

# MEMORANDUM

December 11, 2019

TO: Historical Memo

FM: Pete Carter / Steven Yee

RE: Vashon Wastewater Treatment Plant – November 2019

The Vashon Plant performed well in November 2019. Effluent Biochemical Oxygen Demand (BOD<sub>5</sub>) averaged 2.4-mg/l and Total Suspended Solids (TSS) averaged <2.6-mg/L. BOD<sub>5</sub> and TSS removals were 99.5% and >99.2% respectively. All required analytical testing was completed.

Influent flow averaged 0.108 million gallons per day (MGD). A total of 1.85 inches of precipitation fell in November as measured at the North Vashon rain gauge. Both the max-day precipitation of 0.37-inches and the max-day flow of 0.142 MGD occurred on Nov. 18.

The oxidation ditch was operated at an average sludge retention time of 20-days. The MLSS concentration was in the range of 4190 to 4920 mg/L. The sludge volume index (SVI), which measures the MLSS's settling characteristics, averaged 187 mL/g. An estimated 4200 dry pounds of waste activated sludge were hauled to South Plant for further treatment in November.

One set of samples was collected this month (Nov. 19) for nutrient and alkalinity analysis. Total nitrogen (N) removal was 93%, with an effluent total inorganic-N level of <1.5-mg/L (<0.1-mg/L NH<sub>3</sub>-N and 1.4-mg/L NO<sub>2</sub>+NO<sub>3</sub> as N). Effluent phosphorus (P) was 2.6-mg/L, resulting in a Total-P removal of 56%. No soda ash was added to the ditch in November for pH adjustment; the lowest effluent pH of the month was pH 6.8.

Clarifier 2 was in service all month; Clarifier 1 was returned to service on Nov. 18. The UV system operated with both stages in AUTO.

Vashon – November 2019  
Process Summary

Table 1. Summary of Monthly Flow & Rain

Monthly Total Flow Volume, MG	Monthly Average Flow, MGD	Minimum Daily Flow, MGD	Maximum Daily Flow, MGD	Total Rainfall, Inches
3.239	0.108	0.094	0.142	1.85

Table 2. Summary of Monthly Compliance/Exceptions

Biochemical Oxygen Demand 5-day			Total Suspended Solids			Fecal Coliform (no./100 mL)	
Permit mg/L	Actual mg/L	Rem %	Permit mg/L	Actual mg/L	Rem %	Permit	Actual
30	2.4	99.5	30	<2.6	>99.2	200	E0.9

Table 3. Summary of Weekly Compliance/Exceptions

	Biochemical Oxygen Demand (mg/L)		Total Suspended Solids (mg/L)		Fecal Coliforms (Organisms/100 mL)	
	Permit	Actual	Permit	Actual	Permit	Actual
Week 1	45	2.3	45	<2.3	400	E0.8
Week 2	45	2.4	45	3.0	400	<1
Week 3	45	2.7	45	2.7	400	E1
Week 4	45	2.0	45	2.3	400	E0.8