Stantec

Field Report

Project:	City of Wasilla WWTP Pilot Study	Field Crew:	Jake Alward, John Marshall
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Subsurface☒ Surface☒ Vegetation Plot☐

Reference: January Water Sampling Event

1.1 BACKGROUND

The January sampling event was for surface water and subsurface water. The weather was cold and dry. The site was covered in approximately 3 inches of snow. The ice thickness was determined to be greater than 16 inches, as this was the maximum drilling length possible with the equipment on hand. There appeared to be no open water apart from the stream along the toe of the percolation beds, and even that stream was frozen in most locations. Water was only able to be sampled from two locations, both at the stream.

Subsurface water was sampled at two locations to verify results from December 2019.

The berm was also frozen over, however there were locations that overflow is still present on the berm.

1.2 SAMPLING EVENT HIGHLIGHTS

SURFACE

Water was sampled at 3 locations including the effluent. SW17 was sampled using a peristaltic pump and SW18 was sampled by dipping. The effluent was sampled directly from the pipe. Intrinsic data from the YSI was taken at both surface water locations, but not at the effluent location.

The stream was open at SW17 and frozen at SW18. There was approximately 4 inches of ice that was drilled through to sample SW17. It also appeared the water depth at SW17 was very low. Flow measurements were not able to be collected at either gauging station as both were frozen.

The location immediately adjacent to discharge bed #1 was completely frozen. The ice dome that had been forming around the effluent pipe had disappeared. It appears the local water elevation in the area had risen approximately 4 inches, as the water level was just below the outfall pipe (see Photo 4). There is a small section of open water just downstream of the outfall pipe, however within 15 feet things are completely iced over. There does not appear to be any glaciation.

SUBSURFACE

Water was sampled at MW10 and MW15 by use of bailer. Intrinsic data was not taken at either location. MW10, an artesian well, was not recovering water as fast as it typically does. Samples were taken at these wells to verify data that was collected in December 2019.

Reference: January Water Sampling Event

BERM

The berm is nearly completely covered in ice and still has locations where overflow is apparent. There are no open channels from the effluent discharge to the berm. The overflow locations appear to be due to natural groundwater upwelling, which are common throughout the site. Two samples were taken along the berm to be sampled for nitrogen and ammonia.

WEIR FLOW

Weir 1 (SW17)
Width: NA
Water Depth: NA
Veoicty: NA
Flow: NA

Weir 2 (SW18)
Width: NA
Water Depth: NA
Veoicty: NA
Flow: NA

IMPROVEMENTS FOR FUTURE SAMPLING:

No comments.

1.3 SAMPLE RESULT

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

Detectable Results Summary Table

January - 2020

Site ID	SW17	SW18	Eff	MW10	MW15	A8 (Berm)	B5 (Berm)
Date Collected	1/22/2020	1/22/2020	1/22/2020	1/22/2020	1/22/2020	1/22/2020	1/22/2020
Time	10:30	11:10	13:00	13:20	13:30	12:30	13:12
Sample Type	Surface	Surface	Surface	Sub-surface	Sub-surface	Surface	Surface
Water Temperature (°C)	4.38	0.94					
Conductivity	1052	831					
pH	5.52	5.34					
DO	2.36	8.83					
Nitrate	3.62	4.46	ND(0.100)				
Nitrite	ND(0.100)	ND(0.100)	ND(0.100)				
Total Nitrate/Nitrite	3.62	4.5	ND(0.100)				
TSS	1.41	1.53					
TKN	ND(0.500)	1.06	66.3	ND(0.500)	ND(0.500)	12.1	8.34
Ammonia	0.557	0.437	36.8	ND(0.0500)	ND(0.0500)	9.49	6.05
Total P	0.119	0.226					
BOD	2.05	3.11					
FC	1.7	ND(2)	1270				
E. Coli	1	ND(1)					
TC	56	161					

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January Photo Log

Photo 1:
SW17

Photo 2:
Berm

Photo 3:
Discharge Bed #1

Photo 4:
Discharge Bed #1

Photo 5:
SW15

Photo 6:
SW18