

Follow Up Report: #18-378

August 19, 2018 MEL-14 TDS Concentration Criteria Exceeded

Description of Incident:

A sample of treated water from MEL-14 (final effluent sampling port prior to discharge to Meliadine Lake) was collected on August 19, 2018. Upon review of the laboratory analysis results, the total dissolved solids (TDS) concentration was found to be 1,430 mg/L which exceeded the permitted discharge limit of 1,400 mg/L.


As per the obligations under the Nunavut Water Board License 2AM-MEL1631, Part F, item 3 pursuant to subsection 12(3) of the Nunavut Waters and Nunavut Surface Rights Tribunal Act., samples were collected for laboratory analysis to assess TDS concentrations and other water quality parameters during final effluent discharge at MEL-14. The laboratory results were received on September 13, 2018 and reviewed and reported on September 15, 2018. With regards to your question on reporting delay, due to the remote location and the extensive list of parameters that we sample for the Mel-14 sample, the delay in receiving results from the lab is generally 3-4 weeks. This is because the lab sub-contracts part of the analysis to their sister lab in Burnaby BC, so it can take a while for the sample to be received and processed.

Cause and Corrective Measures

The sample was collected at 10:30 am on August 19, 2018. During this time, there was an unscheduled power outage and effluent release had stopped at the effluent water treatment plant (EWTP). Water was not pumped through the sampling port located at MEL-14 during this time. The person that conducted the sampling was a summer intern student who has returned to school and the sampling conditions and confirmation of the location that the sample was collected has not been verified. Based on the field parameter monitoring, the power outage, review of laboratory results from previous and post sampling events, the TDS concentrations reported from the laboratory analysis for MEL-14 on August 19, 2018 are assumed to be not representative for the final effluent discharged the sampling port for MEL-14 to Meliadine Lake. It is possible that it was sampled from a port that was not treated and not discharging to Meliadine Lake.


Table 1 presents the operational report, which summarizes the monitoring results at the EWTP on August 19, 2018. Table 2 presents the daily volume effluents discharged at MEL-14 to Meliadine Lake in August 2018.

Training for all personnel responsible has been conducted to ensure that future MEL-14 sampling is always collected from the same location, after treatment when the power and pumps are working. In addition,



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EWTP DAILY OPERATIONAL REPORT



Day Shift Operator:	J. Roussy			Date:	Aug 19 2018		
Night Shift Operator:				Weather Conditions D/S:			
				Weather Conditions N/S:			
ACTIFLO #1	7:00	8:00	10:00	12:00	14:00	16:00	18:00
Flowrate (m3/hr)	400	400	D	250	200	170	
Total Suspended Solids (TSS) (mg/l) Actiflo discharge (limit 15 mg/l)	3.43	4.25	O	3.7	3.6	4.44	
Feed Turbidity (NTU)	50.93	43.9	W	29.18	25.45	23.45	
pH	6.83	6.82	N	6.77	6.67	6.68	
Turbidity (NTU) Actiflo discharge	3.68	3.83		4.83	3.4	4.51	
Conductivity (ms/cm) EWTP Discharge pump	2073	2078	D	2173	2098	2142	
Cationic Polymer Set Point (mg/l)	1	1	O	1	1	1	
Coagulant Set Point (mg/l)	35	35	W	37	42	50	
Micro-Sand Quantity (g/l)			N				
Production – ACTIFLO #1	6:00		18:00		Variances		
Totaliser Flowrate (m3)	726700		729400		2700		
D/S COMMENTS : <div> <div>Unscheduled power outage in the morning.</div> <div>Cleaned conductivity probe.</div> </div>							

Table 2: EWT Volume Compilation for August 2018

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