

March 21, 2017

EDI Project No: 16Y0089

Assessment and Abandoned Mines
Department of Energy, Mines and Resources,
Government of Yukon
PO 2703, K-419
Whitehorse, YT Y1A 2C6

Attention: Emilie Hamm, A/Project Manager

RE: Mount Nansen Water Resources Investigations – Field Memo: March 6-8, 2017 - FINAL

The following memo provides a record of the activities conducted during EDI's March 2017 trip to Mount Nansen; sampling was conducted as part of the 2016/17 Water Resources Investigations. This memo provides a record of site conditions and tasks that were completed at each hydrometric station and water quality site. A detailed monthly report on the data collected during the trip will be provided once the water quality lab results are received and all data has been checked for quality assurance/quality control.

Trip Dates:	March 6-8, 2017
EDI Field Staff:	Scott Dilling, Alexandre Mischler, Danny Skookum
Weather conditions during monitoring:	Air temperatures ranged from -38°C to -15°C with clear skies and light winds.
Any changes to project scope, schedule or budget:	All sampling and monitoring was conducted within scope.
Additional Comments:	Site conditions were reflective of winter: water levels were low and ice and snow was present at all locations. Seeps and some small streams were frozen to substrate.
Wildlife Sightings:	On March 6, field crew observed 15 caribou beside the Mount Nansen road approximately 15 km east of the mine site. On March 7, a lynx was observed on the road between the tailings pond and the pit. Pine grosbeaks were observed at H-VC-U. Several snowshoe hares were observed when accessing sites along Victoria Creek.
Site concerns (safety):	None



Table 1. Summary of hydrometric program tasks completed and station conditions during the March 2017 sampling event.

HYDROLOGY

Station	Hydrometric Measurement Type	Notes & Comments
ATM-VC5	None	Barometric logger downloaded.
H-DC-DX+105	None	Creek frozen to bed with no detectable flow.
H-DC-B	None	Creek frozen to bed with no detectable flow.
H-DC-M-WP	None	Conditions not suitable for discharge measurement. Water flowing on top of overflow ice. Ice up to 0.3 m thick covers v-notch weir and pond.
H-DC-R	None	Overflow ice was present at site; channel frozen to bed for winter period.
H-VC-U	Salt Tracer	Low flow in channel. Salt tracer discharge measurement completed. Channel covered with thin layer of ice (up to 0.05 m thick). Logger downloaded.
H-VC-DBC	Salt Tracer	Low flow in channel. Salt tracer discharge measurement completed. Channel covered with ice 0.10 m thick. Logger downloaded.
H-BC	None	Channel frozen to bed with no detectable flow. Overflow ice 0.75 m thick with no evidence of ice accumulation since previous visit.
H-VC-UMN	Salt Tracer	Low flow at site. Salt tracer discharge measurement completed. Channel covered with ice up to 0.10 m thick with pressurized flow downstream of station. Logger downloaded.
H-VC-R+290	None	Low flow at site. Conditions not suitable for discharge measurement; water flowing between layers of ice. Channel covered with ice up to 0.50 m thick. Creek frozen to bed at well location. Logger downloaded.
H-SEEP	Volumetric	Volumetric measurement collected in addition to reading the flow meter in the seepage pond shack. Seepage pond covered with ice.
H-TP	None	Low water level. Pond covered with 0.60 m thick ice.



Table 2. Summary of water quality program tasks completed and site conditions during the March 2017 sampling event.

WATER QUALITY

Site	Sampled? (Yes/No)	Notes / Explanations
WQ-SEEP	Yes	Ice build-up in the culvert 0.50 m thick, 0.01 m thin ice cover downstream of culvert. Moderate flow at pipe outlet. Site has typical, distinct odour of wet organic material, similar to wet moss.
WQ-DC-DSS	No	Unable to locate water at site and no sample collected. Ice thickness greater than 1.5 m.
WQ-TP	Yes	Low water level with moderate turbidity. Pond covered with ice 0.60 m thick.
WQ-DC-DX+105	No	Site frozen to bed. No sample collected.
WQ-DC-B	No	Site frozen to bed. No sample collected.
WQ-DC-U	Yes	Sample collected approximately 5 m downstream of weir pond. Clear water with moderate velocity. Water and general site area has typical organic odour similar to WQ-SEEP site.
WQ-DC-R	No	Site unsuitable for sampling due to overflow ice conditions and channel frozen to bed for winter period.
WQ-VC-U	Yes	Channel covered with ice approximately 0.03 m thick at sampling location. Shallow flow depth with clear water.
WQ-VC-R+150	Yes	Sample collected adjacent to stilling well. Ice up to 0.50 m thick. Anchor ice along bed and water flowing between layers of ice.
WQ-VC-DBC	Yes	Low flow with clear water.
WQ-VC-UMN	Yes	Very low flow with clear water.
WQ-BC	No	Overflow ice conditions at site. No sign of detectable flow under ice. Ice approximately 0.75 m thick.
WQ-PW	Yes	Sample collected at pipe outlet. Water flowing freely from outlet. Moderate ice accumulation downstream of pipe outlet.
Quality Assurance/Quality Control Samples		
Field Replicate	Yes	Collected at WQ-SEEP-r.
Field Blank	Yes	Sample bottles filled with deionized water supplied by ALS; samples were filtered and preserved as instructed, when other sample sets were processed at the bunkhouse.
Travel Blank	Yes	Samples were provided by the lab and were transported to and from site.