

Fact Sheet for State Waste Discharge Permit No. ST0045515

Edison Wastewater Treatment System Skagit County – Edison Clean Water Subarea

Public Notice of Draft date: January 23, 2019

Purpose of this fact sheet

This fact sheet explains and documents the decisions the Department of Ecology (Ecology) made in drafting the proposed State Waste Discharge permit for the Edison Clean Water Subarea District (the District), Wastewater Treatment System. The permit allows the discharge of treated wastewater to two adjacent drainfields, referred to as Drainfield #1 and Drainfield #2, and to an Emergency Upflow Trench.

State law requires any domestic wastewater facility to obtain a permit before discharging waste or chemicals to waters of the state, which includes groundwater.

Ecology makes the draft permit and fact sheet available for public review and comment at least thirty (30) days before it issues the final permit to the facility operator. Copies of the fact sheet and draft permit for the District, State Waste Discharge permit ST0045515, are available for public review and comment from January 23, 2019, until the close of business February 22, 2019. For more details on preparing and filing comments about these documents, please see **Appendix A - Public Involvement Information**.

The District reviewed the draft permit and fact sheet for factual accuracy. Ecology corrected any errors or omissions regarding the facility's location, history, wastewater discharges, or receiving water prior to publishing this draft fact sheet for public notice.

After the public comment period closes, Ecology will summarize substantive comments and our responses to them. Ecology will include our summary and responses to comments to this fact sheet as **Appendix E - Response to Comments**, and publish it when we issue the final State Waste Discharge permit. Ecology generally will not revise the rest of the fact sheet. The full document will become part of the legal history contained in the facility's permit file.

Summary

The Edison Wastewater Treatment System (WWTS) treats domestic wastewater using a septic tank effluent pumping (STEP) system, a recirculating gravel filter, and UV disinfection. Treated effluent is disposed of in two drainfields and one Emergency Upflow Trench. The facility is located just east of Edison Elementary School, on the south side of Edison Slough.

Ecology issued the previous permit on January 28, 2013. This was the first permit issued to Edison Clean Water Subarea for the Edison WWTS and was a State Waste Discharge to Ground permit. The previous permit included effluent technology-based limits for Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), Fecal Coliform, and pH, prior to dispersal in the drainfields. Ecology is proposing to reissue a State Waste Discharge to Ground permit and the proposed permit contains the same effluent technology-based limits.

In addition, the proposed permit contains several new requirements and changes from the previous permit. The proposed permit includes:

- Increase to monthly monitoring of influent BOD₅ & TSS.
- Removal of quarterly effluent nutrient monitoring.
- A maximum daily flow limit on the Emergency Upflow Trench.
- A slight reduction in the maximum daily flow limit to Drainfield #1.
- A capacity evaluation of the system to address exceedances in design criteria.
- The development of a groundwater monitoring network and monitoring plan.
- A compliance schedule for obtaining a Group I operator.

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I. Introduction

The Legislature defined Ecology's authority and obligations for the wastewater discharge permit program in the Water Pollution Control law, chapter 90.48 RCW (Revised Code of Washington).

Ecology adopted rules describing how it exercises its authority:

- State waste discharge program (chapter 173-216 WAC).
- Water quality standards for ground waters of the state of Washington (chapter 173-200 WAC).
- Discharge standards and effluent limits for domestic wastewater facilities (chapter 173–221 WAC).
- Submission of plans and reports for construction of wastewater facilities (chapter 173-240 WAC).

These rules require any domestic wastewater facility to obtain a State Waste Discharge permit before discharging wastewater to state waters. They also help define the basis for limits on each discharge and for performance requirements imposed by the permit.

Under the State Waste Discharge permit program and in response to a complete and accepted permit application, Ecology generally prepares a draft permit and accompanying fact sheet, and makes it available for public review before final issuance. If the volume of the discharge has not changed or if the characteristics of the discharge have not changed, Ecology may choose not to issue a public notice. When Ecology publishes an announcement (public notice), it tells people where they can read the draft permit, and where to send their comments, during a period of thirty days. (See **Appendix A--Public Involvement Information** for more detail about the public notice and comment procedures). After the public comment period ends, Ecology may make changes to the draft State Waste Discharge permit in response to comment(s). Ecology will summarize the responses to comments and any changes to the permit in **Appendix E**.

II. Background Information

Table 1. General Facility Information

Facility Information	
Applicant:	Skagit County – Edison Clean Water Subarea
Facility Name and Address:	Edison Wastewater Treatment System 5801 Main Avenue Bow, WA 98232
Contact at Facility	Name: Alison P. Mohns, Skagit County Planning and Development Services Telephone #: (360) 416-1322
Responsible Official	Name: Tim Holloran Title: Skagit County Administrator Address: Planning and Development Services 1800 Continental Place Mount Vernon, WA 98273 Telephone #: 360-416-1300
Type of Treatment:	Septic tank effluent pumping (STEP) system, recirculating gravel filter with UV disinfection, and drainfield disposal
Facility Location (NAD83/WGS84 reference datum)	Outfall 001: Post UV (effluent monitoring location) Latitude: 48.5616 Longitude: -122.43566
Land Application Area	Outfall 01A: Drainfield #1 – 48.5618, -122.4343 Outfall 01B: Drainfield #2 – 48.5600, -122.4349 Outfall 01C: Emergency Upflow Trench – 48.5622, -122.4343
Permit Status	
Issuance Date of Previous Permit	January 28, 2013
Application for Permit Renewal Submittal Date	September 25, 2017
Date of Ecology Acceptance of Application	October 20, 2017
Inspection Status	
Date of Last Sampling Inspection	February 20, 2018
Date of Last Non-sampling Inspection Date	April 12, 2016

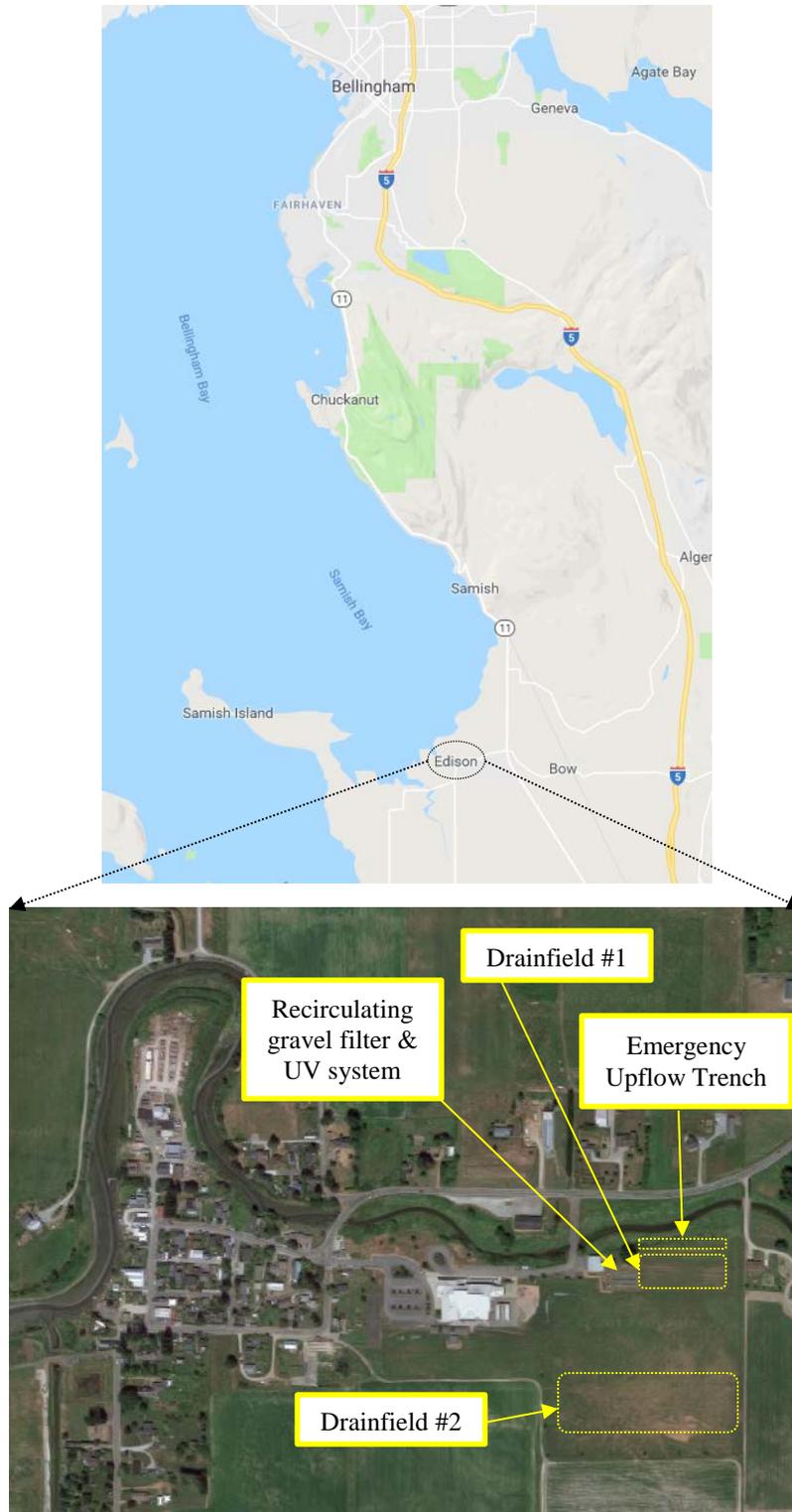


Figure 1. Facility location map

A. Facility description

History

Domestic waste in the community of Edison historically received minimal treatment, if any at all. Prior to installation of the sewerage system, many homes discharged wastewater to street drains that flowed to Edison Slough after minimal treatment in septic tanks. Newer homes tended to have functioning septic tanks but small lot sizes prevented adequate drainage and soil treatment. Some homes had questionable septic tanks that functioned properly only when the groundwater level was at its lowest. Other homes discharged raw sewage directly into Edison Slough.

Beginning in 1993, Department of Health (DOH) shellfish monitoring results showed high fecal coliform levels in Samish Bay and Edison Slough. Fecal coliform levels in Samish Bay often exceeded the 14 fecal organisms/100mL (geometric mean) standard for approved shellfish growing areas. DOH restricted harvesting of shellfish in the Samish Bay.

The community of Edison was identified as one of the sources of fecal contamination. A system survey throughout the community indicated a septic tank failure rate of 65%. The community applied for and received financial assistance from Ecology, the Community Development Block Grant, and the Rensselaerville Institute. Skagit County then formed the Edison Subarea Clean Water District (the District) to oversee a new sewer and wastewater system and provide recommendations to the County. The community wanted a wastewater system that would retain the small town atmosphere and not be detrimental to the local shellfish industry. The community decided against an outfall discharge to surface water in order to protect commercial shell fishing operations in Samish Bay.

In 1996, the District completed construction of the treatment facility (recirculating gravel filters and UV disinfection system), Drainfield #1, and the Edison Elementary School septic tanks and conveyance to the new treatment facility. The system operated well with the school as the sole contributor. In 1997, the District began connecting the residential and business community to the gravel filter. The Emergency Upflow Trench was added in late 1998 because Drainfield #1 was unable to accommodate flows from the fully connected community. The installation of the upflow trench was intended for short-term use until another drainfield could be installed. In 2001, geotechnical engineers for the District verified that Drainfield #1 was located above a relatively impervious layer that prevented adequate infiltration for the quantity of water produced by the community. In addition, the Emergency Upflow Trench was unable to accommodate the volume of wastewater it was initially designed for. The District constructed a second drainfield, Drainfield #2, in 2003.

Ecology and DOH visited the facility on May 24, 2011, to evaluate permitting alternatives for the Edison Wastewater Treatment System (WWTS). DOH concluded that this facility falls under Ecology's permitting purview since effluent could potentially migrate to land surface and surface waters (WAC 246-272B-01200(f)). In addition, at times there is zero vertical separation between Drainfields #1 and #2 discharge chambers and groundwater when the water table is high. This leads to discharges directly to groundwater. DOH requires large on-site sewage systems to have a minimum of three feet separation (WAC 246-272B-06100).

The Edison WWTS was often referred to as the Edison Large On-site Sewage System (LOSS) in the previous permit and previous communications. LOSS is a DOH term, definition found in WAC 246-272-01100, and in accordance comes with operating requirements under DOH purview. Ecology utilizes the definition of domestic wastewater facility, found in WAC 173-216-030, to describe the Edison system. The Ecology definition for domestic wastewater facility includes systems that use subsurface disposal. Since Ecology permits the Edison WWTS, and to avoid confusion of what operating requirements apply to this facility, Ecology will no longer refer to the Edison system as a LOSS. The Edison WWTS is subject to the requirements for domestic wastewater facilities with subsurface disposal under Ecology rules, Chapter 173 WAC.

Geography

Edison WWTS sits on the banks of Edison Slough, a tidewater slough, about one mile from Samish Bay. The water level in Edison Slough is controlled with an agricultural gate to maintain adequate groundwater levels for local farms. Samish Bay is a mud-bottom marine water body that supports hundreds of acres of commercial and recreational shellfish beds (manila clams, geoduck clams, and pacific oysters). The ground elevation in Edison is between 3 and 10 feet above mean sea level. The groundwater is often a foot or less below the ground surface in winter months. The area around the drainfields is relatively flat, with the northern section sloping gently towards the slough and the southern section sloping slightly towards the southwest.

Collection system status

The District installed a small diameter combined gravity and pressure STEP collection system in 1997 to transport septic effluent from homes and restaurants to the treatment plant. The system serves approximately seventy-two connections, including seven food sites and one school (no cooking cafeteria). The District required the restaurants to install grease traps. There are no industrial users connected to the system. There are nine stubs remaining for future connections. The system's only lift station pumps wastewater from the town through a force main to the recirculating gravel filter.

Wastewater treatment process (prior to discharge to ground)

The treatment process includes individual septic tanks, a recirculating gravel filter, and UV disinfection prior to disposal in drainfields. Most of the individual septic tanks are 1000-gallon fiber-reinforced plastic tanks that provide primary sedimentation, floating solids removal, oil and grease removal, anaerobic decomposition of solids, physical filtration of non-settleable particles, and nominal one-day storage for pipeline cleaning and recirculating tank sludge removal. The commercial restaurants have 1500-gallon fiber-reinforced plastic septic tanks. All restaurants have grease traps installed to remove fats, oils, and greases prior to being introduced into the collection system. The recirculating gravel filter further removes TSS, BOD, some FOG (fats, oils, and grease) and some nitrogen, using physical, chemical, and biological processes. The filter has four zones and wastewater passes through the filter and recollects in the recirculation tanks on average five times before flowing from the gravel filter through the main settling tank, to a smaller secondary settling tank, and finally through the UV disinfection system and out to the disposal fields. The Trojan UV system sits in a stainless steel channel and consists of three modules in parallel with two lamps per module.

The facility has a backup diesel generator on-site that is capable of running the entire process, including the pump station, in the event of a power outage. This generator is owned, tested, and maintained by the school. The school tests the generator under load every week.

Distribution system (drainfield)

The District originally installed a subsurface drip irrigation disposal field, Drainfield #1, directly east of the recirculating gravel filter and approximately 200 feet south of Edison Slough. Drainfield #1 contains two irrigation zones. Drainfield #1 operated satisfactorily with the school as the only contributor in the first year of operation. However, when the entire community came on-line, the District noticed that the treated wastewater sent to the drainfield tended to surface and flow overland towards Edison Slough. The Emergency Upflow Trench was installed as a quick measure to add additional disposal area until another drainfield could be planned and installed. The trench, also with two dosing zones, is located 90 feet north of Drainfield #1 between the drainfield and Edison Slough. In planning for Drainfield #2, an investigation found that the Drainfield #1 area has poor infiltration due to an impervious layer of very fine material that lies just below the emitters. In addition, the Emergency Upflow Trench did not have the assimilative capacity as originally designed. The District installed a second, chambered drainfield set on pea gravel in 2003. Drainfield #2 consists of six distribution zones. The District now uses both drainfields, with an average flow of 1,000 gallons per day (gpd) being sent to Drainfield #1 and the remaining flow being sent to Drainfield #2. The Emergency Upflow Trench is intended to be used in emergency situations when flow to Drainfields #1 and #2 are limited or restricted. The Emergency Upflow Trench was utilized 16 times from March 2013 to December 2017, for emergency situations (4 times in November 2015, 7 times in December 2015, 4 times in February 2016, and 1 time in December 2017).

Staff

Ecology requires wastewater treatment facilities to be operated by individuals certified by the state according to WAC 173-230. The recirculating gravel filter is considered a biofiltration treatment type. WAC 173-230-140 classifies biofiltration treatment plants with design flows of less than 1 million gallons per day as Class II facilities. Therefore, the operator of the Edison WWTS must be certified as a Group II operator (WAC 173-230-040). However, WAC 173-230-140 allows Ecology to classify a plant in an alternative group if it has characteristics that make operation less complex than other similar plants of the same flow range. Ecology believes a Group I operator could operate the Edison WWTS since it is not as complex as typical biofiltration facilities.

The District currently contracts with the Drain Doctor to provide the required preventive maintenance for the septic tanks, collection system, recirculating gravel filter, and disposal fields. However, Drain Doctor personnel are not Ecology-certified wastewater treatment plant operators.

The previous permit established a 5-year timeline for the District to train and certify an operator to the Group I level. The District did not attain a Group I operator by the final deadline of February 28, 2018.

The Edison WWTS currently has a Group I operator under an Ecology-issued temporary certification. The certification is good for one year and expires on July 19, 2019. The temporary certification is not transferable or renewable, therefore, the Permittee is required to have a permanent Group I operator in place, prior to the expiration of the temporary certification.

B. Description of the groundwater

The Edison WWTS is located in the Skagit Valley. The site lies along the south bank of Edison Slough, about one mile upstream of Samish Bay on the delta of the Samish River. The elevation of the site is roughly 10 feet above sea level. The drain field area is relatively flat with the northern section sloping gently northward toward the Edison Slough and the southern portion sloping to the southwest. Data from site well logs show very fine material classified as silt or silty clay underlying the WWTS.

Ecology's Environmental Assessment Program (EAP) conducted a comprehensive characterization of groundwater at the site from 2014 to 2016, during the previous permit term. In April 2018, EAP finalized and issued the *Wastewater Treatment System Groundwater Assessment for Edison, Washington (Groundwater Assessment)* report. The purpose of the study was to:

- Conduct a thorough hydrogeologic assessment of the site.
- Establish background groundwater quality.
- Assess whether Ground Water Standards (WAC 173-200) are being met.

The assessment found a complex hydrogeologic system. The horizontal, shallow groundwater flow direction is from east to the southwest during the months of November through May. This then switches to a south to north flow during the months of June through September. In October, groundwater flows radially from the center of the Drainfield #2. Water level elevations also varied seasonally. As expected, water levels are highest in the rainy winter months from November to March. Levels ranged from at or above the tops of the wells to approximately 3.4 feet below ground surface. Water levels in the summer months ranged from approximately 4 to 9 feet below ground surface. Tidal gates installed in the slough approximately 1,000 feet west of the site are operated to maintain a higher water level in Edison Slough. Tidal gates, heavy winter precipitation, and the tidal fluctuations from Samish Bay likely lead to an increase in the elevation of groundwater at the site.

The rate of groundwater flow, or hydraulic conductivity, varied by 5 orders of magnitude across the site. Hydraulic conductivity provides an indication of the ease with which water moves through the subsurface and is used to calculate the rate of groundwater movement. Results in the northern portion of the site (beneath Drainfield #1 and the Emergency Upflow Trench) were higher than results from southern areas of the site (beneath Drainfield #2). As a result, the *Groundwater Assessment* concluded that groundwater beneath the northern portion of the site moves at a faster rate than groundwater at the southern end of the site.

Several monitoring wells were discovered to be highly saline and tidally influenced. These wells are along the west and south boundary of Skagit County and Burlington-Edison School District property. The chemical composition of groundwater from these wells can potentially augment or degrade groundwater quality data. In addition, several wells were installed in areas of potential contamination from overland flow, tidal effects, agricultural land use, surface

drains, or the nearby Edison Slough. With the potential for multiple sources of contamination, further investigation is necessary to parse out the wastewater treatment plant’s contribution for determining background groundwater quality. Additional information on background groundwater quality can be found in Section III.C.

Due to the extreme complexity of the site’s hydrogeology and geochemistry, representative background water quality was not sufficiently established for compliance purposes. Spatial and temporal variability limited the designation of up gradient and down gradient wells necessary to measure changes in groundwater quality.

The *Groundwater Assessment* begins to characterize the subsurface hydrogeology but to develop compliance limits, additional hydrogeologic investigation, expanding on the *Groundwater Assessment*, is necessary and a requirement of this permit. The full *Groundwater Assessment* report can be read at <https://fortress.wa.gov/ecy/publications/documents/1803007.pdf>

Decision on permit type

Permit writers in some cases must decide if the discharge of a pollutant onto the ground near a surface water is subject to an NPDES permit or State Waste Discharge permit. Ecology believes the best guidance on this issue comes from the United States District Court Eastern District of Washington (*Washington Wilderness Coalition v. Hecla Mining*, 870 F. Supp 983, 990). The court held that since the goal of the Clean Water Act (CWA) is to protect the quality of surface waters, any pollutant, which enters such waters, whether directly or through groundwater, is subject to regulation by NPDES permit. The court went on to hold, “It is not sufficient to allege groundwater pollution, and then to assert a general hydrological connection between all waters. Rather, pollutants must be traced from their source to surface waters, in order to come within the purview of the CWA.” The decision on hydraulic continuity depends upon the pollutant (type and mobility in soils), pollutant loading, soils at the site, and hydrology of the site.

Ecology decided to issue the first permit as a State Waste Discharge Permit and not an NPDES Permit for this site because there was no direct, scientific evidence that wastewater pollutants reach surface waters. Data collected over the last permit cycle reported no direct, scientific evidence that wastewater pollutants reaches surface water and therefore Ecology decided to reissue the proposed permit as a State Waste Discharge Permit. Ecology will revisit this decision if data or other information shows a wastewater pollutant from Edison WWTS reaches surface water.

C. Wastewater influent characterization

The data shown in Table 2 represents the quality of the influent to the recirculating gravel filters from March 1, 2013, to December 31, 2017. The District reported the concentration of influent pollutants in discharge monitoring reports.

Table 2. Wastewater influent characterization

Parameter	Units	Average Value	Maximum Value
Flow	gpd	7,337.6	57,020
Biochemical Oxygen Demand (BOD ₅)	mg/L	50.6	132
BOD ₅	lbs/day	5.12	65.0
Total Suspended Solids (TSS)	mg/L	38.5	86.0
TSS	lbs/day	2.82	21.0

D. Wastewater effluent characterization

The data shown in Table 3 represents the quality of the effluent discharged after the UV disinfection system (prior to disposal to drainfields) from March 1, 2013, through December 31, 2017. The District reported the concentration of pollutants in the discharge in discharge monitoring reports.

Table 3. Wastewater effluent characterization

Parameter	Units	Average Value	Maximum Value
Flow, Drainfield #1	gpd	1,014	1,380
Flow, Drainfield #2	gpd	5,449	55,660
Emergency Upflow Trench	gpd	5,244	20,650
BOD ₅	mg/L	2.55	28.0
TSS	mg/L	7.92	31.0
Nitrate+Nitrite Nitrogen	mg/L	60.3	110

Parameter	Units	Average Monthly Geometric Mean	Maximum Monthly Geometric Mean
Fecal Coliforms	cfu/100mL	44.5	1700
Total Coliforms	cfu/100mL	21.8	110

Parameter	Units	Minimum Value	Maximum Value
pH	standard units	6.00	6.91

E. Summary of compliance with previous permit issued January 28, 2013

The previous permit placed effluent limits on BOD₅, TSS, fecal coliform, and pH.

The District has not consistently complied with the effluent limits and permit conditions throughout the duration of the permit issued on January 28, 2013. Ecology assessed compliance based on its review of the facility’s discharge monitoring reports (DMRs).

The following table summarizes the violations that occurred during the permit term.

Table 4. Violations/permit triggers

Begin Date	Parameter	Units	Value	Limit Min/Max	Violation
4/1/2013	Influent Flow	gpd	24910	20000	Exceedance of Design Criteria
11/1/2013	Influent Flow	gpd	21100	20000	Exceedance of Design Criteria
11/1/2013	Flow to Drainfield #2	gpd	18810	18000	Exceedance of Design Criteria
12/1/2013	Effluent Fecal Coliform	cfu/100mL	1700	-/200	Numeric effluent violation
2/1/2014	Influent Flow	gpd	23530	20000	Exceedance of Design Criteria
2/1/2014	Influent Flow	gpd	29060	20000	Exceedance of Design Criteria
3/1/2014	Influent Flow	gpd	24400	20000	Exceedance of Design Criteria
3/1/2014	Flow to Drainfield #2	gpd	18850	18000	Exceedance of Design Criteria
5/1/2014	Influent Flow	gpd	35140	20000	Exceedance of Design Criteria
5/1/2014	Flow to Drainfield #2	gpd	18800	18000	Exceedance of Design Criteria
5/1/2014	Influent Flow	gpd	32060	20000	Exceedance of Design Criteria
5/1/2014	Flow to Drainfield #2	gpd	18800	18000	Exceedance of Design Criteria
11/1/2014	Influent Flow	gpd	22050	20000	Exceedance of Design Criteria

Begin Date	Parameter	Units	Value	Limit Min/Max	Violation
1/1/2015	Flow to Drainfield #2	gpd	55660	18000	Exceedance of Design Criteria
1/1/2015	Flow to Drainfield #2	gpd	27150	18000	Exceedance of Design Criteria
1/1/2015	Influent BOD ₅	mg/L	65	56	Exceedance of Design Criteria
1/1/2015	Influent Flow	gpd	57020	20000	Exceedance of Design Criteria
1/1/2015	Influent Flow	gpd	27510	20000	Exceedance of Design Criteria
1/1/2015	Influent Flow	gpd	22330	20000	Exceedance of Design Criteria
2/1/2015	Effluent Solids (Residue)	mg/L	31	-/30	Numeric effluent violation
4/1/2015	Influent Flow	gpd			Analysis not Conducted; Frequency of Sampling Violation
4/1/2015	Flow to Drainfield #2	gpd			Analysis not Conducted; Frequency of Sampling Violation
4/1/2015	Flow to Drainfield #1	gpd			Analysis not Conducted; Frequency of Sampling Violation
5/1/2015	Influent Flow	gpd			Analysis not Conducted; Frequency of Sampling Violation
5/1/2015	Flow to Drainfield #2	gpd			Analysis not Conducted; Frequency of Sampling Violation
5/1/2015	Flow to Drainfield #1	gpd			Analysis not Conducted; Frequency of Sampling Violation
2/1/2016	Influent Flow	gpd	22470.3	20000	Exceedance of Design Criteria
11/1/2016	Flow to Drainfield #2	gpd	23670	18000	Exceedance of Design Criteria
3/1/2017	Flow to Drainfield #2	gpd	34160	18000	Exceedance of Design Criteria

The following table summarizes compliance with report submittal requirements over the permit term.

Table 5. Permit submittals

Submittal Name	Submittal Status	Due Date	Received Date
Application for permit renewal	Received late	8/31/2017	9/25/2017
Operator certification – Group 1 *temporary certification	Received late	2/28/2018	7/12/2018

F. State environmental policy act (SEPA) compliance

State law exempts the issuance, reissuance, or modification of any wastewater discharge permit from the SEPA process as long as the permit contains conditions that are no less stringent than federal and state rules and regulations (RCW 43.21C.0383). The exemption applies only to existing discharges, not to new discharges.

III. Proposed Permit Limits

State regulations require that Ecology base limits in a State Waste Discharge Permit on the:

- Technology and treatment methods available to treat specific pollutants (technology-based). Dischargers must treat wastewater using all known, available, reasonable methods of prevention, control, and treatment (AKART). Ecology and Washington State Department of Health have adopted technology-based (AKART) criteria for municipal systems that discharge to ground (WA Department of Health, 1994).

- Operations and best management practices necessary to meet applicable water quality standards to preserve or protect beneficial uses for groundwaters.
- Ground water quality standards (Ecology, 1996).
- Applicable requirements of other local, state and federal laws.

Ecology applies the most stringent of technology and water quality-based limits to each parameter of concern and further describes the proposed limits below.

The limits in this permit reflect information received in the application and from supporting reports (engineering, hydrogeology, monitoring, and irrigation/crop management). Ecology evaluated the permit application and determined the limits needed to comply with the rules adopted by the state of Washington. Ecology does not develop effluent limits for all reported pollutants. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, and are not listed in regulation.

Ecology does not usually develop permit limits for pollutants not reported in the permit application but may be present in the discharge. The permit does not authorize the discharge of the non-reported pollutants. During the five-year permit term, the facility’s effluent discharge conditions may change from those conditions reported in the permit application. The facility must notify Ecology if significant changes occur in any constituent. Until Ecology modifies the permit to reflect additional discharges of pollutants, a permitted facility could be violating its permit.

A. Design criteria

Under WAC 173-216-110 (4), flows and waste loadings must not exceed approved design criteria. Ecology approved design criteria for this facility’s treatment plant and drainfields in the engineering reports listed in Table 6. Table 7 outlines the design criteria.

Table 6. Approved engineering documents with design criteria

Facility	Document
Recirculating Gravel Filter and UV Disinfection System	<i>Engineering Report/Facility Plan for Wastewater Collection, Treatment, and Disposal for Edison Washington</i> , Willson Engineering, February 1996, revised April 1996 <i>Plans & Specifications, Edison Subarea Phase I Sewer Improvements</i> , Wilson Engineering, April 1996 <i>O&M Manual, Volume 2: Gravel Filter, Treatment, Disinfection, and Disposal System</i> , Gray & Osborne, Inc., October 2003
Drainfield #1 and Emergency Upflow Trench	<i>Plans & Specifications, Skagit County Clean Water District, Edison Subarea Phase I Sewer Improvements</i> , Wilson Engineering, April 1996 <i>Hydrogeological Evaluation – Edison Wastewater Treatment Facility Drainfield</i> , HWA GeoSciences, Inc., Project #2001-023, September 10, 2002
Drainfield #2	<i>Plans & Specifications, Edison Subarea Wastewater Disposal Field Improvements</i> , Gray & Osborne, Inc., March 2003 <i>O&M Manual, Volume 2: Gravel Filter, Treatment, Disinfection, and Disposal System</i> , Gray & Osborne, Inc., October 2003

Table 7. Design Criteria

Parameter	Recirculating Gravel Filter and UV Disinfection	Drainfield #1	Emergency Upflow Trench ^a	Drainfield #2
Peak (max) daily flow	24,000 gpd	1,650 gpd	1,846 gpd	18,000 gpd
Monthly average flow (maximum month)	--	--	--	12,000 gpd (2,000 gpd/zone)
Daily max BOD ₅ loading	56 lbs/day	--	--	--
Daily max TSS loading	56 lbs/day	--	--	--
Number of dosing zones	--	2	2	6
Documentation	1996 P&S	2002 Hydrogeo Eval	2002 Hydrogeo Eval	2003 P&S

The maximum daily flows for the above parameters are listed as the permitted capacity in the proposed permit.

B. Technology-based effluent limits

Waste discharge permits issued by Ecology specify conditions requiring the facility to use all known available and reasonable methods of prevention, control, and treatment of discharges AKART before discharging to waters of the state (RCW 90.48). Ecology defines AKART for domestic wastewater facilities in chapter 173-221 WAC, Discharge Standards and Effluent Limits for Domestic Wastewater Facilities.

Ecology approved design criteria for this facility’s treatment plant and drainfields in the engineering reports listed in Table 6.

Ecology evaluated the report for technology-based requirements using the:

- Discharge standards and effluent limits for domestic wastewater facilities.
- *Criteria for Sewage Works Design*, Ecology, 2008.

Ecology determined that the facility meets the minimum requirements demonstrating compliance with the AKART standard if the District operates the treatment and disposal system as described in the approved engineering report and any subsequent Ecology approved reports.

Ecology also evaluated the report for water quality-based requirements which is described in the next section of the fact sheet.

Wastewater treatment (prior to discharge to ground) requirements

Ecology based the technology-based effluent limits on Chapter 173-221-WAC. Weekly limits were not included in the permit since Ecology is proposing effluent BOD₅ and TSS monitoring once per month.

Table 8. Technology-based Limits

Parameter	Average Monthly Limit	
BOD ₅	30 mg/L 85% removal of influent BOD ₅	
TSS	30 mg/L 85% removal of influent TSS	
Parameter	Monthly Geometric Mean Limit	
Fecal Coliform Bacteria	200 organisms/100 mL	
Parameter	Daily Minimum	Daily Maximum
pH	6.0 standard units	9.0 standard units

According to WAC 173-221-050(4), domestic wastewater facilities which receive less concentrated influent wastewater may be allowed a lower percent removal limit than the discharge standards set forth in WAC 173-221-040. Agency guidance outlined in the *Permit Writer's Manual* states that the Permittee will be presumed to be in compliance with the percent removal requirement in the permit if the permit effluent concentration limit is met and there is no excessive inflow and infiltration. The proposed permit includes a requirement to conduct a Capacity Evaluation. The Capacity Evaluation includes an evaluation of inflow and infiltration contributions and the overall treatment capacity of the system. Ecology will evaluate compliance to the percent removal requirement based on compliance with the effluent concentration limits for BOD₅ and TSS. Therefore, the proposed permit does not include a percent removal limit.

C. Groundwater quality based effluent limits

In order to protect existing water quality and preserve the designated beneficial uses of Washington's groundwaters including the protection of human health, WAC 173-200-100 requires Ecology to condition discharge permits in such a manner as to authorize only activities that will not cause violations of the groundwater quality standards. The goal of the groundwater quality standards is to maintain the highest quality of the State's groundwaters and to protect existing and future beneficial uses of the groundwater through the reduction or elimination of the discharge of contaminants to groundwater [WAC 173-200-010(4)]. Ecology achieves this goal by:

- Applying AKART to any discharge.
- Applying the antidegradation policy of the groundwater standards.
- Establishing numeric and narrative criteria for the protection of human health and the environment in the groundwater quality standards.

Ecology approved the engineering report as noted above in the technology based limits section. Ecology evaluated the report to ensure compliance with groundwater standards using the:

- Guidelines for the Preparation of Engineering Reports for Industrial Wastewater Land Application Systems, Ecology, May 1993.
(<https://fortress.wa.gov/ecy/publications/summarypages/9336.html>).
- Guidance on Land Treatment of Nutrients in Wastewater, with Emphasis on Nitrogen, Ecology, November 2004.
(<https://fortress.wa.gov/ecy/publications/summarypages/0410081.html>).

Antidegradation Policy

The state of Washington's ground water quality standards (GWQS) require preservation of existing and future beneficial uses of groundwater through the antidegradation policy, which includes the two concepts of antidegradation and non-degradation.

Antidegradation

Antidegradation is not the same as non-degradation (see below). Antidegradation applies to calculation of permit limits in groundwater when background (see below) contaminant concentrations are less than criteria in the GWQS. Ecology has discretion to allow the

concentrations of contaminants at the point of compliance to exceed background concentrations but not exceed criteria in the GWQS. Ecology grants discretion through an approved AKART engineering analysis of treatment alternatives. If the preferred treatment alternative predicts that discharges to groundwater will result in contaminant concentrations that fall between background concentrations and the criteria, then the preferred treatment alternative should protect beneficial uses and meet the antidegradation policy. In this case, the predicted concentrations become the permit limits. If the preferred alternative will meet background contaminant concentrations, background concentrations become the permit limits. Permit limits must protect groundwater quality by preventing degradation beyond the GWQS criteria. If discharges will result in exceedance of the criteria, facilities must apply additional treatment before Ecology can permit the discharge.

Non-degradation

Non-degradation applies to permit limits in groundwater when background contaminant concentrations exceed criteria in the GWQS. Non-degradation means that discharges to groundwater must not further degrade existing water quality. In this case, Ecology considers the background concentrations as the water quality criteria and imposes the criteria as permit limits.

You can obtain more information on antidegradation and non-degradation by referring to the *Implementation Guidance for the Ground Water Quality Standards (Implementation Guidance)*, Ecology Publication #96-02 (available at <https://fortress.wa.gov/ecy/publications/SummaryPages/9602.html>).

Background water quality

Background groundwater quality is determined by a statistical calculation of constituent concentrations without the impacts of the proposed activity. The calculation requires an adequate amount of groundwater quality data and determining the mean and standard deviation of the data, as described in the *Implementation Guidance*. Following the procedure in the *Implementation Guidance*, Ecology then defines background water quality for most contaminants as the 95 percent upper tolerance limit. This means that Ecology is 95 percent confident that 95 percent of future measurements will be less than the upper tolerance limit. There are a few exceptions to the use of the upper tolerance limit. For pH, Ecology will calculate both an upper and a lower tolerance limit resulting in an upper and lower bound to the background water quality.

As part of the *Groundwater Assessment*, eleven monitoring wells were sampled at the site. Samples were collected bimonthly from each well along with Edison WWTS effluent from October 2014 through April 2016. Results varied widely between wells. Water quality testing indicated 3 main groundwater types:

- Wells in the north and east had the most dilute concentrations of ions and water quality parameters.
- Wells in the south and west had very high concentrations of ions, including chloride, bromide, potassium, and ammonium.
- The wells north and west, the well adjacent to Edison Slough, and the effluent had a somewhat higher ionic strength than the northern/eastern group but far lower than the southern/western group.

However, due to the seasonality in horizontal flow, monitoring well locations, potential contaminant sources, and the superimposition of a groundwater mound from the Edison WWTS, Ecology is unable to adequately determine background groundwater quality for compliance purposes at this time.

D. Comparison of effluent limits with the previous permit issued on January 28, 2013

Table 9. Comparison of effluent limits with previous permit

		Previous Effluent Limits: Outfall # 001	Proposed Effluent Limits: Outfall # 001
Parameter	Basis of Limit	Average Monthly	Average Monthly
BOD ₅	Technology	30 mg/L	30 mg/L
TSS	Technology	30 mg/L	30 mg/L
Parameter	Basis of Limit	Monthly Geometric Mean Limit	Monthly Geometric Mean Limit
Fecal Coliform Bacteria	Technology	200 cfu/100 mL	200 cfu/100 mL
Parameter	Basis of Limit	Daily Minimum	Daily Maximum
pH	Technology	6.0 – 9.0 standard units	6.0 – 9.0 standard units

IV. Monitoring Requirements

Ecology requires monitoring, recording, and reporting (WAC 173-216-110) to verify that the treatment process functions correctly.

If a facility uses a contract laboratory to monitor wastewater, it must ensure that the laboratory uses the methods and meets or exceeds the method detection levels required by the permit. The permit describes when facilities may use alternative methods. It also describes what to do in certain situations when the laboratory encounters matrix effects. When a facility uses an alternative method as allowed by the permit, it must report the test method, detection level (DL), and quantitation level (QL) on the discharge monitoring report or in the required report.

A. Lab accreditation

Ecology requires that facilities must use a laboratory registered or accredited under the provisions of chapter 173-50 WAC, Accreditation of Environmental Laboratories, to prepare all monitoring data (with the exception of certain parameters). The permittee does not have an accredited lab onsite and will send the following to an accredited lab for analysis: BOD₅, TSS, TDS, DO, fecal coliform, total coliform, and nitrogen species. The permittee will analyze pH in-house.

B. Wastewater monitoring

Ecology details the proposed monitoring schedule under Special Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The

permit proposes monthly influent and effluent monitoring. This monitoring schedule is less frequent than the agency guidance given in Ecology's *Permit Writer's Manual*. The treatment process at the Edison WWTS is less complex and has minimal variability. The proposed permit requires additional monitoring during non-standard discharge events.

Total coliform, dissolved oxygen, TKN, nitrate+nitrite, and total phosphorus effluent monitoring have been removed from the proposed permit. Effluent monitoring of BOD₅, TSS, pH, and fecal coliform is sufficient to track the efficiency of the treatment system. In addition, the proposed permit contains a condition requiring the submittal of a proposed monitoring plan for the next permit term (Special Condition S8). The proposed monitoring plan must include effluent monitoring for, at a minimum, parameters of concern found during the Groundwater Evaluation. The submitted proposed monitoring plan will be reviewed and approved by Ecology and incorporated into the next permit.

C. Sludge monitoring

Monitoring of sludge quantity and quality is necessary to determine the appropriate uses of the sludge. Biosolids monitoring is required by the current state and local solid waste management program and also by EPA under 40 CFR 503.

D. Groundwater monitoring

Ecology requires groundwater monitoring at the site in accordance with the Ground Water Quality Standards, chapter 173-200 WAC. Ecology has determined that this discharge has a potential to pollute the groundwater but background groundwater quality has yet to be determined.

This permit includes a condition requiring the development of a groundwater monitoring network and proposed monitoring plan. The purpose of this permit condition is to establish the framework for determining background groundwater quality. In developing the monitoring well network for establishing background groundwater quality, the Permittee must consider the following,

- Placement of monitoring wells within the same hydrogeologic unit but not space too closely or immediately up gradient or down gradient of each other.
- Hydraulic conductivity.
- Range of contaminant concentrations.
- Size of area being investigated to provide adequate spatial and temporal coverage of the site.
- Groundwater movement, direction, volume, and stability.
- Collection of a sufficient number of samples to demonstrate that the analytical results do not correlate with either time of collection or nearby wells.
- Known sources of contamination that may misrepresent pollutant parameters in the background groundwater in relation to down gradient groundwater.
- Intrawell versus interwell statistical comparisons.

This condition is the first of three permit conditions that will build over three consecutive permit terms. The next permit will require the collection and analysis of groundwater samples from the monitoring network. Groundwater data collected during the next permit term will be used to characterize background groundwater quality and to develop early warning values (WAC 173-200-070) or groundwater compliance limits (WAC 173-200-050) associated with the discharge. Subsequent permits will require monitoring for compliance with groundwater standards and any applicable early warning values or compliance limits. Ecology may change this permitting strategy in subsequent permit terms dependent on information submitted by the District. Although these conditions are spread over three permit cycles the collection of groundwater data can begin as soon as the groundwater monitoring network and monitoring plan are approved by Ecology.

V. Other Permit Conditions

A. Reporting and record keeping

Ecology based Special Condition S3 on its authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-216-110).

B. Prevention of facility and drainfield overloading

Overloading of the treatment plant and/or drainfields is a violation of the terms and conditions of the permit. Special Condition S4 restricts the amount of flow, BOD₅, and TSS to the treatment system and the amount of flow to the drainfields. To prevent this from occurring, RCW 90.48.110 and WAC 173-216-110 require Edison WWTS to:

- Take the actions detailed in proposed permit Special Condition S4.
- Design and construct expansions or modifications before the treatment plant reaches existing capacity.
- Report and correct conditions that could result in new or increased discharges of pollutants.

If a municipality intends to apply for Ecology-administered funding for the design or construction of a facility project, the plan must meet the standard of a “Facility Plan”, as defined in WAC 173-98-030. A complete “Facility Plan” includes all elements of an “Engineering Report” along with State Environmental Review Process (SERP) documentation to demonstrate compliance with 40 CFR 35.3140 and 40 CFR 35.3145, and a cost effectiveness analysis as required by WAC 173-98-730. The municipality should contact Ecology’s regional office as early as practical before planning a project that may include Ecology-administered funding.

C. Operations and maintenance

Ecology requires dischargers to take all reasonable steps to properly operate and maintain their wastewater treatment system in accordance with state regulations (WAC 173-240-080 and WAC 173-216-110). The facility prepared and retains an operation and maintenance (O&M) manual for the wastewater facility.

Implementation of the procedures in the operation and maintenance manual ensures the facility’s compliance with the terms and limits in the permit and ensures the facility provides AKART to the waste stream.

D. Pretreatment

Duty to enforce discharge prohibitions

This provision prohibits the publicly owned treatment works (POTW) from authorizing or permitting an industrial discharger to discharge certain types of waste into the sanitary sewer.

- The first section of the pretreatment requirements prohibits the POTW from accepting pollutants which causes “pass-through” or “interference”. This general prohibition is from 40 CFR §403.5(a). **Appendix C** of this fact sheet defines these terms.
- The second section reinforces a number of specific state and federal pretreatment prohibitions found in WAC 173-216-060 and 40 CFR §403.5(b). These reinforce that the POTW may not accept certain wastes, which:
 - a. Are prohibited due to dangerous waste rules.
 - b. Are explosive or flammable.
 - c. Have too high or low of a pH (too corrosive, acidic or basic).
 - d. May cause a blockage such as grease, sand, rocks, or viscous materials.
 - e. Are hot enough to cause a problem.
 - f. Are of sufficient strength or volume to interfere with treatment.
 - g. Contain too much petroleum-based oils, mineral oil, or cutting fluid.
 - h. Create noxious or toxic gases at any point.

40 CFR Part 403 contains the regulatory basis for these prohibitions, with the exception of the pH provisions, which are based on WAC 173-216-060.

- The third section of pretreatment conditions reflects state prohibitions on the POTW accepting certain types of discharges unless the discharge has received prior written authorization from Ecology. These discharges include:
 - a. Cooling water in significant volumes.
 - b. Stormwater and other direct inflow sources.
 - c. Wastewaters significantly affecting system hydraulic loading, which do not require treatment.

Federal and state pretreatment program requirements

Ecology administers the pretreatment program under the terms of the addendum to the “Memorandum of Understanding between Washington Department of Ecology and the United States Environmental Protection Agency, Region 10” (1986) and 40 CFR, Part 403. Under this delegation of authority, Ecology issues wastewater discharge permits for significant industrial users (SIUs) discharging to POTWs which have not been delegated authority to issue wastewater discharge permits. Ecology must approve, condition, or deny new discharges or a significant increase in the discharge for existing significant industrial users (SIUs) [40 CFR 403.8 (f)(1)(i) and(iii)].

Industrial dischargers must obtain a permit from Ecology before discharging waste to the Edison WWTS [WAC 173-216-110(5)]. Industries discharging wastewater that is similar in character to domestic wastewater do not require a permit.

Routine identification and reporting of industrial users

The permit requires non-delegated POTWs to take “continuous, routine measures to identify all existing, new, and proposed significant industrial users (SIUs) and potential significant industrial users (PSIUs)” discharging to their sewer system. Examples of such routine measures include regular review of water and sewer billing records, business license and building permit applications, advertisements, and personal reconnaissance. System maintenance personnel should be trained on what to look for so they can identify and report new industrial dischargers in the course of performing their jobs. The POTW may not allow SIUs to discharge prior to receiving a permit, and must notify all industrial dischargers (significant or not) in writing of their responsibility to apply for a State Waste Discharge Permit. The POTW must send a copy of this notification to Ecology.

E. Solid wastes

To prevent water quality problems the facility is required in Special Condition S7 to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and state water quality standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503 “Standards for Use of Disposal of Sewage Sludge”, and by Ecology under chapter 70.95J RCW “Municipal Sewage Sludge – Biosolids”, chapter 173-308 WAC “Biosolids Management,” and chapter 173-350 WAC “Solid Waste Handling Standards.” The disposal of other solid waste is under the jurisdiction of the Skagit County Health Department.

F. Compliance schedule

Ecology is allowing additional time for the District to train and certify (or contract) a Group I operator. By the date tabulated below, the Permittee must complete the following task. If the permittee fails to meet the date below, a letter must be sent outlining the reasons for delay and the steps it is taking to return to the established schedule.

Table 10. Compliance schedule

Tasks	Due Date
Submit a letter including the name of the Group I operator and date that the operator status was attained.	July 19, 2019

G. General conditions

Ecology bases the standardized general conditions on state law and regulations. They are included in all state waste discharge permits issued by Ecology.

VI. Permit Issuance Procedures

A. Permit modifications

Ecology may modify this permit to impose numerical limits, if necessary, to comply with water quality standards for groundwaters, based on new information from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

Ecology may also modify this permit to comply with new or amended state regulations.

B. Proposed permit issuance

This proposed permit meets all statutory requirements for Ecology to authorize a wastewater discharge. The permit includes limits and conditions to protect human health and aquatic life, and the beneficial uses of waters of the state of Washington. Ecology proposes to issue this permit for a term of 5 years.

VII. References for Text and Appendices

Gavlak, R., D. Horneck, R.O. Miller, and J. Kotuby-Amacher.

3rd edition 2005. *Soil, Plant And Water Reference Methods For The Western Region*

Washington State Department of Ecology.

2018. *Wastewater Treatment System Groundwater Assessment for Edison, Washington*, Ecology Publication Number 18-03-007

<https://fortress.wa.gov/ecy/publications/documents/1803007.pdf>

1993. *Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems*, Ecology Publication Number 93-36. 20 pp.

<https://fortress.wa.gov/ecy/publications/summarypages/9336.html>

Laws and Regulations (<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information (<https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-quality-permits>)

Revised October 2005. *Implementation Guidance for the Ground Water Quality Standards*, Ecology Publication Number 96-02.

<https://fortress.wa.gov/ecy/publications/SummaryPages/9602.html>

Revised August 2008. *Criteria for Sewage Works Design*. Publication Number 98-37.

<https://fortress.wa.gov/ecy/publications/summarypages/9837.html>

December 2011. *Permit Writer's Manual*. Publication Number 92-109

(<https://fortress.wa.gov/ecy/publications/summarypages/92109.html>)

November 2004. *Guidance on Land Treatment of Nutrients in Wastewater, with Emphasis on Nitrogen*, Ecology Publication Number 04-10-081;

<https://fortress.wa.gov/ecy/publications/summarypages/0410081.html>

Washington State Department of Health.

February 1994. *Design Criteria for Municipal Wastewater Land Treatment Systems for Public Health Protection.*

Link is in the process of being updated.

Appendix A--Public Involvement Information

Ecology proposes to issue a permit to the Edison Wastewater Treatment System. The permit includes wastewater discharge limits and other conditions. This fact sheet describes the facility and Ecology's reasons for requiring permit conditions.

Ecology will place a Public Notice of Draft on January 23, 2019, in the *Skagit Valley Herald* to inform the public and to invite comment on the proposed draft State Waste Discharge permit and fact sheet.

The notice:

- Tells where copies of the draft Permit and Fact Sheet are available for public evaluation (a local public library, the closest Regional or Field Office, posted on our website).
- Offers to provide the documents in an alternate format to accommodate special needs.
- Urges people to submit their comments, in writing, before the end of the Comment Period.
- Tells how to request a public hearing of comments about the proposed state waste discharge permit.
- Explains the next step(s) in the permitting process.

Ecology has published a document entitled *Frequently Asked Questions about Effective Public Commenting*, which is available on our website at <https://fortress.wa.gov/ecy/publications/documents/0307023.pdf>.

You may obtain further information from Ecology by telephone, (425) 649-7000, or by writing to the address listed below.

Water Quality Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

The primary author of this permit and fact sheet is Maia Hoffman and Stephanie Allen.

Appendix B--Your Right to Appeal

You have a right to appeal this permit to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of the final permit. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. “Date of receipt” is defined in RCW 43.21B.001(2) (see glossary).

To appeal you must do the following within 30 days of the date of receipt of this permit:

- File your appeal and a copy of this permit with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this permit on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in chapter 43.21B RCW and chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
<p>Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503</p>	<p>Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608</p>
<p>Pollution Control Hearings Board 1111 Israel RD SW STE 301 Tumwater, WA 98501</p>	<p>Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903</p>

Appendix C--Glossary

1-DMax or 1-day maximum temperature -- The highest water temperature reached on any given day. This measure can be obtained using calibrated maximum/minimum thermometers or continuous monitoring probes having sampling intervals of thirty minutes or less.

7-DADMax or 7-day average of the daily maximum temperatures -- The arithmetic average of seven consecutive measures of daily maximum temperatures. The 7-DADMax for any individual day is calculated by averaging that day's daily maximum temperature with the daily maximum temperatures of the three days prior and the three days after that date.

Acute toxicity -- The lethal effect of a compound on an organism that occurs in a short time period, usually 48 to 96 hours.

AKART -- The acronym for “all known, available, and reasonable methods of prevention, control and treatment.” AKART is a technology-based approach to limiting pollutants from wastewater discharges, which requires an engineering judgment and an economic judgment. AKART must be applied to all wastes and contaminants prior to entry into waters of the state in accordance with RCW 90.48.010 and 520, WAC 173-200-030(2)(c)(ii), and WAC 173-216-110(1)(a).

Alternate point of compliance -- An alternative location in the groundwater from the point of compliance where compliance with the groundwater standards is measured. It may be established in the groundwater at locations some distance from the discharge source, up to, but not exceeding the property boundary and is determined on a site specific basis following an AKART analysis. An “early warning value” must be used when an alternate point is established. An alternate point of compliance must be determined and approved in accordance with WAC 173-200-060(2).

Ambient water quality -- The existing environmental condition of the water in a receiving water body.

Ammonia -- Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Annual average design flow (AADF) -- The average of the daily flow volumes anticipated to occur over a calendar year.

Average monthly (intermittent) discharge limit -- The average of the measured values obtained over a calendar month's time taking into account zero discharge days.

Average monthly discharge limit -- The average of the measured values obtained over a calendar month's time.

Background water quality -- The concentrations of chemical, physical, biological or radiological constituents or other characteristics in or of groundwater at a particular point in time upgradient of an activity that has not been affected by that activity [WAC 173-200-020(3)]. Background water quality for any parameter is statistically defined as the 95% upper tolerance interval with a 95% confidence based on at least eight hydraulically upgradient water quality samples. The eight samples are collected over a period of at least one year, with no more than one sample collected during any month in a single calendar year.

Best management practices (BMPs) -- Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD5 -- Determining the five-day Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD5 is used in modeling to measure the reduction of dissolved oxygen in receiving waters after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD₅ is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass -- The intentional diversion of waste streams from any portion of a treatment facility.

Categorical pretreatment standards -- National pretreatment standards specifying quantities or concentrations of pollutants or pollutant properties, which may be discharged to a POTW by existing or new industrial users in specific industrial subcategories.

Chlorine -- A chemical used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic toxicity -- The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean water act (CWA) -- The federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance inspection-without sampling -- A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance inspection-with sampling -- A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations. In addition it includes as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Ecology may conduct additional sampling.

Composite sample -- A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Construction activity -- Clearing, grading, excavation, and any other activity, which disturbs the surface of the land. Such activities may include road building; construction of residential houses, office buildings, or industrial buildings; and demolition activity.

Continuous monitoring -- Uninterrupted, unless otherwise noted in the permit.

Critical condition -- The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Date of receipt -- This is defined in RCW 43.21B.001(2) as five business days after the date of mailing; or the date of actual receipt, when the actual receipt date can be proven by a preponderance of the evidence. The recipient's sworn affidavit or declaration indicating the date of receipt, which is unchallenged by the agency, constitutes sufficient evidence of actual receipt. The date of actual receipt, however, may not exceed forty-five days from the date of mailing.

Detection limit -- The minimum concentration of a substance that can be measured and reported with 99 percent confidence that the pollutant concentration is above zero and is determined from analysis of a sample in a given matrix containing the pollutant.

Dilution factor (DF) -- A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction, for example, a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Distribution uniformity -- The uniformity of infiltration (or application in the case of sprinkle or trickle irrigation) throughout the field expressed as a percent relating to the average depth infiltrated in the lowest one-quarter of the area to the average depth of water infiltrated.

Early warning value -- The concentration of a pollutant set in accordance with WAC 173-200-070 that is a percentage of an enforcement limit. It may be established in the effluent, groundwater, surface water, the vadose zone or within the treatment process. This value acts as a trigger to detect and respond to increasing contaminant concentrations prior to the degradation of a beneficial use.

Enforcement limit -- The concentration assigned to a contaminant in the groundwater at the point of compliance for the purpose of regulation, [WAC 173-200-020(11)]. This limit assures that a groundwater criterion will not be exceeded and that background water quality will be protected.

Engineering report -- A document that thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report must contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal coliform bacteria -- Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab sample -- A single sample or measurement taken at a specific time or over as short a period of time as is feasible.

Groundwater -- Water in a saturated zone or stratum beneath the surface of land or below a surface water body.

Industrial user -- A discharger of wastewater to the sanitary sewer that is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial wastewater -- Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business; from the development of any natural resource; or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated stormwater and, also, leachate from solid waste facilities.

Interference -- A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Local limits -- Specific prohibitions or limits on pollutants or pollutant parameters developed by a POTW.

Major facility -- A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum daily discharge limit -- The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Maximum day design flow (MDDF) -- The largest volume of flow anticipated to occur during a one-day period, expressed as a daily average.

Maximum month design flow (MMDF) -- The largest volume of flow anticipated to occur during a continuous 30-day period, expressed as a daily average.

Maximum week design flow (MWDF) -- The largest volume of flow anticipated to occur during a continuous 7-day period, expressed as a daily average.

Method detection level (MDL) -- See Detection Limit.

Minor facility -- A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing zone -- An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The permit specifies the area of the authorized mixing zone that Ecology defines following procedures outlined in state regulations (chapter 173-201A WAC).

National pollutant discharge elimination system (NPDES) -- The NPDES (Section 402 of the Clean Water Act) is the federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the state of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both state and federal laws.

pH -- The pH of a liquid measures its acidity or alkalinity. It is the negative logarithm of the hydrogen ion concentration. A pH of 7 is defined as neutral and large variations above or below this value are considered harmful to most aquatic life.

Pass-through -- A discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

Peak hour design flow (PHDF) -- The largest volume of flow anticipated to occur during a one-hour period, expressed as a daily or hourly average.

Peak instantaneous design flow (PIDF) -- The maximum anticipated instantaneous flow.

Point of compliance -- The location in the groundwater where the enforcement limit must not be exceeded and a facility must comply with the Ground Water Quality Standards. Ecology determines this limit on a site-specific basis. Ecology locates the point of compliance in the groundwater as near and directly downgradient from the pollutant source as technically, hydrogeologically, and geographically feasible, unless it approves an alternative point of compliance.

Potential significant industrial user (PSIU) -- A potential significant industrial user is defined as an Industrial User that does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day; or
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

Ecology may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation level (QL) -- Also known as Minimum Level of Quantitation (ML) -- The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that the lab has used all method-specified sample weights, volumes, and

cleanup procedures. The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to $(1, 2, \text{ or } 5) \times 10^n$, where n is an integer (64 FR 30417).

ALSO GIVEN AS:

The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency, December 2007).

Reasonable potential -- A reasonable potential to cause a water quality violation, or loss of sensitive and/or important habitat.

Responsible corporate officer -- 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 have 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 (40 CFR 122.22).

Sample Maximum -- No sample may exceed this value.

Significant industrial user (SIU) --

- 1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; and
- 2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement [in accordance with 40 CFR 403.8(f)(6)].

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

Slug discharge -- Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge to the POTW. This may include any pollutant released at a flow rate that may cause interference or pass through with the POTW or in any way violate the permit conditions or the POTW's regulations and local limits.

Soil scientist -- An individual who is registered as a Certified or Registered Professional Soil Scientist or as a Certified Professional Soil Specialist by the American Registry of Certified Professionals in Agronomy, Crops, and Soils or by the National Society of Consulting Scientists or who has the credentials for membership. Minimum requirements for eligibility are: possession of a baccalaureate, masters, or doctorate degree from a U.S. or Canadian institution with a minimum of 30 semester hours or 45 quarter hours professional core courses in agronomy, crops or soils, and have 5,3,or 1 years, respectively, of professional experience working in the area of agronomy, crops, or soils.

Solid waste -- All putrescible and non-putrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials.

Soluble BOD₅ -- Determining the soluble fraction of Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of soluble organic material present in an effluent that is utilized by bacteria. Although the soluble BOD₅ test is not specifically described in Standard Methods, filtering the raw sample through at least a 1.2 um filter prior to running the standard BOD₅ test is sufficient to remove the particulate organic fraction.

State waters -- Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater -- That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based effluent limit -- A permit limit based on the ability of a treatment method to reduce the pollutant.

Total coliform bacteria -- A microbiological test, which detects and enumerates the total coliform group of bacteria in water samples.

Total dissolved solids -- That portion of total solids in water or wastewater that passes through a specific filter.

Total maximum daily load (TMDL) -- A determination of the amount of pollutant that a water body can receive and still meet water quality standards.

Total suspended solids (TSS) -- Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset -- An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits 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, lack of preventative maintenance, or careless or improper operation.

Water quality-based effluent limit -- A limit imposed on the concentration of an effluent parameter to prevent the concentration of that parameter from exceeding its water quality criterion after discharge into receiving waters.

Appendix D--Monitoring Data Summary

Discharge Monitoring Data, March 2013 to December 2017

Facility: Edison
 Permit
 No.ST0045515

Influent						
Date	Flow, GPD	Flow, GPD	TSS, ppd	TSS, mg/L	Total BOD5, ppd	Total BOD5, mg/L
	Mon Ave	Daily Max	Mon Ave	Mon Ave	Mon Ave	Mon Ave
Mar-13	8709	17200				
Apr-13	9256	24910	2.54	32	9.12	115
May-13	8496	12690				
Jun-13	8043	13800				
Jul-13	6785	9530	1.65	33	6.61	132
Aug-13	7151	9170				
Sep-13	7418	12380				
Oct-13	7228	8420	1.05	16	2.55	39
Nov-13	8514	21100				
Dec-13	8266	16380				
Jan-14	9023	19790	5.1	68	1.2	16
Feb-14	10499	29060				
Mar-14	10089	24400				
Apr-14	8478	15680	2.8	41	1.84	26
May-14	10777	35140				
Jun-14	7788	10290				
Jul-14	7105	9510	2.07	35	1.83	31
Aug-14	6715	8930				
Sep-14	3783	7520				
Oct-14	6585	13180	0.325	6	0.271	5
Nov-14	9253	22050				
Dec-14	8672	18600				
Jan-15	10878	57020	21	21	65	65
Feb-15	8557	16810				
Mar-15	8736	14840				
Apr-15			4.4	76	5.5	95
May-15	7000	7000				
Jun-15	6070	7641				
Jul-15	5734	7443	1.379	78	0.143	24
Aug-15	5841	8628				

Sep-15	6283	8114				
Oct-15	6092	9505	0.293	37	0.024	3
Nov-15	6219	7461				
Dec-15	8028	18823				
Jan-16	6450	7653	0.751	11	3.279	48
Feb-16	7431	22470				
Mar-16	6528	11882				
Apr-16	6246	7883	0.0004	29	0.001	128
May-16	6137	7103				
Jun-16	6113	8217				
Jul-16	6037	8180	0.0004	44	0.00007	8.9
Aug-16	6351	8291				
Sep-16	7432	9343				
Oct-16	7377	9616	0.0002	24	0.0001	21
Nov-16	9404	17665				
Dec-16	7602	9751				
Jan-17	8637	13573	0.00012	15	0.00011	14
Feb-17	7232	12887				
Mar-17	6856	13451				
Apr-17	6147	8551	0.00025	30	0.00015	18
May-17	6159	7448				
Jun-17	5722	7424				
Jul-17	5363	8330	0.0004	50	0.001	127
Aug-17	5567	8013				
Sep-17	6050	8425				
Oct-17	5874	7275	0.00071	86	0.00037	45
Nov-17	6140	9013				
Dec-17	7313	14625				
Min	3783	7000	0.00012	6	0.00007	3
Max	10878	57020	21	86	65	132
Average	7338	13510	2.28213	39	5.12473	51
Median	7151	9616	0.751	33	0.271	31
95th Percentile	10171	25740	6.69	79	14.708	128

LIMIT:

DESIGN:

20000

56

56

exceeds design limits

Facility: Edison
 Permit No. ST0045515

Effluent																				
Date	Dissolved Oxygen, mg/L	Dissolved Oxygen, mg/L	Fecal Coliform, #/100ml	Nitrate + Nitrite, mg/L	Nitrate + Nitrite	pH, Standard Units	pH, Standard Units	TSS, mg/L	TSS, mg/L	TKN, mg/L	Total BOD5, mg/L	Total BOD5, mg/L	Total Coliforms, #/100ml	Total Phosphorus, mg/L	Drainfield No. 1, GPD	Drainfield No. 1, GPD	Drainfield No. 2, GPD	Drainfield No. 2, GPD	Emergency Upflow Trench, GPD	Emergency Upflow Trench, GPD
	Mon Ave	Min	GEM	Max	Maximum	Max	Min	Mon Ave	Max	Max	Mon Ave	Max	Max	Max	Mon Ave	Daily Max	Mon Ave	Daily Max	Mon Ave	Daily Max
Mar-13			33			6.1	6.1	5	5		2	2			1128	1370	4552	9420		
Apr-13	7.8	7.8	2	35.9	35.9	6.3	6.3	11	11	2.0	2	2	1.8	9.1	1148	1360	3636	11420		
May-13			2			6.2	6.2	10	10		3	3			1161	1370	3888	8830		
Jun-13			49			6.4	6.4	9	9		3	3			1263	1370	4552	10450		
Jul-13	3.8	3.8	8	42.1	42.1	6.8	6.8	8	8	2.9	4	4	23.0	8.9	1298	1360	5810	8380		
Aug-13			2			6.4	6.4	10	10		3	3			1271	1370	5562	7990		
Sep-13			9			6.2	6.2	6	6		0	0			1318	1370	6221	10770		
Oct-13	5.8	5.8	2	61.0	61	6.3	6.3	8	8	0.0	2	2	1.8	9.6	1285	1360	5971	8060		
Nov-13			2			6.1	6.1	0	0		2	2			1297	1370	7419	18810		
Dec-13			1700			6.3	6.3	0	0		2	2			1308	1370	6460	13290		
Jan-14	9.3	9.3	2	42.4	42.4	6.7	6.7	1	1	0.8	1	1	1.0	6.3	1209	1370	5236	13700		
Feb-14			2			6.1	6.1	1	1		1	1			1131	1370	6055	15000		
Mar-14			22			6.5	6.5	8	8		2	2			1103	1370	5188	18850		
Apr-14	7.3	7.3	2	56.0	56	6.3	6.3	17	17	0.5	3	3	33.0	8.9	1116	1370	4162	10100		
May-14			8			6.1	6.1	9	9		2	2			1263	1370	5556	18800		
Jun-14			2			6.2	6.2	5	5		0	0			1033	1370	4836	11200		
Jul-14	3.0	3.0	2	59.8	59.8	6.4	6.4	8	8	2.7	6	6	13.0	10.8	1258	1380	4016	8510		

Aug-14			4			6.6	6.6	11	11		5	5			1288	1370	3806	8260		
Sep-14			4			6.1	6.1	6	6		2	2			1214	1370	3246	7200		
Oct-14	8.8	8.8	33	56.9	53.2	6.4	6.4	5	5	1.2	2	2	49.0	7.4	1122	1370	5363	13920		
Nov-14			2			6.6	6.6	0	0		3	3			1228	1370	6906	14800		
Dec-14			2		48.2	6.9	6.9	6	6		3	3			1037	1370	6890	13670		
Jan-15	10.7	10.7	2	49.6		6.1	6.1	0	0	3.5	0	0	2.0	7.6	1611	1360	10138	55660		
Feb-15			2		34.3	6.3	6.3	31	31		28	28			1296	1370	8096	15370		
Mar-15			2			6.2	6.2	4	4		3	3			1317	1370	7998	14920		
Apr-15	7.1	7.1	2	110.0	86.9	6.2	6.2	9	9	0.7	3	3	4.5	9.6						
May-15			49			6.0	6.0	6	6		2	2			1000	1000	7000	7000		
Jun-15			2		61.5	6.3	6.3	9	9		3	3			736	960	4384	6080		
Jul-15	4.0	4.0	8	63.4		6.6	6.6	29	29	2.6	3	3	79.0	10.6	864	1310	4409	6240		
Aug-15			23		63.6	6.7	6.7	4	4		0	0			852	950	4545	7560		
Sep-15			2			6.5	6.5	0	0		0	0			861	960	5022	6680		
Oct-15	5.4	5.4	130	77.8		6.3	6.3	1	1	0.0	14	14	17.0	10.0	867	940	4926	8860		
Nov-15			170		31.4	6.4	6.4	1	1		1	1			802	930	5431	8300	1316	3922
Dec-15			170			6.4	6.4	4	4		2	2			859	950	5824	11310	7099	17700
Jan-16	9.9	9.9	17	59.7		6.6	6.6	1	1	0.0	1	1	110.0	9.1	853	950	5330	7840		
Feb-16			13		62.4	6.1	6.1	5	5		1	1			854	960	4742	9720	12713	20650
Mar-16			2			6.8	6.8	5	5		2	2			865	960	5037	10650		
Apr-16	7.0	7.0	2	64.2	60.6	6.5	6.5	8	8	2.2	2	2	1.8	8.2	862	940	5694	7180		
May-16			2			6.1	6.1	11	11		2	2			815	940	5264	6410		
Jun-16			2			6.3	6.3	14	14		2	2			842	950	4999	8470		
Jul-16	5.4	5.4	2	66.7	66.7	6.4	6.4	8	8	0.0	0	0	4.5	9.3	835	940	4528	6160		
Aug-16			2			6.5	6.5	30	30		0	0			831	940	4799	6420		
Sep-16			2			6.6	6.6	6	6		0	0			853	950	5686	7430		
Oct-16	6.4	6.4	8	80.7	80.7	6.3	6.3	0	0	0.0	0	0	13.0	10.2	846	940	5764	8270		
Nov-16			49			6.9	6.9	0	0		0	0			837	950	7990	23670		
Dec-16			33			6.7	6.7	0	0		0	0			851	950	6225	11600		
Jan-17	8.6	8.6	5	41.5	41.5	6.4	6.4	0	0	0.4	2	2	4.5	6.1	840	950	6715	13370		

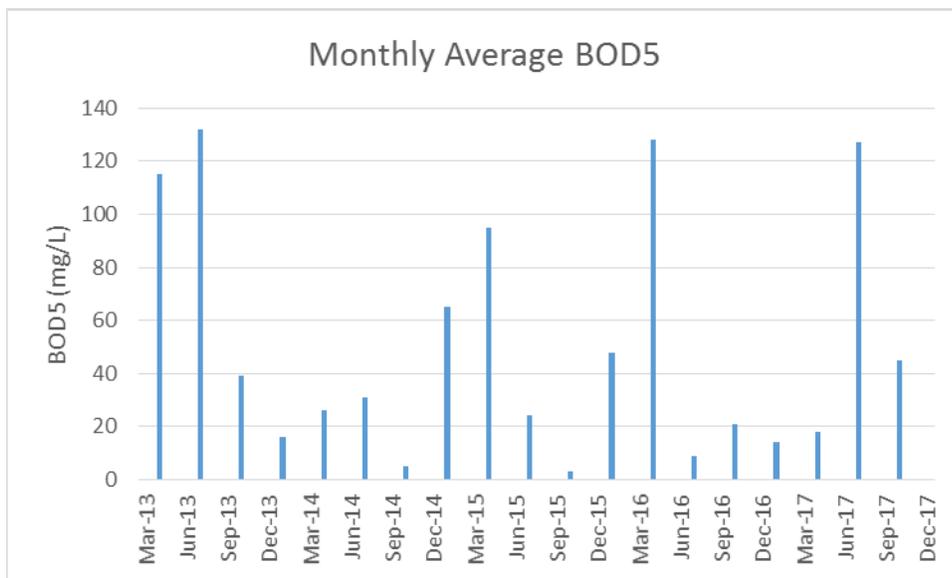
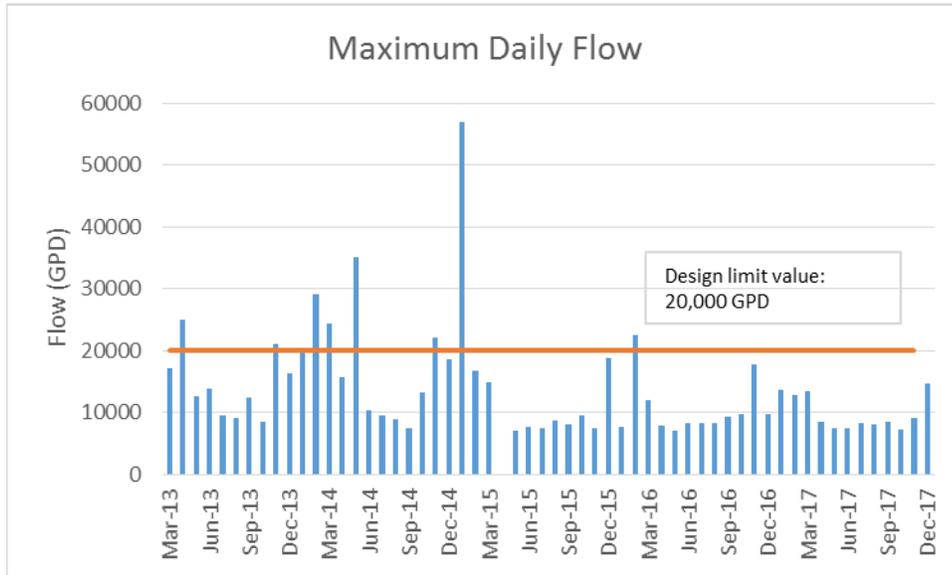
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Apr-17	7.3	7.3	2	47.4	47.4	6.1	6.1	6	6	0.0	3	3	4.5	7.2	863	970	4962	6560		
May-17			2			6.1	6.1	14	14		5	5			860	960	4827	6450		
Jun-17			2			6.6	6.6	21	21		5	5			860	960	4464	6480		
Jul-17	4.4	4.4	2	53.5	53.5	6.3	6.3	17	17	0.2	2	2	49.0	12.5	835	950	4077	7090		
Aug-17			13			6.5	6.5	27	27		2	2			838	960	3946	6880		
Sep-17			2			6.3	6.3	13	13		0	0			816	960	4445	6760		
Oct-17	6.4	6.4	2	78.0	78	6.0	6.0	11	11	0.0	2	2	1.8	16.8	831	940	4567	5870		
Nov-17			4			6.9	6.9	13	13		2	2			839	930	5148	9900		
Dec-17			2			6.5	6.5	7	7		0	0			833	950	6174	16390	10340	10340
Min	3.0	3.0	2	35.9	31.4	6.0	6.0	0	0	0.0	0	0	1.0	6.1	736	930	3246	5870	0	0
Max	10.7	10.7	1700	110.0	86.9	6.9	6.9	31	31	3.5	28	28	110.0	16.8	1611	1380	10138	55660	12713	20650
Average	6.8	6.8	46	60.3	55.6	6.4	6.4	8	8	1.0	3	3	21.8	9.4	1014	1141	5449	11424	5245	8769
Median	7.0	7.0	2	59.7	56	6.3	6.3	6	6	0.5	2	2	4.5	9.1	864	960	5188	8830	4207	7131
95th Percentile	10.0	10.0	136	83.6	80.7	6.8	6.8	27	27	3.0	5	5	82.1	12.9	1310	1370	7992	19814	12119	19913

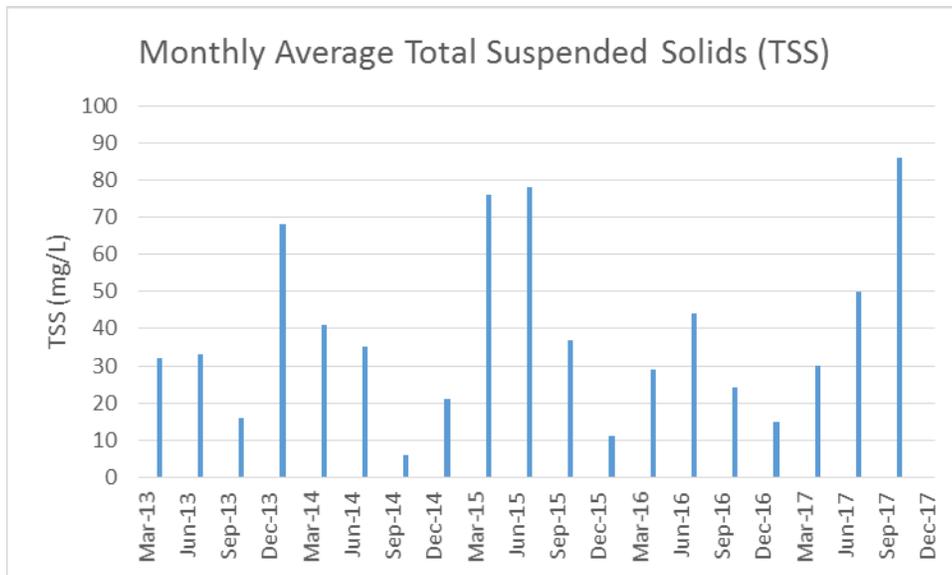
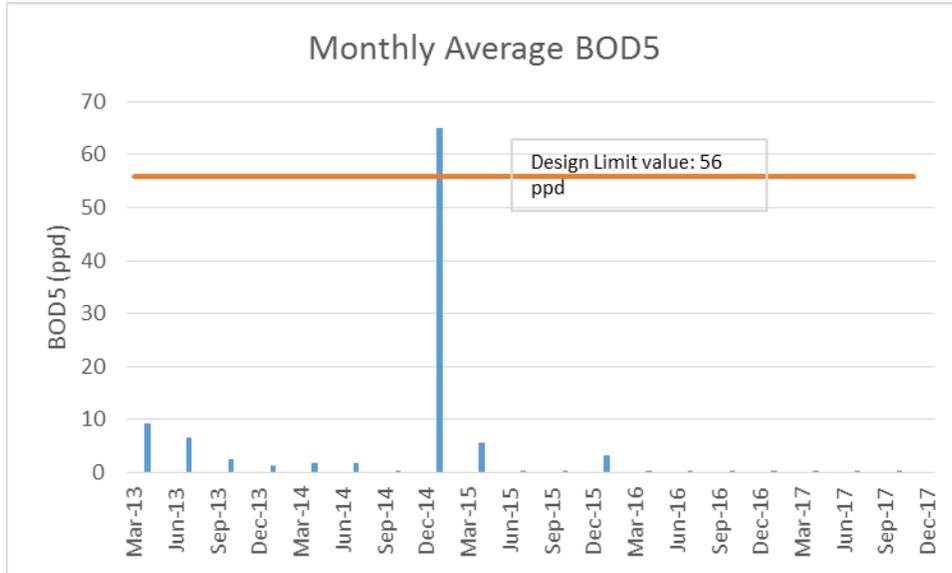
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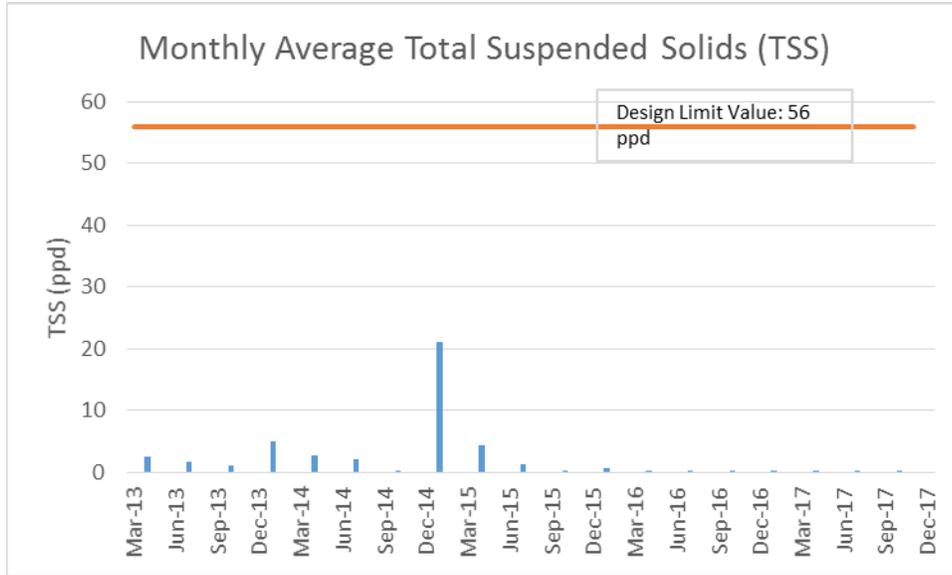
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exceed permit or design limits

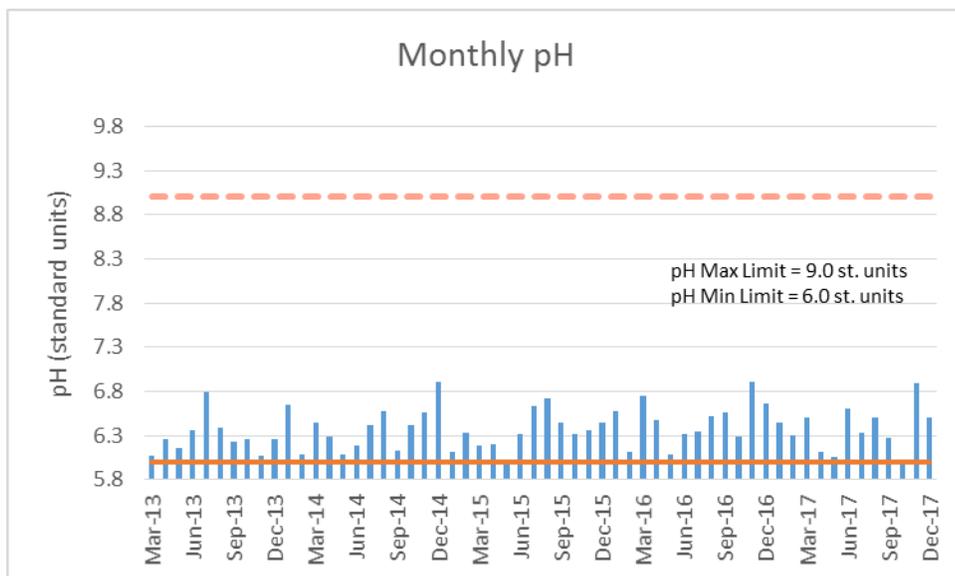
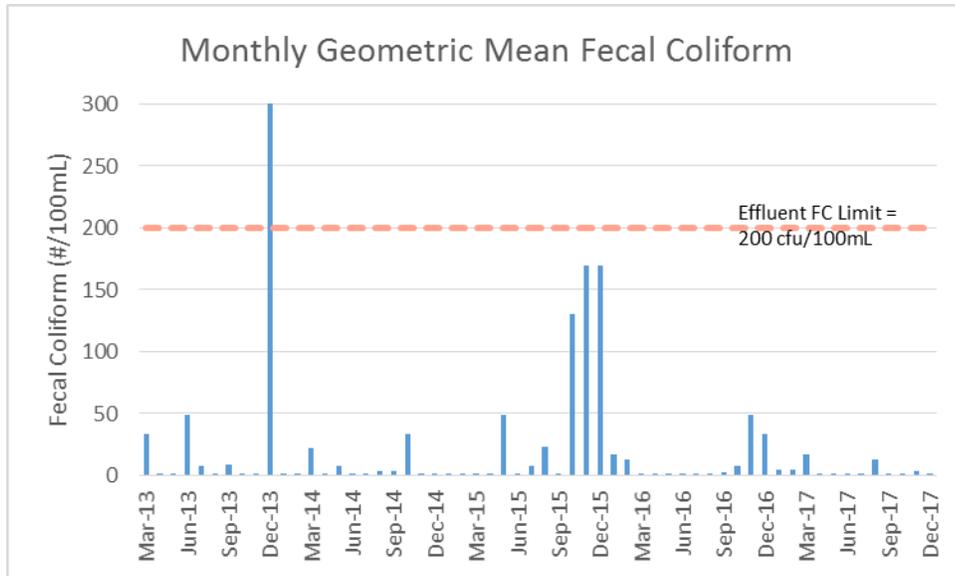
Discharge Monitoring Influent Data, March 2013 to December 2017

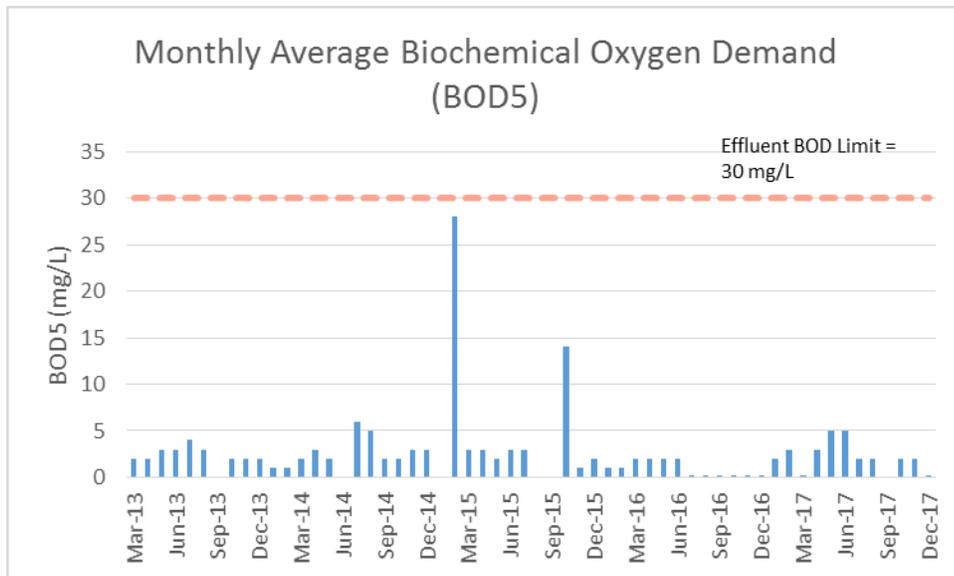
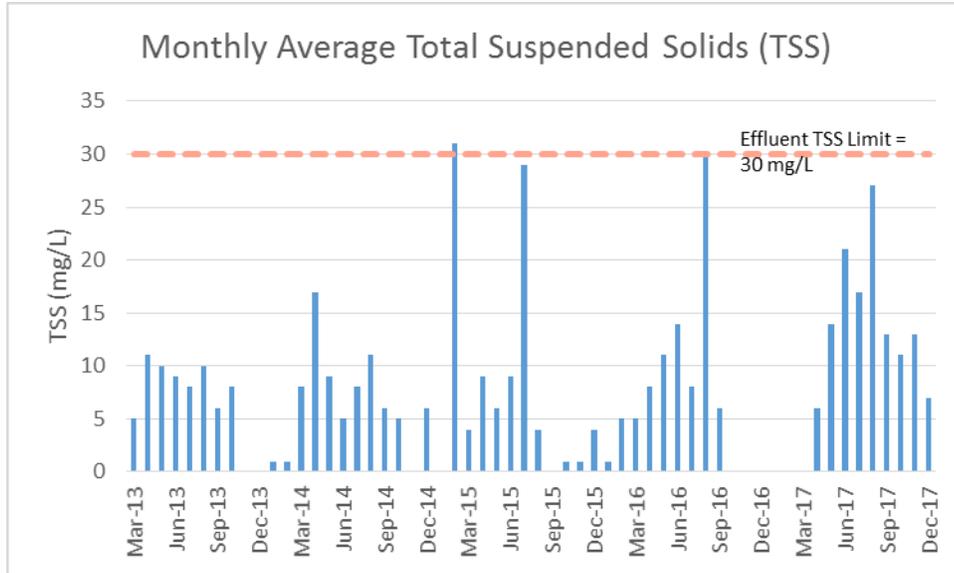


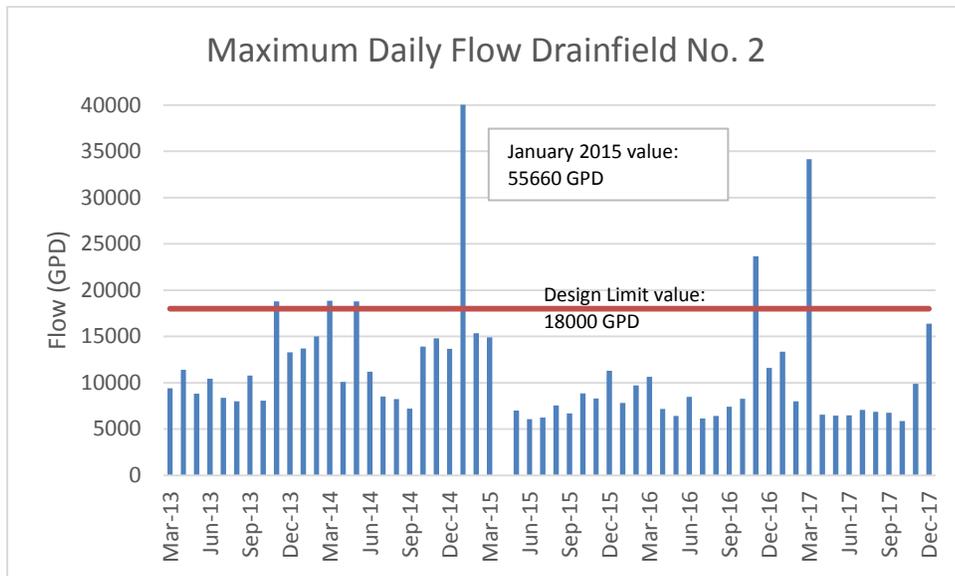
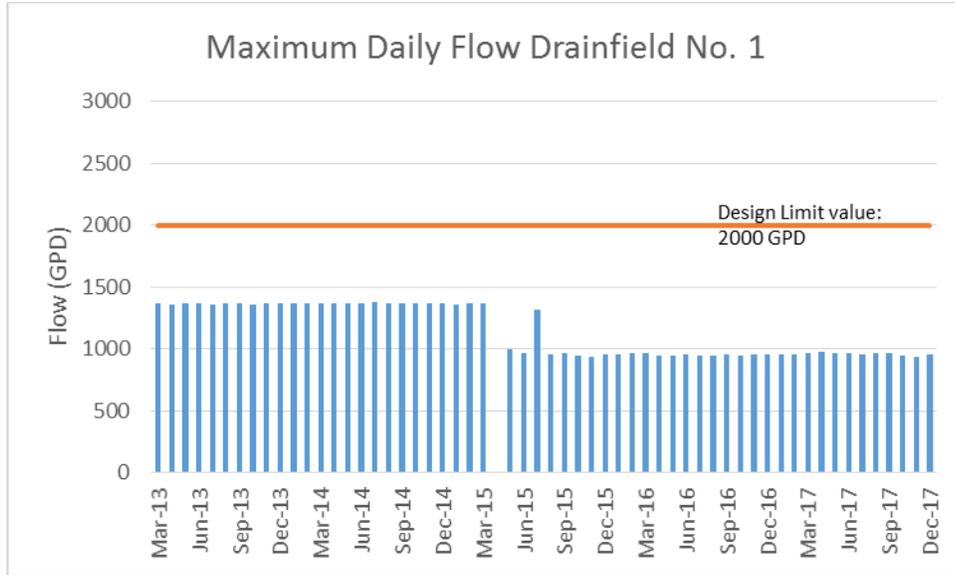


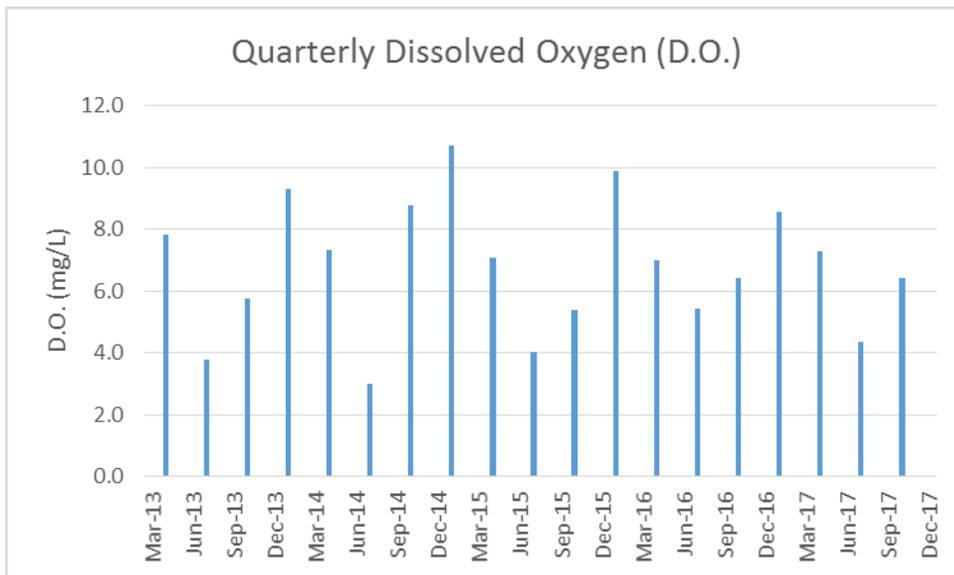
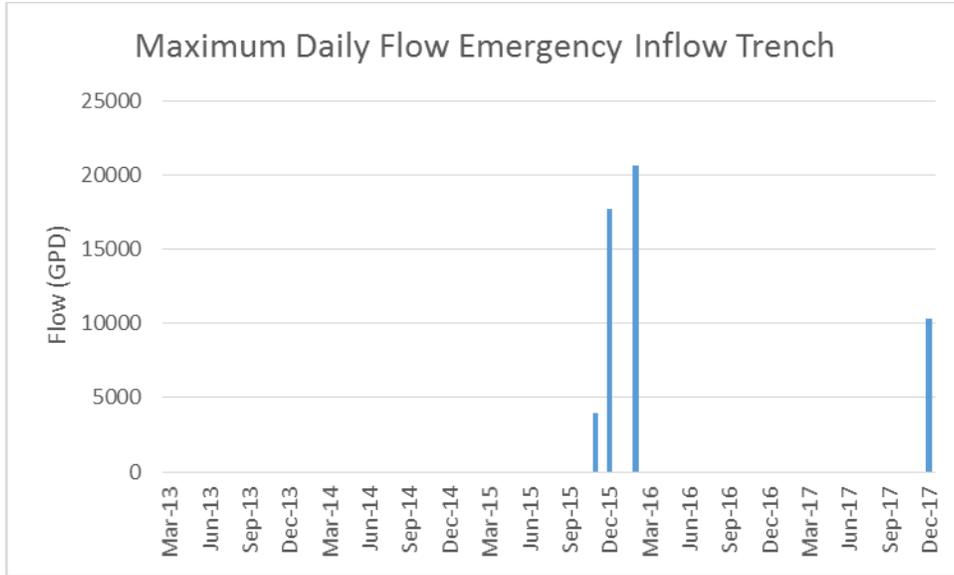


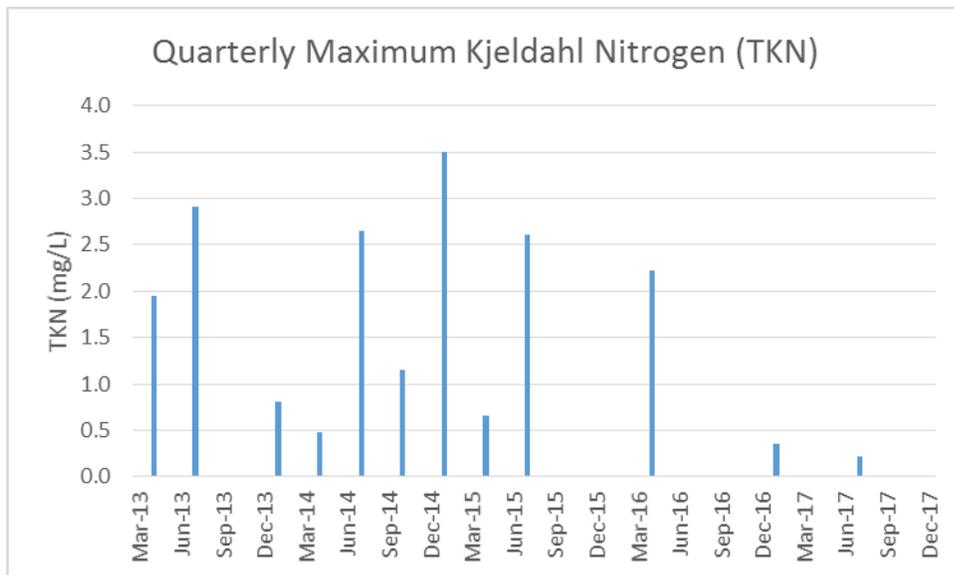
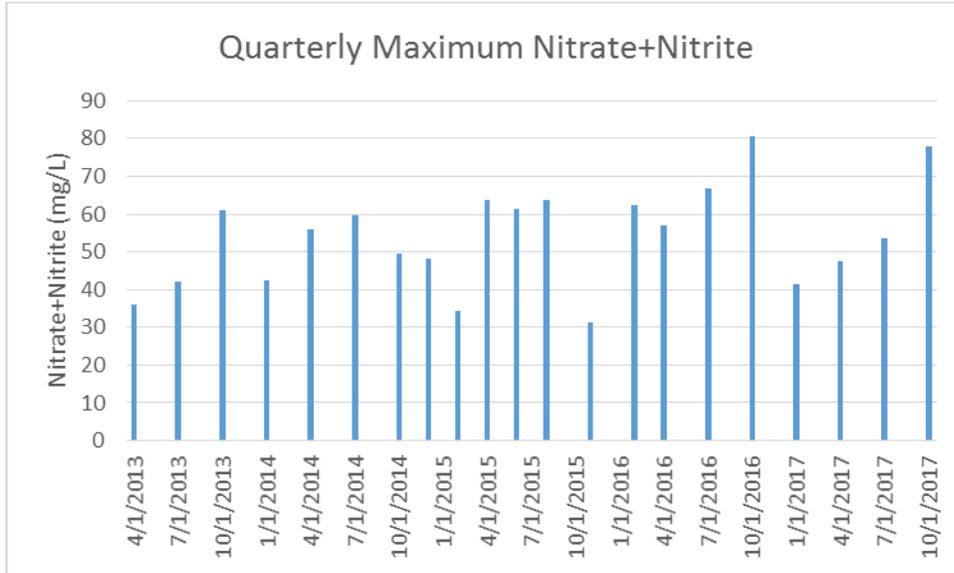
Discharge Monitoring Effluent Data, March 2013 to December 2017

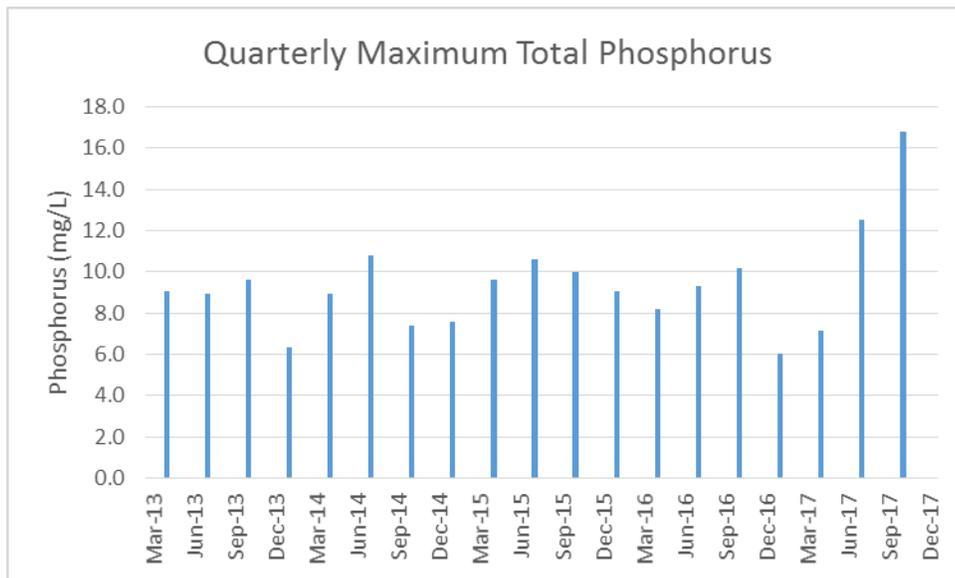
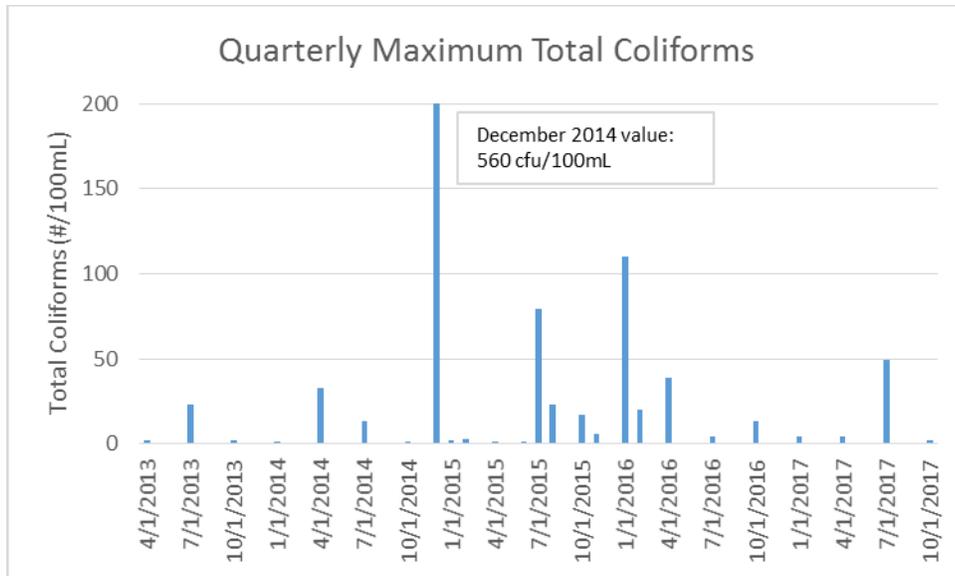


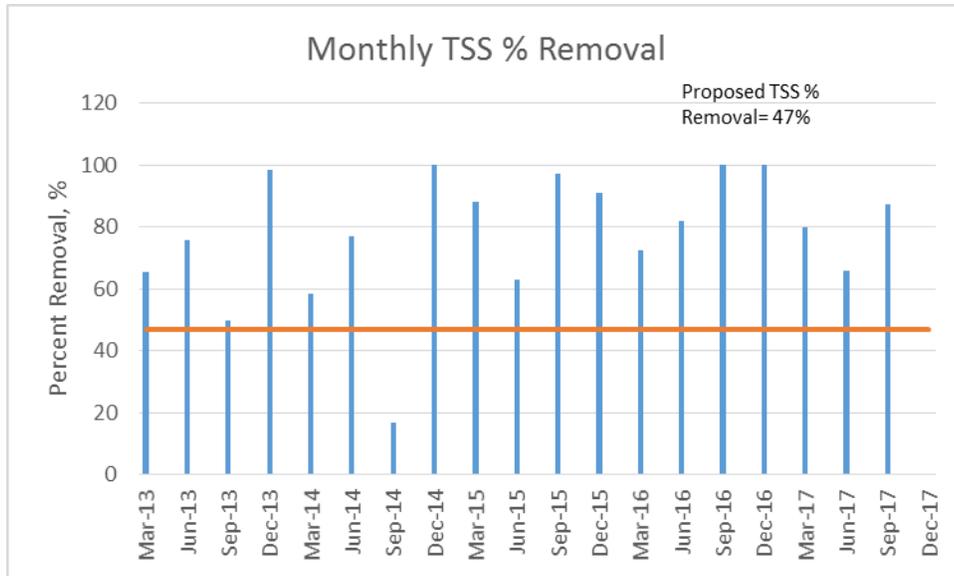






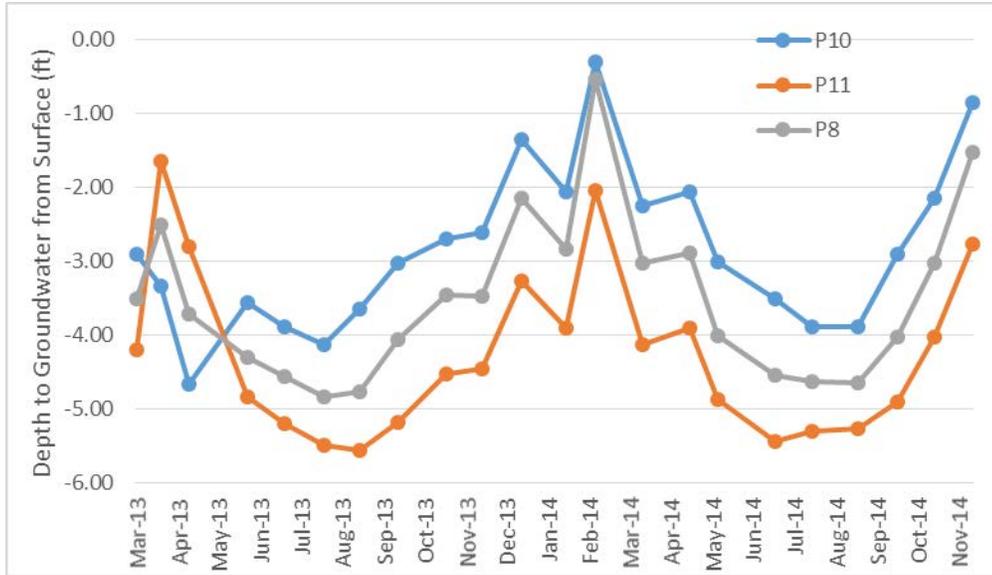






Depth to Groundwater Monitoring Data, March 2013 to December 2014

Date	Sample Location P10	Sample Location P11	Sample Location P8
	Depth (ft)	Depth (ft)	Depth (ft)
Mar-13	-2.91	-4.19	-3.51
Apr-13	-3.33	-1.64	-2.51
May-13	-4.66	-2.79	-3.72
Jun-13	-3.56	-4.83	-4.29
Jul-13	-3.89	-5.19	-4.56
Aug-13	-4.13	-5.48	-4.83
Sep-13	-3.64	-5.56	-4.77
Oct-13	-3.03	-5.18	-4.05
Nov-13	-2.69	-4.53	-3.46
Dec-13	-2.60	-4.46	-3.47
Jan-14	-1.35	-3.26	-2.14
Feb-14	-2.05	-3.91	-2.83
Mar-14	-0.30	-2.04	-0.54
Apr-14	-2.25	-4.13	-3.03
May-14	-2.05	-3.90	-2.88
Jun-14	-3.00	-4.87	-4.00
Jul-14	-3.50	-5.44	-4.54
Aug-14	-3.89	-5.29	-4.63
Sep-14	-3.89	-5.26	-4.65
Oct-14	-2.91	-4.90	-4.03
Nov-14	-2.15	-4.02	-3.03
Dec-14	-0.85	-2.76	-1.52



Appendix E--Response to Comments

[Ecology will complete this section after the public notice of draft period.]