



7th Floor - 4922 48th Street,
P.O. Box 2130, Yellowknife NT X1A 2P6

Tel: 867-669-0506 Fax: 867-873-6610
www.mvlwb.com

Staff Report

Applicant: Paramount Resources Ltd.	
Location: Celibeta, NT	File Number: MV2018A0022 & MV2018L1-0005
Date Prepared: September 9, 2020	Date of Board Meeting: September 17, 2020
Subject: Engagement Plan (V2) and Closure and Reclamation Plan (V1)	

1. Purpose

This purpose of this report is to present to the Mackenzie Valley Land and Water Board (MVLWB or Board) the following documents submitted by Paramount Resources Limited (Paramount), in fulfillment of relevant terms and conditions in Class A Land Use Permit MV2018A0022 (Permit) and Type B Water Licence MV2018L1-0005 (Licence), issued to an oil and gas reclamation project, located at Celibeta, NT:

- a) *Engagement Plan, Celibeta, NWT* (June 2020), required under Part B, condition 10 of the Licence and condition 71 of the Permit; and
- b) *Celibeta Closure and Reclamation Plan* (June 2020), required under Part H, condition 1 of the Licence and condition 68 of the Permit.

2. Background

- December 10, 2018 – Issuance of Licence and Permit;
- June 30, 2020 – Submission of Closure & Reclamation Plan and Engagement Plan;
- July 31, 2020 – Distribution of Closure and Reclamation Plans for Public comments;
- August 18, 2020 – Due date for public comments related to both plans;
- August 25, 2020 – Due date for Paramount to respond to comments; and
- **September 17, 2020 – Plans presented to the Board for decision.**

3. Discussion

The Board issued the above-mentioned Licence and Permit (Authorizations) to Paramount for the suspension and reclamation of wellsite H-78, linked to an oil and gas reclamation project, located at Celibeta, NT, approximately 50 kilometres east of Fort Liard.

Wellsite H-78 was drilled between the years 1959 - 1960 at a depth of about 1,254 metres; however, within weeks after being drilled, the well was plugged as a dry hole and abandoned. In 1990, about three decades after the well site was initially drilled, the well was re-entered and plugged completely. Reclamation and remediation activities for the site were completed in the first quarter of 2020. Site monitoring activities are expected to commence in 2021 and continue until 2023; final closure of the site is expected to occur in 2024.

Under the Authorizations issued to the Project, the Board granted interim approval of an Engagement Plan submitted at the time. Paramount, however, was required to submit an updated version of the same plan for approval as well as a Closure and Reclamation Plan within ninety (90) days of the Authorizations' effective date.

On June 30, 2020, Paramount submitted a Closure and Reclamation Plan and an updated Engagement Plan for consideration. Following an internal preliminary review, the documents were distributed on July 31, 2020 for public review, with the due date for comments set to August 18, 2020. The due date for Paramount's response(s) to comments was set to August 25, 2020 but was later extended to September 4, 2020 following a request from Paramount.

Management Plans

Board Staff reviewed the Closure and Reclamation Plan and suggest further development of the plan to address relevant concerns/issues raised by commenting parties and Board staff.

Engagement

Board Staff reviewed the Engagement Plan and suggest that the plan is consistent with requirements contained in applicable guidelines.

Details included in Paramount Engagement Log suggest that it consulted/engaged the Smbaa K'e Development Corporation, Smbaa K'e Dene Band, and Smbaa K'e First Nation, through e-mails, telephone calls, and virtual meetings.

4. Comments

Board staff review of the Closure and Reclamation Plan identified the following issues that could be addressed under an updated/a revised version of the plan:

- Inclusion of rationale for undertaking closure and reclamation activities prior to submission and/or approval of the closure and reclamation plan;
- Provision of complete information pertaining to post-closure environmental monitoring planned for the site including monitoring frequency, parameters, etc., considered;
- Confirmation of timeline for providing a revised/updated financial security estimate for the project;
- Inclusion of measure implemented/proposed to manage surface/site water;
- Provision of details regarding eventual fate of the project site's access road;
- Provision of details regarding Site Specific Guidelines developed in 2019 and the results of sampling conducted prior to remediation and reclamation activities; and
- Inclusion of an appropriately scaled, topographic map or drawings showing the size, layout, and location of each project-related component including buried PHC soil, buried drill waste, wellhead, site water management structures/measures, and any other relevant information.

5. Public Review

Prior to the deadline for comments, submissions Paramount's documents were received from the Acho Dene Koe First Nation (ADKFN); and the Government of the Northwest Territories – Department of Environment and Natural Resources (GNWT-ENR), Environmental Assessment and Monitoring. The main topics raised by parties in their submissions are as follows:

- Phases I, II, and III ESA results;
- Post-closure monitoring & surface infrastructure salvaging opportunities available to ADKFN;
- Post-closure monitoring of soil, surface water, ground water, erosion and settling;
- Site re-vegetation plan;
- Consultations and engagement for the access road;

- Confirmation that Plan/design meets objectives in the PHC Soil Treatment Facility Guidelines;
- Use of Reclaim Model (V. 7.0) for pending security update;
- Testing of remediated site(s) for contaminants of concern;
- Invasive species; and
- Project map details limited.

On September 8, 2020, four days after the due date for the Proponent to provide its responses, Paramount responded to parties' comments.

The Board will have to decide whether to accept the late response provided by Paramount.

6. Security

Paramount has posted combined financial security in the amount of \$233,500 under both the water Licence and Land Use Permit. Paramount stated that it intends to provide an updated security estimate under a subsequent submission.

7. Conclusion

Board staff suggest that the contents of the engagement plan submitted in support of the application is consistent with relevant guidelines.

Board staff suggest that the Closure and Reclamation Plan not be approved until it addresses the issues raised during the review period and included in the relevant decision letter.

8. Recommendation

Board staff recommend the Board:

- a) **Make a motion to approve Engagement Plan, as required under Part B, condition 10 of Licence MV2018L1-0005 and condition 71 of Permit MV2018A0022 as submitted by Paramount Resources Ltd.**
- b) **Make a motion to deny the Closure and Reclamation Plan, Celibeta, NWT, required under Part H, condition 1 of Licence MV2018L1-0005 and condition 68 of Permit MV2018A0022 as submitted by Paramount Resources Ltd.** Paramount Resources Ltd. is required to submit a revised submission in accordance with comments and/or commitments made during this review by October 9, 2020 for Board decision.

9. Attachments

- [Engagement Plan](#)
- [Closure & Reclamation Plan](#)
- [LUP MV2018A0022](#)
- [Licence MV2018L1-0005](#)
- Draft Decision Letters
- Review Comment Table

Respectfully submitted,



Sean Joseph
Regulatory Specialist

Review Comment Table

Board:	MVLWB
Review Item:	Celibeta - Engagement Plan (V2) and Closure and Reclamation Plan (V1) (MV2018A0022 MV2018L1-0005)
File(s):	MV2018A0022 MV2018L1-0005
Proponent:	Paramount Resources Ltd.
Document(s):	Engagement Plan (V2) (2.81) Closure and Reclamation Plan (V1) (3.16)
Item For Review Distributed On:	July 31 at 15:53 Distribution List
Reviewer Comments Due By:	Aug 18, 2020
Proponent Responses Due By:	Sep 4, 2020
Item Description:	<p>Paramount Resources Limited (the Applicant) has submitted Version 2 of its Engagement Plan and Version 1 of its Closure and Reclamation Plan on June 20, 2020. These Plans are required by sections 26(1)(q)(71) and 26(1)(o)(68), respectively, of Permit MV2018A0022 and Part B, condition 10 and Part H condition 1, respectively, of Licence MV2018L1-0005.</p> <p>Using the Online Review System (ORS), reviewers are invited to submit comments and recommendations on the documents linked below by the review comment deadline specified. Reviewers may also wish to consider providing an overarching recommendation regarding whether the Board should approve the submission, to provide context for the comments and recommendations and assist the Board with its decision. If reviewers seek clarification on the submission, they are encouraged to correspond directly with the Applicant prior to submitting comments and recommendations.</p> <p>All documents that have been uploaded to this review are also available on our public Registry. If you have any questions or comments about the ORS or this review, please contact Board staff identified below</p>
Contact Information:	Angela Love 867-766-7456 Jen Potten 867-766-7468 Sean Joseph

Comment Summary

Paramount Resources Ltd. (Proponent)				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	General File	Comment (doc) Tier II Recommendation		
Acho Dene Koe First Nation: Scott Mackay				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	Environmental Site Assessments	<p>Comment Paramount notes in the Closure and Reclamation Plan that a Phase 1 ESA was completed in July 2018. The results from the Phase 1 ESA indicated that a Phase 2 ESA was required for the Site due to the possible presence of contaminants of potential concern (COPC). The Phase 2 ESA was completed in October 2019, which indicated that petroleum hydrocarbons (PHC) were present in the well center area, drilling waste disposal area, and flaring area. While ADKFN understands that the contaminated soil will be treated on-site and mixed with clean subsoil, contamination will continue to be a concern for our community's future use of the Site.</p> <p>Recommendation ADKFN requests that Paramount share the results of the Phase 1 and Phase 2 ESAs. Due to perceived tainting of the environment, the location of formerly contaminated areas may have implications for the future use of the site by our community members and ADKFN requires this information to adequately assess and address impacts</p>	<p>Sep 8: The results of the P1 ESA and P2 ESAs were provided in the June C&R submission. It should be noted that a P1 ESA included only a desktop study and a site visit and the P2 ESA included onsite soil sampling. The location of the formerly impacted soil is no longer relevant as soils from those areas were excavated and relocated which was described in the remediation section of the June 2020 C&R submission.</p>	

		to our rights and interests and exercise of our rights.		
2	Site Infrastructure Removal	<p>Comment In Section 2.2 (Abandonment and Surface Equipment Removal), Paramount indicates that surface infrastructure was removed from the Site in Q1 2020. Despite the Site being located within ADKFN's traditional territory, they were not provided with the opportunity for right of first refusal on salvage of the equipment and materials. It is not clear from the Plan if Paramount has this surface infrastructure staged at an area where this opportunity could still be provided.</p> <p>Recommendation ADKFN requests that Paramount clarify why the community was not provided the opportunity for the right of first refusal prior to the surface infrastructure being removed. If this equipment is currently staged at an area where this opportunity could still be provided, Paramount must with ADKFN to determine if they wish to complete a salvage of this equipment and infrastructure.</p>	<p>Sep 8: Surface infrastructure was a decades old wellhead that was disposed as per the Waste Mangement Plan. Paramount is not aware of any obligation to provide ADKFN a right of first refusal on materials owned by Paramount.</p>	
3	On-site Soil Treatment	<p>Comment In Section 2.5 (Remediation), Paramount indicates that contaminated soils were treated on-site by excavating an unimpacted area and using the excavated material as clean subsoil for mixing. Paramount has not provided information on the area that was used for mixing soil (e.g. if an engineered and lined pad was used) or how the activities were managed, for example, by controlling</p>	<p>Sep 8: Soils from the areas of concern on the site were excavated and immediately placed into the remediation area excavation where they were mixed and covered at depths of 1.5 metres below ground surface or greater. No temporary storage locations were utilized.</p>	

		<p>and testing runoff water from the mixing area.</p> <p>Recommendation ADKFN requests that Paramount provide greater detail on the soil remediation activities, include the location where soils were mixed, and the mitigation measures put in place during these activities. This information is important for understanding if these activities may have inadvertently contaminated other areas of the Site.</p>		
4	Post-closure Monitoring	<p>Comment In the Closure and Reclamation Plan, Paramount provides very few details regarding post-closure monitoring of the site or if ADKFN will provided an opportunity to be involved.</p> <p>Recommendation ADKFN requests that Paramount expand upon this aspect of the Plan, including if the site will be monitored for erosion and settling, continued monitoring of groundwater and soil for contamination downgradient of contaminated areas, contingency monitoring if reclamation is not successful (e.g., testing for soil compaction, admixing, topsoil depth, and coarse materials), and if ADKFN will be provided an opportunity to be involved in post-closure monitoring activities. ADKFN possesses valuable Traditional Knowledge and will be future users of the Site, which could help to inform the reclamation process and help to ensure its success.</p>	<p>Sep 8: Post-closure monitoring will be conducted on annual basis, this combined with inspections by the GNWT will guide additional reclamation acitivities, if any, are required. Monitoring will include checking for erosion, settling, ponding and vegetation growth. If these issues are noted, additional investigations will take place to formulate a plan to resolve the issue(s) with additional reclamation treatments. Paramount is confident that the initial reclamation efforts will be successful but will be diligent in monitoring and resolving issues as they are identified. Paramount would encourage ADKFN to work with the GNWT and the MVLWB to participate in their monitoring activities related to the site.</p>	
5	Post-closure Monitoring	<p>Comment In Section 2.6 (Reclamation) Paramount</p>	<p>Sep 8: See above.</p>	

		<p>provides a brief description of the activities that have been completed to reclaim the site. Paramount has provided very little information on the monitoring activities that will occur post-closure to determine if remediation and reclamation activities were successful. The information provided on post-closure monitoring is limited to determining if the vegetation cover and species assemblage is similar to surrounding areas and ensuring invasive species are not more prevalent than in surrounding areas.</p> <p>Recommendation ADKFN requests that Paramount provide greater detail on the monitoring that will occur onsite In addition to the activities detailed in the Plan, this should include monitoring for erosion and settling onsite, further testing of soil and groundwater downgradient of the well, and the frequency, timing and duration of monitoring. This information will be helpful in identifying and advancing concrete recommendations for post-closure monitoring activities. Further, ADKFN recommends the involvement of ADKFN monitors on-site to participate in monitoring activities and ensure that reclamation measures are mitigating and avoiding impacts to ADKFN's rights and interests.</p>		
6	Site Revegetation	Comment In Section 5.0 (Permanent Closure and	Sep 8: If revegetation is required Parmaount will	

		<p>Reclamation), Paramount indicates that, if necessary, minor reclamation treatments, such as revegetation, may be completed at the site.</p> <p>Recommendation ADKFN requests that, if revegetation does occur onsite, we are provided with details of the site revegetation plan, reclamation tree and shrub species list, and reclamation seed mix details beforehand and that Paramount engage the community to gather input on plant species we may wish to see established at the site. In the future, ADKFN community members may wish to gather edible and medicinal plants from the site. By engaging ADKFN now, Paramount can ensure that the Site will provide maximum benefit for ADKFN's future use of the Site.</p>	<p>work with affected parties and other stakeholders to identify an appropriate seed/vegetation mix. If ADKFN has a preferred seed/vegetation mix, Paramount would be happy to receive that information.</p>	
7	Road Decommissioning	<p>Comment In the Closure and Reclamation Plan, Paramount does not mention if, or when, the access road for the Site will be decommissioned.</p> <p>Recommendation ADKFN requests that Paramount consult with the community to determine if road access should be maintained to the Site to allow for future use, or if this access road should be decommissioned and access to the site restricted. If the road is to be maintained, this should include details on how the integrity of the road and culverts, if applicable, will be ensured, and who will assume responsibility for this maintenance. If ADKFN</p>	<p>Sep 8: The road was decommissioned at the end of the winter season. The road will be monitored as part of the annual monitoring. Given the road was winter accessed and the soil bed was not disturbed, Paramount envisions the road will naturally revegetate. A barrier to natural revegetation could be continued use by other land users in the area.</p>	

		wishes to see the road decommissioned, this should include details on how the right-of-way will be stabilized and reclaimed, the removal of culverts and streambanks will be stabilized, and monitoring that will occur post-decommissioning.		
8	Engagement	<p>Comment It is apparent from the Closure and Reclamation Plan that much of the work at the Site has already been completed. For example, the Phase 1 and 2 ESAs were completed in 2018 and 2019, respectively, and remediation activities (e.g. site recontouring and soil remediation) occurred in early 2020. Paramount has engaged ADKFN very little on the remediation and reclamation of the Site. This includes gathering input from the community to help inform the remediation and reclamation plan, as well as providing ADKFN with opportunities to accompany Paramount or even be involved directly in the work being completed and any post-closure monitoring relate to site revegetation.</p> <p>Recommendation ADKFN requests a deeper level of engagement for the remaining activities indicated in Table 2 (Proposed Sequence of Events) of the Closure and Reclamation Plan. Given the that Paramount engage ADKFN to gather input to inform the work, and that ADKFN be provided the opportunity to accompany Paramount onsite to oversee the work being completed.</p>	<p>Sep 8: Paramount would encourage ADKFN to find opportunities to work with the MVLWB and GNWT to be involved in post-closure monitoring. Paramount will continue to inform affected parties and other stakeholders of plans and outcomes at the site via engagement activities and MVLWB processes. Paramount would note ADK businesses were directly involved in the reclamation at the site.</p>	

9	Environmental Site Assessments	<p>Comment Paramount notes in the Closure and Reclamation Plan that a Phase 1 ESA was completed in July 2018. The results from the Phase 1 ESA indicated that a Phase 2 ESA was required for the Site due to the possible presence of contaminants of potential concern (COPC). The Phase 2 ESA was completed in October 2019, which indicated that petroleum hydrocarbons (PHC) were present in the well center area, drilling waste disposal area, and flaring area. While ADKFN understands that the contaminated soil will be treated on-site and mixed with clean subsoil, contamination will continue to be a concern for our community's future use of the Site.</p> <p>Recommendation ADKFN requests that Paramount share the results of the Phase 1 and Phase 2 ESAs. Due to perceived tainting of the environment, the location of formerly contaminated areas may have implications for the future use of the site by our community members and ADKFN requires this information to adequately assess and address impacts to our rights and interests and exercise of our rights.</p>	Sep 8: Duplicate	
10	Site Infrastructure Removal	<p>Comment In Section 2.2 (Abandonment and Surface Equipment Removal), Paramount indicates that surface infrastructure was removed from the Site in Q1 2020. Despite the Site being located within ADKFN's traditional territory, they</p>	Sep 8: Duplicate	

		<p>were not provided with the opportunity for right of first refusal on salvage of the equipment and materials. It is not clear from the Plan if Paramount has this surface infrastructure staged at an area where this opportunity could still be provided.</p> <p>Recommendation ADKFN requests that Paramount clarify why the community was not provided the opportunity for the right of first refusal prior to the surface infrastructure being removed. If this equipment is currently staged at an area where this opportunity could still be provided, Paramount must with ADKFN to determine if they wish to complete a salvage of this equipment and infrastructure.</p>		
11	On-site Soil Treatment	<p>Comment In Section 2.5 (Remediation), Paramount indicates that contaminated soils were treated on-site by excavating an unimpacted area and using the excavated material as clean subsoil for mixing. Paramount has not provided information on the area that was used for mixing soil (e.g. if an engineered and lined pad was used) or how the activities were managed, for example, by controlling and testing runoff water from the mixing area.</p> <p>Recommendation ADKFN requests that Paramount provide greater detail on the soil remediation activities, include the location where soils were mixed, and the mitigation measures put in place during these activities. This information is important</p>	Sep 8: Duplicate	

		for understanding if these activities may have inadvertently contaminated other areas of the Site.		
12	Post-closure Monitoring	<p>Comment In the Closure and Reclamation Plan, Paramount provides very few details regarding post-closure monitoring of the site or if ADKFN will provided an opportunity to be involved.</p> <p>Recommendation ADKFN requests that Paramount expand upon this aspect of the Plan, including if the site will be monitored for erosion and settling, continued monitoring of groundwater and soil for contamination downgradient of contaminated areas, contingency monitoring if reclamation is not successful (e.g., testing for soil compaction, admixing, topsoil depth, and coarse materials), and if ADKFN will be provided an opportunity to be involved in post-closure monitoring activities. ADKFN possesses valuable Traditional Knowledge and will be future users of the Site, which could help to inform the reclamation process and help to ensure its success.</p>	Sep 8: Duplicate	
13	Post-closure Monitoring	<p>Comment In Section 2.6 (Reclamation) Paramount provides a brief description of the activities that have been completed to reclaim the site. Paramount has provided very little information on the monitoring activities that will occur post-closure to determine if remediation and reclamation activities were successful. The information</p>	Sep 8: Duplicate	

		<p>provided on post-closure monitoring is limited to determining if the vegetation cover and species assemblage is similar to surrounding areas and ensuring invasive species are not more prevalent than in surrounding areas.</p> <p>Recommendation ADKFN requests that Paramount provide greater detail on the monitoring that will occur onsite In addition to the activities detailed in the Plan, this should include monitoring for erosion and settling onsite, further testing of soil and groundwater downgradient of the well, and the frequency, timing and duration of monitoring. This information will be helpful in identifying and advancing concrete recommendations for post-closure monitoring activities. Further, ADKFN recommends the involvement of ADKFN monitors on-site to participate in monitoring activities and ensure that reclamation measures are mitigating and avoiding impacts to ADKFN's rights and interests.</p>		
14	Site Revegetation	<p>Comment In Section 5.0 (Permanent Closure and Reclamation), Paramount indicates that, if necessary, minor reclamation treatments, such as revegetation, may be completed at the site.</p> <p>Recommendation ADKFN requests that, if revegetation does occur onsite, we are provided with details of the site revegetation plan,</p>	Sep 8: Duplicate	

		<p>reclamation tree and shrub species list, and reclamation seed mix details beforehand and that Paramount engage the community to gather input on plant species we may wish to see established at the site. In the future, ADKFN community members may wish to gather edible and medicinal plants from the site. By engaging ADKFN now, Paramount can ensure that the Site will provide maximum benefit for ADKFN's future use of the Site.</p>		
15	Road Decommissioning	<p>Comment In the Closure and Reclamation Plan, Paramount does not mention if, or when, the access road for the Site will be decommissioned.</p> <p>Recommendation ADKFN requests that Paramount consult with the community to determine if road access should be maintained to the Site to allow for future use, or if this access road should be decommissioned and access to the site restricted. If the road is to be maintained, this should include details on how the integrity of the road and culverts, if applicable, will be ensured, and who will assume responsibility for this maintenance. If ADKFN wishes to see the road decommissioned, this should include details on how the right-of-way will be stabilized and reclaimed, the removal of culverts and streambanks will be stabilized, and monitoring that will occur post-decommissioning.</p>	Sep 8: Duplicate	
16	Engagement	<p>Comment It is apparent from the Closure and Reclamation</p>	Sep 8: Duplicate	

		<p>Plan that much of the work at the Site has already been completed. For example, the Phase 1 and 2 ESAs were completed in 2018 and 2019, respectively, and remediation activities (e.g. site recontouring and soil remediation) occurred in early 2020. Paramount has engaged ADKFN very little on the remediation and reclamation of the Site. This includes gathering input from the community to help inform the remediation and reclamation plan, as well as providing ADKFN with opportunities to accompany Paramount or even be involved directly in the work being completed and any post-closure monitoring relate to site revegetation.</p> <p>Recommendation ADKFN requests a deeper level of engagement for the remaining activities indicated in Table 2 (Proposed Sequence of Events) of the Closure and Reclamation Plan. Given the that Paramount engage ADKFN to gather input to inform the work, and that ADKFN be provided the opportunity to accompany Paramount onsite to oversee the work being completed.</p>		
GNWT - ENR - EAM (Environmental Assessment and Monitoring): Central Email GNWT				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
8	General File	<p>Comment (doc) ENR Letter with Comments and Recommendations</p> <p>Recommendation</p>		
1	Topic: Analytical Results	<p>Comment The Plan states that a Phase II ESA and a Phase III ESA were performed</p>	<p>Sep 8: A summary of results is captured in the previously provided Closure and</p>	

		<p>for the site, which have allowed Paramount to conclude that the reclamation of 2000 m3 of petroleum hydrocarbon contaminated soil was completed using a method of mixing and buried on site with clean soil. However, without reviewing the ESAs, including the analytical Phase III results, ENR is uncertain if the reclamation of the contaminated soil was completed adequately. This information will be required for assessing the upcoming financial security estimate and the ultimate permanent closure of the site.</p> <p>Recommendation 1) ENR recommends that the proponent share the Phase II and III ESAs with ENR, including the analytical results from the field investigation and conformation program. This information should be shared prior to the public review of the forthcoming updated Security Estimate.</p>	<p>Reclamation Plan. The applicable regulatory guideline documents, Subsoil Petroleum Hydrocarbon Guidelines for Remote Forested Sites in the Green Area and the Alberta Tier 2 Soil and Groundwater Remediation Guidelines, have been attached.</p>	
2	Topic: Site-Specific Remediation Guidelines	<p>Comment Paramount has provided limited details on the Site-Specific Remediation Guidelines developed for the site. ENR seeks further information on why and how the Tier 2 AEP Guidelines were selected (e.g., why not Tier 1 AEP?). This information should confirm that the Site-Specific Remediation Guidelines meet the principals and objectives of the MVLWB Guideline for the Design, Operation, Monitoring, Maintenance and Closure of Petroleum Hydrocarbon-Contaminated</p>	<p>Sep 8: The H-78 site is a remote forested site, requiring approximately 80km of winter-built ice-road to access by vehicle and equipment. The remediation alternative of hauling the material to landfill is a higher risk activity compared to guideline adjustment and/or pathway elimination. The risks of transporting contaminated material included risks to humans, equipment, and environment including increased air emissions from trucking. Hauling on a remote ice-road</p>	

		<p>Soil Treatment Facilities in the Northwest Territories (2020).</p> <p>Recommendation 1) ENR recommends that Paramount discuss how the current plan meets the objectives of the MVLWB Guideline for the Design, Operation, Monitoring, Maintenance and Closure of Petroleum Hydrocarbon-Contaminated Soil Treatment Facilities in the Northwest Territories (2020). This should include further details that provide the rationale on why the Tier 2 AEP standard was selected.</p>	<p>that would be subject to repeated fatigue, in short daylight hours, increased the potential for an incident or accident. Guidelines for contaminated land in NWT are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (CSQG), and managed under the NWT Department of Environment and Natural Resources (ENR) Environmental Guideline for Contaminated Site Remediation (ENR, 2003). However, in the CSQG, Natural Area land use for remote forested sites is not identified as a land use category. Guidelines for remote forested sites have been developed for other jurisdictions, specifically, in Alberta. Like the ENR, Alberta guidelines allow the use of reasonable guideline modification and risk-based management at contaminated sites. The Alberta Tier 2 approach allows for the consideration of site-specific conditions through the modification of Tier 1 guidelines and/or removal of exposure pathways that are not applicable to the site.</p>	
3	Topic: Financial Security	<p>Comment Paramount has indicated that an updated Security Estimate will be provided under a separate cover letter based on the work remaining at the site. ENR notes that on November 9, 2018, Paramount wrote to the MVLWB stating that they would not use the RECLAIM model, as they could not get</p>	<p>Sep 8: ENR's request is noted</p>	

		<p>it to work on their end. ENR would like to reiterate that the current RECLAIM model, Version 7.0 - Oil and Gas, can be found on the MVLWB website and is fully functional for user inputs and calculations. Due to the split of land and water liabilities associated with the project site, ENR requests that the upcoming security estimate be calculated using RECLAIM. ENR further notes that this is consistent with other oil and gas reclamation projects using RECLAIM, such as Paramount's Liard East and West Sites (MV2013L1-0002-003).</p> <p>Recommendation 1) ENR recommends that for the upcoming updated Security Estimate, Paramount submit the estimate using the RECLAIM model, Version 7.0 "Oil and Gas."</p>		
4	Topic: Section 5.0 Permanent Closure and Reclamation	<p>Comment The following recommendations are in reference to the monitoring of the wellsite for settling and vegetation reestablishment.</p> <p>Recommendation 1) ENR recommends further testing of remediation site to ensure that the contaminants of concern are within acceptable levels as per environmental guidelines.</p>	<p>Sep 8: No additional sampling will be conducted based on the conclusions presented in the Phase III ESA.</p>	
5	None	<p>Comment None</p> <p>Recommendation 2) Regarding the statement: "If necessary minor reclamation treatments, treatments will be conducted via helicopter (i.e. revegetation)", ENR has a list of preferred grass seed species to utilize for</p>	<p>Sep 8: Paramount will engage affected parties and other stakeholders if reseeding is required for the site. Paramount will note Suzanne Carrier, Habitat Biologist as the appropriate contact for ENR.</p>	

		<p>revegetation and recommends that Paramount contact Suzanne Carriere, Habitat Biologist by email at: Suzanne_Carriere@gov.nt.ca, prior to reseeding the site.</p>		
6	Topic: Section 2.6: Reclamation	<p>Comment In reference to the statement: "Prevalence of invasive of invasive species should be no greater than the surrounding areas." Invasive species should be absent in every reclaimed area.</p> <p>Recommendation 1) Areas with invasive species present should be documented and reported to the ENR to Johanna Stewart, Invasive Species Biologist by email at: Johanna_Stewart@gov.nt.ca.</p>	<p>Sep 8: Invasive species (if present) would be noted in the Progress reports required under the Land Use Permit and under the Annual Report for the Water Licence. These will be posted to the Public Registry.</p>	
7	Topic: Appendix A	<p>Comment A map with greater detail is needed. The first map does not locate the site about roads or landmarks. As well, the map in the top left corner should indicate the site location within Northwest Territories, not British Columbia.</p> <p>Recommendation 1) ENR recommends submitting a map with greater detail and reference the site location within a map of the Northwest Territories, not British Columbia.</p>	<p>Sep 8: The Celibeta NWT Access Map in Appendix A provides the information requested (page 13 of 15 of the document)</p>	



August 18, 2020

Angela Love
Regulatory Specialist
Mackenzie Valley Land and Water Board
7th Floor – 4910 50th Avenue
P.O. Box 2130
Yellowknife, NT
X1A 2P6

Dear Ms. Love,

**Re: Paramount Resources Ltd.
 Land Use Permit – MV2018A0022
 Water Licence – MV2018L1-0005
 Engagement Plan Version 2
 Closure and Reclamation Plan Version 1
 Request for Comments**

The Department of Environment and Natural Resources (ENR), Government of the Northwest Territories has reviewed the plans 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: Analytical Results

Comment(s):

The Plan states that a Phase II ESA and a Phase III ESA were performed for the site, which have allowed Paramount to conclude that the reclamation of 2000 m³ of petroleum hydrocarbon contaminated soil was completed using a method of mixing and buried on site with clean soil. However, without reviewing the ESAs, including the analytical Phase III results, ENR is uncertain if the reclamation of the contaminated soil was completed adequately. This information will be required for assessing the upcoming financial security estimate and the ultimate permanent closure of the site.

Recommendation(s):

- 1) ENR recommends that the proponent share the Phase II and III ESAs with ENR, including the analytical results from the field investigation and conformation program. This information should be shared prior to the public review of the forthcoming updated Security Estimate.

Topic 2: Site-Specific Remediation Guidelines**Comment(s):**

Paramount has provided limited details on the Site-Specific Remediation Guidelines developed for the site. ENR seeks further information on why and how the Tier 2 AEP Guidelines were selected (e.g., why not Tier 1 AEP?). This information should confirm that the Site-Specific Remediation Guidelines meet the principals and objectives of the MVLWB Guideline for the Design, Operation, Monitoring, Maintenance and Closure of Petroleum Hydrocarbon-Contaminated Soil Treatment Facilities in the Northwest Territories (2020).

Recommendation(s):

- 1) ENR recommends that Paramount discuss how the current plan meets the objectives of the MVLWB Guideline for the Design, Operation, Monitoring, Maintenance and Closure of Petroleum Hydrocarbon-Contaminated Soil Treatment Facilities in the Northwest Territories (2020). This should include further details that provide the rational on why the Tier 2 AEP standard was selected.

Topic 3: Financial Security**Comment(s):**

Paramount has indicated that an updated Security Estimate will be provided under a separate cover letter based on the work remaining at the site. ENR notes that on November 9, 2018, Paramount wrote to the MVLWB stating that they would not use the RECLAIM model, as they could not get it to work on their end. ENR would like to reiterate that the current RECLAIM model, Version 7.0 – Oil and Gas, can be found on the MVLWB website and is fully functional for user inputs and calculations. Due to the split of land and water liabilities associated with the project site, ENR requests that the upcoming security estimate be calculated using RECLAIM. ENR further notes that this is consistent with other oil and gas reclamation projects using RECLAIM, such as Paramount’s Liard East and West Sites (MV2013L1-0002-003).

Recommendation(s):

- 1) ENR recommends that for the upcoming updated Security Estimate, Paramount submit the estimate using the RECLAIM model, Version 7.0 – Oil and Gas.

Topic 4: Section 5.0 Permanent Closure and Reclamation**Comment(s):**

The following recommendations are in reference to the monitoring of the wellsite for settling and vegetation reestablishment.

Recommendation(s):

- 1) ENR recommends further testing of remediation site to ensure that the contaminants of concern are within acceptable levels as per environmental guidelines.
- 2) Regarding the statement: “If necessary minor reclamation treatments, treatments will be conducted via helicopter (i.e. revegetation)”, ENR has a list of preferred grass seed species to utilize for revegetation and recommends that Paramount contact Suzanne Carriere, Habitat Biologist by email at: [Suzanne Carriere@gov.nt.ca](mailto:Suzanne.Carriere@gov.nt.ca), prior to reseeding the site.

Topic 5: Section 2.6: Reclamation**Comment(s):**

In reference to the statement: “Prevalence of invasive species should be no greater than the surrounding areas.” Invasive species should be absent in every reclaimed area.

Recommendation(s):

- 1) Areas with invasive species present should be documented and reported to the ENR to Johanna Stewart, Invasive Species Biologist by email at: [Johanna Stewart@gov.nt.ca](mailto:Johanna.Stewart@gov.nt.ca).

Topic 6: Appendix A

Comment(s):

A map with greater detail is needed. The first map does not locate the site about roads or landmarks. As well, the map in the top left corner should indicate the site location within Northwest Territories, not British Columbia.

Recommendation(s):

- 1) ENR recommends submitting a map with greater detail and reference the site location within a map of the Northwest Territories, not British Columbia.

Comments and recommendations were provided by ENR technical experts in the Water Management and Monitoring Division, the Wildlife and Fish Management Division and the Dehcho Region and were coordinated and collated by the Environmental Assessment and Monitoring Section (EAM), 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 email: patrick.clancy@gov.nt.ca.

Sincerely,



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