



December 21, 2017

Inuvialuit Water Board  
PO Box 2531  
Inuvik, NT  
X0E 0T0

**Mr. Bijaya Adhikari**  
**Science and Regulatory Coordinator**

Dear Mr. Adhikari:

**Camp Farewell**  
**Response to comments regarding the Camp Farewell Remediation Program, Annual Report 2016 - Amended**

Thank you for your feedback regarding the Camp Farewell Remediation Program, Annual Report 2016. Comments provided by the Inuvialuit Water Board are addressed below:

1. The report has been retitled “Camp Farewell Remediation Program, Annual Report 2016”.
2. **Part B, Item 1a:** Approximately 760 US barrels of fresh water was obtained from a spacer barge and used for the daily operation of the camp barge. Fresh water was not obtained from other sources during the 2016 Remediation Program (Section 4.1.2).
3. **Part B, Item 1b:** There was no waste discharged to the water or the land during the 2016 Remediation Program. Waste water generated at the barge camp was contained in a waste water holding AST and disposed at an approved facility by the barge operator. Domestic waste was contained in garbage bins on the barge and burned on-site in an incinerator. Domestic waste was produced at a rate of approximately two garbage bags per day according to the barge master (Section 5.5).
4. **Part B, Item 1c:** There was no waste discharged to the water or the land during the 2016 Remediation Program (Section 5.5).
5. **Part B, Item 1d:** Approximately 200 m<sup>3</sup> of impacted material was barged to Hay River and then trucked to the Tervita Rainbow Lake Landfill (approximately 2,800 km from Camp Farewell). There was no other waste stored on-site and/or transported off site during the 2016 Remediation Program (Section 5.5)

6. **Part B, Item 1e:** Please refer to Appendix I of the *Camp Farewell Remediation Program, Annual Report 2016* which indicates the “Surveillance Network Program” applies to the sewage lagoon (Station Number 1834-1) which was remediated in 2013. Therefore, there has been no sampling conducted since 2013 in regard to the “Surveillance Network Program”. Please see the report submitted to the IWB in 2014 entitled “*Camp Farewell Lagoon Remediation*” for additional detail if required.
7. **Part B, Item 1f:** Please refer to Appendix I of the *Camp Farewell Remediation Program, Annual Report 2016*. Water Supply Facilities and Sewage Treatment Facilities were removed in 2013.
8. **Part B, Item 1h:** There were no sumps restored during the 2016 Remediation Program.
9. **Part B, Item 1i:** abandonment and restoration works:
  - a. **Page i, executive summary, bullet 1:** seven excavation zone numbers have been added.
  - b. **Page i, executive summary, bullet 2:** clarified.
  - c. **Page i, executive summary, bullet 3:** zone numbers have been added.
  - d. **Page i, executive summary, bullet 5:** zone number has been added.
  - e. **Page iv, List of Figures, Figure 3:** Please see updated Figure 3.
  - f. **Page 10, Section 7.2, paragraph 1:** Samples were collected between July 19 and August 18, 2016. Specific sample dates are provided in Table 2.
  - g. **Page 10, Section 7.2, paragraph 1:** The list of Appendices has been adjusted.
  - h. **Page 5 of 6, Table 2, location windrow 12 and 13, column 4:** the sample date has been corrected.
  - i. **Page 9, section 6, paragraph 2:** the referenced guideline has been corrected.
  - j. **Pages 1 of 6 to 5 of 6, Tables 1 and 2:** The Environmental Guideline for Contaminated Site Remediation (Residential/Parkland land use) states the guideline for PHC fraction F1 in surface soil is 30 mg/kg. However, the Ecological Soil Contact pathway is most applicable and has a guideline of 130 mg/kg. Section 6 (Regulatory Framework) has been updated to more clearly indicate the Ecological Soil Contact pathway is applicable.
  - k. **Pages 1 of 6 to 5 of 6, Tables 1 and 2, Column 5:** unit has been provided.
  - l. **Provide groundwater monitoring and sampling results:** There were no groundwater samples collected in 2016. The integrity of the monitoring wells will be investigated during the 2018 field program and, if possible, groundwater samples will be collected.
  - m. **Provide a map, table and figures illustrating the area and amount of soil and water remediated to date and areas to be remediated. A map and table displaying results of confirmatory results would provide a better understanding of the status of the remediation program:** Figure 4 indicates the area of soil remediated to date and the areas requiring further remediation. Zone numbers have been added for additional clarification however, confirmatory soil results added to the figure would be congested while not

supplying any additional useful information (as the areas are already clearly indicated). Table 1 can be referenced for confirmatory soil results if desired. The soil volumes are discussed in Section 7.4 “Soil Volumes and Remediation Summary”. Additional groundwater information will be obtained during the 2018 field program.

- n. **Provide information for which of the boreholes intercepted the polyurethane foam layer and an assessment of the spatial extent, as well as the condition of the foam layer:** The spatial extent of the polyurethane foam layer is unknown. Due to degradation of the foam layer and rotating nature of the soil auger, only trace amounts were uncovered during the 2015 soil assessment. During the 2016 remediation program, the foam layer was uncovered and observed to be brittle and very degraded. Manual removal by hand was required due to the many small pieces.
  - o. **Provide a map depicting the spatial extent of the polyurethane foam layer and the location of the piezometers which are monitoring the contaminants resulting from biodegradation of the polyurethane foam:** The spatial extent of the polyurethane foam layer is unknown. There are no piezometers in place to monitor the contaminants resulting from biodegradation of the foam layer. The existing piezometers will be sampled for possible contaminants during the 2018 field program and placement of additional piezometers will be assessed.
  - p. **Provide a description of locations where contaminated soil exists below the polyurethane foam layer, include areas that may be below where the foam liner is non-existent including assessments required to determine if soil/groundwater contamination exist:** The spatial extent of the polyurethane foam layer is unknown. A full soil assessment was conducted on the entire lease in 2015. For areas where contaminated soil exists, please refer to the 2015 report entitled: *Camp Farewell 2015 Decommissioning and Soil Assessment Program Report*, submitted to the IWB in April 2016. It is unknown if groundwater contamination exists as a result of the polyurethane foam layer. Groundwater will be investigated for possible contaminants during the 2018 field program.
  - q. Proposed activities for the Site are included in Section 9.
10. **Part B, Item 1j:** There have been no studies requested by the board that relate to waste disposal, water use or reclamation. There are no future studies planned at this time (Section 3.4).
11. **Part B, Item 1k:** IEG Consultants Ltd. will update the Spill Contingency Plan for the 2018 field program. The Waste Disposal Facilities Operations and Maintenance Plan and Sewage Treatment Plan no longer apply as there is no longer Waste Disposal Facilities or a Sewage Lagoon. Shell requests that these plans be disregarded.
12. **Part B, Item 1m:** The board did not request additional details on water use or waste disposal. (Section 3.4).
13. Challenges and Setbacks have been added to Section 7.4.1.

We trust the information provided above and within the Camp Farewell Remediation Program, Annual Report 2016 satisfy the reporting requirements. If you have any further questions or comments, please don't hesitate to contact me at (403) 730-6809 or [nwills@klohn.com](mailto:nwills@klohn.com).

Yours truly,  
**IEG CONSULTANTS LTD.**



Nicole Wills, P.Ag.  
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