Funds: Agency Composite (7100-7999)
	ASSETS				
101000	Cash and cash equivalents	1,165.00			13,661.60
	Receivables:				
110000	Tax/assessment receivable (net of allowance for uncollectibles)				
120000	Accounts/other receivables - (net of allowance for uncollectibles)				
128000	Interest receivable				
101100	Investments (at fair value)				
	Total Assets	1,165.00	0.00	0.00	13,661.60
190000	**Deferred Outflows of Resources**				
	LIABILITIES				
201100	Warrants payable				13,661.60
202100	Accounts payable				
203100	Judgments payable				
204100	Contracts payable				
211000	Due to other funds				
212000	Due to other governments				
216000	Revenues Collected in Advance				
	Total Liabilities	0.00	0.00	0.00	13,661.60
220000	**Deferred Inflows of Resources**				
	NET POSITION				
	Held in trust for pension benefits and other purposes	1,165.00	0.00	0.00	
	Balance check:	*0.00*	*0.00*	*0.00*	

TOWN OF Saco

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

FIDUCIARY FUNDS

FISCAL YEAR ENDING JUNE 30, 2019

Account Number	Description	Trust Funds: Pension Trust Funds (7000-7005)	Trust Funds: Investment Trust Funds (7006-7009)	Trust Funds: Private Purpose Trust Funds (7010-7099)
	ADDITIONS:			
310000	Tax revenue			
330000	Intergovernmental revenue			
360000	Miscellaneous revenue			
370000	Investment earnings			
366000	Contributions to pension plan			
366000	Contributions to investment trust			
	Total Additions	0.00	0.00	0.00
	DEDUCTIONS:			
	Administrative expenses			
	Refunds of contributions			
	Benefit payments			
	Distribution of investments			
	Due to other funds			
	Due to other governments			
	Total Deductions	0.00	0.00	0.00
	Change in net position	0.00	0.00	0.00
	Total net position - July 1, 2018 as previously reported	1,165.00		
	Prior period adjustments			
	Total net position - July 1, 2018 as restated	1,165.00	0.00	0.00
	Total net position - June 30, 2019	1,165.00	0.00	0.00

TOWN OF Saco
NOTES TO THE BASIC FINANCIAL STATEMENTS
FISCAL YEAR ENDING JUNE 30, 2019

1. Summary of Significant Accounting Policies

The financial statements have been prepared in accordance with accounting principles generally accepted as applied to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for governmental accounting and financial reporting principles. Pronouncements adopted in the fiscal year ending June 30, 2019 are

The government adopted the provisions of the following GASB Statements:
GASB 83 - This statement addresses accounting and financial reporting for certain asset retirement obligations (AROs). An ARO is a legally enforceable liability associated with the retirement of a tangible capital asset.
GASB 88 - The objective of the statement is to improve the information that is disclosed in the notes to government financial statements related to debt, including direct borrowing and direct placements. It also clarifies which liabilities governments should include when disclosing information related to debt. The statement requires additional essential information related to debt be disclosed in the notes to the financial statements, including unused lines of credit; assets pledged as collateral for the debt; and terms specified in debt agreements related to significant events of default with finance-related consequences, significant termination events with finance-related consequences, and significant subjective acceleration clauses.

The significant accounting policies are described below.

The City/Town of Saco is a political subdivision of the State of Montana governed by a Mayor and Council (Commission) duly elected by the registered voters of the City/Town. The City/Town utilizes the Comm-Ex form of government. The accompanying financial statements present the primary government and its component units, entities for which the government is considered to be financially accountable. Blended component units are part of the government's operations. Each discretely presented component unit is reported in a separate column in the government-wide financial statements to emphasize that it is legally separate from the government, but is financially accountable to or fiscally dependent upon the primary government or their omission from the financial statements would be misleading or incomplete.

B. Government-wide and fund financial statements

The government-wide financial statements (i.e., the statement of net position and the statement of changes in net position) report information on all of the nonfiduciary activities of the primary government and its component units. For the most part, the effect of interfund activity has been removed from these statements. Governmental activities, which normally are supported by taxes and intergovernmental revenues, are reported separately from business-type activities, which rely to a significant extent on fees and charges for support. Likewise, the primary government is reported separately from certain legally separate component units for which the primary governments is financially accountable.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segment are offset by program revenues. Direct expenses are those that are clearly identifiable with a specific function. Program revenues include: 1) charges to customers who purchase, use, or directly benefit from goods, services, or privileges provided by a given function and 2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function. Taxes and other items not properly included among program revenues are reported instead as general revenues.

Separate financial statements are provided for governmental funds, proprietary funds, and fiduciary funds, even though the latter are excluded from the government-wide statements. Major individual governmental funds and major individual enterprise funds are reported in separate columns in the fund financial statements.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - cont.

C. Measurement focus, basis of accounting, and financial statement presentation

The government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting, as are the proprietary fund and fiduciary fund financial statements. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Property taxes are recognized as revenues in the year for which they are levied. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

Governmental fund financial statements are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the government considers revenues to be available if they are collected within 60 days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences and claims and judgments, are recorded only when payment is due.

Property taxes, licenses and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current period. Only the portion of special assessments receivable due within the current fiscal period is considered to be susceptible to accrual as revenue of the current period. All other revenue items are considered to be measurable and available only when cash is received by the government. Taxes and assessments receivable remaining uncollected at year end are offset by deferred tax/assessment revenue, a deferred inflow of resources, since they are not available to pay liabilities of the current period.

Both financial statements presented on the accrual basis of accounting and the modified accrual basis of accounting recognize grants and similar items, pending purely routine requirements such as filing reimbursement and/or progress reports, where all eligibility requirements imposed by the provider have been met, other than time requirements, as revenue in the current period.
Grants and similar items received prior to meeting time requirements but after all eligibility requirements are met, are recognized as deferred inflows of resources until use is required or first permitted.

The government reports the following major governmental funds:

General Fund - This is the government's primary operating fund. It accounts for all financial resources of the general government, except those required to be accounted for in another fund.

Water Enterprise Fund - This fund is used to account for the operating and nonoperating revenues and expenses of the public water utility system. The fund is maintained on the full accrual basis of accounting.

Sewer Enterprise Fund - This fund is used to account for the operating and nonoperating revenues and expenses of the public sewer utility system. The fund is maintained on the full accrual basis of accounting.

Utility Gas Fund - This fund is used to account for the operating and nonoperating revenues and expensesof the public natural gas utility system. The Fund is maitaind of the full accrual basis of accounting.

The government reports the following major proprietary funds:

Market Gas Fund - This fund is used to account for the activity related to the wholesale natural gas sales and other activity as approved by the Town Council. The fund is maintained on the full accrual basis of accounting.
utility system. The fund is maintained on the full accrual basis of accounting.

Sewer Enterprise Fund - This fund is used to account for the operating and nonoperating revenues and expenses of the public sewer utility system. The fund is maintained on the full accrual basis of accounting.

Additionally, the government reports the following fund types:

Private Purpose Trust Funds - These funds are used to account for resources legally held in trust for use by another government, individual, or organization as identified by the donor. The use of these funds may be restricted to only the interest earned on the investment of the principal or the entire amount may be used in accordance with the terms of the donor.

Fiduciary Funds
Trust & Agency Funds - Used to account for assets held by the City in a trustee capacity or as an agent for individuals, private organizations, other governments, and/or other funds. These may include (a) expendable trust funds, (b) nonexpendable trust funds, (c) pension trust funds and (d) agency funds.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - cont.

D. Measurement focus, basis of accounting, and financial statement presentation - cont.

The Governmental Accounting Standards Board (GASB) issued Statement No. 62. The Statement codifies the requirements of all pre-November 30, 1989 FASB and AICPA pronouncements that apply to state and local governments.
Both the government-wide and proprietary fund financial statements follow the guidance of the Governmental Accounting Standards Board. Governments can continue to apply, as other accounting literature, post-November 30, 1989 FASB pronouncements that do not conflict with or contradict GASB pronouncements, including Statement No. 62. The government has adopted the provisions of GASB Statement No. 62.

As a general rule the effect of interfund activity has been eliminated from the government-wide financial statements. Exceptions to this general rule are payments-in-lieu of taxes and other charges between the governments' enterprise functions and various other functions of the government. Elimination of these charges would distort the direct costs and program revenues reported for the various functions.

Amounts reported as program revenues include: 1) charges to customers for goods, services, or privileges provided, 2) operating grants and contributions, and 3) capital grants and contributions, including special assessments. Internally dedicated resources are reported as general revenues rather than as program revenues. Likewise, general revenues include all taxes.

Proprietary funds distinguish operating revenues and expenses from nonoperating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the enterprise funds and the government's internal service funds are charges to customers for services provided. Operating expenses for enterprise funds and internal service funds include the cost of providing such services and the depreciation of capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

E. Assets, deferred outlflows of resources, liabilities, deferred iutflows of resources, and fund balance/net position

1. Deposits and investments

Allowable deposit and investment of public funds is governed by Title 7, Chapter 6, Part 2 of the Montana Code Annotated (MCA). Deposits and investments may include demand, time, and savings deposits, direct obligations of the United States Government, securities issued by agencies of the United States, investments in the Montana Short-Term Investment Program (STIP), repurchase agreements, and registered warrants.

Cash equivalents are short-term, highly liquid investments that are both readily convertible to known amounts of cash, and have maturities at purchase date of three months or less. The cash and cash equivalents (including restricted assets) are considered to be cash on hand, demand, savings and time deposits, STIP and all short-term investments with original maturity dates of three months or less from the date of acquisition.

Investments, with limited exceptions, are reported at fair value. Investments in nonparticipating certificates of deposit are reported at cost. Money market investments, including U.S. Treasury and Agency obligations, that mature within one year of acquisition are reported at amortized cost. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is determined annually, and requires the use of valuation techniques, a specific method or combination of methods using one or more of three approaches: market, cost or income approach.

2. Receivables and payables

Activity between funds that are representative of lending/borrowing arrangements outstanding at fiscal year end are referred to as either "due to/from other funds" (i.e., the current portion of interfund loans) or "advances to/from other funds" (i.e., the non-current portion of interfund loans). Advances between funds are not available for appropriation and are not expendable available financial resources.

Accounts receivables are shown net of allowance for uncollectibles. Property tax receivables are offset by a deferred inflow account since they are not available to pay liabilities of the current period. All property tax levies are set at the time of the adoption of the annual budget. The real estate taxes are payable in two installments, the first due by November 30 and the second by May 31. Personal property taxes are assessed in April or May and are payable within 30 days of the issuance of the notice.

3. Inventories and prepaid items

All inventories are valued at cost. Inventories are recorded as expenditures when purchased (when consumed).

Certain payments reflect costs applicable to future accounting periods and are recorded as prepaid items in both the government-wide and fund financial statements.

4. Restricted assets

Certain assets of the enterprise funds are restricted for specific use as required by the bond indenture agreement covenants established with the issuance and sale of the revenue bonds representing a liability to the enterprise funds. These restricted assets represent cash and cash equivalents restricted for use to repay current debt, establish a reserve for future debt and the establish a replacement and depreciation reserve for the purpose of replacing the system in the future.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - cont.

F. Assets, liabilities, and net position or equity - cont.

5. Capital assets

Capital assets, which include property, plant, equipment, and infrastructure assets (e.g., roads, bridges, sidewalks, curbs, etc), are reported in the applicable governmental or business-type activities columns in the government-wide financial statements. Capital assets, other than infrastructure assets, are defined by the Local Government as assets with an initial cost of more than $5,000.00 and an estimated useful life in excess of _____ years. Such assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets are recorded at estimated acquisition value at the date of donation.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets lives are not capitalized.

Property, plant, and equipment of the primary government, as well as the component units, is depreciated using the straight line method over the following estimated useful lives:

Assets	Years
Buildings	5 to 50
Building improvements	5 to 50
Public domain infrastructure	
System infrastructure	
Vehicles	3 to 40
Equipment other than vehicles	3 to 40
Office equipment	3 to 40
Computer equipment	3 to 40

6. Deferred outflows of resources

Deferred outflow of resources is a financial statement element. A deferred outflow of resources is a consumption of net assets by the government that is applicable to a future reporting period. The government-wide statement of net position, proprietary fund statement of net position, and governmental fund balance sheet report a separate section for deferred outflows of resources. Deferred outflows of resources may be disclosed on the face of the financial statements, in the notes to the financial statements, or a combination of both. Deferred outflows of resources not disclosed on the face of the financial statements are as follows:

7. Compensated absences

As required by State law, the Local Government allows for employees to accumulate earned but unused vacation and sick leave benefits. Unused vacation leave benefits are 100 percent payable upon termination and 1/4 of unused sick leave benefits are payable upon termination. Such amounts are reported as liabilities in the appropriate governmental or business-type activity in the government wide statements. Expenditures for unpaid vacation and sick leave benefits are recorded when paid in the governmental funds on the modified accrual basis of accounting and expenses for vacation and sick leave benefits are recorded when accrued in the proprietary funds on the full accrual basis of accounting.

8. Long-term obligations

In the government-wide financial statements, and proprietary fund types in the fund financial statements, long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities, business-type activities, or proprietary fund type statement of net position. Bond premiums and discounts, as well as issuance costs, are deferred and amortized over the life of the bond issue using the effective interest method. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are reported as deferred charges and amortized over the term of the related debt.

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing sources while discounts on debt issuance are reported as other financing uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures.

9. Deferred inflows of Resources

A deferred inflow of resources is an aquisition of net assets by the government that is applicable to a future reporting period. The government-wide statement of net position, proprietary fund statement of net position, and governmental fund balance sheet report a separate section for deferred inflows of resources. Deferred inflows of resources may be disclosed on the face of the financial statements, in the notes to the financial statements, or a combination of both. Deferred inflows of resources not disclosed on the face of the financial statements are as follows:

Description:	Amount;
Taxes and Assessments Receivable	$20,304.39

10. Fund balance/Net Position
Governmental Accounting Standards Board (GASB) Statement No. 54 requires presentation of governmental fund balances by specific purpose. In the governmental fund financial statements, the fund balance classifications are presented either discretely or in the aggregate for the following fund balance classifications: non-spendable, restricted, committed, assigned and unassigned.
GASB Statement No. 63 resulted in presentation changes in the government-wide and proprietary fund financial statements. Among other changes, equity is classified as 'net position'. Components of net position are net investment in capital assets, restricted, and unrestricted. See notes J and K for further information.

11. Net Position significantly impacted by Deferred Outflows or Deferred Inflows of Resources.
GASB 63 requires disclosure of any deferrals that have a significant impact on Net Position.

2. RECONCILIATION OF GOVERNMENT-WIDE AND FUND FINANCIAL STATEMENTS

A. Explanation of certain differences between the governmental fund balance sheet and the government-wide statement of net position
The governmental fund balance sheet includes a reconciliation between fund balance - total governmental funds and net position - governmental activities as reported in the government-wide statement of net position.

B. Explanation of certain differences between the governmental fund statement of revenues, expenditures, and changes in fund balances and the government-wide statement of activities
The governmental fund statement of revenues, expenditures, and changes in fund balances includes a reconciliation between net changes in fund balances - total governmental funds and changes in net position of governmental activities as reported in the government-wide statement of activities.

C. Explanation of certain differences between the proprietary fund statement of net position and the government-wide statement of net position.
The proprietary fund statement of net position includes a reconciliation between *net position - total enterprise funds* and *net position of business-type activities* as reported in the government-wide statement of net position.

3. COMPLIANCE AND ACCOUNTABILITY

A. Budgetary Information

The Local Government adopts an annual budget for all of its funds in accordance with Title 7, Chapter 6, Part 40 of the Montana Code Annotated. Statute requires the adoption of a preliminary budget, public hearings on the preliminary budget and the final adoption of the budget by the later of the first Thursday after the first Tuesday in September or within 30 calendar days of the receipt of the certified taxable valuations from the Department of Revenue. The Local Government must also submit a copy of the final budget to the Department of Administration by the later of October 1 or 60 days after the receipt of taxable values from the Department of Revenue.

State statute limits the making of expenditures or incurring of obligations to the amount of the final budget as adopted or as amended. Budget transfers and amendments are authorized by law, and in some instances, may require further public hearings. Any budget amendments providing for additional appropriations must identify the fund reserves, unanticipated revenue, or previously unbudgeted revenue that will fund the appropriations.

Appropriations are created by fund, function, and activity and may further be detailed by department. Expenditure limitations imposed by law extend to the department level which is identified as the legal level of budgetary control.

Encumbrance accounting is (is not) employed for the governmental funds. Encumbrances (e.g. purchase orders, contracts) outstanding at year end are reported as reservations of fund balances and do not constitute expenditures or liabilities because the commitments will be reappropriated and honored during the subsequent fiscal year.

B. Excess of expenditures over appropriations

None

4. DETAILED NOTES ON ALL FUNDS - cont.

C. Capital assets

Capital asset activity for the fiscal year ended June 30, 2019 was as follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Governmental activities:				
Capital assets not being depreciated				
Land	9,955.00	0.00	0.00	9,955.00
Construction in progress	0.00	0.00	0.00	0.00
Total capital assets not being depreciated	9,955.00	0.00	0.00	9,955.00
Capital assets being depreciated				
Buildings	503,273.00	0.00	0.00	503,273.00
Intangibles/works of art	0.00	0.00	0.00	0.00
Improvements other than buildings	0.00	0.00	0.00	0.00
Machinery and equipment	32,437.00	0.00	0.00	32,437.00
Infrastructure	0.00	0.00	0.00	0.00
Total capital assets being depreciated	535,710.00	0.00	0.00	535,710.00
Less accumulated depreciation for:				
Buildings	(92,306.00)	0.00	(12,358.00)	(104,664.00)
Intangibles/works of art	0.00	0.00	0.00	0.00
Improvements other than buildings	0.00	0.00	0.00	0.00
Machinery and equipment	(26,278.00)	0.00	(1,168.00)	(27,446.00)
Infrastructure	0.00	0.00	0.00	0.00
Total accumulated depreciation	(118,584.00)	0.00	(13,526.00)	(132,110.00)
Total capital assets being depreciated	417,126.00	0.00	(13,526.00)	403,600.00
Governmental activities capital assets net	427,081.00	0.00	(13,526.00)	413,555.00
Business-type activities:				
Capital assets not being depreciated				0.00
Land	14,079.00			14,079.00
Construction in progress				0.00
Total capital assets not being depreciated	14,079.00	0.00	0.00	14,079.00
Capital assets being depreciated				
Buildings and system	34,805.00			34,805.00
Intangibles/works of art				0.00
Improvements other than buildings	2,580,446.00			2,580,446.00
Machinery and equipment	1,520,895.00			1,520,895.00
Source of supply				0.00
Pumping plant				0.00
Treatment plant				0.00
Transmission and distribution				0.00
General plant				0.00
Total capital assets being depreciated	4,136,146.00	0.00	0.00	4,136,146.00
Less accumulated depreciation for:				
Buildings and system	(8,902.00)		(1,185.00)	(10,087.00)
Intangibles/works of art				0.00
Improvements other than buildings	(1,120,092.00)		(81,131.00)	(1,201,223.00)
Machinery and equipment	(1,051,892.00)		(70,095.00)	(1,121,987.00)
Source of supply				0.00
Pumping plant				0.00
Treatment plant				0.00
Transmission and distribution				0.00
General plant				0.00
Total accumulated depreciation	(2,180,886.00)	0.00	(152,411.00)	(2,333,297.00)
Total capital assets being depreciated	1,955,260.00	0.00	(152,411.00)	1,802,849.00
Business-type activities capital assets net	1,969,339.00	0.00	(152,411.00)	1,816,928.00

Balance check with page 18: 0.00

4. DETAILED NOTES ON ALL FUNDS - cont.

C. Capital assets - cont.

Depreciation expense was charged to functions/programs of the primary government as follows:

Governmental activities:	
General government	13,526.00
Public safety	0.00
Public works	0.00
Public health	0.00
Social and economic services	0.00
Culture and recreation	0.00
Housing and community development	0.00
Conservation of natural resources	0.00
Uncatagorized	0.00
Total depreciation expense - governmental activities	13,526.00
Business-type activities:	
water	82,103.00
sewer	0.00
gas	58,412.00
Market gas	11,896.00
Total depreciation expense - business-type activities	152,411.00

Long-term Debt

Changes in long-term obligations for the year ended June 30, 20XX, are as follows:

	Balance at 1-Jul-18	Increases	Decreases	Balance at 30-Jun-19	Due within One Year
Governmental activities:					
General Obligation bonds	$ -	$ -	$ -	$ -	$ -
Special Assessment/Improvement District bonds:	$ -	$ -	$ -	$ -	$ -
Notes from direct borrowings and direct placements	$ 247,270.00	$ -	$ 14,984.00	$ 232,286.00	$ 14,984.00
Other:	$ -	$ -	$ -	$ -	$ -
Other:	$ -	$ -	$ -	$ -	$ -
Total	$247,270	$0	$14,984	$232,286	$14,984
Business-type activities:					
Revenue bonds	$ 230,000	$ -	$ 12,000	$ 218,000	$ 12,000
Rural Development Loan	$ 578,269	$ -	$ 11,685	$ 566,584	$ 11,685
Other:	$ -	$ -	$ -	$ -	$ -
Total	$808,269	$0	$23,685	$784,584	$23,685

The County/City/Town's outstanding notes from direct borrowings related to governmental/business-type activities of $XXX,XXX are secured with _*describe the assets/property/equipment listed as collateral*_.

During the fiscal year, in addition to the debt listed above the local government had the following changes in Other Long-Term Liabilities for Other Postemployment Benefits (OPEB), Net Pension Liability and Compensated Absences.
The Town had no retireesparticipating at this time.

TOWN OF Saco
NOTES TO THE BASIC FINANCIAL STATEMENTS
FISCAL YEAR ENDING JUNE 30, 2019

OTHER POST EMPLOYMENT BENEFITS (OPEB) NOTE DISCLOSURE

(Note: The following note disclosure should be modified, as appropriate, to correctly describe the Local Government's OPEB. This illustration represents a disclosure for a Local Government ***having fewer than 100 plan participants (active and inactive), and therefore qualifies to use the Alternative Measurement Method to calculate the ending OPEB liability.***

Post Employment Benefits Other Than Pensions (OPEB)

Plan description: As required by State law (MCA 2-18-704), the Town of Saco allows its retiring employees with at least five years of service and who are at least 50 years of age, along with their eligible spouses and dependents, the option to continue participation in the local government's group health insurance plan until the retiree becomes eligible for Medicare coverage. This option creates a defined benefit other post-employment benefits plan (OPEB) since retirees are typically older than the average age of active plan participants and therefore receive a benefit of lower insurance rates. The OPEB plan is a single-employer defined benefit plan administered by the Town of Saco. No assets are accumulated in a trust that meets the criteria in paragraph 4 of GASB Statement 75. The Town of Saco covers OPEB costs when they come due, on a pay-as-you-go basis.

Because the local government has fewer than 100 employees (active and inactive) that are provided with OPEB through the plan, the local government qualifies to use the alternative measurement method for calculating the OPEB liability. At this time the Town of Saco has no retirees participating.

TOWN OF Saco
NOTES TO THE BASIC FINANCIAL STATEMENTS
FISCAL YEAR ENDING JUNE 30, 2019

NET PENSION LIABILITY NOTES:
Public Employees' Retirement System - Defined Benefit:

MPERA GASB Information

http://mpera.mt.gov/Portals/175/GASB/2019/Reports/PERS/PERS_2019_6353.pdf

4. DETAILED NOTES ON ALL FUNDS - cont.

Fund	Amount	Reason for adjustment
Water	(450.00)	Adjustment for compensated absences
Sewer	(570.00)	Adjustment for compensated absences
Utility Gas	(1,375.00)	Adjustment for compensated absences
General	(2,395.00)	Adjustment for compensated absences
Total	(4,790.00)	

4. DETAILED NOTES ON ALL FUNDS - cont.

I. 1. Fund Balance Disclosure:

The Governmental Accounting Standards Board, Statement No. 54, requires presentation of governmental fund balances by specific purpose. In the basic financial statements, the fund balance classifications are presented in the aggregate for the following fund balance classifications: non-spendable, restricted, committed, assigned and unassigned.

Non-spendable includes fund balances that cannot be spent either because it is not in spendable form or because of legal or contractual constraints.

Restricted includes fund balances that are constrained for specific purposes which are externally imposed by providers such as creditors, or amounts constrained due to law, constitutional provisions or enabling legislation.

Committed includes fund balance amounts that are constrained for specific purposes that are internally imposed by the government through formal action of the highest level of decision-making authority and does not lapse at year-end.

Assigned includes fund balance amounts that are intended to be used for a specific purpose that are neither considered restricted or committed.

2. Net Position

The government-wide and proprietary fund financial statements report net position. Net position represent the difference between assets plus deferred outflow of resources and liabilities plus deferred inflows of resources. Components of net position are net investment in capital assets, restricted, and unrestricted. Net investment in capital assets consists of capital assets net of accumulated depreciation plus capital related deferred outflows of resources, less outstanding balance of any related borrowing used for the acquisition, construction, or improvement of those assets and capital related deferred inflows of resources. Restricted net position is defined above (see J1.), and unrestricted net position is any portion of net position that does not meet the definition of net investment in capital assets and restricted.

J. Spending policy:

The Local Government receives inflows from revenue and other financial sources from numerous sources for use in the General fund. The Fund will expend those resources on multiple purposes of the local government. The intention of this spending policy is to identify the expenditure order of resource categories for the General Fund. Resources will be categorized according to Generally Accepted Accounting Principles (GAAP) for state and local governments. When both restricted and unrestricted resources are available in the General Fund, the following spending policy will apply or the default will apply if a policy has not been adopted:

1st:	Restricted
2nd:	Committed
3rd:	Assigned
4th:	Unassigned

The Local Government receives inflows from revenue and other financial sources from numerous sources for use in the Special Revenue, Debt Service and Capital Projects funds. These funds will expend those resources on the specific purpose of the fund.
The intention of this spending policy is to identify the expenditure order of resource categories for these Funds. Resources will be categorized according to Generally Accepted Accounting Principles (GAAP) for state and local governments. When both restricted and unrestricted resources are available in these funds, the following spending policy will apply or the default will apply if a policy has not been adopted:

1st:	
2nd:	
3rd:	

K. Minimum Fund Balance Policy:

The Local Government does not have a minimum fund balance policy in place.

REQUIRED

SUPPLEMENTARY

INFORMATION

TOWN OF Saco
GENERAL FUND
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL
FISCAL YEAR ENDING JUNE 30, 2019

Account Number	Description	BUDGETED AMOUNTS ORIGINAL	BUDGETED AMOUNTS FINAL	ACTUAL AMOUNTS	VARIANCE WITH FINAL BUDGET POSITIVE (NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes	129,544.00	129,544.00	125,401.29	(4,142.71)
314140	Local option taxes				0.00
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses	20.00	20.00	160.00	140.00
323050	Other permits			30.00	30.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants				0.00
335000/336	State shared revenues	23,829.00	23,829.00	23,744.72	(84.28)
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government			5.00	5.00
342000	Public safety				0.00
343000	Public works	750.00	750.00	23,097.27	22,347.27
344000	Public health			160.00	160.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**			1,000.00	1,000.00
370000	**Investment and royalty earnings**	619.00	619.00	910.91	291.91
	Total revenues	154,762.00	154,762.00	174,509.19	19,747.19
	EXPENDITURES				
	Current:				
410000	**General Government:**				
410100	**Legislative services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
410200	**Executive services**				
100	Personal services	8,033.00	8,033.00	6,238.96	1,794.04
200-800	Supplies/services/materials, etc			2,589.06	(2,589.06)
900	Capital outlay				0.00
410300	**Judicial services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00

TOWN OF Saco
GENERAL FUND
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL
FISCAL YEAR ENDING JUNE 30, 2019

Account Number	Description	BUDGETED AMOUNTS ORIGINAL	BUDGETED AMOUNTS FINAL	ACTUAL AMOUNTS	VARIANCE WITH FINAL BUDGET POSITIVE (NEGATIVE)
410400	**Administrative services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	4,000.00	4,000.00	3,275.69	724.31
900	Capital outlay				0.00
410500	**Financial services**				
100	Personal services	18,664.00	18,664.00	15,719.30	2,944.70
200-800	Supplies/services/materials, etc	22,918.00	22,918.00	24,385.71	(1,467.71)
900	Capital outlay				0.00
410600	**Elections**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
410900	**Records administration**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
411000	**Planning & Research services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
411100	**Legal services**				
100	Personal services	2,000.00	2,000.00	1,917.97	82.03
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
411200	**Facilities administration**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
411600	**Public school administration**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
411800	**Other General Government services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
420000	**Public Safety:**				
420100	**Law enforcement services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
420200	**Detention and correction**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
420300	**Probation and parole**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00

TOWN OF Saco
GENERAL FUND
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL
FISCAL YEAR ENDING JUNE 30, 2019

Account Number	Description	BUDGETED AMOUNTS ORIGINAL	BUDGETED AMOUNTS FINAL	ACTUAL AMOUNTS	VARIANCE WITH FINAL BUDGET POSITIVE (NEGATIVE)
420400	**Fire protection**				
100	Personal services	270.00	270.00	1,953.44	(1,683.44)
200-800	Supplies/services/materials, etc			177.25	(177.25)
900	Capital outlay				0.00
420500	**Protective inspections**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
420600	**Civil defense**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
420700	**Emergency services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
430000	**Public Works:**				
430100	**Public works administration**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
430200	**Road and street services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	5,000.00	5,000.00	1,942.79	3,057.21
900	Capital outlay				0.00
430300	**Airport**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
430400	**Transit systems**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
430500	**Water utilities**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	15,000.00	15,000.00		15,000.00
900	Capital outlay				0.00
430600	**Sewer utilities**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	5,000.00	5,000.00		5,000.00
900	Capital outlay				0.00
430800	**Solid waste services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	800.00	800.00	800.00	0.00
900	Capital outlay				0.00
430900	**Cemetery services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	1,500.00	1,500.00		1,500.00
900	Capital outlay				0.00
431100	**Weed control**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc			81.00	(81.00)
900	Capital outlay				0.00

TOWN OF Saco
GENERAL FUND
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL
FISCAL YEAR ENDING JUNE 30, 2019

Account Number	Description	BUDGETED AMOUNTS ORIGINAL	BUDGETED AMOUNTS FINAL	ACTUAL AMOUNTS	VARIANCE WITH FINAL BUDGET POSITIVE (NEGATIVE)
431300	**Central shop services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc			18,334.15	(18,334.15)
900	Capital outlay				0.00
440000	**Public Health:**				
440100	**Public health services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
440200	**Hospitals**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
440300	**Nursing homes**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
440400	**Mental health center**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
440600	**Animal control services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	70.00	70.00		70.00
900	Capital outlay				0.00
440700	**Insect and pest controls**				
100	Personal services			765.82	(765.82)
200-800	Supplies/services/materials, etc	6,186.00	6,186.00	3,967.88	2,218.12
900	Capital outlay				0.00
450000	**Social and Economic Services:**				
450100	**Welfare**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
450200	**Veteran's services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
450300	**Aging services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
450400	**Extension services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00

TOWN OF Saco					
GENERAL FUND					
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE					
BUDGET AND ACTUAL					
FISCAL YEAR ENDING JUNE 30, 2019					
					VARIANCE WITH
		BUDGETED AMOUNTS			FINAL BUDGET
Account				ACTUAL	POSITIVE
Number	Description	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
460000	**Culture and Recreation:**				
460100	**Library services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
460200	**Fairs**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
460300	**Other community events**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
460400	**Parks**				
100	Personal services	22,712.00	22,712.00	21,462.24	1,249.76
200-800	Supplies/services/materials, etc	10,200.00	10,200.00	2,444.62	7,755.38
900	Capital outlay				0.00
460440	**Participant recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
460450	**Spectator recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
470000	**Housing and Community Development:**				
470100	**Community public facility projects**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
470200	**Housing rehabilitation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
470300	**Economic development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
470400	**TSEP/Home/Infrastructure rehabilitation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00

TOWN OF Saco

GENERAL FUND

STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE

BUDGET AND ACTUAL

FISCAL YEAR ENDING JUNE 30, 2019

Account Number	Description	BUDGETED AMOUNTS ORIGINAL	BUDGETED AMOUNTS FINAL	ACTUAL AMOUNTS	VARIANCE WITH FINAL BUDGET POSITIVE (NEGATIVE)
480000	**Conservation of Natural Resources:**				
480100	**Soil conservation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
480200	**Water quality control**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
480300	**Air quality control**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
490000	**Debt Service:**				
610	Principal	12,943.00	12,943.00	14,983.97	(2,040.97)
620	Interest	11,057.00	11,057.00	9,016.03	2,040.97
510000	**Miscellaneous**	15,997.00	15,997.00	1,908.00	14,089.00
	Total expenditures	162,350.00	162,350.00	131,963.88	30,386.12
	Excess of revenues over (under)expenditures	(7,588.00)	(7,588.00)	42,545.31	50,133.31
	OTHER FINANCING SOURCES (USES)				
381010/40	Proceeds from sale of bonds				0.00
381010/40	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In				0.00
520000	Transfers out (enter as a negative)	(186.00)	(186.00)	(561.55)	(375.55)
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure (enter as negative)				0.00
	Total other financing sources (uses)	(186.00)	(186.00)	(561.55)	(375.55)
	Net change in fund balance	(7,774.00)	(7,774.00)	41,983.76	49,757.76
	Fund balances - July 1, 2018 as previously reported			36,320.12	
	Prior period adjustments				
	Fund balances - July 1, 2018 as restated			36,320.12	
	Fund balances - June 30, 2019			78,303.88	

TOWN OF Saco
FISCAL YEAR ENDING JUNE 30, 2019

Public Employees Retirement Plan (PERS)
Required Supplementary Information
Schedule of Proportionate Share of the Net Pension Liability
For the Last Ten Fiscal Years*

81a1

Reporting Date:	2019	2018	2017	2016	2015
As of Measurement Date:	2018	2017	2016	2015	2014
Employer's proportion of the Net Pension Liability (percentage)	0.7500%	0.9400%	1.3000%	1.4800%	1.3800%
Employer's Net Pension Liability (amount)	155,989	183,026	221,618	207,275	171,945
State of Montana's Net Pension Liability (amount)	52,008	2,187	2,708	2,546	2,100
Total	**$207,997.00**	**$185,213.00**	**$224,326.00**	**$209,821.00**	**$174,045.00**
Employer's Covered Payroll	122,911	116,575	155,846	173,045	156,212
Employer's proportionate share as a percent of Covered Payroll	126.91%	157.00%	142.20%	119.78%	111.22%
Plan Fiduciary Net Position as a percent of the Total Pension Liability	73.47%	73.75%	74.71%	78.40%	78.87%

**The amounts presented for each fiscal year were determined as of June 30*

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

TOWN OF Saco
Required Supplementary Information
Schedule of Contributions
For the Last Ten Fiscal Years*

81b

As of most recent FYE - (reporting date)	2019	2018	2017	2016	2015
Contractually Required DB Contributions		10,411	9,758	13,026	14,260
Plan Choice Rate Required Contributions					
Contributions in Relation to the Contractually Required Contributions		10,411	9,758	13,026	14,260
Contribution Deficiency (Excess)					
Employer's Covered Payroll		122,911	116,575	155,846	173,045
Contributions as a percentage of Covered F		8.47%	8.37%	8.36%	8.24%

**The amounts presented for each fiscal year were determined as of June 30*

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

TOWN OF Saco
Notes to the Required Supplementary Information
For the Employer's Fiscal Year Ended June 30, 2019 (June 30, 2018 Measurement Date)
82

Changes of Benefit Terms
The following changes to the plan provisions were made as identified:

2017
Working Retiree Limitations – for PERS

Effective July 1, 2017, if a PERS retiree returns as an independent contractor to what would otherwise be PERS-covered employment, general contractor overhead costs are excluded from PERS working retiree limitations.

Refunds

1) Terminating members eligible to retire may, in lieu of receiving a monthly retirement benefit, refund their accumulated contributions in a lump sum.
2) Terminating members with accumulated contributions between $200 and $1,000 who wish to rollover their refund must do so within 90 days of termination of service.
3) Trusts, estates, and charitable organizations listed as beneficiaries are entitled to receive only a lump-sum payment.

Interest credited to member accounts – Effective July 1, 2017, the interest rate credited to member accounts increased from 0.25% to 0.77%.

Lump-sum payouts

Effective July 1, 2017, lump-sum payouts in all systems are limited to the member's accumulated contributions rate than the present value of the member's benefit.

Disabled PERS Defined Contribution (DC) Members

PERS members hired after July 1, 2011 have a normal retirement age of 65. PERS DC members hired after July 1, 2011 who became disabled were previously only eligible for a disability benefit until age 65. Effective July 1, 2017, these individuals will be eligible for a disability benefit until they reach 70, thus ensuring the same 5-year time period available to PERS DC disabled members hired prior to July 1, 2011 who have a normal retirement age of 60 and are eligible for a disability benefit until age 65.

Changes in Actuarial Assumptions and Methods
Method and assumptions used in calculations of actuarially determined contributions
The following Actuarial Assumptions were adopted from the June 30, 2016 Experience Study:

General Wage Growth*	3.50%
Investment Rate of Return*	7.65%
*Includes inflation at	2.75%
Merit salary increases	0% to 6.30%
Asset valuation method	4-year smoothed market
Actuarial cost method	Entry age Normal
Amortization method	Level percentage of payroll, open
Mortality (Healthy members)	For Males and Females: RP 2000 Combined Employee and Annuitant Mortality Table projected to 2020 using Scale BB, males set back 1 year
Mortality (Disabled members)	For Males and Females: RP 2000 Combined Mortality Table
Admin Expense as % of Payroll	0.26%

Administrative expenses are recognized by an additional amount added to the normal cost contribution rate for the System. This amount varies from year to year based on the prior year's actual administrative expenses.

OTHER

SUPPLEMENTARY

INFORMATION

COUNTY/CITY/TOWN OF _____
COMBINING BALANCE SHEET
NONMAJOR SPECIAL REVENUE FUNDS
JUNE 30, 2019

ACCOUNT NUMBER	DESCRIPTION	2200 Mosquito	2400 SID Street Light Maintenance	2820 Gas Apportionment	2940 CDBG
	ASSETS				
101000	Cash and cash equivalents	5,414.99	28,045.93	12,965.68	12,925.43
103000	Petty cash				
101100	Investments				
102000	Cash and cash equivalents - restricted				
102300	Investments - restricted				
106000	Valuation of investments to fair value				
	Taxes receivable:				
111000	Mobiles				
113000	Real estate	1,353.90			
114000	Net proceeds				
115000	Personal				
116000	Protested	198.48			
118000	Special assessments		2,422.37		
120000	Accounts/other receivables (net of allowance for uncollectibles)				11,804.68
131000	Due from other funds				
132000	Due from other governments				
133000	Advances to other funds				
140000	Prepaid expense				
150000	Inventories				
170000	Other debits				
	Total Assets	6,967.37	30,468.30	12,965.68	24,730.11
	DEFERRED OUTFLOWS OF RESOURCES				
190000	Deferred Outflows of Resources				
19xxxx	Deferred Outflows of Resources				
	Total Deferred Outflows of Resources	0.00	0.00	0.00	0.00
	LIABILITIES				
201000	Warrants payable				
202100	Accounts payable				
203100	Judgments payable				
204000	Contracts/loans/notes payable				
205200	Matured interest payable				
206100	Other accrued payables				
211000	Due to other funds				
212000	Due to other governments				
214000	Deposits payable				
216000	Revenues collected in advance				
233000	Advances from other funds				
	Total Liabilities	0.00	0.00	0.00	0.00
	DEFERRED INFLOWS OF RESOURCES				
220000	Deferred Inflows of Resources				
223000	Deferred Inflows of Tax Revenues	1,552.38	2,422.37		9,935.45
	Total Deferred Inflows of Resources	1,552.38	2,422.37	0.00	9,935.45
	FUND BALANCES:				
250100	Non-spendable				
250200	Restricted				
260100	Committed				
260200	Assigned				
271000	Unassigned *(negative balance ony)*	5,414.99	28,045.93	12,965.68	14,794.66
	Total Fund Balances	5,414.99	28,045.93	12,965.68	14,794.66
	Total Liabilities, Deferred Inflows of Resources and Fund Balances	6,967.37	30,468.30	12,965.68	24,730.11

COUNTY/CITY/TOWN OF _____
COMBINING BALANCE SHEET
NONMAJOR SPECIAL REVENUE FUNDS
JUNE 30, 2019

ACCOUNT NUMBER	DESCRIPTION	NONMAJOR SPECIAL REVENUE FUNDS
	ASSETS	
101000	Cash and cash equivalents	59,352.03
103000	Petty cash	0.00
101100	Investments	0.00
102000	Cash and cash equivalents - restricted	0.00
102300	Investments - restricted	0.00
106000	Valuation of investments to fair value	0.00
	Taxes receivable:	
111000	Mobiles	0.00
113000	Real estate	1,353.90
114000	Net proceeds	0.00
115000	Personal	0.00
116000	Protested	198.48
118000	Special assessments	2,422.37
120000	Accounts/other receivables (net of allowance for uncollectibles)	11,804.68
131000	Due from other funds	0.00
132000	Due from other governments	0.00
133000	Advances to other funds	0.00
140000	Prepaid expense	0.00
150000	Inventories	0.00
170000	Other debits	0.00
	Total Assets	75,131.46
	DEFERRED OUTFLOWS OF RESOURCES	
190000	Deferred Outflows of Resources	0.00
19xxxx	Deferred Outflows of Resources	0.00
	Total Deferred Outflows of Resources	0.00
	LIABILITIES	
201000	Warrants payable	0.00
202100	Accounts payable	0.00
203100	Judgments payable	0.00
204000	Contracts/loans/notes payable	0.00
205200	Matured interest payable	0.00
206100	Other accrued payables	0.00
211000	Due to other funds	0.00
212000	Due to other governments	0.00
214000	Deposits payable	0.00
216000	Revenues collected in advance	0.00
233000	Advances from other funds	0.00
	Total Liabilities	0.00
	DEFERRED INFLOWS OF RESOURCES	
220000	Deferred Inflows of Resources	0.00
223000	Deferred Inflows of Tax Revenues	13,910.20
	Total Deferred Inflows of Resources	13,910.20
	FUND BALANCES:	
250100	Non-spendable	0.00
250200	Restricted	0.00
260100	Committed	0.00
260200	Assigned	0.00
271000	Unassigned *(negative balance ony)*	61,221.26
	Total Fund Balances	61,221.26
	Total Liabilities, Deferred Inflows of Resources and Fund Balances	75,131.46

COUNTY/CITY/TOWN OF _____
COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2019

		8-Jan-06			
		Mosquito			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes	20,000.00	20,000.00	19,470.32	(529.68)
314140	Local option taxes				0.00
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses				0.00
323050	Other permits				0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants				0.00
335000/336	State shared revenues				0.00
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government				0.00
342000	Public safety				0.00
343000	Public works				0.00
344000	Public health				0.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**			320.00	320.00
370000	**Investment and royalty earnings**				0.00
	Total revenues	20,000.00	20,000.00	19,790.32	(209.68)

COUNTY/CITY/TOWN OF _____
COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2019

		27-Jul-06			
		SID Street Light Maintenance			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes				0.00
314140	Local option taxes	16,414.00	16,414.00	16,066.64	(347.36)
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses				0.00
323050	Other permits				0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants				0.00
335000/336	State shared revenues				0.00
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government				0.00
342000	Public safety				0.00
343000	Public works				0.00
344000	Public health				0.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**				0.00
370000	**Investment and royalty earnings**				0.00
	Total revenues	16,414.00	16,414.00	16,066.64	(347.36)
		-65-			

COUNTY/CITY/TOWN OF _____
COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2019

		20-Sep-07			
		Gas Apportionment			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes				0.00
314140	Local option taxes				0.00
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses				0.00
323050	Other permits				0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants			11,231.01	11,231.01
335000/336	State shared revenues	13,442.00	13,442.00	9,612.48	(3,829.52)
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government				0.00
342000	Public safety				0.00
343000	Public works				0.00
344000	Public health				0.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**				0.00
370000	**Investment and royalty earnings**				0.00
	Total revenues	13,442.00	13,442.00	20,843.49	7,401.49
		-65-			

COUNTY/CITY/TOWN OF _____
COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2019

		18-Jan-08			
		CDBG			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes				0.00
314140	Local option taxes				0.00
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses				0.00
323050	Other permits				0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants				0.00
335000/336	State shared revenues				0.00
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government				0.00
342000	Public safety				0.00
343000	Public works				0.00
344000	Public health				0.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**				0.00
370000	**Investment and royalty earnings**			20.19	20.19
	Total revenues	0.00	0.00	20.19	20.19
		-65-			

COUNTY/CITY/TOWN OF _____
COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2019

		TOTALS			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes	20,000.00	20,000.00	19,470.32	(529.68)
314140	Local option taxes	16,414.00	16,414.00	16,066.64	(347.36)
	Licenses and permits				
322010	Alcoholic beverage licenses	0.00	0.00	0.00	0.00
322020	General business licenses	0.00	0.00	0.00	0.00
323010	Building permits	0.00	0.00	0.00	0.00
323030	Animal licenses	0.00	0.00	0.00	0.00
323050	Other permits	0.00	0.00	0.00	0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants	0.00	0.00	0.00	0.00
332000/333	Federal shared revenues	0.00	0.00	0.00	0.00
334000	State grants	0.00	0.00	11,231.01	11,231.01
335000/336	State shared revenues	13,442.00	13,442.00	9,612.48	(3,829.52)
337000	Local grants	0.00	0.00	0.00	0.00
338000	Local shared revenues	0.00	0.00	0.00	0.00
	Charges for services				
341000	General government	0.00	0.00	0.00	0.00
342000	Public safety	0.00	0.00	0.00	0.00
343000	Public works	0.00	0.00	0.00	0.00
344000	Public health	0.00	0.00	0.00	0.00
345000	Social/economic services	0.00	0.00	0.00	0.00
346000	Culture and recreation	0.00	0.00	0.00	0.00
	Fines and forfeitures				
351010	Justice court	0.00	0.00	0.00	0.00
351020	District court	0.00	0.00	0.00	0.00
351030	City court	0.00	0.00	0.00	0.00
360000	**Miscellaneous**	0.00	0.00	320.00	320.00
370000	**Investment and royalty earnings**	0.00	0.00	20.19	20.19
	Total revenues	49,856.00	49,856.00	56,720.64	6,864.64

COUNTY/CITY/TOWN OF _____
COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2019

		8-Jan-06			
		Mosquito			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
420000	**Public Safety**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
430000	**Public Works**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
440000	**Public Health**				
100	Personal services	7,458.00	7,458.00	5,302.33	2,155.67
200-800	Supplies/services/materials, etc	10,000.00	10,000.00	12,155.67	(2,155.67)
450000	**Social and Economic Services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
460000	**Culture and Recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
470000	**Housing and Community Development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
480000	**Conservation of Natural Resources**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	**Capital expenditures**				0.00
490000	**Debt Service**				
610	Principal				0.00
620	Interest				0.00
510000	**Miscellaneous**				0.00
	Total expenditures	17,458.00	17,458.00	17,458.00	0.00
	Excess of revenues over expenditures	2,542.00	2,542.00	2,332.32	(209.68)
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued				0.00
381000	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In				0.00
520000	Transfers out (enteras a negative)				0.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure(enter as negative)				0.00
	Total other financing sources (uses)	0.00	0.00	0.00	0.00
	Net change in fund balance	2,542.00	2,542.00	2,332.32	(209.68)
	Fund balances - July 1, 2018 as previously reported			3,082.67	
	Prior period adjustments				
	Fund balances - July 1, 2018 as restated			3,082.67	
	Fund balances - June 30, 2019			5,414.99	
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COUNTY/CITY/TOWN OF _____
COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2019

		27-Jul-06			
		SID Street Light Maintenance			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
420000	**Public Safety**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
430000	**Public Works**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	16,414.00	16,414.00	12,292.61	4,121.39
440000	**Public Health**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
450000	**Social and Economic Services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
460000	**Culture and Recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
470000	**Housing and Community Development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
480000	**Conservation of Natural Resources**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	**Capital expenditures**				0.00
490000	**Debt Service**				
610	Principal				0.00
620	Interest				0.00
510000	**Miscellaneous**	800.00	800.00	702.33	97.67
	Total expenditures	17,214.00	17,214.00	12,994.94	4,219.06
	Excess of revenues over expenditures	(800.00)	(800.00)	3,071.70	3,871.70
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued				0.00
381000	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In				0.00
520000	Transfers out (enteras a negative)				0.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure(enter as negative)				0.00
	Total other financing sources (uses)	0.00	0.00	0.00	0.00
	Net change in fund balance	(800.00)	(800.00)	3,071.70	3,871.70
	Fund balances - July 1, 2018 as previously reported			24,974.23	
	Prior period adjustments				
	Fund balances - July 1, 2018 as restated			24,974.23	
	Fund balances - June 30, 2019			28,045.93	
		-66-			

COUNTY/CITY/TOWN OF _____
COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2019

		20-Sep-07			
		Gas Apportionment			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
420000	**Public Safety**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
430000	**Public Works**				
100	Personal services	6,890.00	6,890.00	6,997.58	(107.58)
200-800	Supplies/services/materials, etc	4,760.00	4,760.00	4,282.84	477.16
440000	**Public Health**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
450000	**Social and Economic Services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
460000	**Culture and Recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
470000	**Housing and Community Development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
480000	**Conservation of Natural Resources**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	**Capital expenditures**				0.00
490000	**Debt Service**				
610	Principal				0.00
620	Interest				0.00
510000	**Miscellaneous**				0.00
	Total expenditures	11,650.00	11,650.00	11,280.42	369.58
	Excess of revenues over expenditures	1,792.00	1,792.00	9,563.07	7,771.07
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued				0.00
381000	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In			561.55	561.55
520000	Transfers out (enteras a negative)				0.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure(enter as negative)				0.00
	Total other financing sources (uses)	0.00	0.00	561.55	561.55
	Net change in fund balance	1,792.00	1,792.00	10,124.62	8,332.62
	Fund balances - July 1, 2018 as previously reported			2,841.06	
	Prior period adjustments				
	Fund balances - July 1, 2018 as restated			2,841.06	
	Fund balances - June 30, 2019			12,965.68	
		-66-			

COUNTY/CITY/TOWN OF _____
COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2019

		18-Jan-08			
		CDBG			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
420000	**Public Safety**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
430000	**Public Works**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
440000	**Public Health**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
450000	**Social and Economic Services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
460000	**Culture and Recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
470000	**Housing and Community Development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
480000	**Conservation of Natural Resources**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	**Capital expenditures**				0.00
490000	**Debt Service**				
610	Principal				0.00
620	Interest				0.00
510000	**Miscellaneous**				0.00
	Total expenditures	0.00	0.00	0.00	0.00
	Excess of revenues over expenditures	0.00	0.00	20.19	20.19
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued				0.00
381000	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In				0.00
520000	Transfers out (enteras a negative)				0.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure(enter as negative)				0.00
	Total other financing sources (uses)	0.00	0.00	0.00	0.00
	Net change in fund balance	0.00	0.00	20.19	20.19
	Fund balances - July 1, 2018 as previously reported			14,774.47	
	Prior period adjustments				
	Fund balances - July 1, 2018 as restated			14,774.47	
	Fund balances - June 30, 2019			14,794.66	
		-66-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES

BUDGET AND ACTUAL

NONMAJOR SPECIAL REVENUE FUNDS

FISCAL YEAR ENDED JUNE 30, 2019

		TOTALS			
					VARIANCE WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT NUMBER	DESCRIPTION	ORIGINAL	FINAL	ACTUAL AMOUNTS	POSITIVE (NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
420000	**Public Safety**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
430000	**Public Works**				
100	Personal services	6,890.00	6,890.00	6,997.58	(107.58)
200-800	Supplies/services/materials, etc	21,174.00	21,174.00	16,575.45	4,598.55
440000	**Public Health**				
100	Personal services	7,458.00	7,458.00	5,302.33	2,155.67
200-800	Supplies/services/materials, etc	10,000.00	10,000.00	12,155.67	(2,155.67)
450000	**Social and Economic Services**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
460000	**Culture and Recreation**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
470000	**Housing and Community Development**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
480000	**Conservation of Natural Resources**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
900	**Capital expenditures**	0.00	0.00	0.00	0.00
490000	**Debt Service**				
610	Principal	0.00	0.00	0.00	0.00
620	Interest	0.00	0.00	0.00	0.00
510000	**Miscellaneous**	800.00	800.00	702.33	97.67
	Total expenditures	46,322.00	46,322.00	41,733.36	4,588.64
	Excess of revenues over expenditures	3,534.00	3,534.00	14,987.28	11,453.28
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued	0.00	0.00	0.00	0.00
381000	Discount on bonds issued	0.00	0.00	0.00	0.00
381050	Inception of capital lease	0.00	0.00	0.00	0.00
381070	Notes/loans/intercap issued	0.00	0.00	0.00	0.00
382010	Sale of assets	0.00	0.00	0.00	0.00
383000	Transfers In	0.00	0.00	561.55	561.55
520000	Transfers out (enteras a negative)	0.00	0.00	0.00	0.00
384000	Special items - revenue	0.00	0.00	0.00	0.00
385000	Extraordinary items - revenue	0.00	0.00	0.00	0.00
524000	Special items - expenditure (enter as negative)	0.00	0.00	0.00	0.00
525000	Extraordinary items - expenditure(enter as negative)	0.00	0.00	0.00	0.00
	Total other financing sources (uses)	0.00	0.00	561.55	561.55
	Net change in fund balance	3,534.00	3,534.00	15,548.83	12,014.83
	Fund balances - July 1, 2018 as previously reported			45,672.43	
	Prior period adjustments			0.00	
	Fund balances - July 1, 2018 as restated			45,672.43	
	Fund balances - June 30, 2019			61,221.26	

TOWN OF Saco
STATEMENT OF NET POSITION
NONMAJOR ENTERPRISE FUNDS
FISCAL YEAR ENDING JUNE 30, 2019

Account Number	Description	NonMajor Enterprise Funds 5712 Market Gas	Totals
	ASSETS		
	Current Assets		
101000	Cash and cash equivalents	55,119.59	55,119.59
103000	Petty cash		0.00
101100	Investments (at fair value)		0.00
110000	Tax/assessment receivable (net of allowance for uncollectibles)		0.00
120000	Accounts/other receivables (net of allowance for uncollectibles)		0.00
131000	Due from other funds		0.00
132000	Due from other governments		0.00
141000	Prepaid expense		0.00
150000	Inventories		0.00
	Total Current Assets	55,119.59	55,119.59
	Noncurrent Assets		
	Restricted Assets:		
102200	Cash and cash equivalents		0.00
102300	Investments		0.00
133000	Advances to other funds		0.00
170000	Other debits		0.00
180000	Capital assets:		
	Land		0.00
	Construction in progress		0.00
	Buildings	24,380.00	24,380.00
	Improvements other than buildings		0.00
	Machinery and equipment	163,935.00	163,935.00
	Infrastructure		0.00
	Less: accumulated depreciation	(105,135.00)	(105,135.00)
	Capital assets - net of accumulated depreciation	83,180.00	83,180.00
	Total Noncurrent Assets	83,180.00	83,180.00
	Total Assets	138,299.59	138,299.59
	DEFERRED OUTFLOWS OF RESOURCES		
190000	Deferred Outflows of Resources - Pensions		0.00
19xxxx	Deferred Outflows of Resources - OPEB		0.00
19xxxx	Deferred Outflows of Resources		0.00
	Total Deferred Outflows of Resources	0.00	0.00
	LIABILITIES		
	Current Liabilities		
202100	Accounts payable		0.00
203100	Judgments payable		0.00
204000	Contracts/loans/notes payable		0.00
205200	Matured interest payable		0.00
206100	Other accrued payables		0.00
209100	Compensated absences		0.00
211000	Due to other funds		0.00
212000	Due to other governments		0.00
214000	Deposits payable		0.00
216000	Revenues collected in advance		0.00
	Total Current Liabilities	0.00	0.00
	Noncurrent Liabilities		
231000	Bonds payable		0.00
233000	Advance from other funds		0.00
234000	Judgments payable		0.00
235000	Contracts/loans/notes payable		0.00
236000	Closure/postclosure care costs		0.00
237000	Net Pension Liability		0.00
238000	OPEB Liability		0.00
239000	Compensated absences		0.00
	Total Noncurrent Liabilities	0.00	0.00
	Total Liabilities	0.00	0.00
	DEFERRED INFLOWS OF RESOURCES		
220000	Deferred Inflows of Resources - Pensions		0.00
22xxxx	Deferred Inflows of Resources - OPEB		0.00
223000	Deferred Inflows of Resources		0.00
	Total Deferred Inflows of Resources	0.00	0.00
	NET POSITION		
	Net Investment in capital assets	83,180.00	83,180.00
	Restricted for:		
			0.00
			0.00
			0.00

				0.00
		Unrestricted	55,119.59	55,119.59
		Total Net Position	138,299.59	138,299.59

TOWN OF Saco

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET POSITION

NONMAJOR ENTERPRISE FUNDS

FISCAL YEAR ENDING JUNE 30, 2019

Account Number	Description	NonMajor Enterprise Funds 5712 Market Gas	Totals
	OPERATING REVENUES		
340000	Charges for services		0.00
360000	Miscellaneous revenues		0.00
363000	Special assessments		0.00
			0.00
	Total Operating Revenues	0.00	0.00
	OPERATING EXPENSES		
100	Personal services		0.00
200	Supplies		0.00
300	Purchased services		0.00
400	Building materials		0.00
500	Fixed charges	300.00	300.00
810	Loss/Bad debt expense		0.00
830	Depreciation	11,896.00	11,896.00
			0.00
	Total Operating Expenses	12,196.00	12,196.00
	Operating Income (Loss)	(12,196.00)	(12,196.00)
	NONOPERATING REVENUES (EXPENSES)		
310000	Taxes/assessment revenue		0.00
320000	Licenses/permits revenue		0.00
330000	Intergovernmental revenue		0.00
371000	Interest revenue		0.00
382030	Gain or Loss on sale of capital assets		0.00
490000	Debt service interest expense (enter as negative)		0.00
384000	Special items - revenue		0.00
385000	Extraordinary items - revenue		0.00
524000	Special items - expense (enter as negative)		0.00
525000	Extraordinary items - expense (enter as negative)		0.00
	Total Non-Operating Revenues (Expenses)	0.00	0.00
	Income (Loss) before contributions and transfers	(12,196.00)	(12,196.00)
	Capital contributions		0.00
	Transfers in (out)		0.00
	Change in net position	(12,196.00)	(12,196.00)
	Total net position - July 1, 2018 as previously reported	150,495.59	150,495.59
	Prior period adjustments		0.00
	Total net position - July 1, 2018 as restated	150,495.59	150,495.59
	Total net position - June 30, 2019	138,299.59	138,299.59

TOWN OF Saco		
COMBINING STATEMENT OF CASH FLOWS		
NONMAJOR ENTERPRISE FUNDS		
FISCAL YEAR ENDING JUNE 30, 2019		
	5712	
Description	Market Gas	TOTALS
CASH FLOWS FROM OPERATING ACTIVITIES		
Cash received from customers	0.00	0.00
Cash paid to suppliers	(300.00)	(300.00)
Cash paid to employees	0.00	0.00
Cash received from interfund services provided		0.00
Cash paid for interfund services used		0.00
Net cash provided (used) by operating activities	(300.00)	(300.00)
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES		
Transfers from (to) other funds	0.00	0.00
Advances from (to) other funds		0.00
Subsidies from taxes and other governments	0.00	0.00
Net cash provided (used) by capital and related financing activities	0.00	0.00
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES		
Proceeds from debt		0.00
Capital contributions	0.00	0.00
Purchases/acquisition/construction of capital assets		0.00
Principal on debt		0.00
Interest paid on debt	0.00	0.00
Capital lease down payment		0.00
Proceeds from sales of capital assets		0.00
Net cash provided (used) by capital and related financing activities	0.00	0.00
CASH FLOWS FROM INVESTING ACTIVITIES		
Proceeds from sales of investments		0.00
Purchase of investments		0.00
Interest earnings	0.00	0.00
Net cash provided (used) by investing activities	0.00	0.00
Net increase (decrease) in cash and cash equivalents	(300.00)	(300.00)
Cash and cash equivalents - July 1, 2017	55,419.59	55,419.59
Cash and cash equivalents - June 30, 2018	55,119.59	55,119.59
Reconciliation of operating income to net cash provided (used by operating activities:		
Operating income	(12,196.00)	(12,196.00)
Adjustments to reconcile operating income to net cash provided (used) by operating activities		
Depreciation expense	11,896.00	11,896.00
(Increase) decrease in accounts receivable		0.00
(Increase) decrease in intergovernmental receivables		0.00
(Increase) decrease in due from other funds		0.00
Increase in allowance for uncollectible accounts		0.00
(Increase) decrease in inventories		0.00
(Increase) decrease in prepaid items		0.00
Increase (decrease) in customer deposits		0.00
Increase (decrease) in accounts payable		0.00
Increase (decrease) in compensated absences pay.		0.00
Increase (decrease) in intergovernmental payables		0.00
Increase (decrease) in due to other funds		0.00
Total adjustments	11,896.00	11,896.00
Net cash provided (used) by operating activities	(300.00)	(300.00)
Noncash investing, capital, and financing activities:		
Borrowing under capital lease		0.00
Contributions of capital assets from government		0.00
Purchase of equipment on account		0.00
Increase in fair value of investments		0.00
Capital asset trade-ins		0.00

TOWN OF Saco
SCHEDULE OF FEDERAL/STATE GRANTS, ENTITLEMENTS, AND SHARED REVENUES
FISCAL YEAR ENDING JUNE 30, 2019

	REVENUE CODE	RECEIVING FUND	AMOUNT
FEDERAL GRANTS/ENTITLEMENTS - (LIST)			
Total Federal Grants/Entitlements			0.00
FEDERAL SHARED REVENUES - (LIST)			
Total Federal Shared Revenues			0.00
STATE GRANTS/ENTITLEMENTS - (LIST)			
State Entitlement	335000	1000	23,744.72
BarSAA Grant	334000	2820	11,231.01
Total State Grants/Entitlements			34,975.73
STATE SHARED REVENUES - (LIST)			
Gas Tax	335000	2820	9,612.48
Total State Shared Revenues			9,612.48
LOCAL GRANTS - (LIST)			
			0.00
TOTAL			44,588.21

ALL FUNDS

SCHEDULE OF CASH RECEIPTS AND DISBURSEMENTS - ALL FUNDS

FISCAL YEAR ENDING JUNE 30, 2019

Fund Number	Description	Cash balance 7/1/2018	Receipts	Transfers in	Disbursements	Transfers Out	Cash balance 6/30/2019
1000	**GENERAL**	36,320.12	174,509.19	58.85	24,664.27	107,920.01	78,303.88
2000	**SPECIAL REVENUE FUNDS**						
2100	Resort Tax						0.00
2110	Road						0.00
2120	Poor						0.00
2130	Bridge						0.00
2140	Weed control						0.00
2150	Predatory animal						0.00
2160	Fair						0.00
2170	Airport						0.00
2180	District court						0.00
2190	Comprehensive Insurance						0.00
2191	Property insurance						0.00
2200	Mosquito	3,082.67	19,790.32	13.65		17,471.65	5,414.99
2210	Parks/Recreation/Civic center						0.00
2220	Library						0.00
2230	Ambulance						0.00
2240	Cemetery						0.00
2250	Planning						0.00
2251	Planning/Zoning						0.00
2260	Disaster						0.00
2270	Health						0.00
2271	Mental health						0.00
2280	Senior citizens						0.00
2281	Senior citizens transp.						0.00
2290	Extension service						0.00
2300	Public safety						0.00
2320	Economic Development						0.00
2330	Rodent control						0.00
2340	Fire control						0.00
2360	Museum						0.00
2370	Employer retirement						0.00
2371	Health insurance						0.00
2390	D.A.R.E.						0.00
2393	Records preservation						0.00
2400	Light maintenance districts (all)	24,974.23	16,066.64			12,994.94	28,045.93
2500	Maintenance districts (all)						0.00
2800	Alcohol rehabilitation						0.00
2810	Police reserve						0.00
2820	Gas tax	2,841.06	21,405.04			11,280.42	12,965.68
2840	Weed grant						0.00
2850	911 Emergency						0.00
2860	Land planning						0.00
2890	Lewis and Clark Bicentennial Grant						0.00
2894	State allocated federal mineral royalties						0.00
2900	P.I.L.T.						0.00
							0.00
2940	C.D.B.G.	11,650.24	1,275.19				12,925.43
2960-79	Health grants (all)						0.00
							0.00
							0.00
							0.00
2980	Aging services						0.00
							0.00
	TOTAL SPECIAL REVENUE	42,548.20	58,537.19	13.65	0.00	41,747.01	59,352.03

ALL FUNDS
SCHEDULE OF CASH RECEIPTS AND DISBURSEMENTS - ALL FUNDS
FISCAL YEAR ENDING JUNE 30, 2019

Fund Number	Description	Cash balance 7/1/2018	Receipts	Transfers in	Disbursements	Transfers Out	Cash balance 6/30/2019
3000	**DEBT SERVICE FUNDS (list)**						
3400	S.I.D. revolving						0.00
							0.00
							0.00
	TOTAL DEBT SERVICE FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
4000	**CAPITAL PROJECTS FUNDS (list)**						
							0.00
							0.00
							0.00
	TOTAL CAPITAL PROJECTS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
5000	**ENTERPRISE FUNDS (list)**						
5110	Hospital/Nursing						0.00
5210	Water	56,668.05	132,214.20	15.12	27,998.80	89,014.13	71,884.44
5310	Sewer	8,035.67	40,515.70	1,266.88	29.20	23,426.50	26,362.55
5410	Solid Waste						0.00
5710	Gas	60,932.33	97,543.23	3,166.09		128,437.08	33,204.57
5712	Market Gas	55,419.59				300.00	55,119.59
	TOTAL ENTERPRISE FUNDS	181,055.64	270,273.13	4,448.09	28,028.00	241,177.71	186,571.15
6000	**INTERNAL SERVICE FUNDS (list)**						
							0.00
							0.00
	TOTAL INTERNAL SERVICE FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
7000	**TRUST FUNDS (list)**						
7001	Police reserve						0.00
7002	Fire disability pension	1,165.00					1,165.00
							0.00
7010	Cemetery perpetual care						0.00
							0.00
							0.00
7100	**AGENCY FUNDS (list)**						
7110	Bed tax collection						0.00
7120	Fire disability						0.00
7130	Protested tax						0.00
7140	Public administrator						0.00
7150	Redemptions						0.00
							0.00
7160	Clerk of district court						0.00
7170	Partial tax payments						0.00
							0.00
7190	Migratory stock						0.00
7200	**SPECIAL DISTRICTS (list)**						
							0.00
							0.00
							0.00
							0.00

ALL FUNDS

SCHEDULE OF CASH RECEIPTS AND DISBURSEMENTS - ALL FUNDS

FISCAL YEAR ENDING JUNE 30, 2019

Fund Number	Description	Cash balance 7/1/2018	Receipts	Transfers in	Disbursements	Transfers Out	Cash balance 6/30/2019
7400	Agency - State (all)						0.00
7700	District schools (all)						0.00
7805	General School Elementary						0.00
7810	General School H.S.						0.00
7815	Community College						0.00
7820	Transportation H.S./Elementary						0.00
7830	Retirement H.S.						0.00
7840	Retirement elementary						0.00
7850	**AGENCY - CITIES AND TOWNS (list)**						
							0.00
							0.00
							0.00
							0.00
7900	**AGENCY - OTHER**						
7910	Payroll fund	9,096.86	2.72	167,494.89	166,320.31		10,274.16
7930	Claims fund	3,394.44		218,829.25	218,836.25		3,387.44
	TOTAL TRUST AND AGENCY FUNDS	13,656.30	2.72	386,324.14	385,156.56	0.00	14,826.60
8000	**PERMANENT FUNDS**						
							0.00
							0.00
							0.00
	TOTAL PERMANENT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
	TOTALS (to be accounted for)	273,580.26	503,322.23	390,844.73	437,848.83	390,844.73	339,053.66

****PROPERTY TAXES COLLECTED**

Fund number	Description	Receipts		Disbursements		Undisbursed receipts 06/30/20___	
7820	Transportation H.S./Elementary						
7830	Retirement H.S.						
7840	Retirement elementary						

****THIS INFORMATION CAN BE TAKEN FROM FP-6b REPORT (TREASURER'S REPORT OF COUNTY WIDE SCHOOL FUNDS.)**

ALL FUNDS
CASH RECONCILIATION
FISCAL YEAR ENDING JUNE 30, 2019

	BANK NAME				
Account Description (not full acct #)	FSB	FCB			**Cash in all depositories**
BALANCE PER STATEMENTS	281,291.00	12,925.43			298,653.66
ADD Deposits in transit					
Service charges					0.00
Other					0.00
					0.00
					0.00
					0.00
Total to add	0.00	0.00	0.00	0.00	0.00
SUBTRACT Outstanding checks					13,661.60
Other					
					0.00
					0.00
					0.00
					0.00
Total to subtract	0.00	0.00	0.00	0.00	13,661.60
TOTAL CASH IN DEPOSITS	281,291.00	12,925.43	0.00	0.00	284,992.06
ADD Investments					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
Total to add	0.00	0.00	0.00	0.00	0.00
TOTAL IN DEPOSITORIES	281,291.00	12,925.43	0.00	0.00	284,992.06
ADD Cash and cash items on hand					0.00
	CDs				40,000.00
	Petty Cash				400.00
					0.00
					0.00
					0.00
					0.00
					0.00
Total to add	0.00	0.00	0.00	0.00	40,400.00
****TOTAL ACCOUNTED FOR**	281,291.00	12,925.43	0.00	0.00	325,392.06

***Total cash must agree with total cash reported within report**

Cash reconciles _____ Cash does not reconcile _____

GENERAL INFORMATION SECTION

GENERAL INFORMATION

(Complete all portions applicable to entity)

1. Class of county/city	3
2. Date of incorporation	1918
3. County seat	
4. Form of government	Comm-Ex
5. Population (most recent estimate)	199
6. Land area	
7. Miles of roads/streets/alleys	5.88
8. Taxable valuation	327,998
9. Road taxable valuation (county)	
10. Number of water consumers	170
11. Average daily water consumption	
12. Miles of water main	
13. Miles of sanitary and storm sewers	
14. Number of building permits issued	
15. Number of full-time employees	2

B. PROPERTY TAX MILL LEVIES -

County/City/Town funds only (For fiscal year being reported)

Fund/activity	Mills
General	394.16
Mosquito	63.88
TOTAL	458.04

STATE FINANCIAL SERVICES DIVISION
LOCAL GOVERNMENT SERVICES BUREAU
Mitchell Building Room 255, PO Box 200547, Helena, Montana 59620-0547
Local Government Services Bureau Portal

ENTITY # **023603**

MONTANA
TOWN OF SACO
PO Box 330
Saco, MT 59261

ANNUAL FINANCIAL REPORT

FISCAL YEAR ENDING JUNE 30, 2020

ANNUAL FINANCIAL REPORT FILING FEE
FISCAL YEAR ENDING JUNE 30, 2020

023603 TOWN OF SACO PO Box 330 Saco, MT 59261	If the local government entity name or mailing address on the Department's mailing list is inaccurate or has changed recently please note the correction below.

****If a filing fee is owed, please print the completed filing fee form and mail with your payment to:**

Montana Department of Administration
Local Government Services
Mitchell Bldg - Room 270
PO Box 200547
Helena, MT 59620-0547

****If no filing fee is owed, you must complete Part II to determine if an audit is required. *Please* assure a copy of the completed *Determination of Filing Fee & Audit Requirement* form is either included in your Annual Financial Report (AFR) or if not, a completed copy of the form is uploaded along with your AFR in the portal to ensure we enter the correct amount of adjusted debt proceeds in our system.**

PLEASE NOTE: The "Determination of Filing Fee Form" - page 2 of 2 - is designed to be self-calculating. If you choose to print this form and manually fill it in, please adjust the "Filing Fee Owed" in Box #1, based on the Filing Fee Schedule included below. Please revise Box #2 to "YES" if the adjusted debt proceeds and total revenues received by your government indicate that an audit will be required.

If there is an amount listed in BOX #1 of the Determination of Filing Fee Form (page 2 of 2), please include a check or warrant for that amount, made payable to "State Treasurer" in the amount of the required fee.

LOCAL GOVERNMENT ANNUAL FILING FEE SCHEDULE

The following filing fee schedule is required by Section 2-7-514, MCA, and has been adopted as Section 2.4.402 of the Administrative Rules of Montana.

Annual Resources Exceed:	Annual Resources Equal to or Less Than	Filing Fee
$0	$750,000	$0
$750,000	$1,000,000	$550
$1,000,000	$1,500,000	$800
$1,500,000	$2,500,000	$950
$2,500,000	$5,000,000	$1,300
$5,000,000	$10,000,000	$1,700
$10,000,000	$50,000,000	$2,500
$50,000,000		$3,000

FOR DEPARTMENT OF ADMINISTRATION USE ONLY

GL#	**Amount Received:** **$** **Date:**
TD#	**By:**

REVISED 7-2017 VERSION 17.1

Determination of Filing Fee Form

Note: This form is self-calculating, with defaults of -0- and "NO" in box #1 and #2. Please adjust according if you print this form and enter information manually.

FEE REQUIREMENT: As provided by 2-7-514, MCA, each local government required to have an audit under 2-7-503, MCA, shall pay an annual filing fee to the department; the fee schedule must be based upon the local government's annual revenue amounts. Administrative Rule 2.4.402 defines "revenues" as all receipts or inflows of resources of a local government entity from any source excluding the proceeds from bond issuances and other long-term debt not received from state or federal sources.

AUDIT REQUIREMENT: As provided by 2-7-503, MCA, each local government receiving revenue or financial assistance in excess of $750,000, regardless of the source of revenue or financial assistance, must have an audit. "Financial Assistance" including assistance provided by a federal, state, or local government entity in the form of loans and loan guarantees.

Part II - Determination of Audit Requirement. Loan proceeds received in the fiscal year that were used to refinance (payoff) existing debt will not be considered as "Financial Assistance" when determining the current audit requirement.

GOVERNMENTAL FUNDS - PAGE 16 *(STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES)*	
Total Revenues	220,825.00
Other Financing Sources - Proceeds from Sale of Capital Assets	0.00
Special and/or Extraordinary Items (Revenues only)	0.00
ENTERPRISE FUNDS - PAGE 19 *(STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET POSITION)*	
Note: Do not include revenues of Internal Service Funds	
Total Operating Revenues	243,320.00
Non-Operating Revenues: (Do not include Gain on Sale of Capital Assets)	
Taxes/Assessments	0.00
Licenses/Permits	0.00
Intergovernmental Revenues	0.00
Interest Revenues	1,647.00
Other Non-operating Revenues not included above	
Capital Contributions	0.00
Special and/or Extraordinary Items (Revenues only)	0.00
ENTERPRISE FUNDS - PAGE 20 *(STATEMENT OF CASH FLOWS)*	
Proceeds from Sale of Capital Assets	0.00
TRUST FUNDS - PAGE 22 *(STATEMENT OF CHANGES IN FIDUCIARY NET ASSETS)*	
NOTE: Do not include additions to Investment Trust Funds	
Total Additions to **Pension & Private Purpose** Trust Funds Only	0.00
Total Revenues for Calculation of Filing Fee	**$465,792.00**

Box #1

Filing Fee Owed **0**

If total revenues are equal to or less than $750,000, no filing fee is required to be paid. However, your entity may be subject to audit requirements as determined in Part II or required by other agencies. **Review Part II** below to determine if there is an audit requirement. Manually subtract proceeds of debt received to refinance an existing debt to exclude from audit determination.

If total revenues plus adjusted debt proceeds exceeds $750,000, your entity will be subject to audit requirements.

Part II - Determination of Audit Requirement w/ No Filing Fee (Subtract Debt used to Refinance Manually)	
Add: Proceeds from Debt provided by a Federal agency, a State agency or another local government:	
Governmental Funds (from Statement of Revenues, Expenditures, and Changes in Fund Balances (Page 16) Proceeds from General Long-Term Debt)	0.00
Proprietary Funds (from Statement of Cash Flows, Major & Non-Major Enterprise Funds (Page 20) Proceeds from Debt)	0.00
Manually subtract debt proceeds received from non-governmental financial institutions (banks, savings & loans) included above *(Enter as a negative)*	
Subtotal - Proceeds received from Debt	0.00
Manually subtract amount of proceeds received from governments used to refinance existing debt. *(Enter as a negative)*	
Total Adjusted Debt Proceeds	$0.00
Total Revenues + Total Adjusted Debt Proceeds	**$465,792.00**

Box #2

Audit Required? **NO**

If this amount exceeds $750,000, you are required to have an

audit for the fiscal year.

TOWN OF SACO
ANNUAL FINANCIAL REPORT
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INTRODUCTORY

SECTION

LETTER OF TRANSMITTAL

LETTER OF TRANSMITTAL - CONT.

TOWN OF SACO
ELECTED OFFICIALS/OFFICERS

OFFICE	NAME OF COUNTY OFFICIALS/OFFICERS	DATE TERM EXPIRES
Commissioner (Chairperson)		
Commissioner		
Commissioner		
Assessor		
Attorney		
Auditor		
Treasurer		
Clerk and recorder		
Clerk of district court		
Coroner		
Justice of the peace		
Justice of the peace		
Public administrator		
School superintendent		
Sheriff		

OFFICE	NAME OF CITY/TOWN OFFICIALS/OFFICERS	DATE TERM EXPIRES
Mayor	Clint Simpson	12/30/2021
Councilperson/Commissioner	Bill Haynes	12/30/2022
Councilperson/Commissioner	Wayne Woodall	12/30/2022
Councilperson/Commissioner	Roberta Christopherson	12/30/2021
Councilperson/Commissioner	Wayne Stahl	12/30/2021
Councilperson/Commissioner		
Councilperson/Commissioner		
Councilperson/Commissioner		
Councilperson/Commissioner		
City manager		
Attorney		
Chief of police		
Clerk	Kristen Albus	
Clerk/Treasurer		
Finance Director		
Police Judge		
Treasurer		
Utility billing/collection clerk		

CONSISTENT WITH STATE LAW, I HEREBY TRANSMIT THE TOWN OF SACO ANNUAL FINANCIAL REPORT FOR THE FISCAL YEAR ENDING JUNE 30, 2020

Submitted by;

County Clerk and Recorder or City/Town Clerk-Treasurer

Date

Preparer's contact information:
Email: ebarnardconsulting@gmail.com
Phone: **406.390.4907**

FINANCIAL

SECTION

BASIC

FINANCIAL

STATEMENTS

TOWN OF SACO
STATEMENT OF NET POSITION
FISCAL YEAR ENDING JUNE 30, 2020

	Primary Government			Component Units	
	Governmental Activities	Business-type Activities	Total		
ASSETS					
Cash and cash equivalents	204,244.00	162,238.00	366,482.00		
Investments	0.00	0.00	0.00		
Petty Cash	400.00	0.00	400.00		
Restricted Assets:					
Cash and cash equivalents	0.00	41,647.00	41,647.00		
Investments (at fair value)	0.00	0.00	0.00		
Taxes/Assessments Receivable - (net of allowance for uncollectibles)	13,005.00	0.00	13,005.00		
Accounts/other receivables - (net of allowance for uncollectibles)	8,916.00	(20,787.00)	(11,871.00)		
Internal Balances	0.00	0.00	0.00		
Due from other governments	0.00	0.00	0.00		
Prepaid expense	0.00	0.00	0.00		
Inventories	0.00	0.00	0.00		
Other debits	0.00	0.00	0.00		
Capital assets not being depreciated					
Land	9,955.00	14,079.00	24,034.00		
Construction in progress	0.00	0.00	0.00		
Capital assets being depreciated (net of accumulated depreciation)	390,606.00	1,653,506.00	2,044,112.00		
Total Assets	627,126.00	1,850,683.00	2,477,809.00	0.00	0.00
DEFERRED OUTFLOWS OF RESOURCES					
Deferred Outflows of Resources - Pensions	0.00	0.00	0.00		
Deferred Outflows of Resources - OPEB	0.00	0.00	0.00		
Deferred Outflows of Resources	0.00	0.00	0.00		
Total Deferred Outflows of Resources	0.00	0.00	0.00	0.00	0.00
LIABILITIES					
Accounts payable and other current liabilities	0.00	0.00	0.00		
Matured bonds and interest payable	0.00	206,000.00	206,000.00		
Due to other governments	0.00	0.00	0.00		
Revenues collected in advance	0.00	0.00	0.00		
Contracts/Loans/Notes Payable	0.00	556,573.00	556,573.00		
Noncurrent liabilities:					
Due within one year	0.00	3,954.00	3,954.00		
Due in more than one year	219,079.00	0.00	219,079.00		
Pension Liability	0.00	0.00	0.00		
OPEB Liability	0.00	0.00	0.00		
Total Liabilities	219,079.00	766,527.00	985,606.00	0.00	0.00
DEFERRED INFLOWS OF RESOURCES					
Deferred Inflows of Resources - Pensions	0.00	0.00	0.00		
Deferred Inflows of Resources - OPEB	0.00	0.00	0.00		
Deferred Inflows of Resources	0.00	0.00	0.00		
Total Deferred Inflows of Resources	0.00	0.00	0.00	0.00	0.00
NET POSITION					
Net Investment in Capital Assets	183,828.00	905,012.00	1,088,840.00		
Restricted for:	0.00		0.00		
Debt Service			0.00		
Bond Indenture Requirements		0.00	0.00		
General Government			0.00		
Public Safety			0.00		
Public Works			0.00		
Public Health			0.00		
Culture/Recreation			0.00		
Economic Development			0.00		
Other:			0.00		
Non-spendable (other than Perm Fund)	0.00		0.00		
Permanent Fund principal			0.00		
Unrestricted	224,219.00	179,144.00	403,363.00		
Total Net Position	408,047.00	1,084,156.00	1,492,203.00	0.00	0.00
Balance check w/GW Statement (should equal zero):	0.00	0.00	0.00		

0.00 0.00 0.00

TOWN OF SACO
STATEMENT OF ACTIVITIES
FISCAL YEAR ENDING JUNE 30, 2020

Functions/Programs	Expenses	Program Revenues: Charges for Services, Fines, Forfeitures, etc.	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions	Net (Expense) Revenue and Changes in Net Position: Primary Government: Governmental Activities	Primary Government: Business-type Activities	Primary Government: Total	Component Units	
Primary government:									
Governmental activities:									
General government	58,697.00	0.00	0.00	0.00	(58,697.00)		(58,697.00)		
Public safety	5,916.00	0.00	0.00	0.00	(5,916.00)		(5,916.00)		
Public works	31,236.00	5,674.00	0.00	0.00	(25,562.00)		(25,562.00)		
Public health	18,746.00	0.00	0.00	0.00	(18,746.00)		(18,746.00)		
Social and economic services	0.00	0.00	0.00	0.00	0.00		0.00		
Culture and recreation	27,748.00	0.00	0.00	0.00	(27,748.00)		(27,748.00)		
Housing/Community Development	0.00	0.00	0.00	0.00	0.00		0.00		
Conservation of Natural Resources	0.00	0.00	0.00	0.00	0.00		0.00		
Interest on long-term debt	8,446.00	0.00	0.00	0.00	(8,446.00)		(8,446.00)		
Miscellaneous	3,675.00	0.00	0.00	0.00	(3,675.00)		(3,675.00)		
Unallocated costs	0.00				0.00		0.00		
Total governmental activities	154,464.00	5,674.00	0.00	0.00	(148,790.00)		(148,790.00)		
Business-type activities:									
Water	169,872.00	119,386.00				(50,486.00)	(50,486.00)		
Sewer	28,477.00	39,950.00				11,473.00	11,473.00		
Gas	176,256.00	83,984.00				(92,272.00)	(92,272.00)		
Market Gas	10,828.00					(10,828.00)	(10,828.00)		
						0.00	0.00		
						0.00	0.00		
						0.00	0.00		
Total business-type activities	385,433.00	243,320.00	0.00	0.00	0.00	(142,113.00)	(142,113.00)		
Total primary government	539,897.00	248,994.00	0.00	0.00	(148,790.00)	(142,113.00)	(290,903.00)		
Component Units:									
Total component units	0.00	0.00	0.00	0.00				0.00	0.00
General revenues:									
Property taxes					161,635.00	0.00	161,635.00		
Local option taxes					0.00		0.00		
Licenses and permits					60.00		60.00		
Unrestricted Federal/State shared revenues					45,036.00	0.00	45,036.00		
Unrestricted grants and contributions					0.00		0.00		
Unrestricted investment earnings					1,121.00	1,647.00	2,768.00		
Miscellaneous					0.00		0.00		
Gain on sale of capital assets					0.00	0.00	0.00		
Transfers					0.00	0.00	0.00		
Special/Extraordinary items					0.00	0.00	0.00		
							0.00		
Total general revenues and transfers					207,852.00	1,647.00	209,499.00	0.00	0.00
Change in net position					59,062.00	(140,466.00)	(81,404.00)	0.00	0.00
Total net position - July 1, 2019 as previously reported					348,985.00	1,223,779.00	1,572,764.00		
Prior period adjustments					0.00	843.00	843.00		
Total net position - July 1, 2019 as restated					348,985.00	1,224,622.00	1,573,607.00		
Total net position - June 30, 2020					408,047.00	1,084,156.00	1,492,203.00	0.00	0.00

TOWN OF SACO
BALANCE SHEET
GOVERNMENTAL FUNDS
FISCAL YEAR ENDING JUNE 30, 2020

Account Number	Description	Fund #1000 General	Other Governmental Funds	Total Governmental Funds
	ASSETS			
101000	Cash and cash equivalents	125,629.00	78,615.00	204,244.00
103000	Petty cash	400.00	0.00	400.00
101100	Investments		0.00	0.00
	Restricted Assets:			
102200	Cash and cash equivalents		0.00	0.00
102300	Investments		0.00	0.00
106000	Valuation of investments to fair value		0.00	0.00
110000	Tax/assessment receivable (net of allowance for uncollectibles)	8,911.00	4,094.00	13,005.00
120000	Accounts/other receivables - (net of allowance for uncollectibles)		8,916.00	8,916.00
131000	Due from other funds		0.00	0.00
132000	Due from other governments		0.00	0.00
133000	Advances to other funds		0.00	0.00
140000	Prepaid expense		0.00	0.00
150000	Inventories		0.00	0.00
170000	Other debits		0.00	0.00
	Total Assets	134,940.00	91,625.00	226,565.00
	DEFERRED OUTFLOWS OF RESOURCES			
190000	Deferred Outflows of Resources		0.00	0.00
19xxxx	Deferred Outflows of Resources		0.00	0.00
	Total Deferred Outflows of Resources	0.00	0.00	0.00
	LIABILITIES			
201000	Warrants payable		0.00	0.00
202100	Accounts payable		0.00	0.00
203100	Judgments payable		0.00	0.00
204000	Contracts/loans/notes payable		0.00	0.00
205200	Matured interest payable		0.00	0.00
206100	Other accrued payables		0.00	0.00
211000	Due to other funds		0.00	0.00
212000	Due to other governments		0.00	0.00
214000	Deposits payable		0.00	0.00
216000	Revenues collected in advance		0.00	0.00
233000	Advances from other funds		0.00	0.00
	Total Liabilities	0.00	0.00	0.00
	DEFERRED INFLOWS OF RESOURCES			
220000	Deferred Inflows of Resources		0.00	0.00
223000	Deferred Inflows of Tax Revenues	8,911.00	14,030.00	22,941.00
	Total Deferred Inflows of Resources	8,911.00	14,030.00	22,941.00
	FUND BALANCES:			
250100	Non-spendable		0.00	0.00
	Inventory			0.00
250200	Restricted		0.00	0.00
	General government			0.00
	Public Safety			0.00
	Public Works			0.00
	Culture and Recreation			0.00
	Other: (input explanation			0.00
260100	Committed		0.00	0.00
	General government			0.00
	Public Safety			0.00
	Public Works			0.00
	Culture and Recreation			0.00
	Other: (input explanation			0.00
260200	Assigned		0.00	0.00
				0.00
				0.00
				0.00
271000	Unassigned	126,029.00	77,595.00	203,624.00
	Total Fund Balances	126,029.00	77,595.00	203,624.00
	Total Liabilities, Deferred Inflows of Resources and Fund Balances	134,940.00	91,625.00	
	Balance check (Should equal zero):	*0.00*	*0.00*	
	Amounts reported for governmental activities in the statement of net			
	position are different because:			
	Capital assets used in governmental activities are not financial			
	resources and, therefore, are not reported in the funds.			400,561.00
	Other long-term assets are not available to pay current-period			
	expenditures and, therefore, are deferred outflows of resources in the funds.			22,941.00
	Internal service funds are used by management to charge the costs of			
	providing services within the government. The assets and liabilities of			
	the internal service funds are included in governmental activities in the			
	government-wide statement of net position.			
	Current assets		0.00	
	Accounts payable		0.00	
	Net amount allocated to business-type/external activ		0.00	0.00
	Long-term liabilities, including bonds payable, are not due and payable			
	in the current period and therefore are not reported in the funds.			(219,079.00)
				408,047.00

TOWN OF SACO
STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
FISCAL YEAR ENDING JUNE 30, 2020

Account Number	Description	Fund #1000 General	Major Funds: Fund # Fund Name	Fund # Fund Name	Fund # Fund Name	Fund # Fund Name	Fund # Fund Name	Fund # Fund Name	Fund # Fund Name	Other Governmental Funds	Total Governmental Funds
	REVENUES										
310000/ 363000	Taxes/assessments	132,371.00								36,563.00	168,934.00
320000	Licenses and permits	60.00								0.00	60.00
330000	Intergovernmental revenues	24,633.00								20,403.00	45,036.00
340000	Charges for services	5,674.00								0.00	5,674.00
350000	Fines and forfeitures	0.00								0.00	0.00
360000	Miscellaneous	0.00								0.00	0.00
370000	Investment and royalty earnings	1,096.00								25.00	1,121.00
											0.00
	Total Revenues	163,834.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56,991.00	220,825.00
	EXPENDITURES										
	Current:										
410000	General government	45,405.00								0.00	45,405.00
420000	Public safety	5,916.00								0.00	5,916.00
430000	Public works	7,668.00								23,568.00	31,236.00
440000	Public health	1,855.00								16,891.00	18,746.00
450000	Social and economic services	0.00								0.00	0.00
460000	Culture and recreation	27,748.00								0.00	27,748.00
470000	Housing and community development	0.00								0.00	0.00
480000	Conservation of natural resources	0.00								0.00	0.00
490000	Debt Service:										
	Principal	15,554.00								0.00	15,554.00
	Interest	8,446.00								0.00	8,446.00
											0.00
	Capital outlay	0.00								0.00	0.00
500000	Internal Services										0.00
510000	Miscellaneous	2,973.00								702.00	3,675.00
	Total Expenditures	115,565.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41,161.00	156,726.00
	Excess of revenues (under) expenditures	48,269.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15,830.00	64,099.00
	OTHER FINANCING SOURCES (USES):										
381010/40	Bonds issued	0.00								0.00	0.00
381010/40	Discount on bonds issued	0.00								0.00	0.00
381050	Inception of capital lease	0.00								0.00	0.00
381070	Notes/loans/intercap issued	0.00								0.00	0.00
382010	Sale of capital assets	0.00								0.00	0.00
383000	Transfers In	0.00								544.00	544.00
521000	Transfers out (Enter as negative)	(544.00)								0.00	(544.00)
384000	Special items - revenue	0.00								0.00	0.00
385000	Extraordinary items - revenue	0.00								0.00	0.00
524000	Special items - expenditure (Negative)	0.00								0.00	0.00
525000	Extraordinary items - expenditure (Negati	0.00								0.00	0.00
	Total other financing sources (uses)	(544.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	544.00	0.00
	Net change in fund balances	47,725.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16,374.00	64,099.00
	Fund balances - July 1, 2019 as previously reported	78,304.00								61,221.00	139,525.00
	Prior period adjustments	0.00								0.00	0.00
	Fund balances - July 1, 2019 as restated	78,304.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61,221.00	139,525.00
	Fund balances - June 30, 2020	126,029.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77,595.00	203,624.00

TOWN OF SACO
RECONCILIATION OF THE STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES OF GOVERNMENTAL FUNDS TO THE STATEMENT OF ACTIVITIES
FISCAL YEAR ENDING JUNE 30, 2020

Net change in fund balances - total governmental funds (page 16)		64,099.00
Amounts reported for governmental activities in the statement of activities (page) are different because:		
Governmental funds report capital outlays as expenditures while governmental activities report depreciation expense to allocate those expenditures over the life of the assets:		
Capital assets purchased		0.00
Depreciation expense		(12,995.00)
In the Statement of Activities, the loss or gain on the sale or disposal of capital assets is recognized. The fund financial statements recognize only the proceeds from the sale of these assets:		
Gain (loss) on the disposal of capital assets		
Proceeds from the sale of capital assets		0.00
Revenues in the Statement of Activities that do not provide current financial resources are not reported as revenues in the funds:		
Donated capital assets		
Long-term receivables (deferred inflow)		(7,299.00)
GASB68 recognition of On-behalf payments to Pension Plans		0.00
Long-term debt proceeds provide current financial resources to the governmental funds, but issuing debt increases long-term liabilities in the statement of net position:		
Capital lease proceeds		0.00
Bond sale proceeds		0.00
Loan proceeds		0.00
Repayment of debt principal is an expenditure in the governmental funds, but the repayment reduces long-term debt in the Statement of Net Position:		
Capital lease obligation principal payments		
Long-term loan/contract principal payments		15,554.00
Long-term bond principal payments		
Internal service funds are used by management to charge the costs of certain activities, such as insurance and data processing, to individual funds. The net revenue of the internal service funds is reported with the governmental activities of the government-wide statement of activities net of the amounts allocated to business-type activities and depreciation expense		
Change in net position	0.00	
Net of amount allocated to business-type/external activities	0.00	
Depreciation Expense	0.00	0.00
Some expenses reported in the Statement of Activities do not require the use of current financial resources and therefore are not reported as expenditures in governmental funds		
Accrued compensated absenses		(297.00)
Pension & OPEB expense		0.00
Other:		
Change in Net Position in Governmental Activities		59,062.00

Balance check: *0.00*

TOWN OF SACO
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
FISCAL YEAR ENDING JUNE 30, 2020

Account Number	Description	5210 Water	5310 Sewer	5710 Gas	Fund # Name	Nonmajor Enterprise Funds	Totals	Governmental Activities Internal Service
		Business-type Activities						
		Major Enterprise Funds						
	ASSETS							
	Current Assets							
101000	Cash and cash equivalents	59,634.00	40,371.00	7,113.00		55,120.00	162,238.00	0.00
103000	Petty cash					0.00	0.00	0.00
101100	Investments (at fair value)					0.00	0.00	0.00
110000	Tax/assessment receivable (net of allowance for uncollectibles)					0.00	0.00	0.00
120000	Accounts/other receivables - (net of allowance for uncollectibles)	(10,991.00)	(677.00)	(9,119.00)		0.00	(20,787.00)	0.00
131000	Due from other funds					0.00	0.00	0.00
132000	Due from other governments					0.00	0.00	0.00
141000	Prepaid expense					0.00	0.00	0.00
150000	Inventories					0.00	0.00	0.00
	Total Current Assets	48,643.00	39,694.00	(2,006.00)	0.00	55,120.00	141,451.00	0.00
	Noncurrent Assets							
	Restricted Assets:							
102200	Cash and cash equivalents	41,647.00				0.00	41,647.00	0.00
102300	Investments					0.00	0.00	0.00
133000	Advances to other funds					0.00	0.00	0.00
170000	Other debits					0.00	0.00	0.00
180000	Capital assets:							
	Land			14,079.00		0.00	14,079.00	0.00
	Construction in progress					0.00	0.00	0.00
	Buildings			10,425.00		24,380.00	34,805.00	0.00
	Improvements other than buildings	2,580,446.00				0.00	2,580,446.00	0.00
	Machinery and equipment	31,823.00	19,690.00	1,305,447.00		163,935.00	1,520,895.00	0.00
	Infrastructure (utility systems)					0.00	0.00	0.00
	Less: accumulated depreciation	(1,311,745.00)	(19,690.00)	(1,035,242.00)		(115,963.00)	(2,482,640.00)	0.00
	Capital assets - net of accumulated depreciation	1,300,524.00	0.00	294,709.00	0.00	72,352.00	1,667,585.00	0.00
	Total Noncurrent Assets	1,342,171.00	0.00	294,709.00	0.00	72,352.00	1,709,232.00	0.00
	Total Assets	1,390,814.00	39,694.00	292,703.00	0.00	127,472.00	1,850,683.00	0.00
	DEFERRED OUTFLOWS OF RESOURCES							
199000	Deferred Outflows of Resources - Pensions					0.00	0.00	0.00
199xxx	Deferred Outflows of Resources - OPEB					0.00	0.00	0.00
199xxx	Deferred Outflow of Resources - Others					0.00	0.00	0.00
	Total Deferred Outflows of Resources	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	LIABILITIES							
	Current Liabilities							
202100	Accounts payable					0.00	0.00	0.00
203100	Judgments payable					0.00	0.00	0.00
204000	Contracts/loans/notes payable	556,573.00				0.00	556,573.00	0.00
205200	Matured interest bonds payable	206,000.00				0.00	206,000.00	0.00
206100	Other accrued payables					0.00	0.00	0.00
209100	Compensated absences	890.00	890.00	2,174.00		0.00	3,954.00	0.00
211000	Due to other funds					0.00	0.00	0.00
212000	Due to other governments					0.00	0.00	0.00
214000	Deposits payable					0.00	0.00	0.00
216000	Revenues collected in advance					0.00	0.00	0.00
	Total Current Liabilities	763,463.00	890.00	2,174.00	0.00	0.00	766,527.00	0.00
	Noncurrent Liabilities							
231000	Bonds payable					0.00	0.00	0.00
233000	Advance from other funds					0.00	0.00	0.00
234000	Judgments payable					0.00	0.00	0.00
235000	Contracts/loans/notes payable					0.00	0.00	0.00
236000	Closure/postclosure care costs					0.00	0.00	0.00
237000	Pension Liability					0.00	0.00	0.00
238000	OPEB Liability					0.00	0.00	0.00
239000	Compensated absences					0.00	0.00	0.00
	Total Noncurrent Liabilities	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Liabilities	763,463.00	890.00	2,174.00	0.00	0.00	766,527.00	0.00
	DEFERRED INFLOWS OF RESOURCES							
220000	Deferred Inflows of Resources - Pensions					0.00	0.00	0.00
22xxxx	Deferred Inflows of Resources - OPEB					0.00	0.00	0.00
22xxxx	Deferred Inflows of Resources - Other					0.00	0.00	0.00
	Total Deferred Inflows of Resources	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NET POSITION							
	Net Investment in Capital Assets	537,951.00	0.00	294,709.00	0.00	72,352.00	905,012.00	0.00
	Restricted for:							
						0.00	0.00	0.00
						0.00	0.00	0.00
						0.00	0.00	
						0.00	0.00	
	Unrestricted	89,400.00	38,804.00	(4,180.00)	0.00	55,120.00	179,144.00	0.00
	Total Net Position	627,351.00	38,804.00	290,529.00	0.00	127,472.00	1,084,156.00	0.00
	Balance check (Should equal zero):	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*		
			Reconciliation to government-wide statement of net position:					
			Adjustment to reflect the consolidations of internal service funds					
			activities related to enterprise funds					
			Net position of business-type activities				1,084,156.00	

TOWN OF SACO
STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET POSITION
PROPRIETARY FUNDS
FISCAL YEAR ENDING JUNE 30, 2020

								Governmental
		Business-type Activities						Activities
		Major Enterprise Funds				Nonmajor		
Account Number	Description	5210 Water	5310 Sewer	5710 Gas	Fund # Name	Enterprise Funds	Totals	Internal Service
	OPERATING REVENUES							
340000	Charges for services	119,386.00	39,950.00	83,984.00		0.00	243,320.00	0.00
360000	Miscellaneous revenues					0.00	0.00	0.00
363000	Special assessments					0.00	0.00	0.00
						0.00	0.00	
	Total Operating Revenues	119,386.00	39,950.00	83,984.00	0.00	0.00	243,320.00	0.00
	OPERATING EXPENSES							
100	Personal services	20,345.00	20,346.00	73,383.00		0.00	114,074.00	0.00
200	Supplies	23,986.00	4,474.00	40,160.00		0.00	68,620.00	0.00
300	Purchased services	15,194.00	3,580.00	3,398.00		0.00	22,172.00	0.00
400	Building materials					0.00	0.00	0.00
500	Fixed charges	5,591.00	78.00	2,902.00		0.00	8,571.00	0.00
810	Loss/Bad debt expense					0.00	0.00	0.00
830	Depreciation	82,103.00		56,412.00		10,828.00	149,343.00	0.00
						0.00	0.00	
	Total Operating Expenses	147,219.00	28,478.00	176,255.00	0.00	10,828.00	362,780.00	0.00
	Operating Income (Loss)	(27,833.00)	11,472.00	(92,271.00)	0.00	(10,828.00)	(119,460.00)	0.00
	NONOPERATING REVENUES (EXPENSES)							
310000	Taxes/assessment revenue					0.00	0.00	0.00
320000	Licenses/permits revenue					0.00	0.00	0.00
330000	Intergovernmental revenue					0.00	0.00	0.00
371000	Interest revenue	1,647.00				0.00	1,647.00	0.00
382030	Gain/Loss on Sale of Capital Assets (Loss is negative)					0.00	0.00	0.00
490000	Debt service interest expense (Enter as negative)	(22,653.00)				0.00	(22,653.00)	0.00
384000	Special items - revenue					0.00	0.00	0.00
385000	Extraordinary items - revenue					0.00	0.00	0.00
524000	Special items - expense (enter as negative)					0.00	0.00	0.00
525000	Extraordinary items - expense (enter as negative)					0.00	0.00	0.00
	Total Non-Operating Revenues (Expenses)	(21,006.00)	0.00	0.00	0.00	0.00	(21,006.00)	0.00
	Income (Loss) before contributions and transfers	(48,839.00)	11,472.00	(92,271.00)	0.00	(10,828.00)	(140,466.00)	0.00
	Capital contributions					0.00	0.00	0.00
	Transfers in (out)					0.00	0.00	0.00
	Change in net position	(48,839.00)	11,472.00	(92,271.00)	0.00	(10,828.00)	(140,466.00)	0.00
	Total net position - July 1, 2019 as previously reported	676,210.00	27,352.00	381,917.00		138,300.00	1,223,779.00	0.00
	Prior period adjustments	(20.00)	(20.00)	883.00		0.00	843.00	0.00
	Total net position - July 1, 2019 as restated	676,190.00	27,332.00	382,800.00	0.00	138,300.00	1,224,622.00	0.00
	Total net position - June 30, 2020	627,351.00	38,804.00	290,529.00	0.00	127,472.00	1,084,156.00	0.00
			Reconciliation to government-wide statement of activities:					
			Adjustment to reflect the consolidation of internal service fund					
			activities related to enterprise funds					
			Change in net position of business-type activities				(140,466.00)	

TOWN OF SACO
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
FISCAL YEAR ENDING JUNE 30, 2020

	Business-type Activities					
	Major Enterprise Funds				Nonmajor	
	5210	5310	5710	Fund #	Enterprise	
Description	Water	Sewer	Gas	Name	Funds	Totals
CASH FLOWS FROM OPERATING ACTIVITIES						
Cash received from customers	138,529.00	42,486.00	93,751.00	0.00	0.00	274,766.00
Cash paid to suppliers	(44,771.00)	(8,132.00)	(46,460.00)	0.00	0.00	(99,363.00)
Cash paid to employees	(20,345.00)	(20,346.00)	(73,383.00)	0.00	0.00	(114,074.00)
Cash received from interfund services provided					0.00	0.00
Cash paid for interfund services used					0.00	0.00
Net cash provided (used) by operating activities	73,413.00	14,008.00	(26,092.00)	0.00	0.00	61,329.00
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES						
Transfers from (to) other funds	0.00	0.00	0.00	0.00	0.00	0.00
Advances from (to) other funds					0.00	0.00
Subsidies from taxes and other governments	0.00	0.00	0.00	0.00	0.00	0.00
Net cash provided (used) by capital and related financing activities	0.00	0.00	0.00	0.00	0.00	0.00
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES						
Proceeds from debt					0.00	0.00
Capital contributions	0.00	0.00	0.00	0.00	0.00	0.00
Purchases/acquisition/construction of capital assets					0.00	0.00
Principal on debt (Enter as a negative)	(23,010.00)				0.00	(23,010.00)
Interest paid on debt (Negative)	(22,653.00)	0.00	0.00	0.00	0.00	(22,653.00)
Capital lease down payment					0.00	0.00
Proceeds from sales of capital assets					0.00	0.00
Net cash provided (used) by capital and related financing activities	(45,663.00)	0.00	0.00	0.00	0.00	(45,663.00)
CASH FLOWS FROM INVESTING ACTIVITIES						
Proceeds from sales of investments					0.00	0.00
Purchase of investments (Enter as negative)					0.00	0.00
Interest earnings	1,647.00	0.00	0.00	0.00	0.00	1,647.00
Net cash provided (used) by investing activities	1,647.00	0.00	0.00	0.00	0.00	1,647.00
Net increase (decrease) in cash and cash equivalents	29,397.00	14,008.00	(26,092.00)	0.00	0.00	17,313.00
Cash and cash equivalents - July 1, 2019	71,884.00	26,363.00	33,205.00		55,120.00	186,572.00
Cash and cash equivalents - June 30, 2020	101,281.00	40,371.00	7,113.00	0.00	55,120.00	203,885.00
Reconciliation of operating income to net cash provided (used by operating activities:						
Operating income	(27,833.00)	11,472.00	(92,271.00)	0.00	(10,828.00)	(119,460.00)
Adjustments to reconcile operating income to net cash provided (used) by operating activities						
Depreciation expense	82,103.00	0.00	56,412.00	0.00	10,828.00	149,343.00
(Increase) Decrease in accounts receivable	19,144.00	2,536.00	9,768.00		0.00	31,448.00
(Increase) Decrease in intergovernmental receivables					0.00	0.00
(Increase) Decrease in due to/from other funds					0.00	0.00
Increase in allowance for uncollectible accounts					0.00	0.00
(Increase) decrease in inventories					0.00	0.00
(Increase) decrease in prepaid items					0.00	0.00
Increase (decrease) in customer deposits					0.00	0.00
Increase (decrease) in accounts payable					0.00	0.00
Increase (decrease) in compensated absences pay.	20.00	20.00	883.00		0.00	923.00
Increase (decrease) in intergovernmental payables	(20.00)	(20.00)	(883.00)		0.00	(923.00)
Increase (decrease) in GASB68 pension expense					0.00	0.00
Total adjustments	101,247.00	2,536.00	66,180.00	0.00	10,828.00	180,791.00
Net cash provided (used) by operating activities	73,414.00	14,008.00	(26,091.00)	0.00	0.00	61,331.00
Noncash investing, capital, and financing activities:						
Borrowing under capital lease					0.00	0.00
Contributions of capital assets from government					0.00	0.00
Purchase of equipment on account					0.00	0.00
Increase in fair value of investments					0.00	0.00
Capital asset trade-ins					0.00	0.00

TOWN OF SACO

STATEMENT OF FIDUCIARY NET POSITION

FIDUCIARY FUNDS

FISCAL YEAR ENDING JUNE 30, 2020

Account Number	Description	Trust Funds: Pension Trust Funds (7000-7005)	Trust Funds: Investment Trust Funds (7006-7009)	Trust Funds: Private Purpose Trust Funds (7010-7099)	Agency Funds: Agency Composite (7100-7999)
	ASSETS				
101000	Cash and cash equivalents	1,165.00			7,927.00
	Receivables:				
110000	Tax/assessment receivable (net of allowance for uncollectibles)				
120000	Accounts/other receivables - (net of allowance for uncollectibles)				
128000	Interest receivable				
101100	Investments (at fair value)				
	Total Assets	1,165.00	0.00	0.00	7,927.00
190000	**Deferred Outflows of Resources**				
	LIABILITIES				
201100	Warrants payable				7,927.00
202100	Accounts payable				
203100	Judgments payable				
204100	Contracts payable				
211000	Due to other funds				
212000	Due to other governments				
216000	Revenues Collected in Advance				
	Total Liabilities	0.00	0.00	0.00	7,927.00
220000	**Deferred Inflows of Resources**				
	NET POSITION				
	Held in trust for pension benefits and other purposes	1,165.00	0.00	0.00	
	Balance check:	*0.00*	*0.00*	*0.00*	

TOWN OF SACO
STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FIDUCIARY FUNDS
FISCAL YEAR ENDING JUNE 30, 2020

Account Number	Description	Trust Funds: Pension Trust Funds (7000-7005)	Trust Funds: Investment Trust Funds (7006-7009)	Trust Funds: Private Purpose Trust Funds (7010-7099)
	ADDITIONS:			
310000	Tax revenue			
330000	Intergovernmental revenue			
360000	Miscellaneous revenue			
370000	Investment earnings			
366000	Contributions to pension plan			
366000	Contributions to investment trust			
	Total Additions	0.00	0.00	0.00
	DEDUCTIONS:			
	Administrative expenses			
	Refunds of contributions			
	Benefit payments			
	Distribution of investments			
	Due to other funds			
	Due to other governments			
	Total Deductions	0.00	0.00	0.00
	Change in net position	0.00	0.00	0.00
	Total net position - July 1, 2019 as previously reported	1,165.00		
	Prior period adjustments			
	Total net position - July 1, 2019 as restated	1,165.00	0.00	0.00
	Total net position - June 30, 2020	1,165.00	0.00	0.00

TOWN OF SACO
NOTES TO THE BASIC FINANCIAL STATEMENTS
FISCAL YEAR ENDING JUNE 30, 2020

1. Summary of Significant Accounting Policies

The financial statements have been prepared in accordance with accounting principles generally accepted as applied to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for governmental accounting and financial reporting principles. Pronouncements adopted in the fiscal year ending June 30, 2020 are

The government adopted the provisions of the following GASB Statements:

GASB 83 - This statement addresses accounting and financial reporting for certain asset retirement obligations (AROs). An ARO is a legally enforceable liability associated with the retirement of a tangible capital asset.
GASB 88 - The objective of the statement is to improve the information that is disclosed in the notes to government financial statements related to debt, including direct borrowing and direct placements. It also clarifies which liabilities governments should include when disclosing information related to debt. The statement requires additional essential information related to debt be disclosed in the notes to the financial statements, including unused lines of credit; assets pledged as collateral for the debt; and terms specified in debt agreements related to significant events of default with finance-related consequences, significant termination events with finance-related consequences, and significant subjective acceleration clauses.

The Town of Saco is a political subdivision of the State of Montana governed by a Mayor and Council duly elected by the registered voters of the Town. The Town utilizes the Comm-Ex form of government. The accompanying financial statements present the primary government and its component units, entities for which the government is considered to be financially accountable. Blended component units are part of the government's operations. Each discretely presented component unit is reported in a separate column in the government-wide financial statements to emphasize that it is legally separate from the government, but is financially accountable to or fiscally dependent upon the primary government or their omission from the financial statements would be misleading or incomplete.

B. Government-wide and fund financial statements

The government-wide financial statements (i.e., the statement of net position and the statement of changes in net position) report information on all of the nonfiduciary activities of the primary government and its component units. For the most part, the effect of interfund activity has been removed from these statements. Governmental activities, which normally are supported by taxes and intergovernmental revenues, are reported separately from business-type activities, which rely to a significant extent on fees and charges for support. Likewise, the primary government is reported separately from certain legally separate component units for which the primary governments is financially accountable.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segment are offset by program revenues. Direct expenses are those that are clearly identifiable with a specific function. Program revenues include: 1) charges to customers who purchase, use, or directly benefit from goods, services, or privileges provided by a given function and 2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function. Taxes and other items not properly included among program revenues are reported instead as general revenues.

Separate financial statements are provided for governmental funds, proprietary funds, and fiduciary funds, even though the latter are excluded from the government-wide statements. Major individual governmental funds and major individual enterprise funds are reported in separate columns in the fund financial statements.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - cont.

C. Measurement focus, basis of accounting, and financial statement presentation

The government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting, as are the proprietary fund and fiduciary fund financial statements. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Property taxes are recognized as revenues in the year for which they are levied. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

Governmental fund financial statements are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the government considers revenues to be available if they are collected within 60 days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences and claims and judgments, are recorded only when payment is due.

Property taxes, licenses and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current period. Only the portion of special assessments receivable due within the current fiscal period is considered to be susceptible to accrual as revenue of the current period. All other revenue items are considered to be measurable and available only when cash is received by the government. Taxes and assessments receivable remaining uncollected at year end are offset by deferred tax/assessment revenue, a deferred inflow of resources, since they are not available to pay liabilities of the current period.

Both financial statements presented on the accrual basis of accounting and the modified accrual basis of accounting recognize grants and similar items, pending purely routine requirements such as filing reimbursement and/or progress reports, where all eligibility requirements imposed by the provider have been met, other than time requirements, as revenue in the current period.
Grants and similar items received prior to meeting time requirements but after all eligibility requirements are met, are recognized as deferred inflows of resources until use is required or first permitted.

The government reports the following major governmental funds:

General Fund - This is the government's primary operating fund. It accounts for all financial resources of the general government, except those required to be accounted for in another fund.

The government reports the following major proprietary funds:

Water Enterprise Fund - This fund is used to account for the operating and nonoperating revenues and expenses of the public water utility system. The fund is maintained on the full accrual basis of accounting.

Sewer Enterprise Fund - This fund is used to account for the operating and nonoperating revenues and expenses of the public sewer utility system. The fund is maintained on the full accrual basis of accounting.

Utility Gas Enterprise Fund - This fund is used to accout for the operating an nonoperating revenus and expenses of the public natural gas system. This fund id maintained on the full accrual basis of accounting.

Additionally, the government reports the following fund types:

Private Purpose Trust Funds - These funds are used to account for resources legally held in trust for use by another government, individual, or organization as identified by the donor. The use of these funds may be restricted to only the interest earned on the investment of the principal or the entire amount may be used in accordance with the terms of the donor.

Pension Trust Funds - These funds are used to account for the activities of a local retirement plan which accumulates resources for pension benefit payments to qualified employees.

Permanent Funds - These funds are used to account for certain funds held in a trust capacity wherein the principle balance of the trust cannot be expended, only the interest earned on the investment of such funds.

Fiduciary Funds
Trust & Agency Funds - Used to account for assets held by the City in a trustee capacity or as an agent for individuals, private organizations, other governments, and/or other funds. These may include (a) expendable trust funds, (b) nonexpendable trust funds, (c) pension trust funds and (d) agency funds.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - cont.

D. Measurement focus, basis of accounting, and financial statement presentation - cont.

The Governmental Accounting Standards Board (GASB) issued Statement No. 62. The Statement codifies the requirements of all pre-November 30, 1989 FASB and AICPA pronouncements that apply to state and local governments.
Both the government-wide and proprietary fund financial statements follow the guidance of the Governmental Accounting Standards Board. Governments can continue to apply, as other accounting literature, post-November 30, 1989 FASB pronouncements that do not conflict with or contradict GASB pronouncements, including Statement No. 62. The government has adopted the provisions of GASB Statement No. 62.

As a general rule the effect of interfund activity has been eliminated from the government-wide financial statements. Exceptions to this general rule are payments-in-lieu of taxes and other charges between the governments' enterprise functions and various other functions of the government. Elimination of these charges would distort the direct costs and program revenues reported for the various functions.

Amounts reported as program revenues include: 1) charges to customers for goods, services, or privileges provided, 2) operating grants and contributions, and 3) capital grants and contributions, including special assessments. Internally dedicated resources are reported as general revenues rather than as program revenues. Likewise, general revenues include all taxes.

Proprietary funds distinguish operating revenues and expenses from nonoperating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the enterprise funds and the government's internal service funds are charges to customers for services provided. Operating expenses for enterprise funds and internal service funds include the cost of providing such services and the depreciation of capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

E. Assets, deferred outlflows of resources, liabilities, deferred iutflows of resources, and fund balance/net position

1. Deposits and investments

Allowable deposit and investment of public funds is governed by Title 7, Chapter 6, Part 2 of the Montana Code Annotated (MCA). Deposits and investments may include demand, time, and savings deposits, direct obligations of the United States Government, securities issued by agencies of the United States, investments in the Montana Short-Term Investment Program (STIP), repurchase agreements, and registered warrants.

Cash equivalents are short-term, highly liquid investments that are both readily convertible to known amounts of cash, and have maturities at purchase date of three months or less. The cash and cash equivalents (including restricted assets) are considered to be cash on hand, demand, savings and time deposits, STIP and all short-term investments with original maturity dates of three months or less from the date of acquisition.

Investments, with limited exceptions, are reported at fair value. Investments in nonparticipating certificates of deposit are reported at cost. Money market investments, including U.S. Treasury and Agency obligations, that mature within one year of acquisition are reported at amortized cost. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is determined annually, and requires the use of valuation techniques, a specific method or combination of methods using one or more of three approaches: market, cost or income approach.

2. Receivables and payables

Activity between funds that are representative of lending/borrowing arrangements outstanding at fiscal year end are referred to as either "due to/from other funds" (i.e., the current portion of interfund loans) or "advances to/from other funds" (i.e., the non-current portion of interfund loans). Advances between funds are not available for appropriation and are not expendable available financial resources.

Accounts receivables are shown net of allowance for uncollectibles. Property tax receivables are offset by a deferred inflow account since they are not available to pay liabilities of the current period. All property tax levies are set at the time of the adoption of the annual budget. The real estate taxes are payable in two installments, the first due by November 30 and the second by May 31. Personal property taxes are assessed in April or May and are payable within 30 days of the issuance of the notice.

3. Inventories and prepaid items

All inventories are valued at cost. Inventories are recorded as expenditures when purchased (when consumed).

Certain payments reflect costs applicable to future accounting periods and are recorded as prepaid items in both the government-wide and fund financial statements.

4. Restricted assets

Certain assets of the enterprise funds are restricted for specific use as required by the bond indenture agreement covenants established with the issuance and sale of the revenue bonds representing a liability to the enterprise funds. These restricted assets represent cash and cash equivalents restricted for use to repay current debt, establish a reserve for future debt and the establish a replacement and depreciation reserve for the purpose of replacing the system in the future.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - cont.

F. Assets, liabilities, and net position or equity - cont.

5. Capital assets

Capital assets, which include property, plant, equipment, and infrastructure assets (e.g., roads, bridges, sidewalks, curbs, etc), are reported in the applicable governmental or business-type activities columns in the government-wide financial statements. Capital assets, other than infrastructure assets, are defined by the Local Government as assets with an initial cost of more than $5,000.00 and an estimated useful life in excess of _____ years. Such assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets are recorded at estimated acquisition value at the date of donation.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets lives are not capitalized.

Property, plant, and equipment of the primary government, as well as the component units, is depreciated using the straight line method over the following estimated useful lives:

Assets	Years
Buildings	5 to 50
Building improvements	5 to 50
Public domain infrastructure	
System infrastructure	
Vehicles	3 to 40
Equipment other than vehicles	3 to 40
Office equipment	3 to 40
Computer equipment	3 to 40

6. Deferred outflows of resources

Deferred outflow of resources is a financial statement element. A deferred outflow of resources is a consumption of net assets by the government that is applicable to a future reporting period. The government-wide statement of net position, proprietary fund statement of net position, and governmental fund balance sheet report a separate section for deferred outflows of resources. Deferred outflows of resources may be disclosed on the face of the financial statements, in the notes to the financial statements, or a combination of both. Deferred outflows of resources not disclosed on the face of the financial statements are as follows:

Description:	Amount;

7. Compensated absences

As required by State law, the Local Government allows for employees to accumulate earned but unused vacation and sick leave benefits. Unused vacation leave benefits are 100 percent payable upon termination and 1/4 of unused sick leave benefits are payable upon termination. Such amounts are reported as liabilities in the appropriate governmental or business-type activity in the government wide statements. Expenditures for unpaid vacation and sick leave benefits are recorded when paid in the governmental funds on the modified accrual basis of accounting and expenses for vacation and sick leave benefits are recorded when accrued in the proprietary funds on the full accrual basis of accounting.

8. Long-term obligations

In the government-wide financial statements, and proprietary fund types in the fund financial statements, long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities, business-type activities, or proprietary fund type statement of net position. Bond premiums and discounts, as well as issuance costs, are deferred and amortized over the life of the bond issue using the effective interest method. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are reported as deferred charges and amortized over the term of the related debt.

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing sources while discounts on debt issuance are reported as other financing uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures.

9. Deferred inflows of Resources

A deferred inflow of resources is an aquisition of net assets by the government that is applicable to a future reporting period. The government-wide statement of net position, proprietary fund statement of net position, and governmental fund balance sheet report a separate section for deferred inflows of resources. Deferred inflows of resources may be disclosed on the face of the financial statements, in the notes to the financial statements, or a combination of both. Deferred inflows of resources not disclosed on the face of the financial statements are as follows:

Description:	Amount;

10. Fund balance/Net Position

Governmental Accounting Standards Board (GASB) Statement No. 54 requires presentation of governmental fund balances by specific purpose. In the governmental fund financial statements, the fund balance classifications are presented either discretely or in the aggregate for the following fund balance classifications: non-spendable, restricted, committed, assigned and unassigned.
GASB Statement No. 63 resulted in presentation changes in the government-wide and proprietary fund financial statements. Among other changes, equity is classified as 'net position'. Components of net position are net investment in capital assets, restricted, and unrestricted. See notes J and K for further information.

11. Net Position significantly impacted by Deferred Outflows or Deferred Inflows of Resources.

GASB 63 requires disclosure of any deferrals that have a significant impact on Net Position.

2. RECONCILIATION OF GOVERNMENT-WIDE AND FUND FINANCIAL STATEMENTS

A. Explanation of certain differences between the governmental fund balance sheet and the government-wide statement of net position

The governmental fund balance sheet includes a reconciliation between fund balance - total governmental funds and net position - governmental activities as reported in the government-wide statement of net position.

B. Explanation of certain differences between the governmental fund statement of revenues, expenditures, and changes in fund balances and the government-wide statement of activities

The governmental fund statement of revenues, expenditures, and changes in fund balances includes a reconciliation between net changes in fund balances - total governmental funds and changes in net position of governmental activities as reported in the government-wide statement of activities.

C. Explanation of certain differences between the proprietary fund statement of net position and the government-wide statement of net position.

The proprietary fund statement of net position includes a reconciliation between *net position - total enterprise funds* and *net position of business-type activities* as reported in the government-wide statement of net position.

3. COMPLIANCE AND ACCOUNTABILITY

A. Budgetary Information

The Local Government adopts an annual budget for all of its funds in accordance with Title 7, Chapter 6, Part 40 of the Montana Code Annotated. Statute requires the adoption of a preliminary budget, public hearings on the preliminary budget and the final adoption of the budget by the later of the first Thursday after the first Tuesday in September or within 30 calendar days of the receipt of the certified taxable valuations from the Department of Revenue. The Local Government must also submit a copy of the final budget to the Department of Administration by the later of October 1 or 60 days after the receipt of taxable values from the Department of Revenue.

State statute limits the making of expenditures or incurring of obligations to the amount of the final budget as adopted or as amended. Budget transfers and amendments are authorized by law, and in some instances, may require further public hearings. Any budget amendments providing for additional appropriations must identify the fund reserves, unanticipated revenue, or previously unbudgeted revenue that will fund the appropriations.

Appropriations are created by fund, function, and activity and may further be detailed by department. Expenditure limitations imposed by law extend to the department level which is identified as the legal level of budgetary control.

Encumbrance accounting is (is not) employed for the governmental funds. Encumbrances (e.g. purchase orders, contracts) outstanding at year end are reported as reservations of fund balances and do not constitute expenditures or liabilities because the commitments will be reappropriated and honored during the subsequent fiscal year.

B. Excess of expenditures over appropriations

None

C. Deficit fund equity

None

4. DETAILED NOTES ON ALL FUNDS - cont.

C. Capital assets

Capital asset activity for the fiscal year ended June 30, 2020 was as follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Governmental activities:				
Capital assets not being depreciated				
Land	9,955.00	0.00	0.00	9,955.00
Construction in progress	0.00	0.00	0.00	0.00
Total capital assets not being depreciated	9,955.00	0.00	0.00	9,955.00
Capital assets being depreciated				
Buildings	503,273.00	0.00	0.00	503,273.00
Intangibles/works of art	0.00	0.00	0.00	0.00
Improvements other than buildings	0.00	0.00	0.00	0.00
Machinery and equipment	32,437.00	0.00	0.00	32,437.00
Infrastructure	0.00	0.00	0.00	0.00
Total capital assets being depreciated	535,710.00	0.00	0.00	535,710.00
Less accumulated depreciation for:				
Buildings	(104,663.00)	0.00	(12,358.00)	(117,021.00)
Intangibles/works of art	0.00	0.00	0.00	0.00
Improvements other than buildings	0.00	0.00	0.00	0.00
Machinery and equipment	(27,446.00)	0.00	(637.00)	(28,083.00)
Infrastructure	0.00	0.00	0.00	0.00
Total accumulated depreciation	(132,109.00)	0.00	(12,995.00)	(145,104.00)
Total capital assets being depreciated	403,601.00	0.00	(12,995.00)	390,606.00
Governmental activities capital assets net	413,556.00	0.00	(12,995.00)	400,561.00
Business-type activities:				
Capital assets not being depreciated				0.00
Land	14,079.00			14,079.00
Construction in progress				0.00
Total capital assets not being depreciated	14,079.00	0.00	0.00	14,079.00
Capital assets being depreciated				
Buildings and system	34,805.00			34,805.00
Intangibles/works of art				0.00
Improvements other than buildings	2,580,446.00			2,580,446.00
Machinery and equipment	1,520,895.00			1,520,895.00
Source of supply				0.00
Pumping plant				0.00
Treatment plant				0.00
Transmission and distribution				0.00
General plant				0.00
Total capital assets being depreciated	4,136,146.00	0.00	0.00	4,136,146.00
Less accumulated depreciation for:				
Buildings and system	(10,087.00)		(1,185.00)	(11,272.00)
Intangibles/works of art				0.00
Improvements other than buildings	(1,201,223.00)		(81,131.00)	(1,282,354.00)
Machinery and equipment	(1,121,987.00)		(67,027.00)	(1,189,014.00)
Source of supply				0.00
Pumping plant				0.00
Treatment plant				0.00
Transmission and distribution				0.00
General plant				0.00
Total accumulated depreciation	(2,333,297.00)	0.00	(149,343.00)	(2,482,640.00)
Total capital assets being depreciated	1,802,849.00	0.00	(149,343.00)	1,653,506.00
Business-type activities capital assets net	1,816,928.00	0.00	(149,343.00)	1,667,585.00

Balance check with page 18: 0.00

4. DETAILED NOTES ON ALL FUNDS - cont.

C. Capital assets - cont.

Depreciation expense was charged to functions/programs of the primary government as follows:

Governmental activities:	
General government	12,995.00
Public safety	0.00
Public works	0.00
Public health	0.00
Social and economic services	0.00
Culture and recreation	0.00
Housing and community development	0.00
Conservation of natural resources	0.00
Uncatagorized	0.00
Total depreciation expense - governmental activities	12,995.00
Business-type activities:	
Water	82,103.00
Sewer	
Gas	56,412.00
Market Gas	10,828.00
Total depreciation expense - business-type activities	149,343.00

Long-term Debt

Changes in long-term obligations for the year ended June 30, 20XX, are as follows:

	Balance at 1-Jul-19	Increases	Decreases	Balance at June 30, 20XX	Due within One Year
Governmental activities:					
General Obligation bonds	$ -	$ -	$ -	$ -	$ -
Special Assessment/Improvement District bonds:	$ -	$ -	$ -	$ -	$ -
Notes from direct borrowings and direct placements	$ 232,286.00	$ -	$ 15,554.00	$ 216,732.00	$ 15,554.00
Other:	$ -	$ -	$ -	$ -	$ -
Other:	$ -	$ -	$ -	$ -	$ -
Total	$232,286	$0	$15,554	$216,732	$15,554
Business-type activities:					
Revenue bonds	$ 218,000	$ -	$ 12,000	$ 206,000	$ 12,000
Notes from direct borrowings	$ 566,584	$ -	$ 11,010	$ 555,574	$ 11,010
Other:	$ -	$ -	$ -	$ -	$ -
Total	$784,584	$0	$23,010	$761,574	$23,010

During the fiscal year, in addition to the debt listed above the local government had the following changes in Other Long-Term Liabilities for Other Postemployment Benefits (OPEB), Net Pension Liability and Compensated Absences.
The Town had no retirees participating at this time.

TOWN OF SACO
NOTES TO THE BASIC FINANCIAL STATEMENTS
FISCAL YEAR ENDING JUNE 30, 2020

OTHER POST EMPLOYMENT BENEFITS (OPEB) NOTE DISCLOSURE

(Note: The following note disclosure should be modified, as appropriate, to correctly describe the Local Government's OPEB. This illustration represents a disclosure for a Local Government ***having fewer than 100 plan participants (active and inactive), and therefore qualifies to use the Alternative Measurement Method to calculate the ending OPEB liability.***

Post Employment Benefits Other Than Pensions (OPEB)

Plan description : As required by State law (MCA 2-18-704), the Town of Saco allows its retiring employees with at least five years of service and who are at least 50 years of age, along with their eligible spouses and dependents, the option to continue participation in the local government's group health insurance plan until the retiree becomes eligible for Medicare coverage. This option creates a defined benefit other post-employment benefits plan (OPEB) since retirees are typically older than the average age of active plan participants and therefore receive a benefit of lower insurance rates. The OPEB plan is a single-employer defined benefit plan administered by the Town of Saco. No assets are accumulated in a trust that meets the criteria in paragraph 4 of GASB Statement 75. The Town of Saco covers OPEB costs when they come due, on a pay-as-you-go basis.

Because the local government has fewer than 100 employees (active and inactive) that are provided with OPEB through the plan, the local government qualifies to use the alternative measurement method for calculating the OPEB liability. The Town of Saco has no retirees participating at this time.

TOWN OF SACO
NOTES TO THE BASIC FINANCIAL STATEMENTS
FISCAL YEAR ENDING JUNE 30, 2020

NET PENSION LIABILITY NOTES:
Public Employees' Retirement System - Defined Benefit:

MPERA GASB Information

http://mpera.mt.gov/Portals/175/GASB/2020/Reports/PERS/PERSDBRP_2020_6353.pdf

4. DETAILED NOTES ON ALL FUNDS - cont.

H. Restatements/prior period adjustments

During the current fiscal year, adjustments relating to prior year's transactions were made to the fund balance and net position accounts. The following is a schedule of these adjustments:

Fund	Amount	Reason for adjustment
Water	(20.00)	Adjustment for Compensated Absences
Sewer	(20.00)	Adjustment for Compensated Absences
Gas	883.00	Adjustment for Compensated Absences
Total	843.00	

4. DETAILED NOTES ON ALL FUNDS - cont.

I. 1. Fund Balance Disclosure:

The Governmental Accounting Standards Board, Statement No. 54, requires presentation of governmental fund balances by specific purpose. In the basic financial statements, the fund balance classifications are presented in the aggregate for the following fund balance classifications: non-spendable, restricted, committed, assigned and unassigned.

Non-spendable includes fund balances that cannot be spent either because it is not in spendable form or because of legal or contractual constraints.

Restricted includes fund balances that are constrained for specific purposes which are externally imposed by providers such as creditors, or amounts constrained due to law, constitutional provisions or enabling legislation.

Committed includes fund balance amounts that are constrained for specific purposes that are internally imposed by the government through formal action of the highest level of decision-making authority and does not lapse at year-end.

Assigned includes fund balance amounts that are intended to be used for a specific purpose that are neither considered restricted or committed.

Unassigned fund balance includes positive fund balance within the General Fund which has not been classified within the above mentioned classifications. Negative fund balances in other governmental funds will be reported as unassigned.

2. Net Position

The government-wide and proprietary fund financial statements report net position. Net position represent the difference between assets plus deferred outflow of resources and liabilities plus deferred inflows of resources. Components of net position are net investment in capital assets, restricted, and unrestricted. Net investment in capital assets consists of capital assets net of accumulated depreciation plus capital related deferred outflows of resources, less outstanding balance of any related borrowing used for the acquisition, construction, or improvement of those assets and capital related deferred inflows of resources. Restricted net position is defined above (see J1.), and unrestricted net position is any portion of net position that does not meet the definition of net investment in capital assets and restricted.

J. Spending policy:

The Local Government receives inflows from revenue and other financial sources from numerous sources for use in the General fund. The Fund will expend those resources on multiple purposes of the local government. The intention of this spending policy is to identify the expenditure order of resource categories for the General Fund. Resources will be categorized according to Generally Accepted Accounting Principles (GAAP) for state and local governments. When both restricted and unrestricted resources are available in the General Fund, the following spending policy will apply or the default will apply if a policy has not been adopted:

1st:	Restricted
2nd:	Committed
3rd:	Assigned
4th:	Unassigned

The Local Government receives inflows from revenue and other financial sources from numerous sources for use in the Special Revenue, Debt Service and Capital Projects funds. These funds will expend those resources on the specific purpose of the fund.
The intention of this spending policy is to identify the expenditure order of resource categories for these Funds. Resources will be categorized according to Generally Accepted Accounting Principles (GAAP) for state and local governments. When both restricted and unrestricted resources are available in these funds, the following spending policy will apply or the default will apply if a policy has not been adopted:

1st:	Restricted
2nd:	Committed
3rd:	Assigned

K. Minimum Fund Balance Policy:

The Local Government does not have a minimum fund balance policy in place.

TOWN OF SACO					
GENERAL FUND					
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE					
BUDGET AND ACTUAL					
FISCAL YEAR ENDING JUNE 30, 2020					
					VARIANCE WITH
		BUDGETED AMOUNTS			FINAL BUDGET
Account				ACTUAL	POSITIVE
Number	Description	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes	129,784.00	129,784.00	132,371.00	2,587.00
314140	Local option taxes				0.00
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses	190.00	190.00	60.00	(130.00)
323050	Other permits				0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants				0.00
335000/336	State shared revenues	24,633.00	24,633.00	24,633.00	0.00
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government				0.00
342000	Public safety				0.00
343000	Public works			5,594.00	5,594.00
344000	Public health			80.00	80.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**				0.00
370000	**Investment and royalty earnings**	911.00	911.00	1,096.00	185.00
	Total revenues	155,518.00	155,518.00	163,834.00	8,316.00
	EXPENDITURES				
	Current:				
410000	**General Government:**				
410100	**Legislative services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
410200	**Executive services**				
100	Personal services	8,828.00	8,828.00	6,500.00	2,328.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
410300	**Judicial services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00

TOWN OF SACO
GENERAL FUND
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL
FISCAL YEAR ENDING JUNE 30, 2020

Account Number	Description	BUDGETED AMOUNTS ORIGINAL	BUDGETED AMOUNTS FINAL	ACTUAL AMOUNTS	VARIANCE WITH FINAL BUDGET POSITIVE (NEGATIVE)
410400	**Administrative services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
410500	**Financial services**				
100	Personal services	18,754.00	18,754.00	18,161.00	593.00
200-800	Supplies/services/materials, etc	33,648.00	33,648.00	18,744.00	14,904.00
900	Capital outlay				0.00
410600	**Elections**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
410900	**Records administration**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
411000	**Planning & Research services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
411100	**Legal services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	2,000.00	2,000.00	2,000.00	0.00
900	Capital outlay				0.00
411200	**Facilities administration**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
411600	**Public school administration**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
411800	**Other General Government services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
420000	**Public Safety:**				
420100	**Law enforcement services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
420200	**Detention and correction**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
420300	**Probation and parole**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00

TOWN OF SACO
GENERAL FUND
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL
FISCAL YEAR ENDING JUNE 30, 2020

Account Number	Description	BUDGETED AMOUNTS ORIGINAL	BUDGETED AMOUNTS FINAL	ACTUAL AMOUNTS	VARIANCE WITH FINAL BUDGET POSITIVE (NEGATIVE)
420400	**Fire protection**				
100	Personal services	2,500.00	2,500.00	501.00	1,999.00
200-800	Supplies/services/materials, etc			5,415.00	(5,415.00)
900	Capital outlay				0.00
420500	**Protective inspections**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
420600	**Civil defense**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
420700	**Emergency services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
430000	**Public Works:**				
430100	**Public works administration**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
430200	**Road and street services**				
100	Personal services	5,000.00	4,642.00	1,765.00	2,877.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
430300	**Airport**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
430400	**Transit systems**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
430500	**Water utilities**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	12,500.00	12,500.00	5,284.00	7,216.00
900	Capital outlay				0.00
430600	**Sewer utilities**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	14,710.00	14,710.00	619.00	14,091.00
900	Capital outlay				0.00
430800	**Solid waste services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
430900	**Cemetery services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	1,250.00	1,250.00		1,250.00
900	Capital outlay				0.00
431100	**Weed control**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00

TOWN OF SACO
GENERAL FUND
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL
FISCAL YEAR ENDING JUNE 30, 2020

Account Number	Description	BUDGETED AMOUNTS ORIGINAL	BUDGETED AMOUNTS FINAL	ACTUAL AMOUNTS	VARIANCE WITH FINAL BUDGET POSITIVE (NEGATIVE)
431300	**Central shop services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
440000	**Public Health:**				
440100	**Public health services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
440200	**Hospitals**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
440300	**Nursing homes**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
440400	**Mental health center**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
440600	**Animal control services**				
100	Personal services	559.00	559.00	32.00	527.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
440700	**Insect and pest controls**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	11,000.00	11,000.00	1,823.00	9,177.00
900	Capital outlay				0.00
450000	**Social and Economic Services:**				
450100	**Welfare**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
450200	**Veteran's services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
450300	**Aging services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
450400	**Extension services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00

TOWN OF SACO
GENERAL FUND
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL
FISCAL YEAR ENDING JUNE 30, 2020

Account Number	Description	BUDGETED AMOUNTS ORIGINAL	BUDGETED AMOUNTS FINAL	ACTUAL AMOUNTS	VARIANCE WITH FINAL BUDGET POSITIVE (NEGATIVE)
460000	**Culture and Recreation:**				
460100	**Library services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
460200	**Fairs**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
460300	**Other community events**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
460400	**Parks**				
100	Personal services	12,749.00	12,749.00	24,258.00	(11,509.00)
200-800	Supplies/services/materials, etc	3,000.00	3,000.00	3,490.00	(490.00)
900	Capital outlay				0.00
460440	**Participant recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
460450	**Spectator recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
470000	**Housing and Community Development:**				
470100	**Community public facility projects**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
470200	**Housing rehabilitation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
470300	**Economic development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
470400	**TSEP/Home/Infrastructure rehabilitation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00

TOWN OF SACO
GENERAL FUND
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL
FISCAL YEAR ENDING JUNE 30, 2020

Account Number	Description	BUDGETED AMOUNTS ORIGINAL	BUDGETED AMOUNTS FINAL	ACTUAL AMOUNTS	VARIANCE WITH FINAL BUDGET POSITIVE (NEGATIVE)
480000	**Conservation of Natural Resources:**				
480100	**Soil conservation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
480200	**Water quality control**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
480300	**Air quality control**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
490000	**Debt Service:**				
610	Principal	12,943.00	12,943.00	15,554.00	(2,611.00)
620	Interest	11,057.00	11,057.00	8,446.00	2,611.00
510000	**Miscellaneous**	9,164.00	9,164.00	2,973.00	6,191.00
	Total expenditures	159,662.00	159,304.00	115,565.00	43,739.00
	Excess of revenues over (under)expenditures	(4,144.00)	(3,786.00)	48,269.00	52,055.00
	OTHER FINANCING SOURCES (USES)				
381010/40	Proceeds from sale of bonds				0.00
381010/40	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In				0.00
520000	Transfers out (enter as a negative)	(186.00)	(544.00)	(544.00)	0.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure (enter as negative)				0.00
	Total other financing sources (uses)	(186.00)	(544.00)	(544.00)	0.00
	Net change in fund balance	(4,330.00)	(4,330.00)	47,725.00	52,055.00
	Fund balances - July 1, 2019 as previously reported			78,304.00	
	Prior period adjustments				
	Fund balances - July 1, 2019 as restated			78,304.00	
	Fund balances - June 30, 2020			126,029.00	

OTHER

SUPPLEMENTARY

INFORMATION

COUNTY/CITY/TOWN OF _____
COMBINING BALANCE SHEET
NONMAJOR SPECIAL REVENUE FUNDS
JUNE 30, 2020

ACCOUNT NUMBER	DESCRIPTION	2200 Mosquito	2400 Street Light Main	2820 Gas Apportionment	2940 CDBG
	ASSETS				
101000	Cash and cash equivalents	8,756.00	30,843.00	23,176.00	15,840.00
103000	Petty cash				
101100	Investments				
102000	Cash and cash equivalents - restricted				
102300	Investments - restricted				
106000	Valuation of investments to fair value				
	Taxes receivable:				
111000	Mobiles				
113000	Real estate	1,423.00			
114000	Net proceeds				
115000	Personal				
116000	Protested				
118000	Special assessments		2,671.00		
120000	Accounts/other receivables (net of allowance for uncollectibles)				8,916.00
131000	Due from other funds				
132000	Due from other governments				
133000	Advances to other funds				
140000	Prepaid expense				
150000	Inventories				
170000	Other debits				
	Total Assets	10,179.00	33,514.00	23,176.00	24,756.00
	DEFERRED OUTFLOWS OF RESOURCES				
190000	Deferred Outflows of Resources				
19xxxx	Deferred Outflows of Resources				
	Total Deferred Outflows of Resources	0.00	0.00	0.00	0.00
	LIABILITIES				
201000	Warrants payable				
202100	Accounts payable				
203100	Judgments payable				
204000	Contracts/loans/notes payable				
205200	Matured interest payable				
206100	Other accrued payables				
211000	Due to other funds				
212000	Due to other governments				
214000	Deposits payable				
216000	Revenues collected in advance				
233000	Advances from other funds				
	Total Liabilities	0.00	0.00	0.00	0.00
	DEFERRED INFLOWS OF RESOURCES				
220000	Deferred Inflows of Resources				
223000	Deferred Inflows of Tax Revenues	1,424.00		2,671.00	9,935.00
	Total Deferred Inflows of Resources	1,424.00	0.00	2,671.00	9,935.00
	FUND BALANCES:				
250100	Non-spendable				
250200	Restricted				
260100	Committed				
260200	Assigned				
271000	Unassigned *(negative balance ony)*	8,755.00	33,514.00	20,505.00	14,821.00
	Total Fund Balances	8,755.00	33,514.00	20,505.00	14,821.00
	Total Liabilities, Deferred Inflows of Resources and Fund Balances	10,179.00	33,514.00	23,176.00	24,756.00

COUNTY/CITY/TOWN OF _____
COMBINING BALANCE SHEET
NONMAJOR SPECIAL REVENUE FUNDS
JUNE 30, 2020

ACCOUNT NUMBER	DESCRIPTION	FUND# NAME	FUND# NAME	NONMAJOR SPECIAL REVENUE FUNDS
	ASSETS			
101000	Cash and cash equivalents			78,615.00
103000	Petty cash			0.00
101100	Investments			0.00
102000	Cash and cash equivalents - restricted			0.00
102300	Investments - restricted			0.00
106000	Valuation of investments to fair value			0.00
	Taxes receivable:			
111000	Mobiles			0.00
113000	Real estate			1,423.00
114000	Net proceeds			0.00
115000	Personal			0.00
116000	Protested			0.00
118000	Special assessments			2,671.00
120000	Accounts/other receivables (net of allowance for uncollectibles)			8,916.00
131000	Due from other funds			0.00
132000	Due from other governments			0.00
133000	Advances to other funds			0.00
140000	Prepaid expense			0.00
150000	Inventories			0.00
170000	Other debits			0.00
	Total Assets	0.00	0.00	91,625.00
	DEFERRED OUTFLOWS OF RESOURCES			
190000	Deferred Outflows of Resources			0.00
19xxxx	Deferred Outflows of Resources			0.00
	Total Deferred Outflows of Resources	0.00	0.00	0.00
	LIABILITIES			
201000	Warrants payable			0.00
202100	Accounts payable			0.00
203100	Judgments payable			0.00
204000	Contracts/loans/notes payable			0.00
205200	Matured interest payable			0.00
206100	Other accrued payables			0.00
211000	Due to other funds			0.00
212000	Due to other governments			0.00
214000	Deposits payable			0.00
216000	Revenues collected in advance			0.00
233000	Advances from other funds			0.00
	Total Liabilities	0.00	0.00	0.00
	DEFERRED INFLOWS OF RESOURCES			
220000	Deferred Inflows of Resources			0.00
223000	Deferred Inflows of Tax Revenues			14,030.00
	Total Deferred Inflows of Resources	0.00	0.00	14,030.00
	FUND BALANCES:			
250100	Non-spendable			0.00
250200	Restricted			0.00
260100	Committed			0.00
260200	Assigned			0.00
271000	Unassigned *(negative balance ony)*	0.00	0.00	77,595.00
	Total Fund Balances	0.00	0.00	77,595.00
	Total Liabilities, Deferred Inflows of Resources and Fund Balances	0.00	0.00	91,625.00

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2020

		2200			
		Mosquito			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes	20,000.00	20,000.00	20,232.00	232.00
314140	Local option taxes				0.00
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses				0.00
323050	Other permits				0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants				0.00
335000/336	State shared revenues				0.00
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government				0.00
342000	Public safety				0.00
343000	Public works				0.00
344000	Public health				0.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**				0.00
370000	**Investment and royalty earnings**				0.00
	Total revenues	20,000.00	20,000.00	20,232.00	232.00

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2020

		2400			
		Street Light Main			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes				0.00
314140	Local option taxes	16,414.00	16,414.00	16,331.00	(83.00)
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses				0.00
323050	Other permits				0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants				0.00
335000/336	State shared revenues				0.00
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government				0.00
342000	Public safety				0.00
343000	Public works				0.00
344000	Public health				0.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**				0.00
370000	**Investment and royalty earnings**				0.00
	Total revenues	16,414.00	16,414.00	16,331.00	(83.00)

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2020

		2820			
		Gas Apportionment			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes				0.00
314140	Local option taxes				0.00
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses				0.00
323050	Other permits				0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants		10,878.00	10,878.00	0.00
335000/336	State shared revenues	9,525.00	9,525.00	9,525.00	0.00
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government				0.00
342000	Public safety				0.00
343000	Public works				0.00
344000	Public health				0.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**				0.00
370000	**Investment and royalty earnings**				0.00
	Total revenues	9,525.00	20,403.00	20,403.00	0.00
		-65-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2020

		2940			
		CDBG			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes				0.00
314140	Local option taxes				0.00
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses				0.00
323050	Other permits				0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants				0.00
335000/336	State shared revenues				0.00
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government				0.00
342000	Public safety				0.00
343000	Public works				0.00
344000	Public health				0.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**				0.00
370000	**Investment and royalty earnings**			25.00	25.00
	Total revenues	0.00	0.00	25.00	25.00

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2020

		TOTALS			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes	20,000.00	20,000.00	20,232.00	232.00
314140	Local option taxes	16,414.00	16,414.00	16,331.00	(83.00)
	Licenses and permits				
322010	Alcoholic beverage licenses	0.00	0.00	0.00	0.00
322020	General business licenses	0.00	0.00	0.00	0.00
323010	Building permits	0.00	0.00	0.00	0.00
323030	Animal licenses	0.00	0.00	0.00	0.00
323050	Other permits	0.00	0.00	0.00	0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants	0.00	0.00	0.00	0.00
332000/333	Federal shared revenues	0.00	0.00	0.00	0.00
334000	State grants	0.00	10,878.00	10,878.00	0.00
335000/336	State shared revenues	9,525.00	9,525.00	9,525.00	0.00
337000	Local grants	0.00	0.00	0.00	0.00
338000	Local shared revenues	0.00	0.00	0.00	0.00
	Charges for services				
341000	General government	0.00	0.00	0.00	0.00
342000	Public safety	0.00	0.00	0.00	0.00
343000	Public works	0.00	0.00	0.00	0.00
344000	Public health	0.00	0.00	0.00	0.00
345000	Social/economic services	0.00	0.00	0.00	0.00
346000	Culture and recreation	0.00	0.00	0.00	0.00
	Fines and forfeitures				
351010	Justice court	0.00	0.00	0.00	0.00
351020	District court	0.00	0.00	0.00	0.00
351030	City court	0.00	0.00	0.00	0.00
360000	**Miscellaneous**	0.00	0.00	0.00	0.00
370000	**Investment and royalty earnings**	0.00	0.00	25.00	25.00
	Total revenues	45,939.00	56,817.00	56,991.00	174.00
		-65A-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES

BUDGET AND ACTUAL

NONMAJOR SPECIAL REVENUE FUNDS

FISCAL YEAR ENDED JUNE 30, 2020

		2200			
		Mosquito			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
420000	**Public Safety**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
430000	**Public Works**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
440000	**Public Health**				
100	Personal services	7,458.00	7,458.00	6,203.00	1,255.00
200-800	Supplies/services/materials, etc	17,957.00	17,957.00	10,688.00	7,269.00
450000	**Social and Economic Services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
460000	**Culture and Recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
470000	**Housing and Community Development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
480000	**Conservation of Natural Resources**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	**Capital expenditures**				0.00
490000	**Debt Service**				
610	Principal				0.00
620	Interest				0.00
510000	**Miscellaneous**				0.00
	Total expenditures	25,415.00	25,415.00	16,891.00	8,524.00
	Excess of revenues over expenditures	(5,415.00)	(5,415.00)	3,341.00	8,756.00
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued				0.00
381000	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In				0.00
520000	Transfers out (enteras a negative)				0.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure(enter as negative)				0.00
	Total other financing sources (uses)	0.00	0.00	0.00	0.00
	Net change in fund balance	(5,415.00)	(5,415.00)	3,341.00	8,756.00
	Fund balances - July 1, 2019 as previously reported			5,415.00	
	Prior period adjustments				
	Fund balances - July 1, 2019 as restated			5,415.00	
	Fund balances - June 30, 2020			8,756.00	
		-66-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2020

		2400			
		Street Light Main			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
420000	**Public Safety**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
430000	**Public Works**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	15,614.00	15,614.00	12,832.00	2,782.00
440000	**Public Health**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
450000	**Social and Economic Services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
460000	**Culture and Recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
470000	**Housing and Community Development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
480000	**Conservation of Natural Resources**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	**Capital expenditures**				0.00
490000	**Debt Service**				
610	Principal				0.00
620	Interest				0.00
510000	**Miscellaneous**	800.00	800.00	702.00	98.00
	Total expenditures	16,414.00	16,414.00	13,534.00	2,880.00
	Excess of revenues over expenditures	0.00	0.00	2,797.00	2,797.00
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued				0.00
381000	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In				0.00
520000	Transfers out (enteras a negative)				0.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure(enter as negative)				0.00
	Total other financing sources (uses)	0.00	0.00	0.00	0.00
	Net change in fund balance	0.00	0.00	2,797.00	2,797.00
	Fund balances - July 1, 2019 as previously reported			28,046.00	
	Prior period adjustments				
	Fund balances - July 1, 2019 as restated			28,046.00	
	Fund balances - June 30, 2020			30,843.00	
		-66-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES

BUDGET AND ACTUAL

NONMAJOR SPECIAL REVENUE FUNDS

FISCAL YEAR ENDED JUNE 30, 2020

		2820			
		Gas Apportionment			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
420000	**Public Safety**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
430000	**Public Works**				
100	Personal services	7,303.00	7,303.00	7,332.00	(29.00)
200-800	Supplies/services/materials, etc	4,760.00	15,638.00	3,404.00	12,234.00
440000	**Public Health**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
450000	**Social and Economic Services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
460000	**Culture and Recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
470000	**Housing and Community Development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
480000	**Conservation of Natural Resources**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	**Capital expenditures**				0.00
490000	**Debt Service**				
610	Principal				0.00
620	Interest				0.00
510000	**Miscellaneous**				0.00
	Total expenditures	12,063.00	22,941.00	10,736.00	12,205.00
	Excess of revenues over expenditures	(2,538.00)	(2,538.00)	9,667.00	12,205.00
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued				0.00
381000	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In		544.00	544.00	0.00
520000	Transfers out (enteras a negative)				0.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure(enter as negative)				0.00
	Total other financing sources (uses)	0.00	544.00	544.00	0.00
	Net change in fund balance	(2,538.00)	(1,994.00)	10,211.00	12,205.00
	Fund balances - July 1, 2019 as previously reported			12,965.00	
	Prior period adjustments				
	Fund balances - July 1, 2019 as restated			12,965.00	
	Fund balances - June 30, 2020			23,176.00	
		-66-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2020

		2940			
		CDBG			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
420000	**Public Safety**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
430000	**Public Works**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
440000	**Public Health**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
450000	**Social and Economic Services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
460000	**Culture and Recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
470000	**Housing and Community Development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
480000	**Conservation of Natural Resources**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	**Capital expenditures**				0.00
490000	**Debt Service**				
610	Principal				0.00
620	Interest				0.00
510000	**Miscellaneous**	12,925.00	12,925.00		12,925.00
	Total expenditures	12,925.00	12,925.00	0.00	12,925.00
	Excess of revenues over expenditures	(12,925.00)	(12,925.00)	25.00	12,950.00
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued				0.00
381000	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In				0.00
520000	Transfers out (enteras a negative)				0.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure(enter as negative)				0.00
	Total other financing sources (uses)	0.00	0.00	0.00	0.00
	Net change in fund balance	(12,925.00)	(12,925.00)	25.00	12,950.00
	Fund balances - July 1, 2019 as previously reported			14,795.00	
	Prior period adjustments				
	Fund balances - July 1, 2019 as restated			14,795.00	
	Fund balances - June 30, 2020			14,820.00	
		-66-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES

BUDGET AND ACTUAL

NONMAJOR SPECIAL REVENUE FUNDS

FISCAL YEAR ENDED JUNE 30, 2020

		TOTALS			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
420000	**Public Safety**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
430000	**Public Works**				
100	Personal services	7,303.00	7,303.00	7,332.00	(29.00)
200-800	Supplies/services/materials, etc	20,374.00	31,252.00	16,236.00	15,016.00
440000	**Public Health**				
100	Personal services	7,458.00	7,458.00	6,203.00	1,255.00
200-800	Supplies/services/materials, etc	17,957.00	17,957.00	10,688.00	7,269.00
450000	**Social and Economic Services**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
460000	**Culture and Recreation**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
470000	**Housing and Community Development**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
480000	**Conservation of Natural Resources**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
900	**Capital expenditures**	0.00	0.00	0.00	0.00
490000	**Debt Service**				
610	Principal	0.00	0.00	0.00	0.00
620	Interest	0.00	0.00	0.00	0.00
510000	**Miscellaneous**	13,725.00	13,725.00	702.00	13,023.00
	Total expenditures	66,817.00	77,695.00	41,161.00	36,534.00
	Excess of revenues over expenditures	(20,878.00)	(20,878.00)	15,830.00	36,708.00
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued	0.00	0.00	0.00	0.00
381000	Discount on bonds issued	0.00	0.00	0.00	0.00
381050	Inception of capital lease	0.00	0.00	0.00	0.00
381070	Notes/loans/intercap issued	0.00	0.00	0.00	0.00
382010	Sale of assets	0.00	0.00	0.00	0.00
383000	Transfers In	0.00	544.00	544.00	0.00
520000	Transfers out (enteras a negative)	0.00	0.00	0.00	0.00
384000	Special items - revenue	0.00	0.00	0.00	0.00
385000	Extraordinary items - revenue	0.00	0.00	0.00	0.00
524000	Special items - expenditure (enter as negative)	0.00	0.00	0.00	0.00
525000	Extraordinary items - expenditure(enter as negative)	0.00	0.00	0.00	0.00
	Total other financing sources (uses)	0.00	544.00	544.00	0.00
	Net change in fund balance	(20,878.00)	(20,334.00)	16,374.00	36,708.00
	Fund balances - July 1, 2019 as previously reported			61,221.00	
	Prior period adjustments			0.00	
	Fund balances - July 1, 2019 as restated			61,221.00	
	Fund balances - June 30, 2020			77,595.00	

TOWN OF SACO
STATEMENT OF NET POSITION
NONMAJOR ENTERPRISE FUNDS
FISCAL YEAR ENDING JUNE 30, 2020

Account Number	Description	NonMajor Enterprise Funds 5712 Market Gas	FUND # NAME	FUND # NAME	FUND # NAME	Totals
	ASSETS					
	Current Assets					
101000	Cash and cash equivalents	55,120.00				55,120.00
103000	Petty cash					0.00
101100	Investments (at fair value)					0.00
110000	Tax/assessment receivable (net of allowance for uncollectibles)					0.00
120000	Accounts/other receivables (net of allowance for uncollectibles)					0.00
131000	Due from other funds					0.00
132000	Due from other governments					0.00
141000	Prepaid expense					0.00
150000	Inventories					0.00
	Total Current Assets	55,120.00	0.00	0.00	0.00	55,120.00
	Noncurrent Assets					
	Restricted Assets:					
102200	Cash and cash equivalents					0.00
102300	Investments					0.00
133000	Advances to other funds					0.00
170000	Other debits					0.00
180000	Capital assets:					
	Land					0.00
	Construction in progress					0.00
	Buildings	24,380.00				24,380.00
	Improvements other than buildings					0.00
	Machinery and equipment	163,935.00				163,935.00
	Infrastructure					0.00
	Less: accumulated depreciation	(115,963.00)				(115,963.00)
	Capital assets - net of accumulated depreciation	72,352.00	0.00	0.00	0.00	72,352.00
	Total Noncurrent Assets	72,352.00	0.00	0.00	0.00	72,352.00
	Total Assets	127,472.00	0.00	0.00	0.00	127,472.00
	DEFERRED OUTFLOWS OF RESOURCES					
190000	Deferred Outflows of Resources - Pensions					0.00
19xxxx	Deferred Outflows of Resources - OPEB					0.00
19xxxx	Deferred Outflows of Resources					0.00
	Total Deferred Outflows of Resources	0.00	0.00	0.00	0.00	0.00
	LIABILITIES					
	Current Liabilities					
202100	Accounts payable					0.00
203100	Judgments payable					0.00
204000	Contracts/loans/notes payable					0.00
205200	Matured interest payable					0.00
206100	Other accrued payables					0.00
209100	Compensated absences					0.00
211000	Due to other funds					0.00
212000	Due to other governments					0.00
214000	Deposits payable					0.00
216000	Revenues collected in advance					0.00
	Total Current Liabilities	0.00	0.00	0.00	0.00	0.00
	Noncurrent Liabilities					
231000	Bonds payable					0.00
233000	Advance from other funds					0.00
234000	Judgments payable					0.00
235000	Contracts/loans/notes payable					0.00
236000	Closure/postclosure care costs					0.00
237000	Net Pension Liability					0.00
238000	OPEB Liability					0.00
239000	Compensated absences					0.00
	Total Noncurrent Liabilities	0.00	0.00	0.00	0.00	0.00
	Total Liabilities	0.00	0.00	0.00	0.00	0.00
	DEFERRED INFLOWS OF RESOURCES					
220000	Deferred Inflows of Resources - Pensions					0.00
22xxxx	Deferred Inflows of Resources - OPEB					0.00
223000	Deferred Inflows of Resources					0.00
	Total Deferred Inflows of Resources	0.00	0.00	0.00	0.00	0.00
	NET POSITION					
	Net Investment in capital assets	72,352.00	0.00	0.00	0.00	72,352.00
	Restricted for:					
						0.00
						0.00
						0.00

							0.00
		Unrestricted	55,120.00	0.00	0.00	0.00	55,120.00
		Total Net Position	127,472.00	0.00	0.00	0.00	127,472.00

TOWN OF SACO
STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET POSITION
NONMAJOR ENTERPRISE FUNDS
FISCAL YEAR ENDING JUNE 30, 2020

Account Number	Description	NonMajor Enterprise Funds 5712 Market Gas	FUND # NAME	FUND # NAME	FUND # NAME	Totals
	OPERATING REVENUES					
340000	Charges for services					0.00
360000	Miscellaneous revenues					0.00
363000	Special assessments					0.00
						0.00
	Total Operating Revenues	0.00	0.00	0.00	0.00	0.00
	OPERATING EXPENSES					
100	Personal services					0.00
200	Supplies					0.00
300	Purchased services					0.00
400	Building materials					0.00
500	Fixed charges					0.00
810	Loss/Bad debt expense					0.00
830	Depreciation	10,828.00				10,828.00
						0.00
	Total Operating Expenses	10,828.00	0.00	0.00	0.00	10,828.00
	Operating Income (Loss)	(10,828.00)	0.00	0.00	0.00	(10,828.00)
	NONOPERATING REVENUES (EXPENSES)					
310000	Taxes/assessment revenue					0.00
320000	Licenses/permits revenue					0.00
330000	Intergovernmental revenue					0.00
371000	Interest revenue					0.00
382030	Gain or Loss on sale of capital assets					0.00
490000	Debt service interest expense (enter as negative)					0.00
384000	Special items - revenue					0.00
385000	Extraordinary items - revenue					0.00
524000	Special items - expense (enter as negative)					0.00
525000	Extraordinary items - expense (enter as negative)					0.00
	Total Non-Operating Revenues (Expenses)	0.00	0.00	0.00	0.00	0.00
	Income (Loss) before contributions and transfers	(10,828.00)	0.00	0.00	0.00	(10,828.00)
	Capital contributions					0.00
	Transfers in (out)					0.00
	Change in net position	(10,828.00)	0.00	0.00	0.00	(10,828.00)
	Total net position - July 1, 2019 as previously reported	138,300.00				138,300.00
	Prior period adjustments					0.00
	Total net position - July 1, 2019 as restated	138,300.00	0.00	0.00	0.00	138,300.00
	Total net position - June 30, 2020	127,472.00	0.00	0.00	0.00	127,472.00

TOWN OF SACO
COMBINING STATEMENT OF CASH FLOWS
NONMAJOR ENTERPRISE FUNDS
FISCAL YEAR ENDING JUNE 30, 2020

Description	5712 Market Gas	FUND # NAME	FUND # NAME	FUND # NAME	TOTALS
CASH FLOWS FROM OPERATING ACTIVITIES					
Cash received from customers	0.00	0.00	0.00	0.00	0.00
Cash paid to suppliers	0.00	0.00	0.00	0.00	0.00
Cash paid to employees	0.00	0.00	0.00	0.00	0.00
Cash received from interfund services provided					0.00
Cash paid for interfund services used					0.00
Net cash provided (used) by operating activities	0.00	0.00	0.00	0.00	0.00
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES					
Transfers from (to) other funds	0.00	0.00	0.00	0.00	0.00
Advances from (to) other funds					0.00
Subsidies from taxes and other governments	0.00	0.00	0.00	0.00	0.00
Net cash provided (used) by capital and related financing activities	0.00	0.00	0.00	0.00	0.00
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES					
Proceeds from debt					0.00
Capital contributions	0.00	0.00	0.00	0.00	0.00
Purchases/acquisition/construction of capital assets					0.00
Principal on debt					0.00
Interest paid on debt	0.00	0.00	0.00	0.00	0.00
Capital lease down payment					0.00
Proceeds from sales of capital assets					0.00
Net cash provided (used) by capital and related financing activities	0.00	0.00	0.00	0.00	0.00
CASH FLOWS FROM INVESTING ACTIVITIES					
Proceeds from sales of investments					0.00
Purchase of investments					0.00
Interest earnings	0.00	0.00	0.00	0.00	0.00
Net cash provided (used) by investing activities	0.00	0.00	0.00	0.00	0.00
Net increase (decrease) in cash and cash equivalents	0.00	0.00	0.00	0.00	0.00
Cash and cash equivalents - July 1, 2019	55,120.00				55,120.00
Cash and cash equivalents - June 30, 2020	55,120.00	0.00	0.00	0.00	55,120.00
Reconciliation of operating income to net cash provided (used by operating activities:					
Operating income	(10,828.00)	0.00	0.00	0.00	(10,828.00)
Adjustments to reconcile operating income to net cash provided (used) by operating activities					
Depreciation expense	10,828.00	0.00	0.00	0.00	10,828.00
(Increase) decrease in accounts receivable					0.00
(Increase) decrease in intergovernmental receivables					0.00
(Increase) decrease in due from other funds					0.00
Increase in allowance for uncollectible accounts					0.00
(Increase) decrease in inventories					0.00
(Increase) decrease in prepaid items					0.00
Increase (decrease) in customer deposits					0.00
Increase (decrease) in accounts payable					0.00
Increase (decrease) in compensated absences pay.					0.00
Increase (decrease) in intergovernmental payables					0.00
Increase (decrease) in due to other funds					0.00
Total adjustments	10,828.00	0.00	0.00	0.00	10,828.00
Net cash provided (used) by operating activities	0.00	0.00	0.00	0.00	0.00
Noncash investing, capital, and financing activities:					
Borrowing under capital lease					0.00
Contributions of capital assets from government					0.00
Purchase of equipment on account					0.00
Increase in fair value of investments					0.00
Capital asset trade-ins					0.00

TOWN OF SACO
SCHEDULE OF FEDERAL/STATE GRANTS, ENTITLEMENTS, AND SHARED REVENUES
FISCAL YEAR ENDING JUNE 30, 2020

	REVENUE CODE	RECEIVING FUND	AMOUNT
FEDERAL GRANTS/ENTITLEMENTS - (LIST)			
Total Federal Grants/Entitlements			0.00
FEDERAL SHARED REVENUES - (LIST)			
Total Federal Shared Revenues			0.00
STATE GRANTS/ENTITLEMENTS - (LIST)			
State Entitlement	335000	1000	24,633.00
BarSAA Grant	334000	2820	10,878.00
Gas Apportionment	335040	2820	9,525.00
Total State Grants/Entitlements			45,036.00
STATE SHARED REVENUES - (LIST)			
Total State Shared Revenues			0.00
LOCAL GRANTS - (LIST)			
			0.00
TOTAL			45,036.00

ALL FUNDS

SCHEDULE OF CASH RECEIPTS AND DISBURSEMENTS - ALL FUNDS

FISCAL YEAR ENDING JUNE 30, 2020

Fund Number	Description	Cash balance 7/1/2019	Receipts	Transfers in	Disbursements	Transfers Out	Cash balance 6/30/2020
1000	**GENERAL**	78,304.00	163,834.00	382.00	24,804.00	91,688.00	126,028.00
2000	**SPECIAL REVENUE FUNDS**						
2100	Resort Tax						0.00
2110	Road						0.00
2120	Poor						0.00
2130	Bridge						0.00
2140	Weed control						0.00
2150	Predatory animal						0.00
2160	Fair						0.00
2170	Airport						0.00
2180	District court						0.00
2190	Comprehensive Insurance						0.00
2191	Property insurance						0.00
2200	Mosquito	5,415.00	20,232.00			16,891.00	8,756.00
2210	Parks/Recreation/Civic center						0.00
2220	Library						0.00
2230	Ambulance						0.00
2240	Cemetery						0.00
2250	Planning						0.00
2251	Planning/Zoning						0.00
2260	Disaster						0.00
2270	Health						0.00
2271	Mental health						0.00
2280	Senior citizens						0.00
2281	Senior citizens transp.						0.00
2290	Extension service						0.00
2300	Public safety						0.00
2320	Economic Development						0.00
2330	Rodent control						0.00
2340	Fire control						0.00
2360	Museum						0.00
2370	Employer retirement						0.00
2371	Health insurance						0.00
2390	D.A.R.E.						0.00
2393	Records preservation						0.00
2400	Light maintenance districts (all)	28,046.00	16,331.00			13,534.00	30,843.00
2500	Maintenance districts (all)						0.00
2800	Alcohol rehabilitation						0.00
2810	Police reserve						0.00
2820	Gas tax	12,966.00	20,947.00			10,737.00	23,176.00
2840	Weed grant						0.00
2850	911 Emergency						0.00
2860	Land planning						0.00
2890	Lewis and Clark Bicentennial Grant						0.00
2894	State allocated federal mineral royalties						0.00
2900	P.I.L.T.						0.00
							0.00
2940	C.D.B.G.	12,926.00	2,915.00				15,841.00
2960-79	Health grants (all)						0.00
							0.00
							0.00
							0.00
2980	Aging services						0.00
							0.00
	TOTAL SPECIAL REVENUE	59,353.00	60,425.00	0.00	0.00	41,162.00	78,616.00

ALL FUNDS

SCHEDULE OF CASH RECEIPTS AND DISBURSEMENTS - ALL FUNDS

FISCAL YEAR ENDING JUNE 30, 2020

Fund Number	Description	Cash balance 7/1/2019	Receipts	Transfers in	Disbursements	Transfers Out	Cash balance 6/30/2020
3000	**DEBT SERVICE FUNDS (list)**						
3400	S.I.D. revolving						0.00
							0.00
							0.00
	TOTAL DEBT SERVICE FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
4000	**CAPITAL PROJECTS FUNDS (list)**						
							0.00
							0.00
							0.00
	TOTAL CAPITAL PROJECTS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
5000	**ENTERPRISE FUNDS (list)**						
5110	Hospital/Nursing						0.00
5210	Water	71,884.00	143,516.00		28,373.00	85,746.00	101,281.00
5310	Sewer	26,363.00	41,096.00	1,624.00	29.00	28,683.00	40,371.00
5410	Solid Waste						0.00
5510	Ambulance						0.00
5610	Airport						0.00
5710	Gas	33,205.00	92,216.00	1,536.00	1.00	119,843.00	7,113.00
5712	Market Gas	55,120.00	0.00	0.00	0.00	0.00	55,120.00
	TOTAL ENTERPRISE FUNDS	186,572.00	276,828.00	3,160.00	28,403.00	234,272.00	203,885.00
6000	**INTERNAL SERVICE FUNDS (list)**						
							0.00
							0.00
	TOTAL INTERNAL SERVICE FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
7000	**TRUST FUNDS (list)**						
7001	Police reserve						0.00
7002	Fire disability pension	1,165.00					1,165.00
							0.00
7010	Cemetery perpetual care						0.00
							0.00
							0.00
7100	**AGENCY FUNDS (list)**						
7110	Bed tax collection						0.00
7120	Fire disability						0.00
7130	Protested tax						0.00
7140	Public administrator						0.00
7150	Redemptions						0.00
							0.00
7160	Clerk of district court						0.00
7170	Partial tax payments						0.00
							0.00
7190	Migratory stock						0.00
7200	**SPECIAL DISTRICTS (list)**						
							0.00
							0.00
							0.00
							0.00

ALL FUNDS

SCHEDULE OF CASH RECEIPTS AND DISBURSEMENTS - ALL FUNDS

FISCAL YEAR ENDING JUNE 30, 2020

Fund Number	Description	Cash balance 7/1/2019	Receipts	Transfers in	Disbursements	Transfers Out	Cash balance 6/30/2020
7400	Agency - State (all)						0.00
7700	District schools (all)						0.00
7805	General School Elementary						0.00
7810	General School H.S.						0.00
7815	Community College						0.00
7820	Transportation H.S./Elementary						0.00
7830	Retirement H.S.						0.00
7840	Retirement elementary						0.00
7850	**AGENCY - CITIES AND TOWNS (list)**						
							0.00
							0.00
							0.00
							0.00
7900	**AGENCY - OTHER**						
7910	Payroll fund	6,580.00		176,661.00	178,869.00		4,372.00
7930	Claims fund	3,387.00		187,318.00	187,329.00		3,376.00
	TOTAL TRUST AND AGENCY FUNDS	11,132.00	0.00	363,979.00	366,198.00	0.00	8,913.00
8000	**PERMANENT FUNDS**						
							0.00
							0.00
							0.00
	TOTAL PERMANENT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
	TOTALS (to be accounted for)	335,361.00	501,087.00	367,521.00	419,405.00	367,122.00	417,442.00

****PROPERTY TAXES COLLECTED**

Fund number	Description	Receipts		Disbursements		Undisbursed receipts 06/30/20___	
7820	Transportation H.S./Elementary						
7830	Retirement H.S.						
7840	Retirement elementary						

****THIS INFORMATION CAN BE TAKEN FROM FP-6b REPORT (TREASURER'S REPORT OF COUNTY WIDE SCHOOL FUNDS.)**

ALL FUNDS
CASH RECONCILIATION
FISCAL YEAR ENDING JUNE 30, 2020

	BANK NAME				
Account Description (not full acct #)	FSB	FCB - CDBG	FSB- Phase II		**Cash in all depositories**
BALANCE PER STATEMENTS	355,296.00	15,840.00	4,437.00		375,573.00
ADD					
Deposits in transit					0.00
Service charges					0.00
Other					0.00
					0.00
					0.00
					0.00
Total to add	0.00	0.00	0.00	0.00	0.00
SUBTRACT					
Outstanding checks	7,748.00				7,748.00
Other	179.00				179.00
					0.00
					0.00
					0.00
					0.00
Total to subtract	7,927.00	0.00	0.00	0.00	7,927.00
TOTAL CASH IN DEPOSITS	347,369.00	15,840.00	4,437.00	0.00	367,646.00
ADD					
Investments					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
Total to add	0.00	0.00	0.00	0.00	0.00
TOTAL IN DEPOSITORIES	347,369.00	15,840.00	4,437.00	0.00	367,646.00
ADD					
Cash and cash items on hand					0.00
Petty Cash					400.00
FSB CD1					20,824.00
FSB CD2					20,824.00
					0.00
					0.00
					0.00
					0.00
Total to add	0.00	0.00	0.00	0.00	42,048.00
****TOTAL ACCOUNTED FOR**	347,369.00	15,840.00	4,437.00	0.00	409,694.00

***Total cash must agree with total cash reported within report**

Cash reconciles _____ Cash does not reconcile _____

GENERAL INFORMATION SECTION

GENERAL INFORMATION

(Complete all portions applicable to entity)

1. Class of county/city	3
2. Date of incorporation	1918
3. County seat	
4. Form of government	Comm-Ex
5. Population (most recent estimate)	199
6. Land area	
7. Miles of roads/streets/alleys	5.88
8. Taxable valuation	294,444
9. Road taxable valuation (county)	
10. Number of water consumers	170
11. Average daily water consumption	
12. Miles of water main	
13. Miles of sanitary and storm sewers	
14. Number of building permits issued	
15. Number of full-time employees	

B. PROPERTY TAX MILL LEVIES -

County/City/Town funds only (For fiscal year being reported)

Fund/activity	Mills
General	394.16
Mosquito	63.88
TOTAL	458.04

CONVERSION WORKSHEETS

THESE PAGES WILL ASSIST WITH THE GASB 34 CONVERSION
THEY DO NOT HAVE TO BE INCLUDED WITH YOUR REPORT SUBMISSION

TOWN OF SACO

GASB NO. 34 ENTITY-WIDE STATEMENT COMPOSITION SPREADSHEET

ENTITY-WIDE STATEMENT OF NET POSITION - BALANCE SHEET CONVERSION WORKSHEET

FISCAL YEAR ENDING JUNE 30, 2020

			Action item	Action item	Auto	Auto	Auto	Auto	Action item	Action item	Action item	
		FROM GOVERNMENTAL FUND B/S	Add the Gov. Funds Prior Year's Ending Balances of Deferred Outflows & Inflows of Resources associated with Pensions & OPEB; Outflows in Cell D28&29; Inflows in Cell D51&52	1. Remove Current Year Deferred Inflows of Tax Revenue; 2. Pensions & OPEB: Add Adj to Current Year Deferred Inflows & Outflows of Resources related to Pensions & OPEB	Add Principal balance of long-term loans, contracts, and bonds	Add Long-term portion of compensated absences, OPEB & Pension Liability	Add Capital assets	Add Accumulated Depreciation on Capital Assets	Remove interfund receivables and payables (between governmental funds only)	Add net position of the internal service funds applicable to governmental funds	Reclassify short-term portion of long-term liabilities	ADJUSTED AMOUNT FOR ENTITY-WIDE STATEMENTS
	ASSETS											
101000	Cash and cash equivalents	204,244.00										204,244.00
103000	Petty cash	400.00										400.00
101100	Investments	0.00										0.00
	Restricted Assets:											
102200	Cash and cash equivalents	0.00										0.00
102300	Investments	0.00										0.00
106000	Valuation of investments to fair value	0.00										0.00
110000	Tax/assessment receivable (net of allowance for uncollectibles)	13,005.00										13,005.00
120000	Accounts/other receivables - (net of allowance for uncollectibles)	8,916.00										8,916.00
131000	Due from other funds	0.00										0.00
132000	Due from other governments	0.00										0.00
133000	Advances to other funds	0.00										0.00
140000	Prepaid expenses	0.00										0.00
150000	Inventories	0.00										0.00
170000	Other debits	0.00										0.00
180000	Capital assets (net of accumulated depreciation						545,665.00	(145,104.00)				400,561.00
	Total Assets	226,565.00		0.00	0.00	0.00	545,665.00	(145,104.00)	0.00	0.00	0.00	627,126.00
190000	Deferred Outflows of Resources - Pensions											0.00
190xxx	Deferred Outflows of Resources - OPEB											0.00
190xxx	Deferred Outflows of Resources	0.00										0.00
	Total Deferred Outflows of Resources	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	LIABILITIES AND FUND BALANCES											
	Liabilities:											
201000	Warrants payable	0.00										0.00
202100	Accounts payable	0.00										0.00
204000	Contracts/loans/notes payable	0.00										0.00
211000	Due to other funds	0.00										0.00
212000	Due to other governments	0.00										0.00
216000	Revenues collected in advance	0.00										0.00
205200	Matured interest payable	0.00										0.00
206100	Other accrued payables	0.00										0.00
233000	Advances from other funds	0.00										0.00
	Noncurrent liabilities:											
	Due within one year											0.00
	Due in more than one year				216,733.00	2,346.00						219,079.00
237000	Pension Liability					0.00						0.00
238000	OPEB Liability					0.00						0.00
	Total Liabilities	0.00		0.00	216,733.00	2,346.00	0.00	0.00	0.00	0.00	0.00	219,079.00
220000	Deferred Inflows of Resources - Pensions											0.00
220XXX	Deferred Inflows of Resources - OPEB											0.00
223XXX	Deferred Inflows of Resources - Other	0.00										0.00
223000	Deferred Inflows of Tax Revenues	22,941.00		(22,941.00)								0.00
		22,941.00		(22,941.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Fund balances (Net Position)											
	Net Investment in Capital assets				(216,733.00)		545,665.00	(145,104.00)				183,828.00
	Reserved (Restricted) for:											
250100	Non-spendable	0.00										0.00
250200	Restricted	0.00										0.00
												0.00
												0.00
260000 to	**Unrestricted, reported in:**											0.00
271000	All unrestricted governmental funds	203,624.00	0.00	22,941.00		(2,346.00)						224,219.00
												0.00
												0.00
	Total fund balances	203,624.00	0.00	22,941.00	(216,733.00)	(2,346.00)	545,665.00	(145,104.00)	0.00	0.00	0.00	408,047.00
	Total liabilities, Deferred Inflows of Resources and fund balances (Net Position)	226,565.00	0.00	0.00	0.00	0.00	545,665.00	(145,104.00)	0.00	0.00	0.00	627,126.00

TOWN OF SACO

GASB NO. 34 ENTITY-WIDE STATEMENT COMPOSITION SPREADSHEET

ENTITY-WIDE STATEMENT OF ACTIVITY - OPERATING STATEMENT CONVERSION WORKSHEET

FISCAL YEAR ENDING JUNE 30, 2020

Account Number	Description	FROM GOVERNMENTAL FUNDS	Auto Current Year Deferred Inflow of Tax Revenue (Enter as postive on line 11 and/or 17)	Action item Prior Year Deferred Inflow of Tax Revenue (Enter as negative on line 11 and line 16 if assessments reported as misc.)	Action item 1. Add GASB 68 on-behalf payment as intergovernmental revenue and pension expense by major purpose if not entered in fund financial statements; if entered in software - an adjustment may be necessary; See GASB Worksheet; 2. Input OPEB expense. 3. Auto - add beginning Long-term Debt to fund balance.	Action item Remove the proceeds from long-term debt from other financing sources (enter as negative)	Auto Remove Principal Debt Payments - Autofills from the reduction in long-term debt from the GLTDAG Worksheet	Action item Remove Capital Outlay Purchases	Auto Add Capital Assets Beginning (to fund balance) Auto fills from GCAAG Worksheet	Auto Record Depreciation Expense - Auto fills from the GCAAG Worksheet	Action item Adjust for gain (loss) on sale of capital assets	Action item Record Current Year Compensated Absences	Action item Remove proceeds from sale of assets from other financing sources	Action item Add net adjustments made to capital assets in the GFAAG (i.e. donated capital assets & other adjustments to inventory)	Action item Add change in net position of internal service funds applicable to governmental activities	ADJUSTED AMOUNT FOR ENTITY-WIDE STATEMENT
	REVENUES																
310000/ 363000	Taxes/assessments	168,934.00	22,941.00	(30,240.00)													161,635.00
320000	Licenses and permits	60.00															60.00
330000	Intergovernmental revenues	45,036.00															45,036.00
340000	Charges for services	5,674.00															5,674.00
350000	Fines and forfeitures	0.00															0.00
360000	Miscellaneous	0.00															0.00
370000	Investment and royalty earnings	1,121.00															1,121.00
	Capital Asset Adj, gain/loss on sale, donation																0.00
	Total Revenues	220,825.00	22,941.00	(30,240.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	213,526.00
	EXPENDITURES																
	Current:																
410000	General government	45,405.00								12,995.00		297.00					58,697.00
420000	Public safety	5,916.00								0.00							5,916.00
430000	Public works	31,236.00								0.00							31,236.00
440000	Public health	18,746.00								0.00							18,746.00
450000	Social and economic services	0.00								0.00							0.00
460000	Culture and recreation	27,748.00								0.00							27,748.00
470000	Housing and community development	0.00								0.00							0.00
480000	Conservation of natural resources	0.00								0.00							0.00
490000	Debt Service:																
	Principal	15,554.00					(15,554.00)										0.00
	Interest	8,446.00															8,446.00
	Unallocated costs									0.00							0.00
	Capital outlay	0.00															0.00
500000	Internal Services	0.00															0.00
510000	Miscellaneous	3,675.00															3,675.00
	Total Expenditures	156,726.00	0.00	0.00	0.00	0.00	(15,554.00)	0.00	0.00	12,995.00	0.00	297.00	0.00	0.00	0.00	0.00	154,464.00
	Excess of revenues (under)	64,099.00	22,941.00	(30,240.00)	0.00	0.00	15,554.00	0.00	0.00	(12,995.00)	0.00	(297.00)	0.00	0.00	0.00	0.00	59,062.00
	OTHER FINANCING SOURCES (USES):																
381010/40	Bonds issued	0.00															0.00
381010/40	Discount on bonds issued	0.00															0.00
381050	Inception of capital lease	0.00															0.00
381070	Notes/loans/intercap issued	0.00															0.00
382010	Sale of capital assets	0.00															0.00
383000	Transfers In	544.00															544.00
521000	Transfers out	(544.00)															(544.00)
384000	Specail items - revenue	0.00															0.00
385000	Extraordinary items - revenue	0.00															0.00
524000	Special items - expenditure	0.00															0.00
525000	Extraordinary items - expenditure	0.00															0.00
	Total other financing sources (uses)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Net change in fund balances	64,099.00	22,941.00	(30,240.00)	0.00	0.00	15,554.00	0.00	0.00	(12,995.00)	0.00	(297.00)	0.00	0.00	0.00	0.00	59,062.00
	Fund balances - July 1, 2019 as previously reported	139,525.00	0.00	30,240.00	(234,336.00)				413,556.00	0.00							348,985.00
	Prior period adjustments	0.00															0.00
	Fund balances - July 1, 2019 as restated	139,525.00	0.00	30,240.00	(234,336.00)	0.00	0.00	0.00	413,556.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	348,985.00
	Fund balances - June 30, 2020	203,624.00	22,941.00	0.00	(234,336.00)	0.00	15,554.00	0.00	413,556.00	(12,995.00)	0.00	(297.00)	0.00	0.00	0.00	0.00	408,047.00
																Balance Check	0.00

TOWN OF SACO

GASB NO. 34 ENTITY-WIDE STATEMENT COMPOSITION SPREADSHEET

REVENUE ANALYSIS WORKSHEET

FISCAL YEAR ENDING JUNE 30, 2020

Action item | Auto - unless a program revenue

Functional Activity	Taxes and Assessments	Licenses/ Permits	Intergovernmental: Operating Grants and Contributions	Intergovernmental: Capital Grants and Contributions	Intergovernmental: State and Federal Shared Revenues	Charges for Services	Fines and Forfeitures	Miscellaneous	Investment Earnings	Gain (Loss) on Sale of Capital Assets	Transfers In (Out)	Special/ Extra-ordinary Items	TOTAL
From OP Conversion Spreadsheet	161,635.00	60.00		45,036.00		5,674.00	0.00	0.00	1,121.00	0.00	0.00	0.00	213,526.00
PROGRAM REVENUES													
General Government													0.00
Public Safety													0.00
Public Works						5,674.00							5,674.00
Public Health													0.00
Social/Economic Services													0.00
Culture/Recreation													0.00
Housing/Community Development													0.00
Conservation of Natural Resources													0.00
Interest on long-term debt													0.00
Miscellaneous													0.00
TOTAL PROGRAM REVENUES	0.00	0.00	0.00	0.00	0.00	5,674.00	0.00	0.00	0.00	0.00	0.00	0.00	5,674.00
GENERAL REVENUES													
Property taxes	161,635.00												161,635.00
Local option taxes													0.00
Licenses and permits		60.00											60.00
Unrestricted Federal/State shared revenues					45,036.00								45,036.00
Unrestricted grants and contributions													0.00
Unrestricted investment earnings									1,121.00				1,121.00
Miscellaneous								0.00					0.00
Gain on sale of capital assets										0.00			0.00
Transfers											0.00		0.00
Special/Extraordinary items												0.00	0.00
TOTAL GENERAL REVENUES	161,635.00	60.00	0.00	0.00	45,036.00	0.00	0.00	0.00	1,121.00	0.00	0.00	0.00	207,852.00
TOTAL ALL REVENUES	161,635.00	60.00		45,036.00		5,674.00	0.00	0.00	1,121.00	0.00	0.00	0.00	213,526.00
										Balance check (should equal zero)			0.00

TOWN OF SACO

GOVERNMENTAL FUNDS CAPITAL ASSETS (FUND 9000)

FISCAL YEAR ENDING JUNE 30, 2020

ACCOUNT NUMBER	ACCOUNT DESCRIPTION	BALANCE July 1, 2019	DEBITS	CREDIT	Adjustments for capital assets/prior year depreciation	BALANCE June 30, 2020
181000	LAND	9,955.00				9,955.00
188000	CONSTRUCTION IN PROGRESS					0.00
182000	BUILDINGS	503,273.00				503,273.00
182100	ALLOWANCE FOR DEPRECIATION	(104,663.00)		12,358.00		(117,021.00)
183000	INTANGIBLES/WORKS OF ART					0.00
183100	AMORTIZATION/ALLOW. FOR DEPRECIATION					0.00
184000	IMPROVEMENTS OTHER THAN BUILDINGS					0.00
184100	ALLOWANCE FOR DEPRECIATION					0.00
186000	MACHINERY & EQUIPMENT	32,437.00				32,437.00
186100	ALLOWANCE FOR DEPRECIATION	(27,446.00)		637.00		(28,083.00)
187000	INFRASTRUCTURE					0.00
187100	ALLOWANCE FOR DEPRECIATION					0.00
	TOTAL ASSETS	413,556.00	0.00	12,995.00	0.00	400,561.00
	DEPRECIATION EXPENSE:					
410000830	GENERAL GOVERNMENT	0.00	12,995.00			12,995.00
420000830	PUBLIC SAFETY	0.00				0.00
430000830	PUBLIC WORKS	0.00				0.00
440000830	PUBLIC HEALTH	0.00				0.00
450000830	SOCIAL/ECONOMIC SERVICES	0.00				0.00
460000830	CULTURE AND RECREATION	0.00				0.00
470000830	HOUSING/COMMUNITY DEVELOPMENT	0.00				0.00
480000830	CONSERVATION OF NATURAL RESOURCES	0.00				0.00
	UNALLOCATED DEPRECIATION	0.00				0.00
	TOTAL DEPRECIATION EXPENSE	0.00	12,995.00	0.00	0.00	12,995.00
280000	INVESTMENT IN GENERAL CAPITAL ASSETS	413,556.00	12,995.00	0.00	0.00	400,561.00
	TOTAL	413,556.00	12,995.00	0.00	0.00	400,561.00

NOTE: At year end, the depreciation expense would be closed into the equity account (280000 Investment in General Capital Assets) and new purchases/acquisitions and/or sales/disposals would be recorded if updating Fund 9000.

LONG-TERM DEBT (FUND 9500)
STATEMENT OF CHANGES IN GOVERNMENTAL FUNDS LONG-TERM DEBT
FISCAL YEAR ENDING JUNE 30, 2020

Account number	Description	Balance July 1, 2019	Debits	Credits	Balance June 30, 2020
	ASSETS				
173100	Amount available G.O.debt				0.00
173200	Amount available S.I.D.debt				0.00
					0.00
174100	Amount to be provided G.O. debt				0.00
174200	Amount to be provided S.I.D. debt				0.00
174300	Amount to be provided - other	234,336.00	297.00	15,554.00	219,079.00
					0.00
	***TOTAL ASSETS**	234,336.00	297.00	15,554.00	219,079.00
	DEBT PAYABLE				
231100	G.O. bonds payable				0.00
					0.00
231200	DNRC bonds (loans) payable				0.00
					0.00
231400	S.I.D. bonds payable				0.00
	S.I.D. #				0.00
	S.I.D. #				0.00
	S.I.D. #				0.00
					0.00
234000	Judgement payable				0.00
					0.00
235100	Contracts payable				0.00
					0.00
235200	Installment purchase contract				0.00
					0.00
235300	Capital lease agreement				0.00
					0.00
235400	Notes/Loans/Intercap	232,287.00	15,554.00		216,733.00
237000	Pension Liabilities				0.00
238000	OPEB Liability				0.00
239000	Compensated absences payable	2,049.00		297.00	2,346.00
					0.00
	TOTAL DEBT PAYABLE	234,336.00	15,554.00	297.00	219,079.00

*Total assets must equal total debt payable. Balance check: 0.00

Beginning balance should equal with the ending balance of the previous fiscal year annual report and/or audit report.
The ending debt payable balances should equal the long-term debt balances reported in the "Notes to the Financial
other than the debt of any Business-Type Funds.

Helpful hints: Does the addition of bonds/notes/loans equal the proceeds from debt on the OP Conversion?
Does the reduction in bonds/notes/loans equal the principal payment on the OP Conversion?

STATE FINANCIAL SERVICES DIVISION
LOCAL GOVERNMENT SERVICES BUREAU
Mitchell Building Room 255, PO Box 200547, Helena, Montana 59620-0547
Local Government Services Bureau Portal

ENTITY # **023603**

MONTANA
TOWN OF SACO
PO BOX 330
SACO, MONTANA 59261

ANNUAL FINANCIAL REPORT

FISCAL YEAR ENDING JUNE 30, 2021

REVISED JULY 2021/VERSION 21.1

ANNUAL FINANCIAL REPORT FILING FEE
FISCAL YEAR ENDING JUNE 30, 2021

023603 TOWN OF SACO PO BOX 330 SACO, MONTANA 59261	If the local government entity name or mailing address on the Department's mailing list is inaccurate or has changed recently please note the correction below.

****If a filing fee is owed, please print the completed filing fee form and mail with your payment to:**

Montana Department of Administration
Local Government Services
Mitchell Bldg - Room 270
PO Box 200547
Helena, MT 59620-0547

****If no filing fee is owed, you must complete Part II to determine if an audit is required. *Please* assure a copy of the completed *Determination of Filing Fee & Audit Requirement* form is either included in your Annual Financial Report (AFR) or if not, a completed copy of the form is uploaded along with your AFR in the portal to ensure we enter the correct amount of adjusted debt proceeds in our system.**

PLEASE NOTE: The "Determination of Filing Fee Form" - page 2 of 2 - is designed to be self-calculating. If you choose to print this form and manually fill it in, please adjust the "Filing Fee Owed" in Box #1, based on the Filing Fee Schedule included below. Please revise Box #2 to "YES" if the adjusted debt proceeds and total revenues received by your government indicate that an audit will be required.

If there is an amount listed in BOX #1 of the Determination of Filing Fee Form (page 2 of 2), please include a check or warrant for that amount, made payable to "State Treasurer" in the amount of the required fee.

LOCAL GOVERNMENT ANNUAL FILING FEE SCHEDULE

The following filing fee schedule is required by Section 2-7-514, MCA, and has been adopted as Section 2.4.402 of the Administrative Rules of Montana.

Annual Resources Exceed:	Annual Resources Equal to or Less Than	Filing Fee
$0	$750,000	$0
$750,000	$1,000,000	$550
$1,000,000	$1,500,000	$800
$1,500,000	$2,500,000	$950
$2,500,000	$5,000,000	$1,300
$5,000,000	$10,000,000	$1,700
$10,000,000	$50,000,000	$2,500
$50,000,000		$3,000

FOR DEPARTMENT OF ADMINISTRATION USE ONLY

GL#	**Amount Received:** **$** **Date:**
TD#	**By:**

REVISED 7-2017 VERSION 17.1

Determination of Filing Fee Form

Note: This form is self-calculating, with defaults of -0- and "NO" in box #1 and #2. Please adjust according if you print this form and enter information manually.

FEE REQUIREMENT: As provided by 2-7-514, MCA, each local government required to have an audit under 2-7-503, MCA, shall pay an annual filing fee to the department; the fee schedule must be based upon the local government's annual revenue amounts. Administrative Rule 2.4.402 defines "revenues" as all receipts or inflows of resources of a local government entity from any source excluding the proceeds from bond issuances and other long-term debt not received from state or federal sources.

AUDIT REQUIREMENT: As provided by 2-7-503, MCA, each local government receiving revenue or financial assistance in excess of $750,000, regardless of the source of revenue or financial assistance, must have an audit. "Financial Assistance" including assistance provided by a federal, state, or local government entity in the form of loans and loan guarantees.

Part II - Determination of Audit Requirement. Loan proceeds received in the fiscal year that were used to refinance (payoff) existing debt will not be considered as "Financial Assistance" when determining the current audit requirement.

GOVERNMENTAL FUNDS - PAGE 16 *(STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES)*	
Total Revenues	236,134.00
Other Financing Sources - Proceeds from Sale of Capital Assets	0.00
Special and/or Extraordinary Items (Revenues only)	0.00
ENTERPRISE FUNDS - PAGE 19 *(STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET POSITION)*	
Note: Do not include revenues of Internal Service Funds	
Total Operating Revenues	266,367.00
Non-Operating Revenues: (Do not include Gain on Sale of Capital Assets)	
Taxes/Assessments	0.00
Licenses/Permits	0.00
Intergovernmental Revenues	0.00
Interest Revenues	292.00
Other Non-operating Revenues not included above	
Capital Contributions	0.00
Special and/or Extraordinary Items (Revenues only)	0.00
ENTERPRISE FUNDS - PAGE 20 *(STATEMENT OF CASH FLOWS)*	
Proceeds from Sale of Capital Assets	0.00
TRUST FUNDS - PAGE 22 *(STATEMENT OF CHANGES IN FIDUCIARY NET ASSETS)*	
NOTE: Do not include additions to Investment Trust Funds	
Total Additions to **Pension & Private Purpose** Trust Funds Only	0.00
Total Revenues for Calculation of Filing Fee	**$502,793.00**

Box #1

Filing Fee Owed **0**

If total revenues are equal to or less than $750,000, no filing fee is required to be paid. However, your entity may be subject to audit requirements as determined in Part II or required by other agencies. **Review Part II** below to determine if there is an audit requirement. Manually subtract proceeds of debt received to refinance an existing debt to exclude from audit determination.

If total revenues plus adjusted debt proceeds exceeds $750,000, your entity will be subject to audit requirements.

Part II - Determination of Audit Requirement w/ No Filing Fee (Subtract Debt used to Refinance Manually)	
Add: Proceeds from Debt provided by a Federal agency, a State agency or another local government:	
Governmental Funds (from Statement of Revenues, Expenditures, and Changes in Fund Balances (Page 16) Proceeds from General Long-Term Debt)	0.00
Proprietary Funds (from Statement of Cash Flows, Major & Non-Major Enterprise Funds (Page 20) Proceeds from Debt)	0.00
Manually subtract debt proceeds received from non-governmental financial institutions (banks, savings & loans) included above *(Enter as a negative)*	
Subtotal - Proceeds received from Debt	0.00
Manually subtract amount of proceeds received from governments used to refinance existing debt. *(Enter as a negative)*	
Total Adjusted Debt Proceeds	$0.00
Total Revenues + Total Adjusted Debt Proceeds	**$502,793.00**

Box #2

Audit Required? **NO**

If this amount exceeds $750,000, you are required to have an

audit for the fiscal year.

TOWN OF SACO
ANNUAL FINANCIAL REPORT
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INTRODUCTORY

SECTION

TOWN OF SACO
ELECTED OFFICIALS/OFFICERS

OFFICE	NAME OF COUNTY OFFICIALS/OFFICERS	DATE TERM EXPIRES
Commissioner (Chairperson)		
Commissioner		
Commissioner		
Attorney		
Clerk and recorder		
Auditor		
Treasurer		
Sheriff		
Clerk of district court		
Coroner		
Justice of the peace		
Justice of the peace		
Public administrator		
School superintendent		

OFFICE	NAME OF CITY/TOWN OFFICIALS/OFFICERS	DATE TERM EXPIRES
Mayor	Wayne Woodall	12/31/2021
Councilperson/Commissioner	Wayne Stahl	12/31/2021
Councilperson/Commissioner	Roberta Christopherson	12/31/2021
Councilperson/Commissioner	Don Minnerath	12/31/2021
Councilperson/Commissioner	Jess Erickson	12/31/2021
Councilperson/Commissioner		
Councilperson/Commissioner		
Councilperson/Commissioner		
Councilperson/Commissioner		
City manager		
Attorney		
Chief of police		
Clerk		
Clerk/Treasurer		
Finance Director		
Police Judge		
Treasurer		
Utility billing/collection clerk		

CONSISTENT WITH STATE LAW, I HEREBY TRANSMIT THE TOWN OF SACO ANNUAL FINANCIAL REPORT FOR THE FISCAL YEAR ENDING JUNE 30, 2021

Submitted by;

Kirsten Albus, Clerk

County Clerk and Recorder or City/Town Clerk-Treasurer

Date

Preparer's contact information:

Email: ebarnardconsulting@gmail.com

Phone: **406.390.4907**

FINANCIAL

SECTION

BASIC

FINANCIAL

STATEMENTS

TOWN OF SACO
STATEMENT OF NET POSITION
FISCAL YEAR ENDING JUNE 30, 2021

	Primary Government			Component Units	
	Governmental Activities	Business-type Activities	Total		
ASSETS					
Cash and cash equivalents	275,034.00	154,154.00	429,188.00		
Investments	0.00	0.00	0.00		
Petty Cash	400.00	0.00	400.00		
Restricted Assets:					
Cash and cash equivalents	0.00	41,939.00	41,939.00		
Investments (at fair value)	0.00	0.00	0.00		
Taxes/Assessments Receivable - (net of allowance for uncollectibles)	17,488.00	0.00	17,488.00		
Accounts/other receivables - (net of allowance for uncollectibles)	7,343.00	(9,308.00)	(1,965.00)		
Internal Balances	0.00	0.00	0.00		
Due from other governments	0.00	0.00	0.00		
Prepaid expense	0.00	0.00	0.00		
Inventories	0.00	0.00	0.00		
Other debits	0.00	0.00	0.00		
Capital assets not being depreciated					
Land	9,955.00	14,079.00	24,034.00		
Construction in progress	0.00	0.00	0.00		
Capital assets being depreciated (net of accumulated depreciation)	390,167.00	1,508,749.00	1,898,916.00		
Total Assets	700,387.00	1,709,613.00	2,410,000.00	0.00	0.00
DEFERRED OUTFLOWS OF RESOURCES					
Deferred Outflows of Resources - Pensions	0.00	0.00	0.00		
Deferred Outflows of Resources - OPEB	0.00	0.00	0.00		
Deferred Outflows of Resources	0.00	0.00	0.00		
Total Deferred Outflows of Resources	0.00	0.00	0.00	0.00	0.00
LIABILITIES					
Accounts payable and other current liabilities	375.00	0.00	375.00		
Matured bonds and interest payable	0.00	0.00	0.00		
Due to other governments	0.00	0.00	0.00		
Revenues collected in advance	0.00	0.00	0.00		
Contracts/Loans/Notes Payable	0.00	0.00	0.00		
Noncurrent liabilities:					
Due within one year	0.00	0.00	0.00		
Due in more than one year	201,692.00	745,760.00	947,452.00		
Pension Liability	0.00	0.00	0.00		
OPEB Liability	0.00	0.00	0.00		
Total Liabilities	202,067.00	745,760.00	947,827.00	0.00	0.00
DEFERRED INFLOWS OF RESOURCES					
Deferred Inflows of Resources - Pensions	0.00	0.00	0.00		
Deferred Inflows of Resources - OPEB	0.00	0.00	0.00		
Deferred Inflows of Resources	0.00	0.00	0.00		
Total Deferred Inflows of Resources	0.00	0.00	0.00	0.00	0.00
NET POSITION					
Net Investment in Capital Assets	199,558.00	783,600.00	983,158.00		
Restricted for:	0.00		0.00		
Debt Service			0.00		
Bond Indenture Requirements		0.00	0.00		
General Government			0.00		
Public Safety			0.00		
Public Works			0.00		
Public Health			0.00		
Culture/Recreation			0.00		
Economic Development			0.00		
Other:			0.00		
Non-spendable (other than Perm Fund)	0.00		0.00		
Permanent Fund principal			0.00		
Unrestricted	298,762.00	180,253.00	479,015.00		
Total Net Position	498,320.00	963,853.00	1,462,173.00	0.00	0.00
Balance check w/GW Statement (should equal zero):	0.00	0.00	0.00		

0.00 0.00 0.00

TOWN OF SACO
STATEMENT OF ACTIVITIES
FISCAL YEAR ENDING JUNE 30, 2021

Functions/Programs	Expenses	Program Revenues: Charges for Services, Fines, Forfeitures, etc.	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions	Net (Expense) Revenue and Changes in Net Position: Primary Government: Governmental Activities	Primary Government: Business-type Activities	Primary Government: Total	Component Units	
Primary government:									
Governmental activities:									
General government	59,402.00	0.00	0.00	0.00	(59,402.00)		(59,402.00)		
Public safety	1,248.00	0.00	0.00	0.00	(1,248.00)		(1,248.00)		
Public works	48,001.00	2,002.00	0.00	0.00	(45,999.00)		(45,999.00)		
Public health	11,496.00	0.00	0.00	0.00	(11,496.00)		(11,496.00)		
Social and economic services	0.00	0.00	0.00	0.00	0.00		0.00		
Culture and recreation	18,964.00	0.00	0.00	0.00	(18,964.00)		(18,964.00)		
Housing/Community Development	0.00	0.00	0.00	0.00	0.00		0.00		
Conservation of Natural Resources	0.00	0.00	0.00	0.00	0.00		0.00		
Interest on long-term debt	10,532.00	0.00	0.00	0.00	(10,532.00)		(10,532.00)		
Miscellaneous	702.00	0.00	0.00	0.00	(702.00)		(702.00)		
Unallocated costs	0.00				0.00		0.00		
Total governmental activities	150,345.00	2,002.00	0.00	0.00	(148,343.00)		(148,343.00)	0.00	0.00
Business-type activities:									
Water	169,368.00	128,479.00				(40,889.00)	(40,889.00)		
Sewer	55,416.00	42,713.00				(12,703.00)	(12,703.00)		
Gas	152,711.00	95,175.00				(57,536.00)	(57,536.00)		
Market Gas	9,467.00					(9,467.00)	(9,467.00)		
						0.00	0.00		
						0.00	0.00		
						0.00	0.00		
Total business-type activities	386,962.00	266,367.00	0.00	0.00	0.00	(120,595.00)	(120,595.00)	0.00	0.00
Total primary government	537,307.00	268,369.00	0.00	0.00	(148,343.00)	(120,595.00)	(268,938.00)		
Component Units:									
Total component units	0.00	0.00	0.00	0.00				0.00	0.00
General revenues:									
Property taxes					167,293.00	0.00	167,293.00		
Local option taxes					0.00		0.00		
Licenses and permits					540.00		540.00		
Unrestricted Federal/State shared revenues					69,460.00	0.00	69,460.00		
Unrestricted grants and contributions					0.00		0.00		
Unrestricted investment earnings					1,321.00	292.00	1,613.00		
Miscellaneous					0.00		0.00		
Gain on sale of capital assets					0.00	0.00	0.00		
Transfers					0.00	0.00	0.00		
Special/Extraordinary items					0.00	0.00	0.00		
							0.00		
Total general revenues and transfers					238,614.00	292.00	238,906.00	0.00	0.00
Change in net position					90,271.00	(120,303.00)	(30,032.00)	0.00	0.00
Total net position - July 1, 2020 as previously reported					408,049.00	1,084,156.00	1,492,205.00		
Prior period adjustments					0.00	0.00	0.00		
Total net position - July 1, 2020 as restated					408,049.00	1,084,156.00	1,492,205.00	1,492,205.00	1,492,205.00
Total net position - June 30, 2021					498,320.00	963,853.00	1,462,173.00	1,492,205.00	1,492,205.00

TOWN OF SACO
BALANCE SHEET
GOVERNMENTAL FUNDS
FISCAL YEAR ENDING JUNE 30, 2021

Account Number	Description	Fund #1000 General	Other Governmental Funds	Total Governmental Funds
	ASSETS			
101000	Cash and cash equivalents	169,457.00	105,577.00	275,034.00
103000	Petty cash	400.00	0.00	400.00
101100	Investments		0.00	0.00
	Restricted Assets:			
102200	Cash and cash equivalents		0.00	0.00
102300	Investments		0.00	0.00
106000	Valuation of investments to fair value		0.00	0.00
110000	Tax/assessment receivable (net of allowance for uncollectibles)	12,084.00	5,404.00	17,488.00
120000	Accounts/other receivables - (net of allowance for uncollectibles)		7,343.00	7,343.00
131000	Due from other funds		0.00	0.00
132000	Due from other governments		0.00	0.00
133000	Advances to other funds		0.00	0.00
140000	Prepaid expense		0.00	0.00
150000	Inventories		0.00	0.00
170000	Other debits		0.00	0.00
	Total Assets	181,941.00	118,324.00	300,265.00
	DEFERRED OUTFLOWS OF RESOURCES			
190000	Deferred Outflows of Resources		0.00	0.00
19xxxx	Deferred Outflows of Resources		0.00	0.00
	Total Deferred Outflows of Resources	0.00	0.00	0.00
	LIABILITIES			
201000	Warrants payable		0.00	0.00
202100	Accounts payable		0.00	0.00
203100	Judgments payable		0.00	0.00
204000	Contracts/loans/notes payable		0.00	0.00
205200	Matured interest payable		0.00	0.00
206100	Other accrued payables		375.00	375.00
211000	Due to other funds		0.00	0.00
212000	Due to other governments		0.00	0.00
214000	Deposits payable		0.00	0.00
216000	Revenues collected in advance		0.00	0.00
233000	Advances from other funds		0.00	0.00
	Total Liabilities	0.00	375.00	375.00
	DEFERRED INFLOWS OF RESOURCES			
220000	Deferred Inflows of Resources		0.00	0.00
223000	Deferred Inflows of Tax Revenues	12,084.00	15,339.00	27,423.00
	Total Deferred Inflows of Resources	12,084.00	15,339.00	27,423.00
	FUND BALANCES:			
250100	Non-spendable		0.00	0.00
	Inventory			0.00
250200	Restricted		0.00	0.00
	General government			0.00
	Public Safety			0.00
	Public Works			0.00
	Culture and Recreation			0.00
	Other: (input explanation			0.00
260100	Committed		0.00	0.00
	General government			0.00
	Public Safety			0.00
	Public Works			0.00
	Culture and Recreation			0.00
	Other: (input explanation			0.00
260200	Assigned		0.00	0.00
				0.00
				0.00
				0.00
271000	Unassigned	169,857.00	102,610.00	272,467.00
	Total Fund Balances	169,857.00	102,610.00	272,467.00
	Total Liabilities, Deferred Inflows of Resources and Fund Balances	181,941.00	118,324.00	
	Balance check (Should equal zero):	*0.00*	*0.00*	
	Amounts reported for governmental activities in the statement of net			
	position are different because:			
	Capital assets used in governmental activities are not financial			
	resources and, therefore, are not reported in the funds.			400,122.00
	Other long-term assets are not available to pay current-period			
	expenditures and, therefore, are deferred outflows of resources in the funds.			27,423.00
	Internal service funds are used by management to charge the costs of			
	providing services within the government. The assets and liabilities of			
	the internal service funds are included in governmental activities in the			
	government-wide statement of net position.			
	Current assets		0.00	
	Accounts payable		0.00	
	Net amount allocated to business-type/external activ		0.00	0.00
	Long-term liabilities, including bonds payable, are not due and payable			
	in the current period and therefore are not reported in the funds.			(201,692.00)
				498,320.00

TOWN OF SACO

STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES

GOVERNMENTAL FUNDS

FISCAL YEAR ENDING JUNE 30, 2021

Account Number	Description	Fund #1000 General	Other Governmental Funds	Total Governmental Funds
	REVENUES			
310000/ 363000	Taxes/assessments	127,587.00	35,224.00	162,811.00
320000	Licenses and permits	540.00	0.00	540.00
330000	Intergovernmental revenues	48,964.00	20,496.00	69,460.00
340000	Charges for services	2,002.00	0.00	2,002.00
350000	Fines and forfeitures	0.00	0.00	0.00
360000	Miscellaneous	0.00	0.00	0.00
370000	Investment and royalty earnings	1,313.00	8.00	1,321.00
				0.00
	Total Revenues	180,406.00	55,728.00	236,134.00
	EXPENDITURES			
	Current:			
410000	General government	46,230.00	0.00	46,230.00
420000	Public safety	1,248.00	0.00	1,248.00
430000	Public works	26,605.00	21,396.00	48,001.00
440000	Public health	2,340.00	9,156.00	11,496.00
450000	Social and economic services	0.00	0.00	0.00
460000	Culture and recreation	18,964.00	0.00	18,964.00
470000	Housing and community development	0.00	0.00	0.00
480000	Conservation of natural resources	0.00	0.00	0.00
490000	Debt Service:			
	Principal	16,168.00	0.00	16,168.00
	Interest	10,532.00	0.00	10,532.00
				0.00
	Capital outlay	13,950.00	0.00	13,950.00
500000	Internal Services			0.00
510000	Miscellaneous	0.00	702.00	702.00
	Total Expenditures	136,037.00	31,254.00	167,291.00
	Excess of revenues (under) expenditures	44,369.00	24,474.00	68,843.00
	OTHER FINANCING SOURCES (USES):			
381010/40	Bonds issued	0.00	0.00	0.00
381010/40	Discount on bonds issued	0.00	0.00	0.00
381050	Inception of capital lease	0.00	0.00	0.00
381070	Notes/loans/intercap issued	0.00	0.00	0.00
382010	Sale of capital assets	0.00	0.00	0.00
383000	Transfers In	0.00	541.00	541.00
521000	Transfers out (Enter as negative)	(541.00)	0.00	(541.00)
384000	Special items - revenue	0.00	0.00	0.00
385000	Extraordinary items - revenue	0.00	0.00	0.00
524000	Special items - expenditure (Negative)	0.00	0.00	0.00
525000	Extraordinary items - expenditure (Negative)	0.00	0.00	0.00
	Total other financing sources (uses)	(541.00)	541.00	0.00
	Net change in fund balances	43,828.00	25,015.00	68,843.00
	Fund balances - July 1, 2020 as previously reported	126,029.00	77,595.00	203,624.00
	Prior period adjustments	0.00	0.00	0.00
	Fund balances - July 1, 2020 as restated	126,029.00	77,595.00	203,624.00
	Fund balances - June 30, 2021	169,857.00	102,610.00	272,467.00

TOWN OF SACO
RECONCILIATION OF THE STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES OF GOVERNMENTAL FUNDS TO THE STATEMENT OF ACTIVITIES
FISCAL YEAR ENDING JUNE 30, 2021

Net change in fund balances - total governmental funds (page 16)		68,843.00
Amounts reported for governmental activities in the statement of activities (page) are different because:		
Governmental funds report capital outlays as expenditures while governmental activities report depreciation expense to allocate those expenditures over the life of the assets:		
Capital assets purchased		13,950.00
Depreciation expense		(14,390.00)
In the Statement of Activities, the loss or gain on the sale or disposal of capital assets is recognized. The fund financial statements recognize only the proceeds from the sale of these assets:		
Gain (loss) on the disposal of capital assets		
Proceeds from the sale of capital assets		0.00
Revenues in the Statement of Activities that do not provide current financial resources are not reported as revenues in the funds:		
Donated capital assets		
Long-term receivables (deferred inflow)		4,482.00
GASB68 recognition of On-behalf payments to Pension Plans		0.00
Long-term debt proceeds provide current financial resources to the governmental funds, but issuing debt increases long-term liabilities in the statement of net position:		
Capital lease proceeds		0.00
Bond sale proceeds		0.00
Loan proceeds		0.00
Repayment of debt principal is an expenditure in the governmental funds, but the repayment reduces long-term debt in the Statement of Net Position:		
Capital lease obligation principal payments		
Long-term loan/contract principal payments		16,168.00
Long-term bond principal payments		
Internal service funds are used by management to charge the costs of certain activities, such as insurance and data processing, to individual funds. The net revenue of the internal service funds is reported with the governmental activities of the government-wide statement of activities net of the amounts allocated to business-type activities and depreciation expense		
Change in net position	0.00	
Net of amount allocated to business-type/external activities	0.00	
Depreciation Expense	0.00	0.00
Some expenses reported in the Statement of Activities do not require the use of current financial resources and therefore are not reported as expenditures in governmental funds		
Accrued compensated absenses		1,218.00
Pension & OPEB expense		0.00
Other:		
Change in Net Position in Governmental Activities		90,271.00

Balance check: *0.00*

TOWN OF SACO
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
FISCAL YEAR ENDING JUNE 30, 2021

Account Number	Description	5210 Water	5310 Sewer	5710 Gas	Nonmajor Enterprise Funds	Totals	Governmental Activities Internal Service
		Business-type Activities					
		Major Enterprise Funds			Nonmajor		
	ASSETS						
	Current Assets						
101000	Cash and cash equivalents	67,513.00	28,590.00	2,931.00	55,120.00	154,154.00	0.00
103000	Petty cash				0.00	0.00	0.00
101100	Investments (at fair value)				0.00	0.00	0.00
110000	Tax/assessment receivable (net of allowance for uncollectibles)				0.00	0.00	0.00
120000	Accounts/other receivables - (net of allowance for uncollectibles)	(13.00)	(920.00)	(8,375.00)	0.00	(9,308.00)	0.00
131000	Due from other funds				0.00	0.00	0.00
132000	Due from other governments				0.00	0.00	0.00
141000	Prepaid expense				0.00	0.00	0.00
150000	Inventories				0.00	0.00	0.00
	Total Current Assets	67,500.00	27,670.00	(5,444.00)	55,120.00	144,846.00	0.00
	Noncurrent Assets						
	Restricted Assets:						
102200	Cash and cash equivalents	41,939.00			0.00	41,939.00	0.00
102300	Investments				0.00	0.00	0.00
133000	Advances to other funds				0.00	0.00	0.00
170000	Other debits				0.00	0.00	0.00
180000	Capital assets:						
	Land			14,079.00	0.00	14,079.00	0.00
	Construction in progress				0.00	0.00	0.00
	Buildings			10,425.00	24,380.00	34,805.00	0.00
	Improvements other than buildings	2,580,446.00			0.00	2,580,446.00	0.00
	Machinery and equipment	31,823.00	19,690.00	1,305,447.00	163,935.00	1,520,895.00	0.00
	Infrastructure (utility systems)				0.00	0.00	0.00
	Less: accumulated depreciation	(1,393,848.00)	(19,690.00)	(1,088,429.00)	(125,430.00)	(2,627,397.00)	0.00
	Capital assets - net of accumulated depreciation	1,218,421.00	0.00	241,522.00	62,885.00	1,522,828.00	0.00
	Total Noncurrent Assets	1,260,360.00	0.00	241,522.00	62,885.00	1,564,767.00	0.00
	Total Assets	1,327,860.00	27,670.00	236,078.00	118,005.00	1,709,613.00	0.00
	DEFERRED OUTFLOWS OF RESOURCES						
199000	Deferred Outflows of Resources - Pensions				0.00	0.00	0.00
199xxx	Deferred Outflows of Resources - OPEB				0.00	0.00	0.00
199xxx	Deferred Outflow of Resources - Others				0.00	0.00	0.00
	Total Deferred Outflows of Resources	0.00	0.00	0.00	0.00	0.00	0.00
	LIABILITIES						
	Current Liabilities						
202100	Accounts payable				0.00	0.00	0.00
203100	Judgments payable				0.00	0.00	0.00
204000	Contracts/loans/notes payable				0.00	0.00	0.00
205200	Matured interest bonds payable				0.00	0.00	0.00
206100	Other accrued payables				0.00	0.00	0.00
209100	Compensated absences				0.00	0.00	0.00
211000	Due to other funds				0.00	0.00	0.00
212000	Due to other governments				0.00	0.00	0.00
214000	Deposits payable				0.00	0.00	0.00
216000	Revenues collected in advance				0.00	0.00	0.00
	Total Current Liabilities	0.00	0.00	0.00	0.00	0.00	0.00
	Noncurrent Liabilities						
231000	Bonds payable	194,000.00			0.00	194,000.00	0.00
233000	Advance from other funds				0.00	0.00	0.00
234000	Judgments payable				0.00	0.00	0.00
235000	Contracts/loans/notes payable	545,228.00			0.00	545,228.00	0.00
236000	Closure/postclosure care costs				0.00	0.00	0.00
237000	Pension Liability				0.00	0.00	0.00
238000	OPEB Liability				0.00	0.00	0.00
239000	Compensated absences	1,877.00	1,569.00	3,086.00	0.00	6,532.00	0.00
	Total Noncurrent Liabilities	741,105.00	1,569.00	3,086.00	0.00	745,760.00	0.00
	Total Liabilities	741,105.00	1,569.00	3,086.00	0.00	745,760.00	0.00
	DEFERRED INFLOWS OF RESOURCES						
220000	Deferred Inflows of Resources - Pensions				0.00	0.00	0.00
22xxxx	Deferred Inflows of Resources - OPEB				0.00	0.00	0.00
22xxxx	Deferred Inflows of Resources - Other				0.00	0.00	0.00
	Total Deferred Inflows of Resources	0.00	0.00	0.00	0.00	0.00	0.00
	NET POSITION						
	Net Investment in Capital Assets	479,193.00	0.00	241,522.00	62,885.00	783,600.00	0.00
	Restricted for:						
					0.00	0.00	0.00
					0.00	0.00	0.00
					0.00	0.00	
					0.00	0.00	
	Unrestricted	107,562.00	26,101.00	(8,530.00)	55,120.00	180,253.00	0.00
	Total Net Position	586,755.00	26,101.00	232,992.00	118,005.00	963,853.00	0.00
	Balance check (Should equal zero):	*0.00*	*0.00*	*0.00*	*0.00*		
			Reconciliation to government-wide statement of net position:				
			Adjustment to reflect the consolidations of internal service funds				
			activities related to enterprise funds				
			Net position of business-type activities			963,853.00	

TOWN OF SACO
STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET POSITION
PROPRIETARY FUNDS
FISCAL YEAR ENDING JUNE 30, 2021

Account Number	Description	Business-type Activities: Major Enterprise Funds 5210 Water	5310 Sewer	5710 Gas	Nonmajor Enterprise Funds	Totals	Governmental Activities: Internal Service
	OPERATING REVENUES						
340000	Charges for services	128,479.00	42,713.00	95,175.00	0.00	266,367.00	0.00
360000	Miscellaneous revenues				0.00	0.00	0.00
363000	Special assessments				0.00	0.00	0.00
					0.00	0.00	
	Total Operating Revenues	128,479.00	42,713.00	95,175.00	0.00	266,367.00	0.00
	OPERATING EXPENSES						
100	Personal services	26,916.00	16,748.00	63,599.00	0.00	107,263.00	0.00
200	Supplies	18,667.00	26,957.00	25,295.00	0.00	70,919.00	0.00
300	Purchased services	13,505.00	11,627.00	8,121.00	0.00	33,253.00	0.00
400	Building materials				0.00	0.00	0.00
500	Fixed charges	6,188.00	84.00	2,510.00	0.00	8,782.00	0.00
810	Loss/Bad debt expense				0.00	0.00	0.00
830	Depreciation	82,103.00		53,187.00	9,467.00	144,757.00	0.00
					0.00	0.00	
	Total Operating Expenses	147,379.00	55,416.00	152,712.00	9,467.00	364,974.00	0.00
	Operating Income (Loss)	(18,900.00)	(12,703.00)	(57,537.00)	(9,467.00)	(98,607.00)	0.00
	NONOPERATING REVENUES (EXPENSES)						
310000	Taxes/assessment revenue				0.00	0.00	0.00
320000	Licenses/permits revenue				0.00	0.00	0.00
330000	Intergovernmental revenue				0.00	0.00	0.00
371000	Interest revenue	292.00			0.00	292.00	0.00
382030	Gain/Loss on Sale of Capital Assets (Loss is negative)				0.00	0.00	0.00
490000	Debt service interest expense (Enter as negative)	(21,988.00)			0.00	(21,988.00)	0.00
384000	Special items - revenue				0.00	0.00	0.00
385000	Extraordinary items - revenue				0.00	0.00	0.00
524000	Special items - expense (enter as negative)				0.00	0.00	0.00
525000	Extraordinary items - expense (enter as negative)				0.00	0.00	0.00
	Total Non-Operating Revenues (Expenses)	(21,696.00)	0.00	0.00	0.00	(21,696.00)	0.00
	Income (Loss) before contributions and transfers	(40,596.00)	(12,703.00)	(57,537.00)	(9,467.00)	(120,303.00)	0.00
	Capital contributions				0.00	0.00	0.00
	Transfers in (out)				0.00	0.00	0.00
	Change in net position	(40,596.00)	(12,703.00)	(57,537.00)	(9,467.00)	(120,303.00)	0.00
	Total net position - July 1, 2020 as previously reported	627,351.00	38,804.00	290,529.00	127,472.00	1,084,156.00	0.00
	Prior period adjustments				0.00	0.00	0.00
	Total net position - July 1, 2020 as restated	627,351.00	38,804.00	290,529.00	127,472.00	1,084,156.00	0.00
	Total net position - June 30, 2021	586,755.00	26,101.00	232,992.00	118,005.00	963,853.00	0.00
			Reconciliation to government-wide statement of activities:				
			Adjustment to reflect the consolidation of internal service fund				
			activities related to enterprise funds				
			Change in net position of business-type activities			(120,303.00)	

TOWN OF SACO
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
FISCAL YEAR ENDING JUNE 30, 2021

							Governmental
	Business-type Activities						Activities
	Major Enterprise Funds				Nonmajor		
	5210	5310	5710	Fund #	Enterprise		Internal
Description	Water	Sewer	Gas	Name	Funds	Totals	Service
CASH FLOWS FROM OPERATING ACTIVITIES							
Cash received from customers	117,501.00	42,956.00	94,431.00	0.00	0.00	254,888.00	0.00
Cash paid to suppliers	(38,360.00)	(38,668.00)	(35,926.00)	0.00	0.00	(112,954.00)	0.00
Cash paid to employees	(25,929.00)	(16,069.00)	(62,687.00)	0.00	0.00	(104,685.00)	0.00
Cash received from interfund services provided					0.00	0.00	0.00
Cash paid for interfund services used					0.00	0.00	0.00
Net cash provided (used) by operating activities	53,212.00	(11,781.00)	(4,182.00)	0.00	0.00	37,249.00	0.00
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES							
Transfers from (to) other funds	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Advances from (to) other funds					0.00	0.00	0.00
Subsidies from taxes and other governments	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net cash provided (used) by capital and related financing activities	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES							
Proceeds from debt					0.00	0.00	0.00
Capital contributions	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Purchases/acquisition/construction of capital assets					0.00	0.00	0.00
Principal on debt (Enter as a negative)	(23,345.00)				0.00	(23,345.00)	0.00
Interest paid on debt (Negative)	(21,988.00)	0.00	0.00	0.00	0.00	(21,988.00)	0.00
Capital lease down payment					0.00	0.00	0.00
Proceeds from sales of capital assets					0.00	0.00	0.00
Net cash provided (used) by capital and related financing activities	(45,333.00)	0.00	0.00	0.00	0.00	(45,333.00)	0.00
CASH FLOWS FROM INVESTING ACTIVITIES							
Proceeds from sales of investments					0.00	0.00	0.00
Purchase of investments (Enter as negative)					0.00	0.00	0.00
Interest earnings	292.00	0.00	0.00	0.00	0.00	292.00	0.00
Net cash provided (used) by investing activities	292.00	0.00	0.00	0.00	0.00	292.00	0.00
Net increase (decrease) in cash and cash equivalents	8,171.00	(11,781.00)	(4,182.00)	0.00	0.00	(7,792.00)	0.00
Cash and cash equivalents - July 1, 2020	101,281.00	40,371.00	7,113.00		55,120.00	203,885.00	0.00
Cash and cash equivalents - June 30, 2021	109,452.00	28,590.00	2,931.00	0.00	55,120.00	196,093.00	0.00
Reconciliation of operating income to net cash provided (used by operating activities:							
Operating income	(18,900.00)	(12,703.00)	(57,537.00)	0.00	(9,467.00)	(98,607.00)	0.00
Adjustments to reconcile operating income to net cash provided (used) by operating activities							
Depreciation expense	82,103.00	0.00	53,187.00	0.00	9,467.00	144,757.00	0.00
(Increase) Decrease in accounts receivable	(10,978.00)	243.00	(744.00)		0.00	(11,479.00)	0.00
(Increase) Decrease in intergovernmental receivables					0.00	0.00	0.00
(Increase) Decrease in due to/from other funds					0.00	0.00	0.00
Increase in allowance for uncollectible accounts					0.00	0.00	0.00
(Increase) decrease in inventories					0.00	0.00	0.00
(Increase) decrease in prepaid items					0.00	0.00	0.00
Increase (decrease) in customer deposits					0.00	0.00	0.00
Increase (decrease) in accounts payable					0.00	0.00	0.00
Increase (decrease) in compensated absences pay.	987.00	679.00	912.00		0.00	2,578.00	0.00
Increase (decrease) in intergovernmental payables					0.00	0.00	0.00
Increase (decrease) in GASB68 pension expense					0.00	0.00	0.00
Total adjustments	72,112.00	922.00	53,355.00	0.00	9,467.00	135,856.00	0.00
Net cash provided (used) by operating activities	53,212.00	(11,781.00)	(4,182.00)	0.00	0.00	37,249.00	0.00
Noncash investing, capital, and financing activities:							
Borrowing under capital lease					0.00	0.00	0.00
Contributions of capital assets from government					0.00	0.00	0.00
Purchase of equipment on account					0.00	0.00	0.00
Increase in fair value of investments					0.00	0.00	0.00
Capital asset trade-ins					0.00	0.00	0.00

TOWN OF SACO

STATEMENT OF FIDUCIARY NET POSITION

FIDUCIARY FUNDS

FISCAL YEAR ENDING JUNE 30, 2021

Account Number	Description	Trust Funds: Pension Trust Funds (7000-7005)	Trust Funds: Investment Trust Funds (7006-7009)	Trust Funds: Private Purpose Trust Funds (7010-7099)	Custodial Funds: External Investment Pool (not in trust)	Custodial Funds: Custodial Funds (7100-7999)
	ASSETS					
101000	Cash and cash equivalents	1,165.00				8,135.00
101100	Investments (at fair value)					
	Receivables:					
110000	Tax/assessment receivable (net of allowance for uncollectibles)					
120000	Accounts/other receivables - (net of allowance for uncollectibles)					
128000	Interest receivable					
130000	Due from Others					
170000	Other assets:					
	Total Assets	1,165.00	0.00	0.00	0.00	8,135.00
190000	**Deferred Outflows of Resources**					
	LIABILITIES					
201000	Warrants payable					8,135.00
202000	Accounts payable					
203000	Judgment/Protested payable					
204000	Contracts payable					
211000	Due to other funds					
212000	Due to other governments					
230000	Other long-term liabilities					
	Other liabilities:					
	Total Liabilities	0.00	0.00	0.00	0.00	8,135.00
220000	**Deferred Inflows of Resources**					
	NET POSITION					
	Restricted for:					
	Unrestricted	1,165.00	0.00	0.00	0.00	0.00
	TOTAL NET POSITION	1,165.00	0.00	0.00	0.00	0.00
	Balance check:	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*

		TOWN OF SACO					
		STATEMENT OF CHANGES IN FIDUCIARY NET POSITION					
		FIDUCIARY FUNDS					
		FISCAL YEAR ENDING JUNE 30, 2021					
			Trust Funds			**Custodial Funds**	
			Pension	**Investment**	**Private Purpose**	**External**	**Custodial**
	Account		**Trust Funds**	**Trust Funds**	**Trust Funds**	**Investment Pool**	**Funds**
	Number	**Description**	**(7000-7005)**	**(7006-7009)**	**(7010-7099)**	**(not in trust)**	**(7100-7999)**
		ADDITIONS:					
	310000	Tax revenue					
	310000	Tax revenue collected for other governments					
	330000	Intergovernmental revenue					
	360000	Miscellaneous revenue					
	370000	Investment earnings					
	366000	Contributions to pension plan					
	366000	Contributions to investment trust					
		Other additions:					
		Total Additions	0.00	0.00	0.00	0.00	0.00
		DEDUCTIONS:					
		Administrative expenses					
		Refunds of contributions					
		Benefit payments					
		Distribution of investments					
		Refunds or transfers to others					
		Payments of taxes collected for others					
		Other deductions: specify					
		Total Deductions	0.00	0.00	0.00	0.00	0.00
		Change in net position	0.00	0.00	0.00	0.00	0.00
		Total net position - July 1, 2020 as previously reported	1,165.00				
		Prior period adjustments					
		Total net position - July 1, 2020 as restated	1,165.00	0.00	0.00	0.00	0.00
		Total net position - June 30, 2021	1,165.00	0.00	0.00	0.00	0.00

TOWN OF SACO
NOTES TO THE BASIC FINANCIAL STATEMENTS
FISCAL YEAR ENDING JUNE 30, 2021

[Note to the preparer - Note disclosures contained herein are illustrative only, and are provided for your convenience. Local governments should modify these note disclosures as applicable to their entity.]

1. Summary of Significant Accounting Policies

The financial statements have been prepared in accordance with accounting principles generally accepted as applied to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for governmental accounting and financial reporting principles. Pronouncements adopted in the fiscal year ending June 30, 2021 are described below.

The government adopted the provisions of the following GASB Statements:

GASB 83 - This statement addresses accounting and financial reporting for certain asset retirement obligations (AROs).
An ARO is a legally enforceable liability associated with the retirement of a tangible capital asset.
GASB 88 - The objective of the statement is to improve the information that is disclosed in the notes to government financial statements related to debt, including direct borrowing and direct placements. It also clarifies which liabilities governments should include when disclosing information related to debt. The statement requires additional essential information related to debt be disclosed in the notes to the financial statements, including unused lines of credit; assets pledged as collateral for the debt; and terms specified in debt agreements related to significant events of default with finance-related consequences, significant termination events with finance-related consequences, and significant subjective acceleration clauses.

The significant accounting policies are described below.

A. Reporting Entity

The Town of Saco is a political subdivision of the State of Montana governed by a Mayor and Council (Commission) duly elected by the registered voters of the Town. The Town of Sacoutilizes the Comm - Ex form of government. The accompanying financial statements present the primary government and its component units, entities for which the government is considered to be financially accountable. Blended component units are part of the government's operations. Each discretely presented component unit is reported in a separate column in the government-wide financial statements to emphasize that it is legally separate from the government, but is financially accountable to or fiscally dependent upon the primary government or their omission from the financial statements would be misleading or incomplete.

B. Government-wide and fund financial statements

The government-wide financial statements (i.e., the statement of net position and the statement of changes in net position) report information on all of the nonfiduciary activities of the primary government and its component units. For the most part, the effect of interfund activity has been removed from these statements. Governmental activities, which normally are supported by taxes and intergovernmental revenues, are reported separately from business-type activities, which rely to a significant extent on fees and charges for support. Likewise, the primary government is reported separately from certain legally separate component units for which the primary government is financially accountable.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segment are offset by program revenues. Direct expenses are those that are clearly identifiable with a specific function. Program revenues include: 1) charges to customers who purchase, use, or directly benefit from goods, services, or privileges provided by a given function; and 2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function. Taxes and other items not properly included among program revenues are reported instead as a general revenues.

Separate financial statements are provided for governmental funds, proprietary funds, and fiduciary funds, even though the latter are excluded from the government-wide statements. Major individual governmental funds and major individual enterprise funds are reported in separate columns in the fund financial statements.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - cont.

C. Measurement focus, basis of accounting, and financial statement presentation

The government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting, as are the proprietary fund and fiduciary fund financial statements. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Property taxes are recognized as revenues in the year for which they are levied. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

Governmental fund financial statements are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the government considers revenues to be available if they are collected within 60 days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences and claims and judgments, are recorded only when payment is due.

Property taxes, licenses and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current period. Only the portion of special assessments receivable due within the current fiscal period is considered to be susceptible to accrual as revenue of the current period. All other revenue items are considered to be measurable and available only when cash is received by the government. Taxes and assessments receivable remaining uncollected at year end are offset by deferred tax/assessment revenue, a deferred inflow of resources, since they are not available to pay liabilities of the current period.

Both financial statements presented on the accrual basis of accounting and the modified accrual basis of accounting recognize grants and similar items, pending purely routine requirements such as filing reimbursement and/or progress reports, where all eligibility requirements imposed by the provider have been met, other than time requirements, as revenue in the current period. Grants and similar items received prior to meeting time requirements but after all eligibility requirements are met, are recognized as deferred inflows of resources until use is required or first permitted.

The government reports the following major governmental funds:

General Fund - This is the government's primary operating fund. It accounts for all financial resources of the general government, except those required to be accounted for in another fund.

The government reports the following major proprietary funds:

Water Enterprise Fund - This fund is used to account for the operating and nonoperating revenues and expenses of the public water utility system. The fund is maintained on the full accrual basis of accounting.

Sewer Enterprise Fund - This fund is used to account for the operating and nonoperating revenues and expenses of the public sewer utility system. The fund is maintained on the full accrual basis of accounting.

Utility Gas Enterprise Fund - This fund is used to accout for the operating an nonoperating revenus and expenses of the public natural gas system. This fund id maintained on the full accrual basis of accounting.

Additionally, the government reports the following fund types:

Fiduciary Funds - Used to account for assets held by the City in a trustee capacity or as an agent for individuals, private organizations, other governments, and/or other funds. These may include trust or custodial funds.

Trust Funds - These funds are used to account for resources legally held in trust for use by another government, individual, or organization. These may include pension trust funds, investment trust funds, or private-purpose trust funds.

Pension Trust Funds - These funds are used to account for the activities of a local retirement plan which accumulates resources for pension benefit payments to qualified employees.

Investment Trust Funds - These funds are used to report the external portion of investment pools held in a qualifying trust.

Private Purpose Trust Funds - These funds are used to account for resources legally held in trust for use by another government, individual, or organization as identified by the donor. The use of these funds may be restricted to only the interest earned on the investment of the principal or the entire amount may be used in accordance with the terms of the donor.

Custodial Funds - These funds are used to account for fiduciary activities not held in a trust or an equivalent arrangement. These may include external investment pools (not held in trust) and custodial funds.

External Investment Pools (not held in trust) - These funds are used to account for the external portion of investment pools not held in a qualifying trust.

Custodial Funds - These funds are used to account for fiduciary activities not held in a trust or an equivalent arrangement.

Internal Service Funds - These funds account for services provided by the government to its various departments or agencies or to other governments, on a cost recovery basis.

Permanent Funds - These funds are used to account for certain funds held in a trust capacity wherein the principle balance of the trust cannot be expended, only the interest earned on the investment of such funds.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - cont.

C. Measurement focus, basis of accounting, and financial statement presentation - cont.

The Governmental Accounting Standards Board (GASB) issued Statement No. 62. The Statement codifies the requirements of all pre-November 30, 1989 FASB and AICPA pronouncements that apply to state and local governments. Both the government-wide and proprietary fund financial statements follow the guidance of the Governmental Accounting Standards Board. Governments can continue to apply, as other accounting literature, post-November 30, 1989 FASB pronouncements that do not conflict with or contradict GASB pronouncements, including Statement No. 62. The government has adopted the provisions GASB Statement No. 62.

As a general rule the effect of interfund activity has been eliminated from the government-wide financial statements. Exceptions to this general rule are payments-in-lieu of taxes and other charges between the governments' enterprise functions and various other functions of the government. Elimination of these charges would distort the direct costs and program revenues reported for the various functions.

Amounts reported as program revenues include: 1) charges to customers for goods, services, or privileges provided, 2) operating grants and contributions, and 3) capital grants and contributions, including special assessments. Internally dedicated resources are reported as general revenues rather than as program revenues. Likewise, general revenues include all taxes.

Proprietary funds distinguish operating revenues and expenses from nonoperating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the enterprise funds and the government's internal service funds are charges to customer for services provided. Operating expenses for enterprise funds and internal service funds include the cost of providing such services and the depreciation of capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

D. Assets, deferred outflows of resources, liabilities, deferred outflows of resources, and fund balance/net position

1. Deposits and investments

Allowable deposit and investment of public funds is governed by Title 7, Chapter 6, Part 2 of the Montana Code Annotated (MCA). Deposits and investments may include demand, time, and savings deposits, direct obligations of the United States Government, securities issued by agencies of the United States, investments in the Montana Short-Term Investment Program (STIP), repurchase agreements, and registered warrants.

Cash equivalents are short-term, highly liquid investments that are both readily convertible to known amounts of cash, and have maturities at purchase date of three months or less. The cash and cash equivalents (including restricted assets) are considered to be cash on hand, demand, savings and time deposits, STIP and all short-term investments with original maturity dates of three months or less from the date of acquisition.

Investments, with limited exceptions, are reported at fair value. Investments in nonparticipating certificates of deposit are reported at cost. Money market investments, including U.S. Treasury and Agency obligations, that mature within one year of acquisition are reported at amortized cost. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is determined annually, and requires the use of valuation techniques, a specific method or combination of methods using one or more of three approaches: market, cost or income approach.

2. Receivables and payables

Activity between funds that are representative of lending/borrowing arrangements outstanding at fiscal year end are referred to as either "due to/from other funds" (i.e. the current portion of interfund loans) or "advances to/from other funds" (i.e. the non-current portion of interfund loans). Advances between funds are not available for appropriation and are not expendable available financial resources.

Accounts receivables are shown net of allowance for uncollectible. Property tax receivables are offset by a deferred inflow account since they are not available to pay liabilities of the current period. All property tax levies are set at the time of the adoption of the annual budget. The real estate taxes are payable in two installments, the first due by November 30 and the second by May 31. Personal property taxes are assessed in April or May and are payable within 30 days of the issuance of the notice.

3. Inventories and prepaid items

All inventories are valued at cost. Inventories are recorded as expenditures when purchased (when consumed).

Certain payments reflect costs applicable to future accounting periods and are recorded as prepaid items in both the government-wide and fund financial statements.

4. Restricted assets

Certain assets of the enterprise funds are restricted for specific use as required by the bond indenture agreement covenants established with the issuance and sale of the revenue bonds representing a liability to the enterprise funds. These restricted assets represent cash and cash equivalents restricted for use to repay current debt, establish a reserve for future debt and they establish a replacement and depreciation reserve for the purpose of replacing the system in the future.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - cont.

F. Assets, deferred outflows of resources, liabilities, deferred outflows of resources, and fund balance/net position -cont.

5. Capital assets

Capital assets, which include property, plant, equipment, and infrastructure assets (e.g., roads, bridges, sidewalks, curbs, etc.), are reported in the applicable governmental or business-type activities columns in the government-wide financial statements. Capital assets, other than infrastructure assets, are defined by the Local Government as assets with an initial cost of more than $5000.00 and an estimated useful life in excess of 2 years. Such assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets are recorded at estimated acquisition value at the date of donation.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets lives are not capitalized.

Property, plant, and equipment of the primary government, as well as the component units, is depreciated using the straight line method over the following estimated useful lives:

Assets	Years
Buildings	5 to 50
Building improvements	5 to 50
Public domain infrastructure	
System infrastructure	
Vehicles	3 to 40
Equipment other than vehicles	3 to 40
Office equipment	3 to 40
Computer equipment	3 to 40

6. Deferred outflows of resources

Deferred outflow of resources is a financial statement element. A deferred outflow of resources is a consumption of net assets by the government that is applicable to a future reporting period. The government-wide statement of net position, proprietary fund statement of net position, and governmental fund balance sheet report a separate section for deferred outflows of resources. Deferred outflows of resources may be disclosed on the face of the financial statements, in the notes to the financial statements, or a combination of both.

Deferred outflows of resources not disclosed on the face of the financial statements are as follows:

Description:	Amount

7. Compensated absences

As required by State law, the Local Government allows for employees to accumulate earned but unused vacation and sick leave benefits. Unused vacation leave benefits are 100 percent payable upon termination and 1/4 of unused sick leave benefits are payable upon termination. Such amounts are reported as liabilities in the appropriate governmental or business-type activity in the government wide statements. Expenditures for unpaid vacation and sick leave benefits are recorded when paid in the governmental funds on the modified accrual basis of accounting and expenses for vacation and sick leave benefits are recorded when accrued in the proprietary funds on the full accrual basis of accounting.

8. Long-term obligations

In the government-wide financial statements, and proprietary fund types in the fund financial statements, long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities, business-type activities, or proprietary fund type statement of net position. Bond premiums and discounts, as well as issuance costs, are deferred and amortized over the life of the bond issue using the effective interest method. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are reported as deferred charges and amortized over the term of the related debt.

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing sources while discounts of debt issuance are reported as other financing uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures.

9. Deferred inflows of Resources

A deferred inflow of resources is an acquisition of net assets by the government that is applicable to a future reporting period. The government-wide statement of net position, proprietary fund statement of net position, and governmental fund balance sheet report a separate section for deferred inflows of resources. Deferred inflows or resources may be disclosed on the face of the financial statements, in the notes to the financial statements, or a combination of both.

Deferred inflows of resources not disclosed on the face of the financial statements are as follows:

Description:	Amount

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - cont.

D. Assets, deferred outflows of resources, liabilities, deferred inflows of resources, and fund balance/net position - cont.

10. Fund balance/Net Position

Governmental Accounting Standards Board (GASB) Statement No. 54 requires presentation of governmental fund balances by specific purpose. In the governmental fund financial statements, the fund balance classifications are presented either discretely or in the aggregate for the following fund balance classifications: non-spendable, restricted, committed, assigned, and unassigned. GASB Statement No. 63 resulted in presentation changes in the government-wide and proprietary fund financial statements. Among other changes, equity is classified as 'net position'. Components of net position are net investment in capital assets, restricted, and unrestricted. See notes K and L for further information.

11. Net Position significantly impacted by Deferred Outflows or Deferred Inflows of Resources.
GASB 63 requires disclosure of any deferrals that have a significant impact on Net Position.
None

2. RECONCILIATION OF GOVERNMENT-WIDE AND FUND FINANCIAL STATEMENTS

A. Explanation of certain differences between the governmental fund balance sheet and the government-wide statement of net position
The governmental fund balance sheet includes a reconciliation between fund balance - total governmental funds and net position - governmental activities as reported in the government-wide statement of net position.
None

B. Explanation of certain differences between the governmental fund statement of revenues, expenditures, and changes in fund balances and the government-wide statement of activities
The governmental fund statement of revenues, expenditures, and changes in fund balances includes a reconciliation between net changes in fund balances - total governmental funds and changes in net position of governmental activities as reported in the government-wide statement of activities.
None

C. Explanation of certain differences between the proprietary fund statement of net position and the government-wide statement of net position.
The proprietary fund statement of net position includes a reconciliation between *net position - total enterprise funds* and *net position of business-type activities* as reported in the government-wide statement of net position.
None

3. COMPLIANCE AND ACCOUNTABILITY

A. Budgetary Information

The Local Government adopts an annual budget for all of its funds in accordance with Title 7, Chapter 6, Part 40 of the Montana Code Annotated. Statute requires the adoption of a preliminary budget, public hearings on the preliminary budget and the final adoption of the budget by the later of the first Thursday after the first Tuesday in September or within 30 calendar days of the receipt of the certified taxable valuations from the Department of Revenue. The Local Government must also submit a copy of the final budget to the Department of Administration by the later of October 1 or 60 days after the receipt of the taxable values from the Department of Revenue.

State statute limits the making of expenditures or incurring of obligations to the amount of the final budget as adopted or as amended. Budget transfer and amendments are authorized by law, and in some instances, may require further public hearings. Any budget amendments providing for additional appropriations must identify the fund reserves, unanticipated revenue, or previously unbudgeted revenue that will fund the appropriations.

Appropriations are created by fund, function, and activity and may further be detailed by department. Expenditure limitations imposed by law extend to the department level which is identified as the legal level of budgetary control.

Encumbrance accounting is (is not) employed for the governmental funds. Encumbrances (e.g. purchase orders, contracts) outstanding at year end are reported as reservations of fund balances and do not constitute expenditures or liabilities because the commitments will be reappropriated and honored during the subsequent fiscal year.

B. Excess of expenditures over appropriations

(Disclose here any instances of budget overdrafts at the fund level)

C. Deficit fund equity

(Disclose here any instance of deficit fund equity balances and the reasons for such deficit)

4. DETAILED NOTES ON ALL FUNDS - cont.

C. Capital assets

Capital asset activity for the fiscal year ended June 30, 2021 was as follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Governmental activities:				
Capital assets not being depreciated				
Land	9,955.00	0.00	0.00	9,955.00
Construction in progress	0.00	0.00	0.00	0.00
Total capital assets not being depreciated	9,955.00	0.00	0.00	9,955.00
Capital assets being depreciated				
Buildings	503,273.00	0.00	0.00	503,273.00
Intangibles/works of art	0.00	0.00	0.00	0.00
Improvements other than buildings	0.00	0.00	0.00	0.00
Machinery and equipment	32,437.00	13,950.00	0.00	46,387.00
Infrastructure	0.00	0.00	0.00	0.00
Total capital assets being depreciated	535,710.00	13,950.00	0.00	549,660.00
Less accumulated depreciation for:				
Buildings	(117,020.00)	0.00	(12,358.00)	(129,378.00)
Intangibles/works of art	0.00	0.00	0.00	0.00
Improvements other than buildings	0.00	0.00	0.00	0.00
Machinery and equipment	(28,083.00)	0.00	(2,032.00)	(30,115.00)
Infrastructure	0.00	0.00	0.00	0.00
Total accumulated depreciation	(145,103.00)	0.00	(14,390.00)	(159,493.00)
Total capital assets being depreciated	390,607.00	13,950.00	(14,390.00)	390,167.00
Governmental activities capital assets net	400,562.00	13,950.00	(14,390.00)	400,122.00
Business-type activities:				
Capital assets not being depreciated				0.00
Land	14,079.00			14,079.00
Construction in progress				0.00
Total capital assets not being depreciated	14,079.00	0.00	0.00	14,079.00
Capital assets being depreciated				
Buildings and system	34,805.00			34,805.00
Intangibles/works of art				0.00
Improvements other than buildings	2,580,446.00			2,580,446.00
Machinery and equipment	1,520,895.00			1,520,895.00
Source of supply				0.00
Pumping plant				0.00
Treatment plant				0.00
Transmission and distribution				0.00
General plant				0.00
Total capital assets being depreciated	4,136,146.00	0.00	0.00	4,136,146.00
Less accumulated depreciation for:				
Buildings and system	(11,272.00)		(1,185.00)	(12,457.00)
Intangibles/works of art				0.00
Improvements other than buildings	(1,282,354.00)		(81,131.00)	(1,363,485.00)
Machinery and equipment	(1,189,014.00)		(62,441.00)	(1,251,455.00)
Source of supply				0.00
Pumping plant				0.00
Treatment plant				0.00
Transmission and distribution				0.00
General plant				0.00
Total accumulated depreciation	(2,482,640.00)	0.00	(144,757.00)	(2,627,397.00)
Total capital assets being depreciated	1,653,506.00	0.00	(144,757.00)	1,508,749.00
Business-type activities capital assets net	1,667,585.00	0.00	(144,757.00)	1,522,828.00

Balance check with page 18: 0.00

4. DETAILED NOTES ON ALL FUNDS - cont.

C. Capital assets - cont.

Depreciation expense was charged to functions/programs of the primary government as follows:

Governmental activities:	
General government	14,390.00
Public safety	0.00
Public works	0.00
Public health	0.00
Social and economic services	0.00
Culture and recreation	0.00
Housing and community development	0.00
Conservation of natural resources	0.00
Uncategorized	0.00
Total depreciation expense - governmental activities	14,390.00
Business-type activities:	
Water	82,103.00
Sewer	
Gas	53,187.00
Market Gas	9,467.00
Total depreciation expense - business-type activities	144,757.00

4. DETAILED NOTES ON ALL FUNDS - cont.

G. Long-term Debt

Changes in long-term obligations for the year ended June 30, 2021, are as follows:

	Balance at 1-Jul-20	Increases	Decreases	Balance at June 30, 20XX	Due within One Year
Governmental activities:					
General Obligation bonds	$ -	$ -	$ -	$ -	$ -
Special Assessment/Improvement District bonds:	$ -	$ -	$ -	$ -	$ -
Notes from direct borrowings and direct placements	$ 216,732.00	$ -	$ 16,168.00	$ 200,564.00	$ 16,168.00
Other:	$ -	$ -	$ -	$ -	$ -
Other:	$ -	$ -	$ -	$ -	$ -
Total	$216,732	$0	$16,168	$200,564	$16,168
Business-type activities:					
Water Revolving fund Bond	$ 206,000	$ -	$ 12,000	$ 194,000	$ 12,000
Notes from direct borrowings	$ 556,573	$ -	$ 11,345	$ 545,228	$ 11,345
Other:	$ -	$ -	$ -	$ -	$ -
Total	$762,573	$0	$23,345	$739,228	$23,345

Debt Service requirements on long-term debt at June 30, 2021, are as follows:

	Governmental Activities			
	Bonds		Notes from Direct Borrowings and Direct Placements	
Year Ending June 30,	Principal	Interest	Principal	Interest
2021	$ -	$ -	$ 16,168	$ 7,832
2022	$ -	$ -	$ 16,631	$ 7,369
2023	$ -	$ -	$ 17,266	$ 6,734
2024	$ -	$ -	$ 17,925	$ 6,075
2025	$ -	$ -	$ 18,609	$ 5,391
2026-2030	$ -	$ -	$ 127,545	$ 19,043
Thereafter	$ -	$ -	$ 2,588	$ 47
	$ -	$ -	$ 216,732	$ 52,491

	Business-type Activities			
	Bonds		Notes from Direct Borrowings and Direct Placements	
Year Ending June 30,	Principal	Interest	Principal	Interest
2021	$ 12,000	$ 5,445	$ 11,345	$ 16,543
2022	$ 12,000	$ 5,280	$ 11,690	$ 16,198
2023	$ 12,000	$ 4,950	$ 12,046	$ 15,842
2024	$ 12,000	$ 4,620	$ 12,412	$ 15,476
2025	$ 14,000	$ 4,276	$ 12,790	$ 15,098
2026-2030	$ 72,000	$ 15,593	$ 68,772	$ 69,413
Thereafter	$ 72,000	$ 5,074	$ 427,518	$ 145,150
	$ 206,000	$ 45,238	$ 556,573	$ 293,720

During the fiscal year, in addition to the debt listed above the local government had the following changes in Other Long-Term Liabilities for Other Postemployment Benefits (OPEB), Net Pension Liability and Compensated Absences.

TOWN OF SACO
NOTES TO THE BASIC FINANCIAL STATEMENTS
FISCAL YEAR ENDING JUNE 30, 2021

4. DETAILED NOTES ON ALL FUNDS - cont.

OPEB Disclosure - Alternative Measurement Method

OTHER POST EMPLOYMENT BENEFITS (OPEB) NOTE DISCLOSURE

(Note: The following note disclosure should be modified, as appropriate, to correctly describe the Local Government's OPEB. This illustration represents a disclosure for a Local Government ***having fewer than 100 plan participants (active and inactive), and therefore qualifies to use the Alternative Measurement Method to calculate the ending OPEB liability.***

Post Employment Benefits Other Than Pensions (OPEB)

Plan description: As required by State law (MCA 2-18-704), the [County/City/Town] allows its retiring employees with at least five years of service and who are at least 50 years of age, along with their eligible spouses and dependents, the option to continue participation in the local government's group health insurance plan until the retiree becomes eligible for Medicare coverage. This option creates a defined benefit other post-employment benefits plan (OPEB) since retirees are typically older than the average age of active plan participants and therefore receive a benefit of lower insurance rates. The OPEB plan is a single-employer defined benefit plan administered by the [County/City/Town]. No assets are accumulated in a trust that meets the criteria in paragraph 4 of GASB Statement 75. The [County/City/Town] covers OPEB costs when they come due, on a pay-as-you-go basis.

Because the local government has fewer than 100 employees (active and inactive) that are provided with OPEB through the plan, the local government qualifies to use the alternative measurement method for calculating the OPEB liability.

(Note: For OPEB other than for the implicit rate subsidy, as described above, enter the plan description here.)
Plan description:

Benefits provided: The OPEB plan provides healthcare insurance benefits for retirees, eligible spouses and dependents as defined in MCA 2-18-704. Eligible retirees are required to pay the full amount of their health insurance premiums.

Employees covered by benefit terms: As of [June 30, 20XX], the following employees were covered by the benefit terms:

Inactive employees or beneficiaries currently receiving benefit payments	[enter number]
Inactive employees entitled to but not yet receiving benefit payments	[enter number]
Active employees	[enter number]
	0

Total OPEB liability: As of [June 30, 20XX], the [County's/City's/Town's] total OPEB liability is $XX,XXX and was determined by using the alternative measurement method as of [enter date] (*add, if applicable, i.e. if the calculation using the alternative measurement method is not performed as of the measurement date)* and was rolled forward to a measurement date of [enter date], utilizing update procedures incorporating alternative measurement method assumptions.

Actuarial assumptions and other inputs: The total OPEB liability as of [June 30, 20XX] was determined using the following assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

Turnover rate	0.00%	
Discount rate	0.00%	
Salary increases	0.00%	average, including inflation
Healthcare cost trend rate	0.00%	for 20__, decreasing ____ percent per year to an ultimate rate of ____ percent

(NOTE: Necessary disclosure items include the following. The illustration above may not be all-inclusive:)

Demographic information
Expected retirement age
Marital and dependency status
Mortality
Turnover
Healthcare cost trend rates
Use of health insurance premiums
Discount rate
Other economic assumptions

(See GASBS 75, paragraphs 224 - 226, and illustration 5 for examples of how to apply the alternative method.)

Changes in the total OPEB liability

	Total OPEB Liability
Balance at [June 30, 20XX]	$ -
Changes for the year:	
Service cost	
Interest	$ -
Changes in benefit terms	
Differences between expected and actual experience	$ -
Changes in assumptions or other inputs	$ -
Benefit payments	$ -
Net changes	$ -
Balance at [June 30, 20XX]	$ -

Sensitivity of the total OPEB liability to changes in the discount rate: The following presents the total OPEB liability reported by the [County/City/Town], as well as how that liability would change if the discount rate used to calculate the OPEB liability were decreased or increased by 1 percent:

	1% Decrease (____%)	Discount Rate (____%)	1% Increase (____%)
Total OPEB liability	$ -	$ -	$ -

Sensitivity of the total OPEB liability to changes in the healthcare cost trend rates: The following presents the total OPEB liability reported by the [County/City/Town], as well as how that liability would change if the healthcare trend rate used in projecting benefit payments were to decrease or increase by 1 percent:

	1% Decrease (____%)	Healthcare Cost Trend Rates*	1% Increase (____%)
Total OPEB liability	$ -	$ -	$ -

(See the actuarial assumptions and other inputs disclosure above to determine the healthcare cost trends used to calculate the OPEB liability.)*

OPEB expense and deferred outflows of resources and deferred inflows of resources related to OPEB: For the year ended June 30, 20XX, the [County/City/Town] recognized OPEB expense of $XX,XXX. The [County/City/Town] does not report deferred outflows of resources or deferred inflows of resources related to OPEB as there were no differences between expected and actual experience or changes in assumptions performed under the alternative measurement method. In addition, since the [County/City/Town] records costs as they come due, there are deferred outflow of resources for contributions to the OPEB plan.

(or, *if applicable, disclose the deferred outflows and inflows of resources amounts here:)*
The [County/City/Town] reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ -	$ -
Changes in assumptions or other inputs	$ -	$ -
Total	$ -	$ -

Amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Year ended [June 30]:	
20XX	$ -
20XX	$ -
20XX	$ -
20XX	$ -
20XX	$ -
Thereafter	$ -

TOWN OF SACO
NOTES TO THE BASIC FINANCIAL STATEMENTS
FISCAL YEAR ENDING JUNE 30, 2021

NET PENSION LIABILITY NOTES:
Public Employees' Retirement System - Defined Benefit:

MPERA GASB Information

http://mpera.mt.gov/Portals/175/GASB/2020/Reports/PERS/PERSDBRP_2021_6353.pdf

4. DETAILED NOTES ON ALL FUNDS - cont.

J. 1. Fund Balance Disclosure:

The Governmental Accounting Standards Board, Statement No. 54, requires presentation of governmental fund balance by specific purpose. In the basic financial statements, the fund balance classifications are presented in the aggregate for the following fund balance classifications: non-spendable, restricted, committed, assigned and unassigned.

Non-spendable includes fund balances that cannot be spent either because it is not in spendable form or because of legal or contractual constraints.

Restricted includes fund balances that are constrained for specific purposes which are externally imposed by providers such as creditors, or amounts constrained due to law, constitutional provisions or enabling legislation.

Committed includes fund balance amounts that are constrained for specific purposes that are internally imposed by the government through formal action of the highest level of decision-making authority and does not lapse at year-end.

Assigned includes fund balance amounts that are intended to be used for a specific purpose that are neither considered restricted or committed.

Unassigned fund balance includes positive fund balance within the General Fund which has not been classified within the above mentioned classifications. Negative fund balances in other governmental funds will be reported as unassigned.

2. Net Position

The government-wide and proprietary fund financial statements report net position. Net position represents the difference between assets plus deferred outflow of resources and liabilities plus deferred inflows of resources. Components of net position are net investment in capital assets, restricted and unrestricted. Net investment in capital assets consists of capital assets net of accumulated depreciation plus capital related deferred outflows of resources, less outstanding balance of any related borrowing used for the acquisition, construction, or improvement of those assets and capital related deferred inflows of resources. Restricted net position is defined above (see J1), and unrestricted net position is any portion of net position that does not meet the definition of net investment in capital assets and restricted.

K. Spending policy:

The Local Government receives inflows from revenue and other financial sources from numerous sources for use in the General Fund. The Fund will expend those resources on multiple purposes of the local government. The intention of this spending policy is to identify the expenditure order of resource categories for the General Fund. Resources will be categorized according Generally Accepted Accounting Principles (GAAP) for state and local governments. When both restricted and unrestricted resources are available in the General Fund, the following spending policy will apply or the default will apply is a policy has not been adopted:

1st:	Restricted
2nd:	Committed
3rd:	Assigned
4th:	Unassigned

The Local Government receives inflows from revenue and other financial sources from numerous sources for use in the Special Revenue, Debt Service and Capital Project funds. These funds will expend those resources on the specific purpose of the fund. The intention of this spending policy is to identify the expenditure order resource categories for the Funds. Resources will be categorized according to Generally Accepted Accounting Principles (GAAP) for state and local governments. When both restricted and unrestricted resources are available in these funds, the following spending policy will apply or the default will apply is a policy has not been adopted.

1st:	
2nd:	
3rd:	

4. DETAILED NOTES ON ALL FUNDS - cont.

L. Minimum Fund Balance Policy:

The Local Government has does not have a minimum fund balance policy in place. *(Describe the fund balance policy if applicable.*)

REQUIRED

SUPPLEMENTARY

INFORMATION

TOWN OF SACO					
GENERAL FUND					
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE					
BUDGET AND ACTUAL					
FISCAL YEAR ENDING JUNE 30, 2021					
					VARIANCE WITH
		BUDGETED AMOUNTS			FINAL BUDGET
Account				ACTUAL	POSITIVE
Number	Description	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes	129,784.00	129,784.00	127,587.00	(2,197.00)
314140	Local option taxes				0.00
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses	190.00	190.00	40.00	(150.00)
323050	Other permits			500.00	500.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants			23,884.00	23,884.00
332000/333	Federal shared revenues				0.00
334000	State grants				0.00
335000/336	State shared revenues	25,490.00	25,490.00	25,080.00	(410.00)
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government			100.00	100.00
342000	Public safety				0.00
343000	Public works			1,667.00	1,667.00
344000	Public health			235.00	235.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
360000	**Miscellaneous**				0.00
370000	**Investment and royalty earnings**	911.00	911.00	1,313.00	402.00
	Total revenues	156,375.00	156,375.00	180,406.00	24,031.00
	EXPENDITURES				
	Current:				
410000	**General Government:**				
410100	**Legislative services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
410200	**Executive services**				
100	Personal services	8,687.00	8,687.00	6,583.00	2,104.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
410300	**Judicial services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00

TOWN OF SACO

GENERAL FUND

STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE

BUDGET AND ACTUAL

FISCAL YEAR ENDING JUNE 30, 2021

					VARIANCE WITH
		BUDGETED AMOUNTS			FINAL BUDGET
Account				ACTUAL	POSITIVE
Number	Description	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
410400	**Administrative services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	7,000.00	7,000.00	6,486.00	514.00
900	Capital outlay				0.00
410500	**Financial services**				
100	Personal services	18,985.00	18,985.00	14,311.00	4,674.00
200-800	Supplies/services/materials, etc	27,534.00	27,534.00	18,850.00	8,684.00
900	Capital outlay				0.00
420000	**Public Safety:**				
420100	**Law enforcement services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00

TOWN OF SACO					
GENERAL FUND					
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE					
BUDGET AND ACTUAL					
FISCAL YEAR ENDING JUNE 30, 2021					
					VARIANCE WITH
		BUDGETED AMOUNTS			FINAL BUDGET
Account				ACTUAL	POSITIVE
Number	Description	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
420400	**Fire protection**				
100	Personal services	1,500.00	1,500.00	476.00	1,024.00
200-800	Supplies/services/materials, etc	1,000.00	1,000.00	772.00	228.00
900	Capital outlay				0.00
430000	**Public Works:**				
430100	**Public works administration**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	7,355.00	7,355.00	7,550.00	(195.00)
900	Capital outlay				0.00
430200	**Road and street services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	9,243.00	9,243.00	3,147.00	6,096.00
900	Capital outlay				0.00
430500	**Water utilities**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	7,355.00	7,355.00	2,212.00	5,143.00
900	Capital outlay	14,000.00	14,000.00		14,000.00
430600	**Sewer utilities**				
100	Personal services			9,860.00	(9,860.00)
200-800	Supplies/services/materials, etc	21,671.00	21,671.00	3,036.00	18,635.00
900	Capital outlay				0.00
430800	**Solid waste services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	800.00	800.00	800.00	0.00
900	Capital outlay				0.00
430900	**Cemetery services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	1,250.00	1,250.00		1,250.00
900	Capital outlay				0.00

TOWN OF SACO					
GENERAL FUND					
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE					
BUDGET AND ACTUAL					
FISCAL YEAR ENDING JUNE 30, 2021					
					VARIANCE WITH
		BUDGETED AMOUNTS			FINAL BUDGET
Account				ACTUAL	POSITIVE
Number	Description	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
440000	**Public Health:**				
440100	**Public health services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	Capital outlay				0.00
440600	**Animal control services**				
100	Personal services	566.00	566.00	126.00	440.00
200-800	Supplies/services/materials, etc	100.00	100.00		100.00
900	Capital outlay				0.00
440700	**Insect and pest controls**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc	3,000.00	3,000.00	2,214.00	786.00
900	Capital outlay	9,000.00	9,000.00	13,950.00	(4,950.00)

TOWN OF SACO
GENERAL FUND
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL
FISCAL YEAR ENDING JUNE 30, 2021

Account Number	Description	BUDGETED AMOUNTS ORIGINAL	BUDGETED AMOUNTS FINAL	ACTUAL AMOUNTS	VARIANCE WITH FINAL BUDGET POSITIVE (NEGATIVE)
460000	**Culture and Recreation:**				
460400	**Parks**				
100	Personal services	15,127.00	15,127.00	17,535.00	(2,408.00)
200-800	Supplies/services/materials, etc	2,500.00	2,500.00	1,429.00	1,071.00
900	Capital outlay				0.00

TOWN OF SACO
GENERAL FUND
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL
FISCAL YEAR ENDING JUNE 30, 2021

Account Number	Description	BUDGETED AMOUNTS ORIGINAL	BUDGETED AMOUNTS FINAL	ACTUAL AMOUNTS	VARIANCE WITH FINAL BUDGET POSITIVE (NEGATIVE)
490000	**Debt Service:**				
610	Principal	15,800.00	15,800.00	16,168.00	(368.00)
620	Interest	8,200.00	8,200.00	10,532.00	(2,332.00)
510000	**Miscellaneous**	9,164.00	9,164.00		9,164.00
	Total expenditures	189,837.00	189,837.00	136,037.00	53,800.00
	Excess of revenues over (under)expenditures	(33,462.00)	(33,462.00)	44,369.00	77,831.00
	OTHER FINANCING SOURCES (USES)				
381010/40	Proceeds from sale of bonds				0.00
381010/40	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In				0.00
520000	Transfers out (enter as a negative)	(544.00)	(544.00)	(541.00)	3.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure (enter as negative)				0.00
	Total other financing sources (uses)	(544.00)	(544.00)	(541.00)	3.00
	Net change in fund balance	(34,006.00)	(34,006.00)	43,828.00	77,834.00
	Fund balances - July 1, 2020 as previously reported			126,029.00	
	Prior period adjustments				
	Fund balances - July 1, 2020 as restated			126,029.00	
	Fund balances - June 30, 2021			169,857.00	

OTHER

SUPPLEMENTARY

INFORMATION

COUNTY/CITY/TOWN OF _____
COMBINING BALANCE SHEET
NONMAJOR SPECIAL REVENUE FUNDS
JUNE 30, 2021

ACCOUNT NUMBER	DESCRIPTION	2200 Mosquito	2400 SID Street Light Maintenance	2820 Gas Apportionment	2940 CDBG
	ASSETS				
101000	Cash and cash equivalents	18,925.00	33,793.00	35,439.00	17,420.00
103000	Petty cash				
101100	Investments				
102000	Cash and cash equivalents - restricted				
102300	Investments - restricted				
106000	Valuation of investments to fair value				
	Taxes receivable:				
111000	Mobiles				
113000	Real estate	2,142.00			
114000	Net proceeds				
115000	Personal				
116000	Protested				
118000	Special assessments		3,262.00		
120000	Accounts/other receivables (net of allowance for uncollectibles)				7,343.00
131000	Due from other funds				
132000	Due from other governments				
133000	Advances to other funds				
140000	Prepaid expense				
150000	Inventories				
170000	Other debits				
	Total Assets	21,067.00	37,055.00	35,439.00	24,763.00
	DEFERRED OUTFLOWS OF RESOURCES				
190000	Deferred Outflows of Resources				
19xxxx	Deferred Outflows of Resources				
	Total Deferred Outflows of Resources	0.00	0.00	0.00	0.00
	LIABILITIES				
201000	Warrants payable				
202100	Accounts payable				
203100	Judgments payable				
204000	Contracts/loans/notes payable				
205200	Matured interest payable				
206100	Other accrued payables			375.00	
211000	Due to other funds				
212000	Due to other governments				
214000	Deposits payable				
216000	Revenues collected in advance				
233000	Advances from other funds				
	Total Liabilities	0.00	0.00	375.00	0.00
	DEFERRED INFLOWS OF RESOURCES				
220000	Deferred Inflows of Resources				
223000	Deferred Inflows of Tax Revenues	2,142.00	3,262.00		9,935.00
	Total Deferred Inflows of Resources	2,142.00	3,262.00	0.00	9,935.00
	FUND BALANCES:				
250100	Non-spendable				
250200	Restricted				
260100	Committed				
260200	Assigned				
271000	Unassigned *(negative balance ony)*	18,925.00	33,793.00	35,064.00	14,828.00
	Total Fund Balances	18,925.00	33,793.00	35,064.00	14,828.00
	Total Liabilities, Deferred Inflows of Resources and Fund Balances	21,067.00	37,055.00	35,439.00	24,763.00

COUNTY/CITY/TOWN OF _____
COMBINING BALANCE SHEET
NONMAJOR SPECIAL REVENUE FUNDS
JUNE 30, 2021

ACCOUNT NUMBER	DESCRIPTION	NONMAJOR SPECIAL REVENUE FUNDS
	ASSETS	
101000	Cash and cash equivalents	105,577.00
103000	Petty cash	0.00
101100	Investments	0.00
102000	Cash and cash equivalents - restricted	0.00
102300	Investments - restricted	0.00
106000	Valuation of investments to fair value	0.00
	Taxes receivable:	
111000	Mobiles	0.00
113000	Real estate	2,142.00
114000	Net proceeds	0.00
115000	Personal	0.00
116000	Protested	0.00
118000	Special assessments	3,262.00
120000	Accounts/other receivables (net of allowance for uncollectibles)	7,343.00
131000	Due from other funds	0.00
132000	Due from other governments	0.00
133000	Advances to other funds	0.00
140000	Prepaid expense	0.00
150000	Inventories	0.00
170000	Other debits	0.00
	Total Assets	118,324.00
	DEFERRED OUTFLOWS OF RESOURCES	
190000	Deferred Outflows of Resources	0.00
19xxxx	Deferred Outflows of Resources	0.00
	Total Deferred Outflows of Resources	0.00
	LIABILITIES	
201000	Warrants payable	0.00
202100	Accounts payable	0.00
203100	Judgments payable	0.00
204000	Contracts/loans/notes payable	0.00
205200	Matured interest payable	0.00
206100	Other accrued payables	375.00
211000	Due to other funds	0.00
212000	Due to other governments	0.00
214000	Deposits payable	0.00
216000	Revenues collected in advance	0.00
233000	Advances from other funds	0.00
	Total Liabilities	375.00
	DEFERRED INFLOWS OF RESOURCES	
220000	Deferred Inflows of Resources	0.00
223000	Deferred Inflows of Tax Revenues	15,339.00
	Total Deferred Inflows of Resources	15,339.00
	FUND BALANCES:	
250100	Non-spendable	0.00
250200	Restricted	0.00
260100	Committed	0.00
260200	Assigned	0.00
271000	Unassigned *(negative balance ony)*	102,610.00
	Total Fund Balances	102,610.00
	Total Liabilities, Deferred Inflows of Resources and Fund Balances	118,324.00

COUNTY/CITY/TOWN OF _____
COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2021

		2200			
		Mosquito			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes	20,000.00	20,000.00	19,325.00	(675.00)
314140	Local option taxes				0.00
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses				0.00
323050	Other permits				0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants				0.00
335000/336	State shared revenues				0.00
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government				0.00
342000	Public safety				0.00
343000	Public works				0.00
344000	Public health				0.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**				0.00
370000	**Investment and royalty earnings**				0.00
	Total revenues	20,000.00	20,000.00	19,325.00	(675.00)
		-65-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2021

		2400			
		SID Street Light Maintenance			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes	16,414.00	16,414.00	15,899.00	(515.00)
314140	Local option taxes				0.00
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses				0.00
323050	Other permits				0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants				0.00
335000/336	State shared revenues				0.00
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government				0.00
342000	Public safety				0.00
343000	Public works				0.00
344000	Public health				0.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**				0.00
370000	**Investment and royalty earnings**				0.00
	Total revenues	16,414.00	16,414.00	15,899.00	(515.00)

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES

BUDGET AND ACTUAL

NONMAJOR SPECIAL REVENUE FUNDS

FISCAL YEAR ENDED JUNE 30, 2021

		2820			
		Gas Apportionment			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes				0.00
314140	Local option taxes				0.00
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses				0.00
323050	Other permits				0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants	10,805.00	10,805.00	10,804.00	(1.00)
335000/336	State shared revenues	9,525.00	9,525.00	9,692.00	167.00
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government				0.00
342000	Public safety				0.00
343000	Public works				0.00
344000	Public health				0.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**				0.00
370000	**Investment and royalty earnings**				0.00
	Total revenues	20,330.00	20,330.00	20,496.00	166.00
		-65-			

COUNTY/CITY/TOWN OF _____
COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2021

		2940			
		CDBG			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes				0.00
314140	Local option taxes				0.00
	Licenses and permits				
322010	Alcoholic beverage licenses				0.00
322020	General business licenses				0.00
323010	Building permits				0.00
323030	Animal licenses				0.00
323050	Other permits				0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants				0.00
332000/333	Federal shared revenues				0.00
334000	State grants				0.00
335000/336	State shared revenues				0.00
337000	Local grants				0.00
338000	Local shared revenues				0.00
	Charges for services				
341000	General government				0.00
342000	Public safety				0.00
343000	Public works				0.00
344000	Public health				0.00
345000	Social/economic services				0.00
346000	Culture and recreation				0.00
	Fines and forfeitures				
351010	Justice court				0.00
351020	District court				0.00
351030	City court				0.00
360000	**Miscellaneous**				0.00
370000	**Investment and royalty earnings**	20.00	20.00	8.00	(12.00)
	Total revenues	20.00	20.00	8.00	(12.00)
		-65-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2021

		TOTALS			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	REVENUES				
	Taxes:				
311000/312000	Property taxes	36,414.00	36,414.00	35,224.00	(1,190.00)
314140	Local option taxes	0.00	0.00	0.00	0.00
	Licenses and permits				
322010	Alcoholic beverage licenses	0.00	0.00	0.00	0.00
322020	General business licenses	0.00	0.00	0.00	0.00
323010	Building permits	0.00	0.00	0.00	0.00
323030	Animal licenses	0.00	0.00	0.00	0.00
323050	Other permits	0.00	0.00	0.00	0.00
	Intergovernmental revenue (See supplemental section for detail)				
331000	Federal grants	0.00	0.00	0.00	0.00
332000/333	Federal shared revenues	0.00	0.00	0.00	0.00
334000	State grants	10,805.00	10,805.00	10,804.00	(1.00)
335000/336	State shared revenues	9,525.00	9,525.00	9,692.00	167.00
337000	Local grants	0.00	0.00	0.00	0.00
338000	Local shared revenues	0.00	0.00	0.00	0.00
	Charges for services				
341000	General government	0.00	0.00	0.00	0.00
342000	Public safety	0.00	0.00	0.00	0.00
343000	Public works	0.00	0.00	0.00	0.00
344000	Public health	0.00	0.00	0.00	0.00
345000	Social/economic services	0.00	0.00	0.00	0.00
346000	Culture and recreation	0.00	0.00	0.00	0.00
	Fines and forfeitures				
351010	Justice court	0.00	0.00	0.00	0.00
351020	District court	0.00	0.00	0.00	0.00
351030	City court	0.00	0.00	0.00	0.00
360000	**Miscellaneous**	0.00	0.00	0.00	0.00
370000	**Investment and royalty earnings**	20.00	20.00	8.00	(12.00)
	Total revenues	56,764.00	56,764.00	55,728.00	(1,036.00)
		-65A-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES

BUDGET AND ACTUAL

NONMAJOR SPECIAL REVENUE FUNDS

FISCAL YEAR ENDED JUNE 30, 2021

		2200			
		Mosquito			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
420000	**Public Safety**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
430000	**Public Works**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
440000	**Public Health**				
100	Personal services	8,687.00	8,687.00	5,885.00	2,802.00
200-800	Supplies/services/materials, etc	11,313.00	11,313.00	3,271.00	8,042.00
450000	**Social and Economic Services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
460000	**Culture and Recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
470000	**Housing and Community Development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
480000	**Conservation of Natural Resources**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	**Capital expenditures**				0.00
490000	**Debt Service**				
610	Principal				0.00
620	Interest				0.00
510000	**Miscellaneous**				0.00
	Total expenditures	20,000.00	20,000.00	9,156.00	10,844.00
	Excess of revenues over expenditures	0.00	0.00	10,169.00	10,169.00
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued				0.00
381000	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In				0.00
520000	Transfers out (enteras a negative)				0.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure(enter as negative)				0.00
	Total other financing sources (uses)	0.00	0.00	0.00	0.00
	Net change in fund balance	0.00	0.00	10,169.00	10,169.00
	Fund balances - July 1, 2020 as previously reported			8,756.00	
	Prior period adjustments				
	Fund balances - July 1, 2020 as restated			8,756.00	
	Fund balances - June 30, 2021			18,925.00	
		-66-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES

BUDGET AND ACTUAL

NONMAJOR SPECIAL REVENUE FUNDS

FISCAL YEAR ENDED JUNE 30, 2021

		27-Jul-06			
		SID Street Light Maintenance			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
420000	**Public Safety**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
430000	**Public Works**				
100	Personal services	15,709.00	15709	12,247.00	3,462.00
200-800	Supplies/services/materials, etc				0.00
440000	**Public Health**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
450000	**Social and Economic Services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
460000	**Culture and Recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
470000	**Housing and Community Development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
480000	**Conservation of Natural Resources**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	**Capital expenditures**				0.00
490000	**Debt Service**				
610	Principal				0.00
620	Interest				0.00
510000	**Miscellaneous**	705.00	705	702.00	3.00
	Total expenditures	16,414.00	16414	12,949.00	3,465.00
	Excess of revenues over expenditures	0.00	0	2,950.00	2,950.00
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued				0.00
381000	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In				0.00
520000	Transfers out (enteras a negative)				0.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure(enter as negative)				0.00
	Total other financing sources (uses)	0.00	0	0.00	0.00
	Net change in fund balance	0.00	0	2,950.00	2,950.00
	Fund balances - July 1, 2020 as previously reported			30,843.00	
	Prior period adjustments				
	Fund balances - July 1, 2020 as restated			30,843.00	
	Fund balances - June 30, 2021			33,793.00	
		-66-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES

BUDGET AND ACTUAL

NONMAJOR SPECIAL REVENUE FUNDS

FISCAL YEAR ENDED JUNE 30, 2021

		2820			
		Gas Apportionment			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
420000	**Public Safety**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
430000	**Public Works**				
100	Personal services	8,203.00	8,203.00	6,669.00	1,534.00
200-800	Supplies/services/materials, etc	14,864.00	14,864.00	2,480.00	12,384.00
440000	**Public Health**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
450000	**Social and Economic Services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
460000	**Culture and Recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
470000	**Housing and Community Development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
480000	**Conservation of Natural Resources**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	**Capital expenditures**				0.00
490000	**Debt Service**				
610	Principal				0.00
620	Interest				0.00
510000	**Miscellaneous**				0.00
	Total expenditures	23,067.00	23,067.00	9,149.00	13,918.00
	Excess of revenues over expenditures	(2,737.00)	(2,737.00)	11,347.00	14,084.00
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued				0.00
381000	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In	544.00	544.00	541.00	(3.00)
520000	Transfers out (enteras a negative)				0.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure(enter as negative)				0.00
	Total other financing sources (uses)	544.00	544.00	541.00	(3.00)
	Net change in fund balance	(2,193.00)	(2,193.00)	11,888.00	14,081.00
	Fund balances - July 1, 2020 as previously reported			23,176.00	
	Prior period adjustments				
	Fund balances - July 1, 2020 as restated			23,176.00	
	Fund balances - June 30, 2021			35,064.00	
		-66-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
NONMAJOR SPECIAL REVENUE FUNDS
FISCAL YEAR ENDED JUNE 30, 2021

		2940			
		CDBG			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
420000	**Public Safety**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
430000	**Public Works**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
440000	**Public Health**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
450000	**Social and Economic Services**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
460000	**Culture and Recreation**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
470000	**Housing and Community Development**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
480000	**Conservation of Natural Resources**				
100	Personal services				0.00
200-800	Supplies/services/materials, etc				0.00
900	**Capital expenditures**				0.00
490000	**Debt Service**				
610	Principal				0.00
620	Interest				0.00
510000	**Miscellaneous**				0.00
	Total expenditures	0.00	0.00	0.00	0.00
	Excess of revenues over expenditures	20.00	20.00	8.00	(12.00)
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued				0.00
381000	Discount on bonds issued				0.00
381050	Inception of capital lease				0.00
381070	Notes/loans/intercap issued				0.00
382010	Sale of assets				0.00
383000	Transfers In				0.00
520000	Transfers out (enteras a negative)				0.00
384000	Special items - revenue				0.00
385000	Extraordinary items - revenue				0.00
524000	Special items - expenditure (enter as negative)				0.00
525000	Extraordinary items - expenditure(enter as negative)				0.00
	Total other financing sources (uses)	0.00	0.00	0.00	0.00
	Net change in fund balance	20.00	20.00	8.00	(12.00)
	Fund balances - July 1, 2020 as previously reported			14,820.00	
	Prior period adjustments				
	Fund balances - July 1, 2020 as restated			14,820.00	
	Fund balances - June 30, 2021			14,828.00	
		-66-			

COUNTY/CITY/TOWN OF _____

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES

BUDGET AND ACTUAL

NONMAJOR SPECIAL REVENUE FUNDS

FISCAL YEAR ENDED JUNE 30, 2021

		TOTALS			
					VARIANCE
					WITH FINAL
		BUDGETED AMOUNTS			BUDGET
ACCOUNT				ACTUAL	POSITIVE
NUMBER	DESCRIPTION	ORIGINAL	FINAL	AMOUNTS	(NEGATIVE)
	EXPENDITURES				
	Current:				
410000	**General Government:**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
420000	**Public Safety**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
430000	**Public Works**				
100	Personal services	23,912.00	23,912.00	18,916.00	4,996.00
200-800	Supplies/services/materials, etc	14,864.00	14,864.00	2,480.00	12,384.00
440000	**Public Health**				
100	Personal services	8,687.00	8,687.00	5,885.00	2,802.00
200-800	Supplies/services/materials, etc	11,313.00	11,313.00	3,271.00	8,042.00
450000	**Social and Economic Services**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
460000	**Culture and Recreation**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
470000	**Housing and Community Development**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
480000	**Conservation of Natural Resources**				
100	Personal services	0.00	0.00	0.00	0.00
200-800	Supplies/services/materials, etc	0.00	0.00	0.00	0.00
900	**Capital expenditures**	0.00	0.00	0.00	0.00
490000	**Debt Service**				
610	Principal	0.00	0.00	0.00	0.00
620	Interest	0.00	0.00	0.00	0.00
510000	**Miscellaneous**	705.00	705.00	702.00	3.00
	Total expenditures	59,481.00	59,481.00	31,254.00	28,227.00
	Excess of revenues over expenditures	(2,717.00)	(2,717.00)	24,474.00	27,191.00
	OTHER FINANCING SOURCES (USES)				
381000	Bonds issued	0.00	0.00	0.00	0.00
381000	Discount on bonds issued	0.00	0.00	0.00	0.00
381050	Inception of capital lease	0.00	0.00	0.00	0.00
381070	Notes/loans/intercap issued	0.00	0.00	0.00	0.00
382010	Sale of assets	0.00	0.00	0.00	0.00
383000	Transfers In	544.00	544.00	541.00	(3.00)
520000	Transfers out (enteras a negative)	0.00	0.00	0.00	0.00
384000	Special items - revenue	0.00	0.00	0.00	0.00
385000	Extraordinary items - revenue	0.00	0.00	0.00	0.00
524000	Special items - expenditure (enter as negative)	0.00	0.00	0.00	0.00
525000	Extraordinary items - expenditure(enter as negative)	0.00	0.00	0.00	0.00
	Total other financing sources (uses)	544.00	544.00	541.00	(3.00)
	Net change in fund balance	(2,173.00)	(2,173.00)	25,015.00	27,188.00
	Fund balances - July 1, 2020 as previously reported			77,595.00	
	Prior period adjustments			0.00	
	Fund balances - July 1, 2020 as restated			77,595.00	
	Fund balances - June 30, 2021			102,610.00	
		-66A-			

TOWN OF SACO
STATEMENT OF NET POSITION
NONMAJOR ENTERPRISE FUNDS
FISCAL YEAR ENDING JUNE 30, 2021

Account Number	Description	NonMajor Enterprise Funds 5712 Market Gas	Totals
	ASSETS		
	Current Assets		
101000	Cash and cash equivalents	55,120.00	55,120.00
103000	Petty cash		0.00
101100	Investments (at fair value)		0.00
110000	Tax/assessment receivable (net of allowance for uncollectibles)		0.00
120000	Accounts/other receivables (net of allowance for uncollectibles)		0.00
131000	Due from other funds		0.00
132000	Due from other governments		0.00
141000	Prepaid expense		0.00
150000	Inventories		0.00
	Total Current Assets	55,120.00	55,120.00
	Noncurrent Assets		
	Restricted Assets:		
102200	Cash and cash equivalents		0.00
102300	Investments		0.00
133000	Advances to other funds		0.00
170000	Other debits		0.00
180000	Capital assets:		
	Land		0.00
	Construction in progress		0.00
	Buildings	24,380.00	24,380.00
	Improvements other than buildings		0.00
	Machinery and equipment	163,935.00	163,935.00
	Infrastructure		0.00
	Less: accumulated depreciation	(125,430.00)	(125,430.00)
	Capital assets - net of accumulated depreciation	62,885.00	62,885.00
	Total Noncurrent Assets	62,885.00	62,885.00
	Total Assets	118,005.00	118,005.00
	DEFERRED OUTFLOWS OF RESOURCES		
190000	Deferred Outflows of Resources - Pensions		0.00
19xxxx	Deferred Outflows of Resources - OPEB		0.00
19xxxx	Deferred Outflows of Resources		0.00
	Total Deferred Outflows of Resources	0.00	0.00
	LIABILITIES		
	Current Liabilities		
202100	Accounts payable		0.00
203100	Judgments payable		0.00
204000	Contracts/loans/notes payable		0.00
205200	Matured interest payable		0.00
206100	Other accrued payables		0.00
209100	Compensated absences		0.00
211000	Due to other funds		0.00
212000	Due to other governments		0.00
214000	Deposits payable		0.00
216000	Revenues collected in advance		0.00
	Total Current Liabilities	0.00	0.00
	Noncurrent Liabilities		
231000	Bonds payable		0.00
233000	Advance from other funds		0.00
234000	Judgments payable		0.00
235000	Contracts/loans/notes payable		0.00
236000	Closure/postclosure care costs		0.00
237000	Net Pension Liability		0.00
238000	OPEB Liability		0.00
239000	Compensated absences		0.00
	Total Noncurrent Liabilities	0.00	0.00
	Total Liabilities	0.00	0.00
	DEFERRED INFLOWS OF RESOURCES		
220000	Deferred Inflows of Resources - Pensions		0.00
22xxxx	Deferred Inflows of Resources - OPEB		0.00
223000	Deferred Inflows of Resources		0.00
	Total Deferred Inflows of Resources	0.00	0.00
	NET POSITION		
	Net Investment in capital assets	62,885.00	62,885.00
	Restricted for:		
			0.00
			0.00
			0.00
			0.00
	Unrestricted	55,120.00	55,120.00
	Total Net Position	118,005.00	118,005.00

TOWN OF SACO
STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET POSITION
NONMAJOR ENTERPRISE FUNDS
FISCAL YEAR ENDING JUNE 30, 2021

Account Number	Description	NonMajor Enterprise Funds 5712 Market Gas	Totals
	OPERATING REVENUES		
340000	Charges for services		0.00
360000	Miscellaneous revenues		0.00
363000	Special assessments		0.00
			0.00
	Total Operating Revenues	0.00	0.00
	OPERATING EXPENSES		
100	Personal services		0.00
200	Supplies		0.00
300	Purchased services		0.00
400	Building materials		0.00
500	Fixed charges		0.00
810	Loss/Bad debt expense		0.00
830	Depreciation	9,467.00	9,467.00
			0.00
	Total Operating Expenses	9,467.00	9,467.00
	Operating Income (Loss)	(9,467.00)	(9,467.00)
	NONOPERATING REVENUES (EXPENSES)		
310000	Taxes/assessment revenue		0.00
320000	Licenses/permits revenue		0.00
330000	Intergovernmental revenue		0.00
371000	Interest revenue		0.00
382030	Gain or Loss on sale of capital assets		0.00
490000	Debt service interest expense (enter as negative)		0.00
384000	Special items - revenue		0.00
385000	Extraordinary items - revenue		0.00
524000	Special items - expense (enter as negative)		0.00
525000	Extraordinary items - expense (enter as negative)		0.00
	Total Non-Operating Revenues (Expenses)	0.00	0.00
	Income (Loss) before contributions and transfers	(9,467.00)	(9,467.00)
	Capital contributions		0.00
	Transfers in (out)		0.00
	Change in net position	(9,467.00)	(9,467.00)
	Total net position - July 1, 2020 as previously reported	127,472.00	127,472.00
	Prior period adjustments		0.00
	Total net position - July 1, 2020 as restated	127,472.00	127,472.00
	Total net position - June 30, 2021	118,005.00	118,005.00

TOWN OF SACO		
COMBINING STATEMENT OF CASH FLOWS		
NONMAJOR ENTERPRISE FUNDS		
FISCAL YEAR ENDING JUNE 30, 2021		
	5712	
Description	Market Gas	TOTALS
CASH FLOWS FROM OPERATING ACTIVITIES		
Cash received from customers	0.00	0.00
Cash paid to suppliers	0.00	0.00
Cash paid to employees	0.00	0.00
Cash received from interfund services provided		0.00
Cash paid for interfund services used		0.00
Net cash provided (used) by operating activities	0.00	0.00
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES		
Transfers from (to) other funds	0.00	0.00
Advances from (to) other funds		0.00
Subsidies from taxes and other governments	0.00	0.00
Net cash provided (used) by capital and related financing activities	0.00	0.00
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES		
Proceeds from debt		0.00
Capital contributions	0.00	0.00
Purchases/acquisition/construction of capital assets		0.00
Principal on debt		0.00
Interest paid on debt	0.00	0.00
Capital lease down payment		0.00
Proceeds from sales of capital assets		0.00
Net cash provided (used) by capital and related financing activities	0.00	0.00
CASH FLOWS FROM INVESTING ACTIVITIES		
Proceeds from sales of investments		0.00
Purchase of investments		0.00
Interest earnings	0.00	0.00
Net cash provided (used) by investing activities	0.00	0.00
Net increase (decrease) in cash and cash equivalents	0.00	0.00
Cash and cash equivalents - July 1, 2020	55,120.00	55,120.00
Cash and cash equivalents - June 30, 2021	55,120.00	55,120.00
Reconciliation of operating income to net cash provided (used by operating activities:		
Operating income	(9,467.00)	(9,467.00)
Adjustments to reconcile operating income to net cash provided (used) by operating activities		
Depreciation expense	9,467.00	9,467.00
(Increase) decrease in accounts receivable		0.00
(Increase) decrease in intergovernmental receivables		0.00
(Increase) decrease in due from other funds		0.00
Increase in allowance for uncollectible accounts		0.00
(Increase) decrease in inventories		0.00
(Increase) decrease in prepaid items		0.00
Increase (decrease) in customer deposits		0.00
Increase (decrease) in accounts payable		0.00
Increase (decrease) in compensated absences pay.		0.00
Increase (decrease) in intergovernmental payables		0.00
Increase (decrease) in due to other funds		0.00
Total adjustments	9,467.00	9,467.00
Net cash provided (used) by operating activities	0.00	0.00
Noncash investing, capital, and financing activities:		
Borrowing under capital lease		0.00
Contributions of capital assets from government		0.00
Purchase of equipment on account		0.00
Increase in fair value of investments		0.00
Capital asset trade-ins		0.00

TOWN OF SACO
COMBINING STATEMENT OF NET POSITION
INTERNAL SERVICE FUNDS
FISCAL YEAR ENDING JUNE 30, 2021

Account Number	Description	FUND #NAME - -	FUND #NAME - -	FUND #NAME - -	TOTAL INTERNAL SERVICE
	ASSETS				
	Current Assets				
101000	Cash and cash equivalents				0.00
103000	Petty cash				0.00
101100	Investments (at fair value)				0.00
110000	uncollectibles)				0.00
120000	uncollectibles)				0.00
131000	Due from other funds				0.00
132000	Due from other governments				0.00
141000	Prepaid expense				0.00
150000	Inventories				0.00
	Total Current Assets	0.00	0.00	0.00	0.00
	Noncurrent Assets				
	Restricted Assets:				
102200	Cash and cash equivalents				0.00
102300	Investments				0.00
133000	Advances to other funds				0.00
170000	Other debits				0.00
180000	Capital assets:				
	Land				0.00
	Construction in progress				0.00
	Buildings				0.00
	Improvements other than buildings				0.00
	Machinery and equipment				0.00
	Infrastructure				0.00
	Less: accumulated depreciation				0.00
180000	Capital assets - net of accumulated depreciation	0.00	0.00	0.00	0.00
	Total Noncurrent Assets	0.00	0.00	0.00	0.00
	Total Assets	0.00	0.00	0.00	0.00
	DEFERRED OUTFLOWS OF RESOURCES				
190000	Deferred Outflows of Resources - Pensions				0.00
19xxxx	Deferred Outflows of Resources - OPEB				0.00
19xxxx	Deferred Outflows of Resources				0.00
	Total Deferred Outflows of Resources	0.00	0.00	0.00	0.00
	LIABILITIES				
	Current Liabilities				
202100	Accounts payable				0.00
203100	Judgments payable				0.00
204100	Contracts payable				0.00
205200	Matured interest payable				0.00
206100	Other accrued payables				0.00
209100	Compensated absences				0.00
211000	Due to other funds				0.00
212000	Due to other governments				0.00
214000	Deposits payable				0.00
216000	Revenues collected in advance				0.00
	Total Current Liabilities	0.00	0.00	0.00	0.00
	Noncurrent Liabilities				
231000	Bonds payable				0.00
233000	Advance from other funds				0.00
234000	Judgments payable				0.00
235000	Contracts/loans/notes payable				0.00
236000	Closure/postclosure care costs				0.00
237000	Net Pension Liability				0.00
238000	OPEB				0.00
239000	Compensated absences				0.00
	Total Noncurrent Liabilities	0.00	0.00	0.00	0.00
	Total Liabilities	0.00	0.00	0.00	0.00
	DEFERRED INFLOWS OF RESOURCES				
220000	Deferred Inflows of Resources - Pensions				0.00
22xxxx	Deferred Inflows of Resources - OPEB				0.00
223000	Deferred Inflows of Resources				0.00
	Total Deferred Inflows of Resources	0.00	0.00	0.00	0.00
	NET POSITION				
	Net Investment in capital assets	0.00	0.00	0.00	0.00
	Restricted for:				
					0.00
					0.00
	Unrestricted	0.00	0.00	0.00	0.00
	Total Net Position	0.00	0.00	0.00	0.00

TOWN OF SACO
SCHEDULE OF FEDERAL/STATE GRANTS, ENTITLEMENTS, AND SHARED REVENUES
FISCAL YEAR ENDING JUNE 30, 2021

	REVENUE CODE	RECEIVING FUND	AMOUNT
FEDERAL GRANTS/ENTITLEMENTS - (LIST)			
State Entitlement	335000	1000	25,080.00
BarSSA	334000	2820	10,804.00
Gas Apportionment	335040	2820	9,692.00
AARA Federal grant	331000	1000	23,884.00
Total Federal Grants/Entitlements			69,460.00
FEDERAL SHARED REVENUES - (LIST)			
Total Federal Shared Revenues			0.00
STATE GRANTS/ENTITLEMENTS - (LIST)			
Total State Grants/Entitlements			0.00
STATE SHARED REVENUES - (LIST)			
Total State Shared Revenues			0.00
LOCAL GRANTS - (LIST)			
			0.00
TOTAL			69,460.00

ALL FUNDS

SCHEDULE OF CASH RECEIPTS AND DISBURSEMENTS - ALL FUNDS

FISCAL YEAR ENDING JUNE 30, 2021

Fund Number	Description	Cash balance 7/1/2020	Receipts	Transfers in	Disbursements	Transfers Out	Cash balance 6/30/2021
1000	**GENERAL**	126,028.00	180,405.00	94.00	29,320.00	107,350.00	169,857.00
2000	**SPECIAL REVENUE FUNDS**						
2100	Resort Tax						0.00
2110	Road						0.00
2120	Poor						0.00
2130	Bridge						0.00
2140	Weed control						0.00
2150	Predatory animal						0.00
2160	Fair						0.00
2170	Airport						0.00
2180	District court						0.00
2190	Comprehensive Insurance						0.00
2191	Property insurance						0.00
2200	Mosquito	8,756.00	19,325.00			9,156.00	18,925.00
2210	Parks/Recreation/Civic center						0.00
2220	Library						0.00
2230	Ambulance						0.00
2240	Cemetery						0.00
2250	Planning						0.00
2251	Planning/Zoning						0.00
2260	Disaster						0.00
2270	Health						0.00
2271	Mental health						0.00
2280	Senior citizens						0.00
2281	Senior citizens transp.						0.00
2290	Extension service						0.00
2300	Public safety						0.00
2320	Economic Development						0.00
2330	Rodent control						0.00
2340	Fire control						0.00
2360	Museum						0.00
2370	Employer retirement						0.00
2371	Health insurance						0.00
2390	D.A.R.E.						0.00
2393	Records preservation						0.00
2400	Light maintenance districts (all)	30,843.00	15,899.00			12,949.00	33,793.00
2500	Maintenance districts (all)						0.00
2800	Alcohol rehabilitation						0.00
2810	Police reserve						0.00
2820	Gas tax	23,176.00	21,037.00			8,774.00	35,439.00
2840	Weed grant						0.00
2850	911 Emergency						0.00
2860	Land planning						0.00
2890	Lewis and Clark Bicentennial Grant						0.00
2894	State allocated federal mineral royalties						0.00
2900	P.I.L.T.						0.00
							0.00
2940	C.D.B.G.	15,841.00	1,579.00				17,420.00
2960-79	Health grants (all)						0.00
							0.00
							0.00
							0.00
2980	Aging services						0.00
							0.00
	TOTAL SPECIAL REVENUE	78,616.00	57,840.00	0.00	0.00	30,879.00	105,577.00

ALL FUNDS

SCHEDULE OF CASH RECEIPTS AND DISBURSEMENTS - ALL FUNDS

FISCAL YEAR ENDING JUNE 30, 2021

Fund Number	Description	Cash balance 7/1/2020	Receipts	Transfers in	Disbursements	Transfers Out	Cash balance 6/30/2021
3000	**DEBT SERVICE FUNDS (list)**						
3400	S.I.D. revolving						0.00
							0.00
							0.00
	TOTAL DEBT SERVICE FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
4000	**CAPITAL PROJECTS FUNDS (list)**						
							0.00
							0.00
							0.00
	TOTAL CAPITAL PROJECTS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
5000	**ENTERPRISE FUNDS (list)**						
5110	Hospital/Nursing						0.00
5210	Water	101,281.00	121,764.00	13.00	28,088.00	85,518.00	109,452.00
5310	Sewer	40,371.00	41,554.00	1,402.00		54,737.00	28,590.00
5410	Solid Waste						0.00
5510	Ambulance						0.00
5610	Airport						0.00
5710	Gas	7,113.00	96,598.00	2,572.00		103,352.00	2,931.00
5712	Market Gas	55,120.00	0.00	0.00	0.00	0.00	55,120.00
	TOTAL ENTERPRISE FUNDS	203,885.00	259,916.00	3,987.00	28,088.00	243,607.00	196,093.00
6000	**INTERNAL SERVICE FUNDS (list)**						
							0.00
							0.00
	TOTAL INTERNAL SERVICE FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
7000	**TRUST FUNDS (list)**						
7001	Police reserve						0.00
7002	Fire disability pension	1,165.00					1,165.00
							0.00
7010	Cemetery perpetual care						0.00
							0.00
							0.00
7100	**CUSTODIAL FUNDS (list)**						
7110	Bed tax collection						0.00
7120	Fire disability						0.00
7130	Protested tax						0.00
7140	Public administrator						0.00
7150	Redemptions						0.00
							0.00
7160	Clerk of district court						0.00
7170	Partial tax payments						0.00
							0.00
7190	Migratory stock						0.00
7200	**SPECIAL DISTRICTS (list)**						
							0.00
							0.00
							0.00
							0.00

ALL FUNDS

SCHEDULE OF CASH RECEIPTS AND DISBURSEMENTS - ALL FUNDS

FISCAL YEAR ENDING JUNE 30, 2021

Fund Number	Description	Cash balance 7/1/2020	Receipts	Transfers in	Disbursements	Transfers Out	Cash balance 6/30/2021
7400	Custodial - State (all)						0.00
7700	District schools (all)						0.00
7805	General School Elementary						0.00
7810	General School H.S.						0.00
7815	Community College						0.00
7820	Transportation H.S./Elementary						0.00
7830	Retirement H.S.						0.00
7840	Retirement elementary						0.00
7850	**CUSTODIAL - CITIES AND TOWNS (list)**						
							0.00
							0.00
							0.00
							0.00
7900	**CUSTODIAL - OTHER**						
7910	Payroll fund	4,372.00		165,756.00	165,510.00		4,618.00
7930	Claims fund	3,376.00		212,199.00	212,058.00		3,517.00
	TOTAL TRUST AND CUSTODIAL FUNDS	8,913.00	0.00	377,955.00	377,568.00	0.00	9,300.00
8000	**PERMANENT FUNDS**						
							0.00
							0.00
							0.00
	TOTAL PERMANENT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
	TOTALS (to be accounted for)	417,442.00	498,161.00	382,036.00	434,976.00	381,836.00	480,827.00

****PROPERTY TAXES COLLECTED**

Fund number	Description	Receipts		Disbursements		Undisbursed receipts 06/30/20___	
7820	Transportation H.S./Elementary						
7830	Retirement H.S.						
7840	Retirement elementary						

****THIS INFORMATION CAN BE TAKEN FROM FP-6b REPORT (TREASURER'S REPORT OF COUNTY WIDE SCHOOL FUNDS.)**

ALL FUNDS
CASH RECONCILIATION
FISCAL YEAR ENDING JUNE 30, 2021

	BANK NAME				
Account Description (not full acct #)	FSB	FCB - CDBG	FSB - Phase II		**Cash in all depositories**
BALANCE PER STATEMENTS	415,929.00	17,420.00	4,437.00		437,786.00
ADD					
Deposits in transit	702.00				702.00
Service charges					0.00
Other -					0.00
					0.00
					0.00
					0.00
Total to add	702.00	0.00	0.00	0.00	702.00
SUBTRACT					
Outstanding checks	8,135.00				8,135.00
Other					0.00
					0.00
					0.00
					0.00
					0.00
Total to subtract	8,135.00	0.00	0.00	0.00	8,135.00
TOTAL CASH IN DEPOSITS	408,496.00	17,420.00	4,437.00	0.00	430,353.00
ADD					
Investments					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
Total to add	0.00	0.00	0.00	0.00	0.00
TOTAL IN DEPOSITORIES	408,496.00	17,420.00	4,437.00	0.00	430,353.00
ADD					
Cash and cash items on hand					400.00
FSB - CD 1					20,970.00
FSB - CD 2					20,969.00
					0.00
					0.00
					0.00
					0.00
					0.00
Total to add	0.00	0.00	0.00	0.00	42,339.00
****TOTAL ACCOUNTED FOR**	408,496.00	17,420.00	4,437.00	0.00	472,692.00

***Total cash must agree with total cash reported within report**

Cash reconciles ___X___ Cash does not reconcile _____

GENERAL INFORMATION SECTION

GENERAL INFORMATION

(Complete all portions applicable to entity)

1. Class of county/city	3
2. Date of incorporation	1918
3. County seat	
4. Form of government	Comm-Ex
5. Population (most recent estimate)	199
6. Land area	
7. Miles of roads/streets/alleys	5.88
8. Taxable valuation	285,154
9. Road taxable valuation (county)	
10. Number of water consumers	170
11. Average daily water consumption	
12. Miles of water main	
13. Miles of sanitary and storm sewers	
14. Number of building permits issued	
15. Number of full-time employees	2

B. PROPERTY TAX MILL LEVIES -

County/City/Town funds only (For fiscal year being reported)

Fund/activity	Mills
1000 General Fund	377.06
2200 Mosquito	70.61
TOTAL	447.67

CONVERSION WORKSHEETS

THESE PAGES WILL ASSIST WITH THE GASB 34 CONVERSION
THEY DO NOT HAVE TO BE INCLUDED WITH YOUR REPORT SUBMISSION

TOWN OF SACO

GASB NO. 34 ENTITY-WIDE STATEMENT COMPOSITION SPREADSHEET

ENTITY-WIDE STATEMENT OF NET POSITION - BALANCE SHEET CONVERSION WORKSHEET

FISCAL YEAR ENDING JUNE 30, 2021

			Action item	Action item	Auto	Auto	Auto	Auto	Action item	Action item	Action item	
		FROM GOVERNMENTAL FUND B/S	Add the Gov. Funds Prior Year's Ending Balances of Deferred Outflows & Inflows of Resources associated with Pensions & OPEB; Outflows in Cell D28&29; Inflows in Cell D51&52	1. Remove Current Year Deferred Inflows of Tax Revenue; 2. Pensions & OPEB: Add Adj to Current Year Deferred Inflows & Outflows of Resources related to Pensions & OPEB	Add Principal balance of long-term loans, contracts, and bonds	Add Long-term portion of compensated absences, OPEB & Pension Liability	Add Capital assets	Add Accumulated Depreciation on Capital Assets	Remove interfund receivables and payables (between governmental funds only)	Add net position of the internal service funds applicable to governmental funds	Reclassify short-term portion of long-term liabilities	ADJUSTED AMOUNT FOR ENTITY-WIDE STATEMENTS
	ASSETS											
101000	Cash and cash equivalents	275,034.00										275,034.00
103000	Petty cash	400.00										400.00
101100	Investments	0.00										0.00
	Restricted Assets:											
102200	Cash and cash equivalents	0.00										0.00
102300	Investments	0.00										0.00
106000	Valuation of investments to fair value	0.00										0.00
110000	Tax/assessment receivable (net of allowance for uncollectible)	17,488.00										17,488.00
120000	Accounts/other receivables - (net of allowance for uncollectible)	7,343.00										7,343.00
131000	Due from other funds	0.00										0.00
132000	Due from other governments	0.00										0.00
133000	Advances to other funds	0.00										0.00
140000	Prepaid expenses	0.00										0.00
150000	Inventories	0.00										0.00
170000	Other debits	0.00										0.00
180000	Capital assets (net of accumulated depreciation						559,615.00	(159,493.00)				400,122.00
	Total Assets	300,265.00		0.00	0.00	0.00	559,615.00	(159,493.00)	0.00	0.00	0.00	700,387.00
190000	Deferred Outflows of Resources - Pensions											0.00
190xxx	Deferred Outflows of Resources - OPEB											0.00
190xxx	Deferred Outflows of Resources	0.00										0.00
	Total Deferred Outflows of Resources	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	LIABILITIES AND FUND BALANCES											
	Liabilities:											
201000	Warrants payable	0.00										0.00
202100	Accounts payable	0.00										0.00
204000	Contracts/loans/notes payable	0.00										0.00
211000	Due to other funds	0.00										0.00
212000	Due to other governments	0.00										0.00
216000	Revenues collected in advance	0.00										0.00
205200	Matured interest payable	0.00										0.00
206100	Other accrued payables	375.00										375.00
233000	Advances from other funds	0.00										0.00
	Noncurrent liabilities:											
	Due within one year											0.00
	Due in more than one year				200,564.00	1,128.00						201,692.00
237000	Pension Liability					0.00						0.00
238000	OPEB Liability					0.00						0.00
	Total Liabilities	375.00		0.00	200,564.00	1,128.00	0.00	0.00	0.00	0.00	0.00	202,067.00
220000	Deferred Inflows of Resources - Pensions											0.00
220XXX	Deferred Inflows of Resources - OPEB											0.00
223XXX	Deferred Inflows of Resources - Other	0.00										0.00
223000	Deferred Inflows of Tax Revenues	27,423.00		(27,423.00)								0.00
		27,423.00		(27,423.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Fund balances (Net Position)											
	Net Investment in Capital assets				(200,564.00)		559,615.00	(159,493.00)				199,558.00
	Reserved (Restricted) for:											
250100	Non-spendable	0.00										0.00
250200	Restricted	0.00										0.00
												0.00
												0.00
260000 to	**Unrestricted, reported in:**											0.00
271000	All unrestricted governmental funds	272,467.00	0.00	27,423.00		(1,128.00)						298,762.00
												0.00
												0.00
	Total fund balances	272,467.00	0.00	27,423.00	(200,564.00)	(1,128.00)	559,615.00	(159,493.00)	0.00	0.00	0.00	498,320.00
	Total liabilities, Deferred Inflows of Resources and fund balances (Net Position)	300,265.00	0.00	0.00	0.00	0.00	559,615.00	(159,493.00)	0.00	0.00	0.00	700,387.00

TOWN OF SACO

GASB NO. 34 ENTITY-WIDE STATEMENT COMPOSITION SPREADSHEET

ENTITY-WIDE STATEMENT OF ACTIVITY - OPERATING STATEMENT CONVERSION WORKSHEET

FISCAL YEAR ENDING JUNE 30, 2021

Account Number	Description	FROM GOVERNMENTAL FUNDS	Current Year Deferred Inflow of Tax Revenue (Enter as positive on line 11 and/or 17)	Prior Year Deferred Inflow of Tax Revenue (Enter as negative on line 11 and line 16 if assessments reported as misc.)	1. Add GASB 68 on-behalf payment as intergovernmental revenue and pension expense by major purpose if not entered in fund financial statements; if entered in software - an adjustment may be necessary; See GASB Worksheet; 2. Input OPEB expense. 3. Auto - add beginning Long-term Debt to fund balance.	Remove the proceeds from long-term debt from other financing sources (enter as negative)	Remove Principal Debt Payments - Autofill's from the reduction in long-term debt from the GLTDAG Worksheet	Remove Capital Outlay Purchases	Add Capital Assets Beginning (to fund balance) Auto fills from GCAAG Worksheet	Record Depreciation Expense - Auto fills from the GCAAG Worksheet	Adjust for gain (loss) on sale of capital assets	Record Current Year Compensated Absences	Remove proceeds from sale of assets from other financing sources	Add net adjustments made to capital assets in the GFAAG (i.e. donated capital assets & other adjustments to inventory)	Add change in net position of internal service funds applicable to governmental activities	ADJUSTED AMOUNT FOR ENTITY-WIDE STATEMENT
			Auto	Action item	Action item	Action item	Auto	Action item	Auto	Auto	Action item	Action item	Action item	Action item	Action item	Action item	
	REVENUES																
310000/ 363000	Taxes/assessments	162,811.00	27,423.00	(22,941.00)													167,293.00
320000	Licenses and permits	540.00															540.00
330000	Intergovernmental revenues	69,460.00															69,460.00
340000	Charges for services	2,002.00															2,002.00
350000	Fines and forfeitures	0.00															0.00
360000	Miscellaneous	0.00															0.00
370000	Investment and royalty earnings	1,321.00															1,321.00
	Capital Asset Adj, gain/loss on sale, donation																0.00
	Total Revenues	236,134.00	27,423.00	(22,941.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	240,616.00
	EXPENDITURES																
	Current:																
410000	General government	46,230.00								14,390.00		(1,218.00)					59,402.00
420000	Public safety	1,248.00								0.00							1,248.00
430000	Public works	48,001.00								0.00							48,001.00
440000	Public health	11,496.00								0.00							11,496.00
450000	Social and economic services	0.00								0.00							0.00
460000	Culture and recreation	18,964.00								0.00							18,964.00
470000	Housing and community development	0.00								0.00							0.00
480000	Conservation of natural resources	0.00								0.00							0.00
490000	Debt Service:																
	Principal	16,168.00					(16,168.00)										0.00
	Interest	10,532.00															10,532.00
	Unallocated costs									0.00							0.00
	Capital outlay	13,950.00						(13,950.00)									0.00
500000	Internal Services	0.00															0.00
510000	Miscellaneous	702.00															702.00
	Total Expenditures	167,291.00	0.00	0.00	0.00	0.00	(16,168.00)	(13,950.00)	0.00	14,390.00	0.00	(1,218.00)	0.00	0.00	0.00	0.00	150,345.00
	Excess of revenues (under)	68,843.00	27,423.00	(22,941.00)	0.00	0.00	16,168.00	13,950.00	0.00	(14,390.00)	0.00	1,218.00	0.00	0.00	0.00	0.00	90,271.00
	OTHER FINANCING SOURCES (USES):																
381010/40	Bonds issued	0.00															0.00
381010/40	Discount on bonds issued	0.00															0.00
381050	Inception of capital lease	0.00															0.00
381070	Notes/loans/intercap issued	0.00															0.00
382010	Sale of capital assets	0.00															0.00
383000	Transfers In	541.00															541.00
521000	Transfers out	(541.00)															(541.00)
384000	Special items - revenue	0.00															0.00
385000	Extraordinary items - revenue	0.00															0.00
524000	Special items - expenditure	0.00															0.00
525000	Extraordinary items - expenditure	0.00															0.00
	Total other financing sources (uses)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Net change in fund balances	68,843.00	27,423.00	(22,941.00)	0.00	0.00	16,168.00	13,950.00	0.00	(14,390.00)	0.00	1,218.00	0.00	0.00	0.00	0.00	90,271.00
	Fund balances - July 1, 2020 as previously reported	203,624.00	0.00	22,941.00	(219,078.00)				400,562.00	0.00							408,049.00
	Prior period adjustments	0.00															0.00
	Fund balances - July 1, 2020 as restated	203,624.00	0.00	22,941.00	(219,078.00)	0.00	0.00	0.00	400,562.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	408,049.00
	Fund balances - June 30, 2021	272,467.00	27,423.00	0.00	(219,078.00)	0.00	16,168.00	13,950.00	400,562.00	(14,390.00)	0.00	1,218.00	0.00	0.00	0.00	0.00	498,320.00
																Balance Check	0.00

TOWN OF SACO

GASB NO. 34 ENTITY-WIDE STATEMENT COMPOSITION SPREADSHEET

REVENUE ANALYSIS WORKSHEET

FISCAL YEAR ENDING JUNE 30, 2021

Action item | Auto - unless a program revenue

Functional Activity	Taxes and Assessments	Licenses/ Permits	Intergovernmental: Operating Grants and Contributions	Intergovernmental: Capital Grants and Contributions	Intergovernmental: State and Federal Shared Revenues	Charges for Services	Fines and Forfeitures	Miscellaneous	Investment Earnings	Gain (Loss) on Sale of Capital Assets	Transfers In (Out)	Special/ Extra-ordinary Items	TOTAL
From OP Conversion Spreadsheet	167,293.00	540.00		69,460.00		2,002.00	0.00	0.00	1,321.00	0.00	0.00	0.00	240,616.00
PROGRAM REVENUES													
General Government													0.00
Public Safety													0.00
Public Works						2,002.00							2,002.00
Public Health													0.00
Social/Economic Services													0.00
Culture/Recreation													0.00
Housing/Community Development													0.00
Conservation of Natural Resources													0.00
Interest on long-term debt													0.00
Miscellaneous													0.00
TOTAL PROGRAM REVENUES	0.00	0.00	0.00	0.00	0.00	2,002.00	0.00	0.00	0.00	0.00	0.00	0.00	2,002.00
GENERAL REVENUES													
Property taxes	167,293.00												167,293.00
Local option taxes													0.00
Licenses and permits		540.00											540.00
Unrestricted Federal/State shared revenues					69,460.00								69,460.00
Unrestricted grants and contributions													0.00
Unrestricted investment earnings									1,321.00				1,321.00
Miscellaneous								0.00					0.00
Gain on sale of capital assets										0.00			0.00
Transfers											0.00		0.00
Special/Extraordinary items												0.00	0.00
TOTAL GENERAL REVENUES	167,293.00	540.00	0.00	0.00	69,460.00	0.00	0.00	0.00	1,321.00	0.00	0.00	0.00	238,614.00
TOTAL ALL REVENUES	167,293.00	540.00		69,460.00		2,002.00	0.00	0.00	1,321.00	0.00	0.00	0.00	240,616.00
										Balance check (should equal zero)			*0.00*

TOWN OF SACO

GOVERNMENTAL FUNDS CAPITAL ASSETS (FUND 9000)

FISCAL YEAR ENDING JUNE 30, 2021

ACCOUNT NUMBER	ACCOUNT DESCRIPTION	BALANCE July 1, 2020	DEBITS	CREDIT	Adjustments for capital assets/prior year depreciation	BALANCE June 30, 2021
181000	LAND	9,955.00				9,955.00
188000	CONSTRUCTION IN PROGRESS					0.00
182000	BUILDINGS	503,273.00				503,273.00
182100	ALLOWANCE FOR DEPRECIATION	(117,020.00)		12,358.00		(129,378.00)
183000	INTANGIBLES/WORKS OF ART					0.00
183100	AMORTIZATION/ALLOW. FOR DEPRECIATION					0.00
184000	IMPROVEMENTS OTHER THAN BUILDINGS					0.00
184100	ALLOWANCE FOR DEPRECIATION					0.00
186000	MACHINERY & EQUIPMENT	32,437.00	13,950.00			46,387.00
186100	ALLOWANCE FOR DEPRECIATION	(28,083.00)		2,032.00		(30,115.00)
187000	INFRASTRUCTURE					0.00
187100	ALLOWANCE FOR DEPRECIATION					0.00
	TOTAL ASSETS	400,562.00	13,950.00	14,390.00	0.00	400,122.00
	DEPRECIATION EXPENSE:					
410000830	GENERAL GOVERNMENT	0.00	14,390.00			14,390.00
420000830	PUBLIC SAFETY	0.00				0.00
430000830	PUBLIC WORKS	0.00				0.00
440000830	PUBLIC HEALTH	0.00				0.00
450000830	SOCIAL/ECONOMIC SERVICES	0.00				0.00
460000830	CULTURE AND RECREATION	0.00				0.00
470000830	HOUSING/COMMUNITY DEVELOPMENT	0.00				0.00
480000830	CONSERVATION OF NATURAL RESOURCES	0.00				0.00
	UNALLOCATED DEPRECIATION	0.00				0.00
	TOTAL DEPRECIATION EXPENSE	0.00	14,390.00	0.00	0.00	14,390.00
280000	INVESTMENT IN GENERAL CAPITAL ASSETS	400,562.00	14,390.00	13,950.00	0.00	400,122.00
	TOTAL	400,562.00	14,390.00	13,950.00	0.00	400,122.00

NOTE: At year end, the depreciation expense would be closed into the equity account (280000 Investment in General Capital Assets) and new purchases/acquisitions and/or sales/disposals would be recorded if updating Fund 9000.

	Helpful hints:	Does the addition of capital assets recorded on the GCAAG equal the capital outlay on the OP Conversion?					
		Have you adjusted for the disposal/trade-in of a capital asset? What was the carrying value? If other than zero an adjustment on the OP Conversion is necessary.					
	For additional information see the Capital Asset Training Video on the Local Gov. Services Bureau website: http://sfsd.mt.gov/LGSB						

LONG-TERM OBLIGATIONS (FUND 9500)
STATEMENT OF CHANGES IN GOVERNMENTAL FUNDS LONG-TERM OBLIGATIONS
FISCAL YEAR ENDING JUNE 30, 2021

Account number	Description	Balance July 1, 2020	Debits	Credits	Balance June 30, 2021
	ASSETS				
173100	Amount available G.O.debt				0.00
173200	Amount available S.I.D.debt				0.00
					0.00
174100	Amount to be provided G.O. debt				0.00
174200	Amount to be provided S.I.D. debt				0.00
174300	Amount to be provided - other	219,078.00		17,386.00	201,692.00
					0.00
	***TOTAL ASSETS**	219,078.00	0.00	17,386.00	201,692.00
	DEBT PAYABLE				
231100	G.O. bonds payable				0.00
					0.00
231200	DNRC bonds (loans) payable				0.00
					0.00
231400	S.I.D. bonds payable				0.00
	S.I.D. #				0.00
	S.I.D. #				0.00
	S.I.D. #				0.00
					0.00
234000	Judgement payable				0.00
					0.00
235100	Contracts payable				0.00
					0.00
235200	Installment purchase contract				0.00
					0.00
235300	Capital lease agreement				0.00
					0.00
235400	Notes/Loans/Intercap	216,732.00	16,168.00		200,564.00
237000	Pension Liabilities				0.00
238000	OPEB Liability				0.00
239000	Compensated absences payable	2,346.00	1,218.00		1,128.00
					0.00
	TOTAL DEBT PAYABLE	219,078.00	17,386.00	0.00	201,692.00

*Total assets must equal total debt payable. Balance check: 0.00

Beginning balance should equal with the ending balance of the previous fiscal year annual report and/or audit report.
The ending debt payable balances should equal the long-term debt balances reported in the "Notes to the Financial
other than the debt of any Business-Type Funds.

Helpful hints: Does the addition of bonds/notes/loans equal the proceeds from debt on the OP Conversion?
Does the reduction in bonds/notes/loans equal the principal payment on the OP Conversion?

Balance Check:

1 **Start by checking the General Fund:**

Page 15	169,857.00
Page 16	169,857.00
Page 53	169,857.00

2 **Major funds:**

	Column E	Column F	Column G	Column H	Column I	Column J	Column K
Page 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Page 16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Page 59	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3 **Other Non-major Governmental funds:**

Page 15	102,610.00
Page 16	102,610.00

4 **Total Governmental funds:**

Page 15	272,467.00
Page 16	272,467.00

If this balances your government funds are in balance and you can start on conversion; if not, compare below:

5a. **Non-major Special Revenue funds:**

Page 64	102,610.00
Page 66	102,610.00

5b. **Non-major Debt Service funds:**

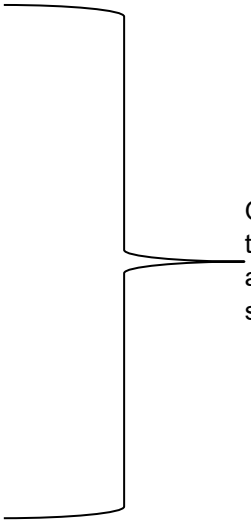
Page 68	0.00
Page 70	0.00

5c. **Non-major Capital Projects funds:**

Page 72	0.00
Page 74	0.00

5d. **Non-major Permanent funds:**

Page 76	0.00
Page 78	0.00



Once you have compared these fund types then compare the Total Government Funds again (#4). If this balances you can now start on the BS and OP Conversion.

Conversion process basics:

6a. GFAAG - Additions to capital assets = capital outlay:

GFAAG:	13,950.00
OP Conv:	13,950.00

6b. GLTDAG - Principal payments on long-term debt = principal payments:

GLTDAG:	16,168.00
OP Conv:	16,168.00

6c. GLTDAG - Compensated absences

GLTDAG	1,218.00
OP Conv.	(1,218.00)

7 **Conversion:**

BS Conv.	498,320.00
OP Conv	498,320.00

8 **Revenue analysis:**

From OP:	240,616.00
After:	240,616.00

9 **Intergovernmental Revenues:**

Page 85:	69,460.00 ⇦
Gov Rev:	69,460.00
Enter:	0.00
Fidic:	0.00
Total:	69,460.00 ⇦

10 **Changes in net position:**

Page 14	90,271.00
Page 17	90,271.00
OP Conv	90,271.00

11 **Governmental Funds:**

Page 13:	498,320.00
Page 14	498,320.00
Page 15	498,320.00
BS Conv	498,320.00
OP Conv	498,320.00

If these pages equal - the governmental funds are complete and in balance.
Continue to fiduciary funds

12 **Fiduciary Funds:**

	Pension	Investment Trust	Private Purpose Tr	Investment-No Trust	Custodial
Page 21	1,165.00	0.00	0.00	0.00	0.00
Page 22	1,165.00	0.00	0.00	0.00	0.00

13 **Enterprise Funds:**

	Column C	Column D	Column E	Column F	Non-major*	Total:
Page 18	586,755.00	26,101.00	232,992.00	0.00	118,005.00	963,853.00
Page 19	586,755.00	26,101.00	232,992.00	0.00	118,005.00	963,853.00

13a ***If non-major does not balance:**

	Column D	Column E	Column F	Column G	Total:
Page 79	118,005.00	0.00	0.00	0.00	118,005.00
Page 80	118,005.00	0.00	0.00	0.00	118,005.00

14 **Cash Flow Statements:**

	Column C	Column D	Column E	Column F	Non-major*	Total:
Page 18	109,452.00	28,590.00	2,931.00	0.00	55,120.00	196,093.00
Page 20	109,452.00	28,590.00	2,931.00	0.00	55,120.00	196,093.00

14a ***If non-major cash flow does not balance:**

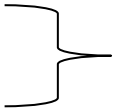
	Column D	Column E	Column F	Column G	Total:
Page 79	55,120.00	0.00	0.00	0.00	55,120.00
Page 81	55,120.00	0.00	0.00	0.00	55,120.00

15 **Changes in net position:**

Page 19	(120,303.00)
Page 14	(120,303.00)

16 **Total Enterprise Funds compared to Government-wide Statements:**

Page 13	963,853.00
Page 14	963,853.00
Page 18	963,853.00
Page 19	963,853.00



If these pages are equal and the cash flow pages are equal - then the enterprise funds are complete and in balance.

17 **Total Government-wide Statement of Net Position to GW Statement of Activities:**

Page 13	1,462,173.00
Page 14	1,462,173.00

18 **Cash Reconciliation:**

Page 88	480,827.00
Page 89	472,692.00

19 **Cash as listed on GW Statements:**

Governmental:		(Does not include internal service funds)
Page 13	275,434.00	
Page 88	275,434.00	*If completing the cash worksheet, if not disregard
Enterprise:		(Does not include internal service funds)
Page 13	196,093.00	
Page 18	196,093.00	
Page 88	196,093.00	*If completing the cash worksheet, if not disregard
Total:		
Page 13:	471,527.00	
Page 21:	1,165.00	
Page 82:	0.00	
Subtotal:	472,692.00	
Page 89:	472,692.00	*if using clearing funds (7910, 7930) add back in the outstanding items to reconcile cash in total.
Outstandir items:	8,135.00	
	480,827.00	Total cash (with outstanding items added back in) to reconcile to cash on statements

APPENDIX V

Funding Agency Correspondence

Matthew Mudd

From: Carlson, Craig - RD, State Office <craig.carlson@usda.gov>
Sent: Tuesday, April 26, 2022 9:11 AM
To: Matthew Mudd; LaNette Jones
Subject: RE: [External Email]Town of Saco

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Matt and LaNette,

Thanks for the feedback. It should be easy to document the health and safety issues for Saco. With the new MHI data set (October 1st) and the health and safety violations, Saco would be eligible for up to a 75 percent grant and a poverty interest rate.

Craig Carlson
US Department of Agriculture
12 3rd Street NW, Suite 300
Great Falls, MT 59404
406 - 770 - 4316
www.rd.usda.gov/mt
"Together, America Prospers"

From: Matthew Mudd <mmudd@greatwesteng.com>
Sent: Tuesday, April 26, 2022 9:03 AM
To: LaNette Jones <ljones@greatwesteng.com>; Carlson, Craig - RD, State Office <craig.carlson@usda.gov>
Subject: RE: [External Email]Town of Saco

Thanks for your response, Craig. I agree with all that LaNette has presented.

We do have letters and first-hand accounts of several homes and a church that have experienced past overflows as a result of the condition of the sewer. The Town has just completed another 2,500 feet, in addition to the 3,000 feet, sewer video'd at the end of last year, and the existing clay piping is in rough shape (sections missing, cracks, offset joints, etc). We could look at splitting the Phase 3 pipe project into sub-phases (3A, 3B) if needed.

-Matt

GreatWest ENGINEERING

We're Hiring!

Matthew Mudd, PE
Project Manager

d: (406) 495-6196
c: (406) 490-3909

2501 Belt View Drive
Helena, MT 59601

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From: LaNette Jones <ljones@greatwesteng.com>
Sent: Tuesday, April 26, 2022 8:52 AM
To: Carlson, Craig - RD, State Office <craig.carlson@usda.gov>
Cc: Matthew Mudd <mmudd@greatwesteng.com>
Subject: RE: [External Email]Town of Saco

Craig,

Thank you for the well thought out email. Saco does have serious public health and safety issues and continues to receive DEQ violations for Ecoli. They also have sanitary sewer overflows into residents basements. They also currently discharge to a TMDL river (Milk River) which adds to the public health and safety. I think the Town is going to apply for MCEP, DNRC, and CDBG for Phase 2. Phase 1 was completely funded by ARPA. However, given your advice below we will talk with the Town about applying for Phase 2 and 3 from RD.

Hope you are doing well.

Thanks,

GreatWest ENGINEERING

We're Hiring!

LaNette Jones
Certified Grant Writer

d: (406) 495-6179
c: (406) 207-7682

2501 Belt View Drive
Helena, MT 59601

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From: Carlson, Craig - RD, State Office <craig.carlson@usda.gov>
Sent: Tuesday, April 26, 2022 8:40 AM
To: LaNette Jones <ljones@greatwesteng.com>
Subject: RE: [External Email]Town of Saco

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Hi LaNette,

I hope that you are doing well these days. There are a bunch of variables here so I will try to paint a picture that you can use. I looked at Saco's 2021 annual financial report and they have very modest reserves in the sewer enterprise. There current rate of $25 for sewer is quite low so when I compare to similar systems I am finding a low of about $36 per month so the monthly rate would have to go to $36 or above to be eligible for RD grant funds. With a $367,000 loan and $300,000 grant I get another $9.42 per month at the current 2 percent intermediate rate. With short-lived assets added in and O&M adjustments it is likely to make the $36 threshold. I certainly prefer to see as much project being completed as possible and maybe getting phase 1 and phase 2 completed is as much as they can handle. I think that this loan/grant split is realistic.

RD will be using a new MHI data set beginning on October 1st which would be slightly more favorable to Saco. If Saco has any health and safety violations with there sewer system, they may become eligible for the poverty interest rate and a greater grant percentage. If that were to be the case it would be worth considering adding the last phase of work into the project.

Craig Carlson
US Department of Agriculture
12 3rd Street NW, Suite 300
Great Falls, MT 59404
406 - 770 - 4316
www.rd.usda.gov/mt
"Together, America Prospers"

From: LaNette Jones <ljones@greatwesteng.com>
Sent: Monday, April 25, 2022 5:16 PM
To: Carlson, Craig - RD, State Office <craig.carlson@usda.gov>
Cc: Matthew Mudd <mmudd@greatwesteng.com>
Subject: [External Email]Town of Saco

[External Email]
If this message comes from an **unexpected sender** or references a **vague/unexpected topic;**
Use caution before clicking links or opening attachments.
Please send any concerns or suspicious messages to: Spam.Abuse@usda.gov

Hi Craig,

Given that Steve is out for awhile, we typically send him these emails about future protects. As you are aware we are in the process of applying for MCEP and RRGL funding. These funders require us to reach out to RD or SRF to determine if the funding package is reasonable. Can you review the below and let us know if the funding package seems reasonable? Thanks!

Great West Engineering is preparing a preliminary wastewater engineering report for the Town of Saco. The following is a summary of the system's deficiencies:

- Treatment - Excessive sludge accumulation, recurring discharge violations for BOD, TSS, E.coli., unable to meet E.coli limits without disinfection, impaired receiving water (Beaver Creek), failed control valves and structures,
- Lift Station – The Town's only lift station is over 70 years old and is well beyond its useful design life, unsafe, difficult to obtain parts, no emergency notification.
- The collection system was constructed in the 1950s. A video inspection of 3,500 feet of the clay pipe collection system identified sagging, cracked, offset joints, and locations of root intrusion. We also have sewer cleaning reports, maintenance logs, and site reconnaissance investigations that indicate approximately 33% of the system experiences high I/I periods.

- The town has approximately 12,000 feet of clay pipe collection system, and within the next two weeks, the town will have additional 4,000 feet of the system video inspected.

The town charges $25/month for sewer and $55/month for drinking water. Saco's 2010 MHI is $41,250. The 2019 MHI is $42,500. Saco is 55-percent LMI, and 21.7% of its residents live in poverty. The wastewater system has approximately 130 EDUs, and the water system is metered.

We are currently designing Phase 1 of the project to replace 1,000 feet of the collection system and the lift station with ARPA funding.

We are reaching out to RD regarding Phase 2 of the project. Phase 2 will upgrade the treatment system and more of the collection system. The estimated cost is $1.9 million. The town will rehab the lagoons and add irrigation of treated WW.

Phase 3 (tentative) will complete the upgrade of the collection system with an estimated cost of $2.2 million.

The estimated cost of the Phase 2 project is $1.9 million. We think Saco could win $1.25 million in MCEP, CDBG, and RRGL grant funding for Phase 2.

The remaining $667K would come from Rural Development or SRF. Based on the condition of the system and Saco's demographics, is it reasonable to assume the community could qualify for RD's intermediate rate with a funding package that is 55% loan and 45% grant?

Please let us know if you have any questions.

GreatWest ENGINEERING

We're Hiring!

LaNette Jones
Certified Grant Writer

d: (406) 495-6179
c: (406) 207-7682

2501 Belt View Drive
Helena, MT 59601

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Matthew Mudd

From: Miller, Anna <annam@mt.gov>
Sent: Monday, April 25, 2022 6:47 PM
To: LaNette Jones
Cc: Matthew Mudd
Subject: RE: Town of Saco WW project

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LaNette,
Of course the town can get a loan from the program. It looks like they might qualify for some forgiveness.

I can Not know what the amount of Forgiveness might be until we have a loan application.

We are waiting to hear from EPA on the final numbers for the amount of forgiveness.

Anna

From: LaNette Jones <ljones@greatwesteng.com>
Sent: Monday, April 25, 2022 5:20 PM
To: Miller, Anna <annam@mt.gov>
Cc: Matthew Mudd <mmudd@greatwesteng.com>
Subject: [EXTERNAL] Town of Saco WW project

Great West Engineering is preparing a preliminary wastewater engineering report for the Town of Saco. The following is a summary of the system's deficiencies:

- Treatment - Excessive sludge accumulation, recurring discharge violations for BOD, TSS, E.coli., unable to meet E.coli limits without disinfection, impaired receiving water (Beaver Creek), failed control valves and structures,
- Lift Station – The Town's only lift station is over 70 years old and is well beyond its useful design life, unsafe, difficult to obtain parts, no emergency notification.
- The collection system was constructed in the 1950s. A video inspection of 3,500 feet of the clay pipe collection system identified sagging, cracked, offset joints, and locations of root intrusion. We also have sewer cleaning reports, maintenance logs, and site reconnaissance investigations that indicate approximately 33% of the system experiences high I/I periods.
- The town has approximately 12,000 feet of clay pipe collection system, and within the next two weeks, the town will have additional 4,000 feet of the system video inspected.

The town charges $25/month for sewer and $55/month for drinking water. The 2019 MHI is $42,500. Saco is 55-percent LMI, and 21.7% of its residents live in poverty. The wastewater system has approximately 130 EDUs, and the water system is metered.

We are currently designing Phase 1 of the project to replace 1,000 feet of the collection system and the lift station with ARPA funding.

We are reaching out to SRF regarding Phase 2 of the project. Phase 2 will upgrade the treatment system and more of the collection system. The estimated cost is $1.9 million. The town will rehab the lagoons and add irrigation of treated WW.

Phase 3 (tentative) will complete the upgrade of the collection system with an estimated cost of $2.2 million.

The estimated cost of the Phase 2 project is $1.9 million. We think Saco could win $1.25 million in MCEP, CDBG, and RRGL grant funding for Phase 2.

The remaining $660K would come from SRF or Rural Development. Based on the condition of the system and Saco's demographics, is it reasonable to assume the community could qualify for loan forgiveness? Since this is a WW project, would the forgiveness likely be 50% of the $660K, or would it be less? If less, what's reasonable?

Please let us know if you have any questions.

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APPENDIX W

Resolutions and Authorizations

RESOLUTION NO. 2022-03

A RESOLUTION OF THE TOWN OF SACO TO AUTHORIZE SUBMISSION OF AN APPICATION TO MCEP

WHEREAS the Town of Saco is applying to the Montana Department of Commerce for financial assistance from the Montana Coal Endowment Program (MCEP) to complete water system upgrades;

WHEREAS, the Town of Saco has the legal authority to construct, finance, operate, and maintain a public wastewater system;

That the Town of Saco agrees to comply with all State laws and regulations and the requirements described in the MCEP Application Guidelines and those that will be described in the MCEP Project Administration Manual;

That the Town of Saco commits to provide the amount of matching funds as proposed in the MCEP application; and

That Wayne Woodall, Mayor, is authorized to submit this application to the Montana Department of Commerce, on behalf of the Town of Saco, to act on its behalf and to provide such additional information as may be required.

PASSED AND ADOPTED by the Town of Saco at a meeting thereof held on the 13th of April 2022.

APPROVED

Wayne Woodall, Mayor

ATTEST:

Kirsten Albus

RESOLUTION NO. 2022-02

A RESOLUTION OF THE TOWN OF SACO TO ACCEPT THE DETERMINATION THAT AN ENVIRONMENTAL ASESSMENT IS APPROPRIATE FOR THE TOWN OF SACO WASTEWASTEWATER SYSTEM IMPROVEMENTS PROJECT

WHEREAS, the Town of Saco has completed an assessment to identify potential environmental impacts of wastewater system upgrades;

WHEREAS the draft Environmental Assessment was made available for public comment and the findings were presented and reviewed at a public meeting;

WHEREAS the Town of Saco did not receive substantive public comment;

WHEREAS the Town of Saco has determined that the improvements to its wastewater system will not significantly affect the quality of the human environment and accordingly the Town of Saco has determined the preparation of an Environmental Impact Statement is not necessary;

NOW, THEREFORE, BE IT RESOLVED by the Town of Saco Town Council to adopt the final Environmental Assessment for the wastewater system improvements project.

PASSED AND ADOPTED by the Saco Town Council at a meeting thereof held on the 13th of April 2022.

APPROVED

Wayne Woodall

Wayne Woodall, Mayor

ATTEST:

Kirsten Albus

Kirsten Albus, Clerk

RESOLUTION NO. 2022-04

A RESOLUTION OF TOWN OF SACO TO ADOPT A DETAILED PRELIMINARY ENGINEERING REPORT PREPARED BY GREAT WEST ENGINEERING, INC.

WHEREAS Great West Engineering did submit a detailed Preliminary Engineering Report to the Town of Saco describing the condition and performance of its existing wastewater system; developed, evaluated, and recommended preferred alternatives for improvements, and

WHEREAS, the Town of Saco did meet with Great West Engineering to review and approve said Preliminary Engineering Report; and

WHEREAS, the Town of Saco Town Council has conducted a public meeting and Great West Engineering has incorporated information from the meeting in the Preliminary Engineering Report.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The Town of Saco Council has reviewed the Preliminary Engineering Report (PER) and submitted change requests necessary to effectuate the acceptance of the PER and hereby declares the document acceptable to the Town of Saco; and

2. That the Town Council hereby authorizes Wayne Woodall, Mayor to execute and attest any documents required to adopt the PER and effectuate its submission to the appropriate governing agencies:

PASSED AND ADOPTED by the Town of Saco at a meeting thereof held on the 13th day of April 2022.

APPROVED

Wayne Woodall, Mayor

ATTEST:

Kirsten Albus, Clerk

Authorizing Statement

A. Grant Authorization

I certify that the information and the statements in this application are true, complete, and accurate to the best of my knowledge. I certify that the project or activity as described in this application complies with all applicable state, local and federal laws and regulations. By my signature below, I certify that I have knowledge of and understand the content of this application and that I am fully authorized to apply to the Department of Natural Resources and Conservation (DNRC) for the grant specified in the submitted materials.

I further declare that, for the Town of Saco, I am legally authorized to enter into a binding contract with the DNRC to obtain funding of this application, Saco Wastewater System Improvements, is approved. I understand that all funds must be both authorized by the Montana Legislature and available in the natural resources project account before grants are available.

A facsimile, photocopy or electronic copy of the signature below shall have the same force and effect as an original signature and an electronic signature shall be regarded as an original signature. 30-18-102, MCA.

/s/ Wayne Woodall Mayor — 4-13-22

Signature and Title of Authorized Representative — Date

Wayne Woodall, Mayor — Saco

Printed Name and Title of Representative — Entity Name