



Title 9 Conditional Use Permit No.: 106-03-19
Date of Issue: May 31, 2019
Permit Expires: December 31, 2022

Permit Issued By:

Northwest Arctic Borough
Planning Department
c/o John Chase
PO Box 1110
Kotzebue, AK 99752
Tel 907.442.8212 / 800.478.1110 extension 112
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Permittee:

Trilogy Metals Inc.
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cal.craig@trilogymetals.com
www.trilogymetals.com

Permittee Contact Information:

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Project Description:

Trilogy Metals Inc. (TRILOGY) proposes to conduct ongoing mineral exploration activities (to include drilling, geophysical surveys, geologic mapping and sampling), which will be helicopter-supported on state, patented, and NANA-owned lands. Mineral exploration activities will support TRILOGY's Upper Kobuk Mineral Projects (UKMP), north of the community of Kobuk in the southern Brooks Range. Bulk fuel storage, the use of airstrips, and archaeological surveys are the other "Uses" described below. The proposed start date is June 1, 2019, and will be completed by October 31, 2022.

The following Uses and Zoning Districts make up this project:

1. Village District:

- Temporary use of airstrips—Minor Use

2. Subsistence Conservation District:

- Mineral exploration—Major Use
- Bulk fuel storage (660 gallons or more)—Conditional Use



- Airstrips—Major Use
- Archaeological surveys and excavation or other activities on a parcel by a professional archaeologist or other person that are likely to disturb archaeological or historic resources—Major Use

3. General Conservation District:

- Mineral Exploration—Minor use
- Bulk fuel storage (660 gallons or more)—Conditional Use
- Temporary use of airstrips—Minor Use
- Exploration, assessment of examination of a parcel by a professional archaeologist or other qualified person—Major Use

This Title 9 Conditional Use Permit #106-03-19 is a renewal permit for Title 9 Permits #113-03-15 and #109-03-12. Project activities will remain largely the same. Specific details of the project are contained in the permit application (19-02-106) and documents submitted by TRILOGY to the Borough Planning Department. These documents are incorporated into the Borough's administrative record. Project Activities are summarized below.

Project Location:

TRILOGY will be conducting mineral exploration activities at both the Arctic and Bornite deposits and plan to base their operations out of the Bornite Camp. TRILOGY will be using both the Bornite and Dahl Creek Airstrips for their exploration activities.

Project activities are located at the following Townships:

- Arctic Deposit is located at T 20/21 N, R 11 E, Section 3, 4 (General Conservation)
- Bornite Deposit is located at T 19 N, R 9 E, Section 4, 5, 8 (Subsistence Conservation)
- Sunshine Deposit is located at T 21 N, R 8 E, Sections 15 (Subsistence Conservation), 16 (General Conservation)
- Cliff DH Deposit is located at T 22 N, R 10 E, Sections 16 (General Conservation), 21 (Subsistence Conservation)
- Bornite Camp is located at T 19 N, R 9 E, Section 8 (Subsistence Conservation)
- Bornite Airstrip is located at T 19 N, R. 9 E, Section 5 (Subsistence Conservation)
- Dahl Creek Airstrip is located at T 18 N, R. 9 E, Section 21 (Village District)

Project activities for the UKMP take place in the Village, Subsistence, and General Conservation districts.

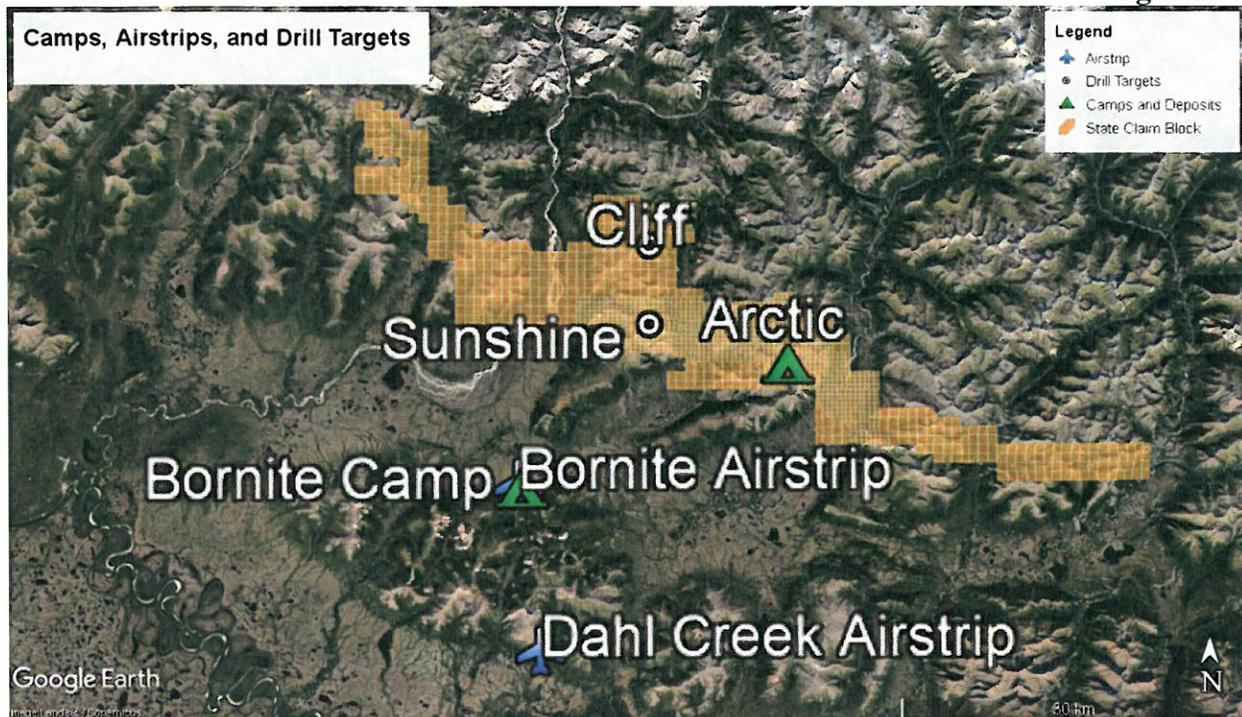


Figure 1. TRILOGY's Upper Kobuk Mineral Projects

Mineral Exploration:

The UKMP activities for this permit will consist of approximately 150 drill holes in the Arctic, Bornite, Sunshine, and Cliff DH deposits. The approximate number of holes for each deposit:

- 60 holes at Arctic Deposit
- 60 holes at Bornite Deposit
- 30 holes in Sunshine and Cliff DH deposits

Exploration drilling will be done by helicopter and ground-supported diamond core drill rigs. Each drill rig will be supported by a water pump that provides water used in the drilling operation. Shallow geotechnical drilling will be done by helicopter and ground supported geotechnical rigs using either water for drilling or an air compressor.

The drill plan includes using five drills, two (2) DuraLite 1400's and three (7) EF-75's supplied by Major Drilling and Tuuq Drilling or equivalent.

Air Strips:

TRILOGY will be using two (2) airstrips to support their UKMP activities: The Bornite and Dahl Creek Airstrips. They have been used in the past and will continue to support TRILOGY's UKMP activities.



- Bornite Airstrip is approximately one (1) mile from the Bornite Camp and is used to bring in supplies, store fuel (Jet A), stage equipment, and transport supplies and personnel to the UKMP Claims Block
- Dahl Creek Airstrip is adjacent to the Dahl Creek Camp and is used to bring in supplies, store fuel (Jet A), stage equipment, and transport supplies and personnel to the Bornite Camp and the UKMP Claims Block

Bulk Fuel Storage:

TRILOGY will be storing approximately 20,000 gallons of fuel. Bulk fuel will be stored at the following locations:

- Bornite Airstrip—up to 10,000 gallons
- Dahl Creek Airstrip—up to 5,000 gallons
- Bornite Camp—up to 5,000 gallons

Bulk fuel will be stored inside secondary containment at the airstrips with at least 110% capacity. The **Bornite Airstrip** fuel storage consists of two (2) 5,000 gallon double-walled Flameshield tanks. The bulk fuel storage at **Dahl Creek Airstrip** consists of one 5,000 gallon double-walled Flameshield tank. Additionally, one 2,000-gallon Jet A double-walled Flameshield tank is located at **Bornite Camp** along with 1,000 gallons of gasoline also in a containment.

Jet A (Diesel) fuel will be transported by fixed-wing aircraft from Fairbanks or Kotzebue to the **Dahl Creek Airstrip**. Fuel will be stored in double-walled tanks at the Dahl Creek Airstrip and transported primarily using a fuel truck to **Bornite Camp** and the **Bornite Airstrip**. Fuel will be transferred to drill sites using double-walled fly tanks with either a helicopter or truck.

Federal laws require a Spill Prevention, Control and Countermeasure Plan (SPCCP) be developed for any above ground fuel storage capacity greater than 1,320 gallons. The Borough, having more stringent standards, requires an SPCCP be prepared for bulk fuel storage greater than 660 gallons, as defined in Title 9.04.070 Definitions “Bulk fuel storage.” The applicant has submitted an SPCCP, revised March 2019 and filed for the administrative record.

Archaeological Surveys:

Archeological surveys will be conducted by several professional archaeologists. The surveys will be conducted at and around the Arctic Deposit, the Bornite Deposit, and the Ambler Lowlands. The surveys will include digging test pits, and looking for signs of historical use. If any historical uses areas are discovered, the artifacts will be left in place and NANA Regional Corporation will be notified.

The archaeologist will first conduct a data review of all known archaeological sites in or near the project areas. These known sites will be avoided. Next, the archaeologist will conduct a field survey, which consists of walking transects within a study area and digging test pits.

Current Approvals:



TRILOGY currently has eleven (11) approvals for this project:

1. Department of Natural Resources, Division of Mining, Land and Water, Multi-Year Hardrock Exploration-Mining Application #2183
2. Department of Natural Resources, Division of Mining, Land and Water, Multi-Year Hardrock Exploration-Mining Application #2882
3. Department of Natural Resources, Division of Mining, Land and Water, Multi-Year Hardrock Exploration-Mining Permit #9785
4. Department of Fish and Game, Division of Habitat, Fish Habitat Permit FH18-III-0121
5. Department of Fish and Game, Division of Habitat, Fish Habitat Permit FH18-III-0064
6. Department of Fish and Game, Division of Habitat, Fish Habitat Permit FH16-III-0080
7. Department of Natural Resources, Division of Mining, Land and Water, Temporary Water Use Authorization, TWUA F2018-082
8. Department of Natural Resources, Division of Mining, Land and Water, Temporary Water Use Authorization, TWUA F2017-023
9. Department of Natural Resources, Division of Mining, Land and Water, Temporary Water Use Authorization, TWUA F2017-024
10. Department of Natural Resources, Division of Mining, Land and Water, Temporary Water Use Authorization, TWUA F2016-053
11. Northwest Arctic Borough Title 9 Permit, Conditional Use Permit #105-03-16

Permit Authorization and Documentation:

TRILOGY submitted a Title 9 Land Use Permit application (19-02-106) for the following Uses in the Subsistence, General Conservation, and Village Districts:

- Mineral Exploration,
- Airstrip,
- Bulk fuel storage, and
- Exploration, assessment of examination of a parcel by a professional archaeologist or other qualified person.

The Title 9 application was received on February 25, 2019. On May 6, 2019 the Borough Planning Department deemed the application was complete.

Permit fees totaled \$950 for the project. The applicant will pay the amount with a check.

The Planning Commission has the authority to permit 'Bulk fuel storage' in both Subsistence and General Conservation Districts by Conditional Use Permit, pursuant to Northwest Arctic Borough Code (NABC) 09.12.030 and 09.12.050.

Permit Terms and Conditions:

1. TRILOGY must 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. TRILOGY must 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. The Permittee is responsible for ensuring that all employees, contractors, subcontractors, and any other persons working for the Permittee and conducting activities allowed by this permit are familiar with and adhere to the conditions of this permit.
4. 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.
5. A cash bond or other surety satisfactory to the Borough must be posted to ensure performance under this permit in an aggregate amount equal to one hundred percent (100%) of the cost of any reclamation or mitigation required under this permit, inclusive of any state or federally required surety as provided under 9.08.040 of the Borough Code. Evidence of the existence of sufficient surety filed with another governmental entity may be accepted as a means of surety that fulfills this requirement.
6. The project will take place near a Borough-identified Subsistence Sub-District which is the Maniilaq River-Ambler Lowlands Area. 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. Uses and activities shall not have a significant adverse impact on fish, including fish in their juvenile and larval stages.
7. During the fall, winter and spring seasons, TRILOGY or any project contractors MAY not, during the migration of caribou, locate any operation and/or equipment that will block or cause diversion of the migration of caribou. TRILOGY and/or any project contractors must 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 $\frac{3}{4}$ 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 fall/winter/spring period of January through December, TRILOGY 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 uninterrupted, 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



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Trilogy Metals Inc.

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adjacent land uses. These guidelines may be revised based upon updated information and research (including local traditional knowledge).

8. All project activities must 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 must ensure reasonable access to subsistence users to subsistence resources.
9. All air (helicopter and airplane) traffic and ground transportation measures must 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 Title 9 Administrator/Planning Director may impose specific requirements as circumstances warrant.

To minimize disturbance to wildlife during air transport, it is recommended that all aircraft maintain a minimum altitude of two thousand (2,000) feet above ground level except as required for takeoff, landing, emergency and/or weather. Take off, landing and transport drop offs should avoid proximity to a migrating caribou herd and especially to avoid interdicting the lead of a caribou herd. TRILOGY must minimize the number of helicopter flights to reduce disturbance during periods of caribou migration.

10. To minimize disturbance to animals on local roads, vehicles must maintain a safe speed within established speed limits. All equipment and vehicles are to be maintained to eliminate or minimize any excessive noise. Equipment and vehicles must be monitored and be inspected daily for functioning sound suppression.

The Administrator may impose specific requirements as circumstances may warrant.

11. All vehicles must be operated in a manner such that the vegetative mat of the tundra is not disturbed. Vehicles must not be abandoned. Vehicles must avoid areas where species that are sensitive to noise or movement are concentrated.
12. All trash and human waste generated at the sites must be properly disposed in accordance with Borough Code Section 9.25.020 (M.), establishing standards of disposal of refuse, human body waste, and chemicals. All remedial activities must comply with 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.
13. The Permittee must conduct activities in a manner to maintain natural drainage pattern, watershed protection, and permafrost stability; to prevent runoff and erosion into waterbodies; to minimize alteration of vegetation; and to conserve natural features and the general environment of the area.



14. Permittee's permitted uses must cease upon the discovery of archaeological, prehistoric, historic or cultural resources during the project activities, and TRILOGY must 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 may not be abandoned.
17. Water intake for all project activities, including but not limited to the camp and drilling purposes, shall be centered and enclosed in a screened box designed to prevent fish entrapment, entrainment or injury. The effective screen opening may not exceed $\frac{1}{4}$ inch. To reduce fish impingement on screened surfaces, water velocity at the screen/water interface shall not exceed .5 feet per second when the pump is operating.
18. TRILOGY must properly reclaim and complete site closure including any reclamation of drill, staging, landing and camp sites. This must include removal of fuel, structures, equipment and supplies; and TRILOGY may not abandoned any fuel, vehicles, camp buildings and/or structures.
19. TRILOGY must immediately notify the Borough (at least within 72 hours) of any change in the mineral exploration plans and seek modification of the permit.
20. 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 regraded 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, regrading 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.
21. TRILOGY is subject to all penalties and civil actions pursuant to NABC §9.08.240 for violation of the permit conditions and stipulations prescribed herein.
22. Annually by December 31st, the Permittee must file a written report with the NAB Planning Department and the City and Tribal governments of Ambler, Kiana, Kobuk, Noorvik, and Shungnak 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.
23. 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.
24. TRILOGY must, if requested by the administrator, provide periodic activity reports to the following entities: the City and Tribal governments of Ambler, Kiana, Kobuk, Noorvik, and Shungnak.
25. TRILOGY and/or land owners must allow the NAB and/or its 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.
26. The Borough Planning Director, as the Title 9 Administrator under provision of NABC 9.08.020, proposes to issue this permit for period of four (4) years. Issuance of this permit under these terms shall require submission of annual reports for compliance with the permit terms and conditions. **This permit shall expire on December 31, 2022**, unless revoked by the Title 9 Administrator and/or TRILOGY.

Permit Approval

NORTHWEST ARCTIC BOROUGH

Conditional Use Permit Approved by the Northwest Arctic Borough Planning Commission through Resolution PC 19-02

Authorized signatory: Martha Siikauraq Whiting, Planning Director/Title 9 Administrator

May 31, 2019

Date

CC: Ambler Traditional Council, City of Ambler, Kiana Traditional Council, City of Kiana, Kobuk IRA Council, City of Kobuk, Noorvik IRA Council, City of Noorvik, Shungnak IRA Council, City of Shungnak, NANA Regional Corporation, Maniilaq Association

Posted at: www.nwabor.org

**NORTHWEST ARCTIC BOROUGH PLANNING COMMISSION
RESOLUTION PC-19-03**

**A RESOLUTION OF THE NORTHWEST ARCTIC
BOROUGH PLANNING COMMISSION APPROVING
TRILOGY METALS INC.'S
DRAFT CONDITIONAL USE PERMIT #106-03-19,
AND FOR RELATED PURPOSES**

WHEREAS: The Northwest Arctic Borough Planning Department received a Title 9 Permit Application (19-02-106) from Trilogy Metals Inc. for 'Mineral exploration,' 'Temporary Use of Airstrips,' 'Bulk fuel storage,' and 'Exploration, assessment or examination of a parcel by a professional archaeologist or other qualified person' in the Village, Subsistence and General Conservation and Village Districts on February 25, 2019; and

WHEREAS: On May 6, 2019, the Borough planning department deemed the application complete with all necessary information; and

WHEREAS: The Borough planning department has published a public notice for this permit on May 6, 2019, as required in borough code 9.20.030; and

WHEREAS: The Northwest Arctic Borough Planning Commission has the authority to approve 'Bulk fuel storage' in both the Subsistence and General Conservation Districts by conditional use permit according to borough code 9.12.030 and 9.12.050 following a public hearing as required under borough code 9.20.030E.

NOW THEREFORE BE IT RESOLVED, The Northwest Arctic Borough Planning Commission hereby authorizes the Planning Director/Title 9 Administrator to approve the DRAFT Conditional Use Permit #106-03-19 dated May 6, 2019, as discussed during the commission meeting;

PASSED AND ADOPTED THIS 30TH DAY OF MAY, 2019.



Harold Lambert, Planning Commission Chair

SIGNED AND ATTESTED TO THIS 30TH DAY OF MAY, 2019.



Stella Atoruk, Borough Clerk

