MOOSEHEAD QUARRY EXTENSION

Environmental Assessment Registration

February 26, 2024

IRON CITY SERVICES LIMITED
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IRON CITY SERVICES Ltd

Contents

1. NAME OF UNDERTAKING

The current undertaking will be named “Moosehead Quarry Extension”

- EA File Ref No. 200.20.3225
- Quarry Permit Identification No. 71113048

2. PROPONENT

2.1 Name of corporate body

IRON CITY SERVICES LIMITED (**ICS** will be used in the remainder of the document)

2.2 Address

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2.3 Senior Engineer

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3. THE UNDERTAKING

3.1 Nature of the Undertaking

The proposed project referred to as the Moosehead Quarry Extension is a 15 ha area quarry permit application (File #71113048) submitted on February 4, 2022, to the Mineral Lands Division of the Department of Industry Energy and Technology (DIET). The project area is within the National

Topographic System (NTS) Map Index 2D/09 in Newfoundland and Labrador (Figure 1). The site is located ~16 km east of the town of Labrador City and 11 km east of the town of Wabush, and outside of their Municipal Planning Area (Figure 2). The proponent ICS will operate the Moosehead Quarry Extension along with the existing 6 ha quarry lease (File 71112736) that is adjacent to the proposed operations.

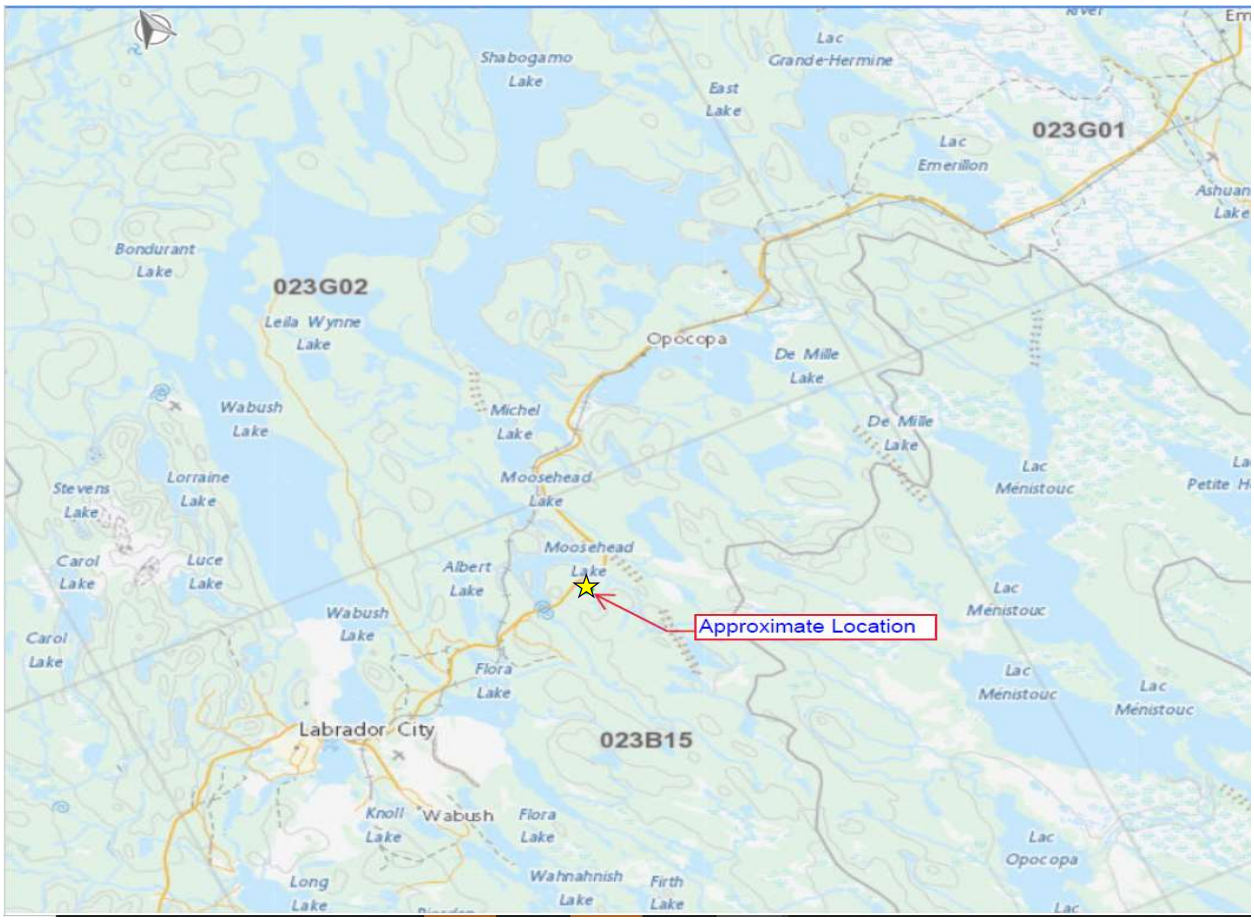

Figure 1 - NTS Map Index

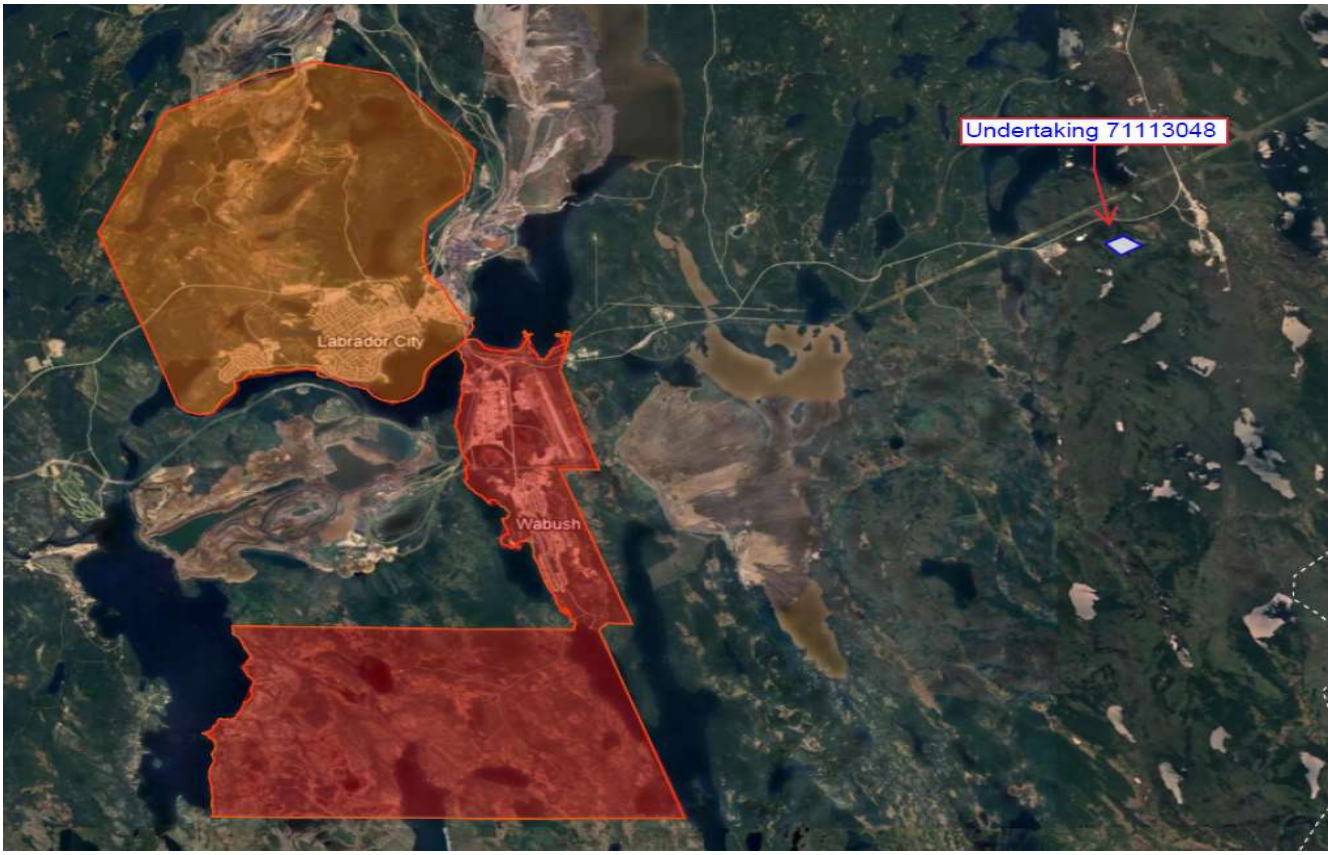

Figure 2 - Labrador and Wabush municipality boundaries

3.2 Purpose/Rationale/Requirement for the Undertaking

ICS is a locally owned and operated civil construction company focused on Earthwork,Road Building, Mining services and Snow Clearing predominantly in the Labrador City region of Newfoundland and Labrador. The Moosehead Extension Quarry will provide resources of blending sand and aggregates to meet increased demand for ICS services and products. The company believes the Moosehead Extension Quarry is the most reasonable location to make the operations most effective from a safety, environmental and regulatory point of view. Access to the proposed quarry site is gained from the Trans-Labrador Highway (TLH). The permit boundary will be mostly concealed from view along the public road by a ~320 m wide forested buffer zone to TLH.Additionally, the topography surrounding the quarry permit boundary will limit site visibility. Sensitive receptor locations are provided in Figure 3 and aerial views from the west and east are presented in Figures 4 & 5.

Figure 3 - Receptor of visual sight

Figure 4 Site Visibility from the south looking north

Figure 5 Site Visibility from the north looking south

Historically the area has seen numerous quarry developments. The proposed and existing quarry operations will conform with these industrial activities while ensuring the impact to the surrounding landscape and environment are minimized.

Quarry production and processing will involve excavating, crushing, screening, and stockpiling sand and gravel. No washing of the material will be required. Annual production volumes are estimated at 7,000 m^3 and may fluctuate to meet specific business demands. Construction of the Moosehead Quarry Extension will begin with clearing the vegetation and overburden within the permit boundary that will be stockpiled and utilized for future site remediation.ICS intends to follow the regulatory responsibilities of the quarry project under a quarry permit that includes full rehabilitation of the site upon closure as described in DIET's Quarry Legislation.

4.0 DESCRIPTION OF THE UNDERTAKING

4.1 Geographic Location

The project area is located along Trans-Labrador Highway ~650m to the south of it and 1.6 km south of the moosehead lake and 16 km east of the town of labrador city,
It is located outside of municipality boundaries and in an area tha already have other quarry permits and undertakings ongoing.

4.2 Physical Features

4.2.1 Project Site Description

The 15 ha quarry permit application boundary (File #71113048) is adjacent to five approved sand and gravel quarry permits and/or leases operated by H&H Enterprises (File 7111495/711537/7110905),Grey Rock Services (File 71119284), Allard Distributing (File 7111395), as shown on Figures 4 and 5. Most of these operating quarry sites utilize each their +or – 500m long gravel access road that extends south from Trans-Labrador Highway along the east side of the quarry area. Their road is part of Crown Title issued the company operating the quarry. ICS applied and received an issued license for title number (No. 159322) north of the proposed quarry boundary (Figure 6).

Figure 6 Road Access to the Quarry

The proposed quarry site is mostly, naturally vegetated with predominantly trees and ranges in elevation from ~3 m to ~10 m in elevation. The topography is mostly flat lying with a gentle decline towards the northwest. Site drainage is expected to follow this gradient through highly permeable sand and gravel (**Section 4.4.5**). A 5 m wide permit boundary buffer zone will be maintained for windrowed grubbing material which serves to restrict access, control drainage and minimize visibility to the quarry site. The following wetlands areas are located **Figure 7**:

- ~420m northwest of the western permit boundary at its closest point
- ~325 m Southwest from the westerm permit boundary at its closest point
- 350 m NorthEast from the eastern permit boundary at its closest point.

This allows for the required buffer distance from all watercourses, wetlands and waterbodies as required by the Mineral Lands Division of DIET.

Figure 7 Watercourse and Wetlands around the undertaking

4.2.2 Existing Biophysical Environment

The quarry site is located 16 km to the east of the labrador west city This region has higher summer maximum temperatures and lower rainfall than other portions of Newfoundland with the mean annual precipitation is 633 mm. The mean annual temperature is around -2.12°C, with a mean summer temperature of 10.13°C and a mean winter temperature of -4.93°C.

The topography contains shallow, medium quality grey sitly sand with trace of organics cobbles and gravel and some brow sand with some silt,trace gravel. The surficial geology underlying the soil and till is classified as Till veneer and glacial veneer.The subsurface geology is within the Late Paleoproterozoic region where the lithology is made primary of granite,quartz,monzonite,granodiorite and syenite

4.2.3 Site Visibility

The closest receptors to the quarry permit application area are public road users of Trans-Labrador Highway which is 365 m away from the closest boundary point and for the remaining of the boundary it lies within 600-700 m from the northern boundary of the property (Figure 4 and 5)

Other sensitive receptors to the project area include residents That utilize cabins around the moosehear lake and the closest cabin being 1.15km away from the northern boundary of the site without a direct line of site to the proposed undertaking (Figure 3). Additional screening methods may be used to conceal the site operations by creating perimeter berms from stripped grubbing within the 5 m permit boundary zone. This berm will help to conceal the entire quarry area if there will be any need in the future

4.3 Construction, Operation and Maintenance

The development operations within the proposed quarry site will utilize IOC adjacent quarry site (File 71112736) and heavy equipment used for the quarry operation. To develop the available sand and gravel resources in the project area the site will be cleared of the overlying vegetation, topsoil, and mineral soils.
This material will be sorted and used for perimeter berms as needed and for preservation and use as future reclamation material to cover the developed area and promote revegetation. The underlying unconsolidated material will be excavated, screened, and stockpiled accordingly. The material stockpiles will be exported off site and used for winter road sand and asphalt production in the region. The quarry layout will evolve over time to ensure the processing operations are completed in a cost effective and environmentally safe manner.

4.3.1 Site Access

Access to the proposed quarry site is gained by travelling ~16.5 km east on the Trans-labrador highway from labrador city. An approximate 650 m long gravel access road branches from TLH leading south to the quarry site along the northern boundary of the permit application area (Figure 6). An entry gate will be installed to secure the public from entering onto the quarry access road. Additionally, the proposed quarry site will be restricted from public users by placing berms or boulders along other boundaries and buffer zone as well as signs notifying the public to the future quarry as required to ensure public safety. Access within the proposed quarry area will fluctuate during development and may be routed through the existing ICS quarry permit 71112736

4.3.2 Site Clearing

The 15 ha quarry permit area currently include an area that have been mulched in the past by an old undertaking and naturally vegetated with forest. During site clearing any merchantable timber will be cleared either by handheld chainsaws or mechanical harvester equipment and will be garnered under a commercial cutting permit issued by the Department of Fisheries, Forestry and Agriculture. Surficial soils, subsoils and grubbing will be stripped and windrowed to the permit boundary for preservation. This reclamation material may be used to construct perimeter berms which help restrict access and visibility of the site. The organic topsoil layer will be preserved separately for eventual reclamation to cover the developed area upon completion of the quarry. It is anticipated that site clearing will be completed in smaller footprint areas following a logical development sequence that would be typically defined in a set of quarry plans.

4.3.3 Quarry Development and Operation

The development of the proposed 15 ha quarry site, following site clearing, will involve excavating the sand and gravel material using heavy equipment, followed by crushing screening, stockpiling and exporting of the material off site. The adjacent ICS quarry operations (file 71112736) will be utilized during quarry development to make operations more cost effective and efficient.Site development will begin in the northern extent of the permit boundary in the rural zoning (Figure 3) and progress towards the south.

The targeted glaciofluvial sand material is concealed by an upper layer of coarser sand that is variable in thickness and will be removed and/or screened and then stockpiled separately from the priority asphalt blending sand. This screened coarse material may be used as potential winter maintenance sand or in other aggregate products. Excavating the targeted sand material will occur in ~5 m high development benches. Production volumes of the materials are to be planned in phases with a footprint area that will meet estimated annual demands for the

material (~7,000 m^3). The quarry design will ensure that quarry depths are above the groundwater table and allow drainage of surface water from the entire quarry permit area along constructed drainage channels.

Operational activities will involve excavating material with an excavator, transporting with loaders to the mobile crushing and screening area, and stockpiling accordingly where it can be easily loaded into dump trucks for export off site to asphalt production facilities. The oversized material may be crushed or stockpiled separately awaiting use in various other end products. The crusher/ screener setup will be mobile and moved as required to ensure efficient processing and operations. No additional secondary processing is required (i.e. washing). The only water used on site will be imported in tanks or water trucks to spray selected areas during extremely dry conditions to prevent the generation of excessive dust. Quarry operations will generally occur between April and December of each year, with any schedule changes corresponding to the seasonal demand for the blending sand product. All extraction activities will adhere to the Government of Newfoundland and Labrador's Occupational Health and Safety Regulations under the Occupational Health and Safety Act.

4.4 Potential Sources of Pollution During Construction and Operation

The construction and operational phases of the proposed quarry development will utilize equipment such as chainsaws, timber harvesting equipment, front end loaders, excavators, and dump trucks. This equipment and related activities represent a potential source of noise disturbance, exhaust emissions, petroleum and hydrocarbons, dust, domestic waste, and general refuse to the surrounding environment. It is the responsibility of ICS to ensure that the operating equipment used on site is maintained, and that standard Occupational Health and Safety protocols for quarry development are followed. ICS will ensure that the quarry site has an emergency response plan, and that necessary emergency response equipment is available to address hazards related to fire and spills thus protecting the workers, nearby community residents and the environment. During all stages of the proposed quarry development consistent monitoring by the operator of the site and operating equipment will ensure that potential sources of pollution are identified, and appropriate steps are taken to mitigate hazards to the surrounding environment.

4.4.1 Air

Air pollution could be generated in the form of exhaust fumes from operating equipment and dust from airborne clay particles in the quarry. Exhaust fumes will be minimized by ensuring that all mechanical equipment using TIER 4 combustion engines. When heavy equipment is not

in operation it will be shut down to maximize fuel efficiency and minimize unnecessary exhaust fumes. Dust created from the quarry operations will be controlled by minimizing the development footprint and stripping overburden from only the required production areas in sequence and not all at once. The dust generated by heavy equipment on the quarry floor or access roads will be mitigated during very dry periods by using mobile watering trucks to suppress silt particles from becoming airborne. All activities within the quarry will be conducted in a manner that respects the province's *Air pollution Control Regulations (2022).*

4.4.2 Noise and Vibration

The quarry site is expected to generate a typical amount of noise expected from operating heavy equipment. The use of blasting and crushing techniques are not required on site. The expected sound levels will not exceed those generated by past and ongoing quarry operations in the area. The creation of berms and development benches in addition to the natural forest buffer will provide noise obstruction to the receptors and public roadway commuters. All mechanical equipment used in the operations will be maintained to ensure that the decibel levels produced do not exceed the manufacturing standard. The work site will be a controlled environment whereby operations occur during daytime work hours and meet the regulations for Occupational Health and Safety.

4.4.3 Domestic Waste and Sewage

Domestic waste generated from human activity on the proposed quarry site will be contained and removed from site for later disposal in approved waste and sewage management areas. Portable lavatories within the proposed quarry boundaries will be utilized as required during production and operation of the site. Garbage and food waste will be kept for later disposal off-site and not littered on the quarry floor. Domestic waste will be collected and disposed of in accordance with the Environmental Protection Act 2002 by a local waste management service provider.

4.4.4 Fuel

Fuel used by heavy equipment on site will be delivered directly by a petroleum product service company as required. No fuel storage tanks will be located on the site. The refueling of equipment on site will comply with the Storage and Handling of Gasoline and Associated Products Regulations. Emergency spill response kits will always be available on-site during quarry operations for containment and cleanup of any hydrocarbon leaks from malfunctioning equipment. All mechanical equipment using fuels will be kept in good operating order with regular inspections and servicing by certified mechanics to prevent incidents of

hydrocarbon spills. Any leaks or release will be reported as per the Environmental Protection ACT,the scene will be freezed immediately and the release will be cleaned up immediately and contained.

4.4.5 Effluent

The effluent generated during quarry operations is likely to be in the form of surface water runoff transporting fine-grained particles from the quarry floor. This could occur at any time of development during rainfall events though most surface water is expected to drain through the unconsolidated sand and gravel material making up the quarry floor and subsurface. Monitoring drainage will occur during all stages of quarry development to ensure appropriate mitigation techniques are used for treating site water runoff. These measures, though circumstantial, will be in line with industry best management practices to reduce suspended fine-grained particles.

Site runoff will initially follow the natural topography of the permit area towards areas of lower elevation and into natural vegetation outside of the proposed quarry boundaries. Shallow ditching in the quarry floor will ensure runoff is collected and drained away from the operations. The installation of rock check dams, hay bales, and silt fencing in drainage areas will filter or remove suspended fine-grained particles from site water before exiting the boundary. During major rainfall events additional areas may be constructed to temporarily hold water within the quarry and allow for suspended fine-grained particles to settle out. All surface water discharged from the quarry site into the surroundings will meet the regulatory requirements of the *Environmental Control Water and Sewage Regulations (2003)*.

4.5 Potential Resource Conflicts During Construction and Operation

The proposed quarry area is situated on an average of 350 m from the labrador winter trails and with the closest distance to the boundary being 85 m from the trail The proposed quarry site will not limit the accessibility of the region used for tourism or recreational activities to the trail and will ensure to clearly identify its southern boundary and protect it to ensure public safety.

The proposed quarry boundaries allow for the regulated buffer distance to any waterbody, watercourse or wetland thus protecting the natural environment that is valued by tourists and recreational users.

Wildlife occurrences surrounding the quarry boundaries are not common. However, due to the buffer zone,berm and due to the proximity of the proposed quarry site to other active quarry area already in operation, this further development is not anticipated to impact wildlife species. Any encounter with wildlife will follow regulations stated in the Wildlife Regulations under the *Wildlife Act and* legislative requirements for areas known to have pine marten. Domestic waste will be disposed of off-site to avoid attracting wildlife.

The 15 ha quarry permit area is within a domestic cutting area (CC22504-Blueberry Hill) that encompasses over 21,877 ha of forest in the region. The amount of available merchantable timber in the proposed quarry area is low in comparison to the broad domestic cutting area and is not expected to cause conflicts with potential harvesters.

The quarry respects the distance to the regulated buffer distance required from all waterbodies (including wetlands) required by the Mineral Lands Division of the DIET and the Water Resources Management Division of the Department of Environment and Climate Change. Precautionary measures to prevent suspended solids from reaching any watercourses are components of the proposed quarry development plan, as discussed in Section 4.4.5 and summarized as follows:
Within the proposed quarry area, a 5 m wide buffer zone alongside all permit boundaries will be left intact where no materials will be excavated, except where the boundary overlaps with other quarry operators. Perimeter berms will be constructed from the windrowed organic and grubbing material placed within the 5 m buffer area along the external boundary that buffers Crown Land.

During development the quarry floor will be kept lower than the perimeter berms where present to contain surface water run-off within the quarry site and will be directed along drainage channels in the quarry floor.

Surface water run-off from the entire quarry area will be controlled and filtered of suspended fine-grained particles through check dams, hay bales and silt fencing prior to exiting the quarry boundary into naturally vegetated areas.

4.6 Occupation

The occupations required for the proposed quarry site are listed below and classified as per the National Occupational Classification (2021): *Construction*
1 Quarry Supervisor (82020)
2 Heavy Equipment Operators –Excavator/Dump Truck/mulcher (73400)
3 Heavy Equipment Operators (amount may vary on demand) – Tandem, TandemTandem, or Semi Dump Trailers (73400)
The operation of the quarry will require up to 6 employees to run at the anticipated production rate of ~7,000 m^3 annually, although fluctuations in material demand may lead to a change in the number of required employees and annual production volumes.

4.7 Reclamation and Closure

The quarry project will be rehabilitated under an approved reclamation plan and quarry permit issued to the proponent by the Department of Industry, Energy and Technology. All exposed quarry faces will be a maximum of 5 m in height and sloped to 30-degrees using sand and gravel material. Catch benches will be placed at the toe of each 30-degree slope if multiple development faces are created. Preserved organic material that was stripped during the construction phase will be re-spread over the quarry floor and sloped quarry faces to promote natural revegetation. Rehabilitation can begin once the quarry development has exhausted available material resources within the quarry permit boundary and is no longer usable for the operations. Rehabilitation will be completed in stages across all areas of quarry development.

5.0 SCHEDULE

The proposed schedule for this project is as follows:

- Submission of Registration Document: February 2025
- Review of Submission Document by Government: March/April 2025
- Commencement of Construction and Operations: May 2025