
Project:	City of Wasilla WWTP Pilot Study	Field Crew:	Jake Alward, John Marshall, Austin Badger
File:	204700415	Date:	July 23 & 24, 2019

Subsurface Surface Vegetation Plot

Reference: July 23 & 24 Water Sampling Event

1.1 BACKGROUND

July 23, 2019

Weather: Sunny and 62 degrees Fahrenheit

TSS, BOD, FC, TC, TKN/Ammonia/TP, Nitrate/Nitrite samples and intrinsic properties were collected at sites SW1, SW2, SW3, SW4, SW5, SW6, SW7, SW8, SW9, and SW10. Summary tables of detectable results are attached.

July 24, 2019

Weather: Mostly cloudy and 62 degrees Fahrenheit

TSS, BOD, FC, TC, TKN/Ammonia/TP, and Nitrate/Nitrite samples in addition to intrinsic properties measured with the YSI were taken at SW11, SW12, SW13, SW14, SW15, SW16, SW17, SW18, and Shaw. Summary tables of detectable results are attached.

1.2 SAMPLING EVENT HIGHLIGHTS

Water levels were significantly higher than previous weeks following the July 22 rain. Very slow flows observed around July 24 sampling locations, particularly the south half of the wetland. Higher water levels in pond.

IMPROVEMENTS FOR FUTURE SAMPLING:

House YSI pH appears to need maintenance as readings were inconsistent.

1.3 SAMPLING EVENT HIGHLIGHTS

WEIR 1 (SW17)

Width: 2.21 -ft

Water depth: .8 -ft

Velocity: .328-ft/sec

Calculated flow: .580 -CF/sec

Reference: July 23 & 24 Water Sampling Event**WEIR 2 (SW18)**

Width: 3.22 -ft
Water depth: 0.6 -ft
Velocity: 0.361 -ft/sec
Calculated flow: 0.697 -CF/sec

1.4 SAMPLE RESULTS

Complete lab results can be found in the attachments. Results are from SGS.

1.5 PHOTOS

Figure 1: July 24, 2019, discharge bed #1.



Figure 2: July 24, 2019, water levels rising, near SW4.

Detectable Results Summary Table

July-2019

Site ID	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10	SW11	SW12
Date Collected	7/23/2019	7/23/2019	7/23/2019	7/23/2019	7/23/2019	7/23/2019	7/23/2019	7/23/2019	7/23/2019	7/23/2019	7/24/2019	7/24/2019
Time	9:53	10:05	10:19	11:38	11:48	11:24	11:15	13:18	13:05	12:50	9:48	10:15
Sample Type	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Water Temperature (°C)	11.27	14.21	17.09	16.63	16.64	17.6	16.57	16.52	17.7	17.58	11.43	14.35
Conductivity	289	691	871	550	476	585	335	319	447	330	431	342
pH	3.8	4.64	5.59	5.19	5.45	5.52	4.94	4.93	5.78	5.66	4.67	5.64
DO	2.8	4.5	2.03	2.15	2.41	2.61	1.91	5.36	1.6	1.6	3.89	1.46
Total Nitrate/Nitrite	ND(0.100)	ND(0.100)	4.39	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)		
TSS	184	24.8	25.1	158	119	39.5	71.9	109	349	130	85.1	155
TKN	3.56	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	4.27	ND(0.500)	ND(0.500)	1.34
Ammonia	0.178	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	0.11	ND(0.0500)	ND(0.0500)	ND(0.0500)
Total P	0.468	0.0297	0.0243	0.0238	0.0746	0.0581	0.0627	0.0351	0.527	0.0657	0.57	0.286
BOD	11.3	4.47	ND(2.00)	3.5	4.45	2.39	3.31	2.18	3.86	3.15	2.56	2.01
FC	ND(2)	6.6	16	94	21	78	40	4.9	64	3.3	290	27
E. Coli	20	ND(20)	28	60	40	74	20	ND(20)	160	7	680	20
TC	6160	9220		34660	2840		4500	1140	15400	387	1860	19600

Site ID	SW13	SW14	SW15	SW16	SW17	SW18	SW18.1	Shaw
Date Collected	7/24/2019	7/24/2019	7/24/2019	7/24/2019	7/24/2019	7/24/2019	7/24/2019	7/24/2019
Time	10:25	11:20	11:02	10:43	12:04	12:22	12:22	13:01
Sample Type	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Water Temperature (°C)	15.89	13.77	13.89	10.94	12.6	12.84	12.84	14.26
Conductivity	365	485	418	226	590	640	640	251
pH	5.82	6.11	6.16	4.88	5.96	5.99	5.99	5.83
DO	1.1	1.72	3.4	2.1	5.54	6.74	6.74	5.09
Total Nitrate/Nitrite					2.25	3.54	3.47	
TSS	19.3	110	16.1	162	38	15.1	14.1	3.84
Ammonia	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	0.153	0.149	ND(0.0500)
Total P	ND(0.0100)	0.182	0.0434	0.143	0.38	0.48	0.49	0.0343
BOD	ND(2.00)	4.29	ND(2.00)	5.5	ND(2.00)	3.16	3.42	ND(2.00)
FC	310	210	727	55	1540	1020	1030	156
E. Coli	320	160	1140	20	690	1080	2050	272
TC	2700	3320	15400	26000	2850	6490	8160	2420