

ENVIRONMENTAL ASSESSMENT

Case File No.: AA-82056

AK-040-EA00-007

Type of
Action: Exploration of hard rock mineral potential

Location: T. 33 N., R. 37 W., Sec. 6, SM
T. 33 N., R. 38 W., Sec. 14, SM

Applicant: Northstar Exploration, Inc.
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Preparing
Office: Bureau of Land Management
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Date: May 10, 2000

I. INTRODUCTION

A. Purpose and Need for the Proposed Action:

North Star Exploration has entered a joint venture with Doyon Limited, Regional Corporation (Doyon) and MTNT Limited, Village Corporation (MTNT) to explore and evaluate native selected land for hard rock mineral potential. Doyon and MTNT need to assess the land for mineral value to assure the best information possible to prioritize lands they have selected for conveyance.

B. Conformance With Land Use Plan:

The proposed mineral exploration is within lands included in the Southwest Planning area Management Framework Plan (MFP), signed November 1981. One of the plan objectives (objective M-2), states that the Bureau of Land Management (BLM) will provide opportunities for the development of locatable minerals throughout the planning area to meet the national demands for precious and strategic minerals. The Proposed Action is in conformance with this land use plan objective.

C. Relationship to Statutes, Regulations, Policies, Plans or Other Environmental Analyses:

The regulations for authorizing mineral exploration on Federal lands are established in the BLM's land regulations published in 43 CFR 2920. The 43 CFR 3809 Surface Management Regulations, which would consider mineral exploration impacts on Federal mining claims, do not apply as there are no mining claims underlying the subject lands.

II. PROPOSED ACTION AND ALTERNATIVES

A. Proposed Action:

On January 2, 2000, North Star Exploration, Inc. submitted an application to the BLM for a land use permit for a proposed mineral exploration program. On April 12, 2000, the application was amended to exclude the proposed trenching, significantly reducing the proposed surface disturbance. The exploration and evaluation will include geologic mapping, surface outcrop and soil geochemical sampling, ground based geophysical surveying, and diamond core drilling. No surface disturbance will be associated with mapping, sampling or surveying.

The proposed exploration work is located at Yankee Creek within the Innoko mining district (Ophir area) of southwestern Alaska. The legal land description is as follows:

Seward Meridian

T. 33 N., R. 37 W., Sec. 6

T. 33 N., R. 38 W., Sec. 14

The operation is being conducted on Native selected lands under the jurisdiction of the BLM. Maps illustrating the current land status of the property within the proposed sites are attached.

The work will occur during the next two field seasons. The employees of North Star will be housed at the nearby Ganes Creek camp. No camp facilities will be needed on the property for these operations.

Existing roads and trails will be used for access. Routes will be chosen that will cause minimum disturbance to vegetation and soil. Existing trails will be improved to provide safe passage of a medium sized bulldozer and/or excavator and small All Terrain Vehicles (ATVs).

Approximately ¼ mile of trail upgrades are needed on the southwesterly edge of Section 14, T. 33 N., R. 38 W., to connect to existing trails. A D-6 or D-7 Bulldozer will be used to upgrade the trails. No trees will be removed, although brush may have to be cut. The trails will be constructed or widened to a maximum width of ten feet.

Upon completion of the operation, the newly disturbed access trails will be contoured back to the original surface topography. Appropriate erosion berms and water bars will be placed. All disturbed areas will be seeded with appropriate native vegetation.

Drilling:

North Star Exploration proposes to drill approximately 5,200 feet of three inch diameter holes from which it will take core samples. Eight to twelve holes are planned. The holes will average 400 to 700 feet in depth.

North Star Exploration plans to use a CS-1000 self propelled, track mounted drill rig. The proposed drilling will be completed from eight separate drill sites, four in Section 6, and four in Section 14. Upon completion, all drill holes will be plugged with a bentonite hole plug and benseal mud, or equivalent slurry will be used to backfill the hole for a minimum of ten feet within the top 20 feet of the drill hole. The remainder of the hole will be backfilled to the surface with drill cuttings and organic material.

North Star Exploration plans to use timber decking drill platforms to minimize surface disturbance. Each platform will be approximately 20' x 20'. The decking will be transported by ATVs.

Agri-tanks will be used instead of sump pits to contain all drilling fluids and to recirculate the fluids back into the drilling process. This will result in no net discharge of drilling fluids to the environment and no surface disturbance.

Water for drilling operations will be obtained from Yankee Creek. Water will be taken from the creek using a pump with a two inch screened intake. It will be transported to the drill rig with rubber hoses over ground distances ranging from 1,000 feet to 5,500 feet. Water usage is estimated at a maximum of 5,000 gallons per day. After the drilling operation the water will be dispersed into the ground.

Diesel fuel will be contained in a steel tank or in 55 gallon drums, not to exceed 300 gallons. The fuel containers will be set at designated areas at each drill site. Each area will be bermed and lined with appropriate PVC plastic liners to State specifications. Fuel containers and the PVC liners will be removed when drilling operations are completed.

The total amount of surface disturbance on selected lands at the Yankee Creek project (drill pads, and trails) is estimated to be 1,600 sq. ft. or approximately 1/32 of an acre.

B. No Action Alternative:

The No Action Alternative would not allow the mineral exploration and consequently no development. Since the sites of the Proposed Action are in an undeveloped area, there would be no impacts to continue present management.

III. AFFECTED ENVIRONMENT

A. Critical Elements:

The following critical elements of the human environment are either not present or would not be affected by the Proposed Action:

- Areas of Critical Environmental Concern
- Environmental Justice
- Farm Lands (Prime or Unique)
- Floodplains
- Invasive, Non-native Species
- Native American Religious Concerns
- Threatened and Endangered Species
- Wetlands/Riparian Zones
- Wild and Scenic Rivers
- Wilderness

1. Cultural Resources:

The general area surrounding the Proposed Action was traditionally occupied by Ingalik Athabaskans and later Kuskokwim River Yupik. Historic European populations of the region consisted of early Russian fur traders and then American prospectors, traders and settlers.

2. Subsistence:

The BLM administered lands proposed for the activity are as follows:

N $\frac{1}{2}$ N $\frac{1}{2}$ Section 6, T. 33 N., R. 37 W., Seward Meridian
(exploration target designated as the Goss Area).

N $\frac{1}{2}$ N $\frac{1}{2}$ Section 14, T. 33 N., R. 38 W., Seward Meridian
(exploration target designated as the Tele Area).

The lands are currently selected by Doyon Limited and MTNT, and thereby do not meet the ANILCA Section 102 (3) definition of Federal Public Land and do not fall under the authority of the Federal Subsistence Board and associated regulations therefrom.

3. Water Quality, Surface/Ground:

There are no data on underground water in the area.

There are no surface streams in the immediate area of the trenching and drilling locations.

4. Wastes, Hazardous/Solid and Air Quality:

Specific current conditions regarding Wastes, Hazardous/Solid and Air Quality are unknown. However, former mining activities in this area may have left some solid wastes. Current air quality is assumed to be pristine.

B. Soils:

The exploration areas are located on two ridge tops above 1,500 feet in the Kuskokwim Highlands. Soils are very gravelly loams or silt loams on slopes and ridges directly above tree line. Depth to bedrock commonly ranges from 20 to 40 inches. Soils have an albic horizon about one inch thick and a dark, yellowish brown, gravelly, silt loam spodic horizon about 18 inches thick. The substratum consists of olive colored soils that are very gravelly and consist of a stony, sandy loam. Not enough moisture is retained in these soils to form ice-rich permafrost.

C. Visual Resources:

This area is managed under a Class III Objective. The objective of this class is to partially retain the existing character of the landscape. The Visual Resource Scenic Quality of the area rates at under 11 points (8 points) which is C Quality. The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

D. Vegetation:

The Proposed Action would occur on ridge tops and slopes of the Kuskokwim Highlands. This area is a maturely dissected area, characterized by rounded hills, long ridges and deeply sloping valleys. The vegetation on north facing slopes consists of mosses, sedges, and shrubs or stunted black spruce forest and a ground cover of moss. On south facing steep slopes, the vegetation consists of forests of white spruce, paper birch and aspen. Above tree line, the vegetation consists of alpine shrubs, lichens, grasses and mosses.

There are no known threatened and endangered plant species within the area of the proposed activity. There may be sensitive species on bare ridge tops or talus slopes, such as Douglasia beringensis, and Smelowskia pyriformis. This area is relatively unknown for sensitive species.

E. Wildlife:

Moderate to low densities of moose occur in the areas associated with willow shrubs and mixed forest. Predators such as wolves, black and brown bear, lynx and marten may frequent the area, but are highly mobile and would be encountered for short periods of time. Resident and migrant land birds nest and feed in shrub and forest habitats. There have been no wildlife surveys completed in this area to determine numbers and distribution in the area of the Proposed Action. There are no known threatened and endangered wildlife species within the area.

IV. ENVIRONMENTAL CONSEQUENCES

A. Impacts of the Proposed Action:

1. Cultural Resources:

No cultural resources are known for the area of exploration or the associated new trails or improved trails. Overflights by AFO archaeologists indicate that no standing structures or semi-subterranean pit houses exist in this area. However, no intensive on-the-ground survey has been performed in these areas. Since the Proposed Action does not lie on a major ridge system which might have been utilized for long distance travel and there is no water source close to these locations, there is a moderately low potential for surface or buried resources--most probably isolated flake scatters.

2. Subsistence:

The Proposed Action will not significantly restrict subsistence uses, decrease the abundance of subsistence resources, alter the distribution of subsistence resources, or limit subsistence user access from currently existing conditions. No further analysis is necessary at this time.

3. Water Quality:

The core drill holes will likely encounter an unknown number of aquifers. The possibility of water from one aquifer contaminating another exists if proper hole plugging procedures are not followed. Drill holes also present a conduit for surface contaminants to enter the subsurface and contaminate aquifers if proper hole plugging methods are not implemented.

No long term impacts are expected to surface water if erosion control techniques are taken. Some temporary point source discharge may result from soil erosion during the exploration activities. However, it is unlikely that any sediment discharge would impact local surface waters due to the overland distance such a discharge would have to travel.

4. Wastes, Hazardous/Solid:

The Proposed Action will construct access roads and drill wells using heavy equipment. Ideally, fuel, oil, or other pollutants will not be released by this operation, but a leak could occur and contaminate local soil and vegetation.

Solid wastes requiring disposal after operations cease will include timber decking, drilling muds, possible core samples, etc. Additionally, human waste will be created by the workers.

5. Soils:

Clearing old roadways will require removing vegetation and topsoil layers in some cases and in others require cut and fill techniques which will destroy previously undisturbed soil profiles. Removal of the organic mat and alteration of soil profiles invites erosion if water is allowed to collect and run off from large areas.

6. Visual Resources:

There will be some visual impact in the form of trail upgrades and drill sites. The impact will be minimal as surface disturbance is estimated at 1/32 of an acre. Visibility of the exploration activity will be greatest from overflying aircraft. The overall impact will be lessened because this is a long term placer mining area and considerable disturbance has taken place in the past.

7. Vegetation:

Principle impacts of the Proposed Action would be the removal of approximately one acre of vegetation and overburden for the trenches and drill sites. Trail improvements would remove approximately 1.2 acres of vegetation. It is unknown if the overburden and excess material from trail improvements would be completely stripped off and side cast, or immediately replaced as the trenching moves forward. If the overburden is side cast into undisturbed areas, then the total footprint of disturbance would be greater. The seed mixture specified in the Proposed Action is unknown other than native vegetation. Depending on the mixture, especially if composed of only grass species, the area could differ in species content for several years until the surrounding native shrubs and forbs recolonize. If the work occurs on steep slopes, soil erosion and associated decreases in soil moisture could extend the length of time for the area to revegetate.

8. Wildlife:

The impacts of clearing existing access trails and drilling for mineral exploration will cause a small loss of forest and shrub habitats. It will also cause a displacement of moose and land birds dependent on those habitats. The noise associated with the equipment used to clear trails, trench and drill during exploration activities will also displace wildlife from nearby, unaffected shrub and forest areas. Displaced animals may be more vulnerable to predators, thereby increasing mortality. There is a high potential for encounters with bears by persons working in the field crew, increasing the chance of the taking of bears for the defense of life and property.

B. Impacts of the No Action Alternative:

The impact of the No Action Alternative would be to deny Doyon and MTNT mineral information on which to prioritize their land selections.

C. Cumulative Impacts:

No direct or indirect impacts will remain after application of the mitigation measures. Cumulatively the Proposed Action would increase the disturbed acreage in an already disturbed area. The impacts of the Proposed Action would slightly increase the overall impacts and would blend in with existing mining in the area.

D. Mitigation Measures:

1. Cultural:

No additional mitigation beyond the standard Right-of-Way stipulation (H-2801-1 2a) concerning previously undiscovered cultural materials is needed.

2. Water Quality:

For protection of groundwater quality, well abandonment should follow Alaska Department of Environmental Conservation Monitoring Well Recommended Practices and/or comparable U.S. Environmental Protection Agency standards. Specifically, aquifers encountered in the wells must be sealed above and below each saturated zone to avoid cross-communication of aquifers. A permanent surface seal must be installed.

3. Wastes, Hazardous or Solid:

All hazardous or solid waste will need to be removed and properly disposed of. Some sanitary method of dealing with human waste produced by the workers will need to be devised.

4. Soils:

In addition to the proposed reclamation measures in the application, it is recommended that all disturbance be minimized where possible. It is preferable to drive tracked vehicles over low vegetation rather than blade it out of the way for a smoother driving surface for wheeled vehicles. Minimal blading is recommended on trails used for access to drilling sites. Routes from main roads to the drill sites and between sites should be planned to minimize the total length of access routes necessary prior to initiation of exploration.

Any roads or trails should be sloped to disperse excess water to the surrounding vegetation. Water bars should be installed at regular intervals

as slope requires to keep water off the trails and prevent erosion. Topsoil from bladed roads should be spread over the disturbed areas to promote natural re-vegetation and reduce erosion. Vegetation removed from the trails or drill sites should be used where necessary as an erosion control measure. Re-seeding should occur well before frost in the fall. If reseeded and natural revegetation does not show rapid response within one to two years, a second seeding and fertilization may be required

Although reclamation proposals in the application are stated, the result of site inspections by the BLM may require additional reclamation measures. The development of a site specific reclamation plan by the applicant is recommended before any access or exploration begins.

5. Visual Resources:

Mitigation measures required for soil and vegetation will reduce the impacts to visual resources. Reclamation of the disturbed areas will minimize any long-term visual disturbances.

6. Vegetation:

Disposal or stockpiling of vegetative material and topsoil removed during construction on undisturbed vegetation should be avoided. Excess topsoil and vegetation should be spread and smoothed over cuts or bare subsoil areas to allow for re-vegetation. The drill sites should be backfilled to the original contour and reseeded. Compacted soils will need to be ripped on roads and staging areas to prepare the sites for seeding. Part of the Proposed Action, that of overburden removal/stockpiling and re-seeding with native species is mitigation. However, choosing a mixture of grasses and forbs of native plants species that will approximate the pre-existing conditions is required. The development of a site specific reclamation plan by the applicant and approved by BLM is recommended before exploration begins. The reclamation plan should specify seed mixtures to be used, rates of seeding and sources of seeds.

7. Wildlife:
Although the field crew will not be living at the site of the actual drilling, the exploration sites must be kept clean of food and garbage that could attract bears. All garbage and food must be removed from the sites, or burned and the ashes buried to prevent attracting bears.

V. CONSULTATION AND COORDINATION

- A. Persons and Agencies Consulted:
Alaska Department of Environmental Conservation
Alaska Department of Natural Resources

- B. List of Preparers:
Carl Persson, Geologist
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