Title 9 Major Use Permit No.: 110-03-22
Date of Issue: April 14, 2022
Permit Expires: December 31, 2024

Permit Issued By: Northwest Arctic Borough, Planning Department
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Project Description:

Teck American Incorporated (TECK) proposes to continue their mineral exploration activities (to include drilling, geophysical surveys, geologic mapping and sampling), which will be helicopter-supported on both state and NANA-owned lands in the AKTIGIRUQ geographic area (‘Mineral Exploration’ is a Major Use in both the Subsistence and General Conservation Districts). These activities are outside of the Borough Master Plan Permit for ongoing Red Dog Mine operations and require a use permit under borough code 9.12. The proposed start date is April 15, 2022 and will be completed by December 31, 2024.

This Title 9 Major Use Permit is a renewal permit for Title 9 Use Permit #108-03-19, #104-03-16 and #110-03-13. Project activities will remain the same. Specific details of the project are contained in the permit application (22-02-110) and documents submitted by TECK to the Borough Planning Department. These documents are incorporated into the Borough’s administrative record. Project Activities are summarized below.
Mineral Exploration:

The primary activities proposed under this application will be diamond drilling AKTIGIRUQ exploration holes to complete a drill hole spacing study, regional exploration holes to determine other areas of mineralization, and geotechnical drill holes to provide TECK with necessary rock characterization information. TECK will be utilizing either RD6000, LF-70, LF-90, or similar model/size drill rigs for core drilling to complete the planned exploration drill holes. A small track or truck-mounted auger or sonic rig may be used to test surficial geotechnical conditions. This drill rig does not require water for drilling activities. Therefore, no stream reaches are proposed as water withdrawal points for these hole locations. However, some geotechnical holes may require core drilling and will utilize a smaller core drilling rig (e.g., LF-70). Water withdrawal for drill water at those locations have already been approved. To decrease surface impacts in some of the exploration areas, mother holes will be drilled with a series of daughter holes drilled from the same collar, and thus, the same drill pad.

![Diagram of drill targets in AKTIGIRUQ](image)

**Figure 1. Teck Drill Targets in AKTIGIRUQ**

**DRILLING ACTIVITIES**

The drilling activity will take place on drill stations within TECK claims. Drilling is scheduled to begin in mid-May, each season, after crews have completed safety orientations, and continue into early October, weather permitting. Core holes will range from 200 to 3,400 feet deep depending on site location and purpose. TECK is planning to drill between 28,000 to
35,000 feet per season over the length of the renewed MLUP permit (2022-2026). This will depend on results and drill capacity. Drill crews operate 24 hours per day, using two 12-hour shifts. Surface disturbance will be minimal and confined to anchor areas of drill platforms and collar areas of drillholes. See Figure 1 for potential drill targets.

**Drilling – Aktigiruq**

Aktigiruq area drillholes are planned to confirm and evaluate the previously identified mineralized body. During the proposed drill hole spacing study, TECK may have up to four drills in the Aktigiruq area each season over the length of the renewed MLUP permit (2022-2026).

**Drilling – Regional**

Regional exploration drillholes are planned to test new areas for mineralization at defined target areas. Although several holes are noted, many of these are only being considered if drilling can be completed in addition to annual drill plans at Aktigiruq. It is anticipated that one to three of these regional holes will be completed annually.

**Drilling – Geotechnical Holes**

Geotechnical drillholes are planned in several areas on an iterative basis. For instance, TECK will need to drill geotechnical holes at proposed material sites to establish rock characterization. This drilling may require one hole or five holes. The number of holes drilled in any one area will be determined by the geotechnical information TECK is able to gather. TECK may use some combination of drill core (e.g., LF-70), auger (e.g., CME-45), or sonic drill rig for geotechnical holes, depending on geotechnical data requirements. The drill core rig will utilize previously applied for stream reaches, as well as some newly proposed stream reaches. The auger/sonic rig will drill shallow holes with no need for water.

**Water Use Authorization**

Water sources are currently permitted under TWUA F2019-079, TWUA-F2019-080, TWUA F2019-081, TWUA F2022-111 and TWUA F2022-112. Water is pumped from the stream takeout points at a maximum rate of 10 gallons/minute or less.

The water used for drilling is recirculated to reduce overall consumption required during the drilling process. Water gauges are utilized to monitor withdrawals of water at the takeout points. Periodic stream flow measurements are taken at the pump sites and reported to the Division of Water Resources at the conclusion of the drill season.

Water for all drill set-ups will be pumped from tributaries of Wulik River and Ikalukrok Creeks. At the Aktigiruq drill locations, water will be pumped from the creek into a temporary bladder and shared by the drills. This allows for more efficient water management and reduction in overall water consumption. Regional exploration holes will pump water directly from the permitted creek to the drill site.
Fuel Usage and Storage:

All the fuel related equipment, the fuel tank and containment will be sited on adjacent 16x16 foot and 8x12 foot wooden pads, arranged in a way that allows the helicopter to land and the pilot to refuel as needed. The fuel will only remain on-site during planned drilling operations. Fuel is replenished by swapping full 110-gallon fly tanks that are flown from the Red Dog Mine. All fly tanks are double walled and are refilled at Red Dog Mine. We plan to re-use this fuel storage site during future drill campaigns if helicopter support is required.

Drill Pads
Large equipment fuel transfers do not occur in the field. Fly tanks are swapped on site; this decreases the potential for spills.

Drillers will complete routine oil changes during operations. Absorbent material for potential spills will be kept on site and all oily waste generated disposed of at Red Dog Mine using their procedure for such material.

Fuel Cache
The fuel cache is specifically at Township 32 North, Range 19 West, Section 11, SE ¼.

Items at site consist of:

- one, 110-gal double walled tank to contain Jet A Fuel,
- one secondary standard above ground fuel containment (130 gal),
- one 2kW electric generator,
- one 150V/1.5A pump,
- one, 25-foot-long hose with a nozzle, and
- one spill kit.

Fuel Storage and Spill Response:

The project does not store fuel in quantities above 1,321 gallons and therefore does not require Spill Prevention Control and Countermeasure (SPCC) plan. However, TECK is committed to minimizing our effects on the environment. TECK Exploration attends spill prevention training and works in collaboration with Red Dog mine personnel to understand concerns and improve overall knowledge regarding fuel handling and spill prevention.

The fuel cache is located 300 feet from any flowing waters. No waste oil is stored on the project site. No fuel containment berms are located around the site as only a small portion of fuel is located at the cache and secondary containment is not required. A spill kit is kept at the fuel cache.
Timeline:

TECK is planning on approximately 20 drill holes per season, which will be around 28,000-35,000 feet drilled per season. Each drill hole can range from 200-3,400 feet depending on site location and purpose.

2022 Mineral Exploration
Start date: On or about April 15, 2022
End Date: On or about November 1, 2022

2023 Mineral Exploration
Start date: On or about April 15, 2023
End Date: On or about November 1, 2023

2024 Mineral Exploration
Start date: On or about April 15, 2024
End Date: On or about November 1, 2024

Current Approvals:

- Department of Natural Resources, Division of Mining, Land and Water, Miscellaneous Land Use Permit for Hardrock Exploration & Reclamation, APMA F20229339, expires 12/31/2026
- Department of Natural Resources, Division of Mining, Land and Water, Temporary Water Use Authorization, TWUA F2019-079, expires 12/31/2023
- Department of Natural Resources, Division of Mining, Land and Water, Temporary Water Use Authorization, TWUA F2019-080, expires 12/31/2023
- Department of Natural Resources, Division of Mining, Land and Water, Temporary Water Use Authorization, TWUA F2019-081, expires 12/31/2023
- Department of Natural Resources, Division of Mining, Land and Water, Temporary Water Use Authorization, TWUA F2021-111, expires 12/31/2026
- Department of Natural Resources, Division of Mining, Land and Water, Temporary Water Use Authorization, TWUA F2021-112, expires 12/31/2026
- Department of Fish and Game, Habitat Section, Fish Habitat Permit, FH19-III-0102-Amendment 1, expires 12/31/2026
- Department of Fish and Game, Habitat Section, Fish Habitat Permit, FH12-III-0091-Amendment 6, expires 12/31/2026

Permit Authorization and Documentation:

Teck American Incorporated (TECK) submitted a Title 9 Zoning Permit Application (22-02-110) to conduct ‘Mineral Exploration’ in both the Subsistence and General Conservation Districts on February 14, 2022. On March 15, 2022 the Borough Planning Department deemed the application was complete.

Permit fees due total to $1,000.00, which was paid by check #214036.
The Planning Director has the authority to permit ‘Mineral Exploration’ as a Minor Use in the General Conservation District, pursuant to NABC 9.12.050, and as a Major Use Permit in the Subsistence Conservation District, pursuant to NABC 9.12.030. A Major Use Permit requires a 20-day public comment period, which started March 15 and ended April 11. There were no public comments for this project.

**Permit Terms and Conditions:**

1. Teck American Incorporated (TECK) shall comply with the terms of the permission, permits and/or agreements granted by the federal government, State of Alaska, NANA Regional Corporation, Northwest Arctic Borough and other applicable agencies.

2. TECK shall comply with any and all applicable local, Borough, state and federal laws. The Borough reserves the right to conduct periodic inspections of the permitted operations as well as work with the permittee to observe operations and/or trips for permit compliance.

3. Mineral exploration activities are required to be sited, designed, constructed and operated in a manner that does not substantially interfere with the use of a site that is important for significant cultural uses or essential for transportation to subsistence use areas.

4. TECK shall cease operations when migrating caribou are in the immediate vicinity (within ¼ of a mile) of any area where it is operating under this Major Use Permit. The Planning Director may also request TECK to cease operations in order to not interfere with caribou herds and/or migrations.

5. TECK shall not, during the migration of caribou, locate any operation and/or equipment so as to block or cause diversion of the migration of caribou, and shall cease any activity that may interfere with the migration, such as airborne transports, airborne surveys or movement of equipment, until such time as the migration has been completed.

6. During the fall, winter and spring seasons, TECK or any project contractors shall not, during the migration of caribou, locate any operation and/or equipment so as to block or cause diversion of the migration of caribou. TECK and/or any project contractors shall cease any activity that may interfere with the seasonal spring and fall caribou migrations and/or caribou fall/winter/spring movements, such as marine, ground and airborne transports, ground and airborne surveys or movement of equipment, until such time as the migration or spring movements have cleared ¼ of a mile from the location of the project activity. Concern for human safety will be given special consideration when applying this policy.

As a general guideline, caribou migration means an area where 500 or more caribou are travelling or congregating. However, during the fall/winter/spring period of January through December, TECK shall take extra precautions to avoid deflecting even small numbers (e.g. group sizes of 5-10) of the first caribou moving through the area as these groups/bands set trails as “lead caribou” that subsequent caribou later follow during the
migration. The intent of these guidelines are to ensure free passage of caribou through the area and to avoid impacting caribou and the communities that historically and currently depend upon it as well as preserving existing and important adjacent land uses. These guidelines may be revised based upon updated information and research (including local traditional knowledge).

7. All project activities shall utilize measures to avoid or minimize disrupting wildlife and bird migration, or subsistence activities including fishing, trapping, waterfowl hunting, egg gathering, berry picking and caribou hunting. The applicant will ensure reasonable access to subsistence users to subsistence resources.

8. All air (helicopter and airplane) traffic and ground transportation measures shall utilize measures to avoid disrupting wildlife and bird migration or subsistence activities by, as safety allows, flying around spotted herds or flocks, flying at altitudes high enough to reduce noise and disturbance, limiting the numbers of flights per day, or temporarily suspending operations. The Administrator may impose specific requirements as circumstances may warrant.

9. All aircraft transportation shall avoid areas where species that are sensitive to noise or movement are concentrated. As appropriate, the operations shall use horizontal and/or vertical buffers as appropriate while ensuring human safety.

10. All vehicles shall be operated in a manner such that the vegetative mat of the tundra is not disturbed. Vehicles shall not be abandoned. Vehicles must avoid areas where species that are sensitive to noise or movement are concentrated.

11. All trash and human waste generated at the sites must be properly disposed in accordance with Northwest Arctic Borough Ordinance 9.25.020 M., establishing standards of disposal of refuse, human body waste, and chemicals. All remedial activities shall comply with any and all other applicable state and federal laws, including all applicable hazardous waste and disposal requirements, all waste disposal and landfill requirements, and all open burning and air quality standards.

12. The applicant must conduct activities in a manner to maintain natural drainage pattern, water shed protection, and permafrost stability; to prevent runoff and erosion into water supplies; to minimize alteration of vegetation; and to conserve natural features and the general environment of the area.

13. The project will take place near a borough identified Priority Subsistence Use Area which is the Wulik River. All project uses and activities are to follow methods to minimize the likelihood of impacts to wildlife, waterfowl, and fish, including waterfowl staging areas, waterfowl nesting areas, and fish spawning areas. Use and activities shall not have a significant adverse impact on fish, including fish in their juvenile and larval stages.
14. Uses permitted shall cease upon the discovery of archaeological, prehistoric, historic or cultural resources during the project activities, and TECK shall immediately contact the Planning Director at the NAB to determine the conditions to continue.

15. All fuel/oil/hazardous substance storage, including waste oil, must meet all applicable state and federal containment laws. Any project fuel storage at the mineral exploration sites shall meet all applicable state and federal containment laws to prevent fuel spills and protect against fire danger. If a spill occurs, it must be reported immediately to the Alaska Department of Environmental Conservation and the NAB Planning Department (at least within 24 hours). Appropriate spill kits and absorbent pads must be stored at the mineral exploration sites. Fuel/oil drums or other storage containers shall not be abandoned.

16. Project equipment servicing and fueling operations are prohibited within 100 feet of any surface water body, including any rivers, drainage channels, sloughs and lakes. Equipment must be monitored daily for hydraulic leaks. Project equipment shall not be abandoned.

17. TECK shall immediately notify the Borough (at least within 24 hours) of any change in the mineral exploration plans and seek modification of the permit.

18. At the completion of each season and overall completion of the project, erosion control measures shall be utilized to stabilize any exploration and/or drill hole sites. At a minimum, any disturbed areas must be re-graded to stable slopes that blend with the natural topography, maintain natural drainage, promote safety, and otherwise mitigate the effects of drilling. Within mean annual flood lines, re-grading to ground contours which will not entrap fish and not significantly alter the river/stream hydraulics will occur at the end of each operating season.

19. TECK is subject to all penalties and civil actions pursuant to section 9.08.240 for violation of the permit conditions and stipulations prescribed herein.

20. Annually by December 31st, the permittee shall file a written report with the NAB Planning Department, the City of Kivalina, the Native Village of Kivalina, and the Native Village of Noatak describing the following:
(a) GPS coordinates of all drill holes,
(b) complete report of any fuel or other hazardous substances discharges and clean-up activities completed,
(c) description of any reclamation,
(d) report the incidents of caribou migration and dates/times of ceased operations for allowing migration of caribou, and
(e) other matters as reasonable required by the Administrator/NAB Planning Director.

21. At the conclusion of each season the Borough Planning Department shall evaluate the effectiveness of the permit conditions. The Title 9 Administrator shall be authorized to adopt corrective measures for ineffective or inadequate permit conditions.
22. TECK and/or land owners shall allow the NAB and/or their representatives access to the permitted sites and properties, during the term of this permit or within 5 years after permit expiration, to conduct scheduled or unscheduled inspections to determine compliance with this permit or respond to emergency situations.

23. The Borough Planning Director, as the Title 9 Administrator under provision of NABC 9.08.020, will issue this permit for period of 4 years. Issuance of this permit under these terms shall require submission of an annual report for compliance with the permit terms and conditions. This permit will expire on December 31, 2024, unless revoked by the Title 9 Administrator and/or TECK.

Permit Approval

NORTHWEST ARCTIC BOROUGH

[Signature]
Clay Nordlum,
Planning Director/Title 9 Administrator

April 14, 2022
Date

CC: Kivalina IRA Council, the City of Kivalina, The Native Village of Noatak, NANA Regional Corporation, Maniilaq Association

Posted at: www.nwabor.org