NWB Manager of Licensing

From: Sylvia Novoligak [snovoligak@nirb.nunavut.ca]

Sent: Tuesday, March 22, 2005 4:39 PM

To: ghakongak@ntilands.com; Jeannie Ehaloak; lmanzo@arctic.ca; Stephen Hartman; Luke Suluk; joleekatalik@npc.nunavut.ca; licensing@nwb.nunavut.ca; jgalipeau@nwmb.com; kwflucy@saltspring.com; wbeveridge@ihti.ca; Spencer Dewar; enor@inac.gc.ca; Scott Stewart; MoggyD@DFO-MPO.GC.CA; GordanierT@DFO-MPO.GC.CA; colette.spagnuolo@ec.gc.ca; mike.fournier@ec.gc.ca; gmackay@gov.nu.ca; ebaddaloo@gov.nu.ca; Mike Atkinson; Nigel Qaumariaq; GLemus@GOV.NU.CA; Bruce Trotter; Isaac Sobol; rchapple@gov.nu.ca; Julie Ross; maureen@nunavuttourism.com; mcampbell@gov.nu.ca; dshewchuk@gov.nu.ca; charlotte_hickes330@hotmail.com

Subject: 05EN020-Mining Exploration and Campsite, BHP Diamonds Inc., Repulse Bay Area

Please review and respond by: April 12, 2005.

Quana.

Sylvia Novoligak
Screener Administrator Trainee
Nunavut Impact Review Board
P.O. Box 2379
Cambridge Bay, NU X0B 0C0
Toll Free: 1-866-233-3033
Ph: 867-983-4613
Fax: 867-983-2594
Email: snovoligak@nirb.nunavut.ca
Website: http://nirb.nunavut.ca
ftp site: http://ftp.nunavut.ca/nirb/

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Mail log

Scan as one doc for NWB2REP

March 22, 2005

Dear Kivalliq Distribution List

Re: Your comments on this application.
NIRB#: 05EN020
Project: Mining Exploration and Campsite
Proponent: BHP Billiton Diamonds Inc.

Nunavut Impact Review Board has received an application for a Mining Exploration and Campsite near Repulse Bay. Please use NIRB file No. 05EN020 and the contact person listed below, in all future correspondence regarding this application.

The application documents are available through the internet on the NIRB ftp site at www://ftp.nunavut.ca/nirb in the folder "05EN020-Mining Exploration and Campsite, BHP Billiton Diamonds Inc. ".

Please assess the project proposal for the potential effects on the ecosystemic and socio-economic environments, from your knowledge of the area or your field of expertise.

Please forward your comments and recommendations to NIRB by April 12, 2005 1:00pm local time.

A comment form has been included with the package.

If you have any questions regarding the application, please do not hesitate to contact our office. Your input is greatly appreciated.

Yours truly,

Sylvia Novoligak
Environmental Screener Trainee
Phone (867) 983-4613
Fax (867) 983-2574 or (867) 983-2594

COMMENT FORM FOR NIRB SCREENINGS

The Nunavut Impact Review Board has a mandate to protect the integrity of the ecosystem for the existing and future residents of Nunavut. In order to assess the environmental and scio-economic impacts of the project proposals, NIRB would like to hear your concerns, comments and suggestions about the following project application:

Project Title: Mining Exploration and Campsite
Proponent: BHP Billiton Diamonds Inc.
Location: Repulse Bay Area
Comments Due By: April 12, 2005 **NIRB #:** 05EN020

Indicate your concerns about the project proposal below:

- ☐ no concerns
- ☐ water quality
- ☐ terrain
- ☐ air quality
- ☐ wildlife and their habitat
- ☐ marine mammals and their habitat
- ☐ birds and their habitat
- ☐ fish and their habitat
- ☐ heritage resources in area
- ☐ traditional uses of land
- ☐ Inuit harvesting activities
- ☐ community involvement and consultation
- ☐ local development in the area
- ☐ tourism in the area
- ☐ human health issues
- ☐ other: _____

Please describe the concerns indicated above:

Do you have any suggestions or recommendations for this application?

Do you support the project proposal? Yes ☐ No ☐ Any additional comments?

Name of person commenting: _____ **of** _____
Position: _____ **Organization:** _____
Signature: _____ **Date:** _____

KIVALLIQ INUIT ASSOCIATION

APPLICATION FOR ACCESS TO INUIT OWNED LAND

Office use only

Category	Application No:	Accepted By:	Date Accepted:
	KVL305B02	[illegible]	

KIVALLIQ INUIT ASSOCIATION RECEIVED JAN – 4 2005 BAKER LAKE NU LAND ADMINISTRATION

To be completed by all applicants

1. Applicant's name and mailing address (Full name, no initials or abbreviations) BHP Billiton Diamonds Inc. 2300 – 1111 West Georgia St, Vancouver, BC V6E 4M3	Fax no 604 683 4125 Telephone no. 604 632-1450
2. Head Office address As above	Fax no. Telephone no.
3. Field supervisor and address if different from above Sigfried Weidner	Telephone no. 604 632-1459

4. Other personnel list (Subcontractors or contractors to be used)

Great Slave Helicopters

Boart Longyear (diamond drilling)

SDS Drilling (possibly)

Total no. of personnel: to a maximum of about 12 No. of person days: ~180

5. Location of activities by map coordinates. Attach **ORIGINAL** maps and sketches.

MAX Lat Min 50	MIN Lat Deg 66	MIN Lat Min 0	MAX Lat Deg 67
MAX Long Min 55	MIN Long Deg 86	MIN Long Min 30	MAX Long Deg 87

Map Sheet No: 46L,M Inuit Land Parcel No: RE – 23, RE - 20

Coordinate of camp (if applicable) Lat. ° ' " Long. ° ' "

6. Periods of operation including periods of seasonal shut down and periods for restoration.

Operating periods could be in any month although the likelihood of this diminishes significantly from October through February due to limited light for flying.

7. Period of access required (up to one or two years for licenses, depending on license level, up to five years for residential/recreational leases and level I and II commercial leases, and up to forty years for level III commercial leases)	Start date March 15, 2005	Completion Date March 15, 2006

8. Other rights, licenses, permits or leases related to this application. Provide proof of rights or indicate if in the process of applying for rights.

- ☐ NTI Subsurface Right
- x DIAND Subsurface Right
- x NWB Water License
- ☐ NRI Research License
- ☐ RWED Tourism License
- ☐ Explosives Permit
- ☐ CWS Permit
- ☐ Other – Please Specify

9. TYPE OF LAND USE ACTIVITY

Check off the appropriate land use activities.

Mining/Oil & Gas
- x staking and prospecting
- x exploration (geophys-grid/air)
- x drilling (diamond/ice, etc.)
- ☐ bulk sampling
- ☐ mine (open pit, undergrd, etc.)
- ☐ bulk fuel storage
- ☐ other: _____

Construction:
- ☐ camp
- ☐ building
- ☐ winter road
- ☐ all-season road
- ☐ quarrying
- ☐ other: _____

Tourism:
- ☐ tourism facility
- ☐ outfitting
- ☐ other: _____

Municipality:
- ☐ bulk storage of fuel
- ☐ residential building
- ☐ commercial building
- ☐ other: _____

Research:
- ☐ wildlife/fish/birds/marine
- ☐ survey (grd/aerial/collars)
- ☐ collection of species
- ☐ research station
- ☐ other: _____

Other:
- ☐ commercial harvest
- ☐ recreational camp
- ☐ _____
- ☐ _____

10. On a separate page, provide a NON-TECHNICAL project summary. This should include a non-technical description of the project proposal, no more than 300 words, in English and Inuktitut (Inuinaktun, in the West Kitikmeot). The project description should outline the project activities and their necessity, method of transportation, any structures that will be erected, expected duration of activity and alternatives considered. If the proposed activity fits into any long-term developments, please describe the projected outcome of the development for the area and its timeline.

11. Attach a detailed project description as outlined in APPENDIX A.

12. Application Fees:

☐ Land use license I
Inuit - $0
Non-Inuit $100
☐ Land use license II $250
x Land use license III $500

☐ Residential/Recreational Lease Inuit - $0
Non-Inuit - $250

☐ Exemption Certificate $0

☐ Commercial Lease I $500
☐ Commercial Lease II $2000
☐ Commercial Lease III $5000

Land use fees: # of hectares used @ $50.00/hectare – $ 50.00

Note: The land use fee is for the amount of land used on an annual basis.

13. a) The Applicant requests a Certificate of Exemption ☐

OR

b) The Applicant agrees to be bound by terms and conditions to be attached to the Inuit Land Use License or Lease. x

Sign name in full. _____ 22-12-04
Signature Date

NUNAVUT IMPACT REVIEW BOARD
Nunavutmi Kanogiliivallanikot Elittohaiyeoplotik Katimayiit

PART 1
PROJECT PROPOSAL INFORMATION REQUIREMENTS

For more information about the Nunavut Impact Review Board (NIRB) please visit our web site http://nirb.nunavut.ca/ or to access NIRB documents, project screenings, and project reviews please visit the Nunavut Impact Review Board ftp site http://ftp.nunavut.ca/nirb.

IMPORTANT

Please be advised that your application will not be processed until the following sections 1 - 6 are completed in full in English and Inuktitut (+ Inuinnaqtun, if in the Kitikmeot).

SECTION 1: APPLICANT INFORMATION

1. Project Number

Please indicate if applicant has submitted any previous application(s) to NIRB related to this project proposal? Yes ___ No x

If yes, please indicate the previous NIRB project number(s):

2. Applicant's full name and mailing address:

BHP Billiton Diamonds Inc
2300 – 1111 West Georgia Street
Vancouver, BC
V6E 4M3

Fax: 604 683-4125
Phone: 604 632-1450
Email:

3. Primary contact's full name and mailing address:

Jeremy Howe
Address as above

Fax: 604 683-4125
Phone: 604 632-1451
Email: jeremy.j.howe@bhpbilliton.com

4. Secondary contact's full name and mailing address:

Sig Weidner
Address as above

Fax: 604 683-4125
Phone: 604 632-1459
Email: siegfried.weidner@bhpbilliton.com

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NUNAVUT **I**MPACT **R**EVIEW **B**OARD
Nunavutmi Kanogillivalianikot Elittohaiyeoplotik Katimayiit

SECTION 2: AUTHORIZATION NEEDED

1. Indicate all authorizations associated with the project proposal:

- [x] Regional Inuit Association (RIA)
- [x] Nunavut Water Board (NWB)
- [ ] Nunavut Planning Commission (NPC)
- [x] Department of Indian And Northern Development (DIAND)
- [ ] Department of Fisheries and Oceans (DFO)
- [ ] Community Government & Services (CG&S)
- [ ] Nunavut Research Institute (NRI)
- [ ] Hamlet
- [ ] Canadian Launch Safety (CLS)
- [ ] Environment Canada (EC)
- [ ] Government of Nunavut (GN)
- [ ] Department of National Defense (DND)
- [ ] Department of Culture, Language, Elders, and Youths (CLEY)
- [ ] Parks Canada (PC)
- [ ] Other (please specify):

2. List the active permits, licences, or other rights related to the project and their expiry date: **NWB2REP0305 exp. May 31, 2005 / DIAND Lic. N2003C006 exp April 1, 2006 / KIA Lic. KVL102C260 exp. June 1, 2005**

NUNAVUT IMPACT REVIEW BOARD
Nunavutmi Kanogllivalianikot Elittohaiyeoplotik Katimayiit

SECTION 3: PROJECT PROPOSAL DESCRIPTION

1. Indicate the type of project proposal:

x	Exploration (geophysical ground, geophysical air, drilling)
	Advanced Exploration/ Bulk Sampling
	Mine development
	Site remediation/ reclamation
	Research
	Dew Line Clean up / Site Investigation
	Other: ______________________

2. Indicate the activities related to the project proposal:

	Drilling other than geoscientific		Quarrying
	Offshore structure		All season road
x	Airport/ landing strip	x	Winter road
x	Camp		Access road
x	Fuel storage		Road modification
x	Solid waste disposal		Cabins
	Hazardous waste disposal	x	Sewage or grey water disposal
	Research		Blasting
	Abandonment and Restoration		Harvesting
x	Burning		Burying
x	Construction		Channeling
	Cut and/or Fill		Removal of vegetation
	Dam/ Impoundment (construction/ abandonment/ removal/ modification)		Ditch construction
	Drainage Alteration		Excavation
	Chemical Storage		Ecological survey
	Explosives Storage		Geoscientific sampling by trenching
x	Geoscientific sampling by diamond drilling		Geoscientific sampling by borehole core
x	Geoscientific sampling by soil sampling		Hydrological testing
	River/ stream/ lake crossing/ bridge		Site restoration (fertilization/ grubbing/ scarification/ spraying/ recontouring)
	Soil testing		Soil disposal/ Soil storage
	Tunneling		Other (please specify):

3. Personnel

Total No. of personnel on site = (A) 35

Total No. of person days = (A) x No. days on site >3700

NUNAVUT IMPACT REVIEW BOARD
Nunavutmi Kanogiliivalianikot Elittohaiyeoplotik Katimayiit

4. Timing

Period of operation:	**March 09 2005**	*to*	**June 30, 2005**
Proposed term of permit:	**April 1 2005**	*to*	**April 1 2007**

Please outline the phases of the proposed project (construction/ operation/ decommissioning) including the timing and scheduling of each phase. Sampling: 2002 / Camp Construction: 2004 / Drilling: 2003, 2004, 2005 / Earliest Restoration and withdrawl: 2006 / Latest Restoration and withdrawl: unknown – success dependent

5. Region (check all that apply):

[ ] Baffin [x] Kivalliq [ ] Kitikmeot [ ] Transboundary: _____

6. Land Status (check all that apply):

[x] Crown [ ] Commissioners' [x] Inuit Owned Surface lands [ ] Inuit Owned Sub-Surface Lands

7. Co-ordinates:

Min Lat (degree/minute)	66.5	Min Long (degree/minute)	86.0
Max Lat (degree/minute)	67.3	Max Long (degree/minute)	87.3

NTS Map Sheet No: 46L &M

Please ensure that maps of the project are attached (1:50,000, 1:250, 000) **(Mandatory)**

If the project proposal includes a **camp**, please provide the coordinates of the camp location

Min Lat (degree/minute)	86^0 22' 3"	Min Long (degree/minute)	66^0 38' 57"
Max Lat (degree/minute)		Max Long (degree/minute)	

If different from above for the camp:

NTS Map Sheet No: 46L

Please ensure that maps of the camp are attached (1:50,000, 1:250, 000) **(Mandatory)**

8. Non-Technical Project Proposal Summary

Please include a non-technical description of the project proposal, no more than 500 words, in English and Inuktitut (+Inuinnaqtun, if in the Kitikmeot). The project description should outline the following:

- The project activities, their necessity and duration;
- Method of transportation;
- Any structures that will be erected (permanent/ temporary);
- Alternatives considered; and
- Long-term developments, the projected outcome of the development for the area and its timeline.

A program is being planned for 2005 that will involve the same classes of activity as those already or previously permitted. Work will likely include:

- *Land-based reverse circulation drilling (tentative)*
- *Diamond drilling (1 LF70 rig)*

- *Helicopter-supported sampling*
- *Ground geophysics*
- *Construction of an airstrip on lake ice to support airlift resupply.*
- *Some modest caching of drummed fuel to augment that already on site. (about 200 Jet B)*

Equipment Needed

- *Camp (already in place) with about 40 people*
- *1 – Astar BA helicopter*
- *212 helicopter (if RC drilling proceeds)*
- *2 - snowmobiles*
- *1 – IT28 loader (aircraft unloading)*
- *1 – Kassbohrer snowcat (snow clearing and icerstrip construction)*
- *1 – freight sleigh*

Note: In addition to the above equipment, the following is also on site although its use is unlikely:

- *1 – D6 Cat*
- *1 – Foremost tundra vehicle*

At this time there is no budget approved for work beyond June 30th although successful drilling would likely encourage a shift to RC drilling until the end of September 2005. Lack of success would lead to demobilization of equipment to Repulse Bay in preparation for removal by barge this fall. The camp would probably be dismantled over the summer and flown to Repulse Bay.

SECTION 4: MATERIAL USE

1. List equipment (including drills, pumps, aircrafts, etc.):

Equipment type and number	Size – dimensions	Proposed use
See above		

2. Detail fuel and hazardous material use:

Fuels	Number of Containers	Capacity of containers (gal & litre)
• Diesel	199	205 L
• Gasoline	20	205 L
• Aviation fuel	425	205 L
• Propane	18	40 lb
• Other Acetylene Oxygen	 14 13	
Hazardous material (please specify)		
•		
•		
•		

SECTION 5: WASTE DISPOSAL AND TREATMENT FACILITIES

1. List the types of waste:

Type of waste	Projected amount generated	Method of Disposal	Additional treatment procedures
Sewage	~ 6000 liltres	RBC plant	UV sterilisation
Greywater		RBC plant	UV sterilisation
Garbage	lots	incinerator	Fly out ash drums to MB
Overburden (organic soil, waste material, tailings)			
Hazardous waste			
Other: Metal waste	lots	Fly out to Churchill	

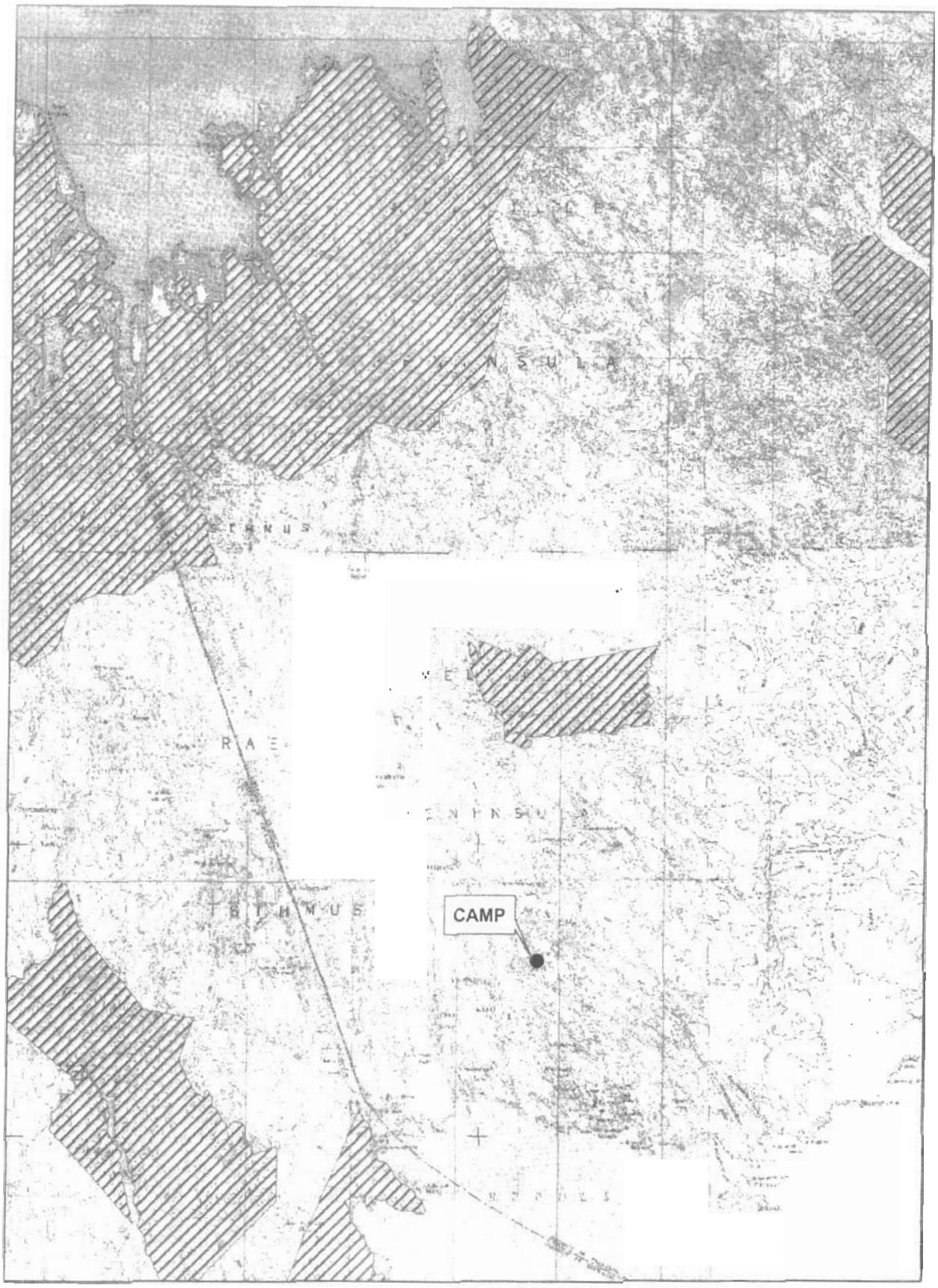
SECTION 6: COMMUNITY INVOLVEMENT & REGIONAL BENEFITS

1. List the community representatives that have been contacted and provide the minutes of the meetings:

Community	Name	Organization	Date Contacted	Telephone No.	Fax No.
See attachments					
Qilalugaq Project - Jan 2004_trip report.					
Meeting Minutes with HTO June 23, 2004.d					

Applicant:

Signature **Title** **Date**



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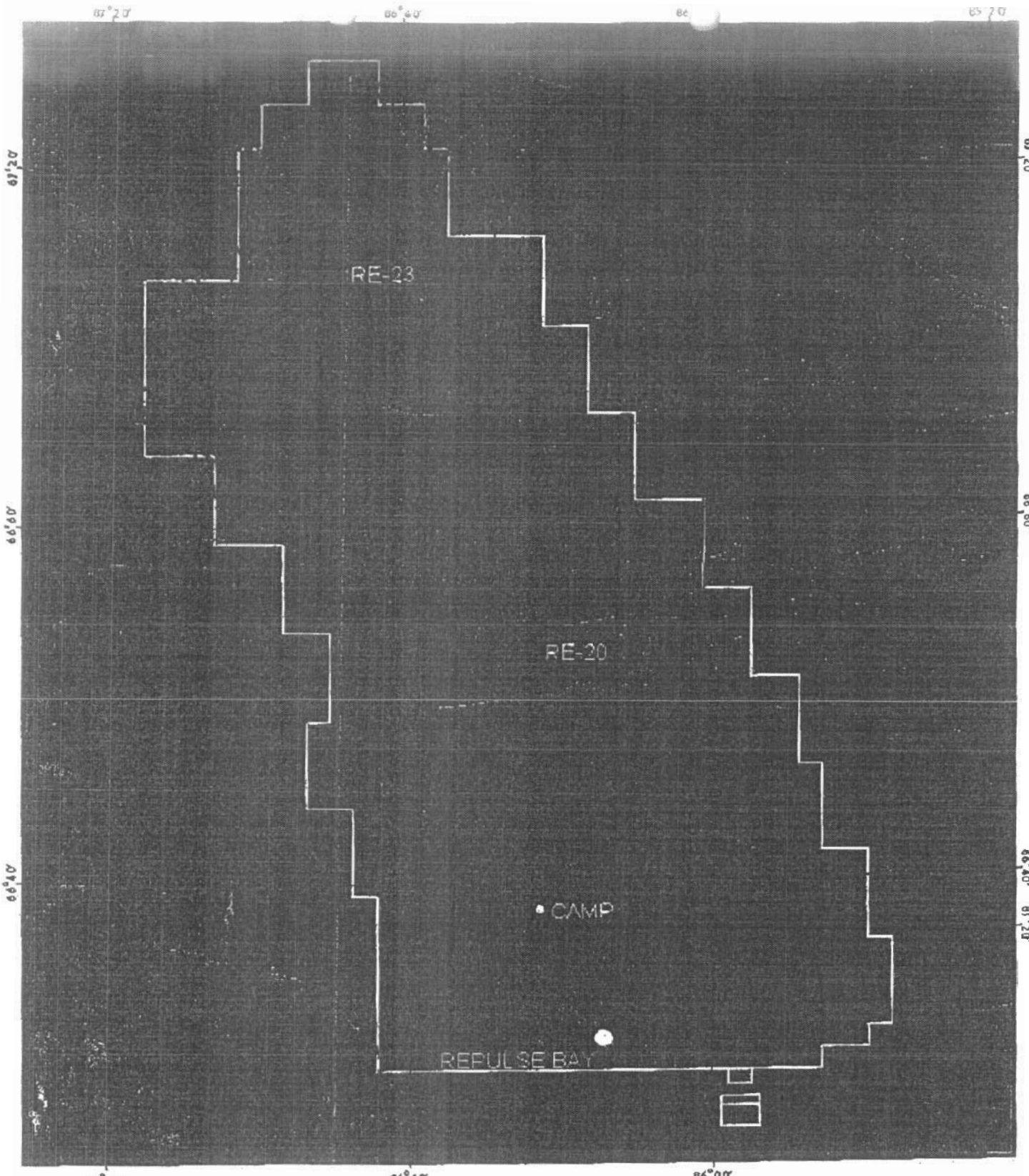

BHP Billiton Qilalugaq Property
Repulse Bay
Nunavut

bhpbilliton

Spill and General Contingency Plan

Working Responsibly at BHP Billiton: Our Health, Safety, Environment and Community Policy.

At BHP Billiton, we are committed to sustainable development. Health, safety, environment and community responsibilities are integral to the way we do busin .
We commit to continual improvement in our performance, ef . cient use of natural resources and aspire to zero harm to people and the environment.
Wherever we operate we will:
Develop, implement and maintain management systems for health, safety, environment and the community that are consistent with internationally recognised standards and enable us to:
identify, assess and manage risks to employees, contractors, the environment and communitie
Strive to achieve leading industry practice;
Meet and, where appropriate, exceed applicable legal requirements;
Set and achieve targets that include reducing and preventing pollution;
Develop our people and provide resources to meet our targets;
support the fundamental human rights of employees, contractors and the communities in which we operate;
Respect the traditional rights of indigenous people;
Care for the environment and value cultural heritage;and
Advise on the responsible use of our products.
Seek opportunities to share our success by:
Working with communities to contribute to social infrastructure needs through the development and use of appropriate skills and technologies;and
Developing partnerships that focus on creating sustainable value for everyone.
Communicate with, and engage, employees, contractors, business partners, suppliers, customers, visitors and communities to:
Build relationships based on honesty, openness, mutual trust and involvement;and
Share responsibility for meeting the requirements of this policy.
We will review regularly and report publicly our progress and ensure this policy remains relevant to the needs of our stakeholders. We will be successful when we achieve our targets toward our goal of zero harm and are valued by the communities in which we work.

Paul AndersonChief Executive Officer and Managing Director

bhpbilliton

Spill and General Contingency Plan

General Project Description

Timing

Spill Response Equipment and Location

Training Programmes

Procedures outlined in this document were reviewed with the crew by the project geologist while on site.

Attachments

- **Maps** *(area map, drill sites, campsite & layout, caches)*
- **MSDS Sheets**
- **Spill Report Form**

ACTION PLAN

1. **Report All Spills Immediately**
   APPENDIX B contains Internal and External Phone Numbers and Contact Information
2. **Clean-Up Spill**
   If safe:
   - Stop the source of the spill;
   - Prevent the spill from entering a watercourse; and

- Clean-up the spill.

3. **Notify Government Agencies (Appendix B)**
4. **Fill out the Spill Report Form (Appendix H)**

If on site coordinator is not available, contact the GNWT 24-hour spills report hotline immediately at: (867) 920-8130.

Respond Immediately if Safe to Do So:

1. Identify the spilled material.
2. Ensure the safety of yourself and others.
3. Shut off ignition sources - NO SMOKING.
4. Attend to injured.
5. Assess the severity of the spill.
6. Call for assistance.
7. On-Scene Co-ordinator mobilizes Emergency Response Team
8. Keep unnecessary people out of the area.
9. Wear impervious clothing, goggles, gloves.
10. Approach spill from upwind IF SAFE TO DO SO.
11. Stop product flow if possible.
12. Contain and recover spill as soon as possible.

Respond Safely

1. Do not contain gasoline/aviation fuel if vapours might ignite.
2. Allow gasoline or aviation fuel spills to evaporate.
3. See the Spill Response Actions on the following pages and Appendix C - Product Guides for further information.

Obtain and report Spill Details

1. Fill in Spill Report Form (Appendix H)
2. All spills must be reported to the GNWT 24-hour Spill Report Hotline: (867) 920-8130.

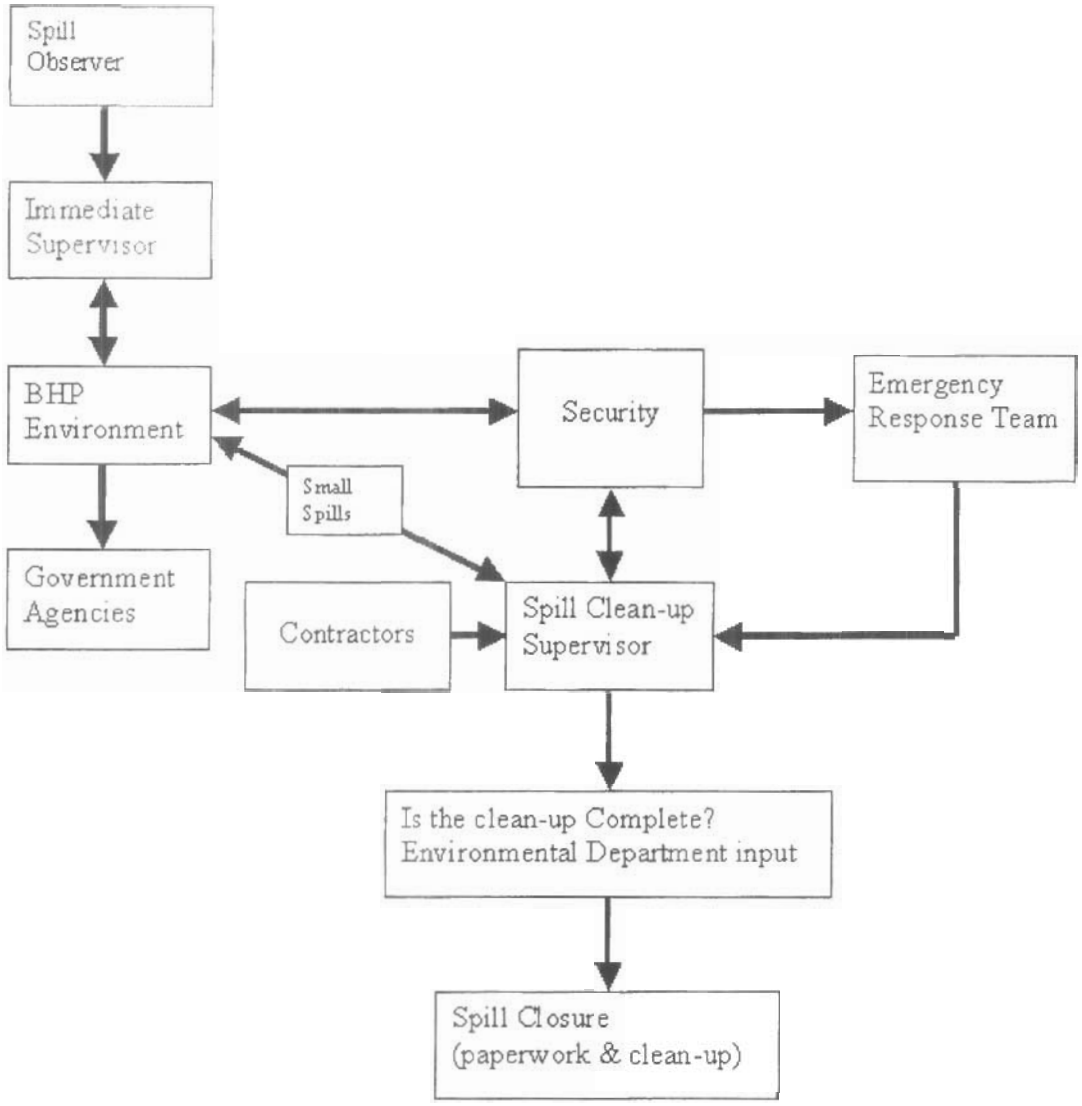

Figure 1. Spill Response Procedure

Spill Response Actions
Diesel, Hydraulic, Lube and Waste Oil

Consider action only if safety permits!

Eliminate ignition sources.
Stop source if safe to do so.

On Land	Do not flush into ditches or drainage systems. Block entry into waterways and contain with earth or other barrier(s). Remove small spills with sorbent pads. On tundra use peat moss and leave in place to degrade, if practical.
On Snow & Ice	Block entry into waterways and contain with snow or other barrier Block entry into waterways and contain with snow or other barrier Remove minor spills with sorbent pads and/or snow. Use ice augers and pump when feasible to recover diesel under ice. Slots in ice can be cut over slow moving water to contain oil. Burn using Tiger Torches if unrecoverable by other methods, feasible and safe to do so.
On Muskeg	Do not deploy personnel and equipment on marsh or vegetation. Remove pooled oil with sorbent pads and/or skimmer. Flush with low pressure water to herd oil to collection point. Burn only in localized areas, e.g., trenches, piles or windrows. Do not burn if root systems can be damaged (low water table). Minimize damage caused by equipment and excavation.
On Water	Contain spill as close to release point as possible. Use spill containment boom to concentrate slicks for recovery. On small spills, use sorbent pads to pick up contained oil. On larger spills, obtain and use skimmer on contained slicks.
Rivers & Streams	Prevent entry into water, if possible, by building a berm or trench Intercept moving slicks in quiet areas using (sorbent) booms. Do not use sorbent booms/pads in fast currents and turbulent water.
Storage & Transfer	Store closed labeled containers outside away from flammable items Electrically ground containers and vehicles during transfer to designated disposal/treatment area
Disposal	Segregate waste types Place contaminated materials into marked containers. Consult BHPB HSEC Coordinator on any post spill requirements.

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Spill and General Contingency Plan

Spill Response Actions
Gasoline and Jet B Aviation Fuel

Consider action only if safety permits!

Gasoline and Jet B form vapours that can ignite and explode!
No smoking!

Eliminate ignition sources.
Stop source if safe to do so.

On Land	Block entry into waterways by diking with earth or other barrier. Do not contain spill if there is any chance of igniting vapours. On shop floors and in work/depot yards, apply particulate sorbents. On tundra use peat moss and leave to degrade if feasible to do so.
On Snow & Ice	Block entry into waterways by diking with snow or other barrier(s). Do not contain spill if there is any chance of igniting vapours. In work/depot yards, apply particulate sorbents.
On Muskeg	Remove pooled gasoline or Jet B with pumps, if safe to do so. Do not deploy personnel and equipment on marsh or vegetation. Low pressure flushing can be tried to disperse small spills. Burn **carefully** only in localized areas, e.g., trenches, piles or windrows. Do not burn if root systems can be damaged (low water table). Minimize damage caused by equipment and excavation.
On Water	Do not attempt to contain or remove spills. Use booms to protect water intakes and sensitive areas.
Storage & Transfer	Store closed labeled containers in cool ventilated areas away from incompatible materials Electrically ground containers and vehicles during transfer to designated disposal/treatment area.
Disposal	Segregate waste types, if necessary. Place contaminated materials into marked containers. Consult BHPB HSEC Coordinator on any post spill requirements.

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Spill and General Contingency Plan

Spill Response Actions
Acetylene and Propane

Consider action only if safety permits!

Gases stored in cylinders can explode when ignited!
Keep vehicles away from accident area.

Refer to Product Guide in Contingency Plan for:

Physical/Chemical Properties
Response to Fires
First Aid

- Vapours cannot be contained when released.
- Water spray can be used to knock down vapours if there is NO chance of ignition.
- Small fires can be extinguished with dry chemical or CO_2.
- Personnel should withdraw immediately from area unless a small leak is stopped immediately after it has been detected.
- If tanks are damaged, gas should be allowed to disperse and no attempt at recovery should be made.
- Personnel should avoid touching release point on containers since frost quickly forms.
- Keep away from tank ends.

bhpbilliton

Spill and General Contingency Plan

Spill Response Actions
Raw Sewage

Consider action only if safety permits!

On Land
Block entry into waterways.
Do not flush into ditches or drainage systems.
Contain spill by diking with earth or other barrier.
Remove spills with pumps or vacuum equipment.
On tundra, use peat moss and leave in place to degrade, if feasible

On Snow & Ice
Block entry into waterways.
Do not flush into ditches or drainage systems.
Contain spill by diking with snow or other barrier.
Remove contaminated snow with shovels or mechanical equipment.

On Muskeg
Do not deploy personnel and equipment on marsh or vegetation.
Remove pooled sewage with pumps or vacuum equipment.
Leave in place if more damage will result from cleanup.
Minimize damage caused by equipment and personnel.

On Water
Sewage sinks and mixes with water.
Isolate/confine spill by damming or diversion.
If not possible to confine and pump, disperse using water flushing.

Storage & Transfer
Store closed labeled containers in cool, ventilated areas.
Avoid contact with collected material.

Disposal
Consider using as a fertilizer in designated areas.
Place into marked containers.
Transport to the designated sewage treatment plant.
Consult BHPB HSEC Coordinator on any post spill requirements.

5.0 RESPONSIBILITY

All Employees (First Observer)

- Assess the initial severity of the spill and safety concerns.
- Identify the source of the spill.
- Report all spills to Work Supervisor as soon as possible.
- Determine the size of the spill and stop or contain it, if possible.
- Participate in spill response as member of cleanup crew.

Work Supervisors

- Contact the BHP Billiton Project Geologist and/or Site Manager.
- Gather facts of the spill.
- Start to prepare a spill report form (Appendix H).
- Assist as required in spill response measures.

Spill Clean-Up Crew

- Conduct cleanup of spills under direction of Project Geologist/Site Manager.
- Deploy booms, sorbents and other equipment and materials as required.
- Take appropriate response measures.
- Continue cleanup as directed by Project Geologist/Site Manager or until relieved.

Project Geologist/Site Manager

- Assist in initial and ongoing response efforts.
- Supervise emergency spill clean-up crew.
- With work crew, take initial action to seal off the source and contain spill.
- Records the time of the report, source of information and details on location, size, type of spill and any other information available on the spill report form.
- Oversees the cleanup operation until it is satisfactorily completed.
- Determine need for equipment and personnel to contain and clean-up spill.
- Ensure co-ordination of equipment and manpower as needed (BHP and contractors).
- Continue actions until relieved or supplemented by other Emergency Supervisor.
- For spills into water, ensure that booms, sorbents, and other material as required are placed in watercourses to contain spill.
- Decide with On-Scene Co-ordinator if mobilization of additional equipment from Spill Response Organization or Contractor is warranted.
- Assess whether burning is a viable clean up measure. Consult with HSEC Coordinator.

Project Geologist

- Ensure expeditious response and clean up of spill site and impacted areas.
- Complete the Spill Report Form (Appendix H) and submit to the NAE – HSEC Coordinator.
- Report the Spill to the GNWT 24-Hour Spill Report Line at (867) 920-8130.

NAE – HSEC Coordinator

- Follow up to ensure that the spill was reported to the GNWT 24-Hour Spill Report Line at (867) 920-8130.
- Together with the Project Geologist/Site Manager, decides if additional equipment is required to contain and clean up spills.
- Notifies NAE Operations Manager and Global Operations Leader.
- Oversees completion and distribution of Spill Report.
- Ensures investigation identifies measures to prevent similar spills.

Vice-President Exploration

- Is responsible for all communication with the media. Ensures that all press releases are accurate and in accordance with company policy.
- Makes financial decisions on major expenses during large spill response.
- Initiates Mutual Aid Agreements if so required.

Global HSEC Coordinator

- Provides cleanup advice to the On-Scene Co-ordinator and Spill Cleanup Supervisor.
- Assists the President in the preparation of press releases.
- Develops safe and effective spill management and prevention practices.
- Provides advice to the Spill Cleanup Team Leader of storage and disposal options.
- Updates and distributes Contingency Plan.
- Ensures that the Environmental Department reports spills to the 24hr Spill Line and obtains confirmation of receipt of spill report.
- Ensures that there is follow up reports prepared on the spill event, clean up and environmental impacts.
- Ensures that Post-Spill reports are completed and takes action, as necessary, to prevent a recurrence.
- Ensures Emergency Response Team is adequately trained in spill response.
- Organizes spill response training and exercises.
- Liase with government agencies (as required).

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Spill and General Contingency Plan

Legal Counsel

- Advises the President and the Environmental Manager as requested related to:
- Legislative authority of various government agencies.
- Questions of due diligence.
- Costs/fines and liabilities, including penalties associated with regulations.
- Consults with the corporate insurance co-ordinator and advises the President on matters related to insurance.

BHP Board of Directors

- Establishes corporate environmental policy based on the recommendations of the Environmental Management Committee.

External Contacts

CONTACT THE FOLLOWING NUMBER IMMEDIATELY:

NWT/NU 24-HOUR SPILL REPORT LINE 1 (867) 920-8130
FAX (867)-873-6924

OTHER CONTACTS	PHONE
NUNAVUT	
Kivalliq Inuit Association	867 645-2800
Nunavut Water Board	867 360-6338
Nunavut Impact Review Board	867 983-2594
Nunavut Tungavik Inc.	613 238-1096
Indian and Northern Affairs Canada, Iqaluit	**867 975-4500**
Repulse Bay Hamlet	867 462-9952
GNWT	
Harvey Gaukel, Hazardous Materials Specialist Environmental Protection Service, GNWT, RWED	(867) 873-7654
Sylvester Wong, Director Prevention Services, WCB	(867) 669-4408
Larry Adamson, Regional Superintendent, RWED	(867) 920-6134
Bruce Stebbing, Office of the Fire Marshall, GNWT, MACA	(867) 873-7030
FEDERAL GOVERNMENT	
RCMP, Repulse Bay	(867) 645-2822
Darren Unrau, Resource Management Officer (DIAND)	(867) 669-2763
David Milburn, Regional Manager, Water Resources Division (DIAND)	(867) 669-2650
Craig Broome, Environmental Protection Branch, Environment Canada	(867) 669-4730
Ron Allen, Manager, Fisheries and Oceans Canada	(867) 669-4902
LOCAL AIR CHARTER	
Calm Air, Churchill	(204) 675-8843
First Air	(867) 979-8302

OTHER CONTACTS	PHONE
SORBENTS	
Western/Westlund Frontier Mining	(867) 920-7617
Acklands-Grainger Inc.	(867) 873-4100

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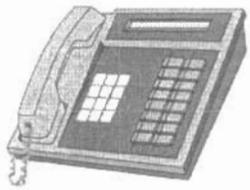
Spill and General Contingency Plan

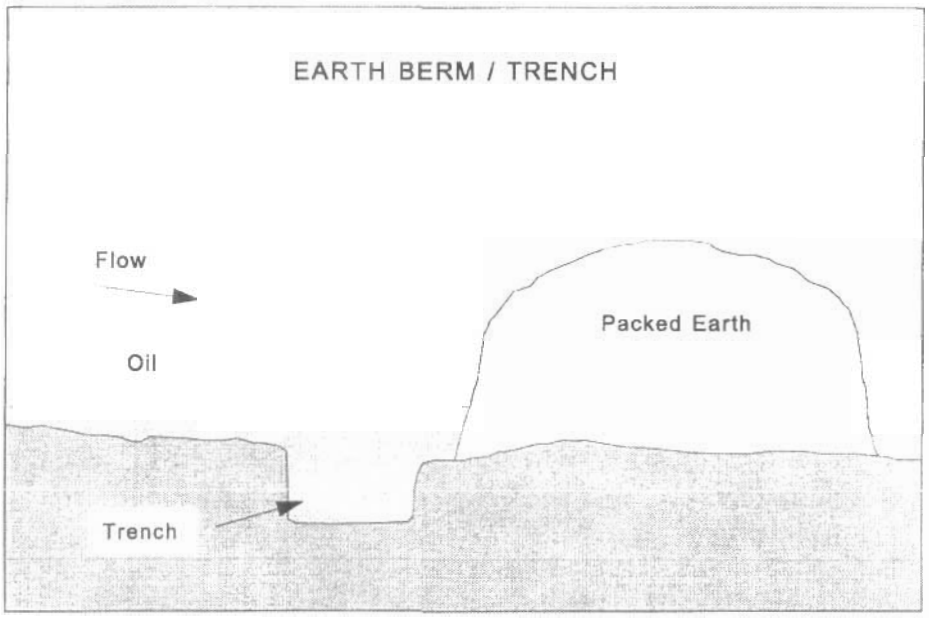
Internal Contacts



TITLE	NAME	PHONE	FAX
First Contact	Kimberly Scully Project Geologist	604 632-1464 home 604 476-1755	604-683-4125
NAE Operations Manager	Sig Weidner	(604) 632- 1459 Cell (604) 716-3355 Home 604 944-2507	604-683-4125
NAE – HSEC Coordinator	Doug Sween	604 694-1523 Cell 604 781-0724	
Global HSEC Coordinator	Ed Routledge	604 694-1522 Home 604 904-2456	
Global Operations Leader	Eric Tweedie	604 694-1514 cell 778 882-9950	
Vice-President Exploration	Tom Whiting	011 61 3 9609 3283 cell 011 61 0419 643 881	

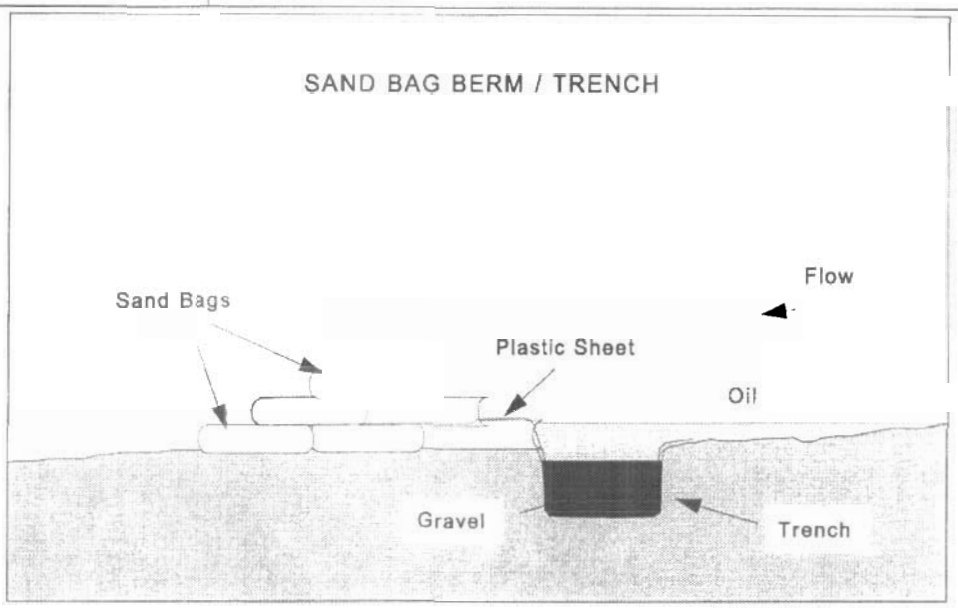
Earth Berm/Trench

If possible, locate the berm/trench sufficiently downslope of the release point to complete its construction before the spill arrives. Dig the trench along a natural drainage contour. It should be approximately 0.5 m deep with a relatively flat bottom. The excavated material can then be combined with other available material to build a berm.



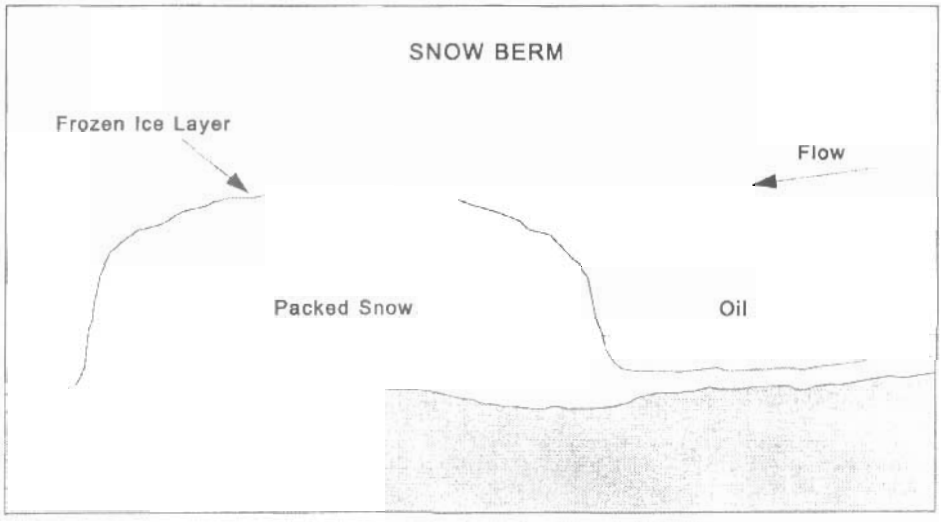
Sand Bag Berm/Trench

Sand bags can be used where available and if the earth is too hard or frozen and cannot be excavated or compacted. ***A plastic liner*** can be used to seal the trench and bags and should be anchored with gravel or rocks and be woven between layers of bags.



Snow Berm

In winter conditions, snow may provide a quick and efficient berm construction material. The snow should be well packed and water can be sprayed to form an ice layer on the top and sides of the berm to make it impermeable to the spill.



The type and size of the containment method chosen will depend on the following factors:

Size of Spill

Berms surrounding large spills that cover extensive areas are difficult and time-consuming to build. For this reason, earth or snow berms may be more easily put into place than sandbags. It is also important to build the berm as close to the source as possible to minimize spreading.

Terrain

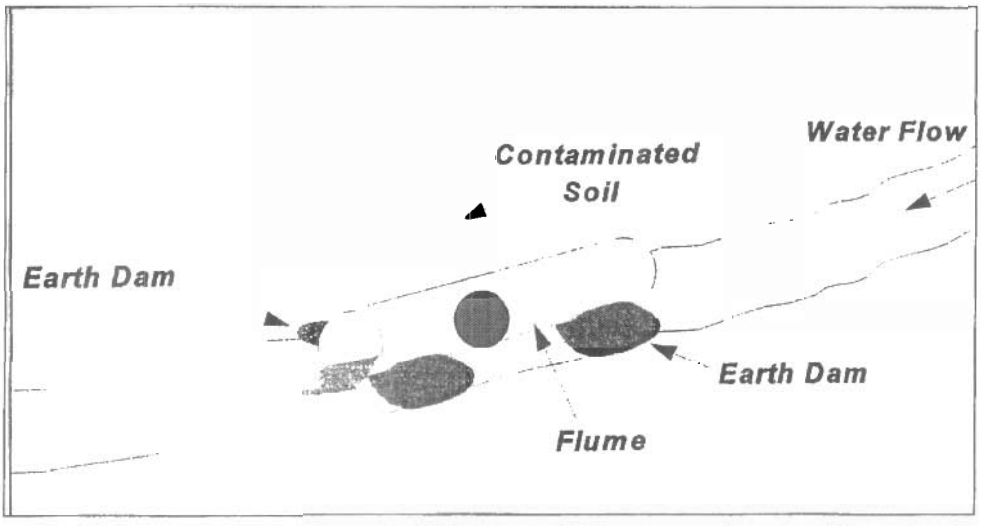
Steep terrain can increase work difficulty, particularly with heavy equipment, while large flat areas will require longer barriers to contain a spill. Spills will also travel much faster on steep inclines but move more slowly and tend to pool on flat ground, allowing more time for the construction of barriers.

Soil Type

Some oils and chemicals will soak into loose, coarse, or dry soils while packed or frozen soil can create a natural barrier. The void space in tundra quickly takes up spills. Frozen soil will also require relatively heavy machinery in order to build a trench or berm. Soft, wet soil can also impede vehicle and machinery access.

Proximity to Water

It is important that every precaution be taken to ensure that spills do not enter a waterway. If there is any possibility of contamination, a stream or river should be protected with a berm or flume as shown below.



Weather

Weather can play an important role in spill response operations, particularly if the ground is frozen or if rainfall is heavy or prolonged. Since oil floats on water, any pooled water that collects in a trench or against a berm will effectively increase the volume of liquid needed to be contained. Water can also significantly increase the tendency of oil to spread thus posing a substantial hindrance to

effective cleanup. Soluble chemicals are difficult to remove and should be assessed for their impacts on an individual basis.

Location

The location of a spill determines the most feasible type of containment. Accessibility of both equipment and manpower could be hindered by difficult terrain or dense vegetation. Areas might be required where a helicopter might land as well as one or more designated locations where equipment could be staged for later deployment at strategic locations.

Darkness

Spills during winter in remote locations can be difficult to clean up if they spread or migrate beyond the release point and there is insufficient light to mount a cleanup operation. During summer months, extended days can facilitate response in the North.

Temperature

Air temperatures of the Arctic demand attention by response personnel during both high and low extremes. Heat stress must be avoided by the proper intake of fluids during the summer while temperatures below -20° C necessitate the protection of skin from freezing

SPILLS ON MUSKEG

Muskeg is generally poorly drained, wet and spongy. Internal drainage is usually slow and the depth of peat over mineral soil varies greatly. Muskeg is also highly acidic and low in nutrients, making natural biodegradation very slow, even during the summer months.

It is recommended that small oil spills in muskeg be mixed with peat moss and allowed to degrade during summer months since more damage can be done by attempting cleanup using mechanical removal methods.

It is possible that, due either to safety or the condition of ground (too soft), that cleanup should be delayed until conditions improve. In either case, all parties involved should be consulted in order to determine when and how cleanup should be undertaken. Site monitoring will also be required during the interim phase in order to ensure that the spill does not spread to any sensitive areas around the contaminated site

Small Spills

In the event of a small spill, it is important to weigh the advantages of cleanup versus the potential negative impacts on the terrain. Considerable damage can be caused by both personnel and equipment to wet or sensitive areas. In many

cases, the best solution may be to add nutrients to the contaminated area and monitor the site to ensure that the spill does not migrate to an adjacent sensitive area. In all cases, BHP's environmental advisor and Regulatory Authorities should be consulted.

Large Spills

Spills involving large quantities of oil or chemicals into muskeg pose a serious threat and should be approached with caution. Possible containment and recovery methods for winter and summer spills, including the different possible scenarios, are discussed for:

- large spills on bogs
- large spills on fens
- large spills on marshes

F2 Spills On Water

Containing spills on water is often difficult because oil quickly spreads. In turbulent water, oil and chemicals are likely to mix into the water column, making recovery impractical. For these reasons, it is important that if a spill reaches water, that containment be attempted as close to the source as possible, and that the spill be prevented from reaching a flowing stream. Spills in lakes should be contained, if possible, before reaching outlets where containment and recovery can be both difficult and dangerous. Efforts to contain spills in large streams should be limited to land-based operations where the oil might pool in accessible back eddies. The recovery of water soluble chemicals is not possible.

In flowing streams, oil travels at the same speed as the surface current. On larger rivers or in open lake areas, slicks are also transported at 3.5% of the wind speed. Although a comparatively small effect, it can be an important factor if the wind is at right angles to the water flow and if the water surface involved is extensive. The wind can force the spill to the sides of the river where flows are slower or to the shore of a lake. Long reaches of the river may become contaminated although containment and recovery might also be possible.

In smaller streams, the wind will have less impact and the slick speed can be easily estimated by placing a small stick in the middle of the stream and determining the length of time required for it to travel a given distance, typically 10 m. This information can be quickly converted to speed (36 / time (sec) = ***x*** km/h) to determine the estimated travel time to a confluence or other sensitive area.

Containment Strategies

Determining the best possible strategy for containment will depend on a number of factors:

- speed of slick travel
- location of possible containment sites
- availability of personnel and equipment
- location of sensitive areas
- safety of operations

Spills on water can be contained by using floating booms (sorbent or non-sorbent) or by constructing a temporary berm and inverted weir. The objective is to build a barrier against which the (normally floating) oil will pool while allowing the underflow of water.

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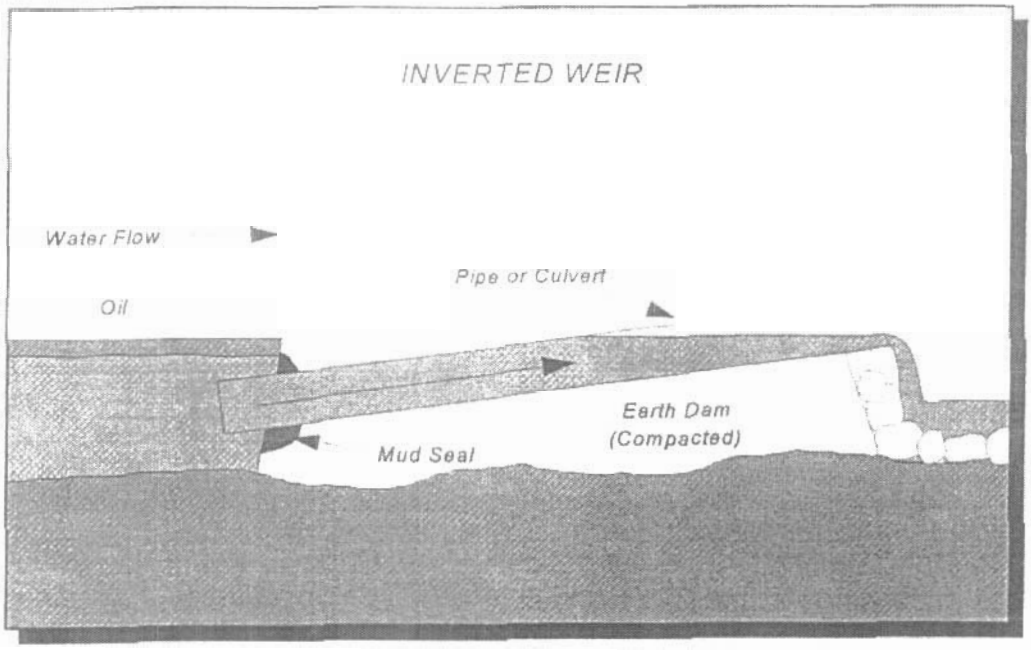
Spill and General Contingency Plan



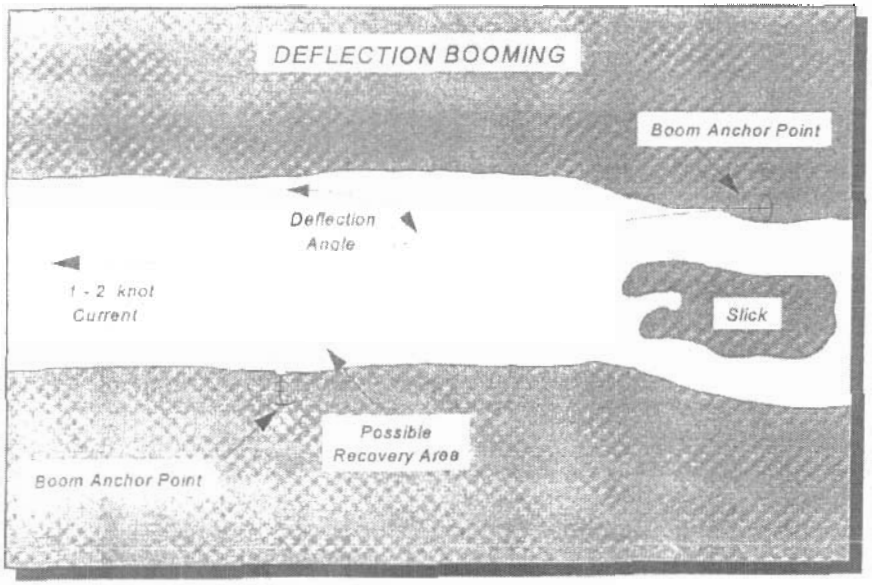
IMPORTANT ☐	Whenever the construction of a berm or flume is considered as part of a spill response operation, the impacts of the disturbance must be weighed against the potential impacts of the uncontained spill. Care must be taken to minimize any adverse effects. The Federal Department of Fisheries and Oceans should be consulted if fish spawning streams are involved. (Phone (867) 669-4902)

Barriers can be constructed from earth or rocks although if large rocks are used, plastic sheets or packed mud should be used to ensure that a complete seal is made. Choosing and positioning the pipe is critical to effective operation of the weir. The pipe should be low enough at the inlet end to ensure that an increase of the slick thickness or substantial lowering of the water will not result in a loss of oil through the pipe. Larger pipes which allow greater volume (and slower) flows will minimize the tendency of the oil to become entrained in the water at the inlet side. The outlet end of the pipe should be positioned to create a continuous, smooth flow. Underflow of oil (under the pipe) should also be prevented by ensuring that the pipe inlet is not located on loose gravel.

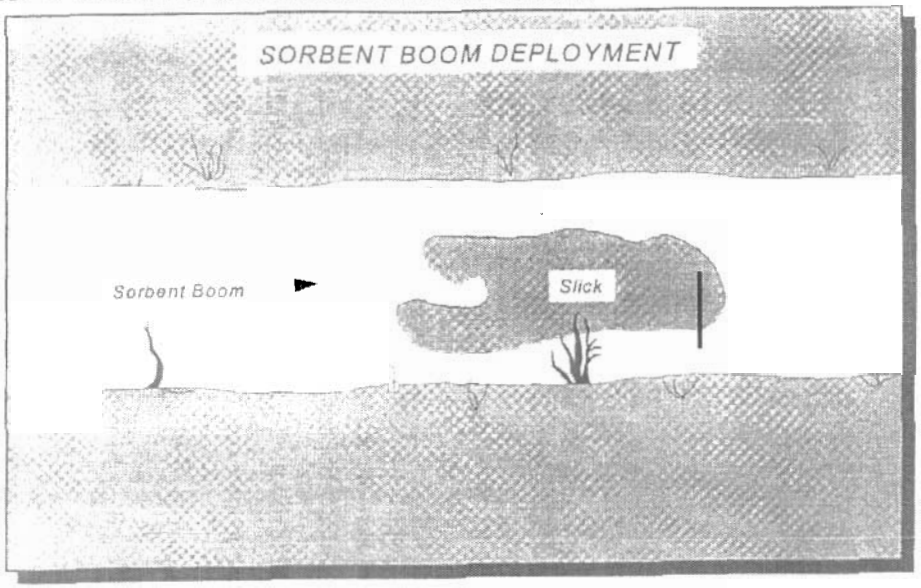
Booms

Booming with either sorbent or non-sorbent booms can also be an effective means of containing spills on slow-moving waters and in lakes. Effective containment using conventional booming techniques will be very difficult in

streams or rivers where currents exceed 0.7 knots (0.4 m/s). At these speeds, oil will become entrained in the water flowing under the boom resulting in significant losses. Some improvement can be achieved in waters flowing at 1- 2 knots (0.5 - 1 m/s) if the boom is deployed at an angle of less than 90 ° to the direction of flow as shown below:



Sordent booms or socks can also be used to provide a barrier to floating oil. These types of booms should be checked regularly to ensure that they do not become saturated with either water or oil since they will tend to float very low in the water or even sink and release oil downstream.



F3 Spills In Ice And Snow

Oil can remain relatively fresh, i.e., in an unweathered state, under snow and ice for several months or more after a spill. Evaporation rates will still be high when the oil is ultimately exposed to atmosphere except in very low temperatures approaching its flash point. Oil can also move up and down small hills (several metres high) due to the capillary action of the snow.

Containment

Snow and ice can be used to create berms to keep spills from spreading. In frozen rivers, angled slots about 1 m wide or holes can be cut in the ice, where safety permits, to allow possible spill recovery. The oil will rise up into the openings where it will concentrate, and be available for recovery using skimmers or pumps.

Disposal

Oil spills in snow and ice can sometimes be burned if the spill can be isolated from the source. Although there is generally a reduced fire hazard, due attention to safety of operations is still required. If burning is not effective, recovered contaminated material will need to be collected and transported to a designated disposal/treatment facility
(Reference BHP Waste Management Plan).

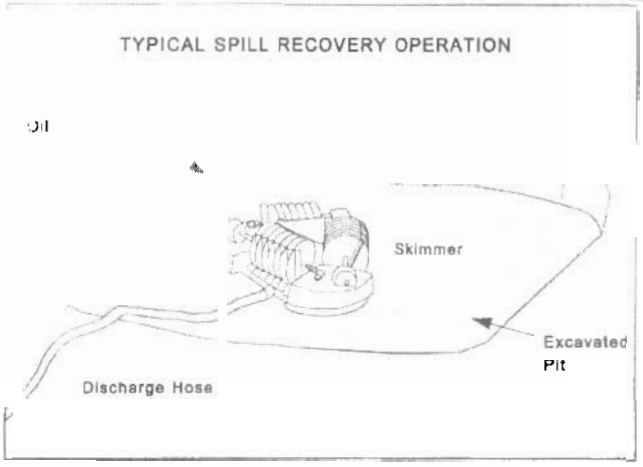
RECOVERY

When large volumes of oil have been contained either through natural or mechanical containment, it will be necessary to remove or recover the accumulated oil. This will generally occur in excavated trenches or adjacent to berms or natural barriers and occasionally in slow running streams or quiet ponds.

Vacuum trucks are ideal at cleanup sites accessible by road and where a large volume of oil has pooled that is generally free of water. The truck must be positioned at a safe distance so that there is no possibility of fire or explosion.

Oleophilic devices, such as disc or drum skimmers, can selectively recover oil in water, and are better suited to applications where the oil has formed a distinct layer on top of quiet water. Accumulations adjacent to an inverted weir are an example. A vacuum truck would be largely ineffective in this instance since it would recover large amounts of water, particularly in a thin layer of oil with water flowing through the pipe or culvert.

An example of a disc skimmer application in an excavated pit is shown in this appendix.



When using disc or drum skimmers, ensure that small items of debris are periodically removed from scrapers to ensure their efficient operation.

TRANSFER

Pumps can be used to transfer oil recovered by a skimmer to temporary and/or final storage facilities. Pumps can also be used for low-pressure flushing of contaminated areas, although this spill response technique should only be carried out under the guidance of an environmental advisor. BHP personnel should be familiar with the operation and maintenance of available transfer equipment:

- Centrifugal ("trash") pumps are capable of moving oil but will emulsify oil and water, resulting in the generation of larger volumes of liquid waste.
- Peristaltic, diaphragm and other positive displacement type pumps tend to reduce oil/water emulsification.
- Ensure that pumps and drives selected for transferring Jet-B, gasoline or other flammable products are explosion proof.

Solid wastes, such as contaminated sediment, used sorbent, spent boom and other debris, will require the use of rakes and shovels for initial pickup and then lined containers, pickup trucks, etc. for their transfer to disposal sites. Care should be taken during such operations to prevent the contamination of soil and water at transfer points.

F4 Cleaning Stream Banks, Shoreline & Muskeg

Site restoration, stream banks and general "shoreline" cleanup of lakes are the final spill response steps. Due to seasonal variations and various types of stream banks and muskeg, a standard restoration program cannot be prescribed.

Consultation with environmental advisors is critical to ensuring cleanup efforts do not create adverse impacts. General cleanup rules include:

1. **Minimize** the impact to shoreline or muskeg, particularly vegetated areas, during all phases of spill response. Cleanup can cause more damage to such habitat than an untreated spill, especially where permafrost and vegetation are involved

2. **Assess** area requiring cleanup in terms of three factors:
- environmental sensitivity
- property, archaeological or other damage
- natural cleansing action at the site

Oil typically does not adhere to the banks of fast moving rivers. Little or no cleanup action can usually be taken. On the other hand, muskeg can undergo long-term contamination and reduced environmental productivity that cleanup may or may not help to alleviate because of other damage inflicted. Whatever method is chosen to deal with an area affected by a spill, minimizing damage to root systems is vital.

3. **Obtain** approval and instruction prior to conducting cleanup operations.

4. **Be particularly careful if oil has entered marshy areas and wetlands**.

Personnel and equipment should NOT be deployed into such areas without explicit approval from environmental authorities. Damage to both upland and water areas may result.

5. Approach vegetated areas and other sensitive zones from the water side, if possible and if cleanup is to be attempted. Be aware that various plant species, birds, fish and animals can all be adversely affected by cleanup operations. In the Arctic, breeding and blooming periods during the summer months are particularly critical.

BURNING

The *in-situ* burning of spilled oil may be useful option, particularly in the North, where terrain and/or safety concerns may make conventional cleanup methods impractical. It is important that the decision to burn be made as soon as possible after the spill because as the more volatile light ends evaporate, burning becomes more difficult. For this reason, it is recommended that BHP obtain prior approval from the necessary regulatory agencies.

Application

The best results will be achieved when burning fresh (less than 24 hours old) spills in winter or in muskeg with a high water table. Burning can also be effective in containment trenches or ponds where significant oil thicknesses can collect. Special care should be taken in winter conditions as the heat from the burn will melt adjacent snow, increasing the potential for penetration of the oil, and potentially transporting the oil to the surrounding area.

Care must also be exercised during the summer. Natural occurring bog and other plants on the Arctic tundra can burn creating more damage than the original spill. Material for burning should be isolated from the surrounding terrain (in windrows or containers) prior to burning if there is ANY chance of adjacent areas being inadvertently set on fire.

Limitations

The burning of heavy or weathered oil is very difficult or impossible. Severe weather conditions such as high winds, snow and rain may also make burning impossible. Areas with vegetation cover which have not been severely damaged by the oil should not be burned as more damage will result than if the oil is left to degrade naturally. Care should also be taken in muskeg with a relatively low water table as burning may destroy sensitive root systems.

Preventive Measures

Drum Cache Storage

- Choose ground that is sandy or gravely and which is either level or represents a naturally containing depression.
- Wherever practicable, drums should be stored within a containing berm made from snow, gravel, or rocks and lined with fuel-impervious material. The volume of the berm must be equal to or greater than110% the volume of the largest container.
- Preferably arrange in single tier rows although two tier stacking is permissible in confined sites.
- All bungs must be visible to inspect for leakage. Parallel rows must have walkways between them.
- Place drums so bungs are in the 9:00/3:00 o'clock position. If this cannot be done, it is preferable to have the larger bung topmost as it is more apt to be the source of a leak.
- Badly dented or questionable drums should be used first. In the case of fuels other than turbo, the contents should be pumped into competent containers for future use. Turbo fuel from leaking drums that cannot be immediately used must be pumped into competent drums and *disposed of.*
- Empty drums should never be stored with the bungs down.
- At least 1 – 205 litre comprehensive hydrocarbon spill kit per 300 drums should be supplied at every fuel cache. Additional hydrocarbon absorption pads must be available to resupply all sites.

Inspections

- Drum caches should be inspected every 2 days for indications of leakage.
- Drums connected to heaters or machine driven equipment should be inspected daily.

Fuel Transfer

- Motorised fuel pumps must be never be left running unattended during a transfer procedure.
- Fuel control values and shut-off controls must be tested before refuelling to ensure proper function.
- Hydrocarbon spill kits must be immediately available during any refuelling procedure.

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Spill and General Contingency Plan

Date & Time of Spill	Reported Date & Time

Responsible Department

- ☐ Operations
- ☐ Diamonds
- ☐ NPGM
- ☐ Copper
- ☐ Base Metals
- ☐ PROJECT_____

Product Spilled

- ☐ Hydraulic Oil
- ☐ Gear Oil
- ☐ Lube Oil
- ☐ Glycol
- ☐ Diesel
- ☐ Drill Cuttings
- ☐ Drilling Additives
- ☐ Sewage
- ☐ Other_____ (Provide Detail)

Estimated Quantities

VOLUME SPILLED_____Liters

CONTAMINATED AREA
_____meters By _____meters

Location of Spill: (Specific Location)	Contractor if responsible: (name, address, phone)

Cause of Spill

Human Error:

- ☐ Overfill
- ☐ Use of improper equipment
- ☐ Improper use of equipment
- ☐ Inadequate training
- ☐ Other _____ (Describe)

Equipment Failure:

- ☐ Safety system failure (i.e auto shut off)
- ☐ Seal broke
- ☐ Hose failure
- ☐ Drum failure (puncture, rupture)
- ☐ Other _____(Describe)

Describe the events leading up to the spill

Action taken to clean up spill

Comments or recommendations

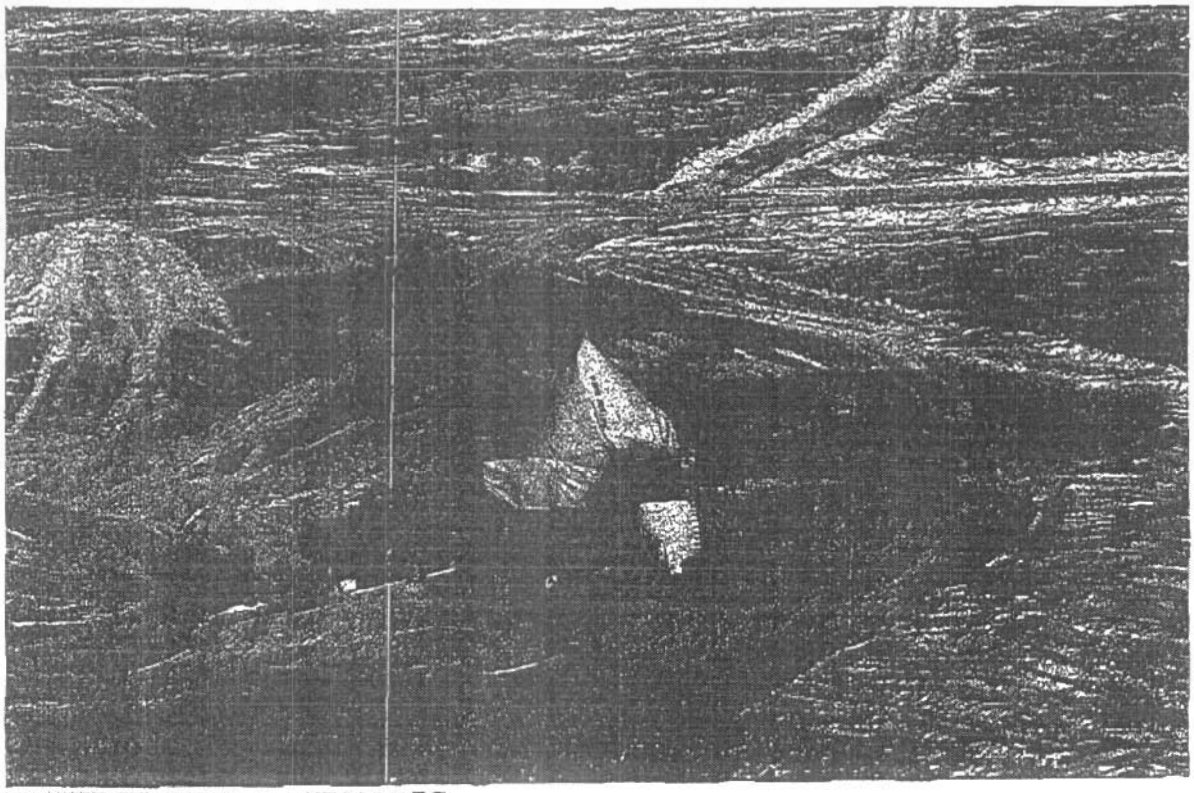
Reported by:	Position, Employer	Telephone:
Reported to:	**Position, Employer**	**Telephone:**

While no drill targets have yet been defined on the subject IOLs, and it's possible that no work will be done on them, BHP Billiton has judged it appropriate to have the necessary permission in place in the event that subsequent exploration data recommends that further work be pursued.

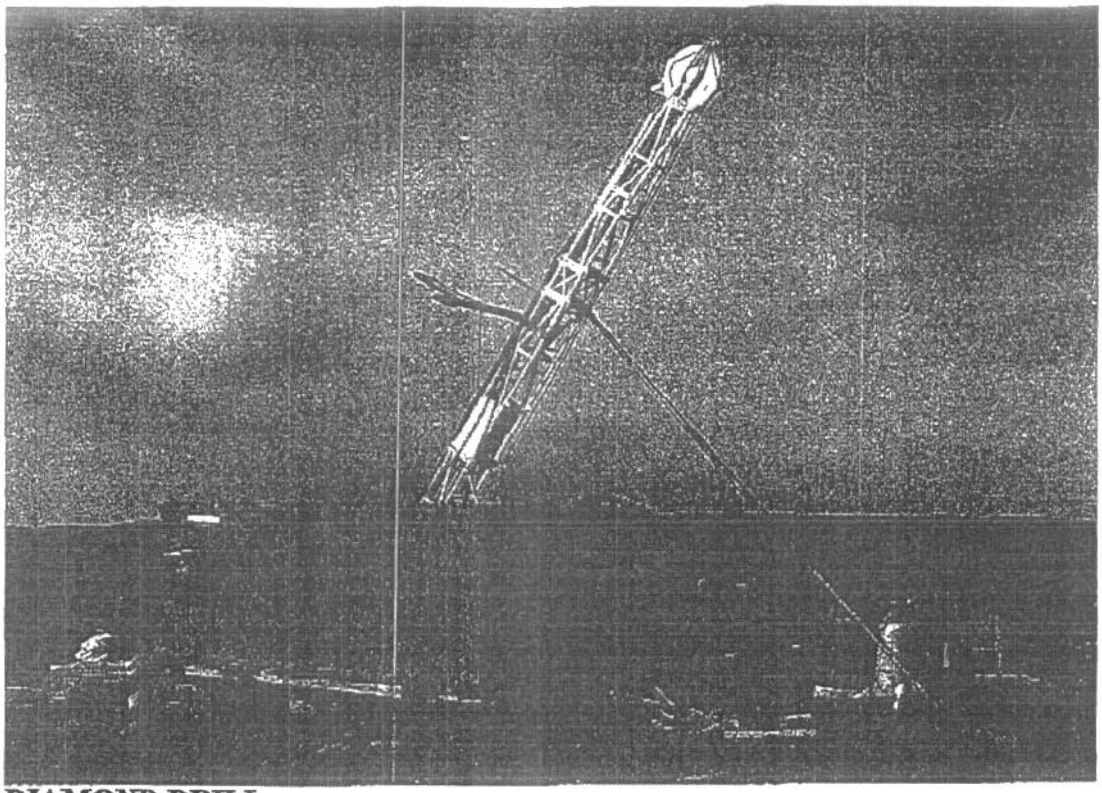
The IOL parcels lie within an extensive mineral claim that overlays much of the Rae Peninsula. The area has been explored in depth for two years by BHP Billiton – almost exclusively on Federal Lands. Last year a new camp was built on federal lands and this would be used to support any work in 2005 as well. Operations continue to be under DIAND permit N2003C0006.
The work could be in the form of ground geophysical surveys, diamond drilling, or reverse circulation (RC) drilling. Any machinery would be positioned solely by helicopter. Small fuel caches of anywhere from 4 to 30 drums (depending on the rig used) would have to be established near any drill setup.

Many local Inuit from Repulse Bay have and will continue to work on the project. The community has thus far been quite supportive of the activities and are regularly advised of and consulted on the evolution of the program.

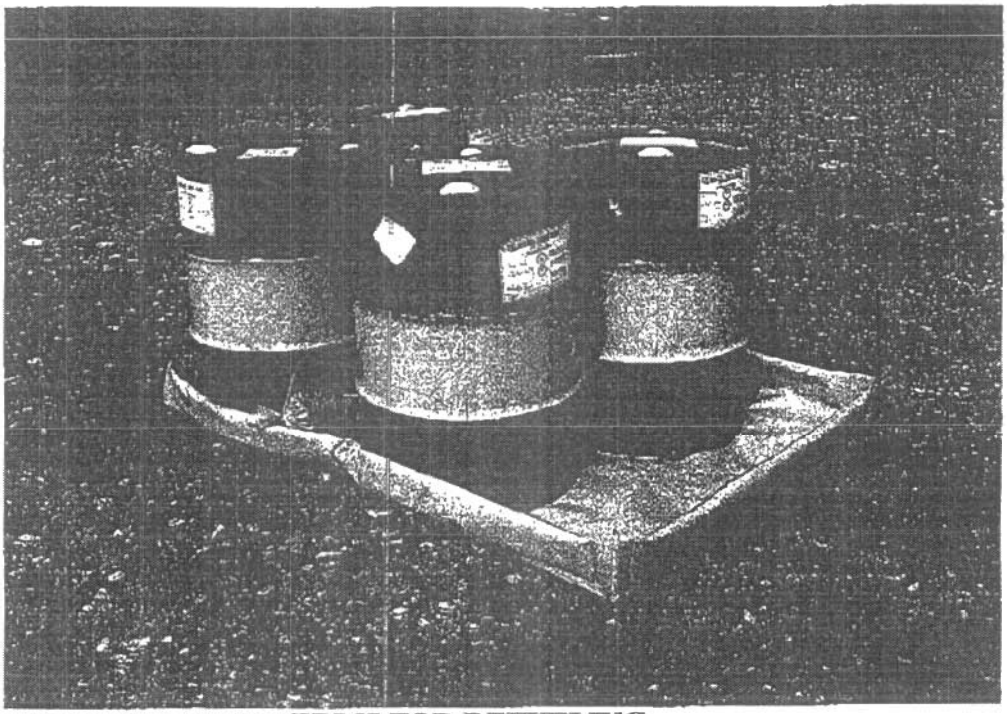
General work on the claims is slated to start in mid March and could continue until the end of September if results warrant. No fuel or equipment will be left on IOL.



REVERSE CIRCULATION RIG



DIAMOND DRILL



PORTABLE FUEL BERMS FOR REFUELINC

BHP Billiton Diamonds Inc

bhpbilliton

BHP Billiton World Exploration Inc
#2300-1111 West Georgia Street
Vancouver, BC. V6E 4M3, Canada

Tel (604) 694-1500 Fax (604) 683-4125
Web: www.bhpbilliton.com

December 9, 2004

D.I.A.N.D.

Land Administration

PO Box 100

Iqaluit, NU

X0A 0H0

Re: 2004 Annual Report for Permit #N2003C0006 Qilalugaq Project (formerly Area 8), Repulse Bay Area, Nunavut

Overview

The claim group covered by the permit represents most of the Rae Isthmus north of Repulse Bay. Apart from airborne and soil sampling surveys, the work was focused on the southern portion of this region The program involved the same class of activities as those performed in 2003 but was expanded to include other elements.

- Installation of a camp for up to 54 people
- Reverse circulation drilling
- Diamond drilling with two rigs
- Clearing of a Hercules airstrip on lake ice
- Large-scale caching of fuel

Operations began in March with the construction of an airstrip to support supply flights on the lake adjacent the campsite. Work continued until September 21, when the camp was closed for the winter.
Unless otherwise indicated, all equipment remains on site pending continuing work in 2005.

Camp

An all-electric camp was constructed on competent esker material between two lakes. Elements included:
12 – 14 x 16 sleep tents
1 – 14 x16 wood frame tent
1 – core logging facility
1 – central complex incorporating kitchen, drys, office and first aid room
1 – 145KVA generator (auxilary)
1 – 200KVA generator (primary)
3 – 8 x 20 steel sea containers
1 – Seprotec sewage treatment plant (RBC type)
Maximum camp population was 47 with the average being about 35.
Septic sewage and grey water were treated by an RBC and the effluent discharged on surface as per our water licence. Discharge BOD, TSS, pH, fecal coliform, and grease and oil were all within NWB approved standards and the performance specs of the plant.

Equipment on Site

1 – D6 Cat
1 – Foremost 4x4 tundra vehicle
1 – Bobcat with tracks
1 – Freight sleigh
1 – IT28 loader
1 – Cassbohrer low-pressure track vehicle
1 – Longyear 38 diamond drill (demobed)
1 – LF70 diamond drill rig and support equipment
1 – SDS RC/Coring hybrid drill rig
1 – 204 helicopter (demobed)
1 – Astar BA Helicopter (demobed)
2 – MD 500D Helicopters (demobed)
Mobile ground equipment was operated only on frozen ground and mothballed after the thaw.

Drilling

Reverse Circulation drilling (8 ¾") was performed in the winter, primarily from setups on lake ice. Cuttings sludge was removed from the sites and deposited in upland sumps (see Impacts and Mitigations). Land-based holes were sealed off with steel plates welded to the casing.

Original positioning of the rig was by 204 helicopter but subsequent short moves were by skidding behind a D6 Cat and then only prior to the thaw. The rig was winterised at the last drill setup in preparation for removal in the spring of 2005.

RC drill co-ordinates are listed below:

LAT			LONG		
degrees	min	sec	degrees	min	sec
66	35	24	86	7	36
66	35	24	86	7	39
66	35	25	86	7	35
66	35	25	86	7	55
66	35	27	86	7	57
66	35	32	86	8	5
66	35	33	86	8	1
66	35	26	86	7	55
66	35	26	86	7	59
66	35	24	86		54
66	35	32	86	8	4
66	35	30	86	8	5
66	35	28	86	8	3
66	35	25	86	7	37
66	35	26	86	7	38
66	35	25	86	7	37
66	35	24	86		38

NQ sized diamond drilling was performed by LF70 and Longyear 38 rigs. These were moved exclusively by helicopter. Cuttings from lake ice setups were captured by a 'poly drill' system and removed to upland sumps. The 38 rig was later demobilised to Churchill while the LF70 was flown to the camp for winter storage.

Diamond drill co-ordinates are listed below:

LAT			LONG		
Degrees	Min	Sec	Degrees	Min	Sec
66	41	44	86	16	17
66	41	40	86	16	23
66	43	33	86	15	9
66	31	16	86	55	47
66	35	1	86	4	19
66	33	49	86	8	17
66	36	3	86	15	24
66	36	19	86	8	27
66	35	39	86	7	51
66	38	27	86	12	41
66	39	32	86	14	1
66	37	14	86	16	42
66	31	32	86	5	24
66	33	46	86	5	3
66	34	44	86	20	39
66	39	31	86	14	2

Fuel Caches

Jet B, diesel, and gasoline drums were cached in lined berms. Mini-berms were used to mitigate spillage during refuelling and at drills, whenever spare drums were held in reserve there. Caching took place over several months, which minimised the collective amount of fuel on site at any given time.

Empty drums will be backhauled on Hercules resupply flights in the winter of 2005.

Fuel on site as of demob. is as follows:

Diesel – 199
Gasoline – 0
Jet B – 227
Empties – 1228

Sampling
During the summer, two MD500D helicopters were engaged in systematic till sampling over the Rae Peninsula, within the claim group. Approximately 3200 samples were taken.

Airborne Surveys
Two surveys were conducted, one using an Astar helicopter flying at 60 metres above surface and one using a Grand Caravan flying at 80 metres. The survey area covered the central and northern portions of the Rae Peninsula that are within the BHPB claim boundary.

Impacts and Mitigations
While the Qilalugaq Project is in its early exploratory phase as BHPBilliton Diamonds Inc. (BHPB) investigates potential reserves near Repulse Bay, NU. Initial baseline monitoring was conducted in the following areas:

- Pre-drilling Winter Water Quality Survey (Rescan March 2004)
- Post Drilling Winter Water Quality Survey (Rescan May 2004)
- Hydrology studies
- Water Quality studies
- Sediment Quality
- Physical limnology
- Fish community and fish habitat

Summary of Unauthorized Discharges

There were eight reportable spills during the 2004-drilling season. Table 7 is a summary of the descriptions of the unauthorized releases, their causes and the remedial measures to control, mitigate or recover the material that was spilled.

BHPBilliton conducted a very detailed investigation into the May 7, 2004 sump failure. Initial delineation of the extent of the fines migration was conducted in early May by Rescan Environmental Services. The findings of this assessment report were discussed verbally with the management staff and work commenced on a remedial action plan. The management staff initiated remedial measures. A detailed spill report was submitted to the Water Resources Inspector for the Department of Indian and Northern Affairs and also shared with Environment Canada and the Nunavut Water Board. Appendix 1 is a copy of the detailed report filed with the government.

Table 7: Unauthorized Releases

Date of Occurrence	Description	Cause	Remedial Action
May 1, 2004	Release of hydraulic fluid to top of ice surface	Drill seal broke while setting casing, spewing water and overfilled a hydraulic oil drip pan, spreading the oil & water solution on the ice.	Drill was shutdown and crew contained the spill using spill clothes and shovelled. The ice was chipped and contaminated material placed into clearly marked empty barrels. Area was scarified with dozer and additional material placed in drums.
May 7, 2004	Release of drill cuttings from sump	Erosion of berm and the undercutting of the permafrost resulted in colloidal material being flushed down slope to an ice covered lake	Additional berms were constructed of PVC, sandbags and Aqua berms to prevent further migration by the melting snow. Material in the sump was removed and placed in low depressions. Peat was used for rehabilitation.
May 19, 2004	Release of 25 L of diesel fuel	Drum breached when operator was transferring diesel fuel	Absorbent material used to wick fluid. Contaminated snow excavated and placed in drums for offsite disposal
May 23, 2004	Release of 1 L of antifreeze from mobile equipment	During maintenance antifreeze was released to lake ice	Contaminated snow and ice removed and placed in drums for offsite disposal
May 27, 2004	Release of 0.5 L of hydraulic oil	Mechanical failure contaminated snow	Contaminated snow placed in drums for offsite disposal
June 11, 2004	Release of diesel fuel (<3 L) from secondary berm adjacent to Camp	Down slope side of secondary berm failed allowing fuel to escape	Recovery residual material and excavate top layer of contaminated sand & peat layer; placed material in sealed drums and reclaimed area with peat and sand mixture.
June 11, 2004	Release of diesel fuel from secondary berm area at the RC fuel cache	Snow melting allowed the berm walls to move allowing the release of residual fuel	Contaminated hydrocarbons were absorbed and the peat mat excavated and placed in drums. Booms were placed in local area to prevent migration of fuel to lake
July 27, 2004	Release of drill cutting water from recirculation tubs	Drill cuttings and water undercutting the permafrost resulted in colloidal material being flushed down slope	Sandbag berms constructed to control migration. Reclaimed site after drill

Community Consultation

The public consultation process involved the community of interest (Hamlet of Repulse Bay). The community of Repulse Bay will be the area of primary focus for potential jobs and business opportunities. Other northern communities like Rankin Inlet, Taloyoak, Pelly Bay have also benefited from this project.

A community informational meeting was held on January 20, 2004 to review and discuss BHPBilliton's planned activities for the 2004 exploration season. Appendix 2 and Appendix 3 in the Nunavut Water Board Report provide summaries of these trip report filed with Nunavut Water Board on outcomes or issued raised during the meeting. During the Q&A session the focus was on hiring, training and traditional hunting areas. A second briefing was provided to Mayor Kopak on Jan.21, 2004.

A supplemental public announcement was made in early May where the status of our exploration activities was provided to the Hamlet of Repulse Bay. Appendix 4 (reference NWB Annual Report) is a copy of this notice. A visit to the campsite and a fly over of the drill sites was conducted on June 5, 2004 for the mayor, council, elders and family members of local hires. A total of 30 people from Repulse Bay participated in the tour and presentation on activities.

The Camp Manager and the Environment and Community Advisor made numerous informal updates on the project status to the Hamlet Council. Again the major issues related to local hiring, training and hunting activities.

MLA Steve Mapsalak participated in a tour of the campsite facilities and was provided a detail update on project status, number of local hires and BHPBilliton's commitment to providing on-the-job training to the local hires.

The Hunters and Trappers Organization (HTO) filed a complaint on June 15, 2004 with the Land Use Inspector and the Kivalliq Inuit Association relating to adherence to permit requirements relating to the Helicopter flight elevation. A meeting was requested by BHPB to better understand the concerns and to better be able to address the issues.

Appendix 6 is a copy of the minutes and the action taken by BHPBilliton regarding this complaint. (Nunavut Annual Report)

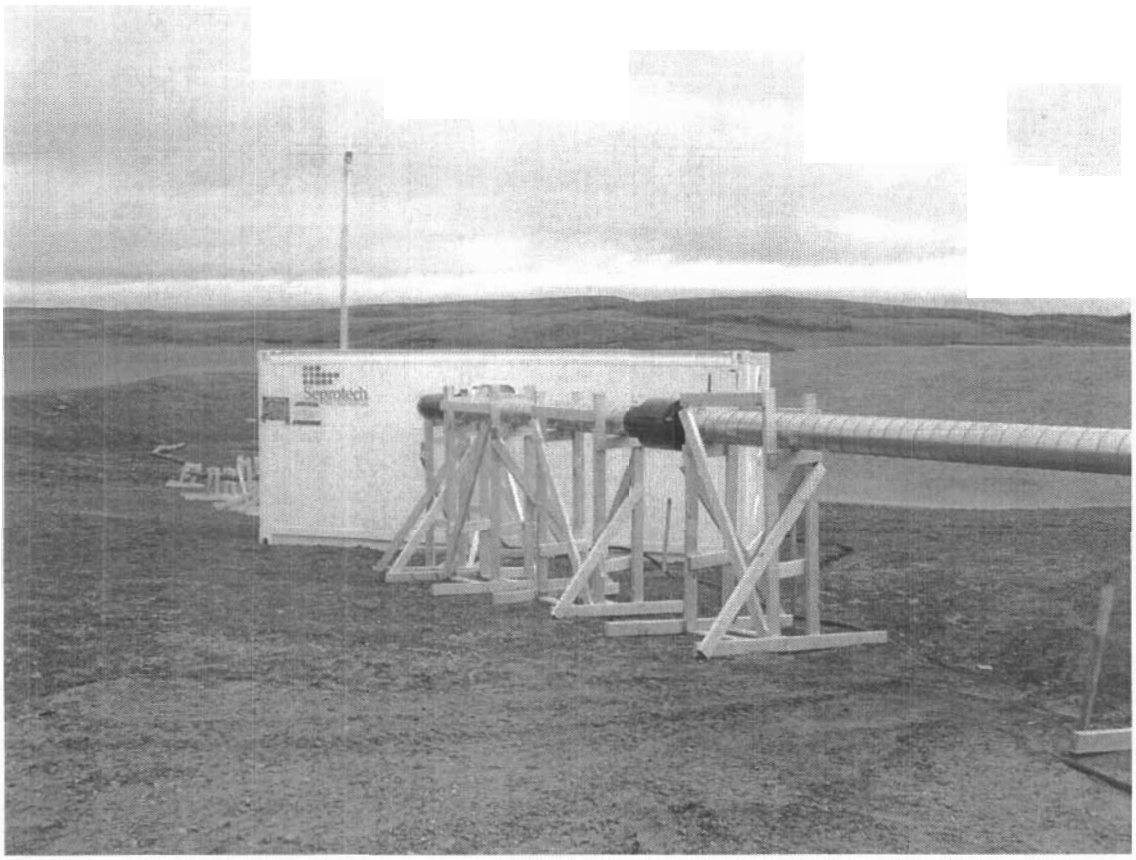
Other Permits Relating to this Project

Kivalliq Class B Land licence KVL204C24

Nunavut Water Licence NWB2REP0305

Attachments:

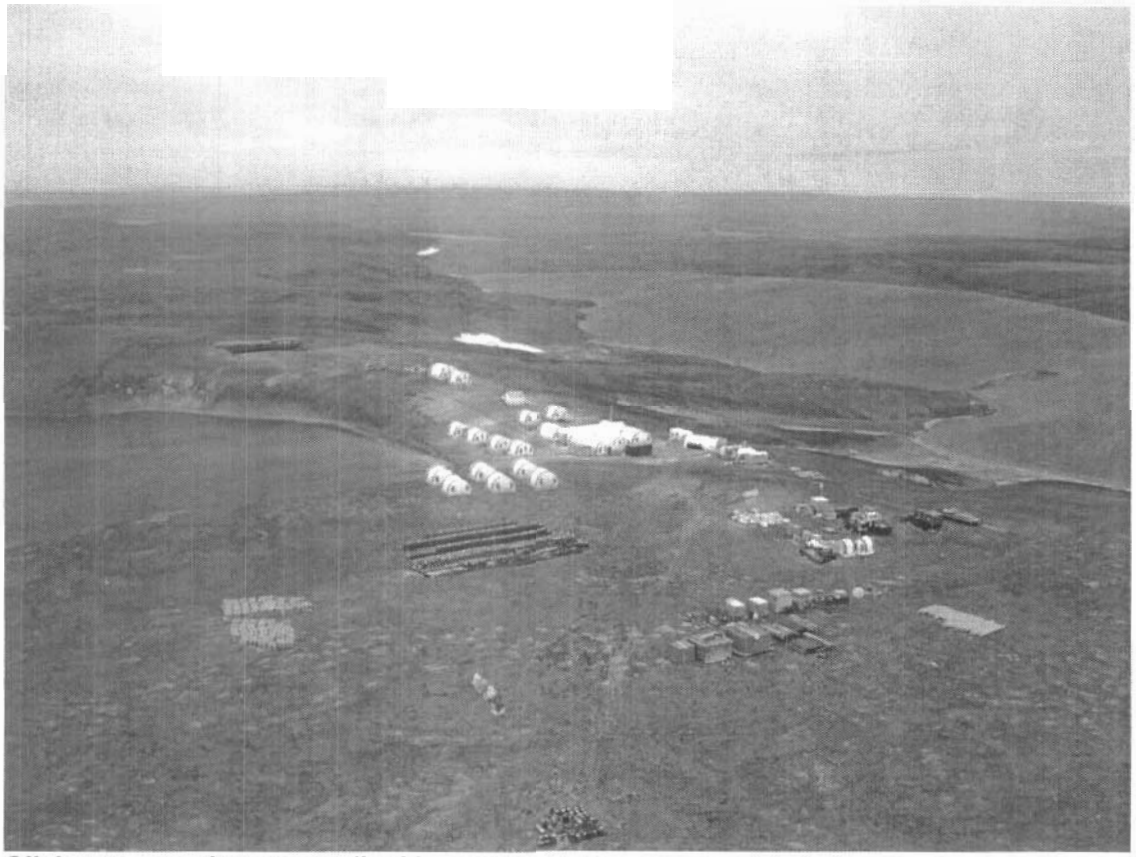
- Camp and drill site location map
- RBC photo
- Fuel transfer berms
- RC rig photo
- Camp overview photo



RBC Sewage treatment plant

Mini-berm for fuel transfer and interim storage

RC Rig at work on lake ice



Qilalugaq camp in summer (looking East)