



Title 9 Minor Use Permit No. 110-03-21
Date of Issue: April 30, 2021
Permit Expires: December 31, 2022

Permit Issued By:

Northwest Arctic Borough
Planning Department
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Kotzebue, AK 99752
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Permittee:

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Project Description:

Teck American Incorporated (TECK) proposes to conduct mineral exploration activities, to include drilling, geophysical surveys, geologic mapping and sampling, on state-owned lands ('Mineral Exploration' is a Minor Use in the General Conservation District). All work will be helicopter-supported. Mineral exploration activities will support the LIK Exploration project. These activities require a use permit under borough code 9.12. The proposed start date is May 15, 2021 and will be completed by October 15, 2022.

Specific details of the project are contained in the permit application (21-02-110) 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.

Project Location:

The project location for TECK's LIK exploration program is at Township 32 North, Range 20 West, Sections 1-3, 9-16, 23, Kateel River Meridian, USGS Map Delong Mountains. The thirty (30) drill locations are all in the General Conservation District.

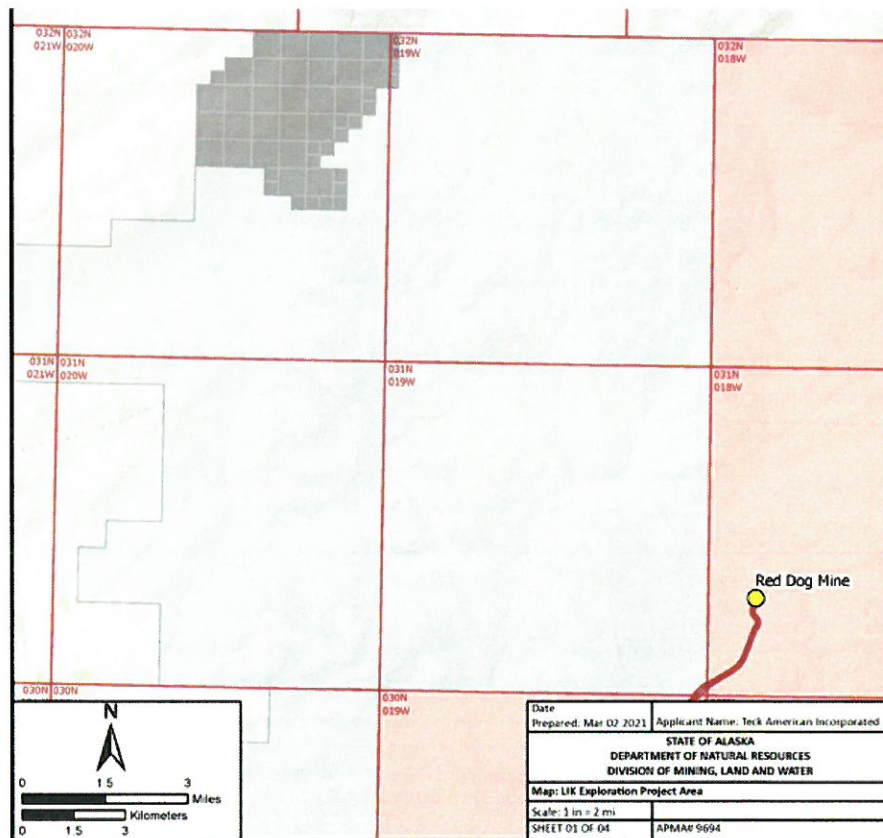


Figure 1. Lik Exploration activities on state mining claims are in the shaded area on the top left. The Red Dog Mine is at the bottom right.

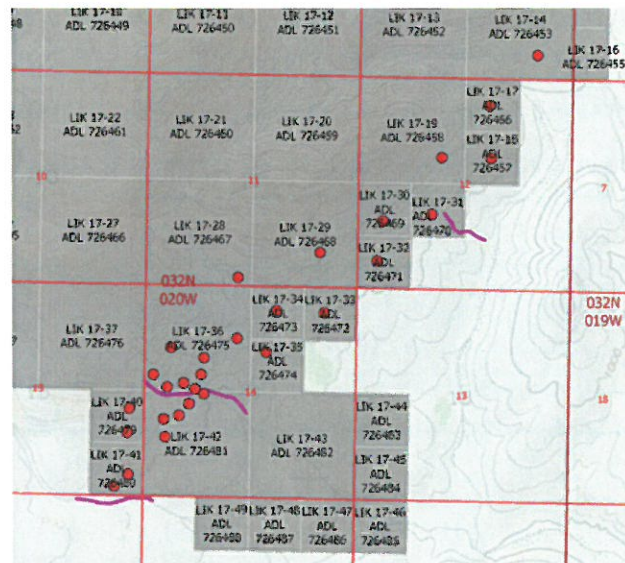


Figure 2. Close-up view of 30 drill hole locations



Mineral Exploration:

The drilling activity for 2021- and 2022-time frames will consist of a maximum of 30 drill stations on TECK claims. Drilling is scheduled to begin in mid-May after crews have completed safety orientations and continue, if weather permits, into early October. Core holes will range from 200 to 700 feet deep depending on site location. TECK is planning to drill approximately 3,500 feet in 2021 depending on results and drill capacity (this equates to about 7 holes). Drill crews operate 24 hours per day, using two 12-hour shifts. Additional drill holes may be proposed from other (new) drill stations, based on results of the initial drilling. Surface disturbance will be minimal and confined to anchor areas of drill platforms and collar areas of drill holes. Drill holes will be beyond 100 feet of any stream.

Exploration drill holes are planned to test new areas for mineralization at defined target areas. In **Figure 2** on page 2– Project Area Detail shows these exploration drillhole locations in detail. Additional drilling beyond the primary holes may be considered if positive results are encountered.

The ground-up rock (cuttings) from the drill holes will be brought to surface in the drilling fluid. To re-use the drilling fluid, it is necessary to separate the cuttings, and this will be done using settling tanks and a solids recovery unit (SRU).

The settling tanks allow particles suspended in the water to settle down by gravity, allowing cleaner water out of the final tank to be used again for drilling. The SRU is a centrifuge that spins water through it to separate out the particles, capturing them as a paste that will be collected in sacks to be transported to the Red Dog mine for storage, and allowing for much cleaner water than that from the settling tanks to be used again for drilling. Separated water that is not required for drilling will be discharged in compliance with the mining regulations in State of Alaska DNR Permit APMA #9694.

Mud fences will be installed to prevent drill cuttings from running into the streams. All pumping will be set up according to Alaska Department of Fish and Game (ADF&G) stipulation; each water intake structure shall be screened to prevent the entrapment, entrainment, or impingement of fish. The effective screen openings may not exceed 0.25 in., and water velocity at the screen/water interface may not exceed 0.5 ft/s when pump is operating. The SRU will remove most cuttings from recirculated water at each drill, returning cleaner water to be recycled and returned down the hole. The collected cuttings will be stored at the Red Dog Mine.

Core recovered from drilling is flown to the mine site for geological logging, sampling, and storage. Following drilling, a downhole geophysical survey is performed consisting of an acoustic televiwer to collect information on the structure of the rock surrounding the drilled borehole. This survey has no impact on the rock, wildlife, or people.

Water Use:

Water sources will be permitted under State of Alaska's Temporary Water Use Authorization.



Water will be pumped from the stream takeout points at a maximum rate of 6 gallons/minute or less. Less than 5,000 gallons per day maximum, will be pumped to the drill sites and stored in a temporary tank/bladder before it is pumped down the drill hole.

The water used for drilling will be recirculated to reduce overall consumption and reduce the amount of additive required during the drilling process. Flow meters will be used to monitor withdrawals of water at the takeout points to ensure we know the rate at which water is withdrawn. Periodic stream flow measurements will be taken at the pump sites and reported to the Division of Water Resources at the conclusion of the drill season.

Regional exploration holes will pump water directly from the permitted creek to the drill site. Drill sites will maintain a 100-foot set-back from the water sources.

Fuel Handling:

The project will use 110-gallon fly tanks. A fly tank is a fuel tank that can be transported to a site. The capacity is 110 gallons. These are used to avoid fuel storage on site. Fuel is replenished by swapping full 110-gallon fly tanks that are flown from the Red Dog Mine, and all refilling of fly tanks are done at Red Dog Mine. Each drill rig will have a full fly-tank brought to it at shift change. Fly tanks will be swapped on site—the empty fly tank will be flown out; 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.

The project will not store fuel on site and therefore does not require Spill Prevention Control and Countermeasure (SPCC) plan. However, TECK is committed to minimizing effects to 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.

Closure, Plugging Methodology, and Surface Reclamation:

Surface reclamation of the drill pads and silt fences will be conducted after the cessation of drilling at each hole. This will involve taking photos of the drill site before the drill pad is built and the tundra is disturbed, when the drill rig is setup and drilling, and after the pad has been reclaimed. Reclaiming the site will include pulling down the wood drill pads, filling in the foundation holes, removing refuse, and removing the silt fences. Re-seeding the tundra will be done to enhance flora recovery. The site will also be checked a few months after reclaiming to ensure the collar is not subsiding.

All drill holes will have casing removed (unless there is an install left in the hole, such as a piezometer). All drill hole casings will be removed or cut off at, or below, ground level. All drill holes will be plugged by the end of the exploration season with bentonite holeplug or equivalent slurry, for a minimum of 10 feet within the top 20 feet of the drill hole. The remainder of the hole will be backfilled to the surface with drill cuttings. If water is encountered



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in any drill hole, a minimum of 7 feet of bentonite holeplug or equivalent slurry will be placed immediately above the static water level in the drill hole.

Current Approvals:

- State of Alaska, Department of Natural Resources, Division of Mining, Land, and Water, Multi-Year 2018-2022, Miscellaneous Land Use Permit for Hardrock Exploration & Reclamation, Permit #9694
- State of Alaska, Department of Natural Resources, Division of Mining, Land, and Water, Temporary Water Use Authorization TWUA F2020-045
- State of Alaska, Department of Fish and Game, Habitat Section, Fish Habitat Permit, FH12-III-0091-Amendment 5

Permit Authorization and Documentation:

Teck American Incorporated (TECK) submitted a Title 9 Zoning Permit Application (21-02-110) to conduct mineral exploration in a General Conservation District on March 30, 2021. On April 20, 2021, the Borough Planning Department deemed the application was complete.

On April 27, 2021, the Borough Planning Director approved a Minor Use Permit. Permit fees due totaled to \$500.00, which will be paid by check from TECK.

The Planning Director has the authority to permit 'Mineral exploration' in a General Conservation District by Minor Use Permit, pursuant to NABC 9.12.050.

Permit Terms and Conditions:

Administrative approval is hereby **GRANTED** to permit Other 'Mineral exploration' as described, subject to the permit terms and conditions stated herein.

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 $\frac{3}{4}$ of a mile) of any area where it is operating under this Minor 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 summer and fall season, 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 fall caribou migrations and/or caribou summer/fall movements, such as marine, ground and airborne transports, ground and airborne surveys or movement of equipment, until such time as the migration or summer/fall movements have cleared $\frac{3}{4}$ 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 summer/fall period of June through October, 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 permits, 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.



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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. 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 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



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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 describing the following:
 - (a) complete report of any fuel or other hazardous substances discharges and clean-up activities completed,
 - (b) description of any reclamation,
 - (c) report the incidents of caribou migration and dates/times of ceased operations for allowing migration of caribou, and
 - (d) 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 shall, if requested by the administrator, provide periodic activity reports to the following entities: the City of Kivalina, the Native Village of Kivalina, and/or the Native Village of Noatak.
23. 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.
24. The Borough Planning Director, as the Title 9 Administrator under provision of NABC 9.08.020, will issue this permit for period of 2 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 expires on December 31, 2022, unless revoked by the Title 9 Administrator and/or TECK.



Permit Approval

NORTHWEST ARCTIC BOROUGH

Eva Harvey

Eva Harvey,
Planning Director/Title 9 Administrator

April 30, 2021

Date

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

Posted at: www.nwabor.org