

MEMORANDUM

August 15, 2018

TO: Historical Memo

FM: Peter Carter / Steven Yee

RE: Vashon Wastewater Treatment Plant – July 2018

The Vashon Plant performed very well in July 2018. Effluent Biochemical Oxygen Demand (BOD₅) averaged 2.7-mg/l and Total Suspended Solids (TSS) averaged 3.4-mg/L. BOD₅ and TSS removals were both >99%. All required analytical testing was completed.

Influent flow averaged 0.104 million gallons per day (MGD), with the highest influent flow recorded on July 19 (.209 MGD). There was no measurable precipitation in July.

The oxidation ditch was operated at an average sludge retention time of 15-days. The MLSS concentration was in the range of 3100-5300 mg/L. The sludge volume index (SVI), which measures the MLSS's settling characteristics, averaged 96 mL/g (a SVI of 80-150 mL/g indicates good settling). An estimated 6000 dry pounds of waste activated sludge were hauled to South Plant for further treatment in July.

One set of samples was collected this month (July 4) for nutrient and alkalinity analysis. Total-N removal was 94%, with an effluent total inorganic nitrogen (N) level of 1.5-mg/L (<0.1-mg/L NH₃-N and 1.4-mg/L NO₂+NO₃ as N). Effluent phosphorus was 5.2-mg/L, resulting in a Total-P removal of 37%. No soda ash was added to the ditch in July for pH adjustment; the lowest effluent pH of the month was pH 6.85.

Clarifier-1 was in service. Clarifier-2 has been out of service since June 6 for process reasons; it will remain out of service for the summer. The UV system operated with both stages in AUTO. There were no UV issues or alarms in July.

Vashon – July 2018
Process Summary

Table 1. Summary of Monthly Flow & Rain

Total Wastewater Treated, MG	Monthly Average Flow, MGD	Minimum Daily Flow, MGD	Maximum Daily Flow, MGD	Total Rainfall, Inches
3.231	0.104	0.091	0.209	0.00

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	2.7	99.5	30	3.4	99.1	200	E1

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	2.8	45	3.7	400	4.5
Week 2	45	2.9	45	3.8	400	E0.8
Week 3	45	2.8	45	3.1	400	1
Week 4	45	2.2	45	2.8	400	E0.8