	State of Washington Department of Ecology <b>WASTEWATER TREATMENT PLANT          COMPLIANCE INSPECTION REPORT</b>	Northwest Regional Office 3190 160 <sup>th</sup> Ave SE Bellevue, WA 98008 (425) 649-7000 ph (425) 649-7098 fax (last update 6-11-07)
	Section A: General Information	

Report Version <input checked="" type="checkbox"/> New <input type="checkbox"/> Changed <input type="checkbox"/> Deleted	PERMIT # <b>WA0020702</b>	mo/day/yr <b>1/23/2018</b>	Inspection Type <b>C</b>	Inspector Code <b>S</b>	Facility Type <input checked="" type="checkbox"/> 1 Municipal <input type="checkbox"/> Public <input type="checkbox"/> Private
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Remarks

Inspection work days 2.5	Facility Self-Monitoring <b>5</b>	Photos Taken <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	BI <b>N</b>	QA <b>N</b>
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Lead Ecology Inspector(s)  
 Maia Hoffman, Kevin Leung, Chris Smith

## Section B: Facility Data

Name, Location, and Phone of Facility Inspected City of Langley Wastewater Treatment Plant 4999 Coles Road Langley, WA 98260 Island County (Phone No. 360-221-4274)	Entry Time 10:00 am	Permit Effective Date 9/1/14
	Exit Time 11:40 am	Permit Expiration Date 8/31/19
Name(s)/Title(s) of On-Site Representative(s) Randi Perry/Utilities Supervisor, Group III Operator; Robert Durr/Group II Operator; Stan Berryman/Director of Public Works; Tim Grove/Group I Operator	Ecology Staff On-Site Maia Hoffman; Kevin Leung; Chris Smith	
Name, Address, Title, Phone, and Fax Number of Responsible Official Tim Callison, Mayor City of Langley 112 Second Street Langley, WA 98260 Phone Number 360-221-4246 Fax 360-221-4265 Contacted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Other Facility Data Previous inspection: Class 1 Inspection on 6/18/13	

## Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

<input checked="" type="checkbox"/> Permit	<input type="checkbox"/> Flow Measurement	<input checked="" type="checkbox"/> Operations & Maintenance	<input type="checkbox"/> CSO/SSO (Sewer Overflow)
<input checked="" type="checkbox"/> Records/Reports	<input checked="" type="checkbox"/> Effluent <input type="checkbox"/> Receiving Water	<input checked="" type="checkbox"/> Sludge Handling/Disposal	<input type="checkbox"/> Pollution Prevention
<input checked="" type="checkbox"/> Facility Site Review	<input type="checkbox"/> Compliance Schedules	<input type="checkbox"/> Pretreatment	<input type="checkbox"/> Multimedia
<input checked="" type="checkbox"/> Self-Monitoring Program	<input type="checkbox"/> Laboratory	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Other

## Section D: Summary of Findings/Comments

**I. INTRODUCTION**

Ecology conducted a Regional Class 1 Inspection at the Langley Wastewater Treatment Plant (WWTP) on 1/23/2018. Maia Hoffman, NWRO WQ Municipal Permit Manager, Kevin Leung and Chris Smith, NWRO WQ Municipal Permit Unit, conducted the inspection with assistance from Randi Perry, Robert Durr, Tim Grove, and Stan Berryman. This was an announced inspection. The facility is regulated by Permit No. WA0020702, issued on July 30, 2014. The permit expires on August 31, 2019.

The purpose of this inspection was to fulfill the regional Class 1 requirements by conducting a site inspection and assessing the permittee's self monitoring and maintenance procedures.

**II. RESULTS AND DISCUSSION**

The original Langley WWTP was constructed as a spirogester (a type of Imhoff tank) in 1963 at the foot of Anthes Street near the shoreline. A chlorine contact chamber was installed in 1973. The sequencing batch reactor (SBR) facility in service today began operation in 1992 and consists of an inline 3/8" bar screen (installed in 2012), two SBRs, and two chlorine contact chambers. Flows to the plant are predominantly residential with some restaurants. The facility also accepts hauled septage (~10,000 gallons/ month). No significant industrial users contribute to the system. Sewage from the city flows into the old WWTP and is pumped by two lift stations to the SBR WWTP. Secondary treated and disinfected effluent leaves the facility via gravity to Saratoga Passage, Puget Sound.

### Collection System:

The collection system is comprised of 6.87 miles of pipe and three pump stations. The sewer flows by gravity to the Sunrise Beach Pump Station where it pumps wastewater to the old WWTP. The majority of the system flows to Lift Station No.1 (at the old WWTP). Lift Station No.1 pumps wastewater to Lift Station No.2, which then pumps wastewater to the WWTP. Staff, at the WWTP control center, is able to monitor pump operations at Lift Stations No.1 and No.2 but not at the Marina Lift Station. Staff expressed that improvements of control and monitoring at the Sunrise Beach Lift Station would be beneficial for effective operations and timely response to pump problems. Currently, an operator visits the Sunrise Beach Lift Station at least two times per week to check the operation. The City is planning to make control and monitoring improvements to this Lift Station in the coming year.

An updated General Sewer Plan (GSP) was submitted to Ecology in 2015. Several improvements related to Infiltration/Inflow (I/I) were recommended in the plan. In addition, an I/I Evaluation conducted in 2017 prioritized certain recommendations from the 2015 GSP. Further study of key sewer lines will be completed in 2018 (smoke testing, etc.) to confirm prioritization of sewer improvement projects. Due to current budgeting, the City may not be able to complete as many sewer improvements as previously intended. Even though the WWTP is only at ~50% of the designed flow capacity, the City is proactive in eliminating I/I.

### Liquid Stream:

Sewage in the influent channel is screened by a 3/8" bar screen. Following screening, wastewater flows by gravity to one of two SBR basins (171,600 gallons each). Both SBR basins are in service throughout the year; influent flow alternates between the two basins. The SBR processes the wastewater with about 5 to 6 cycles a day. Each cycle includes fill, react (alternating aeration and anoxic mixing), settling, decant, and idle. The facility has two contact chambers which are usually run in sequence. However, each chamber can be isolated for cleaning or operation. Effluent is decanted from the top of the SBR to the chlorine contact chamber for a contact time of at least one hour. Liquid chlorine is used for effluent disinfection.

Effluent is discharged through ~7,200 feet of outfall pipe (~1000 feet offshore and depth of 46 feet below mean lower low water) into the waters of Saratoga Passage, Puget Sound. The last 43.5 feet of the 12-inch HDPE outfall pipe contains 10 3-inch diffuser ports, alternating sides. The last outfall inspection was conducted on December 4, 2012.

Flow data submitted to Ecology between 2008 and 2017 indicates that effluent flow from the facility has remained fairly constant. The facility hydraulic loading is only at ~50% of the design capacity. The BOD<sub>5</sub> and TSS influent loading is approximately 48% and 34%, respectively, of the design loading.

### Solids Stream:

Solids from the SBRs flow to one of two aerobic digesters (25,600 gallons each, both are always online). Supernatant from the digesters is routed to an onsite manhole where submersible pumps convey water back to the influent channels. The operators remove grit from the digesters annually. Solids from the digesters are pumped by a positive displacement sludge pump to a belt filter press (BFP) unit for dewatering. Polymer is fed into the influent line to the BFP to produce dewatered solids (~ 16% solids). Dewatered solids are then combined with local green waste, composted, and given away to the public as usable compost.

The SBR WWTP also accepts septic sewage for treatment from septic hauling trucks. Septage received has decreased over the past few years and the facility now only accepts ~10,000 gallons of septage per month. This source of wastewater caused challenges in WWTP operations and resulted in inconsistent quality of final compost products (when the facility was receiving up to 5,000 gallons of septage per day). The City installed septage screen equipment in 2011 to "pre-treat" the septic sewage and to meet the 3/8" screening requirement. The equipment has been very helpful in WWTP operations and staff are very pleased with this improvement. Staff can contact Amber Corfman, NW Regional Biosolids Coordinator, at (360) 255-4406 or [acor461@ecy.wa.gov](mailto:acor461@ecy.wa.gov) for more information on biosolids.

### Flow Measurement:

The City installed a new ultrasonic influent flowmeter in 2010 to replace the bubbler system that was known to be inaccurate at low flow conditions. The City measures effluent flow with a magnetic meter. They check the flowmeters at least once a year.

### Sampling:

Influent is sampled prior to screening removal. Effluent samples are pulled at the end of the chlorine contact channel. Influent and effluent composite samples are pulled on a time-proportional basis and preserved in refrigerated samplers (temperatures of both samplers were 4°C during visit).

### Alarms/Back-up Power

A diesel generator provides back-up power for the SBRs, chlorine equipment, solids handling, laboratory, and yard lighting. However, the generator does not supply power to all equipment, so personnel must manual operate certain process components in the event of a power failure. The generator has a fuel tank providing approximately 6 days of operations. Staff expressed that improvements to generator capacity (generators being able to handle full treatment power requirements) would be highly desirable due to frequent occurrences of short term power losses at the facility. The generators are tested under load annually. Off-hour alarms auto-dial the operators.

Lift Stations #1 and #2 have back up power. The Sunrise Beach Lift Station does not have back up power but has capacity to hold wastewater for approximately 2-3 days. Local septage hauling trucks would aid the facility in pumping out the Sunrise Beach Lift Station, if needed.

**Staffing:**

Randi Perry (Group III) and Robert Durr (Group II) are the full-time operators. Two Group I operators from the Public Works Department also assist WWTP operations, Tim Grove and Brian Hamilton.

**Records and Laboratory Review:**

Laboratory procedures were not reviewed during this visit. The facility is covered under Ecology's Laboratory Accreditation Program. A copy of the NPDES Permit and the treatment plant's O&M manual is available in the laboratory room.

Equipment maintenance records were reviewed during the visit. Information provided by the facility in the recently updated O&M Manual was confirmed. The operators have a strong process for documenting daily activities, maintenance completed, and any issues that occurred. This process allows for easy tracking of problems and general treatment of wastewater.

A brief check of the self-monitoring program was conducted. One month of submitted DMRs was reviewed against facility bench sheets and other monitoring forms. No issues were found with the program.

Overall, the facility had a robust records retention system and records were easily obtained for review.

**Recent Compliance:**

The facility has a good compliance history. Randi also utilizes WQWebDMR for submitting monthly discharge monitoring reports (DMR) to Ecology.

**Misc.:**

DOH conducted a dye study in August 2017 to assess treated wastewater effects on shellfish beds in Saratoga Passage, Puget Sound (follow up to a DOH site assessment in 2013). Randi participated in the study. From the report emailed to Ecology from Randi, no significant dye readings were recorded except directly around the outfall. At this time, DOH does not recommend any changes to shellfish closure zones around the outfall area.

Emailed Randi an example incident report form which outlines key information that Ecology would expect to receive via phone and written report in the event of a spill, bypass, overflow, etc. Due to good operation of the facility, there has not been a situation which required notification in several years. However, this information could be beneficial to review in an upcoming staff meeting.

**III. CONCLUSION**

Langley WWTP continues to be a well-run facility. Plant staff is proactive in maintaining systems and in planning projects to prevent problems before they impact the plant's treatment capabilities.

Randi and the rest of the staff are doing a great job keeping the Langley WWTP in compliance. The facility has demonstrated the ability to produce high-quality effluent. All staff are exceptionally knowledgeable and understand the plant's processes very well.

Please contact Maia Hoffman (425-649-7146) with permit related questions, Carl Jones (360-407-6431) with operation-related questions, and Amy Jankowiak (425-649-7195) with any compliance-related questions.

Copies to: Maia Hoffman, Permit Manager, NWRO  
Amy Jankowiak, Municipal Compliance, NWRO, e-copy  
Amber Corfman, Biosolids Coordinator, e-copy  
Randi Perry, Utility Supervisor, Langley  
Stan Berryman, Public Works Director, Langley  
Central Files, Langley WWTP, Permit No. WA0020702, WQ 6.1

Name(s) and Signatures of Inspector(s)	Agency/Office/Telephone	Date
Maia Hoffman 	WA Dept. of Ecology, NWRO, (425) 649-7146 3190 160 <sup>th</sup> Ave SE, Bellevue, WA 98008-5452	2/15/18
Kevin Leung 	WA Dept. of Ecology, NWRO, (425) 649-7207 3190 160 <sup>th</sup> Ave SE, Bellevue, WA 98008-5452	2/15/18
Chris Smith 	WA Dept. of Ecology, NWRO, (425) 649-7214 3190 160 <sup>th</sup> Ave SE, Bellevue, WA 98008-5452	2/15/18
Name and Signature of Management QA Reviewer	Agency/Office/Telephone	Date
Laura Fricke 	WA Dept. of Ecology, NWRO, (425) 649-7103 3190 160 <sup>th</sup> Ave SE, Bellevue, WA 98008-5452	2/16/18

**ANNOUNCED** Inspection

**INSTRUCTIONS**

**Section A: General Information**

**Report Version:** N for 1<sup>st</sup> version, C for Changed or amended, or D for Delete

**NPDES Permit No.:** Enter the facility's NPDES or State permit number.

**Inspection Date:** Insert the date entry was made into the facility. Use the month/day/year format (e.g., 06/30/04 = June 30, 2004).

**Inspection Type:** Use one of the codes listed below to describe the type of inspection:

A Performance Audit	L Enforcement Case Support	2 IU Sampling Inspection
B Compliance Biomonitoring	M Multimedia	3 IU Non-Sampling Inspection
C Compliance Evaluation (non-sampling)	P Pretreatment Compliance Inspection	4 IU Toxics Inspection
D Diagnostic	R Reconnaissance	5 IU Sampling Inspection with Pretreatment
E Corps of Engineers Inspection	S Compliance Sampling	6 IU Non-Sampling Inspection with pretreatment
F Pretreatment Follow-up	U IU Inspection with Pretreatment Audit	7 IU Toxics with Pretreatment
G Pretreatment Audit	X Toxics Inspection	
I Industrial User (IU) Inspection	Z Sludge	

**Inspector Code:** Use one of the codes listed below to describe the *lead agency* in the inspection:

C - Contractor or Other Inspectors (Specify in Remarks Columns)	N - NEIC Inspectors
E - Corps of Engineers	R - EPA Regional Inspector
J - Joint EPA/State Inspectors - EPA Lead	S - State Inspector
	T - Joint State/EPA Inspectors - State Lead

**Facility Type:** Use one of the choices below to describe the facility.

- 1 - Municipal. Publicly Owned Treatment Works (POTWs) with 1987 Standard Industrial Code (SIC) 4952.
- 2 - Industrial. Other than municipal, agricultural, and Federal facilities.
- 3 - Agricultural. Facilities classified with 1987 SIC 0111 to 0971.
- 4 - Federal. Facilities identified as Federal by the EPA Regional Office

**Remarks:** These columns are reserved for remarks.

**Inspection Work Days.:** Estimate the total work effort (to the nearest 0.1 work day), up to 99.9 days, that were used to complete the inspection. This estimate includes the accumulative effort of all participating inspectors; any effort for laboratory analyses, testing, travel time and preparation time. This estimate does not require detailed documentation.

**Facility Evaluation Rating:** Use information gathered during the inspection (regardless of inspection type) to evaluate the quality of the facility self-monitoring program. Grade the program using a scale of 1 to 5 with a score of 5 being used for very reliable self-monitoring programs, 3 being satisfactory, and 1 being used for very unreliable programs.

**Biomonitoring Information.** Enter D for static testing. Enter F for flow through testing. Enter N for no biomonitoring.

**Quality Assurance Data Inspection.** Enter Q if the inspection was conducted as follow-up on quality assurance sample results. Enter N otherwise.

**Photos Taken:** Yes or No

**Samples Taken:** Yes or No

**Lead Ecology Inspector:** Enter lead inspector's name

**Section B: Facility Data**

This section is self-explanatory except for: "Other Facility Data," which may include new information not in the permit or PCS (e.g., new outfalls, names of receiving waters, new ownership, and other updates to the record), e-mail addresses...; and "Ecology Staff On-Site", which may include staff names, titles, phone numbers, or e-mail addresses.

**Section C: Areas Evaluated During Inspection**

Check only those areas evaluated by marking the appropriate box. Use Section D and additional sheets as necessary.

**Section D: Summary of Findings/Comments**

Support the findings, as necessary, in a narrative report. Use the headings given on the report form (staffing, back-up power) as appropriate. Reference a list of attachments, such as completed checklists, photos, lab reports, etc. Use extra sheets as necessary.

LINKS AND INFORMATION:

"Informational Manual for Treatment Plant Operators"; February 2004; by the Department of Ecology  
Publication Number 04-10-020: <https://fortress.wa.gov/ecy/publications/SummaryPages/0410020.html>  
The manual was prepared to help wastewater treatment plant operators complete and submit their Discharge Monitoring Reports (DMRs) and other annual reports to the Department of Ecology. The manual is available in hard copy. To request a copy, contact the Department of Ecology, Publications Distribution Center at P.O. Box 47600, Olympia, WA 98504-7600 or by Telephone: (360) 407-7472. Updates to the manual are included on the website version.

Ecology's Water Quality website:  
<https://ecology.wa.gov/Water-Shorelines/Water-quality>

Ecology's Operator Certification website:  
<https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Wastewater-operator-certification>

Ecology's Laboratory Accreditation website:  
<https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Laboratory-Accreditation>

Ecology's Biosolids website:  
<https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Organic-materials/Biosolids>

Ecology's Operator Outreach:  
Carl Jones (360) 407-6431; [cjon461@ecy.wa.gov](mailto:cjon461@ecy.wa.gov)

Ecology's Municipal Compliance Specialist (Northwest Regional Office):  
Amy Jankowiak (425) 649-7195; [ajan461@ecy.wa.gov](mailto:ajan461@ecy.wa.gov)

Ecology's Wastewater Operator Certification Coordinator:  
Poppy Carre (360) 407-6449; 1-800-633-6193 (within the state); [poca461@ecy.wa.gov](mailto:poca461@ecy.wa.gov)

Ecology's Biosolids Coordinator (Northwest Regional Office):  
Amber Corfman (360) 255-4406; [acor461@ecy.wa.gov](mailto:acor461@ecy.wa.gov)

Reporting Spills/Overflows/Upsets/Bypasses/Loss of Disinfection IMMEDIATELY:  
Ecology's 24-hour number: (425) 649-7000 to report a spill  
Department of Health – Shellfish Program: (360) 236-3330 (business hours) or (360) 789-8962 (after hours)

Inspection Photos

Photo No.1  
Date: 1/23/2018  
Taken by: Chris Smith  
Witness: Maia Hoffman  
Description: SBR Basin during fill and react stage

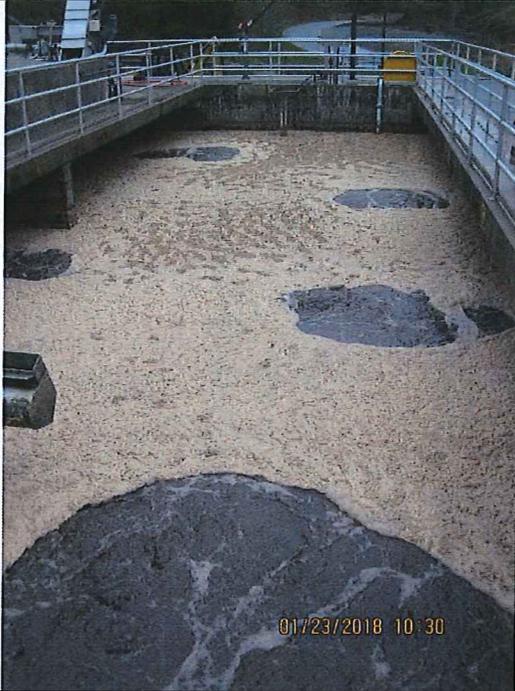


Photo No.2  
Date: 1/23/2018  
Taken by: Chris Smith  
Witness: Maia Hoffman  
Description: Influent sampler between SBR basins



Photo No.3  
Date: 1/23/2018  
Taken by: Chris Smith  
Witness: Maia Hoffman  
Description: Other SBR Basin during react stage (good view of decant arm)

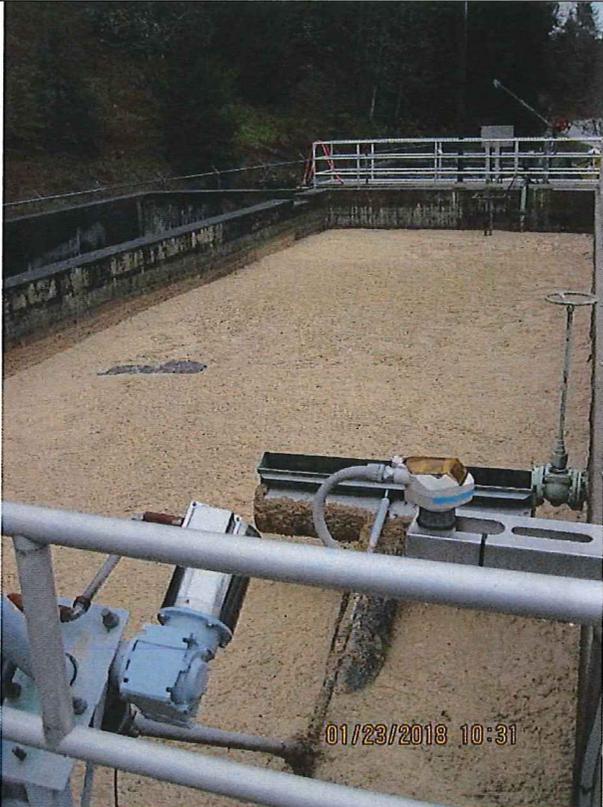


Photo No.4  
Date: 1/23/2018  
Taken by: Chris Smith  
Witness: Maia Hoffman  
Description: Influent pipe to headworks

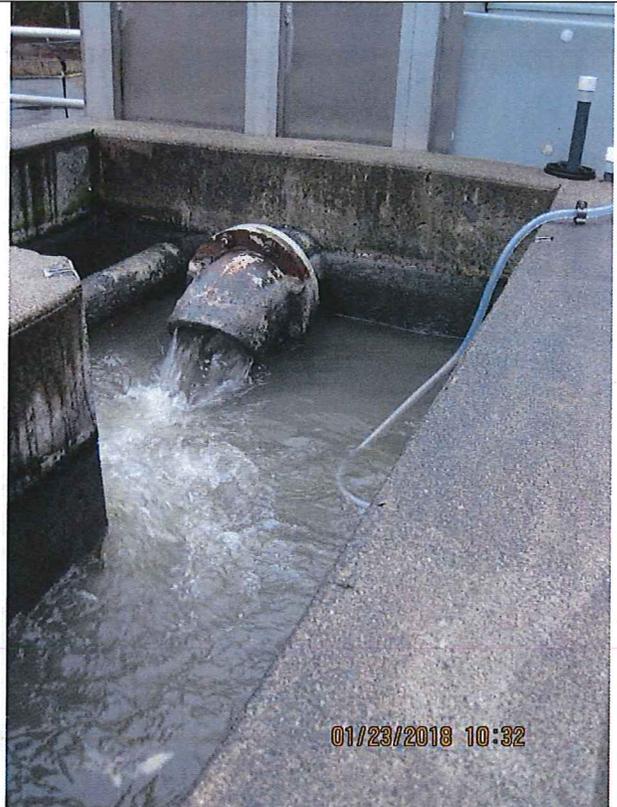


Photo No.5  
Date: 1/23/2018  
Taken by: Chris Smith  
Witness: Maia Hoffman  
Description: Influent flow ultrasonic meter

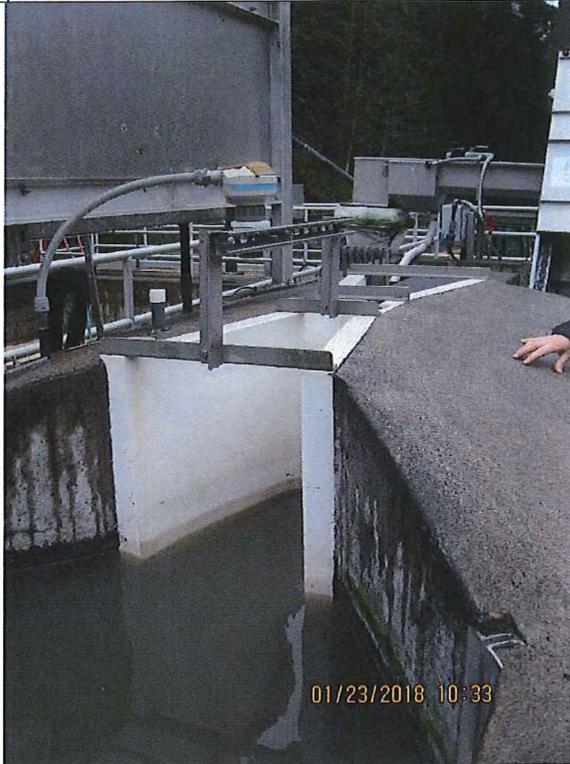


Photo No.6  
Date: 1/23/2018  
Taken by: Chris Smith  
Witness: Maia Hoffman  
Description: 3/8" bar screen prior to SBR basins

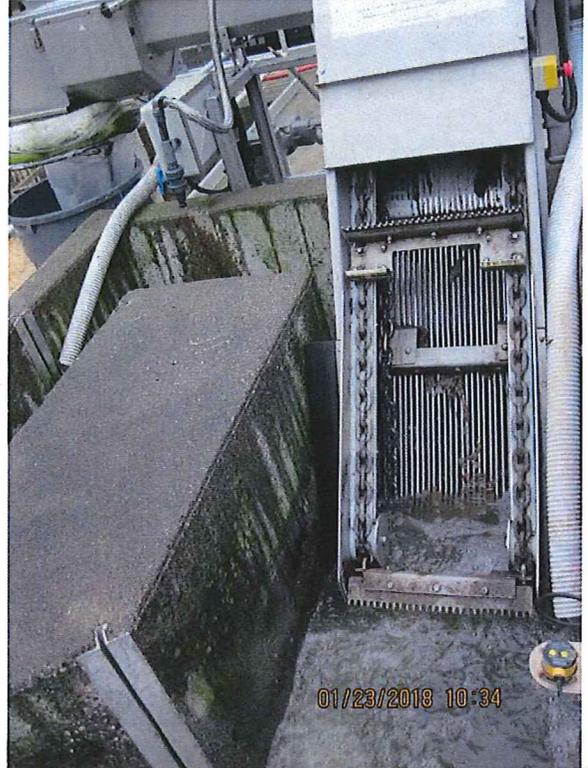


Photo No.7  
Date: 1/23/2018  
Taken by: Chris Smith  
Witness: Maia Hoffman  
Description: Chlorine contact chambers

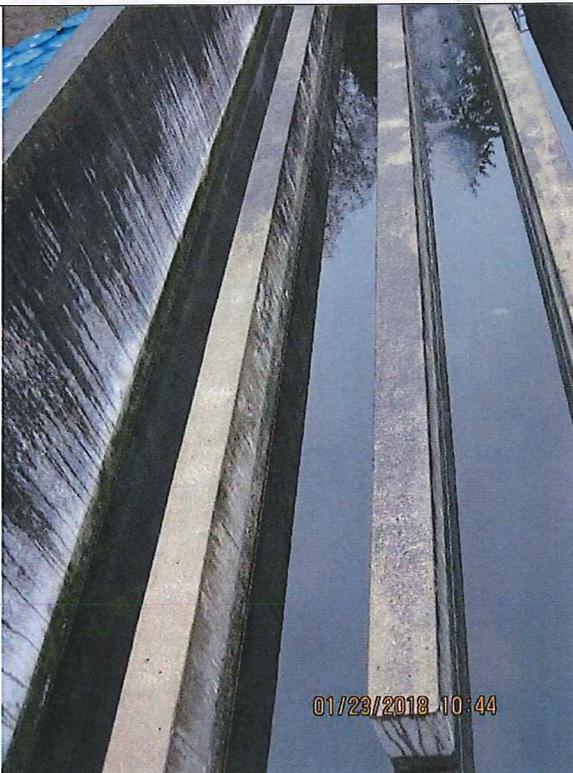


Photo No.8  
Date: 1/23/2018  
Taken by: Chris Smith  
Witness: Maia Hoffman  
Description: Inside effluent sampler (staged above chlorine contact chamber outfall)

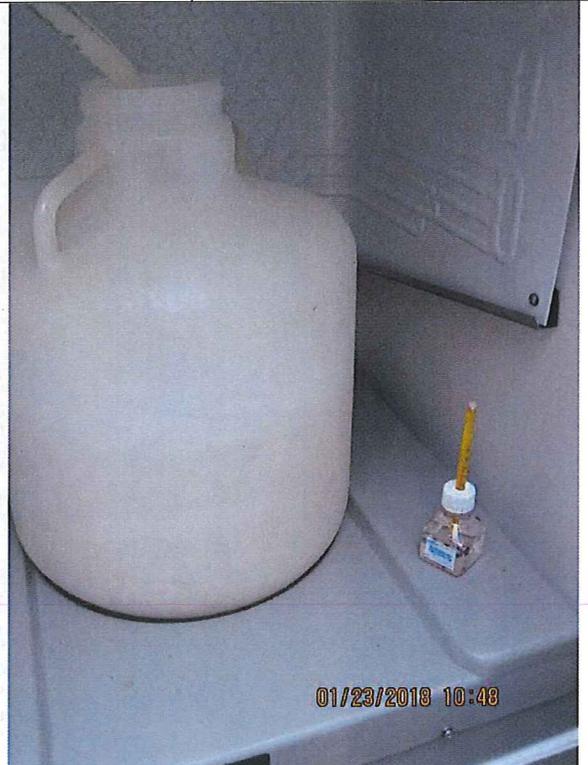


Photo No.9  
Date: 1/23/2018  
Taken by: Chris Smith  
Witness: Maia Hoffman  
Description: Septage receiving/screening station



Photo No.10  
Date: 1/23/2018  
Taken by: Chris Smith  
Witness: Maia Hoffman  
Description: Part of biosolids composting area



Photo No.11  
Date: 1/23/2018  
Taken by: Chris Smith  
Witness: Maia Hoffman  
Description: Chlorine storage/metering room



Photo No.12  
Date: 1/23/2018  
Taken by: Chris Smith  
Witness: Maia Hoffman  
Description: In line polymer mixing (Kevin and Rob in picture)

