



NPDES Compliance Inspection Report

Lummi Tribal Sewer and Water District Kwina Road MBR Wastewater Treatment Plant

Bellingham, WA

Permit # WA0026727

Inspection Date: August 17, 2022

Prepared by:

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U.S. Environmental Protection Agency, Region 10
Enforcement & Compliance Assurance Division
Water Enforcement & Field Branch
Surface Water Enforcement Section

Inspector Signature/Date:

Supervisor Signature/Date:

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(Unless otherwise noted, all details in this inspection report were obtained from conversations and communications (e.g., emails, documents, etc.) with Dale D. Andert, District Manager, or Daniel Jeffries, Lab Technician/Plant Operator, and from reviews of documents and direct inspection observations)

I. Facility Information

Facility Name:	Kwina Road MBR Wastewater Treatment Plant (WWTP)
Facility Owner/Operator:	Lummi Tribal Sewer and Water District (LTSWD)
Physical Address:	4100 Lummi Shore Drive Bellingham, WA 98226
Lat/Long:	48.790651, -122.612978
Mailing Address:	2156 Lummi View Drive Bellingham, WA 98226
Facility Contacts:	Dale D. Andert, District Manager (cell) (360) 393-7105 DaleA@lummi-nsn.gov Daniel Jeffries, Lab Technician/Plant Operator (cell) (360) 305-6059 DanJ@ltswd.com
Permit Number:	WA0026727
NAICS Code:	221320 – Sewage Treatment Facilities
SIC Code:	4952 – Sewerage Systems
Receiving Water:	Wetland No. 2011-08 (eventually Lummi Bay)

II. Inspection Information

Inspection Date:	August 17, 2022
Inspectors:	Rick Cool; Kyle Masters (SWES NPDES inspector in-training)
Arrival Time:	11:30 AM
Departure Time:	12:15 PM (approximate)

Weather: Sunny

Purpose: To evaluate the Kwina Road MBR wastewater treatment plant's (WWTP) compliance with the National Pollutant Discharge Elimination System (NPDES) permit and the Clean Water Act (CWA).

III. Permit Information

This WWTP was permitted previously to discharge under NPDES permit WA0026727. The 2015 permit became effective on August 1, 2015 and expired on July 31, 2020.

An NPDES application for permit reissuance was submitted by the LTSWD on January 25, 2022. EPA determined the application was complete and a draft permit for reissuance was public noticed in the summer, 2022.

The August 17, 2022 NPDES inspection was conducted on the basis of the expired 2015 permit (Permit).

On September 23, 2022, the EPA Region 10 NPDES Permitting Section reissued the permit with an effective date of January 1, 2023 and an expiration date of December 31, 2027.

IV. Background

The WWTP is owned and operated by the LTSWD. According to the EPA Region 10 NPDES Permitting Section's 2022 Fact Sheet (Fact Sheet) used for the public comment period on the draft permit for reissuance, the WWTP serves a resident population of 500. The Fact Sheet states the WWTP collection system has no combined sewers and there are no major industries discharging to the WWTP. The EPA's 2015 Fact Sheet states the WWTP also treats wastewater from the Lummi Nation administrative building, the Northwest Indian College, and the Silver Reef Hotel, Casino & Spa.

The Fact Sheet states the WWTP design flow is 0.107 mgd, and the reported actual WWTP flows range from 0.05 to 0.15 mgd (average monthly flow). The Fact Sheet states when inflows are too high, the WWTP is able to send sewage to the larger Lummi Gooseberry Point wastewater treatment plant for treatment.

The WWTP's treatment process begins with raw influent entering and passing through the WWTP headworks that includes rotary drum fine screens for grit and debris removal. LTSWD staff stated the headworks screens are cleaned bi-weekly.

Influent then flows to an anoxic basin fitted with an alkalinity adjustment system (sodium bicarbonate addition). Any accumulated sludge in the anoxic basin is pumped to the digesters. Anoxic basin flows are conveyed to the pre-aeration basins fitted with blowers. The anoxic basin, in combination with the pre-aeration basins, provide de-nitrification, before the influent is

pumped through 900 membrane bioreactor cells to further filter and secondarily treat the wastewater. The WWTP uses an ultraviolet (UV) disinfection system just prior to pumping and discharge to Wetland 2011-08.

Sludge is removed from the basins, thickened and then sent to two aerobic digesters. The digested solids are applied to land at the Lummi biosolids application site.

Attachment A of this inspection report is a 2021 WWTP process flow schematic that was included as an attachment to the EPA's 2022 Fact Sheet.

Because the WWTP design flow is less than 1 mgd, the WWTP is considered a minor facility.

The Fact Sheet notes the WWTP underwent several upgrades beginning shortly before the first 2015 NPDES permit was issued and ending in 2017. The upgrades included: replacement of chlorine disinfection with UV, construction of two aerobic digesters, construction of a second pre-aeration treatment basin, replacement of the influent screens, mixers, generator, pumps, and membranes, and relocation of the outfall to its current wetland discharge location.

The WWTP replaced the membranes during the summer of 2022 due to poor performance of the membranes which were installed during the earlier membrane upgrade, and as a potential result of apparent damage caused by debris entering the membranes during a torrential rain event.

The Fact Sheet states the WWTP discharges directly to Wetland No. 2011-08, across Lummi Shore Drive from the WWTP, through an underground 8" diameter PVC outfall pipe. The pipe starts from the non-potable water wet well on the WWTP property, travels approximately 20 feet north, turns ninety degrees, travels east for approximately 242 feet, passes under Lummi Shore Drive, and terminates 23 feet east of Lummi Shore Drive.

The Fact Sheet states the outfall pipe discharges onto an energy dissipating rip rap apron that is 3 feet wide at the pipe outlet, 10 feet long, and 8 feet wide at the end and the WWTP discharge from the outfall flows briefly before it ultimately infiltrates into the wetland ground.

The 2015 Fact Sheet states the wetland receiving the WWTP effluent drains to Smugglers Slough, which also runs through Wetland No. 2011-08 and heads generally north and west in the Nooksack River/Lummi River floodplain across the northern upland area of the Lummi Peninsula of the Lummi Indian Reservation before discharging through a series of culverts into Lummi Bay.

The EPA's Integrated Compliance Information System (ICIS) does not show EPA has conducted any comprehensive evaluation inspection (CEI) of the WWTP by an NPDES inspector from the prior EPA Region 10 Office of Compliance and Enforcement or the current Region 10 Enforcement and Compliance Assurance Division. ICIS shows Jill Nogi, an inspector with the EPA Region 10's prior Office of Water and Watersheds (OWW), conducted two reconnaissance inspections of the WWTP on May 22, 2014 (informational site visit) and August 4, 2015. Ms. Nogi was the technical contact and permit writer for the issuance of the 2015 permit. ICIS does not show any follow-up enforcement actions were taken based on those reconnaissance inspections.

V. Inspection Chronology

This was an announced inspection. On July 25, 2022, I sent my introductory email to Mr. Andert, LTSWD District Manager, to discuss scheduling of NPDES inspections of the Gooseberry Point wastewater treatment plant and the Kwina Road Membrane Bioreactor (MBR) WWTP. I called Mr. Andert on July 26, 2022 and made arrangements to conduct the Kwina Road MBR WWTP inspection on August 17. Due to circumstances beyond my direct control, I had to cancel the August 10 inspection of the Gooseberry Point wastewater treatment plant. Mr. Andert agreed to reschedule both the Gooseberry Point wastewater treatment plant and the Kwina Road MBR WWTP inspections for August 17, 2022.

Kyle Masters, SWES NPDES inspector-in-training, accompanied me on the August 17, 2022 NPDES inspections. We arrived at the Gooseberry Point wastewater treatment plant on Wednesday, August 17, at approximately 8:10 a.m. I presented my EPA-issued inspector credentials to Mr. Andert and provided him an EPA Small Business Resources Information Sheet. We were accompanied throughout the two inspections by at least one LTSWD representative at all times. We were not denied access to the Kwina Road MBR WWTP or any portion thereof.

We began the two inspections simultaneously with an opening conference with Dale Andert and Daniel Jeffries, LTSWD Lab Technician/Plant Operator, in Mr. Andert's office. After taking a tour of the Gooseberry Point wastewater treatment plant, we visited the on-site laboratory which serves all three LTSWD wastewater treatment plants and conducted a file review of various permit related documents including documents related to both the Kwina Road MBR WWTP and the Gooseberry Point wastewater treatment plant.

After completing the laboratory document/file review and our on-site tour inspection of the Gooseberry Point wastewater treatment plant, we drove to the Kwina Road MBR WWTP to conduct the NPDES inspection of that WWTP, accompanied by Mr. Jefferies during that entire WWTP inspection.

Due to time constraints caused by two inspections with additional travel, and the need to obtain and review additional documents, we arranged with Mr. Andert and Mr. Jefferies to delay the closing conferences for both facilities' inspections until a mutually agreeable time could be arranged. We did however discuss next steps which included my sending of follow-up emails to Mr. Jefferies with additional document/file requests and informal requests for information related to the plants' operations and the various documents and files reviewed both during and after the August 17 on-site inspections.

We completed the two inspections on Tuesday, September 20, 2022, by conducting a Teams meeting-based closing conference to discuss our inspection observations for both plants and next steps. The closing conference call included Kyle Masters, Dale Andert, Daniel Jeffries, and Ivan Washington, LTSWD Plant Operator.

VI. Opening Conference

Mr. Andert recently joined the LTSWD staff as the (interim) District Manager, with a primary focus to manage the Gooseberry Point wastewater treatment plant's construction upgrade project with construction oversight of the Faber Construction Corporation contract.

Mr. Andert reported the LTSWD operations include both potable water and wastewater services with three major wastewater treatment plants (e.g., Gooseberry Point, Sandy Point and Kwina Road MBR), approximately 21 lift stations and 17 drinking water wells.

Mr. Andert provided a copy of a June 2022 LTSWD water and sewer organizational chart showing at least 6 wastewater/sewer operators under the designated sewer supervisor's oversight, with another two water operators (under the water supervisor's oversight) trained to do both wastewater/sewer and water operations. In sum, the LTSWD has 8 operators for wastewater and sewer related duties and operations and of those 8 operators, Mr. Andert said six operators are certified.

Mr. Andert reported there had been a recent major upgrade of the Kwina Road MBR WWTP's membranes (i.e., membrane replacement) during the 2022 summer, just recently completed at a cost of approximately \$500,000. A substantial 2021 rain event apparently caused debris to get beyond the WWTP headworks into the membranes which may have been a contributing factor to the membranes' performance deterioration, which Mr. Andert stated was as much as 50% reduction in treatment performance.

In response to EPA questions about Kwina Road MBR WWTP's membrane cleaning cycle, Mr. Jefferies stated operators observe trans-membrane pressure and when the variable gets into the 2.9 – 3.0 range, cleaning is initiated.

In response to EPA questions about how Gooseberry Point wastewater treatment plant's 24-hour composite sampling was conducted, Mr. Jefferies stated a 300-ml sample is taken each hour during the 24-hour sampling period and this time-based interval sampling regime is also used for the Kwina Road MBR WWTP's 24-hour composite sampling regime.

In response to EPA questions about the frequency of Kwina Road MBR WWTP conveyance system sanitary sewer overflows, LTSWD staff stated no identified sanitary sewer overflows had occurred.

In response to EPA questions about whether there were any calibrations conducted of the WWTP's influent and effluent flow measurement devices, LTSWD staff stated no calibrations are conducted.

After the combined inspections' opening conference, Mr. Andert took us around the Gooseberry Point wastewater treatment plant site to observe the ongoing construction, including earthwork, structural re-rod installations for eventual concrete pours, new concrete-completed wall installations and related permeability testing, and other new construction.

Mr. Andert then escorted us to the Gooseberry Point wastewater treatment plant's laboratory where, with Mr. Jefferies's assistance, we reviewed files and documents relevant to both plants' inspections. After the review, Mr. Jefferies took us around the Gooseberry Point wastewater treatment plant site to observe the existing WWTP structures, equipment and processes.

After that site tour, we drove to the Kwina Road MBR WWTP to conduct that plant's NPDES on-site tour.

VII. Site Tour

We arrived at the Kwina Road MBR WWTP at approximately 11:30 a.m. and Mr. Jefferies arrived shortly thereafter.

We started the site tour in the Kwina Road MBR WWTP's control/pump building. While in this building and in response to EPA questions about what visual observations are made by LTSWD staff regarding the Permit, Part I.B.3., to ensure no discharge of floating, suspended or nuisance matter, LTSWD staff produced a bound logbook that I quickly scanned. The logbook contained hand-written dated entries showing apparent weekly visual observations of the outfall discharges were being made by operators.

LTSWD staff pointed out that the MBR treated effluent flows through two permeate pipes, each pipe with an effluent flow measuring device (**Photo 1**) and the WWTP computer totals these effluent flows automatically. We also observed the ISCO 24-hour effluent sampling device (**Photo 2**) and its internal thermometer read 2.4°C. We then inspected the headworks screening system (**Photo 3**).

We inspected the aerobic digesters (**Photo 4**), and immediately adjacent, the sludge thickening membrane structure. We then inspected the MBR structures which included the pre-aeration basins (**Photo 5**), and then the entire MBR structure (**Photo 6**).

Finally, we crossed Lummi Shore Drive, and Mr. Jefferies cleared the vegetative overgrowth so I could observe the outfall and discharge flow (**Photo 7**).

After completing the WWTP site tour, we engaged Mr. Jefferies about the delayed inspections' closing conference which mutual arrangement was confirmed with Mr. Andert via phone call.

As part of the site review for both inspections as noted above, we visited and made observations of the WWTP laboratory procedures, documentation and equipment while we were at the Gooseberry Point site. Additionally, some of the laboratory documentation was reviewed after the August 17 on-site portion of the inspections as a result of a post on-site inspection informal document request.

The WWTP laboratory had an unsigned March 7, 2016 Quality Assurance Manual (QAM) which was reviewed as part of the overall inspection process and included, as applicable, substantive content and implementation issues addressed in this inspection report's areas-of-concern.

It appears from the documentation (e.g., 2021 and 2022 chains-of-custody) the WWTP sends out the ammonia, oil and grease, total dissolved solids and nutrient samples to Edge Analytical, Inc. for analysis for the three LTSWD wastewater treatment plant permits.

The WWTP permit requires daily pH readings of the effluent but there were gaps in the pH calibration meter log, i.e., days with no documented calibration. The pH buffer containers were viewed and they were not expired.

The thermometer in the lab refrigerator was observed and it showed a temperature of 3°C.

The laboratory scale was observed and it had a sticker showing its recent annual calibration (dated January 18, 2022).

During this laboratory visit, we also engaged the LTSWD lab technician/plant operator about various Kwina Road MBR WWTP permit implementation issues, as summarized below.

In response to EPA questions about whether LTSWD has submitted the temperature text files annually to EPA and the Lummi Natural Resources Department by January 31 each year, in accord with the Permit, Part I.B.5, LTSWD staff stated those submissions had not been made.

In response to EPA questions about whether LTSWD was conducting the required flow evaluations in accord with the Permit, Part II.D.2, to determine if the facility plan requirement was ever triggered, LTSWD staff stated those evaluations were not being conducted and no facility plan had been submitted to the Lummi Natural Resources Department.

In response to EPA questions about whether LTSWD had developed and maintained a master list of industrial users in accord with the Permit, Part II.E.3, and whether LTSWD had ever submitted this master list and related information to EPA in accord with the Permit, Part II.E.4, LTSWD staff stated no master list was created and maintained; consequently, no related submissions had been made to EPA.

VIII. File Review

We reviewed the following records and documents as part of the total inspection process, including post-August 17 informal information requests:

- NPDES Permit No. WA0026727. The WWTP had a copy of the 2015 NPDES permit on file.
- Discharge Monitoring Reports (DMRs). I reviewed DMR data pulls from the EPA Integrated Compliance Information System (ICIS) for August 2015 through June 2022.
- EPA-Generated Violations Report & NCEP Report. I reviewed an EPA ICIS-generated Violations Report and a National Compliance Evaluation Program (NCEP) Report for the time period of June 1, 2015 through July 25, 2022.

- Non-Compliance Reports. I reviewed the LTSWD's non-compliance reports located in EPA Region 10's NetDMR ICIS Reports folder and in the EPA hard copy DMR files located in this inspector's folder (see above) that were submitted the reported effluent limitation exceedances for August – September 2015 and January 2017. DMR Comment boxes were also reviewed for any other DMR-related noncompliance reports/comments.
- Operation and Maintenance (O&M) Plan. We requested to review the O&M Plan required by the Permit, Part II.A and a copy of any LTSWD letter submitted in accord with the Permit, Part II.A that was required to be submitted to EPA confirming the O&M Plan was developed and implemented within 180 days of the effective date of the 2015 permit. LTSWD staff were not able to provide any O&M Plan related submission notice letter. LTSWD staff said the Plan is located on an USB drive along with WWTP manufacturers' operation manuals.
- Quality Assurance Plan (QAP). I reviewed the WWTP's unsigned March 7, 2016 Quality Assurance Manual (QAM). We requested to review a copy of any LTSWD letter submitted in accord with the Permit, Part II.B that was required to be submitted to EPA confirming the QAP was developed and implemented within 180 days of the effective date of the 2015 permit. LTSWD staff were not able to provide any QAM-related submission notice letter.
- Emergency Response and Public Notification Plan (ERPMP). The Permit, Part II.C., requires the Permittee to develop and implement an ERPMP to protect public health from overflows, bypasses or upsets. After the August 17 inspection, the LTSWD submitted a copy of their two-page ERPMP. We also requested to review a copy of any LTSWD letter submitted in accord with the Permit, Part II.C.2, that was required to be submitted to EPA and the Lummi Department of Natural Resources confirming the ERPMP was developed and implemented within 180 days of the effective date of the 2015 permit. LTSWD staff were not able to provide any ERPMP-related submission notice letter.
- LTSWD Lab-Generated Excel Spreadsheets (January – March 2022). During the on-site August 17 lab discussion, we were apprised the WWTP lab transfers lab bench sheet, and if applicable, private lab report data, to a monthly Excel spreadsheet which also includes other measurement data (e.g., WWTP flow rates, pH readings, etc.) that is then used to fill out monthly DMRs. I requested copies of and reviewed the LTSWD lab-generated Excel spreadsheets for three months, January – March 2022 and compared those spreadsheet entries to the ICIS-generated DMR reports.

IX. Areas of Concern

I note the following areas of concern, most of which were summarized to the LTSWD staff during the September 20, 2022 closing conference:

A. Effluent Limit Exceedances

The Permit, Part I.B.1, requires in part “The Permittee must limit and monitor discharges from outfall 001 as specified in the table below . . . The Permittee must comply with the effluent limits in the tables at all times . . .”

The EPA Violations Report and NCEP Report generated from WWTP-submitted DMR data for the time period of June 1, 2015 through July 25, 2022 show the WWTP has exceeded effluent limits in 3 months of that approximate 85-month time period. LTSWD submitted noncompliance reports for all three month exceedances. Based on the Violations and NCEP Reports, no effluent limit exceedances were reported from the EPA ICIS system for the period after January 2017 through July 25, 2022.

In summary, the two EPA reports identified the following effluent limit exceedances:

- August 2015: Total ammonia and BOD;
- September 2015: Total ammonia; and
- January 2017: Total ammonia.

B. Non-Receipt of Nutrient Sampling Results; DMR Completeness & Accuracy

The Permit, Part III.B., requires in part the Permittee must submit monitoring data each month in the DMR or its equivalent. The Permit, Part V.E.4, provides DMRs are certified as “true, accurate, and complete.” The Permit, Part I.B.1, Table 1, requires quarterly effluent sampling of Total Phosphorus, Total Kjeldahl Nitrogen, and Total Nitrate/Nitrite as N. The DMRs for the following quarters did not include the required nutrient sampling discussed here:

- April – June 2016;
- October – December 2016;
- July – September 2018; and
- October – December 2021.

LTSWD staff reported the missing 2018 and 2021 data was due to the samples not getting into the lab, and no ability to identify where the former lab technician might have saved the sampling results from the two 2016 quarters.

C. Flow Proportional Composite Samples

The Permit, Part I.B.1, Table 1, specifies “24-hour composite” as the required sample type for multiple parameters, and Part VI. Definitions, subitem 24, includes the definition for “24-hour composite” which includes in part the composite must be flow proportional.

EPA inspectors did not observe the WWTP ISCO effluent sampler was connected electronically to the associated effluent flow monitoring devices located on the two permeate pipes. Additionally, the LTSWD lab technician described the 24-hour composite sampling regime during the opening conference to consist of a 300-ml sample being taken on an hourly basis for the 24-hour period. The technician said the same sampling regime was used for both the Gooseberry Point and Kwina Road MBR plants.

EPA is not aware of any technical WWTP flow evidence that the daily flow rate patterns would support use of this time-based sampling method.

D. Facility Planning Requirement

The Permit, Part II.D, provides in summary LTSWD must conduct flow evaluations in accord with the Permit, Part II.D.2.a), to determine whether average daily flows for the month exceed the facility planning value of 0.107 mgd (maximum monthly flow) for any two months during a 12-month period and if that 2 months-in-12 months condition is triggered, LTSWD is required to develop a new or updated Facility Plan and schedule for continuing to maintain capacity and compliance with effluent limits (Part II.D.2.a)(ii)). LTSWD must submit the plan to the Lummi Department of Natural Resources within 18 months of exceeding the trigger (Part II.D.2.b).

As noted above and in response to EPA questions about whether LTSWD was conducting the required flow evaluations in accord with the Permit, Part II.D.2, LTSWD staff stated those evaluations were not being conducted and no facility plan had been submitted to the Lummi Natural Resources Department.

For illustrative purposes here, I reviewed the DMR data from ICIS-generated DMR data pulls and from the EPA's 2022 Fact Sheet used for the draft permit reissuance process, Appendix B, Water Quality Data (Treatment Plant Effluent Data – *Flow*, February 2017 – February 2022). This review covered a time period of August 2015 – June 2021.

Note, the Permit appears to use a rolling 12-months, but for illustration purposes here, the following summarizes the months in which the Monthly Average flows exceeded the 0.107 mgd facility planning value for the calendar years specified. This summary shows the facility planning value was exceeded routinely at least 2-months in multiple 12-month rolling time periods, and the plan development trigger was exceeded as early as May 2016, and triggered repeatedly through June 2021:

- 2016: March, May
- 2017: November, December
- 2018: January – April, July, November, December
- 2019: February, April, June – August, October – December
- 2020: January, February, August – October
- 2021: February, March, June

E. Lack of Noncompliance Reports in DMRs; DMR Completeness & Accuracy

The Permit, Part III.H, Other Noncompliance Reporting, requires in part the Permittee must report all instances of noncompliance, not required to be reported within 24-hours, at the time DMRs are submitted. The Permit, Part V.E.4, provides DMRs are certified as “true, accurate, and complete.”

The Permittee has a routine of submitting an explanation for the reported DMR noncompliance (e.g., limit exceedances or missing data entries) by placing the explanation in the DMR Comment section. However, the Permittee did not submit the

required noncompliance report for the non-submission of monitoring data for the following DMRs:

- February 2022 – missing temperature data
- October – December 2021 – missing quarterly nutrient data
- July – September 2021 – missing quarterly nutrient data
- October – December 2016 – missing quarterly nutrient data
- April – June 2016 – missing quarterly nutrient data

F. Quality Assurance Plan Content and Implementation

The Permit, Part III.C, states “the QAP must include the following: a) Details on the number of samples, type of sample containers, preservation of samples, holding times, analytical methods, analytical detection and quantitation limits for each target compound, type and number of quality assurance field samples, precision and accuracy requirements, sample preparation requirements, sample shipping methods, and laboratory data delivery requirements; b) Map(s) indicating the location of each sampling point; c) Qualification and training of personnel; d) Name(s), address(es) and telephone number(s) of the laboratories used by or proposed to be used by the Permittee.”

I reviewed the LTSWD’s QAM (unsigned March 7, 2016) which states the QAM is applicable to the LTSWD’s three wastewater treatment plants (i.e., Gooseberry Point, Sandy Point and Kwina Road MBR). I noted the following areas of concern (AOC) about this QAM;

- The QAM is not signed, leaving open the question of whether LTSWD management reviewed, certified and approved the QAM in its entirety with a commitment to its full and complete implementation. This AOC is supported in part by the apparent LTSWD failure to conduct and document QAM annual reviews in accord with the Permit, Part II.C., as further described in AOC IX.G. below, and the lack of documentation of QAM QA/QC quarterly audits.
- The QAM, page 5, states a QA/QC report is prepared quarterly and given to the LTSWD wastewater supervisor and the wastewater supervisor will then provide the written report to the District Manager. The QAM further provides the checklist at the QAM’s Appendix C should be used to assist in drafting these QA/QC reports and otherwise assessing lab capability and performance. No documentation was provided to EPA inspectors demonstrating these QAM required audits were being conducted routinely and documented in written reports. When asked, the LTSWD lab technician/plant operator said quarterly audits were not being conducted.
- Incorrect records retention period: The QAM, Paragraphs 2.a. & 6 state three years for records retention. Both the WWTP and Kwina Road MBR permits, Part III.F., require five year record retention.
- The QAM fails to address all pollutant parameters – the following parameters covered by one or both of the Gooseberry Point wastewater treatment plant and Kwina Road MBR

permits are not expressly addressed in the QAM regarding analytical methods, sample collection, type of sample, frequency, etc.

- Enterococci
 - Total Dissolved Solids
 - Total Phosphorus
 - Total Kjeldahl Nitrogen
 - Total Nitrite/Nitrate
 - Oil & Grease (visual and/or specified effluent concentration monitoring)
 - Floating Solids, visible foam, oily wastes (visual)
 - Floating, suspended or nuisance matter – Kwina Road MBR
- The QAM does not state expressly the “qualification” or the actual “training” (e.g., frequency, types, examples of what topics are trained up for which individuals, etc.) for the lab technician, operators or any other WWTP staff that might have duties associated with permit sampling, monitoring, reporting, recordkeeping, etc.
 - The QAM does not contain a WWTP map showing sampling locations.
 - The QAM does not describe or address the WWTP permit’s requirement the 24-hour composite samples must be flow-proportional.
 - The QAM appears to reflect 2012 Standard Methods sample preservation provisions for the Permit-required pollutant parameters like the specified QAM preservation temperature of 4⁰C.

QAM, Table 1, specifies sample preservation temperatures at 4⁰C for all parameters that have a specified preservation temperature. It is not clear Table 1 reflects the most up-to-date Standard Methods preservation requirements because the QAM is based on Standard Methods 22nd edition (January 2012) and the current Standard Methods 23rd edition (January 2017) post-dates the 2016 QAM.

- An AOC exists regarding the Permittee’s attention to and implementation of sampling procedures that maintain sample container temperatures at or below the specified QAM preservation temperature of 4⁰C. The Chains of Custody reviewed for samples taken for the Gooseberry Point facility, Sandy Point facility and the Kwina Road MBR facility showed the private laboratory routinely received WWTP samples substantially exceeding the 2016 QAM Table 1 preservation temperatures of 4⁰C for pollutant parameters subject to the 4⁰C QAM preservation temperature. Here are some examples of recent Chain-of-Custodies (COCs) and the laboratory sample receipt temperature entered onto the COC:

Date of COC (Month/Year)	Temperature Sample Receipt Lab Entry (⁰ C)
March 2021	6-7

June 2021	12
September 2021	9.6
March 2022	15.3
May 2022	17.6

- The QAM-base private consulting laboratory information needs to be updated to reflect Edge Analytical, Inc. and its new address, etc.
- The QAM Table 1 is not expressly captioned or identified as to which of the three LTSWD's wastewater treatment plants it is applicable to; however, the Table 1 data is not complete, accurate or comprehensive for either the Kwina Road MBR facility or the Gooseberry Point WWTP. For example, the Kwina Road MBR TSS/BOD sampling for "plant performance" (PP) purposes is not weekly as noted in Table 1 but 2/month and temperature sampling is not "grab" but continuous recording. Another example is WWTP temperature monitoring which the Permit requires once/week but Table 1 designates *daily* temperature monitoring for PP-based effluent sampling. Finally, for the WWTP, Table 1 does not address dissolved oxygen, oil and grease and total dissolved solids. These examples are only illustrative of AOCs and this set of examples may not be a complete, all-inclusive list of QAM inaccuracies, incompleteness, etc. for all three facilities' permits pollutant parameters.

G. Temperature Files and Placement Log Submissions

The Permit, Part I.B.5, requires the Permittee to use the temperature device manufacturer's software to generate (export) an Excel or electronic ASCII text file and annually, the Permittee must submit the file to EPA and the Lummi Natural Resources Department by January 31 for the previous year along with the placement log. This Permit provision explains the informational details required to be in the placement log.

In response to EPA questions about whether LTSWD has submitted the temperature text files annually to EPA and the Lummi Natural Resources Department (LNR) by January 31 each year for the years 2017-2021, in accord with the Permit, Part I.B.5, LTSWD staff stated those temperature file and placement log submissions had not been made. The LTSWD staff response is consistent with the information in the EPA Violations Report which also shows no temperature text file and placement log was submitted to EPA for calendar year 2015.

H. Industrial User Master List and Submission

The Permit, Parts II.E.3 – E.4., require the Permittee to develop and maintain a master list of the industrial users introducing pollutants to the WWTP, and the Permittee must submit this list, along with a summary description of the sources and information

gathering methods used to develop the list to the EPA within two years following the permit's effective date (e.g., August 1, 2017).

In response to EPA questions about whether LTSWD had developed and maintained the master list of industrial users and ever submitted this master list and related information to EPA, LTSWD staff stated no master list was created and maintained. Consequently, no related, required submissions had been made to EPA.

I. Submission of Written Notification of Multiple Plan Developments

The Permit, Parts II.A – II.C, require the Permittee to develop and implement an O&M Plan, QAP and Emergency Response and Public Notification Plan, respectively, and within the first 180 days of the effective date of the permit (e.g., approximately January 28, 2016), the Permittee must submit written notice to EPA and LNR each plan has been developed and is being implemented.

The EPA Violations Report states EPA did not receive the requisite written notices for these three plans' verification of development and implementation.

J. Failure to Sample Pollutant Parameters

The Permit, Part I.B.1, requires in part "The Permittee must limit and monitor discharges from outfall 001 as specified in the table below" This Part's Table 1 requires pH to be monitored twice/week.

During my review of the WWTP lab spreadsheets, the February 2022 spreadsheet shows pH was not monitored at least twice-per-week for the first two weeks in February, and the March 2022 spreadsheet shows pH was not monitored at least twice-per-week for the week of March 20-26.

K. DMR Completeness & Accuracy

The Permit, Part V.E.4, provides DMRs are certified as "true, accurate, and complete." I reviewed the WWTP lab Excel spreadsheet and related DMR for February 2022, and identified the following apparent entry inaccuracies and missing information:

- The February 2022 DMR entry for Dissolved Oxygen was actually the spreadsheet's temperature grab sample result data;
- The February 2022 DMR reported "0" exceedances for the Permit's Table 1, Note 4 condition and related DMR entry that no more than 10 percent of the fecal coliform samples obtained for calculating the geometric mean density shall exceed 100 colonies/100 mL of water. One of the four reported fecal coliform sample results in the spreadsheet showed a value of 172 colonies/100 mL, which means 25% of the samples exceeded the prescribed 100-value and the DMR should have reflected this exceedance; and
- The February 2022 DMR did not include a temperature data entry and there was no comment about the missing data. As inspection follow-up, the LTSWD staff reported

the temperature report generator was malfunctioning at the measurement time but they were able to recover temperature data, enter it and submit a revised DMR to EPA.

L. DMR Completeness & Accuracy – January 2022 DMR – BOD Entry

The Permit, Part V.E.4, provides DMRs are certified as “true, accurate, and complete.” I reviewed the WWTP lab Excel spreadsheets (SS) for January – March 2022, and identified the following discrepancy. The January 2022 Lab Spreadsheet discrepancy only reflects one BOD sample and analysis conducted in Week 3. The DMR entries do not coincide with January 2022 Lab Spreadsheet’s BOD entry results. For context, the LTSWD lab technician reported in a September 13, 2022 email during Week 1 of January 2022, the BOD and TSS combined sample was taken to Edge Analytical, Inc. by a LTSWD employee because the lab technician was off work. The Edge Analytical lab had apparent issues with the BOD sample being in the same sample bottle with the TSS sample so the BOD sample was not run that week. No further explanation was provided to explain the identified discrepancy between the DMR BOD entries and the January 2022 Lab Spreadsheet BOD data.

M. Violations Report – DMR Non-Receipt Violations

The Permit, Part V.E.4, provides DMRs are certified as “true, accurate, and complete.” The Permit, Part III.B, requires the permittee to monitoring data each month on the DMR or its equivalent and submit the DMR to EPA.

The ICIS-generated Violations Report for the time period of June 1, 2015 through July 25, 2022, noted DMR Non-Receipt violations for the following DMR reporting months which, according to the Violations Report, had been resolved within the ICIS program as alluded to in the Violations Report:

- April 2019
- March 2019
- September 2018
- March 2017
- December 2016
- February - July 2016

The ICIS-generated Violations Report for the time period of June 1, 2015 through July 25, 2022, also noted ongoing reportable noncompliance (e.g., DMR Non-Receipt violations) for the following DMR reporting months which, according to the Violations Report, had not been resolved within the ICIS program:

- February 2022 – Temperature: This missing temperature data issue was discussed with LTSWD staff as described in this inspection report; LTSWD staff reported

the temperature data was retrieved and according to LTSWD staff, a revised, corrected DMR was submitted to EPA with the temperature data.

- December 2021 – Dissolved Oxygen: The DO data was missing in the DMR. The DMR Comment stated the WWTP had a faulty DO probe.
- October – December 2021 – Nutrient Parameters: This missing quarterly nutrient sampling data issue was discussed with LTSWD staff as described in this inspection report. LTSWD staff reported the missing 4th quarter 2021 nutrient data was due to the sample not getting into the lab.
- June 2020 – Total Kjeldahl Nitrogen: The DMR is missing a TKN entry but the DMR Comment stated the TKN sample was taken to the private lab and identified on the chain-of-custody but the lab did not run the TKN sample.

N. Failure to Timely Apply for Permit Reissuance and Unauthorized Discharges

The 2015 permit, page 1, states in part as follows: “This Permit and the authorization to discharge shall expire at midnight, July 31, 2020. The Permittee shall reapply for Permit reissuance on or before February 1, 2020, 180 days before the expiration of this Permit if the Permittee intends to continue operations and discharges at the facility beyond the term of this Permit.”

The 2022 EPA Fact Sheet used to support the draft permit placed on public notice in the summer, 2022, stated an NPDES application for permit issuance was submitted by the LTSWD on January 25, 2022 and EPA determined the application was complete.

The EPA ICIS database currently states the 2015 permit is expired; alternatively, ICIS does not state the 2015 permit was administratively continued or extended.

Evidence indicates the LTSWD did not make timely reapplication in accord with the 2015 permit, page 1, provisions. Evidence also indicates the WWTP did not have effective permit-authorized discharges beginning after the 2015 permit expired on midnight, July 31, 2020. The reissued 2022 permit authorizing prospectively WWTP discharges does not become an effective permit until the permit’s effective date of January 1, 2023.

O. Emergency Response and Public Notification Plan

The Permit, Part II.C.1, states in part at a minimum the emergency response and public notification plan (ERPMP) must include mechanisms to “ensure appropriate responses including assurance that reports of an overflow or of an unanticipated bypass or upset that exceed any effluent limitation in the permit are immediately dispatched to appropriate personnel for investigation and response” and ensure immediate notification to the public, health agencies and other affected public entities, in addition to other minimum ERPMP content requirements.

The LTSWD provided a copy of a two page ERPMP to EPA after the on-site August 17 inspection. Based on an inspector review of the ERPMP, it appears the ERPMP does not expressly and in detail describe or include the following:

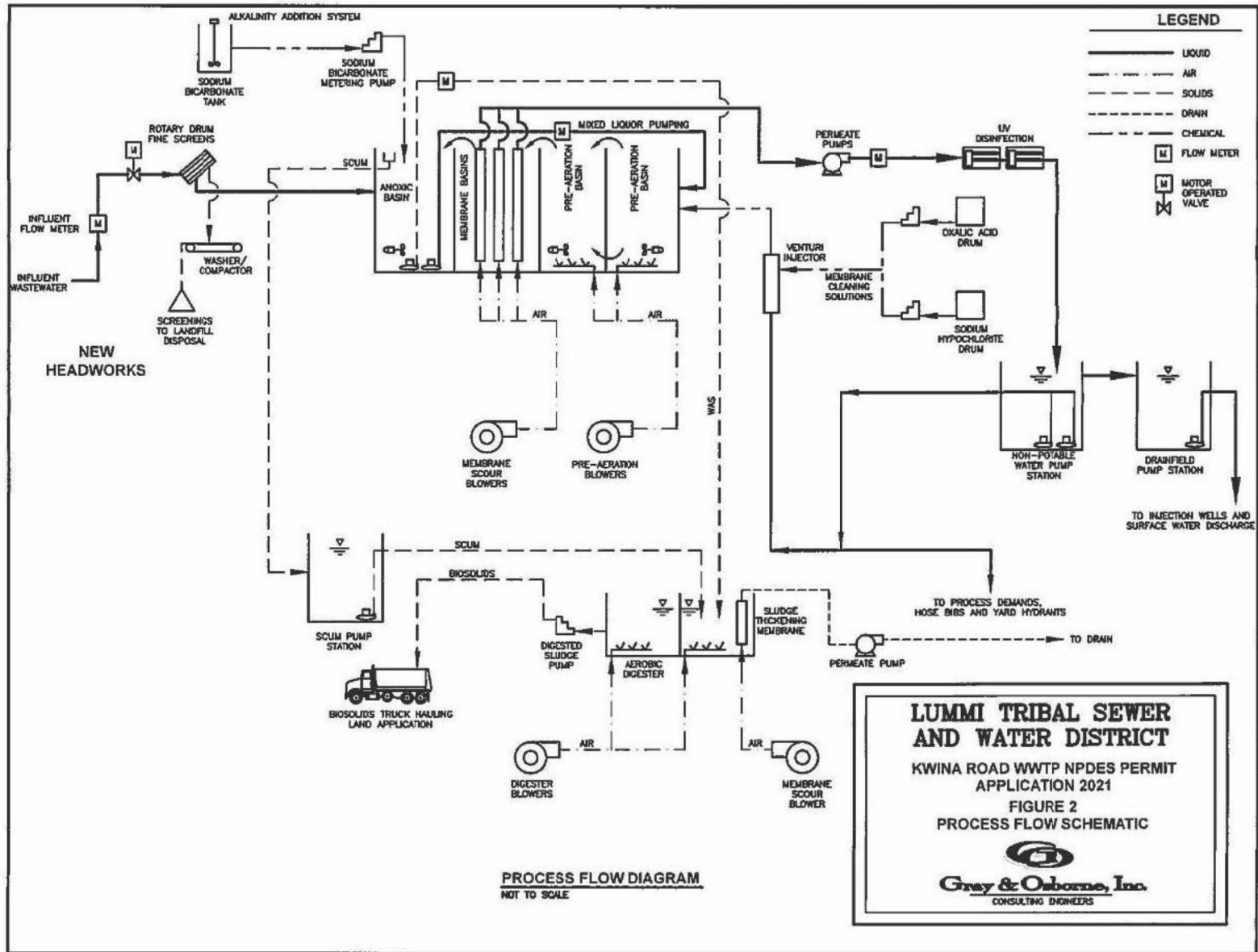
- How LTSWD will provide notice to the general public;
- How LTSWD (what procedures used) will ensure it is aware of overflows from the WWTP collection system, and WWTP bypasses/upsets;
- Procedures or which individuals are charged with reporting overflows/bypasses/upsets to ensure LTSWD staff are dispatched to investigate and respond to these incidents;
- Procedures to ensure appropriate LTSWD personnel are aware of the Plan content and are trained; and
- Emergency operations (e.g., what response options are available to fit the particular emergency situation, response equipment availability, etc.).

X. Closing Conference

I held a closing conference on Tuesday, September 20, 2022, by conducting a Teams meeting-based closing conference to discuss our inspection observations and next steps. The closing conference call included Kyle Masters, Dale Andert, Daniel Jeffries, and Ivan Washington, LTSWD Plant Operator. We discussed most of the areas of concern identified during the inspections and as summarized above, noting these were preliminary areas of concern subject to review and revision. I gave a brief overview of the post-inspection process during this inspection proceeding. I thanked the entire LTSWD team for their time and assistance.

ATTACHMENT A – 2021 Process Flow Schematic

Figure A - 2. Process Flow Diagram



ATTACHMENT B – Photograph Log

(Photographs were taken by Rick Cool with a Panasonic Lumix FH-25 camera)



Photo 1

08/17/2022

MBR permeate piping with flow measuring devices (P1010399)



Photo 2

08/17/2022

ISCO effluent sampling device (P1010400)



Photo 3

08/17/2022

Headworks screens installation (P1010401)



Photo 4

08/17/2022

Digester and sludge thickening installation (P1010402)



Photo 5

08/17/2022

MBR with Pre-aeration basins on the left end (P1010403)



Photo 6

08/17/2022

MBR with pre-aeration basins in foreground (P1010404)

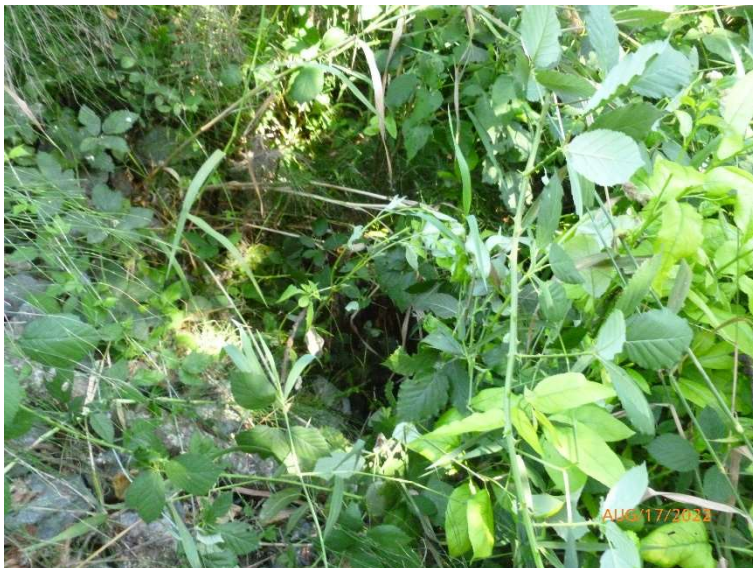


Photo 7

08/17/2022

WWTP outfall (P1010405)