Field Report

Project:	City of Wasilla WWTP Pilot Study	Field Crew:	Jake Alward, John Marshall
File:	204700415	Date:	November 28, 2018

Subsurface☐ Surface☒ Vegetation Plot☐ Lagoon ☐

Reference: November Water Sampling Event

1.1 BACKGROUND

The November sampling event was for surface water only. The site has drastically changed to winter conditions over the last month. Nearly all surface water has frozen to a depth of at least 6 inches. Depending on the location, there was either snow, water, or slush resting on top of the ice. In some locations, there was still open water where there appears to be ground water upwelling. In these locations you can see where the water flows over the ice. Air was visible in the ice where the water seemed to flow around hummocks. It provided a clear picture of where the water wants to flow.

Water samples were only taken at a few locations due to the slush and water on top of the ice.

1.2 SAMPLING EVENT HIGHLIGHTS

SURFACE

Water was only sampled at SW5, SW17, and SW18. All locations, except Mr. Shaw's property, were visited and drilled to determine the thickness of ice. Ice thickness ranged from 3 inches to 18 inches depending on the locations. The northern section of the wetland appears to be more frozen than the southern section. The southern sections had many more upwellings and open water holes.

At all the sampling locations the surface water was completely frozen. It varied by location, but in general the soil under the surface water was also frozen to some degree. It is predicted that the soil will continue to freeze as cold conditions are maintained over the winter.

Water was not sampled at other locations due to the slush and water sitting on the ice. It was unclear whether that water on top was melted surface water or precipitation. If it is precipitation, it does no good to sample as it does not provide an accurate representation of the existing conditions of the surface water.

Moving around the site was easier as most of the site was frozen. There are still occasional warm sections where your foot can sink a few feet.

IMPROVEMENTS FOR FUTURE SAMPLING:

We used a paddle bit to drill through the ice. It works well to drill down; however it is rather difficult to pull the bit back out of the hole. A long cylindrical bit should be used for the next sampling event.

Reference: November Water Sampling Event

1.3 OTHER ACTIVITIES

WEIR 1 (SW17)

Width: 2.21 -ft
Water depth: 0.75 -ft
Velocity: 0.25-ft/sec
Calculated flow: 0.41 -CF/sec

WEIR 2 (SW18)

Width: 3.22 -ft
Water depth: 0.80 -ft
Velocity: 0.36 -ft/sec
Calculated flow: 0.93 -CF/sec

1.4 SAMPLE RESULTS

The attached table summaries detected analytes. All other were below detectable limits. Complete results can be found in the SGS reports.

1.5 DATA QUALITY

There was one duplicate taken during the November sampling event for surface water. The duplicate and original sample all tested very similar with no alarming differences.

Site ID	Nitrate	Nitrite	Total Nitrate /Nitrite	TSS	TKN	Ammonia	Total P	BOD	FC	E. Coli
SW18	7.82	ND	7.85	ND	ND	0.179	0.559	2.43	ND	10
SW18.1	8.04	ND	8.07	ND	ND	0.164	0.556	ND	2	11
% Diff	**2.8%**	**0.0%**	**2.8%**	**0.0%**	**0.0%**	**-8.7%**	**-0.5%**	**NA**	**NA**	**9.5%**

Attachment: Photo Log

Stantec

November Photo Log

Photo 1:
SW-1

Photo 3:
Air trapped in flow path

Photo 2:
SW-5

Photo 4:
SW-10

Stantec

November Photo Log

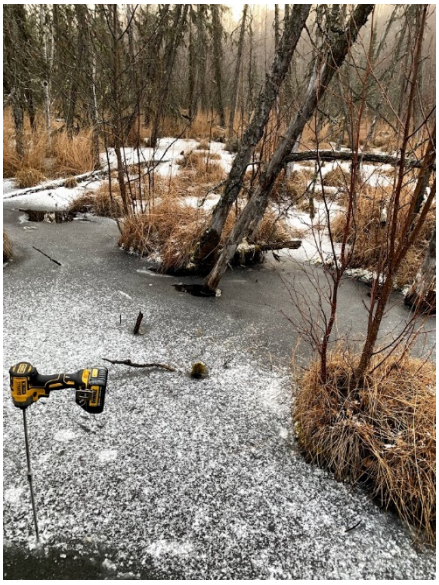

Photo 4:
SW-15

Photo 4:
SW-14

Attachment: Results Summary Table

Detectable Results Summary Table

November-2018

Site ID	SW1	SW2	SW3	SW4
Date Collected	10/23/18	10/23/18	10/23/18	10/23/18
Time	10:37	10:53	11:10	12:24
Sample Type	Surface	Surface	Surface	Surface
Water Temperature (°C)	5.72	4.7	6.53	5.58
Conductivity	178	142	280	278
pH	0	4.5	5.9	6.42
DO	4.6	6.38	3.98	2.7
TSS	4.13	1.88	4.95	13.7
Total P	0.0552	0.0248	0.0263	0.074
BOD	2.67	2.04	ND(2.00)	2.9
FC	1	ND(1)	37	0
E. Coli	3	ND(1)	46	16
TC	387	613	727	2420