

January 17, 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: December 5-6, 2016 - FINAL

The following memo provides a record of the activities conducted during EDI's December 2016 trip to Mount Nansen; sampling 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:	December 5-6, 2016
EDI Field Staff:	Joel MacFabe, Gabriel Rivest, Danny Skookum
Weather conditions during monitoring:	Conditions for the two days included air temperatures from -33 to -22°C, with partly cloudy skies.
Any changes to project scope, schedule or budget:	None. All sampling and monitoring was conducted within scope.
Additional Comments:	Site conditions were reflective of winter; water levels were low to moderate and ice and snow present at all locations. Seeps and small streams were frozen.
Wildlife Sightings:	No wildlife were observed
Site concerns (safety):	None



Table 1. Summary of hydrometric program tasks completed and station conditions during the December 2016 sampling event.

HYDROLOGY

Station	Hydrometric Measurement Type	Notes & Comments
ATM-VC5	None	Barometric logger downloaded.
H-DC-DX+105	Salt Tracer	Salt tracer discharge measurement completed. Channel covered with thin layer of ice (0.01 m thick).
H-DC-D1b	None	Stream frozen to bed for winter period. Multiple layers of overflow ice.
H-DC-B	None	Stream frozen to bed. Ice recently excavated from channel; no evidence of recent flow.
H-DC-M-WP	Volumetric	Volumetric discharge measurement collected. Channel and upstream pond covered with thin layer of ice.
H-DC-R	None	Overflow ice at site; channel frozen to bed.
H-PC-DSP	None	Channel is frozen to bed for winter period.
H-VC-U	Salt Tracer	Salt tracer discharge measurement completed. Channel covered with thin layer of ice (0.02 m thick). Logger downloaded.
H-VC-DBC	ADV	Velocity-area discharge measurement completed using an ADV. Channel covered with ice up to 0.15 m thick. Logger downloaded.
H-BC	None	Site dry for the winter period; no evidence of flow since previous visit.
H-VC-UMN	ADV	Velocity-area discharge measurement completed using an ADV. Ice up to 0.1 m thick covering channel. Logger downloaded.
H-VC-R+290	ADV	Velocity-area discharge measurement completed using an ADV. Channel covered with ice at least 0.3 m thick. 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 0.3 m thick ice.



Table 2. Summary of water quality program tasks completed and site conditions during the December 2016 sampling event.

WATER QUALITY

Site	Sampled? (Yes/No)	Notes / Explanations
WQ-SEEP	Yes	Ice build-up at pipe outlet. Moderate flowrate with lightly turbid water.
WQ-TP	Yes	Low water level with clear water. Pond covered with ice 0.3 m thick.
WQ-DC-DX	No	Site frozen to bed for winter period.
WQ-DC-DX+105	Yes	Moderate flow rate with lightly turbid water. Thin ice (0.01 m thick) and snow covering channel.
WQ-DC-D1b	No	Site frozen to bed for winter period.
WQ-DC-B	No	Ice recently excavated from channel; no evidence of flowing water.
WQ-DC-U	Yes	Channel covered with thin layer of ice (0.04 m thick).
WQ-DC-R	No	Site unsuitable for sampling due to overflow ice conditions and channel frozen to bed. No evidence of recent flow in channel.
WQ-VC-U	Yes	Channel covered with ice up to 0.2 m thick. Large open water leads around sampling location.
WQ-VC-R+150	Yes	Channel covered with ice at least 0.15 m thick. Sample collected in centre of channel.
WQ-VC-DBC	Yes	Channel covered with ice up to 0.15 m thick. Small open water lead upstream of sample site.
WQ-VC-UMN	Yes	Channel frozen to bed along banks. Ice 0.1 m thick in centre of channel. Open water lead upstream of sample site.
WQ-BC	No	Site dry for the winter period; no evidence of flow since previous visit.
WQ-PC-U	No	Site frozen to bed for winter period.
WQ-PC-D	No	Site frozen to bed for winter period.
WQ-CH-P-13-01	No	Site frozen to substrate for winter period. Overflow ice at site.
WQ-NW-SEEP-02	No	Site frozen to bed for winter period.
WQ-PW	Yes	Moderate flow rate with clear water. Minor ice accumulation downstream of pipe outlet.
Quality Assurance/Quality Control Samples		
Field Replicate	Yes	Collected at WQ-TP-r.
Field Blank	Yes	Sample bottles filled with deionized water supplied by ALS; samples were filtered and preserved as instructed. Sample completed at the bunkhouse.
Travel Blank	Yes	Samples were provided by the lab and were transported to and from site.