

1831



**Indian and Northern  
Affairs Canada**

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North Mackenzie District  
P.O. Box 2100  
Inuvik, NT X0E 0T0

**Affaires Indiennes  
et du Nord Canada**

[www.ainc.gc.ca](http://www.ainc.gc.ca)

Telephone: 867-777-8900  
Fax: 867-777-2090

April 7, 2011

Northwest Territories Water Board  
P.O. Box 2531  
Inuvik, NT X0E 0T0



**Attn: Mike Harlow, Executive Director**

**RE: Industrial Water Use N7L1-1831  
CLASS B - INDUSTRIAL  
Mackenzie River - Arvoknar Channel**

Dear Mr. Harlow,

Please find the enclosed Inspection Report for your review and/or records.

An electronic copy (un-editable Adobe pdf.) has also been provided by e-mail.

If you have any questions or concerns regarding the enclosed, and/or if additional information is required please contact me at (867) 777-8909.

Sincerely,

Jan Davies  
Water Resource Officer

Cc: Conrad Baetz, District Manager, North Mackenzie District, Inuvik, NT

Enclosure: Industrial Water Use Inspection Report and Cover Letter (4 pages)



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April 7, 2011

Shell Canada Ltd.  
400 - 4th Avenue S.W.  
P.O. Box 100, Station M  
Calgary, AB T2P 2H5

**Attn: Randall Warren**

**RE: Industrial Water Use N7L1-1831  
CLASS B - INDUSTRIAL  
Mackenzie River - Arvoknar Channel**

Dear Mr. Warren,

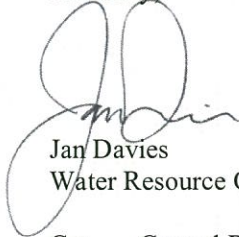
An inspection of the above noted operation was conducted on April 7, 2011 by Water Resource Officer Jan Davies and Resource Management Officer Donald Arey. Enclosed is a copy of the Industrial Water Use Inspection Report.

Shell Canada Ltd. and their contractors are to be congratulated on their progress to date and their success in excavating/transporting the sump and its associated waste. Please note as per the Inspection Report that the flare pit flooding incident needs to be called in to the NWT Spill Report Line given the lab results for the sampled water. There were no violations during this inspection. Please review and address the concerns as indicated in the enclosed Inspection Report.

This report will be sent to the Northwest Territories Water Board for their review and/or public records.

If you have any questions/concerns regarding the enclosed and/or if additional information is required, please do not hesitate to contact me at (867) 777-8909.

Sincerely,



Jan Davies  
Water Resource Officer

Cc: Conrad Baetz, District Manager, North Mackenzie District, Inuvik, NT

Enclosure: Industrial Water Use Inspection Report (3 pages)



## INDUSTRIAL WATER USE INSPECTION REPORT

<b>LICENCE #:</b>	N7L1-1831	<b>EXPIRY DATE:</b>	September 30, 2013
<b>LICENCEE:</b>	Shell Canada Ltd.	<b>PREVIOUS INSPECTION:</b>	March 23, 2011
<b>COMPANY REP:</b>	Randall Warren	<b>INSPECTION DATE:</b>	April 07, 2011

### WATER SUPPLY

Source:	Mackenzie River - Arvoknar Channel	Quantity Used:	<295 m <sup>3</sup> per day
Owner/Operator:	Shell Canada Ltd.	Meter Reading:	N/A

Indicate:      **A - Acceptable**              **U - Unacceptable**              **N/A - Not Applicable**      **N/I - Not Inspected**

Intake Facilities	A	Storage Structures	A	Treatment Systems	N/A	Recycling	N/A
Flow Meas. Device	A	Conveyance Lines	N/A	Pumping Stations	A	Chem. Storage	N/A
						Modifications	N/A

### Water Supply Comments:

Notes:

- Recent water withdrawal records show the quantity of water used well below Water Licence limit of <295 m<sup>3</sup> per day.
- Potable water being shipped from the Town of Inuvik.

### WASTE DISPOSAL

Well Waste:	Off-Site Removal	A	Drilling Sump	N/A	Downhole	N/A	Land spread	N/A
Solid Waste:	Open Dump	N/A	Landfill	A	Burn & Bury	N/A	Under ground	N/A
	Owner / Operator	Shell Canada Ltd.	Sludge Disposal	N/A	Other	N/A		
Tailings:	Tailings Pond	N/A	Natural Lake	N/A	Under ground	N/A		
Sewage:	Sewage Treat. System	A	Camp Sump	N/A	Natural Water Body	N/A	Wetland Treatment	N/A
	Continuous Discharge	N/A	Inter. Discharge	N/A	Seasonal Discharge	N/A	Trench	N/A

Indicate:      **A - Acceptable**              **U - Unacceptable**              **N/A - Not Applicable**      **N/I - Not Inspected**

Discharge Quality	N/A	Construction	N/A	Disch. Meas. Dev.	A	Freeboard	N/A
Decant Structures	N/A	O&M Plan	N/A	Dams, Dykes	N/A	Seepages	N/A
Dyke Inspections	N/A	A&R Plan	N/A	Erosion	N/A	Spills	A <sup>1,2</sup>
Conveyance Lines	A	Pond Treatment	N/A	Runoff Diversion	N/A	Sump Treatment	N/A
Sump Liners	N/A		SNP Samples Collected		N/A		
Periods of Discharge	N/A		Effluent Discharge Rate		N/A		

### Waste Disposal Comments:

Concerns:

1. Flare Pit Excavation - On March 31, 2011, while deepening the excavation and removing additional soil/debris from the south wall (river side) an incident occurred in which the excavation pit filled in with water from the adjacent river beneath the ice. The surface area was bermed so as to avoid flooding the ice (see Figure 1). DFO and INAC were contacted immediately to report the

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## INDUSTRIAL WATER USE INSPECTION REPORT

situation and seek advice. A slight sheen was observed on the surface of the ponded water following the flooding. A hydrocarbon absorbent boom was used to collect this from the surface.

A layer of ice began to form on the surface of the pond within about 30 minutes of flooding. Water samples were collected from the ponded water in the excavation and Arvoknar Channel to assess water chemistry and determine a suitable disposal option. Once the results came back, depending on the outcome the NWT Spill Line would then be contacted.

The results from the ponded water have since come back from the lab and show elevated levels of hydrocarbons. The excavation will be sealed off from the river and dewatered. The water will be put in a storage tank to be taken to the site of the containment cell to be later shipped out for disposal at an approved disposal facility. When the excavation is sealed against the river, work will continue along the east side of the hole leaving a greater extent of grounded ice between the new excavation extents and the river.

**With the results for the ponded water coming back with hydrocarbons the incident needs to be called in to the NWT Spill Report Line.**

2. During the Inspection, drips of oil were noticed from the Water Truck. There was a belly tarp and a drip tray present but the oil was missing both items (see Figure 2). This was reported to the representative on site- Sam Bird with IEG. Given this development there should be a closer assessment of the watering hole to ensure any small drips of oil that might be present are chopped out of the ice for proper disposal.

**Notes:**

- Drilling sump is done being excavated. The trucks were hauling the last loads of waste material. Roads were clean of soil.
- Lined storage area for the excavated contaminated material from the sump has been removed (see Figure 3).
- The soil that was tracked from the excavation of the sump and on the surrounding work site was scraped up after the last load of contaminated soil was taken out.
- Waste water is being shipped to the Inuvik Sewage Lagoon. There have been a number of loads ranging between 6,000L-10,000L and occurring every 3-4 days.
- Drip trays were present and being utilized where appropriate.
- Camp is situated on a ground fast ice area across the river from the sump excavation.
- The project is tentatively planned to be completed on Tuesday, April 19, 2011.

**GENERAL CONDITIONS**

**Indicate:**      **A - Acceptable**                      **U - Unacceptable**                      **N/A - Not Applicable**    **N/I - Not Inspected**

Ore & Waste Rock Stockpiles	N/A	Records & Reporting	A	Surv. Net. Prog.	N/A
Geotechnical Inspection	N/A	Posting, Signage	N/A	Contingency Plan	A
Restorations Activities	A	New Construction	A	Fuel Storage	A
Mine Water Discharge	N/A	Chemical Storage	N/A	Annual Report	N/A

**General Condition Comments:**

**Concerns:**

1. The sandbar borrow source now has 2 large piles since one has been used to backfill the excavation. One pile has partially been spread back on the sand bar. Attention will be needed to ensure that if there is any excess wind or dispersal of material that more windbreaks may be required. Soil piles and disturbed soil areas may need to be watered down to maintain control of loose material.

**Notes:**

- Excavation is almost fully backfilled. Can barely see the outline of where the excavation was located (see Figure 4). Backfill consists of a mixture of overburden and material from the sandbar borrow source. Each layer is compacted with a packer and watered down. In the excavation a depth of approximately 1.5 metres is filled in per day.
- Bentonite liners have been installed along the east and west walls of the excavation. A trench will then be dug to install the final north portion of the liner.
- Camp sump excavation has been backfilled and restored to match the surrounding bank etc. (see Figure 5).
- Surficial soil was blown around the borrow source at the sand bar and the backfilling of the sump excavation. Stripped snow cover has soil mixed with it. Soil laden snow will be rolled back on to the excavated areas when the project is complete and iced down with water. Piles of snow surrounding the excavations are acting as a windbreak.
- Excess material from the sandbar borrow source has been taken for storage in Inuvik in case it is needed for the future.
- Fuel storage areas - main tanker truck and the camp generator fuel tank (see Figure 6), with secondary containment in addition to a bermed synthetic liner looked acceptable.
- Water Licence was present.

**NON-COMPLIANCE/VIOLATIONS OF ACT OR LICENCE**

N/A

Inspector's Signature: \_\_\_\_\_

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## INDUSTRIAL WATER USE INSPECTION REPORT

### Inspection Images:



**Figure 1**  
Flare pit excavation filled in with water from the adjacent river. The surface area was bermed so as to avoid flooding the ice.



**Figure 2**  
Water Truck dripping oil but was missing the belly tarp and a drip tray.



**Figure 3**  
Lined storage area for the excavated contaminated material from the sump has been removed.



**Figure 4**  
Excavation is almost fully backfilled. Can barely see the outline of where the excavation was located. Overburden and material from the sandbar borrow source is put down in lifts then compacted with a packer and watered down.



**Figure 5**  
Camp sump excavation has been backfilled and restored to match the surrounding bank.



**Figure 6**  
Camp generator fuel tank storage area.

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