



April 10, 2015

Resource Management Officer  
Nunavut Field Operations  
Aboriginal Affairs and Northern Development Canada  
PO Box 219  
Box 100  
Iqaluit, NU X0A 0H0  
Justin.Hack@aandc-aancd.cg.ca

**Re: Follow up March 9-12, 2015 AANDC Water Licence Inspection**  
**Mary River Project – Water Licence No. 2AM-MRY1325**

During the Water Licence inspection conducted from March 9 to 12, 2015, by the Aboriginal Affairs and Northern Development Canada (AANDC) Water Resource officer, a few minor concerns pertaining to drainage, materials storage and mitigation measures were identified. Baffinland's responses, below, focus on the AANDC identified areas of concern. This letter provides the following attachments:

- AANDC Water Licence Inspection March 9-12, 2015 (three pages)
- Table A.1: Provides a table that summarizes the Inspector's key observations and concerns along with Baffinland's responses (one page)
- Baffinland Spill Report and Follow-Up Report regarding spill of engine oil on a frozen streambed at Km 38 along the Tote Road on March 11 (five pages).
- Photos showing drainage to Camp Lake subsequent to the clean-up of the sediment laden snow that was unintentionally deposited within the drainage (one page).

Should you require further information on the above, please feel free to contact the undersigned at (647) 253-0596 Ext. 6010 or Jim Millard at (902) 403-1337.

Prepared by:

A handwritten signature in black ink, appearing to read "Allan Knight".

Allan Knight, B.Sc.  
Environmental Superintendent

Reviewed by:

James Millard, M.Sc, P.Geo..  
Environmental Manager

cc. Jim Millard, Trevor Myers, Oliver Curran, Erik Madsen, Michael Anderson, Baffinland.  
Robert Savard, Erik Allain, AANDC



WATER LICENCE INSPECTION FORM

☒ Original  
☐ Follow-Up Report

Licensee	Licensee Representative
Baffinland Iron Mines Corporation (BIMC)	Jim MILLARD/Allan KNIGHT/Trevor MYERS
Licence No. / Expiry	Representative's Title
2AM-MRY1325	Environmental Manager
Land / Other Authorizations	Land / Other Authorizations
8BC-MRY1416, 2BE-MRY1421	N2014X0012, N2014Q0016, N2014C0013
Date of Inspection	Inspector
March 9-12, 2015	Justin HACK
Activities Inspected	
<input checked="" type="checkbox"/> Camp <input checked="" type="checkbox"/> Roads/Hauling	<input type="checkbox"/> Drilling <input type="checkbox"/> Other: <input checked="" type="checkbox"/> Mining <input checked="" type="checkbox"/> Construction <input type="checkbox"/> Other: <input type="checkbox"/> Reclamation <input checked="" type="checkbox"/> Fuel Storage

Conditions:	A - Acceptable	C - Concern	U - Unacceptable	NA – Not Applicable	NI – Not Inspected			
Water Use	Condition	Comment	Site Conditions	Condition	Comment	Haz/Mat Management	Condition	Comment
Intake/Screen	NI		Water Management Structures	A		Storage	A	
Flow Measure. Device	NI		Culverts / Bridges	A		Spills	A	
Source:	A		Drainage	C		Spill Plan	A	
Water Use:	A		Erosion / Sediment	A				
Recirculation ( y /n)	NA		Mitigation Measures	C		Administrative		
			Reclamation Activities	A		Records	A	
			Materials Storage	C		Reports	A	
Waste Disposal			Signage	A		Plans	A	
Waste Water	A					Notifications	A	
Solid Waste	A		Monitoring			Other		
Hazardous Waste	A		Sample Collection / Analysis	NA				
*The number in the comments field will correspond with specific comments provided below.								
Samples taken by Inspector:			Location(s): Sewage and Waste Water Treatment Plant at Mine Site and Milne Inlet.					
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Sample locations: MS-01, and MP-01					

SECTION 1	<input checked="" type="checkbox"/> Comments	<input type="checkbox"/> Non-Compliance with Act or Licence	<input type="checkbox"/> Action Required
Inspectors Statement			
On March 9-12, a water licence inspection was conducted at the Mary River Project, Qikiqtani Region, Nunavut. Sites inspected included the Mary River Mine Site, the Tote Road, and the Milne Port area.			
Background			
At the time of inspection, the Licensee was undertaking activities related to the construction and operation of an open-pit iron ore mine at the Milne Port (Milne Inlet), Mine site (Mary River), and Tote Road. Given that different licence conditions apply to the project depending on what Phase the project is in, and that the project is in both construction and operation phases, Aboriginal Affairs and Northern Development Canada’s (AANDC) Water Resource Officer’s are working with the Licensee to ensure all relevant conditions are being met.			
Major construction activities on site included the continued development of the Ore Stockpile conveyor belt system, the construction of the Milne Inlet Ore Dock, the re-grading and/or upgrades of the Tote Road at KM38.			
Major activities occurring on site under the scope of the operations phase include the mining, crushing, screening and transportation of ore from Deposit 1 to the Ore Stockpile area at Milne Inlet.			
Conditions on Site			
All surface water on site was frozen.			
SECTION 2	<input checked="" type="checkbox"/> Comments	<input type="checkbox"/> Non-Compliance with Act or Licence	<input type="checkbox"/> Action Required
Mary River Site			
Observations:			
1. Open Burn Facility			
• No Concerns. The area was free of ash, and waste was contained, such that risk of waste to water was minimized.			
2. Landfill			
• No concerns noted.			
3. Sewage and Waste Water Treatment Facility			





- Samples were taken and results will be provided to BIMC when available.
- 4. Contractor Lay-Down Area
  - Due to the frozen conditions on site, and the difficulty delineating the exact location of the watercourse, BIMC is reminded to be mindful of equipment storage areas. These areas will be targeted at the next inspection.

#### **Milne Port Site**

##### ***Observations:***

1. Open Burn Facility
  - No concerns. The area was free of ash, and waste was contained, such that risk of waste to water was minimized.
2. Hazardous Waste Berm
  - No concerns with the hazardous waste berms on site.
3. Landfarm and Contaminated Snow Facility
  - Ensure that discarded geotechnical liner is disposed of in the appropriate manner.
4. Sewage and Waste Water Treatment Facility
  - Samples were taken and the results will be provided to BIMC when available.
5. Treated effluent Discharge Location (MP-01)
  - No concerns. Liner was being used to diffuse energy to prevent sedimentation and erosion at discharge location.
6. Ore Stockpile Area
  - No concerns.
7. Milne Dock
  - No concerns.

##### ***Sites of Concern Managed by a Compliance Action Plan***

1. Drilling/Road Salt (Calcium Chloride)
  - Since the August 21-25 2014 Inspection, BIMC has submitted a plan to address concerns AANDC Water Resource Officers had with the storage of Calcium Chloride near the quarry site at Milne Inlet.
  - As per the plan, BIMC has segregated salt bags and debris that have the potential to become windblown to prevent them from becoming displaced around site. Further work is planned for the 2015 season and AANDC will monitor deliverables as they become due.
2. Surface drainage (yard swale) to Camp Lake near MS-MRY-1.
  - A final design plan was submitted by BIMC, on October 30 2014, to address some concerns identified by AANDC Water Inspector's pertaining to the sediment loading of surface drainage into Camp Lake near MS-MRY-1a.
  - Implementation of the new plan will be monitored by AANDC Water Resource Officer's as they become due.
  - If the plan changes, BIMC will provide justification for modifications to existing plan.
3. Waste Ash in barrels near incinerator
  - On February 2, 2015, BIMC requested an extension to the schedules related to waste ash from the incinerators plan, specifically to extend the disposal of the Category 1 Ash until July 31, 2015 and to extend the due date of the Soil Monitoring Report and Final Summary Report until September 30, 2015.
  - AANDC has approved this request on February 3, 2015 considering BIMC's efforts to minimize risk by containing the ash, their plan to characterize contamination by conducting a soil sampling program of the impacted area, and their positive compliance history.

##### ***Sites of Concern noted during Inspection:***

1. Construction Activities
  - No active construction was occurring at the Mine Site at the time of inspection. However, construction has occurred through the winter and sedimentation and erosion is likely due to activity from these areas. Sites of major concern are the Road to Deposit 1, and the Tote Road.
  - Following the inspection, Jim Millard outlined that there will be rip-rap and other control measures on-site to address any issues of sedimentation during freshet.
2. Debris or Sediment pushed into watercourse at MS-MRY-1.
  - It was observed that snow containing gravel and dirt was pushed into the Camp Lake drainage ditch near MS-MRY-1.
  - After the inspection, Jim Millard proposed to address this concern by conducting the




following:

- i. Baffinland Environment division will immediately communicate with Site Services to address their snow removal practices.
- ii. The snow will be removed from the drainage ditch by **May 1, 2015**. Photo documentation will be provided.
- iii. There was discussion an on-site Snow Removal Management Plan.

3. Spill into Water Course at KM38 of Tote Road

- A spill (~1L) occurred under equipment that was not in secondary containment on a frozen stream during a culvert installation at KM38.
- The proper protocol was not in place to prevent that spill from leaking directly on the stream bed.
- In a follow-up to this spill, BIMC must provide why this spill occurred and measures to be taken to prevent this error from happening again.

Inspector's Name	
Justin Hack	
Signature	
	
Date	
March 17, 2015	

CC: Erik Allain, Manager of Field Operations, AANDC  
Phyllis Beaulieu, Manager of Licensing, Nunavut Water Board

**Table A.1 - Response to AANDC Water Licence Inspection - March 9 to 12, 2015**

ITEM No. <sup>1</sup>	Observation or Item of Concern	Baffinland Response
	<b>Mary River Mine Site - Observations</b>	
4	<i>Contractor Lay-Down Area - BIM is reminded to be mindful of equipment storage areas and their proximity to watercourses.</i>	Baffinland Response: Proximity of equipment to watercourses is being evaluated and equipment will be moved as appropriate. Further discussion with the Inspector is required on this item.
	<b>Milne Port Site - Observations</b>	
3	<i>Landfarm and Contaminated Snow Facility - Ensure that discarded geotechnical liner is disposed of in the appropriate manner.</i>	Efforts will be made to remove most of the liner from the landfarm and have it shipped south for proper disposal. The remaining pieces of liner will be removed as exposed during normal operation of the landfarm. This work will be undertaken when soils are sufficiently thawed.
	<b>Sites of Concern Managed by Existing Response Action Plans</b>	
1	<i>Drilling /Road Salt (Calcium Chloride) - Further work is planned for the 2015 season and AANDC will monitor deliverables as they become due.</i>	Further work is planned for the 2015 season and AANDC will monitor deliverables as they become due. Refer to letter to AANDC dated September 12 on the clean-up plans and schedule for the calcium chloride storage area at Milne Port. The plan involves identifying and containing compromised salt packages by July 1, 2015.
2	<i>Surface Drainage (yard swale) to Camp Lake near MS-MRY-1 - Implementation of the Plan will be monitored by AANDC Water Resource Officer's as the Plan is implemented according to schedule.</i>	Refer to letters to AANDC dated September 8 and October 30 on the sediment control plan to be implemented for surface drainage to Camp Lake. A Schedule was proposed in the letters and will be subject to freshet timing and conditions. A silt curtain will be installed at the outlet of the drainage discharge and will be maintained during the 2015 open water season as an additional control while the effectiveness of the control plan is evaluated.
3	<i>Waste Ash in barrels near incinerator - Disposal of Category 1 Ash by July 31, 2015. Soil Monitoring Report and Final Summary Report due September 30, 2015.</i>	Refer to letter to AANDC dated July 4 regarding the ash management and disposal plan. Also refer to follow-up questions and responses in e-mails. Implementation of items identified in the Plan will be communicated to AANDC Water Inspector when completed.
	<b>Locations of Concern noted during Inspection</b>	
1	<i>Construction Activities - Some sedimentation and erosion are likely to occur due to winter construction, particularly, the Road to Deposit 1, and the Tote Road.</i>	Baffinland agrees that there is a likelihood for some erosion and sedimentation during freshet which is typical the first year after construction, however, diligent efforts will be made to minimize this potential by means of implementation of the current Aquatic Ecosystems and Surface Water Management Plan.
2	<i>Debris or Sediment pushed into drainage at MS-MRY-1. Snow containing gravel and dirt was pushed into the Camp Lake drainage ditch near MS-MRY-1</i>	We note that this is a non-fisheries drainage. Baffinland Environment immediately communicated the issue with the Site Services Department to address their snow removal practices. The snow was subsequently removed from the drainage ditch and photo documentation from April 8, 2015, is attached. Consideration will be given to developing a Site Snow Management Guideline for the Winter 2015/2016.
3	<i>Spill into Water Course at KM38 of Tote Road - A minor engine oil spill was observed under equipment that was not in secondary containment on a frozen stream during a culvert installation at Km 38 on the Tote Road.</i>	A Spill Report was submitted to the Spill Line and a follow up report provided to the Inspector and others that provides information as to why the spill occurred and the measures to be taken to prevent this error from reoccurring. The Spill Report and Follow-up Reports are attached.

**Notes:**

1 Item No. as referenced in AANDC Water Licence Inspection Report March 9-12, 2015

April 3, 2015

Resource Management Officer  
Nunavut Field Operations  
Aboriginal Affairs and Northern Development Canada  
Box 100  
Iqaluit, NU X0A 0H0  
Justin.Hack@aandc-aadnc.gc.ca

Manager, Major Projects  
Qikiqtani Inuit Association  
P.O. Box 219  
Iqaluit, NU X0A 0H0  
swbathory@qia.ca

**Re: Follow-up to Spill #15-089, Reported on March 12<sup>th</sup>, 2015**  
**Mary River Project - Water Licence No. 2AM-MRY1325**

**Summary:**

On March 11, 2015 at 17:00, a leak was observed under a ground thawing unit located at Km 38 of the Tote Road. The unit was positioned on the frozen stream at crossing CV099. Approximately 1L of engine oil escaped from an improperly positioned dip stick and was released onto the frozen stream ice surface. There was no spill tray in place to prevent the oil from leaking directly onto the stream bed.

**Immediate and Follow-Up Action:**

Upon discovery, a spill tray and absorbent material was put underneath the leak to prevent further release to the receiving environment. Repairs were then made to the unit to stop the leak. Approximately 0.2 m<sup>3</sup> of impacted snow and gravel was recovered and transported/disposed of in the landfarm facility at Milne Port. The ground thawing unit was subsequently inspected, found to be in good working order with no further leaks, and put back into service by the maintenance department. A large spill tray was installed to protect the ground / stream bed under the unit. The Operations Group, who are responsible for the operation of the ground thaw unit, were reminded that ongoing utilization of spill trays and monitoring of same are key requirements of our environmental permits.

**Recommendations:**

Baffinland have previously developed and implemented a site wide document for the use of spill trays. The requirement for the use of spill trays and spill response material on hand has been communicated by means of the 2014 Environmental Protection Plan training (a requirement for all supervisory personnel on site), routine tool box meetings, and other forms of communication, see attached Spill Tray Use Guidelines document which is routinely communicated to site personnel. Ongoing inspections and monitoring of the use of spill trays is standard practice at site.

**Current Status:**

The Ground Thaw Unit is back in service. Regular inspections are conducted on the ground thawing unit and other equipment to check for leakage and to ensure spill tray use.

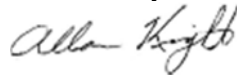
Should you require further information or clarification on the above noted spill, please feel free to contact Trevor Myers / Allan Knight at (647) 253-0596 x6010 or Jim Millard at (902) 403-1337.

Prepared By:



Nicolas Kuzyk,  
Environmental Coordinator

Reviewed by:



Allan Knight, B.Sc.  
Environmental Superintendent

Attach: Photos, Map, NT-NU Spill Report, Spill Tray Use Guidelines

cc. Michael Anderson, Erik Madsen, Jim Millard, Trevor Myers, Lea Willemse (Baffinland),  
Robert Savard, Erik Allain, (AANDC), Manager of Licencing (NWB)





**Photo 1** - Spill location- Oil dripping from the unit (left)

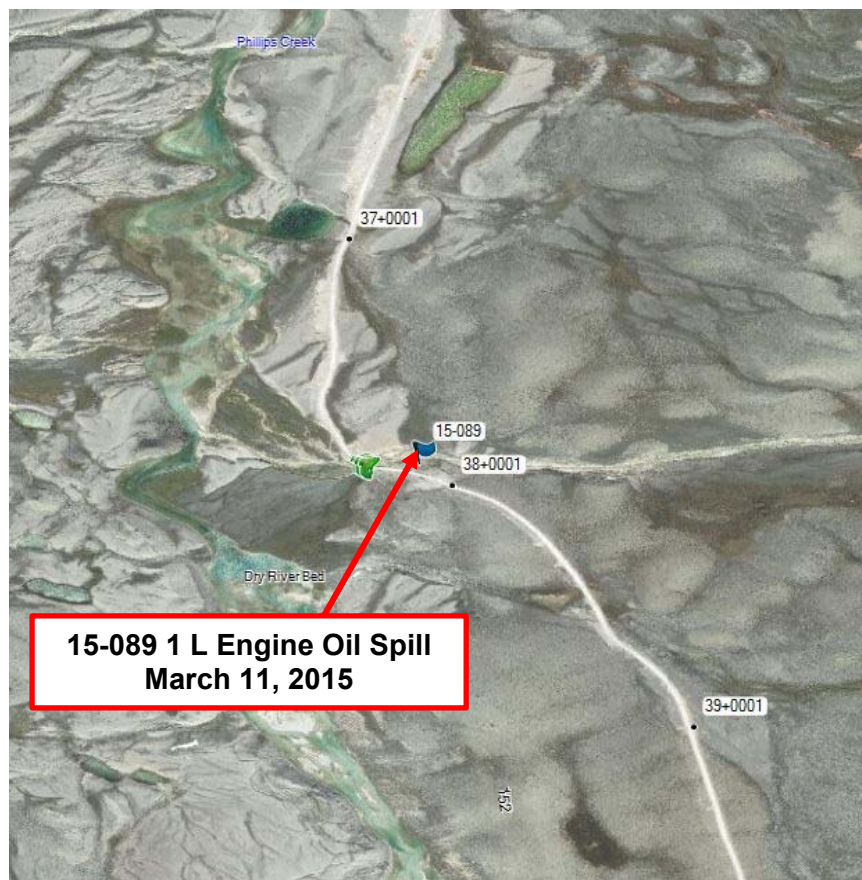


**Photo 2** – Engine oil onto ground – less than 1L





**Photo 3 – Spill location post clean up**



**Map of Spill Location**



# NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

<b>A</b>	REPORT DATE: MONTH – DAY – YEAR <b>03-12-2015</b>	REPORT TIME <b>14:30</b>	<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT		REPORT NUMBER <b>15 - 089</b>
<b>B</b>	OCCURRENCE DATE: MONTH – DAY – YEAR <b>03-11-2015</b>	OCCURRENCE TIME <b>17:00</b>			
<b>C</b>	LAND USE PERMIT NUMBER (IF APPLICABLE) <b>IOL - Commercial Lease No.: Q13C301</b>	WATER LICENCE NUMBER (IF APPLICABLE) <b>2AM-MRY1325 Type "A"</b>			
<b>D</b>	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION <b>Mary River Project Milne Port Site, Baffin Island, NU</b>		REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN		
<b>E</b>	LATITUDE DEGREES <b>71</b> MINUTES <b>38</b> SECONDS <b>22</b>	LONGITUDE DEGREES <b>80</b> MINUTES <b>22</b> SECONDS <b>37</b>			
<b>F</b>	RESPONSIBLE PARTY OR VESSEL NAME <b>Baffinland Iron Mines Corp.</b>	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION <b>2275 Middle Road East, Suite 300, Oakville, ON L6H 0C3</b>			
<b>G</b>	ANY CONTRACTOR INVOLVED <b>N/A</b>	CONTRACTOR ADDRESS OR OFFICE LOCATION <b>N/A</b>			
<b>H</b>	PRODUCT SPILLED <b>Engine Oil</b>	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES <b>Approx. 1 Litres</b>	U.N. NUMBER		
	SECOND PRODUCT SPILLED (IF APPLICABLE) <b>N/A</b>	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES <b>N/A</b>	U.N. NUMBER		
<b>I</b>	SPILL SOURCE <b>Ground Thawing Unit</b>	SPILL CAUSE <b>Oil Leak</b>	AREA OF CONTAMINATION IN SQUARE METRES <b>Approx.1 square meters</b>		
<b>J</b>	FACTORS AFFECTING SPILL OR RECOVERY <b>Cold/Freezing Condition</b>	DESCRIBE ANY ASSISTANCE REQUIRED <b>N/A</b>	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT <b>N/A</b>		
<b>K</b>	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS  <b>During an inspection of the culvert installation at KM 38 on the Tote Road, a worker discovered oil dripping from the Ground Thawing Unit onto the ground below, which was in fact a frozen stream bed. The supervisor overseeing the culvert installation as well as the maintenance department were notified immediately. A spill tray was put underneath the leak right away to prevent further impact to the receiving environment until the leak could be stopped. The spill has been cleaned up and the investigation is currently ongoing. It is estimated that less than 1 litre of engine oil spilled onto the stream bed and further details will be provided in the follow-up report.</b>				
<b>L</b>	REPORTED TO SPILL LINE BY <b>Trevor Myers</b>	POSITION <b>Enviro Superintendent</b>	EMPLOYER <b>Baffinland</b>	LOCATION CALLING FROM <b>Mine Site</b>	TELEPHONE <b>647-253-0596</b>
<b>M</b>	ANY ALTERNATE CONTACT <b>Jim Millard</b>	POSITION <b>Enviro Manager</b>	EMPLOYER <b>Baffinland</b>	ALTERNATE CONTACT LOCATION <b>Off Site</b>	ALTERNATE TELEPHONE <b>902-403-1337</b>
REPORT LINE USE ONLY					
<b>N</b>	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					

## ENVIRONMENTAL BULLETIN NO. 4

### USE OF SPILL TRAYS AT SITE



#### Introduction

Minor spills from mobile vehicles and equipment in use will be identified and controlled by ensuring pre-use inspections are implemented *without exception*. The implementation of robust and effective preventive maintenance programs and daily equipment checks are best protective measures that can be taken with regard to spills originating from mobile vehicles and equipment that are in service. When issues (non-conformances) are identified, immediate action shall be completed to correct any non-conformance (i.e., use of proper spill tray and/or spill tray repair).

Despite the enforcement and use of pre-use operations inspections, small hydrocarbon leaks/spills are still highly probable. In an effort to minimize or eliminate environmental impact from these spills, the Spill Tray Use Standard has been implemented and will be enforced at both the Milne Port and Mary River sites.

#### Spill Tray Use Requirements

- Spill trays shall be used under vehicles that are in mid- and long-term storage (i.e., more than one week). Specific positioning of spill trays under vehicles will be based on an analysis of the most likely sites for hydrocarbon leaks from the subject vehicle.
- Spill trays shall be used under temporary equipment such as portable generators, frost fighters, and light plants to capture any overflow during refueling or spillage resulting from other causes.
- Spill trays shall be used routinely outside and inside the mechanics shops prior to, and subsequent to maintaining vehicles and equipment to contain any residual drips originating from all repairs.
- While vehicles and equipment are being fueled or serviced, spill trays shall be placed under nozzles and work locations to capture any dripping.
- All hazardous materials and wastes are to be stored in secondary containment. Spill trays are ideal for storing small volumes (i.e., <205 L) of hazardous material and hazardous waste. Other alternatives for storage of both small and larger quantities of hazardous materials and waste include:
  - designated lined and contained areas; or
  - Shipping containers located at the laydown areas.

Should you have any questions or concerns, please do not hesitate to contact BIM Environment.





April 8, Drainage to Camp Lake, looking east and upstream toward airstrip.



April 8, Drainage to Camp Lake, looking west and downstream toward Camp Lake.