

October 13, 2021

**Mackenzie Valley Land and Water Board**  
7<sup>th</sup> Floor – 4910 50<sup>th</sup> Avenue  
P.O. Box 2130  
Yellowknife, NT  
X1A 2P6

**Your File: MV2020L1-0011**

**Attention: Andrew Wheeler, Regulatory Specialist**

Dear Andrew:

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**Re: Additional Information for Canadian Natural's Water Licence Application for Arrowhead and Netla 13-Well Abandonment and Reclamation Program Supporting Land Use Permit MV2019X0014**

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Please find below responses to your request for additional information in support of Canadian Natural Resources Limited's Water Licence application to accompany the previously granted Land Use Permit (MV2019X0014) to conduct abandonment and reclamation activities for 13 wells in the Arrowhead and Netla Areas north and northeast of Fort Liard, in the Dehcho Region, Northwest Territories. We have provided responses to your requests in the order they appear in your letter dated November 23, 2020. MVLWB Requests for additional information are in **Bold Font**. Canadian Natural Responses are below the request in standard font.

### **1. Engagement – Application Form Item 14**

**CNRL submitted an Engagement Plan which does not address engagement for the Licence that has been applied for.**

Canadian Natural's Engagement Plan is intended for the life of the abandonment and reclamation project and applies to both the Land Use Permit and Water Licence. The Plan has been updated to reflect this.

**Please provide an engagement log in accordance with the [MVLWB Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits \(2018\)](#) and ensure the Engagement Plan identifies how CNRL will engage with affected parties throughout the authorization, if granted.**

Canadian Natural has updated our engagement log and Engagement Plan to identify how we will engage with rights holders and affected parties throughout the authorization.



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## **2. Scope – Application Form Item 4**

- **Camp - the November 12, 2020 engagement letter submitted with the application indicates a temporary camp may be utilized. Please confirm whether a camp is part of the application and include applicable information on water use and waste management;**

Two camp locations are being contemplated:

1. One is located at N-6678471, E-475941. It is labelled as the “Beaver Enterprises Yard” on the map. Water use and waste management will be managed by the camp operator.
2. The other is located at N-6710234, E-498842. It is labelled as the Proposed 80m x 80m Campsite. Water use is estimated at 0.33m<sup>3</sup>/day per person and all wastewater will be trucked outside the NT for disposal at an approved facility.

Item 4 in the application form has been updated to reflect this.

- **Bridges / culverts - the November 12, 2020 engagement letter submitted with the application indicates repairing / removing bridges and culverts is part of the scope. Please clarify if these are permanent bridges, how many permanent bridges and culverts there are, and where they are located;**

Bridges are all portable oilfield bridges with some being placed on steel pilings and some being placed on wooden timbers set on the ground. From the Liard River working north on the high grade access there are 10 bridges (4 @ 40' and 6 @ 60' in length) to the Paramount K-29 site. From K-29 north to CNRL P-66 location there are 9 bridges (3 @ 30', 3 @ 40', 1 @ 50' and 2 @ 60' lengths). It is estimated that there will be approximately five (5) culverts per kilometre of access.

Nahanni Butte First Nation has requested bridges on the access West of the Liard River (to P-16 and P-66 [under a separate LUP]) be left in place. Canadian Natural is open to this request.

- **Sumps - the November 12, 2020 engagement letter submitted with the application indicates there are petroleum hydrocarbon impacted sumps. Please clarify where the sumps are located and how they will be remediated; and**

Based on the Phase 1 Environmental Site Assessments (ESAs), Phase 2 ESAs are required at the following locations:

- K-35
- C-07
- K-77
- Liard P-16

Phase 2 results will be discussed with the Resource Management group at the Department of Lands, Government of Northwest Territories and communicated to listed parties in the Engagement Plan.

The outcome of the Phase 2 ESAs will direct remediation requirements. Canadian Natural's first priority is to use site specific, outcome-based remediation standards, similar to those used in British Columbia and Alberta, to demonstrate equivalent capability and minimize removal of



material. If contaminated soil needs to be removed from the sites it will be excavated and trucked to the nearest authorized landfill, likely the Northern Rockies Landfill in Fort Nelson, British Columbia.

- **Please clarify what activities will occur in the winter and what will occur in the summer.**

Winter activities will include:

- Winter road opening
- Well abandonment
- Remediation earthwork (as required)
- Reclamation earthwork and preliminary revegetation

Summer/Fall activities will include:

- Phase 2 environmental site assessments
- Follow up reclamation revegetation (as required)
- Reclamation monitoring

### **3. Water Withdrawal – Application Form Item 7**

- **Specify the maximum amount of water for each source per day in cubic meters (m3);**

The maximum amount of water for each source will be less than 300m<sup>3</sup>/ day (which is also the daily limit for the Type B Water Licence) at POD# 281, 282, 283, 286 up to the total maximum as indicated below. It may be all from one source on a day or multiple sources but will not exceed the maximum. Water will be withdrawn from the nearest source as long as there is still room in the annual total budget for the source.

POINTS OF DIVERSION (NAD 83)												
POD #	NTS Location	Name	Purpose of water use	Area(Ha)	Northing (Nad 83)	Easting (Nad 83)	Class	Width (m)	Depth (m)	Gradient%	Flow (m <sup>3</sup> /s)	Total Requested Volume (m <sup>3</sup> )
281	H-29	Mukkeg River	Winter Road construction		6685456	482481	S1	61	2	4.76%		20,000
282	D-21	Unnamed Lake	Winter Road construction	22.5	6707699	480995			3			7,000
283	O-6	Unnamed Lake	Winter Road construction	127.6	6696285	499396			3			25,000
284	E-72	Rabbit Creek	Winter Road construction		6709579	486675	S2	20	0.5	0.20%	0.001	99
285	O-42	Netle River	Winter Road construction		6719352	492230	S3	4	0.5	0.27%		99
286	H-47	Unnamed Lake	Winter Road construction	28.6	6719990	505712			3			12,000
287	F-31	Unnamed Lake	Winter Road construction	10.2	6728422	507332			2			99
288	B-49	Unnamed Lake	Winter Road construction	9.7	6746932	519867			2			99

- **Specify the maximum amount of water for each source per season (m3); and**

The water use will be winter only up to the Total Requested Volumes. No water will be required from these sources for any spring, summer, or autumn work.

- **Reference the map at the end of the application in the water source / calculation portion of the application.**

The application has been updated to reference the map at the end of the application in the water source/calculation portion of the application.



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#### **4. Water Source Capacity – Application Form Item 7**

- **Provide the math for river and creek calculations to show that the withdrawal rates are below 10% of the instantaneous flow and reference applicable DFO guidance; and**

POD #284 and #285 information is from historical data on well site survey plans. Less than 100m<sup>3</sup>/source has been requested from these sources which is below the threshold limit requiring a water licence.

POD #281 (Muskeg River) and the Liard River instantaneous flow rates will be determined with a flow meter once the construction crew is at those locations. Flow rate measurements and volume calculations will be reported back to the MVLWB and ENR-Water Division prior to use.

According to the DFO 2020-07-02 *Interim Code of Practice: Temporary Stream Crossings* in the additional measures for winter crossings (ice bridges and snow fills) proponents are not to exceed 10% of the instantaneous flow if withdrawing any water, in order to maintain existing fish habitat and flow under the ice.

<https://www.dfo-mpo.gc.ca/pnw-ppe/codes/temporary-crossings-traversees-temporaires-eng.html>

- **Provide information on how the surface area was determined for each lake.**

Lake areas were calculated using in-house CAD software and the water data originally purchased from Geomatics Canada, Legal Surveys Division, Natural Resources Canada Yellowknife Office.

#### **5. Security Estimate – Application Form Item 14**

Provide an estimate for security using the **RECLAIM model for oil and gas**.

Canadian Natural has provided an estimate for security using the RECLAIM model for oil and gas. There appears to be significant overlap with security provided for the Land Use Permit and provided to OROGO for the downhole abandonments. Those amounts should be deducted from the total.

#### **6. Geospatial Information – Application Form Item 3**

- **Clarify the project boundaries as the coordinates in the project description of the Waste Management Plan differ from the Application; and**

Project boundaries were provided in the application to be consistent with those of the Land Use Permit. The Waste Management Plan has been updated to be consistent with the Land Use Permit and Water License.

- **Ensure the coordinates include seconds.**

The coordinates have been updated to include seconds.



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### **7. Waste Management Plan – Application Form Item 8**

- **Confirm there are no new waste streams from those that are captured under Table 5-1 of the Waste Management Plan;**

The Waste Management Plan (WMP) has been updated to include scrap metal for recycling.

- **Provide detailed map(s) (1:50,000 or more) of well sites that identify where waste will be generated and stored prior to removal, or, clarify if there are only wellheads present and no other supporting natural gas infrastructure and indicate where waste will be generated and stored prior to removal; and**

There will be some waste generation at all well sites (see Table 1-1 in Waste Management Plan). An updated map has been provided to identify the primary and alternate (in-field) waste storage locations. The primary waste storage prior to removal will be:

Beaver Enterprises Yard  
N-6678471, E-475941;

The alternate in-field storage yard will be:  
N-6710234, E-498842.

- **Ensure the plan states it applies to the Licence.**

The Waste Management Plan (WMP) has been updated to state that it applies to the Licence.

### **8. Spill Contingency Plan – Application Form Item 10**

- **The plan appears to be a general company-wide emergency response / spill plan - ensure the plan is specific to the project and is in accordance with the [INAC Guidelines for Spill Contingency Planning \(2007\)](#). This includes, but is not limited to, identifying how spills could occur on land, water, ice/snow, how spills will be prevented from occurring, training for employees/contractors, and site specific response measures. Please see the INAC Guidelines section 2.0 for a complete list of contents; and**

The Spill Contingency Plan has been updated as requested to be specific to the project and is in accordance with the INAC Guidelines for Spill Contingency Planning (2007).

- **Ensure the plan states it applies to the Licence.**

The Spill Contingency Plan has been updated to state that it applies to the Licence.

### **9. Other**

- **Clarify whether there are other uses of the water sources and their total water use / rate of use (Application Form Item 9);**

Well abandonment operations will require 1300m<sup>3</sup> of water over 44 days.

Water supply for well abandonment operations is planned to be withdrawn from the Muskeg River (POD #281) at a rate of 30m<sup>3</sup>/day over the 44 days. If the Muskeg River cannot support



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this rate of water withdrawal based on 10% of the instantaneous flow, Canadian Natural will use one or more of the other identified water sources. Canadian Natural is not aware of any other uses of these water sources.

- **Segregate corporate information into an appendix at the end of the application (the 2019YE Financial Statement and the 2020 Annual Report);**

Corporate information has been segregated into an appendix at the end of the application, as requested.

- **Provide a copy of the Certificate of Corporate Registration from the GNWT (Application Form Item 2); and**

A copy of the Certificate of Corporate Registration from the GNWT has been provided in the updated application.

- **Provide cheque for application fees and water use (Application Form Item 15).**

Cheques for Application fees and water use have been sent to the MVLWB. See attached.

Please direct any questions or concerns regarding this application to my attention at 403-803-4745 or [jessica.gysler@cnrl.com](mailto:jessica.gysler@cnrl.com) or to Margot Ferguson at 403-817-4527 or [margot.ferguson@envirosearch.ca](mailto:margot.ferguson@envirosearch.ca).

Sincerely,  
**Canadian Natural Resources Limited**

A handwritten signature in black ink, appearing to read 'J. Gysler'.

Jessica Gysler  
Reclamation Coordinator

### Attachments:

1. Updated Engagement Plan
2. Updated Engagement Log
3. Updated WL Application Form
4. Water Use Fee Calculation
5. Updated WMP
6. RECLAIM security estimate
7. Updated Map
8. Updated Corporate ERP
9. Updated Site-Specific ERP and Spill Contingency Plan
10. Proof of Financial capacity
11. Segregated Corporate Information (2019 YE Financial Statement and 2020 Annual Report)
12. Certificate of Corporate Registration
13. Copies of Cheques for Application Fees and Water Use