



February 16, 2012

SOUTHAMPTON ISLAND PROJECT

Closure and Restoration Plan

Submitted to:
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Hwy 17 West
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REPORT



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Nunavut Water Board
Kivalliq Inuit Association
Aboriginal Affairs and Northern Development Canada





CLOSURE AND RESTORATION PLAN

Table of Contents

1.0 INTRODUCTION.....	1
2.0 PROJECT SCHEDULE.....	1
3.0 CLOSURE AND RESTORATION.....	1
3.1 Seasonal Closure and Restoration	1
3.1.1 Buildings and Contents	1
3.1.2 Drill Locations	2
3.1.3 Fuel Cache.....	2
3.1.4 Waste.....	2
3.1.5 Water System	2
3.1.6 Contamination Clean Up	2
3.1.7 Documentation and Inspection.....	2
3.2 Final Closure and Restoration	3
3.2.1 Building and Contents	3
3.2.2 Drill Locations	3
3.2.3 Fuel Storage	3
3.2.4 Waste.....	3
3.2.5 Water System	3
3.2.6 Contamination Clean Up	3
3.2.7 Documentation and Inspection.....	3
3.3 Site Map	4
4.0 REFERENCES.....	4

APPENDICES

APPENDIX A

Site Map



CLOSURE AND RESTORATION PLAN

1.0 INTRODUCTION

Vale Exploration Canada Inc. (Vale) has developed this Closure and Restoration Plan (the Plan) for the Southampton Island Project (the Project), located on Southampton Island, Nunavut approximately 65 km northeast of the Hamlet of Coral Harbour, Nunavut. The Project activities are located between 64°52'26" - 64°30'28" N and 82°59'30" - 82°29'28" W.

The Project area occurs on both Crown and Inuit Owned land, therefore Vale has applied for and received land use permits with Aboriginal Affairs and Northern Development Canada (AANDC), formerly Indian Northern Affairs Canada (INAC), and the Kivalliq Inuit Association (KIA), as well as a water licence with the Nunavut Water Board.

Vale has all the necessary prospecting permits issued by the AANDC Mine Recorder's Office.

Version 3.0 of the Closure and Restoration Plan was prepared for the amendment application to the Nunavut Water Board (water licence 2BE-SIP1114) to include the location of the camp and on-ice drilling as part of the project activities.

In the summer of 2011, Vale carried out a prospecting program. The team of geologists was based in Coral Harbour and flew back and forth each day to the Project.

In 2012, Vale plans to do further mineral exploration work including drilling and a camp to support the drilling program. The proposed camp location is at 64° 45' 43.56"N and 82° 29' 27.24"W and is shown on Figures 1 and 2 in Appendix B. Vale plans on having a drilling program every summer from 2012 – 2017. Depending on the results of the drilling programs, Vale may also do a winter drilling program which would include on-ice drilling.

The scope of this Closure and Restoration Plan (the Plan) covers both drilling activities and a camp. The Plan is effective for the term of the water licence.

2.0 PROJECT SCHEDULE

As previously stated, further mineral exploration work is planned for the summer of 2012. Project activities will include drilling and a camp to support the drilling program and will last approximately 2 to 3 months.

In 2013 to 2017, depending on the results of the 2012 and subsequent programs, further exploration work may be undertaken, this may include on-ice drilling.

3.0 CLOSURE AND RESTORATION

3.1 Seasonal Closure and Restoration

The seasonal closure and restoration will take approximately 1 to 2 days to complete and is described in the preceding sections.

3.1.1 Buildings and Contents

All tent structures will be secured for the winter and all camp equipment such as stoves, beds, shower etc. will remain securely stored on site. No food or food waste will be left on site.



CLOSURE AND RESTORATION PLAN

3.1.2 Drill Locations

All drill equipment will be dismantled, packaged, and stored along with its ancillary equipment and rods, as directed by the drilling contractor. The drill will be left on a level surface, away from water bodies.

All drill locations will be inspected immediately after completion of the drill hole. All waste will be collected and taken to camp for incineration or removed to an approved disposal facility. All sumps will be backfilled. All efforts will be made to contour the sump backfill to pre-existing conditions. At each drill site the surrounding soil will be inspected for potential contamination.

3.1.3 Fuel Cache

Any fuel drums or empty drums from the last drill location will be returned to the fuel cache. Empty drums will be returned to the staging area in Coral Harbour and backhauled to an approved facility throughout the project.

Remaining fuel drums at the fuel cache will be inventoried and stored until the next season. All remaining fuel drums and empty drums, as well as secondary containment, will be inspected. Surrounding soil will also be inspected for potential contamination. Any contaminated soil will be treated according to the *Spill Contingency Plan* (Golder 2012).

3.1.4 Waste

For any field program with a camp, Vale will use a modified burn barrel to incinerate paper products, paperboard packaging, untreated wood, food wastes, and food packaging as described in the Government of Nunavut's *Guideline for the Burning and Incineration of Solid Waste* (GN 2010). All other non-hazardous wastes will be packaged and flown to Coral Harbour for disposal in the hamlet landfill, if all necessary tipping fees and access are in place with the hamlet.

For seasonal camp closure, all ash will be removed from the two stage incinerator and disposed in a natural depression or pit at a minimum 31 m away from water bodies or backhauled to Coral Harbour. The soil under and surrounding the modified burn barrel will be inspected for contamination.

Sewage will be incinerated using Pacto toilets this waste will then be burned in a two stage incinerator. Greywater from the camp will be directed to a sump or natural depression at a minimum 31 m from a water body.

3.1.5 Water System

Pumps, tanks, and hoses will be drained, dismantled, packaged, and stored. Hoses will be rolled up and stored.

3.1.6 Contamination Clean Up

Contaminated soil or water at the drill sites or the camp will be treated as described in the *Spill Contingency Plan* (Golder 2012). Photographs before, during, and after the clean-up will be taken and all clean-up activities will be documented.

3.1.7 Documentation and Inspection

Prior to seasonal closure of the site, all remaining equipment and buildings will be inventoried, locations recorded, and photographed. All areas disturbed by the field program, (e.g., drill sites, fuel cache, camp) will be inspected prior to closure for the season. Records of the inspections will be kept in the project file.



3.2 Final Closure and Restoration

3.2.1 Building and Contents

All reusable equipment such as tents, tent frames, stoves, beds, shower etc. will be dismantled and removed from the site. All consumables associated with camp construction, such as nails, screws, anchors etc. will be recovered where possible, packaged, and flown out with other non-hazardous solid waste for disposal.

3.2.2 Drill Locations

All drill and ancillary equipment will be dismantled, packaged and removed from the site. All drill locations will be inspected immediately after completion of the drill hole. All waste will be collected and taken to camp for incineration or removed to an approved disposal facility. All sumps will be backfilled. All efforts will be made to contour the sump backfill to pre-existing conditions. At each drill site the surrounding soil will be inspected for potential contamination.

3.2.3 Fuel Storage

All remaining fuel drums and empty drums will be removed from the site. The soil under and surrounding the fuel cache will be thoroughly inspected for any contamination, and photographs will be taken. Locations where fuel was stored at the drill sites will be inspected during the drill location inspection. Any contaminated soil will be treated according to the *Spill Contingency Plan* (Golder 2012).

3.2.4 Waste

For any field program with a camp, Vale will use a modified burn barrel to incinerate paper products, paperboard packaging, untreated wood, food wastes, and food packaging as described in the Government of Nunavut's *Environmental Guideline for the Burning and Incineration of Solid Waste* (GN 2010). All other non-hazardous wastes will be packaged and flown to Coral Harbour for disposal in the hamlet landfill, if all necessary tipping fees and access are in place with the hamlet.

For final camp closure, all ash will be removed from the modified burn barrel and disposed in a natural depression or pit at a minimum 31 m away from water bodies. The modified burn barrel will be dismantled and removed from the site. The soil under and surrounding the modified burn barrel will be inspected for contamination.

Sewage will be incinerated using two stage incinerator and Pacto toilets will be used. Greywater from the camp will be directed to a sump or natural depression at a minimum 31 m from a water body.

3.2.5 Water System

Pumps, tanks, and hoses will be drained, dismantled, packaged, and removed from the site. Hoses will be rolled up and removed from site.

3.2.6 Contamination Clean Up

Any contaminated soil or water identified during the closure inspections will be treated according to the *Spill Contingency Plan* (Golder 2012). Photographs will be taken, before, during, and after the clean up.

3.2.7 Documentation and Inspection

Prior to final closure of the site, a complete inspection of all disturbed areas will be conducted. The inspection will include recording locations of all disturbed areas (including coordinates), photographing all disturbed areas,



CLOSURE AND RESTORATION PLAN

and documenting a description of the area. Information gathered during the final inspection will be used to write a final closure and restoration report. The report will be distributed to the regulatory agencies as required by the project permits and licence. The final closure and restoration report will also include site maps showing the locations of all drill waste sumps, greywater sump, ash disposal area, camp location, and fuel cache location.

3.3 Site Map

Vale has proposed a camp and fuel cache location at 64° 45' 43.56"N and 82° 29' 27.24"W, as shown in Figures 1 and 2 of Appendix A. At this time, the drill locations are unknown for the project. Vale will include site diagrams of the drill locations and camp layout with annual reporting requirements associated with permits and licence for the project.

4.0 REFERENCES

Golder. 2012. Spill Contingency Plan Version 2.0, Southampton Island Project. Submitted to Vale Exploration Canada January 2012.

GN (Government of Nunavut). 2010. Environmental Guideline for the Burning and Incineration of Solid Waste. Department of the Environment. Iqaluit, Nunavut. Available on-line:
http://env.gov.nu.ca/sites/default/files/guideline_-_burning_and_incineration_of_solid_waste_1010.pdf



Report Signature Page

GOLDER ASSOCIATES LTD.

A handwritten signature in black ink, reading "S. Gagné".

Sarah Gagné, P.Eng.
Project Manager

A handwritten signature in black ink, reading "Arthur Cole".

Arthur Cole, P.Eng
Principal

SG/AC/bh

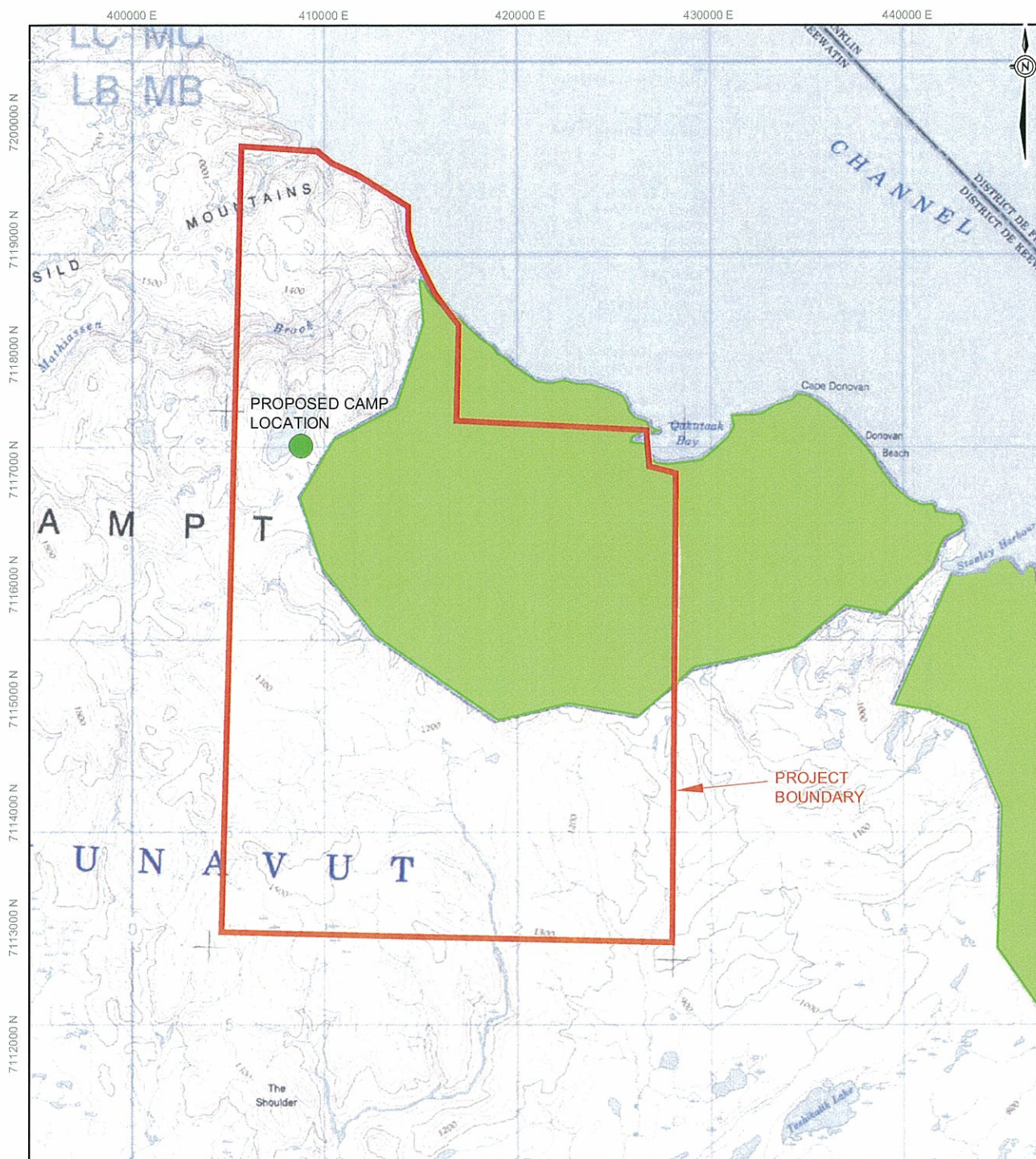
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APPENDIX A

Site Map

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LEGEND	
	PROJECT BOUNDARY
	CROWN LAND
	INUIT OWNED LAND



REFERENCE

TOPOGRAPHIC MAPS 46B AND 46G OBTAINED FROM CANMATRIX. © 1986 AND 1995 (RESPECTIVELY) HER MAJESTY THE QUEEN IN RIGHT OF CANADA. DEPARTMENT OF NATURAL RESOURCES. ALL RIGHTS RESERVED. DATUM: NAD83 PROJECTION: UTM ZONE 17.

PROJECT		CORAL HARBOUR AREA SOUTHAMPTON ISLAND, NUNAVUT			
TITLE		SITE MAP			
PROJECT		11.1372.0019.1000	FILE No. 11137200191000B002		
DESIGN	SG	20 Dec. 2011	SCALE	AS SHOWN	REV. 0
CADD	BSW	23 Dec. 2011	FIGURE: 2		
CHECK	CD	16 Feb. 2012			
REVIEW	JR	16 Feb. 2012			



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