

## REVIEW COMMENT TABLE

### Annual Water License Report - Land Treatment Facility and Monitoring Wells Installation - Norman Wells Airport (S17L8-003) (SLWB)

**File(s):** [S17L8-003](#)  
**Proponent:** Transport Canada  
**Reviewer Comments Due By:** Apr 16, 2019  
**Proponent Responses Due By:** Apr 25, 2019  
**Documents:** [S17L8-003 - 2018 Annual Water Licence Report - Norman Wells LTU - Mar 26 19.pdf](#) 4.67 MB  
**Item For Review Distributed On** Apr 1 at 18:27 [Distribution List](#)

#### Item Description

Transport Canada has submitted their 2018 Annual Water License Report in accordance with Part B Condition 11 and Schedule 1 of Water License S17L8-003. Although formal Board approval is not required under the license, the Board must be satisfied that the Licensee has met the requirements of the License.

Reviewers are invited to submit any questions and/or comments by April 12, 2019.

#### General Reviewer Information

All documents that have been uploaded to this review are also available on the Public Registry. If you have any questions or comments regarding this review or the Online Review System please contact:


Bonnie Bergsma at (867) 496-2778 or [bonnie.bergsma@slwb.com](mailto:bonnie.bergsma@slwb.com)  
(OR)

Aswathy Varghese at (867) 598- 2413 ext. 223 or [ash.varghese@slwb.com](mailto:ash.varghese@slwb.com).

#### Contact Information

Aswathy Varghese 8675982413 Bonnie Bergsma

#### Comment Summary

| Environment and Climate Change Canada: Richard Bingley |  |   |  |   |
|--|--|---|--|---|
| ID   | Topic  | Reviewer Comment/Recommendation   | Proponent Response   | Board Staff Response                              |
| 1  | ECCC Comments  | <b>Comment</b> ECCC has reviewed Transport Canada's 2018 Annual Water Licence Report for the Norman Wells Airport Airside Land Treatment Unit (S17L8-003) in accordance with the department's mandate and has no comments at this time.<br><b>Recommendation</b> N/A  | <b>June 3:</b> No response required  |   |
| GNWT - ENR: Central Email GNWT                         |  |   |  |   |
| ID   | Topic  | Reviewer Comment/Recommendation   | Proponent Response   | Board Staff Response                              |
| 7  | General File   | <b>Comment</b>  EMR Letter with Comments and Recommendations<br><b>Recommendation</b>  |  |   |
| 1  | Topic 1: Discharge Location Not Located in Figure 01 | <b>Comment</b> Section 2.6.1 of the Annual Report stated (p. 11 of 94) that the sump discharge location has been shown in Figure 01, which ENR was unable to locate.<br><b>Recommendation</b> 1) ENR recommends that the location used to dispose of the water contained at the landfarm facility retention pond (sump) be identified in Figure 01, as specified in the Annual Report. As the landfarm facility has already been closed and reclaimed, GPS coordinates should also be provided to confirm this disposal location. | <b>June 3:</b> Facility reclamation is not complete and it is anticipated that this location will be utilized in Spring 2019 for a final discharge of retention pond/sump water. The GPS coordinate and location will be added to the 2019 Annual Report for the site. | <b>June 11:</b> Proponent response is acceptable. |
| 2  | Topic 2: Groundwater Flow Direction                  | <b>Comment</b> Section 2.3 of the Annual Report specifies that because SNP 2017-2a (MW1) was located upgradient from the landfarm, it was considered to be representative of background conditions. Section 2.6.1 (p. 13  | <b>June 3:</b> Cadmium and Selenium were detected in SNP2017-2b (MW2) and SNP2017-2c (MW3) but did not exceed the FIGWQGs in these wells. Copper was detected in SNP2017-2c (MW3) during both  | <b>June 12:</b> Proponent response is acceptable. |

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|   |   | <p>of 94) specifies that the following groundwater exceedances (as per FIGQG) were encountered: - SNP 2017-2a (MW1): Al, Cd, Cu, Fe, Se &amp; U (assumed background well) - SNP 2017-2b (MW2): U. - SNP 2017-2c (MW3): Al, Fe. The Annual Report suggested that as Al and Fe were also measured in exceedance at SNP 2017-2c (as with the SNP 2017-2a – assumed background well), it indicated that uranium was naturally elevated in the groundwater and not associated with landfarming activities. ENR suggests that topography may not always be predictive of groundwater flow, and therefore upgradient may not always means upstream from the groundwater flow – which is also influenced by the underlying conditions at the site.</p> <p><b>Recommendation 1)</b> ENR recommends that the Proponent provide a rationale as to why other parameters such as Cd, Cu and Se, which are thought to reflective of background conditions, were not also present in downstream groundwater wells from the landfarm facility.</p>  | <p>sampling rounds and approached (0.00104 and 0.00182mg/L) but did not exceed the FIGWQG of 0.002 mg/L. As SNP2017-2a (MW1) was dry in September only 1 round of groundwater data is available. A replacement well for MW1 was installed in January 2019 and this data will be used to better characterize groundwater at the site for discussion in the 2019 Annual report.</p>  |   |
| 3 | Topic 3: 2018 Annual Report Terms - Not Aligning with Water Licence S17L8-003 Terminology | <p><b>Comment</b> Terms used in the wording of the current Annual Report differed at times from those within the Water Licence. As such, S17L8-003 refers to 'retention pond' in its definitions, and again in the SNP section describing each monitoring station. This term however was not been used in the current Annual Report, and was replaced by 'sump' all the way through, which may create some confusion. Similar observations were made with respect to the term used to represent the facility itself, referred to as a 'Land Treatment Unit' (LTU) which was not found in Transport Canada Water Licence. Terms currently used in S17L8-003 are 'Hydrocarbon Soils Treatment Facility (HCSTF)' or 'landfarm', which is consistent with similar Water Licence applications submitted and processed throughout the NWT regulatory system.</p> <p><b>Recommendation 1)</b> To promote regulatory consistency within the NWT Water Licencing processes, as well as with Transport Canada regulatory requirements enumerated in the Water Licence, consistent terminology should be used in the Annual Report prepared for Water Licence S17L8-003.</p> | <p><b>June 3:</b> The 2019 Annual report will reflect the terminology used in the Water Licence to describe the Hydrocarbon Soils Treatment Facility and retention pond.</p>   | <p><b>June 11:</b> Proponent response is acceptable.</p>  |
| 4 | Topic 4: Analytical Results Provided - Appendix A   | <p><b>Comment</b> Results were provided in Appendix A for the various media monitored, at various locations. As such, subject headings presenting various monitoring results were provided under the following abbreviations: Surface Water analysis: SUMP, SW1, TP-SUMP-1, SUMP1, Soil analysis: E1, E1 A, E2, E2 B, E3, E3 C, E4, E4 C, E5, E5 D, E6, E6 D, E7, E7 E, &amp; E8, E8 C, M1, M1 D, M2, M2 E, M3, M3 A, M4, M4 B, M5, M5 A, M6, M6 E, M7, M7 E, W1, W1 B, W2, W2 B, W3, W3 E, W4, W4 C, W5, W5 A, 11S, 11D, 12S, 12D, 13S, 13D, 14S &amp; 14D. Stock Piles analysis: * SP1-1, SP1-2, SP1-3, SP2-1, SP2-2, SP3-1, SP3-2, SP4-1, SP4-2, SP5-1, SP5-2, SP6-1, SP6-2, SP7-1, SP7-2, SP8-1, SP8-2, as well as a series of COMPOSITE SAMPLES (1, 2a, 2b, 3, 4, 5, 6, 7, 8). Section 2.5 of the 2018 Annual Report (p. 9) specifies that the landfarm footprint was divided into eight cells. ENR was unable to locate further information (within the current Annual Report or in the CRP) to provide context as to the specific site location from which each soil</p>   | <p><b>June 3:</b> The Chemistry Tables provided in the appendix of the annual report were initially presented along with the approval requests memos for each area where soil was found to meet the Water Licence criteria and was moved out of the bermed area. These can be found on the public registry under 'Operations and Notifications' along with applicable figures for operational areas that were characterized in 2018.</p> | <p><b>June 12:</b> User friendly legends are recommended for the chemistry tables in future reports. The legends should: a) make readers understand the significance of tables and figures without browsing through other documents, and b) help the reviewer to interpret the meaning of the underlying results.</p> |

|  |                                |   |   |   |
|--|--------------------------------|---|---|---|
|  |                                | sample originated from. As such, the current coding used to present lab results may be unnecessary complicated (not user friendly) - and is lacking logical localization context.<br><b>Recommendation 1)</b> ENR recommends that additional information is provided to assist in linking abbreviations used in the Appendix A sample locations of the laboratory results provided.   |   |   |
| 5  | Topic 5: Damaged Liner Repairs | <b>Comment</b> Section 2.2 specifies that the first maintenance event occurred on September 5-8, 2017, where liner repairs of known damaged areas was performed. In order to repair the liner, liner patches using liner adhesive were used, once the soil was removed with hand shovels. The pictures provided in the Annual Report (p. 84-86) illustrate significant damage to the synthetic geotextile liner, which has been in place for ~15 years. As specified in the CRP, the facility was initially constructed to contain and treat 2,500 m3 of PHC impacted soils excavated from several contaminated sites within the Airport lands (p. 4 of CRP).<br><b>Recommendation 1)</b> ENR recommends that Transport Canada provide any available information on alternatives for geotextile liners that may be efficiently used in northern climate environment, and may offer better long-term structural integrity. | <b>June 11:</b> No information is available for alternatives for geotextile liners (referring to the recommendation). | <b>June 12:</b> No comment.                       |
| 6  | Topic 6: Document Format       | <b>Comment</b> The submitted 2018 Annual Report was somewhat difficult to review due to the electronic format and security setting. Similar observations were made from other documents prepared by the current contractor (Blue Metric Environmental) which can be challenging to review electronically as documents settings do not allow simple typical procedures such as text highlighting, sticky note additions, etc. While printing the document (paper copy) and writing directly over the pages is an option, it may not always be preferred when trying to save time and resources.<br><b>Recommendation 1)</b> To the extent possible, ENR reviewing staff would appreciate a document format that allows for a more efficient electronic review to be conducted.   | <b>June 3:</b> This feedback will be considered for future submissions.   | <b>June 11:</b> Proponent response is acceptable. |
| <b>Sahtu Renewable Resource Board: Colin Macdonald</b> |                                |   |   |   |
| <b>ID</b>  | <b>Topic</b>                   | <b>Reviewer Comment/Recommendation</b>  | <b>Proponent Response</b>   | <b>Board Staff Response</b>                       |
| 1  | General Report                 | <b>Comment</b> The SRRB has reviewed the report and has no comments or recommendations.<br><b>Recommendation</b> None   | <b>June 3:</b> No response required.  |   |



April 16, 2019

Bonnie Bergsma  
Regulatory Specialist  
Sahtu Land and Water Board  
Box 1, Fort Good Hope  
Northwest Territories  
X0E 0H0

Dear Ms. Bergsma,

**Re:           Transport Canada  
              Water Licence – S17L8-003  
              2018 Annual Water Licence Report  
              Request for Review and Comments**

The Department of Environment and Natural Resources (ENR), Government of the Northwest Territories has reviewed the report at reference based on its mandated responsibilities under the *Environmental Protection Act*, the *Forest Management Act*, the *Forest Protection Act*, the *Species at Risk (NWT) Act*, the *Waters Act* and the *Wildlife Act* and provides the following comments and recommendations for the consideration of the Board.

**Topic 1: Discharge Location Not Located in Figure 01**

**Comment(s):**

Section 2.6.1 of the Annual Report stated (p. 11 of 94) that the sump discharge location has been shown in Figure 01, which ENR was unable to locate.

**Recommendation(s):**

- 1) ENR recommends that the location used to dispose of the water contained at the landfarm facility retention pond (sump) be identified in Figure 01, as specified in the Annual Report. As the landfarm facility has already been closed and reclaimed, GPS coordinates should also be provided to confirm this disposal location.

## **Topic 2: Groundwater Flow Direction**

### **Comment(s):**

Section 2.3 of the Annual Report specifies that because SNP 2017-2a (MW1) was located *upgradient* from the landfarm, it was considered to be representative of background conditions. Section 2.6.1 (p. 13 of 94) specifies that the following groundwater exceedances (as per FIGQG) were encountered:

- SNP 2017-2a (MW1): Al, Cd, Cu, Fe, Se & U (assumed background well)
- SNP 2017-2b (MW2): U.
- SNP 2017-2c (MW3): Al, Fe.

The Annual Report suggested that as Al and Fe were also measured in exceedance at SNP 2017-2c (as with the SNP 2017-2a – assumed background well), it indicated that uranium was naturally elevated in the groundwater and not associated with landfarming activities.

ENR suggests that topography may not always be predictive of groundwater flow, and therefore upgradient may not always mean upstream from the groundwater flow – which is also influenced by the underlying conditions at the site.

### **Recommendation(s):**

- 1) ENR recommends that the Proponent provide a rationale as to why other parameters such as Cd, Cu and Se, which are thought to be reflective of background conditions, were not also present in downstream groundwater wells from the landfarm facility.

## **Topic 3: 2018 Annual Report Terms - Not Aligning with Water Licence S17L8-003 Terminology**

### **Comment(s):**

Terms used in the wording of the current Annual Report differed at times from those within the Water Licence. As such, S17L8-003 refers to 'retention pond' in its definitions, and again in the SNP section describing each monitoring station. This term however was not been used in the current Annual Report, and was replaced by 'sump' all the way through, which may create some confusion.

Similar observations were made with respect to the term used to represent the facility itself, referred to as a 'Land Treatment Unit' (LTU) which was not found in Transport Canada Water Licence. Terms currently used in S17L8-003 are 'Hydrocarbon Soils Treatment Facility (HCSTF)' or 'landfarm', which is consistent

with similar Water Licence applications submitted and processed throughout the NWT regulatory system.

**Recommendation(s):**

- 1) To promote regulatory consistency within the NWT Water Licencing processes, as well as with Transport Canada regulatory requirements enumerated in the Water Licence, consistent terminology should be used in the Annual Report prepared for Water Licence S17L8-003.

**Topic 4: Analytical Results Provided - Appendix A**

**Comment(s):**

Results were provided in Appendix A for the various media monitored, at various locations. As such, subject headings presenting various monitoring results were provided under the following abbreviations:

Surface Water analysis:

SUMP, SW1, TP-SUMP-1, SUMP1,

Soil analysis:

E1, E1 A, E2, E2 B, E3, E3 C, E4, E4 C, E5, E5 D, E6, E6 D, E7, E7 E, & E8, E8 C, M1, M1 D, M2, M2 E, M3, M3 A, M4, M4 B, M5, M5 A, M6, M6 E, M7, M7 E, W1, W1 B, W2, W2 B, W3, W3 E, W4, W4 C, W5, W5 A, 11S, 11D, 12S, 12D, 13S, 13D, 14S & 14D.

Stock Piles analysis:

\* SP1-1, SP1-2, SP1-3, SP2-1, SP2-2, SP3-1, SP3-2, SP4-1, SP4-2, SP5-1, SP5-2, SP6-1, SP6-2, SP7-1, SP7-2, SP8-1, SP8-2, as well as a series of COMPOSITE SAMPLES (1, 2a, 2b, 3, 4, 5, 6, 7, 8).

Section 2.5 of the 2018 Annual Report (p. 9) specifies that the landfarm footprint was divided into eight cells. ENR was unable to locate further information (within the current Annual Report or in the CRP) to provide context as to the specific site location from which each soil sample originated from. As such, the current coding used to present lab results may be unnecessary complicated (not user friendly) - and is lacking logical localization context.

**Recommendation(s):**

- 1) ENR recommends that additional information is provided to assist in linking abbreviations used in the Appendix A sample locations of the laboratory results provided.

## **Topic 5: Damaged Liner Repairs**

### **Comment(s):**

Section 2.2 specifies that the first maintenance event occurred on September 5-8, 2017, where liner repairs of known damaged areas was performed. In order to repair the liner, liner patches using liner adhesive were used, once the soil was removed with hand shovels.

The pictures provided in the Annual Report (p. 84-86) illustrate significant damage to the synthetic geotextile liner, which has been in place for ~ 15 years. As specified in the CRP, the facility was initially constructed to contain and treat 2,500 m<sup>3</sup> of PHC impacted soils excavated from several contaminated sites within the Airport lands (p. 4 of CRP).

### **Recommendation(s):**

- 1) ENR recommends that Transport Canada provide any available information on alternatives for geotextile liners that may be efficiently used in northern climate environment, and may offer better long-term structural integrity.

## **Topic 6: Document Format**

### **Comment(s):**

The submitted 2018 Annual Report was somewhat difficult to review due to the electronic format and security setting.

Similar observations were made from other documents prepared by the current contractor (Blue Metric Environmental) which can be challenging to review electronically as documents settings do not allow simple typical procedures such as text highlighting, sticky note additions, etc.

While printing the document (paper copy) and writing directly over the pages is an option, it may not always be preferred when trying to save time and resources.

### **Recommendation(s):**

- 1) To the extent possible, ENR reviewing staff would appreciate a document format that allows for a more efficient electronic review to be conducted.

Comments and recommendations were provided by ENR technical experts in the Water Management and Monitoring Division and the Sahtu Region and were coordinated and collated by the Environmental Assessment and Monitoring Section, Environmental Stewardship and Climate Change Division.

Should you have any questions or concerns, please do not hesitate to contact Patrick Clancy, Environmental Regulatory Analyst at (867) 767-9233 Ext: 53096 or email [patrick.clancy@gov.nt.ca](mailto:patrick.clancy@gov.nt.ca).

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Clancy', written in a cursive style.

Patrick Clancy  
Environmental Regulatory Analyst  
Environmental Assessment and Monitoring Section  
Environmental Stewardship and Climate Change Division  
Department of Environment and Natural Resources  
Government of the Northwest Territories