Closure and Reclamation Plan

Liard West, Northwest Territories

V1

February 2024

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Authorizations:

Land Use Permit MV2020A0009

Water License MV2020L1-0006

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1.0 PLAIN LANGUAGE SUMMARY

The proceeding Closure and Reclamation Plan (CRP) lays out the planned approach to site closure for Paramount Resources Ltd.'s (Paramount) Liard West field which incorporates the following well sites: F-25A, K-29, M-25 and O-80, a battery site at F-25 and associated areas (project components).

The goal of the closure and reclamation program is to return the applicable sites and project components to viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment and with human activities.

2.0 INTRODUCTION

2.1 Purpose and Scope

Paramount hereby submits this final CRP for the Liard west field. The scope of this CRP includes the following well sites and associated areas listed in Fort Liard West, Northwest territories Attachment A: Land Use Permit Application Supplement and detailed in the table below:

TABLE 1: PROJECT COMPONENTS

Project Component	Location (Lat/Long)	Total Area (Hectares)
Well Sites		**17.1 ha**
K-29	60° 30’ N, 123° 30’ W	9.11
O-80	60° 30’ N, 123° 30’ W	1.69
M-25	60° 30’ N, 123° 30’ W	3.00
F-25	60° 30’ N, 123° 30’ W	2.20
F-25A	60° 30’ N, 123° 30’ W	1.10
Pipelines		**89.4 ha**
Right-of-Ways (ROW)	60° 20’ N to 60° 30’ N, 123° 15’W to 123° 30’W	44 km X 20 m width (approx.) = 89.4
Access Roads		**64.04 ha**
Good weather access to wellsites, including 9 existing bridges	60° 20’ N to 60° 30’ N, 123° 15’W to 123° 30’W	33 km X 20 m width (approx..) = 64.04 km
Miscellaneous		**8.58 ha**
Borrow Pit at D-05	60° 30’ N, 123° 30’W	0.9
Borrow Pit at K-03	60° 30’ N, 123° 30’W	0.26
Borrow Pit at G-01	60° 30’ N, 123° 30’W	0.35
Borrow Pit at L-04	60° 30’ N, 123° 30’W	0.19
Borrow Pit at M-05	60° 30’ N, 123° 30’W	0.20
Borrow Pit, Camp and Staging area at C-66	60° 20’ N, 123° 15’W	3.26
Borrow Pit at O-10	60° 30’ N, 123° 30’W	0.23
Borrow Pit at F-25	60° 30’ N, 123° 30’W	0.20
Campsite at D-05	60° 30’ N, 123° 30’W	0.20
Campsite at L-18	60° 30’ N, 123° 30’W	0.56
Campsite at K-29	60° 30’ N, 123° 30’W	Included in K-29 wellsite surface area
Sump at A-01 (two pits)	60° 30’ N, 123° 30’W	1.37
Sump at L-18	60° 30’ N, 123° 30’W	0.86
Sump at F-25	60° 30’ N, 123° 30’W	Included in F-25 wellsite surface area
Tower	60° 30’ N, 123° 30’W	Located at km 18, within footprint of existing pipeline RoW.
Total Built Areas Still Present		**179.12 ha**

2.2 Goal of the Closure and Reclamation Plan

The goal of the closure and reclamation program is to return the applicable sites and project components to viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment and with human activities.

The expected future land use of each project component is forested land consistent with the offsite areas surrounding each disturbed area.

2.3 Closure and Reclamation Planning Team

The current reclamation and closure team consists of the following Paramount personnel:

TABLE 2: CLOSURE PLANNING TEAM

Role	Name	Contact
Director, Asset Management	John Hawkins	Telephone: 403-817-5074 Email: john.hawkins@Paramountres.com
Environmental Coordinator	Ian Keir	Telephone: 403-817-5077 Email: ian.keir@Paramountres.com
Regulatory and Community Affairs Advisor	Terence Hughes	Telephone: 403-206-3859 Email: terence.hughes@Paramountres.com

2.4 Engagement

The level of engagement with stakeholders by Paramount, has been and will continue to be, reflective of its activity level in the area. Prior to and during construction and development activities engagement activities were more frequent and intense and included studies, community meetings, open houses, meetings with community leaders and Councils, telephone calls and both written and electronic notifications. Currently, engagement activities are guided by the current, approved project Engagement Plan which can be found online via the public registry at Paramount - Liard West - Engagement Plan V1.1 - Feb19_21.pdf (mvlwb.ca). Closure and reclamation engagement rely upon the regulatory processes of the MVLWB and written notifications. Follow up is determined by MVLWB processes and affected parties' correspondence. Prior to the activities in the summer season of 2023 Paramount provided written notification of the proposed activity on March 23, 2023, no responses to that correspondence were received. Recently, Paramount has been in direct contact with Acho Dene Koe First Nation regarding the main access and other infrastructure at Liard West, those conversations are ongoing.

2.5 Regulatory Instruments

TABLE 3: AUTHORIZATIONS

List of Authorizations	Requirement	Location within CRP
Land Use Permit MV2020A0009, Mackenzie Valley Land and Water Board, expires November 19, 2025	All outstanding liabilities and obligations of the Permittee in relation to work performed or required to be performed under Land Use Permit MV2013A0012 are fully incorporated into and subsumed under this Permit, and the Permittee must therefore complete the restoration and other obligations set out in or incurred under Permit MV2013A0012 as well as such further obligations as may be set out in or incurred under this Permit.	These requirements are listed below in Table 3.
	All areas affected by construction or removal activities shall be stabilized and landscaped to their pre-construction profiles, unless otherwise authorized in writing by an Inspector.	Section 5.5.2 Reclamation
	The Permittee shall save the organic soil stripped from the land use area and shall use the organic soil for reclamation as approved by the Board, or otherwise authorized in writing by an Inspector.	Section 5.5.2 Reclamation
	Prior to the end of the land-use operation, the Permittee shall level all stockpiles of granular material located within the land use area.	Not applicable, no granular material was utilized for these projects.
	Prior to the end of the land-use operation, the Permittee shall complete all cleanup and	In progress and addressed throughout the CRP.

List of Authorizations	Requirement	Location within CRP
	restoration of the lands used.	
	Prior to the end of the land-use operation, the Permittee shall prepare the site in such a manner as to facilitate natural revegetation.	Section 5.5.2 Reclamation
	The Permittee shall carry out Progressive Reclamation of disturbed areas as soon as it is practical to do so.	Not applicable, all surface equipment is still present.
	Prior to the end of the land-use operation, the Permittee shall restore any trails impacted by the land-use operation by removing fallen trees and any other obstructions from the trails.	Section 5.5.2 Reclamation
Water License MV2020L1-0006, Mackenzie Valley Land and Water Board, November 19, 2025	Six months prior to the closure of any specific component of the Project, the Licensee shall submit to the Board, for approval, a Closure and Reclamation Plan.	This document.
	Every three years following the previous approval, or as directed by the Board, the Licensee shall submit to the Board, for approval, a revised Closure and Reclamation Plan.	Not applicable – initial approval not yet received.
	Three years prior to the expiry date of this Licence, or a minimum of two years prior to the end of operations, whichever occurs first, the Licensee shall submit to the Board, for approval, a final Closure and Reclamation Plan.	This document.
	The Licensee shall endeavor to carry out approved Progressive Reclamation as soon as is reasonably practicable.	Not applicable, final reclamation will be completed following removal of the surface equipment.
	The Licensee shall not conduct Progressive Reclamation except as approved by the Board.	Not applicable.
	Beginning May 2021 and no later than every May 1 thereafter, the Licensee shall provide written notification to the Board and an Inspector of any approved Progressive Reclamation that will be conducted in the upcoming year. Notification shall include the name and contact information for the individual responsible for overseeing the Progressive Reclamation. Written notification shall be provided to the Board and an Inspector if any changes occur.	Not applicable.
	Within 90 days of completing Closure and Reclamation of the Project, or as otherwise directed by the Board, the Licensee shall submit to the Board for approval, a Post-Closure and Reclamation Monitoring and Maintenance Plan. The Plan shall be in accordance with the requirements of Schedule 4.	Pending approval of the CRP.
	Within 3 months of completing Closure and Reclamation of any specific component of the	Pending approval of the CRP and completion of closure

List of Authorizations	Requirement	Location within CRP
	Project, the Licensee shall submit to the Board for approval, a **Performance Assessment Report**. The Report shall be in accordance with the MVLWB/AANDC *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*. The Licensee shall submit subsequent Reports as directed by the Board.	activities.
Land Use Permit MV2013A0012, Mackenzie Valley Land and Water Board, expired November 13, 2018	All area affected by construction or removal of activities shall be stabilized and landscaped to their pre-construction profiles, unless otherwise authorized in writing by an Inspector.	Section 5.5.2
	The Permittee shall store overburden and use it to recontour the site after operations are complete, unless otherwise authorized in writing by an Inspector.	Section 5.5.2
	The Permittee shall level all stockpiles of granular material located within the land used area prior to the expiry date of this Permit.	No applicable, no granular material was extracted for the Project.
	Prior to the expiry date of this Permit, the Permittee shall complete all cleanup and restoration of the lands used.	Section 5.5.2
	Permittee shall prepare the site in such a manner as to facilitate natural revegetation.	Section 5.5.2
	The Permittee shall carry out progressive reclamation of disturbed areas as soon as it is practical to do so.	Not applicable
	The licensee shall, six months prior to the closure of any specific component of the Project, submit to the Board for approval, a Component-specific Closure and Reclamation Plan in accordance with Schedule 3, item 1, included in this Licence.	This document
	The Licensee shall, prior to closure of a drilling Sump, sample the Sump(s) and carry out closure activities in accordance with Schedule 3, item 2.	Section 5.6.2
	The Licensee shall revise the plans referred to in Part H, items 1 if not approved. The revised plans shall be submitted to the Board for approval within six months of receiving notification of the Board's decision.	This document
	Notwithstanding the time schedule referred to in the Closure and Reclamation Plan, the Licensee shall endeavor to carry out Progressive Reclamation of areas which are abandoned prior to closure of operations.	Not applicable
	The Licensee shall complete the reclamation work within the time schedule specified in the plan or as subsequently revised and approved by the Board.	Section 8.0
	The Licensee shall review the Closure and Reclamation Plans annually, and modify the plans	This document

List of Authorizations	Requirement	Location within CRP
	as necessary, or at the direction of the Board, to reflect changes in operation, technology, and results of reclamation and/or other studies. The proposed changes shall be submitted to the Board for approval.	
	Upon implementation of the Closure and Reclamation Plan, the Licensee shall provide to the Board updates of all closure and reclamation activities in the Annual Report.	Pending approval of this document and completion of closure activities.
	Compliance with the Closure and Reclamation Plan specified in this Licence does not limit the legal liability of the Licensee, other than liability arising from provisions of the Act and its Regulations.	Noted.
	The Licensee shall restore all Sumps used for Sewage disposal by treating them with lime, backfilling, and compaction. Similar Wastes from permanent camps shall be fully contained and pumped out to an approved Wastewater disposal facility.	Any open sumps remaining will be restored during the Reclamation phase of work.

3.0 PROJECT ENVIRONMENT

3.1 Atmospheric Environment

There are no project-specific climate stations available. The 1981 to 2010 climate normals for the Fort Liard climate station are presented in Figure 1 below.

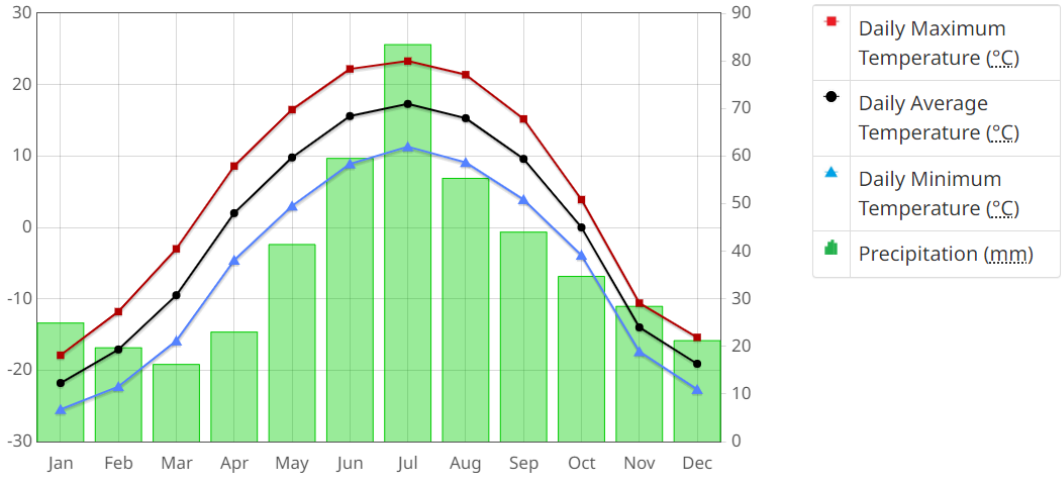

FIGURE 1: Temperature and Precipitation Graph for 1981 to 2010 Canadian Climate Normals FORT LIARD A *(Government of Canada, 2022)*

Well abandonment was completed at the 2K-29, 2M-25, 3K-29, F-25A, K-29A, M-25 and O-80 well sites in August and September 2023 which would have resulted in some equipment emissions. The most recent air quality report available for the Northwest Territories is from 2019 before any closure work commenced. The report indicated coarse particulate matter exceeded the standards in the spring when the winter snow cover melted. All other parameters described in the report were either below the applicable standards or were attributed to natural causes such as wildfires or urban activities (Government of Northwest Territories, 2019).

3.2 Physical (Terrestrial) Environment

All locations and project components are located within the Central Mackenzie Plain Boreal Northern Cordilleran Ecoregion (Paramount Resources Ltd., 2020). The surficial geology consists of a till veneer of thin and discontinuous till which may contain extensive areas of rock outcrop. Ice flow is in a westerly direction (Natural Resources Canada, 2008). There are no known geologic hazards within the project area. Brunisols, Luvisols, and Gleyed Luvisols underlie boreal coniferous, deciduous and mixed-wood forests in

valley bottoms. Gleysols and organic soils occur with wet shrublands, sedge fens and black spruce fens. Organic Cryosols occur with peat plateaus scattered throughout the Ecoregion and mineral Cryosols underlie solifluction terrain mainly on northerly slopes (Paramount Resources Ltd., 2020). Permafrost is defined as being discontinuous sporadic, and primarily is confined to lower, north-facing slopes and some organic deposits in the northwestern part of the Ecoregion (Paramount Resources Ltd., 2020).

Site specific data including topography, bedrock geology, hydrology and hydrogeology for each site is provided in the table below.

TABLE 4: SITE INFORMATION

Location	K-29	M-25	F-25	O-80
Slope Direction	Unknown	Unknown	Unknown	Unknown
On Site Drainage				
Bedrock Geology	Mattson Formation	Mattson Formation	Mattson Formation	Flett Formation
Surface Water within 500m	Yes, <100m west	None	Yes, stream ~100m south	None
Water Wells within 500m	None	None	None	None
Depth to Groundwater	Unknown	Unknown	Unknown	Unknown
Groundwater flow	Unknown	Unknown	Unknown	Unknown

Notes: N – north, S – south, E – east, W – west, SW – southwest, NE – northeast; SE – southeast
Mbgs – metres below ground surface
Flett Formation: limestone, minor shale
Mattson Formation: shale, sandstone, coal, limestone

3.3 Chemical Environment

Acid rock drainage and metal leaching potential are not addressed as part of Paramount's previously completed and proposed work scope. A quarry permit was approved authorizing Paramount to extract 950 m^3 of gravel however the final return submitted confirmed that no gravel was removed and the permit was closed. Soil quality will be assessed during the outstanding environmental assessment work.

3.4 Biological Environment

Several different forest cover types exist within this region of the boreal forest. Alluvial fiats are dominated by white spruce and balsam popular. White birch may also be found throughout this habitat. Jack pine, lodgepole pine and trembling aspen can be found growing on the sandy soils of the uplands. Between 25-50% of the Ecoregion is covered by wetlands, which support open stands of stunted black spruce with some white birch and various shrub species (Ecological Stratification Working Group, 1996). Characteristic mammal species of the Cordilleran Ecoregion include moose, black bear, beaver, fox, wolf, lynx, marten, mink, snowshoe hare, wolverine, weasel and red squirrel (Paramount Resources Ltd., 2020). To a lesser degree species such as woodland caribou occur throughout the region (Paramount Resources Ltd., 2020). Common bird species include bald eagles, hawks, falcons, chickadees, northern shrike, redpolls, ravens, Canada jays, woodpeckers, sandhill cranes, grouse and owls (Paramount Resources Ltd., 2020). Common fish species include northern pike, grayling, walleye, burbot, suckers, whitefish, and a number of species of forage fish (i.e. minnows) (Paramount Resources Ltd., 2020).

4.0 PROJECT DESCRIPTION

4.1 Location and Access

All project components are located within the west Liard field, north of the town of Fort Liard and the provincial border with British Columbia. All sites are accessed by an all-season road and barge across the Liard River. A map of the project components is attached as Appendix A.

4.2 Site History

Paramount is the operator of the Fort Liard West Project. The Project is situated in the NT, roughly 35 km north of the BC / NT border. From the Fort Liard Project area, Fort Nelson, BC is located approximately 200 km to the south; Trout Lake, NT is located roughly 150km to the east and Nahanni Butte, NT is located approximately 100 km to the north. The hamlet of Fort Liard, NT is located within the Project area. Paramount holds two production licences and two significant discovery licences in the area.

The Fort Liard West Project encompasses all-season and winter access roads; well sites, pipelines, valve sites and gas dehydration facilities; a water disposal well at O-80; a repeater site; camp, decking and staging sites; and various borrow pits and sumps. Six natural gas wells (Paramount et al K-29A, 2K-29, 3K-

29, M-25, 2M-25 and F-25a) on three lease sites (K-29, M-25 and F-25) are tied-in to a 37.2 km main pipeline that connects the K-29 lease site to a facility at the abandoned/reclaimed BP Pointed Mountain plant site. The M-25 lease site is linked to the F-25 plant site via a 1.4 km pipeline lateral and the F-25 plant is linked to the main pipeline via a 3.3 km pipeline lateral.

The project has held numerous water licences and land use permits over its history including MV2001P009, MV2000L1-011, MV2002A0071, MV2002L1-0013, MV2006P0021, MV2006L1-005, MV2013A0012, MV2013L1-0002. Additionally, the project has received numerous oil and gas operations approvals, prior to 2014 those were issued by the National Energy Board. Since devolution in 2014 they have been issued by the Office of the Regulator of Oil and Gas Operations.

All project components have been built and the wells and pipelines in the Liard West Project are abandoned, deactivated and/or decommissioned. Activity in the area has been limited in recent times to abandonment activities, maintenance of access and monitoring.

TABLE 5: SITE SUMMARIES

Location	Drilling Dates	Total Depth	Current Status and Date
K-29	Originally drilled in 1999	Unknown	Abandoned, 2005
2K-29	January 26, 2003 to March 21, 2003	3599 m	Abandoned, 2023
3K-29	January 12, 2004 to February 23, 2004	3700 m	Abandoned, 2023
K-29A	August 22, 2005 to October 12, 2005	3620 m	Abandoned, 2023
O-80	August 24, 1999 to September 8, 1999	1028 m	Abandoned, 2023
M-25	September 29, 1999 to December 21, 2000	3382 m	Abandoned, 2023
2M-25	March 31, 2004 to June 12, 2004	4324 m	Abandoned, 2023
F-25A	August 5, 1986 to February 25, 1987	3479 m	Abandoned, 2023

4.3 Site Geology

The sites within this CRP were used for oil and gas exploration and production not mining. Surficial and bedrock geology information is provided above in section 3.2.

4.4 Project Summary

The project consists of four well sites and associated areas including an all-season access road with 9 bridges, 8 borrow pits, 3 campsites, 3 sumps, 1 communication town and 44 km of pipeline right of ways.

4.5 Maps

The map in Appendix A shows all disturbed areas, borrow material locations, hydrological features and elevation contours.

All four sites had equipment present. Site drawings (plot plans) showing the location of the site facilities are attached in Appendix A.

Site photographs are provided in Appendix B.

5.0 PERMANENT CLOSURE AND RECLAMATION

5.1 Definition of Permanent Closure and Reclamation

Permanent closure is the final closure of a site with no foreseeable intent by the proponent to return to either active exploration or development. Permanent closure indicates that the proponent intends to have no activity on the site aside from post-closure monitoring and potential contingency actions. Permanent closure does not, however, preclude the proponent or another party from pursuing opportunities at the existing site or in the area at a time beyond the foreseeable future.

Paramount will be seeking permanent closure of the Liard west field. Paramount does not anticipate any negative residual effects to remain after reclamation is complete.

5.2 Permanent Closure and Reclamation Requirements

TABLE 6: PROJECT COMPONENT DESCRIPTIONS AND CONDITIONS

Project Component Description			Site Conditions	
Locations	**Area/Dimensions**	**Closure Stage**	**Existing**	**Final**
Wellsite K-29	9.11 hectares	Decommissioning	Well is abandoned but surface equipment remains, surrounding areas are sparsely vegetated with good growth around the edges of the site.	No equipment remaining, site contour is restored and site is fully vegetated.
Wellsite O-80	1.69 hectares	Decommissioning	Well is abandoned but surface equipment remains, surrounding areas are well vegetated with good growth on the north side of the site and a bare area in the south portion of the site.	No equipment remaining, site contour is restored and site is fully vegetated.
Wellsite M-25	3 hectares	Decommissioning	Well is abandoned but surface equipment remains, surrounding areas are well vegetated. Some slumping is apparent on the cur slopes north of the site, some sparse and bare areas are apparent	No equipment remaining, site contour is restored and site is fully vegetated.

Project Component Description			Site Conditions	
Locations	**Area/Dimensions**	**Closure Stage**	**Existing**	**Final**
			throughout the site. An apparent sump or fluid pit is visible on the east side of the site.	
Battery site F-25	2.2 hectares	Decommissioning	Surface equipment remains, surrounding areas are well vegetated.	No equipment remaining, site contour is restored and site is fully vegetated.
Wellsite F-25A	1.1 hectares	Decommissioning	Well is abandoned but surface equipment remains, surrounding areas are well vegetated.	No equipment remaining, site contour is restored and site is fully vegetated.
Good weather access to wellsites including 9 existing bridges	20 x 33,000 m	Active	All season road still in use to access the sites for remaining closure activities.	To be determined following ongoing consultations with local road users.
Borrow Pit at D-05	0.9 hectares	Reclamation	Cleared with sparse vegetation throughout.	Fully vegetated.
Borrow Pit at K-03	0.26 hectares	Reclamation	Cleared but not used. Area is well vegetated throughout.	Fully vegetated.
Borrow Pit at G-01	0.35 hectares	Not used	Overgrown, no visible disturbance.	Fully vegetated.
Borrow Pit at L-04	0.19 hectares	Reclamation	Cleared but not used. Areas are well vegetated throughout.	Fully vegetated.
Borrow Pit at M-05	0.2 hectares	Reclamation	Cleared but not used. Areas are well vegetated throughout.	Fully vegetated.
Borrow Pit, camp and staging area at C-66	3.26 hectares	Active	Good vegetation growth and mature trees present around the west, north and eats corners. The south portion is still used for equipment staging and as a landing area for the barge. A shallow borrow pit depression is visible on the east side of this area.	Site contour is restored and site is fully vegetated.
Borrow Pit at O-10	0.23 hectares	Reclamation	Cleared but not used. Areas are well vegetated throughout.	Fully vegetated.
Borrow Pit at F-25	0.2 hectares	N/A	Not shown on map and no disturbance	N/A

Project Component Description			Site Conditions	
Locations	**Area/Dimensions**	**Closure Stage**	**Existing**	**Final**
			visible.	
Borrow Pit at I-15	0.42 hectares	Reclamation	Not included in the application but identified on the map in L-05, no clearing observed at that location. An unknown clearing assumed to be the borrow pit area was identified to the west in I-15. The area was cleared but not used and is well vegetated throughout.	Fully vegetated.
Campsite at D-05	0.2 hectares	Reclamation	Cleared with sparse vegetation throughout.	Fully vegetated.
Campsite at L-18	0.56 hectares	Reclamation	Overgrown with mature tress present.	Fully vegetated.
Campsite at K-29	Included in K-29 wellsite surface area	See K-29 wellsite	See K-29 wellsite	See K-29 wellsite
Sump at A-01 (two pits)	1.37 hectares	Reclamation	West sump: well vegetated and half the area is overgrown. East sump: well vegetated but some bare areas remain.	Fully vegetated.
Sump at L-18	0.86 hectares	Reclamation	Sparse vegetation throughout.	Fully vegetated.
Sump at F-25	Included in the F-25 wellsite surface area	Reclamation	Appears to be open and holding water.	Capped with clay, reclaimed with topsoil/organic soil as applicable and revegetated.
Tower	Located at km 18, within footprint of existing pipeline RoW.	Reclamation	A tower and small building are present. The site appears to be well vegetated and overgrown around the remaining infrastructure.	No equipment remaining and well vegetated.
Right of Ways	20 x 44,000 m	Reclamation	Well vegetated throughout, some slumping/erosion apparent near the M-25 wellsite.	Well vegetated throughout with no evidence of slope instability.

5.3 Closure Objectives and Criteria

The closure objectives for the project along with the associated Closure Options and corresponding Closure Activities proposed are summarized in the below table. Closure Options and Closure Activities are divided into Remediation Options and Reclamation Options and Reclamation Options and Reclamation Activities.

TABLE 7: CLOSURE OBJECTIVES, OPTIONS AND ACTIVITIES

Closure Objectives	Closure Options	Closure Activities
Objective 1: to assess the soils on site to ensure there are no parameters of concern present at concentrations that pose a risk to the applicable receptors at each location.	Remediation Option 1: Remediate all soils to the published numerical standards.	Remediation Activity 1: Excavate any soil samples with reported concentration above the applied standards and dispose at an approved landfill.
	Remediation Option 2: Use site-specific data to revise the numerical standards based on physical site conditions and applicable receptor pathways. Use regional background data in addition to site-specific background samples to assess the presence of naturally occurring substances.	Remediation Activity 2: Complete a Tier 2 Modified Criteria review using previously collected soils data to verify if there are risks to the applicable receptors at each site if the soils on site remain in place.
Objective 2: to ensure the site is stabilized, with no erosion present. Objective 3: to ensure that on site drainage is consistent with the surrounding landscape and not causing excess water retention. Objective 4: to ensure that the site is revegetated with native species consistent with the surrounding Boreal Forest. Objective 5: to ensure invasive species	Reclamation Option 1: Complete full site restoration and reclamation earthworks.	Reclamation Activity 1: Clear established vegetation on site, strip topsoil, recontour subsoil to restore cut/fill slopes and involves re-establishing topography and drainage so that it is similar to off-site conditions and re-establishing soil profiles, where necessary, to provide suitable medium for revegetation.
		Reclamation Activity 2: Revegetate the site with an approved seed mix or by planting seedlings. The proposed seed mix is provided in Appendix C and will be sourced from Valley Seed in Fort St. John, British Columbia. The final mix used at each site is subject to availability at the time of reclamation, a list of alternative species to be considered is also provided in Appendix C. Revegetation is considered successful when areas disturbed by the gas field development and remediation have vegetation communities established that are self-sustaining and on the trajectory towards equivalent land capability to the surrounding areas. This will be determined when the vegetative cover and species assemblage is similar to equivalent community types in the surrounding areas (i.e.

Closure Objectives	Closure Options	Closure Activities
concentrations are less than or equal to offsite conditions.		80% percent cover of vegetation within the applicable project component).
		Reclamation Activity 3: Treat invasive species by either mechanical (hand-picking) or chemical (spraying) means.
	Reclamation Option 2: Minimal disturbance approach.	Reclamation Activity 4: Confirm there is no visible erosion or excess standing water on site, spot seed bare areas and remove invasive species if present (either by spraying or hand picking depending on the concentration of plants observed), retain naturally regenerated vegetation.

Closure is assessed in two phases and the specific criteria to be assessed for each phase are provided below.

5.3.1 Remediation

The soil quality standards to be applied at the Project will be determined at the time of site assessment and/or remediation.

5.3.2 Reclamation

The criteria that will be used to assess whether restoration of a site is complete are as follows:

Objective 2 criteria: Visually assess whether slopes have been stabilized with no visible erosion, slumping, sloughing or other evidence of ground instability.

Objective 3 criteria: Visually assess drainage on and around the site and ensure it is consistent with off-site areas and does not result in increased erosion potential or excess ponding.

Objective 4 criteria: Visually assess that vegetation cover is >80% of ground cover and ensure species diversity and composition is compatible with the surrounding land-use e.g. native species present, with a range of trees, forbs and shrubs or vegetation is likely to continue to diversify with future successional growth.

Objective 5 criteria: Visually assess invasive species concentrations and ensure the concentrations (%) of invasive species present is less than or equal to concentrations offsite.

5.4 Consideration of Closure Options and Selection of Closure Activities

This CRP intends to describe the reclamation strategy and provide updated timelines and a description of activities for the locations identified in the Purpose and Scope above. The following information provides an overview of the closure and reclamation process and a summary of activities at the Site to date.

5.4.1 Abandonment and Surface Equipment Removal

All wells have been abandoned and cut and capped but all surface equipment still remains. Confirmation of well abandonments are provided in Appendix D. GNWT Inspection Reports are provided in Appendix E.

5.4.2 Assessment

5.4.2.1 Phase 1 Environmental Site Assessment

The primary objective of a Phase 1 Environmental Site Assessment (P1 ESA) is to determine whether a site is or may be contaminated and to identify areas of potential environmental concern (APECs) and contaminants of potential concern (COPCs). P1 ESAs will be completed for all sites as outlined in the Implementation Schedule, section 8.0.

5.4.2.2 Phase 2 Environmental Site Assessment

The purpose of a Phase 2 Environmental Site Assessment (P2 ESA) is to assess the soil quality and determine, through intrusive sampling of the APECs identified in the P1 ESA, the presence or absence of COPCs and to determine the extent of any areas of environmental concern (AECs). P2 ESAs will be completed for all sites as outlined in the Implementation Schedule, section 8.0.

5.4.3 Remediation

Soil quality will be assessed during the planned P2 ESAs. If the soil at any of the assessed areas is identified to contain parameter concentrations above the applied guidelines, then site specific criteria will be assessed to determine if the applied guidelines are consistent with the applicable receptor pathways present at the affected site. After a review of the applicable receptor pathways and site-specific data it will be determined if Remediation Option 1 or 2 should be applied at the site to achieve closure objective 1 criteria.

5.4.4 Reclamation

TABLE 8: RECLAMATION ACTIVITY SELECTION

Location	Project Component	Reclamation Option
K-29	Well site	Reclamation Option 1
O-80	Well site	Reclamation Option 1
M-25	Well site	Reclamation Option 1
F-25	Battery site	Reclamation Option 1
F-25A	Well site	Reclamation Option 1
Good weather access to well sites, including 9 existing bridges	Road	To be determined pending the outcome of ongoing engagement
Borrow Pit at D-05	Borrow Pit	Reclamation Option 2
Borrow Pit at K-03	Borrow Pit	Reclamation Option 2
Borrow Pit at G-01	Borrow Pit	Reclamation Option 2
Borrow Pit at L-04	Borrow Pit	Reclamation Option 2
Borrow Pit at M-05	Borrow Pit	Reclamation Option 2
Borrow Pit, Camp and Staging Area at C-66	Borrow Pit, Camp and Staging Area	Reclamation Option 1
Borrow Pit at O-10	Borrow Pit	Reclamation Option 2
Borrow Pit at F-25	Borrow Pit	Reclamation Option 2
Borrow pit at I-15	Borrow Pit	Reclamation Option 2
Campsite at D-05	Camp	Reclamation Option 2
Campsite at L-18	Camp	Reclamation Option 2
Campsite at K-29	Camp	Reclamation Option 2
Sump at A-01 (two pits)	Sump	Reclamation Option 2
Sump at L-18	Sump	Reclamation Option 2
Sump at F-25	Sump	Reclamation Option 2
Tower	Communication System	Reclamation Option 2
Right of Ways	Pipelines	Reclamation Option 2

5.5 Engineering Work Associated with Selected Closure Activity

There was engineering work completed and submitted to OROGO for the well abandonments. Additional engineering work will be completed prior to equipment decommissioning.

5.6 Predicted Residual Effects

Potential environmental effects and associated mitigation measures are detailed in Table 8 below.

TABLE 9: PREDICTED EFFECTS AND MITIGATION MEASURES

Closure Activity	Impact	Duration	Environmental Value Impacted	Proposed Mitigation	Residual Impact
Reclamation Activity 1	Noise	Temporary	Wildlife	**Avoid:** No work between April 15 and June 30. **Minimize:** Equipment numbers will be kept to the minimum required to execute the work required. Equipment will be run for the minimum hours required. **Mitigate:** Not applicable. **Restore:** Not applicable.	Negligible
	Emissions and dust	Temporary	Air quality	**Avoid:** The sites are accessed by a good quality road therefore dust emissions are minimized. **Minimize:** Equipment numbers will be kept to the minimum required to execute the work required. Equipment will be run for the minimum hours required. **Mitigate:** Vehicle maintenance, speed limits, limit idling time. **Restore:** Not applicable.	Negligible

5.7 Uncertainties

Site assessments to assess soil quality and develop the full reclamation scope have not yet been completed and may result in additional work required e.g. remediation of impacted soil.

5.8 Post-Closure Monitoring, Maintenance and Reporting

Post-reclamation activities will consist of reconnaissance level vegetation and terrain monitoring to confirm reclamation success. Wildlife presence is recorded during post-closure monitoring. No soil and water sampling is proposed as part of this monitoring stage as previous assessments will have already confirmed there is no remaining risk to receptors at all sites regarding soil quality. Time on-site is approximately 1 hour per site.

Monitoring is anticipated to occur annually, during summer months for a period of 3 years, dependent on site-specific conditions and the timing of reclamation activities. The rationale for the proposed timeline

of 3 years is that a minimum of 2 growing seasons is required to confirm vegetation establishment. 3 to 5 years was proposed as the anticipated total length of time for a site to meet all closure criteria depending on the individual site and timing of soil reclamation and revegetation activities, including maintenance activities where initial reclamation does not achieve the closure objectives.

Terrain monitoring for Closure Objectives 2 and 3 will include identification of erosion and settlement concerns. From previous site assessments Paramount and their contractors have records of the historical terrain onsite, if during post-closure monitoring events there is visible evidence of slumping, subsidence, or erosion on a site that is not fully vegetated and stable then additional repair works will be completed as required. Stability of erosion and settlement concerns will be determined by recording if the terrain is fully vegetated and if the observed concern (e.g. erosion, slumping, subsidence) is the same size as when it was first observed or if it is worsening with each consecutive visit.

If the presence of standing water is observed, it will be assessed to determine if similar accumulations are present offsite and if the source of the ponding is natural watercourses surrounding the site or if the ponding is a result of subsidence at the site or inconsistent contour and tie-in with the surrounding areas. If ponded water is determined to result from terrain concerns and is not natural in origin, then it will be monitored and sampled as necessary.

Vegetation monitoring for Closure Objectives 3 and 4 will include documentation of revegetation cover across the site as a percentage of the total site area and assessing the site for the presence of invasive species (number of plants or area covered depending on the quantity observed). If there are bare areas present and <80% vegetation cover after two growing seasons, then additional seeding/tree planting will be completed to full revegetate the site. If invasive species are present, they will be removed by handpicking at small quantities (<10% of the site area) or treated with herbicide spraying at larger concentrations.

If during the annual monitoring, or from sampling, concerns are identified that are worsening and have not stabilized after 5 years, minor reclamation treatments will be conducted via helicopter. These could include invasive species management (conducted annually following identification of invasive species), scarification, recontouring, installation of erosion control measures, seeding and other vegetation management techniques. The threshold for proceeding with maintenance activities is an area of subsidence/erosion/ponding >50 cm in depth, a bare/sparse area >20% of the area of the project

component and the presence of any concentration of invasive species that is not consistent with or originating from offsite areas.

If additional reclamation is required to repair an observed reclamation concern, then additional monitoring (up to an additional 3 years) will be completed following the repair to ensure the repairs have been successful.

Following closure and reclamation of each project component and a minimum of 3 years of post-closure monitoring, a Performance Assessment Report will be submitted describing the current conditions of the applicable project component(s) specific to topography, vegetation, reclamation history, and ecological integration.

5.9 Contingencies

If the selected remediation or reclamation activity is not reaching closure objectives as expected then a revised work plan will be completed to address any deficiencies identified.

6.0 PROGRESSIVE RECLAMATION

Progressive reclamation is not applicable as Paramount is pursuing final permanent closure of the Liard west field.

7.0 TEMPORARY CLOSURE

Paramount has no intention of resuming activities on sites slated for closure. Therefore, temporary closure is not applicable to this CRP.

8.0 INTEGRATED SCHEDULE OF ACTIVITIES

The CRP will be implemented over multiple years and will be subject to changes as new information becomes available. Decommissioning of surface equipment is tentatively planned for the summer of 2024, the remaining activities will be scheduled following this decommissioning.

9.0 POST-CLOSURE SITE ASSESSMENT

Predicted residual effects will be monitored during closure activities, if activities are not able to completed without impacting wildlife and other surrounding receptors then activity timing or the proposed work being completed will be adjusted as needed to minimize residual effects.

10.0 FINANCIAL SECURITY

Financial security of $2,162,651 has been posted for the Project.

10. REFERENCES

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APPENDIX A

Liard West Map and Plot Plans

As-Built Map
FORT LIARD WEST

2013

Northwest Territoties
NAD 1983 UTM Zone 10N

Paramount resources ltd.

Legend

- Cabins
- Seismic

Airstrip
- Built
- Foreign

Gathering System
- Built
- Not Used
- Not Built
- Foreign

Transportation
- Fort Liard Highway
- Old Paramount Ice Road
- Road
- Trail
- Access Built
- Access Foreign
- Bridge
- Barge

Leases
- Built
- Built - Tied-in
- Foreign
- Reclaimed
- Gas Plant

Camp
- Built
- Foreign

Battery
- Built

Sump
- Built

Borrow Pit
- Built
- Foreign

Other
- Decking Site - Built

- Watercourse
- String Bog
- Waterbody
- Wetland
- Contours

OVERVIEW MAP
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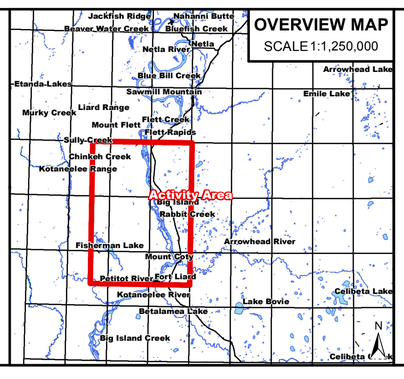

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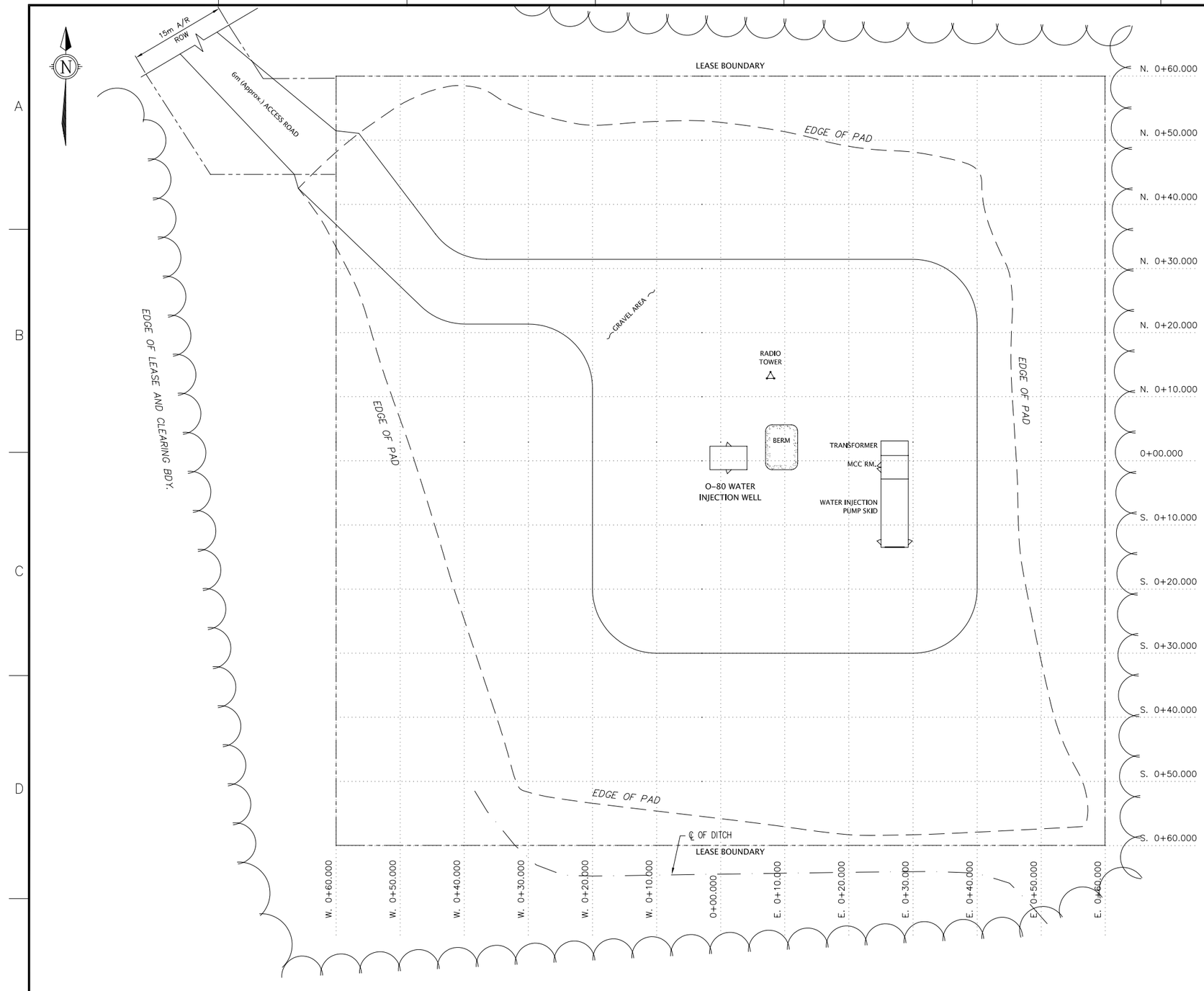
Kilometers

UNIVERSAL Geomatics Solutions

Tech: snicholson
Revised: 20 Aug 2013
Job No.: 05-0399G
Filename: Fort_Liard_West.mxd
Projection: NAD 1983 UTM Zone 10N



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REVISIONS

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A	PRELIMINARY – PUMP SKID ADDITION	DE	02.12.06	MA	MJ

REVISIONS

Paramount resources

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ENG.: LS	DATE: 00.01.16		
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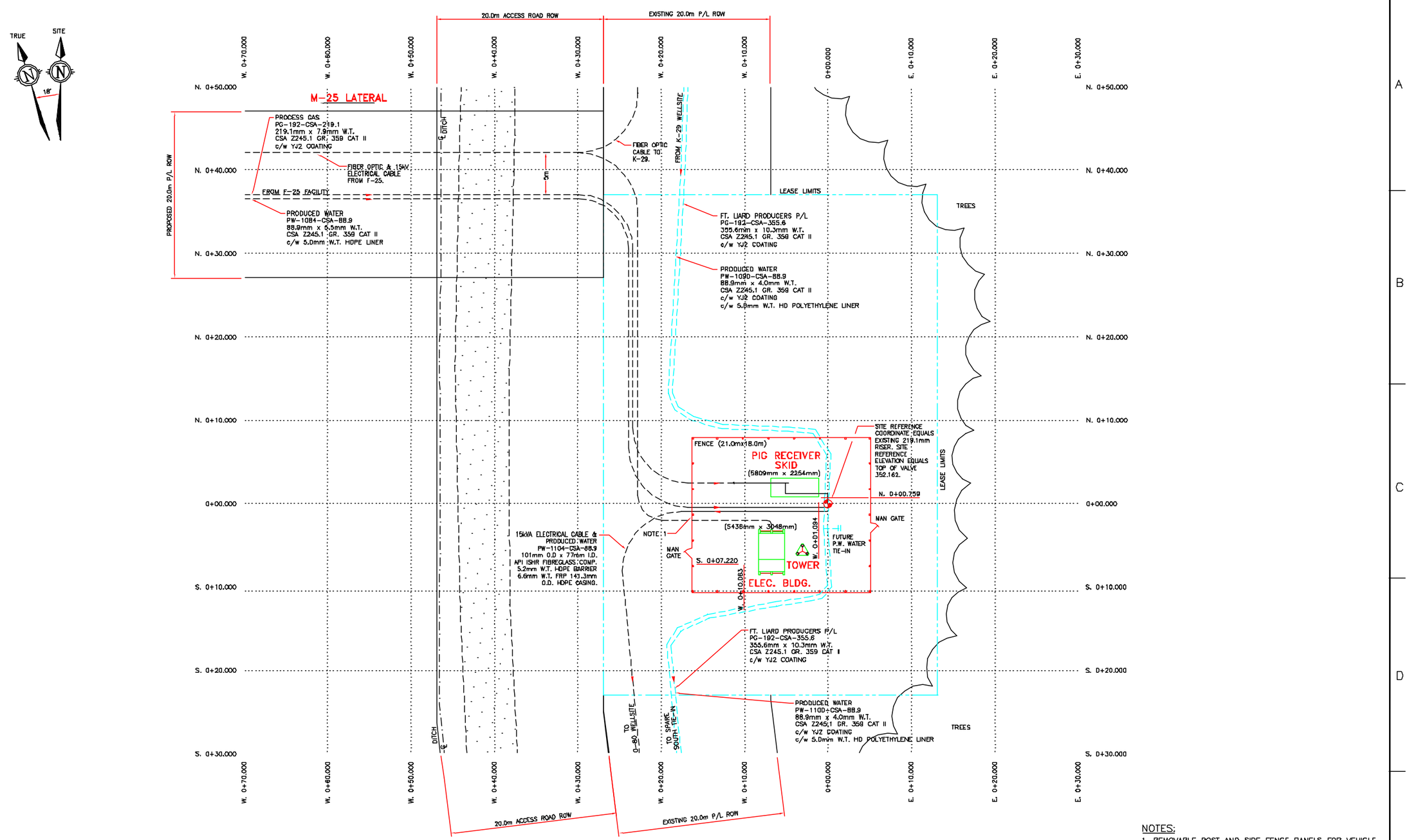

NOTES:

1. REMOVABLE POST AND SIDE FENCE PANELS FOR VEHICLE ACCESS.

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REFERENCE DRAWINGS		REVISIONS					

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2	ADDED NOTE 1 AND MAN GATE	DE	03.01.03		MJ
1	ISSUED FOR CONSTRUCTION (ELEC. BLDG. & TOWER)	DE	03.01.02		MJ
0	ISSUED FOR CONSTRUCTION	CJM	00.07.10	MAA	MJ
A	PRELIMINARY	TL	00.05.10	MAA	MJ
REV. NO.	DESCRIPTION	BY	DATE	CHECKED	ENG.
REVISIONS					

ChevronTexaco

DRAWN TLAC	DATE 00.05.10	FORT LIARD M-25 JUNCTION NORTHWEST TERRITORIES PLOT PLAN	
CHECKED MAA	DATE 00.08.16		
ENG. MJ	DATE 00.06.16		
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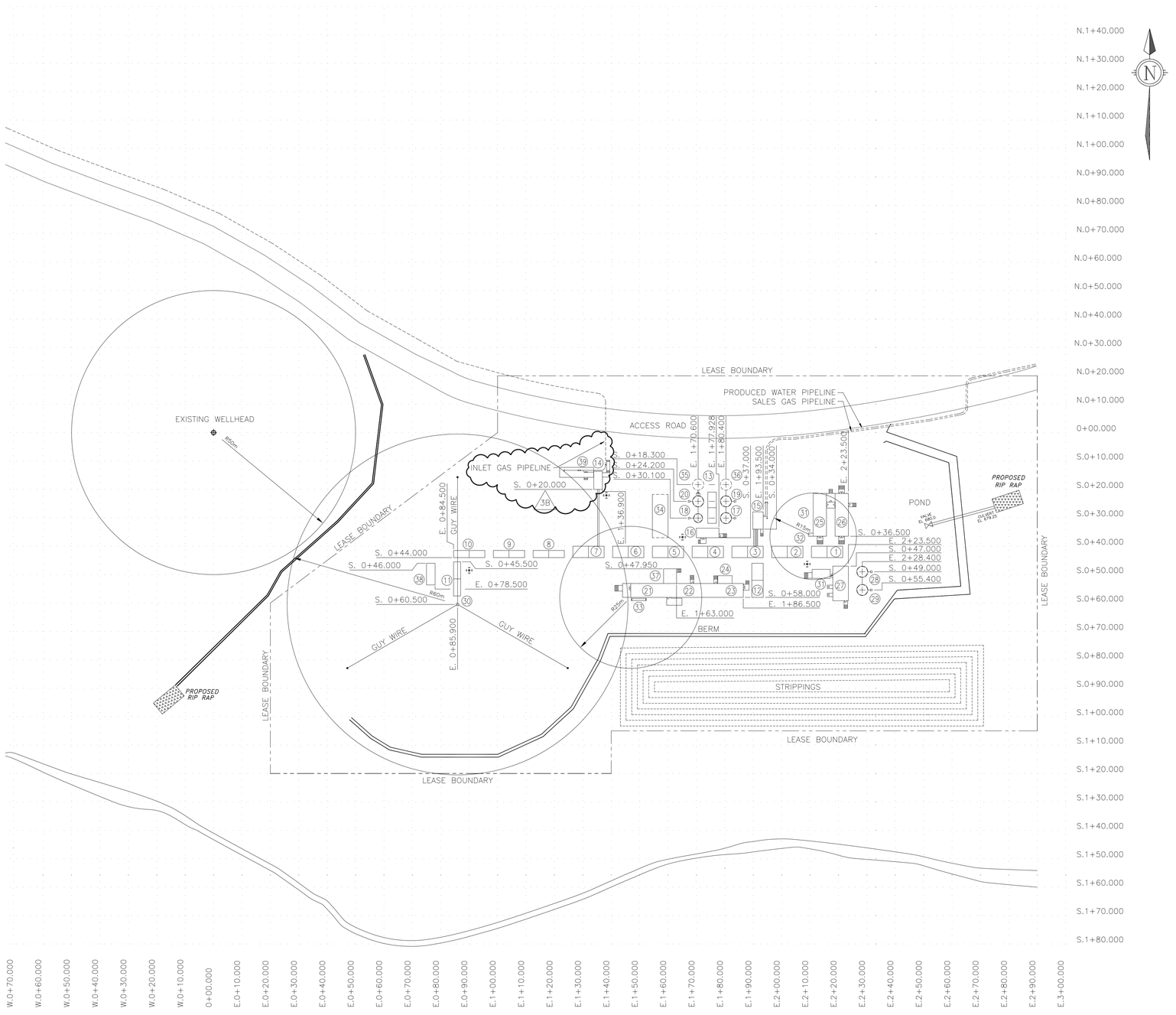

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11	MODULAR	2.500m	11.000m
12	MODULAR	4.000m	12.000m
13	MODULAR	3.000m	12.000m
14	MODULAR/INLET CHOKE SKID	3.048m	6.401m

EQUIPMENT IDENTIFICATION

No.	TAG. No.	DESCRIPTION	SIZE [m]
15	Q-3600	OUTLET/ESD SKID	3.658m Lg. x 6.096m Width
16	Q-2600	INJECTION BUILDING	7.942m Lg. x 3.353m Width
17	TK-2200	30% METHANOL TANK 400bbl PRIMARY SECONDARY	 3.658m O.D. x 6.096m HIGH 3.962m O.D. x 6.030m HIGH
18	TK-2300	CHEMICAL INJECTION TANK 100bbl PRIMARY SECONDARY	 2.896m O.D. x 2.438m HIGH 3.200m O.D. x 2.373m HIGH
19	TK-2400	METHANOL INJECTION TANK 400bbl PRIMARY SECONDARY	 3.658m O.D. x 6.096m HIGH 3.962m O.D. x 6.030m HIGH
20	TK-2500	SLOP TANK 400bbl PRIMARY SECONDARY	 3.658m O.D. x 6.096m HIGH 3.962m O.D. x 6.435m HIGH
21	Q-2800	PROCESS BUILDING / SKID #1	15.088m Lg. x 4.876m Width
22	Q-2900	PROCESS BUILDING / SKID #2	12.192m Lg. x 4.876m Width
23	Q-3000	PROCESS BUILDING / SKID #3	15.240m Lg. x 4.876m Width
24	Q-3300	PROCESS BUILDING / F.K.O.D. SKID	5.029m Lg. x 2.743m Width
25	Q-3500	MCC/CONTROL BUILDING	15.088m Lg. x 4.674m Width
26	Q-3200	WAREHOUSE/INSTR./AIR MODULE	15.088m Lg. x 4.674m Width
27	Q-3100	GENERATOR	12.192m Lg. x 5.486m Width
28	TK-3140	DIESEL TANK 400bbl PRIMARY SECONDARY	 3.658m O.D. x 6.096m HIGH 3.962m O.D. x 6.030m HIGH
29	TK-3150	DIESEL TANK 400bbl PRIMARY SECONDARY	 3.658m O.D. x 6.096m HIGH 3.962m O.D. x 6.030m HIGH
30	FL-3400	FLARE STACK	 0.457m O.D. x 81.077m HIGH 0.152m O.D. x 81.077m HIGH
31	E-3185/3195	COOLERS	6.369m Lg. x 3.175m Width
32	–	TRANSFORMER	–
33	E-2865	LEAN/RICH GLYCOL EXCHANGER	730mm OD x 4994 LG.
34	–	FUTURE COMPRESSOR	–
35	–	FUTURE TANK	–
36	–	FUTURE TANK	–
37	–	PURCELL TIE-IN SKID	5.174m Lg. x 4.570m Width
38	–	PURCELL F.K.O.D. SKID	7.620m Lg. x 3.048m Width
39	Y-2000	PIG RECEIVER SKID	12.000m Lg. x 3.500m Width

3B

REFERENCE DRAWINGS

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REVISIONS

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C	ISSUED FOR ENGINEERING	CMK	00.04.07	CMK	MJ
B	ISSUED FOR APPROVAL	CMK	00.03.08	CMK	MJ
A	PRELIMINARY	CMK	00.03.03	CMK	MJ

Paramount resources

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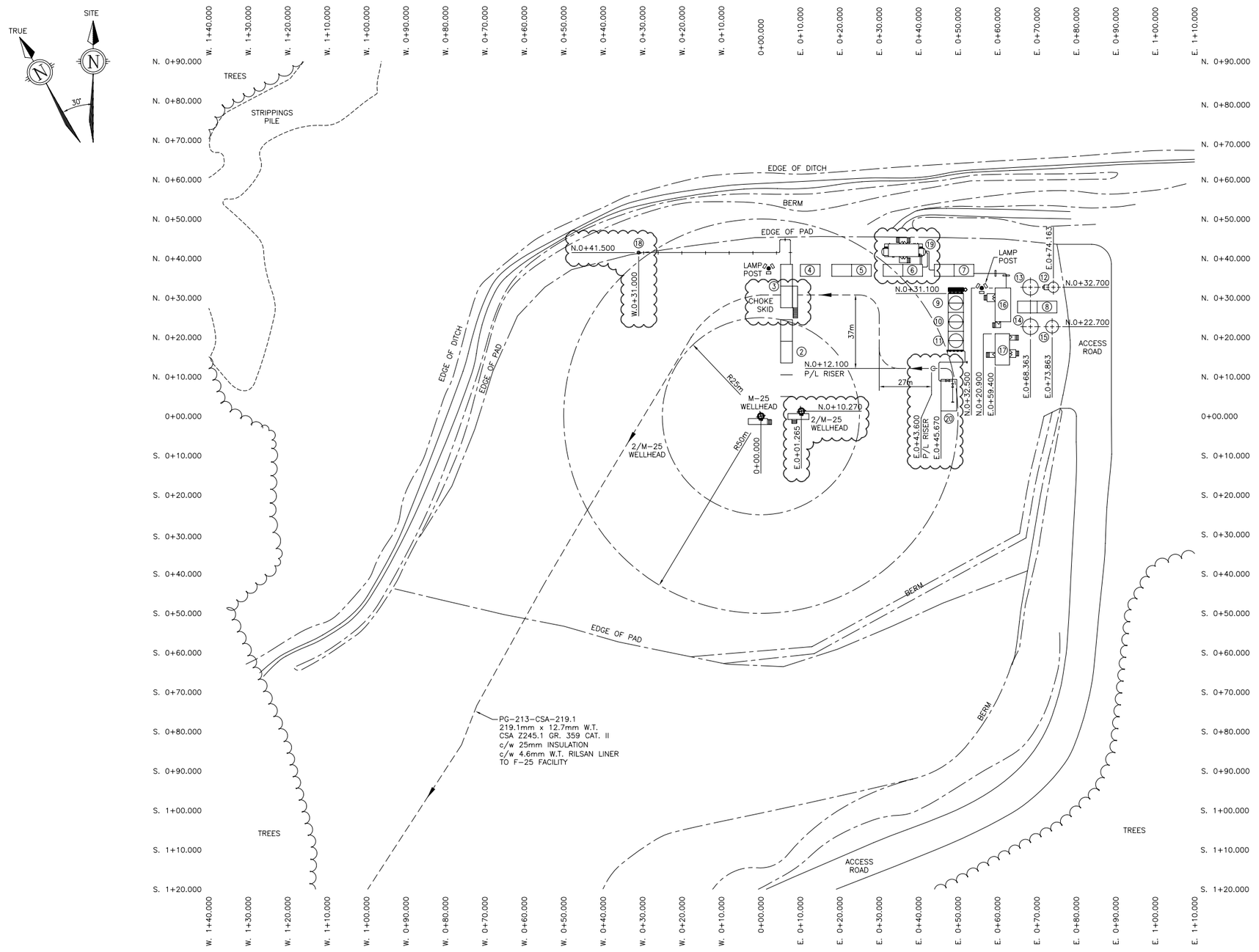

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EQUIPMENT IDENTIFICATION

No.	TAG. No.	DESCRIPTION	SIZE [m]
9	E-1700	COOLER	14.325m Lg. x 3.886m Width
10	E-1710	COOLER	
11	E-1720	COOLER	
12	TK-1300	BATCH INHIBITOR TANK (50bbl) PRIMARY SECONDARY	 2.362m O.D. x 1.829m HIGH 2.667m O.D. x 2.172m HIGH
13	TK-1350	DIESEL TANK (400bbl) PRIMARY SECONDARY	 3.658m O.D. x 6.096m HIGH 3.962m O.D. x 6.030m HIGH
14	TK-1400	METHANOL INJECTION TANK (400bbl) PRIMARY SECONDARY	 3.658m O.D. x 6.096m HIGH 3.962m O.D. x 6.030m HIGH
15	TK-1500	CHEMICAL INJECTION TANK (100bbl) PRIMARY SECONDARY	 2.896m O.D. x 2.438m HIGH 3.200m O.D. x 2.373m HIGH
16	Q-1600	INJECTION BUILDING	8.535m Lg. x 3.963m Width
17	Q-1650	MCC/INSTR. AIR BUILDING	7.925m Lg. x 3.658m Width
18	FL-1800	FLARE STACK	0.168m O.D. x 18.288m HIGH
19	Q-2000	FLARE K.O. DRUM SKID	11.306m Lg. x 3.200m Width
20	Y-1900	PIG SENDER SKID	8.000m Lg. x 4.000m Width

DWG. NO.	DESCRIPTION
REFERENCE DRAWINGS	

REV. NO.	DESCRIPTION	BY	DATE	CHECKED	ENG.
REVISIONS					

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C	ISSUED FOR ENGINEERING	MAA	00.04.25		M.J.
B	ISSUED FOR APPROVAL	CMK	00.03.21		M.J.
A	PRELIMINARY	MAA	00.02.29		M.J.
REVISIONS					

Paramount resources

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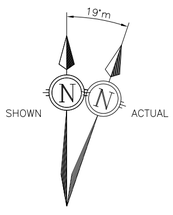

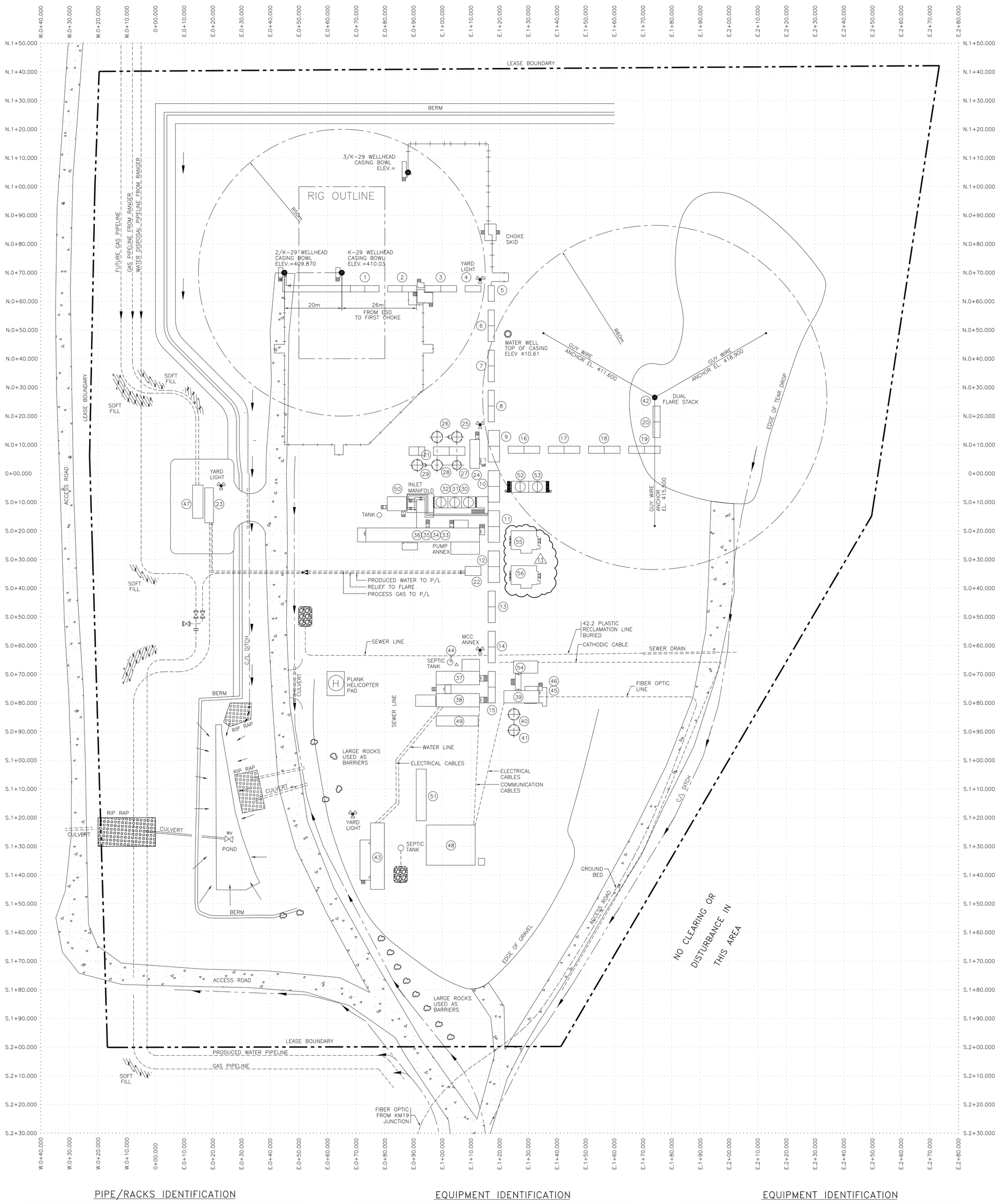

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9	MODULAR	4.000m	11.000m
10	MODULAR	4.000m	11.000m
11	MODULAR	4.000m	11.000m
12	MODULAR	4.000m	11.000m
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20	MODULAR	2.500m	11.000m
21	MODULAR	3.000m	11.000m
22	MODULAR	3.200m	5.500m

EQUIPMENT IDENTIFICATION

No.	TAG. No.	DESCRIPTION		SIZE [m]
23	Q-3610	CHEVRON PIGGING SKID		12.192m Lg. x 3.048m Width
24	Q-2600	INJECTION BUILDING		10058m Lg. x 3.353m Width
25	TK-2200	BATCH INH. TANK	PRIMARY SECONDARY	3.505m O.D. x 3.353m HIGH 3.810m O.D. x 3.692m HIGH
26	TK-2400	METHANOL INJ. TANK	PRIMARY SECONDARY	3.658m O.D. x 6.096m HIGH 3.962m O.D. x 6.030m HIGH
27	TK-2300	CHEMICAL INJ. TANK	PRIMARY SECONDARY	2.896m O.D. x 2.438m HIGH 3.200m O.D. x 2.373m HIGH
28	TK-2310	CHEMICAL INJ. TANK	PRIMARY SECONDARY	3.505m O.D. x 3.353m HIGH 3.810m O.D. x 3.287m HIGH
29	TK-2500	SLOP TANK	PRIMARY SECONDARY	3.658m O.D. x 6.096m HIGH 3.962m O.D. x 6.435m HIGH
30	E-2700	INLET COOLER		14.325m Lg. x 3.886m Width
31	E-2710	INLET COOLER		
32	E-2720	INLET COOLER		
33	Q-2800	PROCESS BUILDING / SKID #1		15.088m Lg. x 4.876m Width
34	Q-2900	PROCESS BUILDING / SKID #2		12.192m Lg. x 4.876m Width
35	Q-3000	PROCESS BUILDING / SKID #3		15.240m Lg. x 4.876m Width
36	Q-3300	PROCESS BUILDING / F.K.O.D. SKID		5.029m Lg. x 2.743m Width
37	Q-3500	MCC/CONTROL BUILDING		15.088m Lg. x 4.674m Width
38	Q-3200	WAREHOUSE/INSTR./BREATHING AIR MODULE		15.088m Lg. x 4.674m Width
39	Q-3100	GENERATOR		12.192m Lg. x 4.267m Width
40	TK-3140	DIESEL TANK	PRIMARY SECONDARY	3.658m O.D. x 6.096m HIGH 3.962m O.D. x 6.030m HIGH
41	TK-3150	DIESEL TANK	PRIMARY SECONDARY	3.658m O.D. x 6.096m HIGH 3.962m O.D. x 6.030m HIGH
42	FL-3400	FLARE STACK		0.457m O.D. x 81.077m HIGH 0.152m O.D. x 81.077m HIGH
43	Q-3700	LIVING QUARTERS		23.165m Lg. x 4.826m Width
44	–	RADIO TOWER		0.838m x 19.507m HIGH
45	E-3195	COOLER		–
46	E-3185	COOLER		–
47	Q-3620	RANGER PIGGING SKID		11.583m Lg. x 3.658m Width

EQUIPMENT IDENTIFICATION

No.	TAG. No.	DESCRIPTION	SIZE [m]
48	Q-3800	CAMP LIVING QUARTERS	17.069m Lg. x 14.021m Width
49	–	WARE HOUSE	–
50	Q-4100	INLET SEPARATOR BUILDING	6.706m Lg. x 4.877m Width
51	–	INPECTOR TRAILER	18.00m Lg. x 3.50m Width
52	E-2730	INLET COOLER	11.887m Lg. x 3.912m Width
53	E-2740	INLET COOLER	
54	GN-3700	GENERATOR	9.144m Lg. x 3.658m Width
55	–	COMPRESSOR #1	
56	–	COMPRESSOR #2	

13

REFERENCE DRAWINGS		REVISIONS						REVISIONS					
DWG. NO.	DESCRIPTION	REV. NO.	DESCRIPTION	BY	DATE	CHECKED	ENG.	REV. NO.	DESCRIPTION	BY	DATE	CHECKED	ENG.
		8	AS-BUILT	DE	03.05.20			13	ISSUED FOR CONSTRUCTION (TG JOB #25118)	RA	06.04.24		
		7	ISSUED FOR CONSTRUCTION – (2/K-29 WELL TIE-IN)	DE	03.03.14	MA	MJ	0	ISSUED FOR CONSTRUCTION	MA	99.12.03		BL
		6	CANCELED/ REMOVED COOLER UPGRADE	KH	02.05.15	MA	JC	12	ISSUED FOR APPROVAL-COMPRESSOR ADDITION (TG JOB #25118)	RA	06.01.17	JD	–
		5	ISSUED FOR REVIEW (COOLER UPGRADE)	MA	01.10.15	MA	JC	11	REVISED 2/K-29 PIPING AND RIG SIZE	JCHU	050704		
		4	PRELIMINARY (COOLER UPGRADE)	MA	01.10.09	MA	JC	10	REVISED 2/K-29 PIPING FOR K-29 REWORK	JCHU	050613		
		3	CAMP ADDITION (FEB. 2000)	KH	01.02.01	CK	BL	9B	ISSUED FOR CONSTRUCTION (3/K-29 WELL TIE-IN)	JC	04.01.01	DE	JB
		2	MINOR REVISIONS	SW	00.01.31	MA	BL	9	AS-BUILT (2/K-29 TIE-IN & INLET SEP. V-4100)	DE	03.09.08	DE	MJ

Paramount resources

DRAWN: RCM	DATE: 99.06.02	FORT LIARD K-29 WELLSITE	
CHECKED: –	DATE: –	NORTHWEST TERRITORIES	
ENG.: –	DATE: –	PLOT PLAN	
IBM: –		ACAD NO.: FLAD10001201	CHEVRON DWG. NO.: FLAD-1000-12-01
SCALE (D SIZE): 1:500	UNITS REQ'D: –	VENDOR SHOP ORDER: –	VENDOR DWG. NO.: –

REV.: 13 | SHT: –

APPENDIX B

Site Photographs

PHOTOGRAPH 1: Overview of M-25 site, facing northwest. Two above ground storage tanks can be seen near the west side of the side. A stockpile is located near the west boundary of the site (2022).

PHOTOGRAPH 2: Overview of the M-25 site, facing north. Two above ground storage tanks are visible on the west side of the facilities. Wellheads M-25 and 2/M-25 can be seen in the center of the site (2022).

PHOTOGRAPH 3: Overview of M-25 site, facing northeast. Wellheads M-25 and 2/M-25 can be seen in center of the site. A flare stack is visible on the east side of the site (2022).

PHOTOGRAPH 4: Overview of eastern boundary of the M-25 site, facing northeast (2022).

PHOTOGRAPH 5: Aerial overview of M-25 site (July 11, 2017)

PHOTOGRAPH 6: Aerial overview of M-25 site and access road (July 11, 2017).

PHOTOGRAPH 7: Aerial overview of O-80 site (July 11, 2017).

PHOTOGRAPH 8: Radio tower and facility housing the O-80 wellhead, facing east (2022).

PHOTOGRAPH 9: Facilities on O-80 site, facing east (2022).

PHOTOGRAPH 10: Aerial overview of K-29 site, facing northwest (2022).

PHOTOGRAPH 11: Aerial overview of K-29 site, facing south. Site access can be seen on the south side of the site (2022).

PHOTOGRAPH 12: Aerial overview of K-29 site and access (July 11, 2017).

PHOTOGRAPH 13: Aerial image of culverts being stored adjacent to access road to site K-29 (July 11, 2017).

PHOTOGRAPH 14: Overview of F-25 site, facing southeast (2022).

PHOTOGRAPH 15: Overview of F-25 site, facing south (2022).

PHOTOGRAPH 16: Overview of F-25 site, facing southeast (2022).

PHOTOGRAPH 17: Aerial overview of F-25 site and access running east west along the north side of the site, facing northeast (July 11, 2017).

PHOTOGRAPH 18: Aerial image of the repeater site (July 11, 2017).

APPENDIX C

Proposed Seed Mix and Alternative Species

BrettYoung™

Custom Lawngrass Mix

Canada No. 1 Lawngrass Mixture

"NT Forestry #2"

42% AEC Hillcrest Awned Slender Wheatgrass

29% Violet Wheatgrass

17% ARC Butte Rocky Mountain Fescue

7% Boreal Creeping Red Fescue

5% AEC Glacier Alpine Bluegrass

Lot # LED-BLND-08-000338

Jameson True Value Hardware

15 Bags

25 KGS. NET WT. (55.1 Lbs.)

PRODUCT OF CANADA

2008 BrettYoung , Calmar, AB. 2008

ACCEPTABLE GRASSES FOR RECLAMATION OF DISTURBED AREAS IN THE NWT
BASED ON AVAILABLE COMMERCIAL SEED MIXES

Wheatgrass

Common Name	Latin Name
Slender Wheatgrass	Agropyron trachycaulum
Violet Wheatgrass	Agropyron violaceum (Elymus alaskanus)

Fescue

Common Name	Latin Name
Creeping Red Fescue	Festuca rubra
Sheep or Northern Fescue	Festuca saximontana

Other Grasses

Common Name	Latin Name
Reed Canarygrass	Phalaris arundinacea
Tufted Hairgrass	Deschampsia caespitosa
Alkaligrass	Puccinellia nuttalliana
Artic Lupine	Lupinus arcticus
Alpine Bluegrass	Poa alpina
Fowl Bluegrass	Poa palustris
Alpine Timothy	Phleum pratense
Junegrass	Koeleria cristata

If you wish to add another species in your grass seed mix contact Dr. S. Carriere at Suzanne_Carriere@gov.nt.ca

APPENDIX D

Confirmation of Abandonment

NWT OFFICE OF THE REGULATOR OF OIL AND GAS OPERATIONS

Office of the Regulator of Oil and Gas Operations
P.O. Box 1320, Yellowknife, NT X1A 2L9
Tel: 867-767-9097 • Fax: 867-920-0798 • Web: www.orogo.gov.nt.ca
Courier Address: 4th floor, 5201 – 50th Avenue, Yellowknife, NT X1A 3S9

John Hawkins,
Director Asset Management
Paramount Resources Ltd.
Suite 2800, 421 – 7 AVE SW
CALGARY, AB T2P 4K9

December 12, 2023

Dear John Hawkins:

Well Status: Abandonment of
Liard 2K-29 (WID1980) (ACW-2022-PAR-2K-29-WID1980)

On September 11, 2023, the Office of the Regulator of Oil and Gas Operations (OROGO) received the Well Operations Report, Change in Well Status and Well Termination Record summarizing the 2023 abandonment operations for the Liard 2K-29 well (WID1980). The report and record have been reviewed and satisfy the requirements of section 89(1) and (2) of the *Oil and Gas Drilling and Production Regulations.*

Our records have been updated identifying the status of this well as abandoned and in compliance with the Downhole Well Abandonment Requirements (Section 6A) of the *Well Suspension and Abandonment Guidelines and Interpretation Notes*.

Sincerely,

Pauline de Jong
Regulator

Bureau de l'organisme de réglementation des opérations pétrolières et gazières
B.P. 1320, Yellowknife, TNO X1A 2L9
Tél : 867-767-9097 • Téléc : 867-920-0798 • Site web : www.orogo.gov.nt.ca
Adresse de messagerie : 4e étage, 5201 – 50e Avenue, Yellowknife TNO X1A 3S9

BUREAU DE L'ORGANISME DE RÉGLEMENTATION DES OPERATIONS PÉTROLIÈRES ET GAZIÈRES DES TN-O

NWT OFFICE OF THE REGULATOR OF OIL AND GAS OPERATIONS

Office of the Regulator of Oil and Gas Operations
P.O. Box 1320, Yellowknife, NT X1A 2L9
Tel: 867-767-9097 • Fax: 867-920-0798 • Web: www.orogo.gov.nt.ca
Courier Address: 4th floor, 5201 – 50th Avenue, Yellowknife, NT X1A 3S9

John Hawkins,
Director Asset Management
Paramount Resources Ltd.
Suite 2800, 421 – 7 AVE SW
CALGARY, AB T2P 4K9

December 12, 2023

Dear John Hawkins:

Well Status: Abandonment of
Liard 2M-25 (WID2008) (ACW-2022-PAR-2M-25-WID2008)

On August 29, 2023, the Office of the Regulator of Oil and Gas Operations (OROGO) received the Well Operations Report, Change in Well Status and Well Termination Record summarizing the 2023 abandonment operations for the Liard 2M-25 well (WID2008). The report and record have been reviewed and satisfy the requirements of section 89(1) and (2) of the *Oil and Gas Drilling and Production Regulations.*

Our records have been updated identifying the status of this well as abandoned and in compliance with the Downhole Well Abandonment Requirements (Section 6A) of the *Well Suspension and Abandonment Guidelines and Interpretation Notes*.

Sincerely,

Pauline de Jong
Regulator

Bureau de l'organisme de réglementation des opérations pétrolières et gazières
B.P. 1320, Yellowknife, TNO X1A 2L9
Tél : 867-767-9097 • Téléc : 867-920-0798 • Site web : www.orogo.gov.nt.ca
Adresse de messagerie : 4e étage, 5201 – 50e Avenue, Yellowknife TNO X1A 3S9

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Courier Address: 4th floor, 5201 – 50th Avenue, Yellowknife, NT X1A 3S9

John Hawkins,
Director Asset Management
Paramount Resources Ltd.
Suite 2800, 421 – 7 AVE SW
CALGARY, AB T2P 4K9

December 12, 2023

Dear John Hawkins:

Well Status: Abandonment of
Liard 3K-29 (WID1999) (ACW-2022-PAR-3K-29-WID1999)

On August 29, 2023, the Office of the Regulator of Oil and Gas Operations (OROGO) received the Well Operations Report, Change in Well Status and Well Termination Record summarizing the 2023 abandonment operations for the Liard 3K-29 well (WID1999). The report and record have been reviewed and satisfy the requirements of section 89(1) and (2) of the *Oil and Gas Drilling and Production Regulations.*

Our records have been updated identifying the status of this well as abandoned and in compliance with the Downhole Well Abandonment Requirements (Section 6A) of the *Well Suspension and Abandonment Guidelines and Interpretation Notes*.

Sincerely,

Pauline de Jong
Regulator

Bureau de l'organisme de réglementation des opérations pétrolières et gazières
B.P. 1320, Yellowknife, TNO X1A 2L9
Tél : 867-767-9097 • Téléc : 867-920-0798 • Site web : www.orogo.gov.nt.ca
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Courier Address: 4th floor, 5201 – 50th Avenue, Yellowknife, NT X1A 3S9

John Hawkins,
Director Asset Management
Paramount Resources Ltd.
Suite 2800, 421 – 7 AVE SW
CALGARY, AB T2P 4K9

December 12, 2023

Dear John Hawkins:

Well Status: Abandonment of
Liard F-25A (WID1621) (ACW-2022-PAR-F-25A-WID1621)

On August 28, 2023, the Office of the Regulator of Oil and Gas Operations (OROGO) received the Well Operations Report, Change in Well Status and Well Termination Record summarizing the 2023 abandonment operations for the Liard F-25A well (WID1621). The report and record have been reviewed and satisfy the requirements of section 89(1) and (2) of the *Oil and Gas Drilling and Production Regulations.*

Our records have been updated identifying the status of this well as abandoned and in compliance with the Downhole Well Abandonment Requirements (Section 6A) of the *Well Suspension and Abandonment Guidelines and Interpretation Notes*.

Sincerely,

Pauline de Jong
Regulator

Bureau de l'organisme de réglementation des opérations pétrolières et gazières
B.P. 1320, Yellowknife, TNO X1A 2L9
Tél : 867-767-9097 • Téléc : 867-920-0798 • Site web : www.orogo.gov.nt.ca
Adresse de messagerie : 4e étage, 5201 – 50e Avenue, Yellowknife TNO X1A 3S9

BUREAU DE L'ORGANISME DE RÉGLEMENTATION DES OPERATIONS PÉTROLIÈRES ET GAZIÈRES DES TN-O

NWT OFFICE OF THE REGULATOR OF OIL AND GAS OPERATIONS

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Courier Address: 4th floor, 5201 – 50th Avenue, Yellowknife, NT X1A 3S9

John Hawkins,
Director Asset Management
Paramount Resources Ltd.
Suite 2800, 421 – 7 AVE SW
CALGARY, AB T2P 4K9

December 12, 2023

Dear John Hawkins:

Well Status: Abandonment of
Liard K-29A (WID2030) (ACW-2022-PAR-K-29A-WID2030)

On August 31, 2023, the Office of the Regulator of Oil and Gas Operations (OROGO) received the Well Operations Report, Change in Well Status and Well Termination Record summarizing the 2023 abandonment operations for the Liard K-29A well (WID2030). The report and record have been reviewed and satisfy the requirements of section 89(1) and (2) of the *Oil and Gas Drilling and Production Regulations.*

Our records have been updated identifying the status of this well as abandoned and in compliance with the Downhole Well Abandonment Requirements (Section 6A) of the *Well Suspension and Abandonment Guidelines and Interpretation Notes*.

Sincerely,

Pauline de Jong
Regulator

Bureau de l'organisme de réglementation des opérations pétrolières et gazières
B.P. 1320, Yellowknife, TNO X1A 2L9
Tél : 867-767-9097 • Téléc : 867-920-0798 • Site web : www.orogo.gov.nt.ca
Adresse de messagerie : 4e étage, 5201 – 50e Avenue, Yellowknife TNO X1A 3S9

BUREAU DE L'ORGANISME DE RÉGLEMENTATION DES OPERATIONS PÉTROLIÈRES ET GAZIÈRES DES TN-O

NWT OFFICE OF THE REGULATOR OF OIL AND GAS OPERATIONS

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Courier Address: 4th floor, 5201 – 50th Avenue, Yellowknife, NT X1A 3S9

John Hawkins,
Director Asset Management
Paramount Resources Ltd.
Suite 2800, 421 – 7 AVE SW
CALGARY, AB T2P 4K9

December 12, 2023

Dear John Hawkins:

Well Status: Abandonment of
Liard M-25 (WID1867) (ACW-2022-PAR-M-25-WID1867)

On August 25, 2023, the Office of the Regulator of Oil and Gas Operations (OROGO) received the Well Operations Report, Change in Well Status and Well Termination Record summarizing the 2023 abandonment operations for the Liard M-25 well (WID1867). The report and record have been reviewed and satisfy the requirements of section 89(1) and (2) of the *Oil and Gas Drilling and Production Regulations.*

Our records have been updated identifying the status of this well as abandoned and in compliance with the Downhole Well Abandonment Requirements (Section 6A) of the *Well Suspension and Abandonment Guidelines and Interpretation Notes*.

Sincerely,

Pauline de Jong
Regulator

Bureau de l'organisme de réglementation des opérations pétrolières et gazières
B.P. 1320, Yellowknife, TNO X1A 2L9
Tél : 867-767-9097 • Téléc : 867-920-0798 • Site web : www.orogo.gov.nt.ca
Adresse de messagerie : 4e étage, 5201 – 50e Avenue, Yellowknife TNO X1A 3S9

BUREAU DE L'ORGANISME DE RÉGLEMENTATION DES OPERATIONS PÉTROLIÈRES ET GAZIÈRES DES TN-O

NWT OFFICE OF THE REGULATOR OF OIL AND GAS OPERATIONS

Office of the Regulator of Oil and Gas Operations
P.O. Box 1320, Yellowknife, NT X1A 2L9
Tel: 867-767-9097 • Fax: 867-920-0798 • Web: www.orogo.gov.nt.ca
Courier Address: 4th floor, 5201 – 50th Avenue, Yellowknife, NT X1A 3S9

John Hawkins,
Director Asset Management
Paramount Resources Ltd.
Suite 2800, 421 – 7 AVE SW
CALGARY, AB T2P 4K9

December 12, 2023

Dear John Hawkins:

Well Status: Abandonment of
Mackay Lakes O-80 (WID1866) (ACW-2022-PAR-O-80-WID1866)

On September 11, 2023, the Office of the Regulator of Oil and Gas Operations (OROGO) received the Well Operations Report, Change in Well Status and Well Termination Record summarizing the 2023 abandonment operations for the Mackay Lakes O-80 well (WID1866). The report and record have been reviewed and satisfy the requirements of section 89(1) and (2) of the *Oil and Gas Drilling and Production Regulations.*

Our records have been updated identifying the status of this well as abandoned and in compliance with the Downhole Well Abandonment Requirements (Section 6A) of the *Well Suspension and Abandonment Guidelines and Interpretation Notes*.

Sincerely,

Pauline de Jong
Regulator

Bureau de l'organisme de réglementation des opérations pétrolières et gazières
B.P. 1320, Yellowknife, TNO X1A 2L9
Tél : 867-767-9097 • Téléc : 867-920-0798 • Site web : www.orogo.gov.nt.ca
Adresse de messagerie : 4e étage, 5201 – 50e Avenue, Yellowknife TNO X1A 3S9

BUREAU DE L'ORGANISME DE RÉGLEMENTATION DES OPERATIONS PÉTROLIÈRES ET GAZIÈRES DES TN-O

APPENDIX E

GNWT Inspection Report

Department of Environment and Climate Change
Land and Water Division- Dehcho
P.O Box 150
Fort Simpson, NT X0E 0N0

Telephone: 867-695-2626 ext. 205
Fax: 867-695-2615

August 31, 2023

Paramount Resources Ltd
Suite 2800, 421 7th Ave SW
Calgary, AB T2P 4K9

Attention: Terrence Hughes

File Number	**MV2020A0009**
Type of Operation	**OIL AND GAS DRILLING - WELLSITE**
Location	F25/F25A, K-29, O-80, M-25, Quarry

Dear Terrence Hughes,

An inspection of the above noted operation was conducted on August 15, 2023 by Manager, Resource Management Danielle Rogers and Lands Officer Christopher Penner.

Enclosed is a copy of the Environmental Inspection Report.

If you have any questions, please contact me at 867-695-2626 ext. 205.

Sincerely,

Danielle Rogers
Manager, Resource Management
Department of Environment & Climate Change

CC: Andrew Wheeler, Regulatory Specialist, MVLWB
Laurie Nadia- Regional Land and Water Superintendent, Department of ECC, Dehcho
Christopher Penner- Lands Officer, Department of ECC, Dehcho

ENVIRONMENTAL INSPECTION REPORT

Permittee:	Paramount Resources Ltd	**Permit Expiry Date:**	November 19, 2025
Land Use Permit No.	MV2020A0009	**Previous Inspection:**	July 14, 2023
Quarrying Permit No.	21/0002	**Inspection Date:**	August 15, 2023
Contractor:		**Subcontractor:**	
Location(s) Inspected:	F25/F25A, K-29, O-80, M-25, Quarry		
Current Stage of Operation:	Abandonment and Reclamation		
Program Modifications Approved:	N/A		

Condition of Operation "A" - Acceptable "U" - Unacceptable "N/A" - Not Applicable "N/I" - Not Inspected

	Operating Condition	Aspect Inspected				
		Sites				
	Location as Permitted	A				
	Time as Permitted	A				
	Equipment as Approved (Type & Size)	A				
	Methods & Techniques	A				
	Facilities	A				
	Erosion (Control or Prevention)	A				
	Chemicals	A				
	Wildlife and Fisheries Habitat (Protection)	A				
	Wastes	A				
	Fuel Storage	A				
	Brush Disposal	A				
	Restoration of Lands	A				
	Permits	A				

Explanatory Remarks -

Inspectors from the Department of Environment and Climate Change conducted an inspection of the well sites and quarry that are associated with the MV2020A0009 Land Use Permit on August 15, 2023, via helicopter.

K-29: There were personnel on site at the time of the inspection. The rig was set up, a flare stack, tanks, numerous vehicles, a loader and portable office trailers. All infrastructure appeared to be in good condition and there were still miscellaneous materials on site. No erosion was observed at the time of the inspection.

O-80: There were no personnel on site at the time of the inspection. The wellhead was still present. Infrastructure appeared to be in a good condition. There was a pile of materials and debris that should be properly disposed of.

M-25: There were no personnel on site at the time of the inspection. The wellheads were still present. Infrastructure appeared to be in a good condition. There was a pile of materials and debris that should be properly disposed of.

ENVIRONMENTAL INSPECTION REPORT

F-25/F-25A: There were no personnel on site at the time of the inspection. The wellhead was still present. Infrastructure appeared to be in a good condition. The fenced off sump was overflowing. No erosion was observed.

Quarry (2021QP0002): Woody vegetation was established throughout the quarry. Material has not yet been quarried under this quarry permit. No signs of erosion were observed.

Inspectors have no concerns and will continue to monitor.

ENVIRONMENTAL INSPECTION REPORT

Inspection Images:

Figure 1

K-29

Figure 2

K-29 rig set up

ENVIRONMENTAL INSPECTION REPORT

Figure 3

O-80- note debris pile

Figure 4

O-80

ENVIRONMENTAL INSPECTION REPORT

Figure 5

M-25

Figure 6

M-25- note debris pile

ENVIRONMENTAL INSPECTION REPORT

Figure 7

F-25/F-25A

Figure 8

F-25/F-25A- note sump overflowing

ENVIRONMENTAL INSPECTION REPORT

Figure 9

Quarry

Figure 10

Quarry