



Nanisivik Mine
RECLAMATION ACTIVITIES
QUARTERLY REPORT (2nd quarter 2005)
(PER Water License NWBNAN0208)



SUBMITTED TO
The Nunavut Water Board



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1.0 INTRODUCTION

The Nanisivik Mine is located on northern Baffin Island in the Nunavut Territory. It is an underground zinc-lead mine owned by CanZinco Ltd. and was in continuous operation from 1976 to 2002 when it ceased production permanently.

CanZinco Ltd. was issued Water License **NWB2NAN0208**, by the Nunavut Water Board (NWB) on October 1, 2002 for the Closure and Reclamation of the Nanisivik project. A requirement of the License, under *Part G, Items 3 to 9*, was to submit a final Reclamation and Closure Plan to the NWB, which was approved by letter on July 6, 2004 (“Approval Letter”).

Condition 2 of the Approval Letter states the following:

The Licensee shall, during the Reclamation Period, provide the NWB for its review, Quarterly Reclamation Reports (“Quarterly Reports”), which are to be submitted not later than 45 days after the end of the quarter (i.e., February 14, May 14, August 14, and November 14). The quarterly reports shall include, but not be limited to: a summary of remediation work completed to date; expenditures to date; documentation regarding waste disposal, including volumes and final location; and a revised implementation schedule, as referred to in Item 2 of this Letter of Approval. It is recommended that the Licensee should submit, with the Quarterly Reports, the effluent monitoring requirements as noted in Part H, Item 30 of the Licence.

The information contained herein is submitted as the Quarterly Report covering the months of April through June 2005. The implementation schedule remains as submitted in the first quarterly report for 2005.

2.0 REMEDIATION WORK

2.1 Earthworks (Surface Covers)

The earth-moving contractors arrived on site in early April and began preparations for the season's work. A summary of the work completed in each area follows.

2.1.1 West Twin Disposal Area

The shale cover advanced significantly, with final graded covers being completed on all areas except the tailings at the toe of the West Twin and Test Cell dikes. Remaining shale covers on the "toe" areas will be completed in August/September of this year after water in the reservoir is drawn down to elevation 368 to 368.5m. In total 186,927 m³ of shale was quarried from the Fuji, East Twin and Area 14 quarries for this purpose. A minor amount of sand and gravel from the East Twin sand and gravel pit was placed on the shale cover (3,300 m³). Completion of the sand and gravel cover is planned for the next quarter.

2.1.2 Area 14

The design cover for this area was completed, except for a small touch up fill. In total 4,860 m³ of shale was quarried from the Area 14 quarry and placed to grade. 2,800 m³ of sand and gravel acquired from an adjacent source was applied. The touch up work will be completed in the next quarter.

2.1.3 East Open Pit

The reclamation of this area was begun in June. In total 57,992 m³ of sulphide waste rock was removed from the adjacent and nearby areas (see chart below) and placed as sub-grade fill in the main pit and East Trench.

Waste rock placed in East open pit	
Areas adjacent to East open pit	44,875
Oceanview road	7,423
K- baseline road and portal	4,668
Oceanview pit	1,023
<i>* all figures are loose m³ based on truck counts</i>	

A minor amount of shale fill (162 m³) was placed in the East trench. Completion of waste rock removal and the shale and gravel covers are planned for the next quarter.

2.1.4 K-Baseline

The reclamation of this area began in May. In total 4,668 m³ of sulphide rich waste rock and 1,170 m³ of hydrocarbon contaminated soils were removed from the areas adjacent to the portal and placed as fill in the East open pit. 4644 m³ of shale was placed as cover. Completion of the shale and gravel covers is planned for the next quarter.

2.1.5 Oceanview

The reclamation of the pit area and cover of the previously closed portal began in May. In total 8,449 m³ of sulphide waste rock was removed from the adjacent areas and the Oceanview haul road and placed as fill in the main pit and East Trench. 4833 m³ of shale was also placed as part of the final cover. Completion of the shale and gravel covers is planned for the next quarter.

2.16 Land Fill

The reclamation of this area began in June. 60,328 m³ of shale was placed to final grade. A small area was left uncompleted to allow for waste disposal. This remaining area will be filled with shale in the next quarter and as well the sand and gravel cover will be completed.

2.2 Earthworks (Contaminated Soils)

2.2.1 STOL Port

This Area was contaminated with hydrocarbons due to leaky fuel drums that were stored there some time in the earlier years of the operation. The area was drilled and blasted in early April. The contaminated material (1900 m³) was then hauled underground. A small area of contamination remains and will be excavated in the 3rd quarter.



There was also some metal contamination from an unknown source adjacent to the STOL strip that was hauled underground (360 m³),

2.2.2 Land Farm

The land farming process was incomplete, so the remaining contaminated material was ripped up and hauled underground. A total of 1500 cubic metres were removed.

2.2.3 Carpenter Shop

Excavation of the contaminated soils beneath (and adjacent to) the former carpenter shop, commenced late in the 2nd quarter. By the end of the quarter, approximately 900 cubic metres of soil had been hauled underground.

2.2.4 Adjacent Bone Yard

This area was drilled and blasted in April and excavation commenced shortly thereafter. A total of 1900 cubic metres were hauled underground. The excavation was completed down to bedrock, but the area is not closed yet as there are more contaminated soils to remove from the adjacent shale pad below the fuel day tanks, cold storage building and the fuel island.

2.2.5 ANFO Factory

The contaminated soil from this area was excavated and hauled underground with a total of 5160 cubic metres removed. The area is now closed as confirmatory sampling has shown that the soil quality meets our objectives.

2.2.6 K-Baseline

This area was drilled and blasted in April. Approval was obtained to relocate these soils to the East Open Pit. The material (7400m³) was placed along the high walls where it was covered with a few metres of metal contaminated soil and then 2 metres of shale. Metal contaminated soil (4500 m³) from the portal area and access road were also hauled to the East open Pit and East Trench.

2.2.7 Oceanview

Contaminated soil from above the portal area, the access road and former stockpile areas were removed and hauled to the East Open Pit. A total of 7400 m³ were deposited in the East Open Pit.

2.2.8 East Open Pit

Metal contaminated soil adjacent to the East Open Pit and East Trench were excavated and layered into the Pit and Trench prior to covering the area with shale. The majority of this material came from the waste dumps below the roadway through this area. The roadway was drilled and blasted to facilitate the removal of this material. Approximately 38,000 m³ were deposited into the Pit and adjacent trench.

2.2.9 Area 14

There were a few small piles of metal contaminated soil adjacent to the area 14 pad that were removed and hauled underground. In addition to this, a small area at the rear of the original shop location was excavated to remove Hydrocarbon contaminated soil that resulted from the oil exhaust from compressors that were used during the area 14 mining operation.

2.3 Building Demolition

2.3.1 Mill

Vendetti Construction, (the contractor for Wofliden Resources) continued dismantling the mill and related infrastructure. There is still some of the process equipment to remove from the

milling area and the powerhouse remains in operation for the time being. The contractor has been focusing on other areas of salvage during the warmer weather.



DMS Plant

2.3.2 Town Site Residences

One House was removed during the quarter. This was a government house that was on a trailer. The unit was split in half and towed to Arctic Bay by Hamlet personnel for use as a storage unit. The Hamlet of Arctic Bay took all responsibility for cleaning the unit prior to use.



2nd half of House 1010 ready for transport

2.3.3 ANFO Plant

The ANFO plant was removed and the equipment was salvaged.

2.3.4 Carpenter Shop

The Carpenter shop was cleaned out and dismantled during the quarter. The building itself was salvaged for future use at Wolfden's High Lake property. The Cement pad that supported the building was removed and hauled underground.

2.2.5 Arena

The remaining structure from the arena was dismantled and prepared for shipping.

2.2.6 Furniture Storage Building

This collapsible building was cleaned out and subsequently dismantled. It has been reassembled on the arena cement pad near the town site for sand blasting operations by the contractor.

2.3 Waste disposal

2.3.1 Waste Disposal Summary

A total of 78007 cubic metres of demolition debris were disposed of in the mine during the quarter. The waste disposal summary is tabled below.

WasteOrigin	Classification	Volume (m3)	Storage Location	
Empty Oil Tanks	AE1	10	NZ 54 Block Area	AE1 = Abandoned Equipment (Free Phase HC's) removed
Tires	AE2	50	NZ9 Area	
ANFO Factory	DD1	100	01 Block	
Carp Shop/TownW/house	DD1	240	01 Block	
Carp Shop/TownW/house	DD1	120	58 Block Area	AE2 = Abandoned Equipment (Direct Storage)
Carp Shop/TownW/house	DD1	340	Ore Pass Area	
Cold and Warm Storage Bldgs	DD1	50	01 Block	
DMS	DD1	10	01 Block	
Furniture Storage Building	DD1	70	01 Block	DD1 = Demolition Debris
Industrial Complex	DD1	595	01 Block	
Industrial Complex	DD1	20	8 Block Area	
Industrial Complex	DD1	130	9 South Portal Area	
Industrial Complex	DD1	150	West Open Pit	S1 = Metal Contaminated Soil
Miscellaneous	DD1	100	01 Block	
Miscellaneous	DD1	70	8 Block Area	
Miscellaneous	DD1	40	East Pit	
Miscellaneous	DD1	60	NZ9 Area	S2 = HC Contaminated Soil
Area 14	S1	280	West Open Pit	
East Adit Waste Rock	S1	38500	East Pit	
East Adit Waste Rock	S1	6375	East Pit Trench Area	
K-Baseline	S1	4835	East Pit	Total AE 1 = 10
Oceanview	S1	8450	East Pit	
West Adit Waste Rock	S1	110	01 Block	
Adjacent Boneyard	S2	1860	58 Block Area	
Area 14	S2	20	58 Block Area	Total AE2 = 50
Carp Shop/TownW/house	S2	690	58 Block Area	
Carp Shop/TownW/house	S2	190	NZ9 Area	
Day Tanks on Mine Roads	S2	3350	58 Block Area	
Day Tanks on Mine Roads	S2	1770	NZ 54 Block Area	Total DD1 = 2095
Day Tanks on Mine Roads	S2	40	NZ9 Area	
K-Baseline	S2	5352	East Pit	
Land Farm	S2	1480	58 Block Area	
Land Farm	S2	210	NZ 54 Block Area	Total S1 = 58550
Land Farm	S2	20	NZ 55 Block Area	
Oceanview	S2	50	58 Block Area	
Stol Port	S2	360	58 Block Area	
Stol Port	S2	1910	58 Block Area	Total S2 = 15442
				Grand Total for Quarter = 78007

3.0 EFFLUENT MONITORING

3.1 West Twin Decant (159-4)

3.1.1 Daily Results

During the period of June 22nd to June 30th, 2005, effluent was released from the final discharge point 159-4. (WTDA decant structure) As required under Part H, Item 30 of the license, this report includes the results of all tests and monitoring at the final discharge points from the site.

June Discharge 159-4 (Effluent from WTDA at Decant Structure)														
Date	Temp. (°C)	pH	Cond. (mS)	T.S.S. (mg/L)	SO ₄	Cd (mg/L)	Pb (mg/L)	As (mg/L)	Cu (mg/L)	Ni (mg/L)	Rad 226 (Bq/L)	Zn total (mg/L)	NH ₃ (mg/L)	24 Hr Flow
22-Jun	13.2	7.71	1.04	0.6	260	0.0001	0.002	0.001	0.002			0.06	1.12	20088
23-Jun	13.6	8.31	1.26	0.0	360	<0.0001	0.002	0.001	0.002			0.07	1.15	3491
24-Jun	11.0	8.60	1.48	0.8	480	<0.0001	0.002	0.001	0.002			0.06	1.24	4018
25-Jun	8.6	8.41	1.49	0.2	540	0.0001	0.002	0.001	0.002	0.007	0.03	0.06	1.25	4018
26-Jun	11.9	8.00	1.40	0.2	508	0.0001	0.002	0.001	0.003			0.06	1.19	4838
27-Jun	10.7	8.23	1.38	0.0	560	0.001	0.002	0.001	0.0002			0.06	1.16	7832
28-Jun	12.3	7.92	1.34	0.0	560	0.0001	0.002	0.001	0.003			0.06	1.14	12027
29-Jun	12.0	9.36	1.32	2.4	580	0.0001	0.002	0.001	0.003			0.04	1.01	17846
30-Jun	12.6	8.90	1.33	1.8	540	0.0001	0.002	<0.001	0.003			0.05	1.15	22546

Mass Loading

Cadmium	- 0.016 kg
Lead	- 0.193 kg
Arsenic	- 0.085 kg
Copper	- 0.237 kg
Nickel	- 0.028 kg
Radium 226	- 0.121 Bq
Zinc	- 5.255 kg
Ammonia	-109.024 kg
TSS	- 100.452 kg

3.1.2 Acute Lethality

A sample was collected at 159-4 on June 25th and tested for Acute Lethality to Rainbow Trout. The results from the test were 0% mortality at 100% effluent concentration.

3.1.3 Daphnia Magna Toxicity

The Effluent from 159-4 was also tested for toxicity to Daphnia magna. The results from this test were 0% mortality at 100% effluent concentration.

3.1.4 Sublethal Toxicity

Results from the various sublethal toxicity tests on the 159-4 – June 25th sample are tabled below.

Test	Effect	Value
Ceriodaphnia Dubia (Survival and Reproduction)	LC50 (Survival)	>100%
	IC25 (Reproduction)	>100%
Fathead Minnow (Survival and Growth)	IC25 (Growth)	>100%
	LC50 (Survival)	>100%
Lema Minor (Growth Inhibition)	IC25 (Weight)	>97%
	IC25 (Frond Production)	>97%
Selenastrum Capricornutum (Growth Inhibition)	IC25 (Growth)	>100%

3.1.5 Effluent Characterization

Effluent characterization was conducted as per the metal mining effluent regulations and is tabled below.

Location	Type	Al	Cd	Fe	Hg	Mo	NH3	Nitrate
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
159-4	Grab	0.030	0.0001	0.10	< 0.0001	0.021	1.25	0.76

3.1.6 Water Quality Monitoring

Water quality monitoring was conducted on samples taken from the exposure and reference areas relating to the effluent discharge as per the metal mining effluent regulations. The results are tabled below. The exposure area sample (159-4A) is located approximately 50 metres downstream from the decant structure at station 159-4. The reference area sample (159-4B) is located approximately 50 metres upstream from the decant structure.

Location	Type	Al	Cd	Fe	Hg	Mo	NH ₃	Nitrate
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
159-4A	Composite	0.350	< 0.0001	0.13	< 0.0001	< 0.005	0.09	< 0.10
159-4B	Grab	0.240	< 0.0001	0.09	< 0.0001	< 0.005	0.06	< 1.00

Location	Type	Temp	Diss O ₂	pH	TSS	Hardness	Alkalinity
		°C	%		mg/L	mg/L	mg/L
159-4A	Composite	4.6	14.5	8.31	3.8	23	10
159-4B	Grab	6.6	15.3	8.03	3.8	9	13

Location	Type	Arsenic	Copper	Cyanide	Lead	Nickel	Zinc	Ra 226
		°C	%		mg/L	mg/L	mg/L	Bq/L
159-4A	Composite	<.001	<.001	n/a	<.001	<.005	<.01	<.01
159-4B	Grab	<.001	<.001	n/a	<.001	<.005	<.01	<.01

4.0 PROJECT COSTS

The following is a list of costs attributed to 2nd quarter reclamation activities at Nanisivik Mine.

Description	Apr-05	May-05	Jun-05	Total 2nd Quarter 2005
Water Quality Monitoring	3,430.02	21,046.74	34,716.95	59,193.71
Geotechnical Monitoring West Twin Dyke	0.00	4,228.02	1,550.11	5,778.13
Outside Services/Closure Studies	0.00	0.00	0.00	0.00
Tailings Impoundment & Dump Ponds	23,842.28	22,709.14	1,502,446.14	1,548,997.56
Spillway	0.00	5,205.76	18,378.84	23,584.60
Tailings Cover	127,380.59	3,129,383.44	141,839.11	3,398,603.14
Material Haulage	781.01	24,497.07	41,378.97	66,657.05
Open Pits & Waste Rock	10,731.99	29,316.11	17,968.17	58,016.27
Buildings & Equipment	38,738.64	64,035.46	15,712.83	118,486.93
Tank Farm & Dock	0.00	0.00	0.00	0.00
Townsite	15,107.06	22,536.44	12,320.66	49,964.16
Landfill Site	0.00	0.00	66.20	66.20
Mine Closure(Sealing entrances)	111.67	0.00	1,071.79	1,183.46
Hazardous Material Disposal	0.00	1,105.00	32,689.26	33,794.26
Tailings & Water Line Recovery	0.00	0.00	0.00	0.00
Access Road Cleanup, Culvert Removal	9,463.66	1,700.00	0.00	11,163.66
Vehicle Maintenance/Operating labour	13,196.38	29,905.88	19,650.44	62,752.70
Inventory Adjustments	1,265.26	59,855.43	0.00	61,120.69
		844.99		
Total	244,048.56	3,416,369.48	1,839,789.47	5,499,362.52

5.0 APPENDICES:

5.1 Photos

- Oceanview
- East Open Pit
- East Twin Quarry Haul Road
- Spill Way
- Land Farm

APPENDIX 5.1

Photos



Sand and Gravel Cover in progress at the Ocean View Pit



Excavating the East Pit waste rock pile down to original ground



Haulage Road Construction from The East Twin Quarry to the West Twin Deposition Area



Newly Constructed Spillway from the Surface Cell to West Twin Reservoir



Landfarm excavated and ready for recontouring