

MEMORANDUM

September 7 2017

TO: Historical Memo

FM: Peter Carter

RE: Vashon Wastewater Treatment Plant – August 2017

The Vashon Plant performed well in August 2017. It met all of its discharge permit requirements. Effluent Biochemical Oxygen Demand (BOD₅) averaged 3.4-mg/l and Total Suspended Solids (TSS) averaged <5.3-mg/L. BOD₅ and TSS removals were 99% and >98%, respectively. All required analytical testing was completed.

Influent flow averaged 0.092 million gallons per day (MGD). The maximum day flow was 0.139 MGD on August 9. Rainfall totaled 0.03inches in August (local rain gage).

The oxidation ditch was operated at an average sludge retention time of 16-days. The MLSS concentration averaged 2815-mg/L. The sludge volume index (SVI), which measures the MLSS's settling characteristics, averaged 154 mL/g (a SVI of 80-150 mL/g indicates good settling). An estimated 8400 dry pounds of waste activated sludge were hauled to South Plant for further treatment in August.

One set of samples was collected this month (August 9) for nutrient and alkalinity analysis. Total-N removal was 97%, with effluent inorganic nitrogen (N) levels of <0.1-mg/L NH₃-N and <0.2-mg/L NO₂+NO₃ as N. Effluent phosphorus was 4.5-mg/L, resulting in a Total-P removal of 39%. It was not necessary to add soda ash to the ditch in August for pH adjustment; the lowest effluent pH of the month was pH 6.7.

Clarifier 2 was in service in August. Clarifier 1 remained out of service as two clarifiers are not needed during the lower dry weather flows. The new UV system operated in AUTO with one of the two banks on-line and the other in standby-mode all month.

There were no call outs in August.

Vashon – August 2017
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
2.862	0.092	0.080	0.134	0.03

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	3.4	99.3	30	<5.3	>98.5	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	4.9	45	11.7	400	<1
Week 2	45	2.9	45	<3.7	400	E4.4
Week 3	45	2.4	45	2.4	400	<1
Week 4	45	2.8	45	2.6	400	<1
Week 5	45	4.0	45	5.0	400	E1.1