Sahtu Land and Water Board

Staff Report

Applicant: MGM Energy	
Location: 110 km SE Norman Wells, near Tulit'a	**File Numbers:** S22A-002, S22L1-002
Date Prepared: July 20, 2023	**Date of Board Meeting:** August 15, 2023
Project Name: MGM Energy I-78 East Mackay Well Abandonment and Site Reclamation and Closure Project	

1. Purpose/Report Summary

The purpose of this Report is to present the following to the Sahtu Land and Water Board for consideration and decision:

a) A new type A Land Use Permit and type B Water Licence Applications submitted by MGM Energy (MGM).
b) Conformity with the Sahtu Land Use Plan.
c) The request for Exemption from Preliminary Screening.
d) Updated Preliminary Screening Determination.
e) Engagement Plan and Record.
f) Waste Management Plan.
g) Spill Contingency Plan.
h) Closure and Reclamation Plan.
i) Security Estimate.
j) Draft Terms and Conditions for the Permit and Licence.

2. Background

2.1 Regulatory Process Timeline

- **June 29, 2022**: Received MGM's applications for new Type A Land Use Permit and Type B Water Licence for abandonment and reclamation program in the East MacKay area of the Tulit'a District.
- **July 13, 2022**: Applications uploaded to Public Registry.
- **August 2, 2022**: Application deemed incomplete.
- **September 16, October 17, October 26:** Additional information/revisions received.
- **October 26, 2022**: Application deemed complete and uploaded onto Public Registry.
- **October 26, 2022:** Draft Permit and Licence terms and conditions uploaded onto Public Registry.

- **October 26, 2022:** Review package sent out electronically to members of the Tulit'a District Distribution List using the Online Review System (ORS).
- **November 9, 2022**: Reviewer comments end date.
- **November 10, 2022:** Proponent requests response extension to January 6, 2023.
- **November 15, 2022:** Original proponent response end date.
- **November 28, 2022:** Proponent requests response further extension to February 15, 2022.
- **December 7, 2022:** End of 42-day timeline for Permit review process and decision.
- **December 7, 2022:** Board meeting to invoke Section 22(2)(b) to allow further studies and investigations, and grant MGM additional time until February 15 for response to reviewer submissions.
- **February 8, 2023**: Proponent request granted for additional time until May 31, 2023 to respond to review comments and recommendations.
- **June 2, 2023:** Proponent request granted for additional time until June 30, 2023.
- **June 30, 2023:** Proponent responses submitted.
- **August 2, 2023:** Board meeting to consider Preliminary Screening.
- **August 13, 2023:** End of 10-day pause period for referral to EA.
- **August 14, 2023:** Board meeting to consider Applications rescheduled due to internet and phone outages in the NWT.
- **August 15, 2023:** Board meeting to consider Applications.

3. Project Overview

MGM submitted new applications for a 5-year term Land Use Permit[1] and 5-year term Water Licence[2] for the abandonment and closure of I-78 East McKay Project which includes a Wellsite Area and Staging Area. The Wellsite Area is located 110 km southeast of Norman Wells, is 2.4 ha in size, and includes a Wellhead, Recovered Wellhead Bare Area, and three groundwater monitoring wells. The Staging Area (0.8 ha) is located approximately 22 km north of the wellsite along the bank of the Mackenzie River. A third-party trailer is in the southwest corner of the staging area (**Map 1**).

Construction and drilling activities for the I-78 East Mackay well occurred in the 2012-2013 winter season under Permit S12A-001 and Licence S12L1-001 and the well has remained suspended since. Environmental monitoring and inspections of the location and wellhead have been conducted periodically over the years. The Permit and Licence were extended in 2017 for two years. Section *26(1)(B) (2.14) states "The Permittee shall complete all clean up and restoration of the lands used prior the expiry date of this permit*." The Permit and Licence expired in 2019 prior to abandonment and reclamation being completed. In the current applications, MGM is planning on abandoning the wellbore, removing the wellhead, and completing reclamation activities at the lease. Reclamation of the staging area is complicated because of the presence of third-party equipment on a portion of the

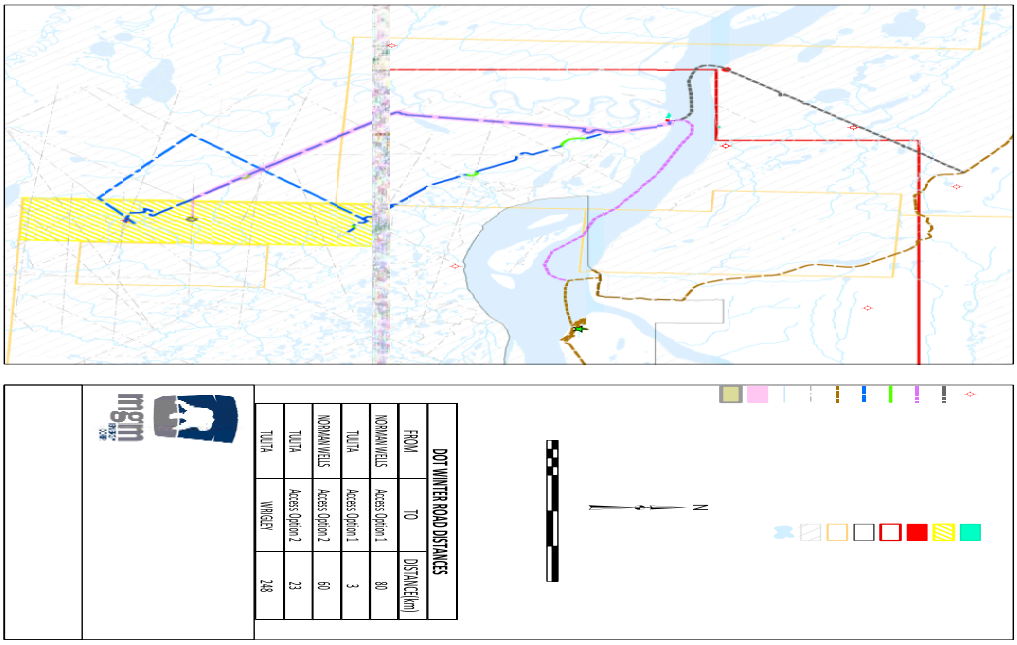
[1] See SLWB Online Registry www.slwb.com for S22A-002 – MGM Energy – Land Use Permit Application – Jun29_22.pdf
[2] See SLWB Online Registry S22L1-002 – MGM Energy – Water Licence Application – Jun 29_22.pdf

area and the responsibility for its' removal and clean-up of potentially contaminated soil is under discussion between MGM Energy and GNWT-ECC.

3.1 Project Activities

The Project will include the following land-use operations:

- Staging and mobilization - movement of equipment to the project area or region.
- Construction and operation of ice road and ice pad.
- Abandonment operations for one sweet well.
- Decommissioning three groundwater wells.
- Reclamation that may include scarification, seeding, recontouring, in-situ remediation and soil removal, if necessary.
- Demobilization of MGM Energy equipment and material from staging area, well site, camps, and other associated infrastructure.
- Monitoring site conditions post abandonment and completing any necessary reclamation activities.



Map 1: Project Area Location Map for MGM Energy I-78

3.2 Project Activities Schedule

Reclamation and monitoring activities are expected to occur during the entire term of the Permit and Licence (2023-2028). Winter construction, camp usage, and well abandonment activities, and remediation activities are planned for the first year of the authorizations during winter 2023-2024. A schedule of proposed activities is in Table 1.

Table 1 Proposed Schedule of Activities

Action	Rationale	General Timeframe
Well abandonment, remediation, and reclamation earthworks.	• OROGO requires completion of well abandonment by 2025. • see above description of remediation and reclamation activities.	Q4 2023 to Q1 2024
Monitor wellsite for settling and native vegetation re-establishment.	• To ensure that revegetation is achieving >70% native species cover. • To monitor for and control undesirable / non-native invasive species presence. • To check that settling around the wellhead has not increased from the 2020 remediation and reclamation activities.	2023-2026
Sample surface soils to evaluate and monitor any residual soil or water exceedances.	• To monitor potential residual concentrations in surface soils or standing water.	2023-2026
Site closure.	• Conduct a site visit with the inspector with the intention of receiving final regulatory closure on the site.	2026 or 2027

3.5 Environmental Site Monitoring Reports/Inspection Reports

Environmental site monitoring was undertaken in 2018, 2019 and again in 2020. The 2020 Environmental Site Monitoring Report[3] was submitted with the application.

Wellsite Area

In 2019 standing water noted around the wellhead reported exceedances of dissolved iron, total metals, and toluene. Soil samples taken around the wellhead area reported PHC exceedances.

In 2020, standing water and soil were not tested for contaminants. Sampling was recommended when the wellhead is cut, capped, and abandoned, as follows:

- Collect standing water sample at the wellhead location for petroleum hydrocarbons (PHCs), total metals and extractable barium for confirmation of exceedances and chemistry trending.
- Collect reference water sample for routine parameters and total metals, if standing water is observed off-site.
- Collect up to 6 samples from 3 reference upgradient soil locations and conduct salinity analysis for background reference soil chemistry.
- Samples should be collected from surface (0-0.25m) and (0.25-0.5m) depths at each location.
- Soil sample collection at the wellhead area at SS22-04 0.25-0.5 m location for BTEX, PHC F1-F4 and polycyclic aromatic hydrocarbons (PAHs) to confirm the biogenic sourced hydrocarbons.

[3] See SLWB Online Registry www.slwb.com for S22L1-002 – MGM Energy – 2020 Environmental Site Monitoring Report – Jun 29_22

In 2019, natural vegetation of the lease appeared good, with over 70% native vegetation cover and no invasive species present. Reclamation treatments were recommended following wellhead abandonment, as follows:

- Reconnaissance level vegetation monitoring only at the Site to assess growth and establishment of vegetation and document any issues that arise.
- Carry out detailed vegetation monitoring in conjunction with the proposed soil and water sampling in the Wellsite Area.

Wildlife use at the wellsite area was limited to moose hoof prints and droppings. Wildlife use will continue to be monitored during site inspections.

There were no issues related to terrain instability.

Staging Area

Previously documented third-party trailer, wooden outbuilding, scrap wood and metal wastes remain in the southwest corner of the Staging Area where a fuel oil/kerosene tank on the trailer was observed to be potentially leaking. The ownership of these materials is unknown and are not the property of MGM Energy. The resolution of who is responsible for clean-up and reclamation of this area of concern has not yet been resolved.

The staging area shows stable terrain conditions, and no evidence of standing water. Soils at the third-party trailer were recommended by GNWT-ENR to be sampled for potential PHCs. Natural revegetation was progressing with >70% cover on the west end, and 65-70% cover in the central and east sections. Invasive species at the staging area were removed in 2019, with no evidence of spread in 2020.

Environmental inspections were carried out by GNWT-Lands in 2012, 2013, 2017, and 2021. The 2021 inspection reported some slumping around the wellhead, and positive regrowth and establishment of native vegetation. The inspection report recommended MGM Energy apply for a new permit for the wellhead abandonment and site reclamation as required by the previous Permit that expired in 2019.

3.6 Sahtu Land Use Plan Conformity

Pursuant to subsection 61(1) of the MVRMA, the Board may not issue a licence or permit except in accordance with any applicable land use plan. As the Project is in the Sahtu Settlement Area, the Sahtu Land Use Plan (SLUP or Plan) applies, and the project must be in conformity with the Plan that came into effect on August 8, 2013. Board staff have required the Proponent demonstrate how the project meets the appropriate SLUP conformity requirements.

As presented under the Eligibility section of this report, the Proponent holds previous authorizations for the well site located in the Project area that were approved before the SLUP came into effect. However, these legacy land use authorizations expired in 2019; accordingly, per section 2.5, Category

D. 1.5, the Project no longer meets the definition of “legacy” because the new authorizations expired prior to the submission of the new /renewal. However, since the Project activities are related to the cleanup and reclamation historic industrial sites (with soils and water contamination) in accordance with Category F., the Project is exempt from the application of CR#1, for Zoning.

The Project is required to meet the intent of the remaining applicable Conformity Requirements number 2 to 14.

MGM submitted the Proponent Determination of Project Conformity with the Applications. Board staff review, which included consideration of the draft conditions of the Permit and Licence, has determined that the Project meets the intent of the applicable Conformity Requirements. The Board did not receive any reviewer comments or recommendations regarding conformity to the SLUP.

Under evaluation by Board staff (Table 2), it appears the project conforms to the SLUP and therefore Board staff do not recommend referral to the SLUPB for a conformity determination as set out in Section 47. Board agrees.

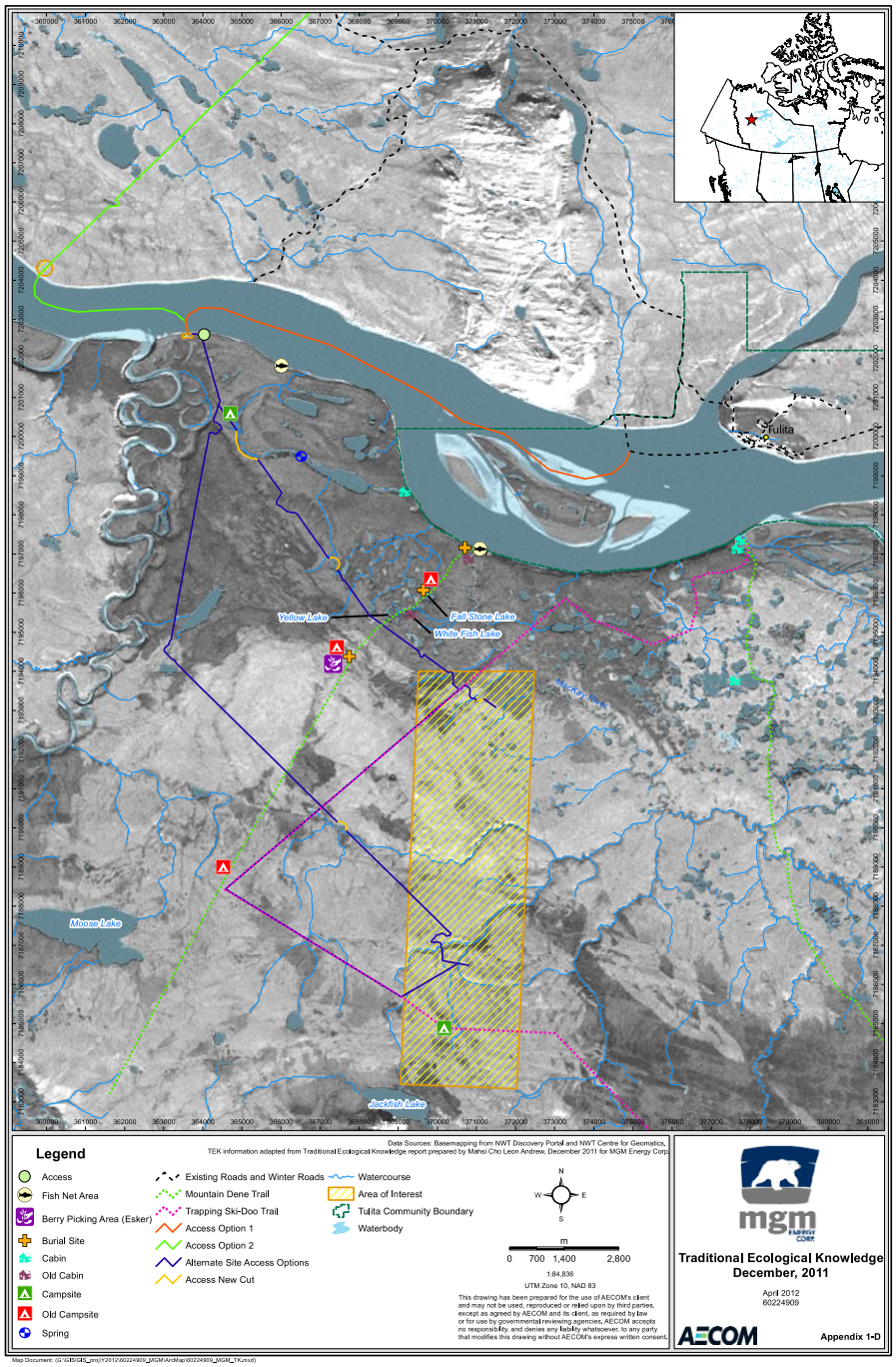
Mapping of Traditional Use Areas in and around the Project site are shown in Map 2, below.

Table 2: Evaluation of Conformity Requirements for MGM Energy I-78 Abandonment Project

Conformity Requirement	Application Section(s)	Supporting Evidence
CR#1 – Land Use Zoning	Exempt	• Staging area is in Zone 63 Deh Cho (Mackenzie River) Special Management Zone. SMZ allows for use for barge traffic, staging areas, winter roads. • Lease is in a General Use Zone. No restrictions.
CR#2 – Community Engagement and Traditional Knowledge	Project Engagement Plan and Record (Consultation Log) S12A-001 Appendix 1-D - Traditional Ecological Study[4]	• TEK Study: *Communication will help create a good working relationship with the local RRC.* • Engagement Plan and Record
CR#3 – Community Benefits	Project Engagement Plan and Consultation Log	• MGM Energy has committed to hire local contractors and equipment for the Project.
CR#4 – Archaeological Sites and Burial Sites	S12A-001 Heritage Impact Assessment[5]	• A review of existing records held by the Prince of Wales Northern Heritage Centre determined there are no known archaeological sites in proximity of the two well sites and thus, there will be no impact. • The fieldwork included a helicopter overflight to assess the archaeological potential of the development areas and a foot reconnaissance with excavation of numerous shovel tests at the well site. • All shovel tests were negative of artifacts and no cultural resources were identified.
CR#5 – Watershed Management	Application Attachment	• Water runoff from lease site toward Mackay River and Mackenzie River.
CR#6 – Drinking Water	Not Applicable	• Water withdrawal and use will not affect any local drinking water sources.
CR#7 – Fish and Wildlife	Application Attachments - Traditional Ecological Knowledge Study and Pre-development Site Photos[6]	• October 12, 2011 – two moose spotted in area of interest (lease – wellsite); October 13, 2011 – fresh moose tracks spotted in area of interest (lease – wellsite). • *Area is rich with vegetation useful for summer and winter activities and provides good wildlife habitat and berry plants.* • *Good Moose habitat in the area due to muskeg and wetland lakes.* • *Muskeg lakes and small lakes and streams near lease not big enough to draw water.* • *Jackfish Lake, Yellow Lake, Fall Stone Lake are fed by underground springs. They are all important fish lakes.* • *Stream at edge of lease area is important migration route for fish to get to Jackfish Lake to spawn.*

[4] See SLWB Online Registry for S12A-001 – Appendix 1D – Traditional Ecological Study – Apr 30_12
[5] See SLWB Online Registry for S12A-001 – Heritage Impact Assessment – Sept 4_12
[6] See SLWB Online Registry for S12A-001 – Appendix A1 – Site Photographs – Apr 30_12

		• *Woodland Caribou move along base of Mackay Range Mountain toward Tate Lake area and along base of Mackenzie Mountain Range in winter.* • *Occasionally Caribou appears at mouth of Bear River and Mackenzie River.*
CR#8 – Species Introductions	Project Environmental Protection Plan	• 2022 Environmental Site Assessment and Monitoring Report
CR#9 – Sensitive Species and Features	Application Attachment Traditional Ecological Knowledge Study	• *A lot of muskeg and soft ground in the area which can take longer to freeze up solid. Frost continues to build well into February.* • *The whole land is considered spiritual to the people and gift offerings are always made to the Lands and Water by hunters or berry pickers.* • *Visual spiritual ceremonial sites include Bear Rock, Four mile smoke, Mackay Range Jackfish lake (pre-historic lake), Windy Island.* • *Berry Picking area Esker is a spiritual place for Mountain Dene.*
CR#10 – Permafrost	Application Attachment Traditional Ecological Knowledge Study	• *The whole area is permafrost except natural underground springs from Mackay Mountain* • *Elders are saying permafrost is slowly melting away.*
CR#11 – Project-Specific Monitoring	Closure and Reclamation Plan Traditional Ecological Knowledge Study	• 2022 Environmental Site Assessment and Monitoring Report • *Company needs a good monitoring system to watch over traditional lands, and water when exploration takes place.*
CR#12 – Financial Security	Closure and Reclamation Plan and Security held for S12A-001 and S12L1-001	• MGM is a wholly owned subsidiary of Paramount Resources Ltd. Latest financials are available at https://www.paramountres.com/content/uploads/2022/08/PRL-Q2-2022-Results-FINAL.pdf • GNWT-ENR holds **$553,579.00** for S12L1-001 • GNWT Lands holds **$234,423.00** for S12A-001
CR#13 – Closure and Remediation	Closure and Reclamation Plan Traditional Ecological Knowledge Study	• soil and water samples will be taken at the wellhead and surrounding lease area to delineate extent of contaminated material for excavation and remediation. • *Companies must try to leave no footprint behind on the traditional land when they leave. This will make the harvester happy and enjoy their way of life.* • *All streams must be kept open and free of ice bridge at the end of Project.*
CR#14 – Protection of Special Values	Deh Cho Special Management Zone Sahtu Land Use Plan	Values to be protected: archaeological and burial sites. Values to be respected: water quality and riparian habitat; special harvesting areas for moose, waterfowl, birds, plants, berry picking sites, fish camps. Values to take into account: traditional trails, wood harvesting areas, cabins, gathering places.

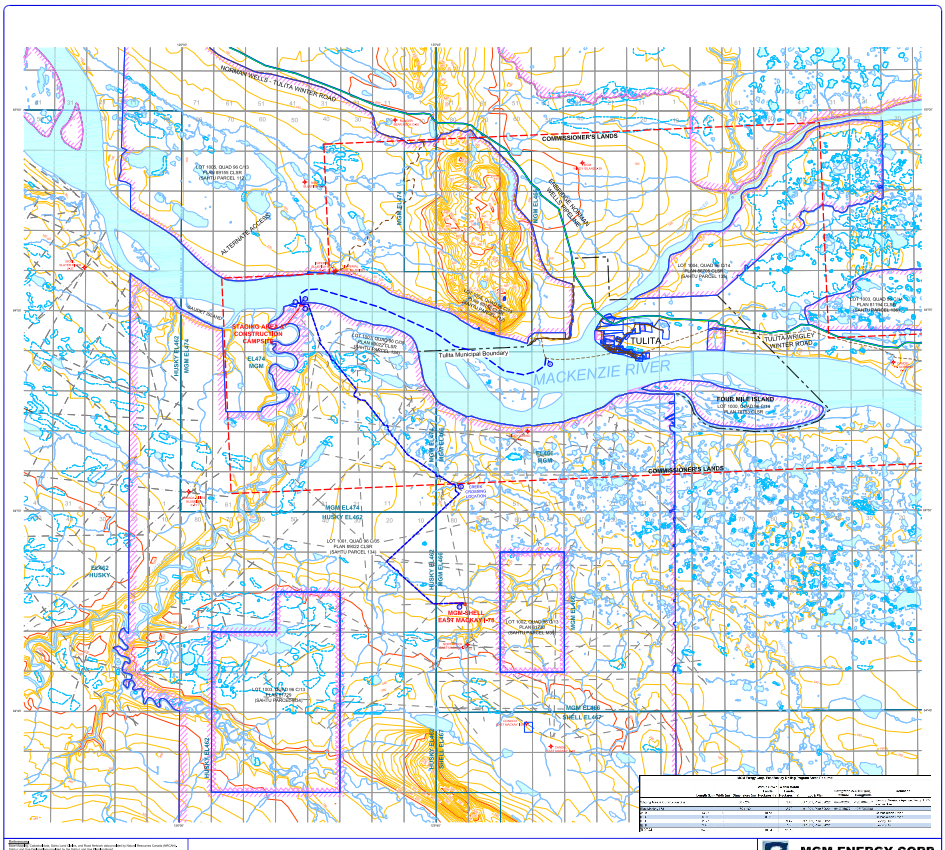


Map 2: Traditional Ecological Mapping in the MGM I-78 Project Area

4. Program Components

4.1 Project Location

The East MacKay I-78 Well Abandonment and Site Reclamation and Closure Project includes a Wellsite Area (Lease) and Staging Area. The Wellsite Area is located 110 km southeast of Norman Wells, on the southwest side of the Mackenzie River across from Tulit'a. The lease is 2.4 ha in size, and includes a Wellhead, Recovered Wellhead Bare Area, and three groundwater monitoring wells. The Staging Area (0.8 ha) is located approximately 22 km north of the wellsite along the bank of the Mackenzie River. A third-party trailer not part of MGM Energy materials and equipment is in the southwest corner of the staging area. An as-built Plan was submitted to the Board following completion of the drilling operations in accordance with conditions of Permit S22A-001 (Map 3).



Map 3: As-built Plan for MGM I-78 East Mackay Drilling Project

4.2 Equipment and Fuel

A revised equipment list was submitted by MGM Energy in response to reviewer comments and recommendations, in response to the security estimate prepared for GNWT by ARKTIS. The text boxes in this section represent the ARKTIS estimate assumptions about these components, and the revised and more accurate estimates of the Project needs provided by MGM.

Equipment required for construction of the ice road and pads will include vacuum and water trucks, front end loader, grader, plough/auger truck, pickup trucks, bulldozers, trackhoe, snowcats, dump trucks, snowmobiles, snow making machines, 10-person sleigh camp, accessory and support equipment, radios.

Equipment required for abandonment of the well will include a 20-person camp, service rig and the rig pump and tank, spare rig pump, catwalk and pipe racks, boilers, wellsite shacks, Eline/Slick line unit, P-tank with flare stack, bed and pickup trucks to haul equipment, water tank truck for produced fluid, potable water truck, vacuum truck, cement pumper and bulker, heated tanks, snowmobiles, secondary containment for tanks, water well rig.

> MGM indicated that most of the equipment will be sourced from Norman Wells and Fort Nelson.
>
> a. *The security estimate prepared for GNWT by ARKTIS assumed that all equipment would be sourced and mobilized/demobilized from British Columbia.*
>
> b. *ARKTIS included costing for fuel mobilization from British Columbia.*

MGM Energy also submitted a revised fuel estimate for the Project and that fuel would be mobilized from Norman Wells:

- 225,000 litres of diesel fuel.
- 8,200 litres propane.
- 1,000 litres gasoline.

Fuel will be stored on the lease, camp and/or staging area (diesel), trucked in as required (propane) or on the lease and camp (gasoline). There will be no storage of fuel after Project Abandonment activity to be completed in the first winter of the five-year term. Fuel storage at the site will be stored according to Directive 55: Storage Requirements for the Upstream Petroleum Industry and will be transferred from fuel transport trucks to storage tanks and from storage tanks to equipment, vehicles or other suitable receptacles by a standard steel line fuel pump and hose, hand pump or gravity feed, with drip trays.

4.3 Camps

MGM Energy submitted a revised estimate for camps and total person-days required during construction and abandonment phases of the Project.

- Approximately 10 personnel will be required for the 60-day ice road access construction phase (600 person days) with a 10-person sleigh camp located at the staging area and moving along with the construction.
- A small crew of 3 persons will be needed to operate and maintain the road (87 person days).
- The abandonment phase is expected to take 10 days with a crew of 17 (170 person days) to be established as a temporary 20-person camp at the lease.
- The reclamation, remediation and demobilization will require 7 persons over 12 days (41 person days).
- No camps are anticipated for monitoring and reclamation work required until closure.

c. *ARKTIS prepared their estimate based on the original application which included a 40-person sleigh camp and a 40-person temporary camp. They assumed and included costs for the dismantling of the 40-person temporary camp.*

d. *ARKTIS included costs for worker mobilization and accommodations at a rate of 40 persons x 120 days plus 30 persons for 60 days (Total of 6,600 person days versus MGM Energy revised estimate of 898 person days).*

4.4 Water Use Requirements and Water Sources

MGM is applying for 46,250 m^3 of water annually for the abandonment program and anticipates using that volume only in the first year of the abandonment program, scheduled for 2023-24 winter, while the anticipated volume for other years is 0 m^3. Water will be withdrawn from the Mackenzie River for winter road and wellsite construction, and camp operation activities associated with the abandonment Project. The water withdrawal is considered negligible and no impact to other water users was identified. The Water Use Fees for the 2023-24 Winter Abandonment Project will be $462.50 due prior to commencement of Project.

4. Regulatory Requirements

5.1 Eligibility

The eligibility of the applicant (MGM Energy) to apply for the Land Use Permit is under Section 18 of the Mackenzie Valley Land Use Regulations:

18) A person is eligible for a permit who

(a) where the proposed land-use operation is in the exercise of a right to search for, win or exploit minerals or natural resources,

(i) holds the right

MGM "holds the right" where the proposed land-use operation is. MGM holds Significant Discovery Licence (SDL) 149 and has conducted previous work (exploratory drilling, completion, and testing) in the program area under Permit S12A-001.

5.2 Type of Area

The Project well site, camps and access roads are located on Commissioner's/Territorial Lands and Sahtu (private) Lands.

5.3 Water Management Area

The Program is in the Mackenzie River Water Management Area.

5.4 Fees

MGM has submitted the Permit application fee of $150.00 and the Water Licence fee of $30.00 to the SLWB. MGM indicated that Water Use Fees would be submitted when the Project is approved.

5.5 Term

Term of Permit and Licence requested in the original application is 5 years, from 2022 to 2027. The anticipated construction of the ice road, pad construction, and abandonment are to occur winter 2023/2024. Therefore, the 5-year term of the authorizations will be adjusted to 2023-2028. Inspections and monitoring will occur from summer 2024 to 2028, as required.

5.6 Triggers

MGM applied for a new Land Use Application and a new Water Licence to proceed with abandonment and reclamation of one existing well site. A Type A Land Use Permit was required for the following activities:

On land outside the boundaries of a local government:

- 4(a)(ii) *the use of a vehicle or machine of a weight equal to or exceeding 10 t, other than on a road or on a community landfill, quarry site or airport*.

- 4(a)(iii) *the use of a single container for the storage of petroleum fuel that has a capacity equal to or exceeding 4 000 L on lands outside of a local government.*
- 4(a)(iv) *the use of a self-propelled motorized machine for moving earth or clearing land.*
- 4(a)(iv) *the levelling, grading, clearing, cutting, or snowploughing of a line, trail or right-of-way, other than a road or existing access trail to a building, that exceeds 1.5 m in width and 4 ha in area, for a purpose other than the grooming of recreational trails.*

On lands within or outside the boundaries of a local government:

- 4(b)(i) *the use of motorized earth-drilling machinery the operating weight of which, excluding the weight of drill rods, bits, pumps and other ancillary equipment, equals or exceeds 2.5 t, for a purpose other than drilling holes for building piles or utility poles or the setting of explosives within the boundaries of the local government.*
- 4(b)(ii) *the use of a campsite outside a territorial park for a duration of or exceeding 400 person-days.*
- 4(b)(iii) *the establishment of a petroleum fuel storage facility with a capacity equal to or exceeding 80,000 L.*
- 4(b)(iv) *the use of stationary motorized machine, other than a power saw, for hydraulic prospecting, moving earth or clearing land.*

A Type B Water Licence was required to obtain water (*use of 100 or more m^3 per day and less than 299 m^3 per day).*

5.7 Closure of Expired Authorizations

The expired authorizations S12A-001 and S12L1-001 will be subject to Final Plan requirements after the abandonment Project is complete and the Inspectors have recommended closure of the new authorizations.

5.8 Management Plans

The following Management Plans were submitted within the Application package:

- **Engagement Plan v. 1.1 and Record**
- **Environmental Protection Plan**
- **Waste Management Plan v. 1.0** – a table within the Environmental Protection Plan.
- **Spill Contingency (Response) Plan (SCRP) v. 1.0**
- **Closure and Reclamation Plan (CRP) v. 1.0** revised as **version 2.0** during review.

A **Wildlife Monitoring and Mitigation Plan** (WMMP) is not required for LUP and WL applications and MGM did not submit a WMMP. MGM did address potential wildlife impacts and identify associated mitigation measures within the applications and the original S12A-001/S12L1-001 applications for exploratory drilling. Upon review of the application, GNWT-ENR is responsible for determining if a WMMP is required for the Project.

5.9 Traditional Knowledge

No new Traditional Knowledge was collected for this application. The applicant included the Traditional Ecological Knowledge Report (December 2011) from the original exploration and drilling application (S12A-001) with the Application. The Study comprised of one-on-one interviews conducted in Slavey and English. A variety of topics were covered including, habitat, terrain, climate, and area use. No new TK was required as this is an abandonment and closure Project to return the site to pre-development conditions. This TK Study and the Pre-Site Photos submitted with the application, in additional to other pre-disturbance field assessments for terrain, soils, vegetation and wildlife will be used for setting Closure goals and objectives. As there were goals and objectives developed during the 2011 TEK Study, and these goals are to be included in the Closure and Reclamation Plan, a follow-up Traditional Knowledge Study has been recommended by the Board at the completion of Project reclamation activities and prior to Final Closure of the authorizations, to demonstrate how these recommendations were addressed in the closure and reclamation activities and environmental site monitoring, and to identify any changes in the area since pre-development to post-development. This can be included in the requirements for the Closure and Reclamation Plan. Additionally, the Board's standard licence conditions in Part B have been included in the draft Licence: Condition 3.: **INCORPORATE SCIENTIFIC INFORMATION AND TRADITIONAL KNOWLEDGE**, and Condition 4.: **IDENTIFY TRADITIONAL KNOWLEDGE**.

6. Public Review

The Application package was distributed to the Tulit'a District Distribution List on the Online Review System, consisting of 37 organizations, 17 within the Sahtu, requesting comments by November 9, 2022. The complete record of comments and responses is available on the Public Registry.[7] Comments and recommendations were provided by:

- **GNWT-ENR-EAM** Government of the Northwest Territories Department of Environment and Natural Resources (ENR) – Environmental Assessment and Monitoring (EAM)
- **GNWT-Lands-Sahtu** Government of the Northwest Territories Dept. of Lands, Sahtu Region
- **GNWT-Lands** Government of the Northwest Territories Department of Lands

6.1 Main Issues Raised during the Review

The main issues raised during the review included:

- Project description, potential impacts and mitigation measures, work schedule, work personnel and camps, equipment and fuel requirements, need more detail especially for completing the security estimate.
- **Engagement Plan** contact list requires updating.
- Recommendation for a stand-alone **Waste Management Plan** rather than as part of the Environmental Protection Plan.
- **Waste Management Plan v. 1.0** requires some additional information.

[7] See SLWB Online Registry for S22A-002 – Reviewer Comments and Proponents Responses – Jul24_23

- **Spill Contingency Response Plan** v. **1.0** requires some additional information.
- **Closure and Reclamation Plan v 1.0** lacks detail and conformity with guidelines.
- Summer work needs to be detailed, including any equipment to be used, activities to be undertaken, and any new impacts and mitigation measures.
- MGM **Security Estimate** compared with ARKTIS estimate is vastly underestimated.

6.2 General Application Documents

GNWT-ENR-EAM and **GNWT-Lands** commented on some inconsistencies between the Application Form, Project Description Report, Environmental Protection Plan, and Closure and Reclamation Plan information. They recommended that details of these Project components, the project timeline, and personnel be clarified and made consistent across documents.

MGM will ensure that all documents are updated with consistent information and key contacts.

GNWT-Lands-Sahtu recommended that plans be updated to include the anticipated summer activities, equipment needs and any other relevant information.

MGM has described the summer Project work, and if it were to be completed as a stand-alone project, it would not likely trigger Permit or Licence requirements.

6.3 Community Consultation and Engagement

MGM updated version 1.0 of their **Engagement Plan** that had been approved with the original Application. Regarding the new applications for a Permit and Water Licence to conduct abandonment and closure and reclamation for this area, MGM distributed an Engagement Notification to affected parties for the East Mackay project area in August of 2021 **(Figure 1).**

MGM also submitted an **Engagement Plan v. 1.1 and Record**[8] as part of the application package, stating that ongoing engagement activities will be dependent on regulatory and operational activities each year.

[8] See SLWB Online Registry for S22A-002 – MGM Energy – Application – Engagement Plan – Jun 29_23

2800, 421 – 7th Avenue SW, Calgary, AB T2P
4K9 Phone (403) 290-3600
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August 12, 2021

To: Distribution List of Affected Parties for the East Mackay Project Area

RE: Update on the Proposed Project Scope and Regulatory TIming

Dear Sir or Madam,

MGM Energy ("MGM") has been reviewing the previous Land Use Permit (S12A-001) and Water Licence (S12L1-001) it had submitted to the Sahtu Land and Water Board ("SLWB") in preparation of preparing new applications. Upon review MGM would like to move forward with two options for access in to the staging area just south of the Mackenzie River.

During the activities under S12A-001 and S12L1-001 MGM accessed the staging area via the Mackenzie River coming west out of Tulita. The alternative access comes south off the Norman Wells-Tulita Winter Road. This access was contemplated by MGM and has been used in the past by other oil and gas operators. This route has the potential to allow for safety timing and cost efficiencies. The route was screened and approved by the Sahtu Land and Water Board under S99A-012. This access is known as the Gaudet route.

The remaining access for the project would remain what was previously used under S12A-001 and SL12L1-001 (see attached map).

Following up on the distributed Engagement Plan in April and this information package, MGM intends to engage into the regulatory system for a new Land Use Permit and Water Licence late in Quarter 3 or Quarter 4 of 2021. The expected scope of the new Permit and Licence is expected to be access, staging, camp, abandonment activities and reclamation. MGM would be requesting a 5-year Permit and Licence. MGM intends to follow up with affected parties in the coming weeks via phone on the proposed applications.

If you have any questions regarding the above or MGM's planned activities in the East Mackay area please contact MGM via phone at 403-206-3859 or email at terence.hughes@paramountres.com .

Respectfully,
MGM Energy

Terence Hughes
Regulatory and Community Affairs Representative

ENCL.

Figure 1: MGM Energy Project Notification

Board staff note, based on the records submitted, that no further engagement has occurred at the time of review. The Board's assessment of Engagement Plan follows in Table 3.

Table 3: Engagement Plan Triggers and Actions

Activity	Potential Issue(s)	Planned Engagement	Planned Engagement Follow-up
LUP Renewal	• MGM's short and long-term plan for the project area	• Written Notification • SLWB regulatory process	• Telephone Calls • Electronic Correspondence • Meetings Upon Request
WL Renewal	• MGM's short and long-term plan for the project area(s)	• Written Notification • SLWB regulatory process	• Telephone Calls • Electronic Correspondence • Meetings Upon Request
Maintenance and Remediation Activities	• Timing and Contracting Opportunities	• Telephone Calls	• Telephone Calls • Electronic Correspondence
OROGO Authorized Oil and Gas Activities	• Timing and Contracting Opportunities	• Written Notification	• Telephone Calls • Electronic Correspondence
Reclamation and Closure Planning Activities	• Timing, Techniques, Technology • Contracting Opportunities	• Written Notification • SLWB Regulatory Process	• Telephone Calls • Electronic Correspondence
LUP Term Extension and WL Term Amendment	• MGM's short and long-term plan for the project area(s)	• Written Notification	• Telephone Calls • Electronic Correspondence

MGM intends to continue engagement with affected parties through the remaining life of its current and future LUPs and WLs. MGM's Engagement Plan is well rounded demonstrating the extensive consultation completed in their previous licences for the project and the engagement efforts going forward. The Engagement Plan and Record meet the *LWB Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits*.

Board recommends that an updated contact list (TABLE 4) for the Engagement Plan be prepared and included in the Engagement Plan to reflect changes in employment across the various organizations identified (e.g., **GNWT-ENR-EAM ID Comment 7** noted that Patrick Clancy has retired from GNWT).

6.4 Management Plans

6.4.1 Environmental Protection Plan (EPP)

The Environmental Protection Plan is a document used to assess the potential impacts of the Project activities and recommend mitigation measures to reduce any impacts to a minimum. The Plan is therefore not a document that the Board approves, as the approval is made through the Preliminary Screening Determination. The **Waste Management Plan** for the Project was embedded in the EPP. Some of the reviewer comments on this Plan are specific to the Waste Management Plan.

Board staff recommend that the WMP be revised and resubmitted as a stand-alone document.

Lands-Sahtu Region recommendations applicable to the EPP include:

- **ID Comment 4** that Appendix 2: Task Specific Mitigation Erosion Prevention of the EPP be enhanced to account for potential impacts while conducting summer/fall work, with more emphasis on mitigating destabilization/erosion. MGM responded that the summer work will be helicopter-based with no stream crossings required and no heavy equipment required. The terrain is stable so issues of erosion and damage to permafrost are not expected.
- **ID Comments 9 and 10** that a site-specific **Erosion and Sedimentation Control Plan** and a **Permafrost Protection Plan** be prepared. Discussion of these conditions follows in Section 8.

6.4.2 Waste Management Plan (WMP)

MGM included a **Waste Management Plan**[9] as a Table and summary within the Environmental Protection Plan. This Plan generally meets the *LWB Guidelines for Developing a Waste Management Plan*; however, Board agree with GNWT-ENR-EAM that a stand-alone Waste Management Plan be provided for review, and that this Plan incorporate the updates as detailed in Table 4.

Table 4: Reviewer Recommendation, Proponent Response and Board staff Analysis of Evidence for the Waste Management Plan

Comment ID #	Recommendation	MGM Response	Board Response
GNWT-ENR-EAM			
6	• A WMP be provided for review as soon as possible.	• The Waste Management Plan is embedded in the project EPP.	• Board consider the WMP as generally complete, with revisions to include the following: • flow/drainage pattern maps. • geotechnical characteristics. • potential environmental effects of the wastes generated. • Board also recommend the WMP be submitted as a stand-alone document.
8	• The EPP – WMP be updated to provide additional information on waste disposal once details on turnkey management are received from the contractor.	• Information can be provided in an updated Plan closer to Project execution.	• Agreed.

[9] See SLWB Online Registry for S22A-002 – MGM Energy – Environmental Protection Plan – Oct 17_22

GNWT Lands - Sahtu			
11	• MGM elaborate on "good environmental and industrial practices" referred to in Section 2 Hazard Review.	https://www.alberta.ca/land-reclamation-and-remediation-guidelines.aspx	• Response is adequate

MGM provided an updated response to the location for sewage disposal.

> *e. ARKTIS assumed sewage would be disposed of in B.C.*
> Based on initial conversations with the Town of Norman Wells, MGM expects to be able to dispose of sewage locally.

6.4.3 Spill Contingency Response Plan (SCRP)

A Spill Contingency Response Plan[10] (SCRP) was submitted for this well abandonment Project. Board staff have reviewed the comments and recommendations from review organizations, the Proponent's response to these comments and the *INAC Guidelines for Spill Contingency Planning (2007)* and have summarized the evidence for the Board in Table 5. Board recommend MGM provide an updated SCRP Version 1.1 within 90 days after issuance of the Licence and Permit that reflects the requested changes.

Table 5: Reviewer Recommendation, Proponent Response and Board Analysis of Evidence for the Spill Contingency Response Plan

Comment ID #	Recommendation	MGM Response	Board Response
GNWT-ENR-EAM			
9	MGM update the SCRP to align with the 2007 *INAC Guidelines for Spill Contingency Planning*. This should include, but is not necessarily limited to: • Type and amount of hazardous materials normally stored on-site, including capacity of storage containers. • List of on-site resources. • Existing preventative measures. • Response organization.	[Hazardous] Materials (produced water) are not normally stored on site; materials will be collected and stored in insulated storage tanks during the abandonment operations and immediately mobilized to safe disposal facility (one winter season). Preventative measures for when activities occur are in section 4.0. Section 7.0 has been updated to describe equipment resources and Appendix C provides details on incident	MGM has provided acceptable responses to the comments based on details of their Project activities. The SCRP meets INAC 2007 Guidelines and only requires minor adjustments and edits based on the evidence provided. Board recommend MGM provide an updated SCRP Version 1.1 within 90 days after issuance of the Licence and Permit that reflects the requested changes.

[10] See SLWB Online Registry for S22A-002 – MGM Energy – Application – Spill Response Plan – Jun 29_22

		reporting for the organization.	
10	MGM include locations of spill control points in the SRP if control points are to be used.	Control points will not be used in the SRP.	Based on the evidence submitted by MGM, if spill control points will not be used an update to the SRP to include them will not be required.
GNWT Sahtu Lands			
7	update Appendix C to include the Department of Lands with correct contact information.	Department of Lands no longer exists (now Environment and Climate Change ECC) An updated SCRP will be submitted closer to commencement of project activities with updated contacts.	Agreed.
8	Enhance potential spill scenarios to reflect the potential for spills during summers months. Ensure that the amount of spill response material on site will be adequate to respond to large releases/that the material on site has enough sorbent capacity to capture the fuel on site in the event of an emergency.	Summer or Fall work will be limited to monitoring via helicopter access. Some spill response equipment will be carried with field crews however no fuel or oils will be brought on monitoring events.	Board recommend MGM to provide locations of spill response equipment, what type of spill response equipment will be on site in case of a summer release. Provide this information in SCRP Version 1.1 to be submitted to the Board as per Comment ID 9, above.

6.4.4 Closure and Reclamation Plan (CRP)

MGM submitted a **Closure and Reclamation Plan version 1.0**[11] with the application. MGM aims to abandon the well in Q1 of 2024 in accordance with the Office of the Regulator of Oil and Gas (OROGO) *Well Suspension and Abandonment Guideline and Interpretations Notes*. The intention after cut and cap of the wellhead is to remove impacted soils, if any, from the site as per the Project Waste Management Plan, adding that MGM will source clean fill to address the slumping identified at the wellhead by mounding the fill at the wellhead to allow for settling (standard practice). MGM notes that vegetation clearing is expected to be minimal, and states that vegetation cover exceeds the threshold of 70% native vegetation established by the original Permit.

[11] See SLWB Online Registry for S22A-002 – MGM Energy – Application – Closure and Reclamation Plan – Sep 16_22

MGM will be seeking permanent closure of all project components except the Staging Area, as it is being used by another Land User. MGM does not anticipate any negative residual effects to remain after reclamation is complete.

GNWT-ENR-EAM provided several recommendations regarding clarifications or additional information to be included in the Plan; however, the biggest issue was their request for MGM Energy to identify reclamation strategies and methods to restore the site conditions to support habitat suitable for Boreal caribou, a listed Species-at-Risk. They also requested an assessment of the benefit of letting the seismic cutline revegetate to improve Mountain and Boreal caribou survivorship versus the benefit the cutlines provide as access to the land and resources for traditional use activities, like hunting, trapping, fishing, and berry picking.

Board staff have reviewed the comments and recommendations from review organizations, the Proponent's response to these comments and *the LWB Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*, and have summarized the evidence for the Board in Table 6 and the following section below.

The LWB Closure Guidelines are useful to set the framework and approach to closure and reclamation for any size of Project. The closure goal in the Guidelines is to "return the [mine] site and affected areas to viable and, wherever practicable, self- sustaining ecosystems that are compatible with a healthy environment and with human activities".

MGM Closure Goal is to return the site to an equivalent of the pre-disturbance state and meet all revegetation requirements from the original Permit and this new Permit. This goal is consistent with the Guidelines.

Closure Objectives are developed for each Component of the Project that requires closure and reclamation. This Project has five components:

1. Staging area
2. Access road (an old seismic cutline)
3. Lease
4. I-78 Wellhead
5. Temporary Campsite

For each of these components, options for reclamation methods and activities required are proposed with the preferred method chosen to meet reclamation objectives based on four closure principals where the success of each component is evaluated against qualitative or quantitative criteria, such as:

1) Physical stability – no erosion or slumping (qualitative).
2) Chemical stability – no contaminated soils remain (CCME soil meets parkland levels).
3) No Long-term Active Care – after closure there will be no other need to monitor (qualitative).

4) Future Use (including aesthetics and values) – the site will be weed free and continue to provide the habitat suitable for wildlife species, vegetation, and migratory fish (both qualitative observations and quantitative vegetation plots).

Background Data

The 2011 **Traditional Ecological Knowledge Study (TEK - Attachment A)** identified an abundance of wildlife present in and around the larger Project area pre-development. Of particular interest to the Elders were Moose and Woodland/Boreal Caribou which are more readily accessed by Traditional harvesters using the overgrown seismic cutlines that lead to the Mountains. MGM will be clearing this seismic line and constructing a winter ice road to access their Project lease area.

Wildlife was also recorded during the pre-development site assessments in 2011 and 2012. In addition, wildlife observations and locations were monitored and recorded by Project works throughout the operation in winter 2012 to 2013 and submitted to the Board[12]

A pre-disturbance field program[13] was carried out in 2011 to select the preferred wellsite location from two potential areas, one north and one south. The selected location was the north site. In 2012, pre-site photos were taken at the chosen wellsite lease area. It was characterized as an old burn area with scrub spruce, willow, tamarack, and dwarf birch. A supplemental pre-disturbance field program was completed by AECOM in 2012[14] with the objective to document aspects of the topography, vegetative cover, wildlife habitat and use, potential creek crossings, and potential environmentally sensitive areas within the proposed Project area. The report was submitted to the Board on November 27, 2012.

Vegetation cover on the vertical well center was 52% black spruce and tamarack trees, 100% shrubs of bog birch, willow, and blueberry, 43% forbs dominated by horsetail and Labrador Tea (a low shrub), and 100% ground layer vegetation dominated reindeer lichen and sphagnum moss. The high percentage of lichen at this location was not representative of the lichen coverage across the lease area, which averaged 13% from five sample plots in the lease centre and four corners.

AECOM also collected soil samples from the lease area and staging area for analysis of pre-disturbance conditions. Results at the lease indicated presence of metals, calcium chloride, pH, and petroleum hydrocarbons (BTEX/F1-F4) in soils within acceptable limits of CCME Alberta Tier 1 guidelines.

[12] See SLWB Online Registry for S12A-001 - S12A-001 – Wildlife Mapping 2012-2013 – May 07_13.pdf
[13] See SLWB Online Registry for S12A-001 - S12A-001 – Appendix 1-B_Pre-Disturbance Assessment Report – Apr 30_12
[14] See SLWB Online Registry for S12A-001 – S12L1-001 – Pre-Disturbance Assessment – Nov 28_12

Table 6: Reviewer Recommendation, Proponent Response and Board Analysis of Evidence for the Closure and Reclamation Plan

Comment ID #	Recommendation	MGM Response	Board Response
GNWT-ENR-EAM			
2	• The Board consider requesting MGM Energy provide closure and reclamation strategies to meet caribou habitat suitability requirements, including: - methods for site preparation and/or scarification. - methods for revegetation. - what species will be planted. - what are the end land use objectives and targets (i.e., improving habitat for caribou) References include: • Framework for Boreal Caribou Range Planning • Boreal Caribou Wek'èezhìı Interim Range Plan. • The Board also consider the potential effect of reclamation on limiting traditional use of the land (i.e., if cut lines are reclaimed, Indigenous people's ability to travel and trapping may be limited) and to compare against the value that restoration of cut lines provides to caribou survivorship.	• The site currently exceeds the revegetation requirements established by Permit S12A-001. • Vegetation removal is expected to be minimal during winter construction and operation. • Appendix A indicates the site itself and the larger study area does not provide ideal habitat for Caribou due to previous fire disturbance, and the current 2022 vegetation (see photo) on the lease and surrounding area is in a similar state of regrowth. • MGM will leave project components in a state that will allow for vegetation succession. • MGM cannot and will not prevent Indigenous rights holders from using the project components. Given the mandate for Caribou recovery in the Northwest Territories belongs to the Department of Environment and Natural Resources (ENR) and it is the Crown's Duty to Consult, it would seem appropriate for ENR to engage with the Indigenous rights holders regarding the long-term use of project components post closure and reclamation.	• While the Project is within the range of Boreal and Woodland Caribou, and TEK study noted that caribou roam the base of Mackay Range Mountain toward Tate Lake, and occasionally appear at the mouth of Little Bear River, site conditions and documented wildlife results from the 2011 TEK Study, 2012 pre-development Wildlife Inventory, the Wildlife Sighting Log and mapping conducted during operations in 2012-2013, and three years of Environmental Site Monitoring (2018, 2019, 2022) did not document caribou in the vicinity of the Project. The larger study area is dominated by wetlands and muskeg which provide more suitable habitat for moose. This was confirmed by wildlife sightings and TEK study. • Reclamation goals cannot be set to achieve a condition that did not exist prior. • The TEK study noted that the seismic line is primarily used to access I-78 Mackay site and

			beyond to get closer to the base of Mackay Range Mountain where there is suitable habitat for Woodland Caribou. • Board to request MGM to review the TEK Study for closure goals and objectives and demonstrate how Traditional Knowledge was accommodated into the Closure and Reclamation Plan as per Table 2, CR# 13.
3	• Since the goal of the Closure and Reclamation Plan is to restore the site to pre-disturbance conditions (which includes restoring habitat to meet caribou requirements), MGM should include a planting prescription that identifies the number of seedlings, species, and site prescriptions for planting in the areas where reclamation is proposed. • Some measure of effectiveness monitoring which includes quantifiable survivorship targets should also be included. • ENR disagrees that allowing the site to revegetate naturally will be an effective measure against invasive plants, as invasive plants naturally out-compete native vegetation on disturbed sites.	• See Appendix A and Table 2 for current site conditions. • The wellsite is well vegetated, and no invasive plants or weeds observed. • Planting is not proposed as vegetation cover is meeting or trending towards meeting the 70% or greater previous Permit requirements. • Native trees, shrubs and forbs are established. • Monitoring will continue during summer periods and any invasive plant species will be removed through manual methods.	• Board agree with MGM based on the records of Inspections conducted by Land Resource Officers, Site Environmental Monitoring Reports prepared by MGM consultants, and evidence submitted by MGM. • The wellsite and lease area, as well as the staging area, are well vegetated with > 65% to 95% native vegetation cover. • SLWB staff disagree with ENR that all invasive plant species will outcompete native plants.
12	• ENR recommends that MGM either include maps and an as-built survey in Appendix A of the CRP or update the	• Revised CRP submitted with this response now includes a project survey and project map.	• Agreed. • Board note that an as-built Plan of the Lease was provided to the

	reference in Section 1.1 of the CRP to correctly indicate where these items can be found.		SLWB within the time specified in S12A-001 and is located on the public registry.
13	• MGM update the CRP to clarify which specific sets of criteria within the *NWT Environmental Guidelines for Contaminated Site Remediation* and *Canadian Council of Ministers of the Environment* guidelines are to be met for soil and water quality respectively.	• The 2003 GNWT *Environmental Guideline for Contaminated Site Remediation*, where soil criteria are available will be used. • *Canadian Council of the Ministers of the Environment* (CCME) may be used should the GNWT guidelines not have standards for some potential contaminants of concern. • In addition, the *Alberta Subsoil Petroleum Hydrocarbon Guidelines* for remote forested sites in the green may be used if applicable.	• Board recommends MGM include the criteria that will be used to meet soil and water quality guidelines in the revised Closure and Reclamation Plan and indicate the standard to be used for soils will be Parkland.

MGM submitted a revised **Closure and Reclamation Plan version 2.0** with their response to reviewer comments. A Revision page was included (Table 9).

Table 9: East MacKay Closure and Reclamation Plan Revision Table

Request or Reason	Document Reference(s)
Update Corporate Address	Title Page
Update Version and Date	Title Page
Update Appendix A Title	Table of Contents and Appendix A title page
Update Appendix A	Add survey and map

Board staff have reviewed the Closure and Reclamation Plan version 2.0. The Plan is generally consistent with the framework of the Closure Guidelines; however, there are some editorial errors (e.g. vegetation cover objective is to achieve greater than (>) 70% native vegetation cover, not less than (<)

70%. The Plan could additionally benefit from presenting the goals, principals, objectives, actions and activities, and criteria for success in a manner more consistent with the Guidelines as suggested at the beginning of section 6.4.4 of this staff report. Board recommends that MGM revise and resubmit a version 2.1 Closure and Reclamation Plan within 90 days following issuance.

6.5 Potential for Environmental Impacts and Mitigation Measures

Potential impacts and associated mitigation measures of the Project are identified in Section 17 of the Land Use Application Form and Section 10 of the Water Licence Application Form. Section 2. Hazard Review and Appendix 1 and 2 of the Environmental Protection Plan provide additional insights on impacts and mitigation.

Table 7 below summarize the updated mitigation measures for the Abiotic, Biotic and Cultural components that have the potential to be affected by the development activities:

- the potential impacts of the proposed changes to the Project;
- the concerns that were identified during the regulatory proceeding and how the Applicant addressed those concerns;
- the proposed and potential mitigations for the potential impacts; and
- the Board's analysis of the potential impacts and proposed mitigations.

Table 7: Potential Impacts and Proposed Mitigations for the Proposed Changes to the Project

Potential Impact	Activity	**Proposed Mitigations** *Description of measures to reduce potential impacts, including consideration of cumulative impacts and climate change.*
ABIOTIC		
Land Disturbance	Clearing of land	• Temporary campsites will coincide with previously disturbed land, on relatively level terrain 100m from any watercourse, where possible. • Depending on the infrastructure required (e.g., trailers, sewage sumps, welding shop, vehicle parking, etc.), an area 40m x 70m to 100m x 100m will be cleared for temporary camps. • Slash will be windrowed at the camp boundaries and used for rollback during site reclamation. • Snow will be used to level minor irregularities on the surface as much as possible.
Soil Contamination	Fuel Transfer and storage	• Drip trays, proper fuel transfer, spill contingency plan, and good housekeeping will be practiced. • The target date for final cleanup will be immediately after the project is complete, when feasible, or as directed by the Land Use Inspector.

Soil Compaction / damage to ground vegetation	Heavy equipment operation	• Proper snow depth on roads, camps and well site. • Drip trays, proper fuel transfer, spill contingency plan and good housekeeping will be practiced.
Destabilization / Erosion	Winter crossings	• Use of appropriate stream crossing techniques. • Site stability at temporary campsites will be assessed within one year after construction. • If unstable, appropriate corrective action will be undertaken as soon as practical to stabilize the site, thereby minimizing erosion. • Erosion will be mitigated in areas disturbed by Project activities by various methods, as appropriate (e.g., check dams, contouring, cross ditches, cross berms, ditch plugs, diversion berms, positive drainage, seeding, silt fence, slash rollback, swales, etc.).
Contaminated soil	Revegetation success	• Soil will be removed and recontoured. Proper techniques will be used to promote vegetation regrowth.
Permafrost regime alteration	Drilling, road construction	• On work areas free of timber, snow will be packed onto the rough, natural surface with lightweight tracked vehicles to drive frost into the ground. To achieve sufficient snow-pack depth, thus a protective surface barrier, corduroy may be added to the snow. As well, water may be used to build-up the protective surface barrier. • When working on wet, muskeg or permafrost terrain, ensure sufficient frost penetration is present to avoid terrain damage. Recommended minimum frost depths are: a. muskeg – 45 cm; b. loam soils – 15 cm; c. saturated silts or clays – 30 cm; and d. sloughs or shallow water – 90 cm • Vehicles will be used to compact the insulating snow cover to promote deep frost penetration.
Greenhouse gases	Equipment Operation	• Short term increase in industrial activity. No mitigation noted. • MGM will require any incineration at camps to follow Environment Canada and Climate Change Canada's Technical Document for Batch Waste Incineration: Executive Summary and Overview of the Six-Step Process for Batch Waste Incineration January 2010. In addition to any requirements in the LUP and/WL or the project
BIOTIC		
Non-native or invasive species introduction	Scarification, contouring, seeding, use of	• Construction and reclamation equipment (i.e., equipment used to "break ground") will be cleaned before entering the I-78 Project area to ensure weed free conditions. Similarly, materials such as pipe should be sourced from storage yards free of weeds.

	unclean equipment	• Equipment passing through areas identified as having a weed problem will be cleaned (e.g., steam/high pressure water, compressed air, etc.) prior to continuing work.
Effects on Plant health (dust, metals, toxins)	Equipment use	• Drip trays, proper fuel transfer, spill contingency plan and good housekeeping will be practiced.
Species at Risk	Noise	• Woodland and Boreal Caribou habitat is present in the area, and restoration of the site will encourage species present prior to construction.
Fish population changes / water and aquatic species	Introduction of foreign matter, grading, water withdrawals	• Trees will not be purposely felled into water bodies. Likewise, slash, debris, rocks, and soil will not be knowingly introduced into a water body. • Grade away from watercourses to minimize introduction of soil and organic debris. No windrowed or fill material shall be placed in the watercourses during grading. • MGM will observe setback distances of 100m from the edge of a disturbance to the edge of a watercourse / water body, except when a watercourse / water body is being crossed (see DFO Measures to Avoid Causing Harm to Fish and Fish Habitat). Where necessary, alternative setbacks will be determined through consultation with the Sahtu Land and Water Board. • Water will be withdrawn from watercourses, as per DFO Measures to Avoid Causing Harm to Fish and Fish Habitat: The withdrawal of any water will not exceed 10% of the instantaneous flow, to maintain existing fish habitat and water flow is maintained under the ice, where this naturally occurs. • Equipment used for water withdrawal with employ fish screens.
Removal of wildlife corridor or buffer zone	Piling of snow blocking movement	• Should snow be removed from access corridors, windrows at the edges of the road will be constructed. The windrows will have gaps (8 m) at regular intervals (every 300 to 500 m) to allow animal movement and to provide escape routes.
Breeding Disturbances	Noise	• Program activities (ice road construction and well decommissioning) will not take place during the time periods when migratory birds are present in the area for nesting, rearing, and feeding. • Dens and nests, even if inactive, will not be knowingly disturbed if it can be avoided. • If bear dens are encountered within the Project area, GNWT, ENR will be notified.
Population reductions	Human – Wildlife conflicts	• Project personnel will be instructed to avoid wildlife when using roads. • Vehicle and equipment operators will be instructed to maintain appropriate speeds and to be aware of potential encounters with wildlife. If wildlife is encountered, it will not be fed or harassed and will be given an opportunity to disperse at its own rate. Pet dogs will be prohibited.

		• To minimize impact on wildlife species abundance, snow removal will be limited to only that necessary for safe and efficient work. • Any incidents with nuisance wildlife or collisions with wildlife will be reported to GNWT, ENR. • Project personnel are forbidden to carry firearms (except with written permission from MGM) and to hunt. • To minimize bear conflicts MGM will employ local wildlife monitors during all program activities. • Motorized vehicles will travel on approved routes. The creation of ancillary access will be minimized. The recreational use of all-terrain vehicles (ATVs) and snowmobiles by construction personnel will not be permitted in the project area.
Wildlife behavioural changes	Noise, presence of people in the area	• The windrows will have gaps (8 m) at regular intervals (every 300 to 500 m) to allow animal movement and to provide escape routes.
CULTURAL		
Effects on traditional land use, subsistence, and harvesting rights.	Work during harvesting times	• Single season of increased project activity • Trails will not be blocked
Human Health Hazard and risk	Movement of vehicles	• Increased traffic on GNWT road
Potential to Affect other land use operators	Timing of construction and operations	• The appropriate government and indigenous representatives will be notified by MGM of the construction schedule as soon as the schedule is determined. Ideally, this should be at least two (2) weeks prior to approved clearing. If possible, arrangements will be made with land users to clearly identify access routes and equipment (e.g., remove their traps and snares, etc.) in the vicinity of the right of way prior to clearing to ensure that they are protected during construction.
Quality of life changes / Economic Opportunities	Work tenders and local equipment contracting	• Single season of increased contracting opportunities.

6.5.1 Preliminary Environmental Screening

Under the Preliminary Screening Requirements of section 124(1) of the *Mackenzie Valley Resource Management Act* (MVRMA), the Board must conduct a preliminary screening of any proposed development prior to the issuance of a Licence, Permit, or Authorization, unless it is exempt from Part 5 of the MVRMA.

MGM requested an exemption from preliminary screening under 2.1, Schedule 1 of the Exemption List Regulations as the original exploratory oil and gas drilling project was previously screened under S12A-001/S12L1-001 and included decommissioning with activities related to well abandonment and reclamation of camp sites, drill site, groundwater wells and access prior to expiry of the authorizations in 2019.

Board staff note the original application and screening only briefly mentioned abandonment and reclamation as part of the principal activity of decommissioning. The preliminary screening report also did not check off solid waste generation or disposal of hazardous wastes as a principal activity. These Project activities require confirmatory screening by the Board in accordance with subsection 124(1) of the MVRMA to ensure these activities have been sufficiently assessed for potential impacts.

The Project was screened in 2012 for Decommissioning activities which contemplated abandonment of the well and reclamation activities, although the impact and mitigations were not assessed in depth. While Waste generation and disposal were also not checked as a principal activity in 2012, conditions in the authorizations required the submission of a Waste Management Plan for approval. The changes to the screening were mostly related to updates and new techniques proposed for mitigation measures to minimize impacts and negative effects to the environment.

Board staff review of the original screening in relation to the new applications, noted that changes were mostly related to use of different pieces of equipment, changes to the amount of fuel, number of persons required, size of camps, and amount of water required as well as some updates and new techniques proposed for mitigation measures to minimize impacts and negative effects to the environment.

The 2012 preliminary screening evaluated the potential for impacts during winter activities under frozen ground conditions. As noted by **GNWT-Lands-Sahtu**, project activities and equipment to be used during summer and fall are unclear and associated impacts and mitigation, if relevant, should be addressed.

In response to summer reclamation and monitoring work, there are no anticipated environmental impacts related to a small crew (3 persons) conducting helicopter-assisted investigation where only small equipment that can be slinged in may be used (example, rototiller for scarification and recontouring). Any invasive species management will be done by hand and/or hand tools and soils and water samples may be collected.

Based on the potential impacts and proposed mitigations identified above in Table 7, the Board considered whether the changes to the Project mitigations might have a significant adverse impact on the environment. In general, impacts of these changes to the Project mitigation measures on the environment are positive, with any potential negative impacts mitigated through the use of standard permit and licence conditions and project-specific conditions established by the Board as per the *LWB*

Standard Process for New Conditions. These conditions may include requirements for management and monitoring plans that provide detailed information regarding the implementation of mitigation measures and the evaluation of their effectiveness.

6.5.2 Consideration of Public Concern

In addition to considering the potential impacts of the changes to the Project, the Board considered whether the changes to the Project might be a cause of public concern. Based on the evidence provided during the regulatory proceeding, the Board did not identify any comments or issues that indicate that the Project is a cause of public concern. The Project will be a positive activity for the environment as it entails the abandonment of the suspended well and reclamation of the land to a pre-development state.

6.5.3 Preliminary Screening Determination

The Board completed an updated preliminary screening of the Project on August 2, 2023. Accordingly, the Board determined that Project activities that have already been subject to Part 5 of the MVRMA are exempt from preliminary screening under Part 1, Schedule 1, section 2.1 of the Exemption List Regulations to the MVRMA. The Board conducted a preliminary screening of the proposed changes to the Project because:

- The original screening did not check Abandonment activities, and Waste generation and disposal activities.
- The Project required different pieces of equipment, changes to the amount of fuel, number of persons required, size of camps, and amount of water required, and
- Project mitigation measures for some activities were updated to reflect best practices for 2023, and new techniques to further minimize impacts and negative effects to the environment.

The Board reviewed all the evidence received during the regulatory process with respect to the Preliminary Screening of the proposed changes to the Project mitigation measures. Based on the evidence, it was the Board's opinion that the proposed changes to the Project mitigation measures will not have a significant adverse impact on the environment or be a cause of public concern as set out in paragraph 125(1)(a) of the MVRMA. The Board therefore decided not to refer the proposed changes to the Project mitigation measures to Environmental Assessment. The Board sent the Notification and Preliminary Screening Determination and Reasons for Decision to the Review Board on August 2, 2023 to begin the 10-day pause period for referral to environmental assessment.

7. Security

7.1 Legislative Requirements

Section 32 of the *Mackenzie Valley Land Use Regulation* state:

32(1) *The Board may require security to be posted in an amount not exceeding the aggregate of the costs of*
- *(a) Abandonment of the land-use operation;*
- *(b) Restoration of the site of the land-use operation; and*
- *(c) Any measure that may be necessary after the abandonment of the land-use operation.*

32(2) *In setting the amount of security pursuant to subsection (1), the Board may consider*
- *(a) The ability of the applicant or prospective assignee to pay the costs referred to in that subsection;*
- *(b) The past performance of the applicant or prospective assignee in respect of any other permit;*
- *(c) The prior posting of security by the applicant to other federal legislation in relation to the land-use operation; and*
- *(d) The probability of environmental damage or significance of any environmental damage*

7.2 Current Security

MGM currently has the following security posted under the following permit and licence:

Permit S12A-001 -	$234,423.00
Licence S12L1-001 -	$553,579.00
Total security -	$788,002.00

f. ARKTIS estimate did not review any securities currently held for the Project site or for any previous authorizations.

g. ARKTIS assumed one sweet well drilled between 1,000 to 2,000 m depth, no vent flow/gas migration, and four completion zones.

According to AECOM, July 2013[15], details of the drilling operation for the I-78 exploration oil well include the following: Drilling depth is 2,000 m; the well is sweet (no gases); the number of completions was two, as summarized below.

Stratigraphy: consisted of Quaternary surficial deposits on top of the Tertiary-aged Summit Creek Formation which was deposited on top of the Cretaceous-aged East Fork Formation. Below the East Fork Formation is the Cretaceous-aged Little Bear Formation.

Drilling Depth: The target zones were found below the deepest spectrum of the range; the primary target, the Canol Shale was found between 1,819 m and 1,919 m, and the Bluefish Formation, the secondary target, was found between 1,936 m and 1,957 m. A main hole was successfully drilled, cored,

[15] See SLWB Online Registry for S12A-001 - Groundwater, Surface Water, and Water Supply Well Monitoring Report – Jul 2013.pdf

logged, cased, and cemented full length from surface to total depth of 2001 mKB (drilled) and 1988.25 mKB (cased) concluding on February 15, 2013.

Gases: detected in both zones of the I-78 hole include methane (CH4) and carbon dioxide (CO2), however, the measured concentrations were extremely low in both zones (-5 to 15 units total gas) indicating no generation of thermogenic gas or any active migration pathway for thermogenic gas generated at deeper horizons.

Completions: One zone of the Bluefish Formation was successfully fractured on March 2, 2013. The Canol Formation was fractured commencing March 4, 2013, in three stages, with one stage having two perforation zones. All fracs were successful with hydraulic fracture pressures remaining within fracture design parameters. No seismic events in the Project vicinity were noted.

7.3 Reclaim Security Estimate Comparisons – GNWT-ENR (ARKTIS) and MGM Energy

As part of the Applications package, MGM submitted a reclamation security estimate for the project based on the RECLAIM Model 7.1 for Oil and Gas. GNWT-ENR retained ARKTIS Solutions Incorporated (ARKTIS) to provide a reclamation security estimate for the project. GNWT-ENR recommended that the total reclamation security is $4,962,917 with a land and water liability of $2,192,322 and $2,770,565 respectively. ENR also recommended that the Board require posting of the security to GNWT immediately upon the Board's decision.

GNWT-ENR also indicated that further refinement of the security estimate could be made if MGM Energy were to verify and provide more information on cost items that ARKTIS made certain assumptions about, including details on wells and facilities, buildings and equipment, chemicals and contaminated soil management, and mobilization/demobilization.

Table 8 compares the original estimates provided by GNWT-ENR and MGM Energy. The difference in magnitude between ENR's estimate of close to $5 Million and that of MGM Energy of approximately $750,000 is significant.

In response to the GNWT request for additional information on cost items, MGM Energy provided a more detailed project execution plan, with refined equipment lists, fuel requirements, camp person-days and source location of the required equipment. MGM Energy also requested that the reclamation and clean-up of the third-party trailer at the staging area be removed from the GNWT estimate, as this is and was never part of their Project.

> *h. ARKTIS included costing of approximately $7,000 for removal of the equipment and 1m^3 contaminated soil by MGM Energy and assumed that 50% of the area would require recontouring and revegetation. They argue that the Staging Area was part of the original permitted area and therefore must be reclaimed, including the 3rd party equipment.*

Table 8: Comparison of ARKTIS (GNWT) and MGM Energy Security Estimate for Abandonment and Closure

Capital Cost Item	GNWT-ENR			MGM		
	Total Cost	Land Liability	Water Liability	Cost	Land Liability	Water Liability
Wells and Facilities	$157,162	$78,581	$78,581	$175,000	$0	$175,000
Buildings and Equipment	$9,080	$5,760	$3,320	$0	$0	$0
Chemicals and Contaminated Soil Management	$2,605	$0	$2,605	$5,423	$0	$5,423
Surface and Groundwater Management	$0	-	$0	$0	-	$0
Interim Care and Maintenance	$22,082	-	$22,082	$0	-	$0
Inflation (2014 to 2022 $CAD – 21.8%) on Capital Costs	$41,642	$18,395	$23,247			
Subtotal Capital Costs	$232,570	$102,736	$129,836	$180,423	$0	$180,423
Indirect Cost Item	Total Cost	Land Liability	Water Liability	Cost	Land Liability	Water Liability
Mobilization/Demobilization	$3,264,822	$1,442,204	$1,822,618	$468,500	$0	$468,500
Post-Closure Monitoring and Maintenance	$146,882	$64,884	$81,998	$84,000	$0	$84,000
Engineering	$11,629	$5,137	$6,492	$3,608	$0	#3,608
Project Management	$11,629	$5,137	$6,492	$0	$0	$0
Health and Safety Plans/Monitoring & QA/QC	$2,326	$1,027	$1,298	$0	$0	$0
Bonding/Insurance	$2,326	$1,027	$1,298	$0	$0	$0
Contingency Applied to Capital Cost	$34,886	$15,410	$19,475	$0	$0	$0
Contingency Applied to Mob/Demob, and Post Closure Monitoring and Maintenance	$511,756	$226,063	$285,692			
Market Price Factor Adjustment	$0	$0	$0	$0	$0	$0
Inflation (from 2014 to 2022 $CAD – 21.81%)	$744,093	$328,696	$285,692			

Mob/Demob and Post Closure Monitoring and Maintenance						
Subtotal Indirect Costs	$4,730,346	$2,089,586	$2,640,760	$556,108	$0	$566,108
TOTAL COSTS	$4,962,917	$2,192,322	$2,770,595	$736,531	$0	$736,531
MGM CURRENT SECURITY HELD BY GNWT	$788,002	$234,423	$553,579	$788,002		
POTENTIAL ADDITIONAL SECURITY REQUIREMENTS	**$4,174,915**	**$1,957,899**	**$2,217016**	**$0**	**$0**	**$0**

7.4 MGM Energy Response to ARKTIS Assumptions

As presented throughout this report, the following assumptions (a) to (g) that were made by ARKTIS for the estimate they prepared for GNWT-ENR, were responded to by MGM Energy with revised estimates based on more accurate information.

a. *The security estimate prepared for GNWT by ARKTIS assumed that all equipment would be sourced and mobilized/demobilized from British Columbia*.

MGM indicated that most of the equipment will be sourced from Norman Wells and Fort Nelson, B.C.

b. *ARKTIS included costing for fuel mobilization based on the original application.*

MGM Energy submitted a revised fuel estimate for the Project with mobilization from Norman Wells

- 225,000 litres of diesel fuel.
- 8,200 litres propane.
- 1,000 litres gasoline.

c. *ARKTIS prepared their estimate based on the original application which included a 40-person sleigh camp and a 40-person temporary camp. They assumed and included costs for the dismantling of the 40-person temporary camp. All costs for mobilization and demobilization were assumed from B.C.*

MGM Energy submitted a revised estimate for a 10-person sleigh camp and a 20–30-person temporary camp also supplied and mobilized from Norman Wells.

d. *ARKTIS included costs for worker mobilization and accommodations at a rate of 40 persons x 120 days plus 30 persons for 60 days (Total of 6,600 person days)*

MGM Energy submitted a revised estimate of personnel requirements and timing for a total of 898 person days.

e. *ARKTIS assumed sewage would be disposed of in B.C.*

Based on initial conversations with the Town of Norman Wells, MGM expects to be able to dispose of sewage locally.

f. *ARKTIS estimate did not review any securities currently held for the Project site or for any previous authorizations.*

MGM currently has the following security posted under the following permit and licence:

Permit S12A-001	$234,423.00	for land liability
Licence S12L1-001	$553,579.00	for water liability
Total security	**$788,002.00**	

g. *ARKTIS assumed one sweet well drilled between 1,000 to 2,000 m depth, no vent flow/gas migration, and four completion zones.*

According to AECOM, July 2013[16], details of the drilling operation for the I-78 exploration oil well include the following: Drilling depth is 2,000 m; the well is sweet (no gases); the number of completions was two.

h. *ARKTIS included costing of approximately $7,000 for removal of the 3rd party equipment and 1m^3 contaminated soil by MGM Energy and assumed that 50% of the area would require recontouring and revegetation. They argue that the Staging Area was part of the original permitted area and therefore must be reclaimed, including the 3rd party equipment.*

MGM Energy is not seeking permanent closure of the Staging Area, due to the presence of the 3rd party equipment with potential minor soil contamination that will require remediation, and potentially revegetation. They do not agree with GNWT-ENR that the clean-up of this area is their responsibility and their cost to assume. Board staff agree with MGM Energy that it should not be their cost to clean up the 3rd party materials; however, agree with GNWT that the Staging Area should be cleaned up. If MGM assumes this task they should be provided relief from their security for the costs to clean up that area.

7.5 Board Staff Potential Revised Reclaim Security Estimate

SLWB staff copied the GNWT-ARKTIS RECLAIM estimate and adjusted the numbers for the cost items above based on MGM response. No other values were changed. The potential revised RECLAIM estimate is presented in Table 9. Note that there are other areas that were identified as potentially requiring additional information to verify the assumptions made by ARKTIS, thus this is presented as a potential revised estimate.

The Board has the authority to set the security. In their submission to the Board, dated June 29, 2022[3], MGM Energy requested that the Board consider Section 32 (2) of the Mackenzie Valley Land Use Regulations and Section 11 (2) of the Water Regulations as part of the Security Adjustment. These considerations include a) the ability of MGM to pay; b) the past performance of MGM; c) the prior posting of security instruments to the government; and d) the probability and significance of any environmental damage.

Table 9: SLWB Potential Revised RECLAIM Estimate based on MGM verification of ARKTIS assumptions.

SUMMARY OF COSTS				
CAPITAL COSTS	**COMPONENT NAME**	**COST**	**LAND LIABILITY**	**WATER LIABILITY**
WELLS AND FACILITIES		$114,442	$57,221	$57,221
BUILDINGS AND EQUIPMENT (Construction Execution)		$4,984	$4,320	$664
CHEMICALS AND CONTAMINATED SOILD MANAGEMENT		$2,601	$0	$2,601
SURFACE AND GROUNDWATER MANAGEMENT		$0	-	$0
INTERIM CARE AND MAINTENANCE		$22,082	-	$22,082
INFLATION (2014 TO 2022) ON CAPITAL COSTS	21.81%	$31,430	$13,422	$18,008
	SUBTOTAL: Capital Costs	**$175,539**	**$74,963**	**$100,575**
	PERCENT OF SUBTOTAL		**43%**	**57%**
INDIRECT COSTS		**COST**	**LAND LIABILITY**	**WATER LIABILITY**
MOBILIZATION/DEMOBILIZATION/WORKER ACCOMODATIONS		$2,336,622	$997,846	$1,338,776
POST-CLOSURE MONITORING AND MAINTENANCE		$146,882	$62,725	$84,157
ENGINEERING	5%	$8,777	$3,748	$5,029
PROJECT MANAGEMENT	1%	$1,755	$750	$1,006
HEALTH AND SAFETY PLANS/MONITORING & QA/QC	1%	$1,755	$750	$1,006
BONDING/INSURANCE	1%	$1,755	$750	$1,006
CONTINGENCY	10%	$17,554	$7,496	$10,058
CONTINGENCY - MOBILIZATION, ACCOMODATIONS AND POST-CLOSURE	15%	$372,526	$159,086	$213,440
MARKET PRICE FACTOR ADJUSTMENT	0%	$0	$0	$0
INFLATION (2014 TO 2022) MOBILIZATION/DEMOBLIZATION AND POST-CLOSURE MONITORING AND MAINTENANCE	21.81%	$541,652	$231,311	$310,342
	SUBTOTAL: Indirect Costs	**$3,429,279**	**$1,464,461**	**$1,964,818**
TOTAL COSTS		**$3,604,817**	**$1,539,424**	**$2,065,393**
MGM CURRENT SECURITY HELD BY GNWT		**$788,002**	**$234,423**	**$553,579**
POTENTIAL ADDITIONAL SECURITY REQUIREMENTS FOR EAST MACKAY I-78 ABANDONMENT PROJECT		**$2,816,815**	**$1,305,001**	**$1,511,814**

For consideration, MGM submits that it has provided and maintained security instruments related to its activities at I-78 and has and is currently providing numerous more under the jurisdiction of the SLWB. MGM is a wholly owned subsidiary of Paramount Resources Ltd. ("Paramount"), the two entities have a history of providing and maintaining security of over 20 years. The assessment of potential for environmental impacts related to this Project, the risk is low.

MGM accepts that GNWT may want to submit an updated security estimate based on the information included in their response. Further, MGM is willing to meet and discuss the project scope (unchanged), updated equipment list, sourcing location(s) and project security if requested.

Board staff are of the opinion that the GNWT security is overinflated, and GNWT have also indicated willingness to review and discuss a security revision based on new information and confirmation of assumptions. Therefore, it does not seem reasonable for the GNWT to request the posting of security immediately after the Board issues the authorizations.

The revised estimate prepared by Board staff demonstrates that ARKTIS (GNWT) should revise the estimate based on the updated information.

7.6 Recommendation Options for Security

Board staff recommend the Board choose one of the following options for security:

a) The Board may accept **the $4.2 Million GNWT estimate prepared by ARKTIS** (estimate minus the current securities held for the Project).
b) The Board may accept the revised potential estimate of **$2.8 Million prepared by Board staff** based on MGM updates provided.
c) The Board may accept the **MGM estimate of $736,00** based on past performance, securities already held ($788,000), ability to pay, and the low risk of environmental damage to the surrounding area.
d) The Board may **defer setting security** for a period sufficient to allow the GNWT and MGM to revise their estimates.

Given the uncertainty with the estimates prepared by ARKTIS (too high) (option a)) and MGM (Option b) - equivalent to the security already held by GNWT), it is reasonable to include conditions in the Licence to allow for more refinement of the estimate by the two parties for the Licence (water liability) (option d)). In the Licence, the security amount is placed within a Schedule (2), and the Board may update the Schedule at their discretion as per Part B, Condition 14: **UPDATES TO SCHEDULE(S) AND COMPLIANCE DATE(S)** - The Schedules and any compliance dates specified in this Licence may be updated at the discretion of the Board.

If the Board chooses option d), draft Conditions in the Licence Part C would be as follows:

1. **POST SECURITY DEPOSIT** - The Licensee shall post and maintain a security deposit with the Minister in accordance with Schedule 2. The Licensee shall post the security deposit within 90 days after issuance of this Licence.

2. **UPDATE CLOSURE COST ESTIMATE** - The Licensee shall submit an updated Closure Cost Estimate using the current version of RECLAIM within 60 days of the issuance of this Licence.

3. **ADJUSTED SECURITY AMOUNT** - The amount of the security deposit required by Part C, Condition 1 may be adjusted by the Board:

a) Based on an updated Closure Cost Estimate as per Part C, Condition 2; or
b) Based on such other information as may become available to the Board.

The Board could set the security for the Land Liability portion to be included in the Land Use Permit. This amount could be either:

i) the amount proposed in the Board Staff estimate **$1,305,001.**
ii) the amount of the total securities currently held by GNWT-ENR and Lands **$788,000.**
iii) an amount split between the above two estimates **$1 Million.**

The remainder of the security estimate for the water liability, after GNWT and MGM Energy revise their estimates, would then be added to the Water Licence Schedule from a motion by the Board.

In their deliberations, the Board requested information on other security amounts that the Board has approved for other similar projects.

- **Suncor Energy Inc**. is planning to abandon three wells in the Colville Lake area and have posted a total security deposit of **$3.7 M** divided into $1,966,498 for S22L1-001 and $1,757,670 for S22A-001.

- **Cenovus Energy** has abandoned all their wells and retain a total security of **$1,555,560** for Interim Care and Maintenance activities at the Slater River Program site ($1,166,670 for Permit S20X-006, and $388,890 for Licence S20L1-004). Security for previous wells that have been abandoned was approximately $1.2 M.

The Board chose Option b) for the following reasons:

1) The additional details provided by MGM were sufficient for staff familiar with using the Reclaim estimate tool, to revise the estimates for each of the ARKTIS assumptions where there was new information to input.
2) The revised estimate addressed the areas where the greatest differences in the estimates were (equipment and fuel mobilization/demobilization; number of person-days required).
3) A total security of $2.8 M is reasonable for this Project and in keeping with other Board approved security amounts for similar projects in the Sahtu.

8. Draft Authorizations

SLWB staff developed a draft Land Use Permit (LUP; Permit) S22A-002 and a draft Water Licence (WL; Licence) S22L1-002 based on LWB's current Standard Land Use Permit Conditions and Standard Water Licence Conditions. These Conditions were also developed based on the recent approval for a similar Well Abandonment Program to be conducted by MGM in the Colville Lake area (S22A-001 and S22L1-001). The Draft LUP and WL were distributed for review at the same time as the Application package.

8.1 Land Use Permit Conditions and Cover Page (Attachment B)

The Draft Permit included two non-standard conditions for consideration by reviewers and the proponent:

- 26(1)(d) Methods and Techniques

  19. The Permittee shall prepare and submit to the Board and Inspector, for approval, a **Permafrost Protection Contingency Plan** that outlines additional mitigation measures to be taken if permafrost is exposed during operational activities. The Plan shall be submitted 90 days prior to Winter Project commencement.

  23. The Permittee shall prepare and submit to the Board and Inspector, for approval, a **Sediment and Erosion Control Contingency Plan** that outlines additional mitigation measures to be taken to remediate any degradation resulting from erosion after during operational activities. The Plan shall be submitted 90 days prior to Winter Project commencement.

GNWT Lands-Sahtu Comment ID 9 and 10 supports both conditions be retained in the Permit, commenting that a Sediment and Erosion Control Contingency Plan is required to show due diligence with the works, and recommend MGM develop and circulate such a plan. **GNWT Lands-Sahtu** also commented that permafrost mitigation is lacking in the application and recommended MGM develop and circulate a Permafrost Protection Contingency Plan.

The Board has used these two conditions in other authorizations where the risk to permafrost is high due to the magnitude and extent of the Projects (large wellsite reclamation and all-season road construction – see Permit S22A-001 and Licence S22L1-001). This Project, by comparison, is small with only one well to abandon and no contaminated sumps for remediation. The site has no current erosion or permafrost concerns, and the main Project activities will occur during frozen conditions in the winter, with only one water crossing. Therefore, the risk for accelerated erosion or damage to permafrost is negligible. Board staff agree that Inclusion of these conditions for this Project are administratively burdensome and not necessary.

8.2 Draft Water Licence Conditions and Cover Page (Attachment C)

GNWT-ENR-EAM provided comments on the Draft Licence, specifically:

- **ID Comment 14** - Part D, Condition 1 to be revised to indicate the maximum quantity of water withdrawal is 46,250 m^3/year. MGM Agreed.
- **ID Comment 15** - Part D, Condition 1, to include a daily limit of water withdrawal at 299m^3/day. MGM Agreed.
- **ID Comment 16** - Part I, Condition 2 to be retained, with revised text to require the submission of the revised Closure and Reclamation Plan (CRP) "A minimum of 90 days prior to the commencement of winter abandonment activities for the Project". MGM No comment.
- **ID Comment 17** - Schedule 3 to include a second condition to outline the requirements of the Wellsite Reclamation Monitoring and Maintenance Plan. MGM believed that this condition can be captured within the Closure and Reclamation Plan and the annual reporting requirements. Board staff agree and submit that this condition was a requirement of the MGM Energy Colville Lake abandonment Project which has numerous leases, wellsites and sumps that require development of such a Plan. Board Staff added an additional requirement under Schedule 2 for a post-reclamation monitoring report that includes an updated Traditional Ecological Knowledge Study.

9. Conclusion

In summary, under evaluation by the Board, the project conforms to the Sahtu Land Use Plan and therefore, the SLWB has met the requirements as per Section 46 of the MVRMA.

Board concludes that the **Engagement Plan v. 1.1** as submitted, is in conformity with guidelines and sufficiently reflect the scope of the proposed activities. Engagement to date for the new applications has been limited to notification and submission of applications; with appropriate triggers identified for engagement timing. The Board requires the Licensee to keep the Engagement contact list updated as peoples positions frequently change.

No additional **Traditional Knowledge** information was provided over the 2011 study and Board staff did not recommend that additional Traditional Knowledge studies are required at this time. The Proponent has demonstrated accommodation of Traditional Knowledge in the design and locations of activities, before development, to ensure protection of these resources and values. The Board noted that Traditional Knowledge should be collected again. Board staff recommended and Board agreed that a non-standard condition will be included in the Licence that requires MGM Energy to complete a post-reclamation TEK Study.

Based on the evidence provided, Board recommends that the **Waste Management Plan version 1.0**, as submitted within the **Environmental Protection Plan**, be approved with a requirement for submission of a <u>version 2.0</u> that contains the updates and revisions as requested by reviewers and agreed to by

MGM Energy, within 90 days following issuance. The Plan must also be developed as a stand-alone document. The changes will be documented in a revision table and reviewed for conformity by Board staff.

Board concludes that the **Spill Contingency Response Plan Version 1.0**, as submitted, meets the intent of the guidelines, and sufficiently reflects the scope of the proposed activities. The Plan may be approved with a requirement for submission of a **version 1.1** that contains the updates and edits as requested by reviewers and agreed to by MGM Energy, within 90 days following issuance. The changes will be documented in a revision table and reviewed for conformity by Board staff.

Board concludes that the **Closure and Reclamation Plan version 2.0**, as submitted, meets the general intent of the guidelines. The Plan may be approved with a requirement for submission of a **version 2.1** that contains the updates and edits as requested by reviewers and with the framework proposed by Board staff in section 6.4.4, within 90 days following issuance. The changes will be documented in a revision table and reviewed for conformity by Board staff.

The Board reviewed all evidence related to security and chose Option b) – the staff revised estimate for a total security of **$2,816,815** split into water liability of **$1,511,814** and land liability of **$1,305,001.**

10. Recommendations

Board staff recommend the Board:

1) **Accept** the staff recommendation in this report that the Application for LUP S22A-002 and WL S22L1-002 from MGM **conforms with the Sahtu Land Use Plan.**

2) Make a **motion to approve** the **Type A Land Use Permit S22A-002** for a term of 5 years, the draft permit conditions, security of **$1,305,001**and draft Issuance Letter (Attachment D).

3) Make a **motion to approve** the **Type B Water Licence S22L1-002** for a term of 5 years, the draft licence conditions, security of **$1,511,814**, and draft Issuance Letter (Attachment E).

4) Make a **motion to approve** the **Engagement Plan version 1.1,** with one edit to Table 4 for update to primary contacts for each organization.

5) Make a **motion to conditionally approve** the **Waste Management Plan version 1.0,** with revisions required to include submission of a stand-alone **Waste Management Plan version 2.0** to be reviewed for conformity by Board Staff.

6) Make a **motion to conditionally approve** the **Spill Contingency (Response) Plan version 1.0**, with revisions for a **version 1.1** to be reviewed for conformity by Board Staff.

7) Make a **motion to conditionally approve** the **Closure and Reclamation Plan version 2.0**, with revisions for a **version 2.1** to be reviewed for conformity by Board Staff.

8) Make a motion to direct Board Staff to finalize the draft **Reasons for Decision** for the Permit and Licence for signature by the Interim Board Chair (Attachment F).

11. Reference Material/Attachments

ATTACHMENTS

A. 2011 Traditional Ecological Knowledge Study
B. Draft Permit Cover Page and Terms and Conditions
C. Draft Licence Cover Page and Terms and Conditions
D. Draft Issuance Letter for Land Use Permit S22A-002
E. Draft Issuance Letter for Water Licence S22L1-002
F. Draft Reason for Decision

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Respectfully prepared and submitted by:	With assistance and review by:	Approved by:
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