



Aboriginal Affairs and
Northern Development Canada

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Affaires autochtones et
Développement du Nord Canada

<http://www.aadnc-aandc.gc.ca>

North Mackenzie District
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Telephone: 867-777-8900
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November 14, 2013

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
Unipkat I-22
Mackenzie River – Arvoknar Ch**

Dear Mr. Warren,

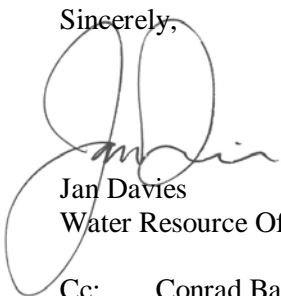
An inspection of the Shell Canada Ltd. Water Licence N7L1-1831 (expiry on September 30, 2013) was conducted on July 31, 2013. The operation under the above mentioned Industrial Water Use was inspected to assess compliance and ensure that the terms and conditions were met. Enclosed is a copy of the Inspection Report (4 pages) for your review and records.

There were some specific concerns in regards to erosion on site in addition to the Annual and Final Reports including the format that will relate to future reporting for Shell Canada Ltd. Please review and address the concerns and other items throughout the Inspection Report.

Please note that it is the Licensee's responsibility to ensure compliance with all of the terms and conditions of its Water Licence. A copy of this report will be sent to the Northwest Territories Water Board for their review and public records.

If you have any questions 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 (4 pages)



INDUSTRIAL WATER USE INSPECTION REPORT

LICENCE #:	N7L1-1831, Unipkat I-22	EXPIRY DATE:	September 30, 2013
LICENCEE:	Shell Canada Ltd.	PREVIOUS INSPECTION:	October 2, 2012
COMPANY REP:	Randall Warren	INSPECTION DATE:	July 31, 2013

WATER SUPPLY

Source:	Mackenzie River – Arvoknar Ch	Quantity Used:	N/A, see Annual Reports
Owner/Operator:	Shell Canada Ltd	Meter Reading:	N/A

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

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

Water Supply Comments:

N/A

WASTE DISPOSAL – WELL WASTE

Disposal Method		Excavation of drill sump and associated waste							
Off-Site Removal	Y	Drilling Sump	N	Downhole Injection	N	Treat and Landsread	N	Other	N/A

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

Sump Liners	N/A	Sump Treatment	N/A	Freeboard	N/A
Erosion	U ^{1,2}	Construction	N/A		
SNP Samples Collected	N/A				

Well Waste Comments:

Concerns:

1. Further erosion is occurring along river edge bordering the excavation/backfill area. It continues to appear that erosion is progressing further and larger as time progresses into this area.
2. Backfill cap erosion issues remain and could lead to the cap material being destabilized. Please refer to Restoration Activities under General Conditions/Reports/Plans below.

Notes:

- Area below bank is stabilizing or the river might be low and exposing more of the base of the embankment.
- It appears that the erosion from the river along the bank is progressing further and larger as time progresses.
- Given the recent excavation and backfilling that has occurred the area is in a state of stabilization and is a dynamic environment.
- Waste material was excavated from the drilling sump and transported to approved landfills - solid waste disposal facilities.
- North of the backfilled sump there remains residual contamination from the sump presence. According to the 2011 Annual Report, "The exceedences remaining in the drilling sump excavation are north of a bentonite blanket, which was used to contain the remaining affected soil away from the Arvoknar Channel".

WASTE DISPOSAL – SOLID WASTE

Disposal Method		Inuvik Landfill and various facilities					
Open Dump	N	Landfill	Y	Burn & Landfill	N	Underground	N



INDUSTRIAL WATER USE INSPECTION REPORT

Offsite Removal	Y	Other	N/A
Owner / Operator	Shell Canada Ltd./various facilities		

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

Runoff Diversion	N/A	SNP Samples Collected	N/A
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Solid Waste Comments:

- Site was clean with no debris or solid waste related concerns.

GENERAL CONDITIONS/REPORTS/PLANS

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

C &R Plan	N/A	Records & Reporting	U ^{2,3}	Final Report	U ^{2,3}
Geotechnical Inspection	N/A	Posting, Signage	N/A	Contingency Plan	A
Restorations Activities	U ¹	Spills	N/A	O&M Plan	N/A
Maintenance	A	Modifications	N/A	Annual Report	U ^{2,3}

General Condition Comments:

Concerns:

1. While it is understood that the area is in a process of stabilization, there are a lot of cracks present throughout the backfill cap and signs of settling. These cracks could lead to further erosion of the backfill cap with rain or flooding in the area. A plan of action is requested towards preventing further erosion from reaching the bentonite blanket and the contaminated area, including what procedures will be done if this occurs to deal with the contaminated soil that remains on site.
2. While the Annual/Final Reports have been submitted it is noted that the format does not allow for an easier and more efficient display of the information required by Part B: General Conditions, Item 1. Typically the Annual and/or Final Reports have each item systematically listed then the corresponding information immediately displayed or referred to within the document or the report. This format ensures simple and easy reference to what items were required by Part B: General Conditions of the Water Licence. It would be advised for this format to be used for the current Annual and Final Reports that have been submitted for this project. This would allow for easier and future reference when an audit is conducted for final closure and if there is a historical review/study of this project (since it consisted of an excavation of a sump and subsequent backfill to prevent erosion of sump waste material by the river).
3. It is also important to note that when referring to the Water Licence there have been Annual Reports and Monitoring and Sampling Program Reports that were late. Please ensure for future operations that timelines are adhered to and if there are any concerns or need for extensions please contact the Northwest Territories Water Board.

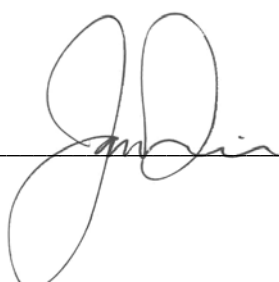
Notes:

- Sand bar and bank borrow area has stabilized with further sediment being deposited onto the borrow area. No longer a definable excavation site as before, since the lines and indications of the excavation are less distinguishable. Still see disturbance and indentation but well filled in 30-40% vegetation growth.
- Existing pond adjacent to the sump excavation site is no longer present as the river erosion has accessed the pond and emptied it.
- Vegetation growth on disturbed areas at the sump excavation site are at about 20-30%.
- Thermistors and groundwater wells present on site.
- The 2012 Monitoring and Sampling Program Report has been submitted and according to the Licensee is to be used to satisfy Part B: General Conditions, Item 1 of the Water Licence regarding the 2012 Annual Report.
- 2013 Monitoring and Sampling Program Report in addition to the 2013 Annual Report have been submitted.

NON-COMPLIANCE/VIOLATIONS OF ACT OR LICENCE

N/A

Inspector's Signature:





INDUSTRIAL WATER USE INSPECTION REPORT

Inspection Images:

Figure 1

Sand bar barrow source for backfilling the Unipkat I-22 sump excavation. Vegetation is re-establishing itself and excavation outline is reduced.



Figure 2

Area erosion showing how much of site has been decreased as indicated from the river edge including ponded water near the river which has since drained out.



Figure 3

Unipkat I-22 sump was excavated then backfilled but there continues to be stabilization, erosion and subsidence occurring. Former sink hole and erosion of northwest corner is no longer visible.



Figure 4

Surface of the backfilled sump excavation with associated vegetation growth and settling.



Figure 5

Southeast corner of the backfilled excavation area and adjacent subsided area with ponded water that has since been drained out to the river.



Figure 6

Extent of erosion of the backfilled excavation and associated river bank.

