



**National Park Service  
U.S. Department of the Interior**

**Lake Clark National Park and Preserve  
Interior Region 11 – Alaska**

**FINDING OF NO SIGNIFICANT IMPACT  
Right-of-Way Certificate of Access for North Tract of Johnson Tract**

Recommended:

**SUSANNE GREEN**

Digitally signed by SUSANNE GREEN  
Date: 2020.11.24 10:54:04 -09'00'

Susanne Fleek-Green  
Superintendent, Lake Clark National Park and Preserve

Date

Approved:

Donald Striker  
Acting Regional Director, Interior Region 11 – Alaska, National Park Service

Date

# 1. Introduction

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) prepared an Environmental Assessment (EA) to examine alternative actions and environmental impacts associated with the proposed action to issue a Right-of-Way Certificate of Access (RWCA) to Cook Inlet Region, Inc. (CIRI) lessee, HighGold Mining, Inc. (HighGold) to access and explore the minerals of the North Tract of the Johnson Tract (Parcel: LACL 03-107) within Lake Clark National Park and Preserve (LACL). CIRI was conveyed the lands comprising the Johnson River Tract under the Cook Inlet Land Exchange Act to fulfill CIRI's land selections under the 1971 Alaska Native Claims Settlement Act (ANCSA). These parcels were selected for their mineral potential and CIRI retains surface and subsurface mineral estate of the South Tract and the subsurface mineral estate of the North Tract. The issuance of the RWCA is necessary to ensure that the lessee has adequate and feasible means to access the subsurface mineral estate of the North Tract, while establishing reasonable stipulations to protect park resources.

The statements and conclusions reached in this finding of no significant impact (FONSI) are based on documentation and analysis provided in the EA and associated decision file. To the extent necessary, relevant sections of the EA are incorporated by reference below.

## 2. Selected Alternative and Rationale for the Decision

Based on the analysis presented in the EA, NPS selected Alternative 2 – Issue RWCA Authorizing Helicopter Access and Exploratory Drilling on LACL 03-107 (Proposed Action and Preferred Alternative). This alternative includes issuance of a RWCA to CIRI authorizing helicopter access to the North Tract, exploratory drilling, and nondestructive surveys to support mining activities. This right-of-way will be the primary access for exploration of the North Tract.

Seasonal work on the North Tract will occur between June 1 and October 31 annually through 2028. Activity will vary annually, with a maximum exploration period of 150 days. Drilling activity on the North Tract will be confined with the majority expected to occur in the focus core drilling areas.

Helicopter access will support the drilling operations and typically requires the construction of helipads to safely access the steep, rocky terrain typical of the focus areas. Helipads are constructed of timber and have an area 14 feet by 14 feet. When possible, one helipad will support multiple drillpads.

During the 8-year period of exploration, between 20 and 150 drillpads will be needed. The number varies depending on the drilling results, with positive results leading to additional drilling and drillpads. The drillpads will be temporary and provide stable, level platforms to support the drills and associated supplies. Pads are constructed of wood timbers placed on the ground with minimal surface disturbance. The footprint is typically 20 feet by 20 feet.

Water is needed to lubricate the drill during operation, requiring a water pump to draw surface water from a nearby source. A water supply pump pad will be constructed near the water source to support the pump. Construction is like the drillpad, with a timber frame covering a 12 by 12 feet footprint.

Return water from the drilling contains drill cuttings (fine rock sediment) and may stay within the subsurface rock formation or may return up the drillhole to the surface. If cuttings reach the surface, procedures will be in place to contain them and avoid their release to surface waters. The procedure includes directing cuttings to unlined sumps for settling. Any sumps used to collect cuttings will be filled with soil obtained on location and capped with a 6-inch clay cap during site reclamation.

Fuel will be required for each drill and water pump. Fuel will be transported via helicopter in fly tanks ranging in capacity from 70 to 130 gallons and incorporating secondary containment. Water supply pump stations and drilling pads will have fuel stored in secondary containment with cumulative storage of up to 260 gallons. Personnel will be trained in spill prevention and spill response procedures, with training occurring at least annually. Spill kits will be located at all drill and pump sites.

The NPS will incorporate the Proposed Permit Stipulations in the EA in the RWCA in order to provide measures to protect park resources and values.

## **Rationale**

Access to inholdings in Alaska National Parks is governed by the Alaska National Interest Lands Conservation Act (ANILCA) Section 1110(b), which states that the NPS shall provide adequate and feasible access to privately owned lands that are encapsulated by public land.

Alternative 2 was selected because it best meets the purpose and need identified in the EA: to provide adequate and feasible means for CIRI and their lessee HighGold to access and explore the mineral of their mineral estate on the North Tract of Johnson Tract within Lake Clark National Park and Preserve. The inholder has requested helicopter access to the North Tract to explore the subsurface mineral estate of the North Tract.

Issuing a RWCA is the NPS's way of recognizing the legal access rights of inholders. The RWCA describes and permits the route to the inholding across NPS lands, the mode of travel, and the maintenance the inholder may perform. The NPS has identified the access route, methods of access, and has developed reasonable terms and conditions for the RWCA governing use of the route in order to protect park resources and minimize potential impacts to park resources and values.

Over the term of the RWCA, any substantial changes to accessing the mineral estate would require an amendment to the RWCA and would warrant additional NEPA analysis.

The NPS implements ANILCA Section 1110(b) through regulation 43 CFR 36.10. This regulation defines "adequate and feasible access" and identifies the criteria the NPS must follow to ensure that the route and method of access are compatible with the request of the private landowner, unless

otherwise adequate and feasible access exists. The NPS has determined that no other means of adequate and feasible access exists that meet the stated access needs of the landowner.

Under the No Action alternative, the landowners would not be provided with an adequate and feasible means to access their property. Refusal to issue a RWCA to the landowner when no other adequate and feasible means of access to the inholding otherwise exists would be in violation of ANILCA Section 1110(b), 43 CFR 36.10, and would violate the inholder's statutory rights.

### 3. Mitigation Measures

- Helicopter landings on LACL lands will be restricted to the North Tract.
- If previously unidentified archeological resources are encountered, work in the discovery area will be interrupted until an NPS archeologist is contacted, able to assess the site, and the State Historic Preservation Officer has been consulted regarding the significance of the discovery using the National Register Criteria (60.4).
- Helicopter flights will be kept to the minimum needed to transport field crews. If a bear is observed during flight, at least one kilometer of distance will be maintained to minimize disturbance. When this distance cannot be maintained, an alternative flight path will be considered.
- If a field crew encounters a freshly excavated bear den or a bear denning, work in the area may only continue if a minimum separation distance of one kilometer can be maintained. This distance will limit bear disturbance and minimize the chance for a negative human-bear encounter. Encounters will be reported to Lake Clark National Park Natural Resources Program Manager.
- HighGold will perform a visual inspection for active bird nests before constructing new pads. New pad construction will be postponed or relocated if an active nest is identified within 100 feet of the pad site.
- HighGold will avoid any ground- or vegetation-disturbing activity at or near the known *Cladonia luteoalba* lichen population located in the project area. This plant is identified by the Alaska Natural Heritage Program as critically imperiled in the state. The approximate geographic coordinates of the occurrence are: 60.15208, -152.94970 decimal degrees. The NPS will be consulted if such activities could occur within one-quarter mile of this population.
- To prevent the spread of invasive species into the park, clothing, gear, building materials, and all equipment will be cleaned and be free of soil or plant material before entering the park.
- HighGold will visit drilling sites two to three years after reclamation to determine if any invasive species have become established.
- If invasive species are found in the project area, the NPS will be consulted for appropriate measures to remove them.

- Invasive species-related issues and mitigations will be presented within the annual activity and reclamation report to the NPS.
- Any ground disturbance resulting in removal of vegetation will have that vegetation restored after soil or rock samples are removed.
- Baseline water quality and stream sediment metal concentrations data will be collected for stream reaches downgradient from drilling locations. The following parameters will be measured in the water: pH, specific conductance, and at minimum the following metals: Arsenic, Copper, Iron, Lead, Zinc. The same metal concentrations will be analyzed in the stream sediment samples using sampling methods and analytical procedures that comply with AKDEC standards. Data will be provided to the NPS within three months of the annual operation end date.
- Continuous monitors for pH and specific conductance will be installed along streams with active drilling, downgradient of operations, and collect hourly data for the duration of the operational season. Data will be provided to the NPS.
- At the end of each drilling season, all indicated water quality and stream sediment parameters shall be re-measured in reaches where exploration activities have been conducted. These data will be reported to the NPS within three months of the annual operation end date.
- HighGold will obtain a Fish Habitat Permit from the Alaska Department of Fish and Game Habitat Section regarding Title 16 permit requirements for work in fish bearing waters.
- Drillpads, helipads, and sumps will be kept at least 50 feet from flowing water.
- A 1/8-inch stainless steel screen will cover the intake hose to prevent organisms from being pulled into the pump. The intake will be placed in a 5-gallon bucket to further mitigate this risk.
- In situations when stream levels are extremely low and field crews have trouble maintaining sufficient intake flows, work will be suspended until flows increase to minimize potential dewatering impacts to fish downstream. Alternatively, another water source could be used if sufficient flows are present.
- Drilling fluids will consist primarily of water. Use of non-toxic additives appropriate for use in potable water well drilling may be used when necessary.
- All bypass water will be mitigated by placing the bypass outlet on well-vegetated or hard-to-erode ground of shallow slope, by configuring the outlet to slow flow, and by inspecting the site twice daily.
- Drill fluids are recycled to reduce contact volumes and keep all contact waters contained within the borehole and sump.
- Sumps will be unlined and used to retain drill cuttings and fluids.
- Sumps will be dug deeply enough to retain all drill fluids and the surface of the residual drill muds and cuttings will be at least 1.5 feet below the surrounding surface. Place a 0.5-foot-thick bentonite clay cap on drill sumps and cover the clay cap with native soil and native vegetation. This bentonite cover will encourage water runoff and seepage to travel around the sump contents thereby minimizing the infiltration of oxygen and water into the drill cuttings and reduce the rate of oxidation of any pyritic cuttings. In this configuration vegetation will

not be in contact with any drill mud and cuttings and the clay cap will provide an effective barrier between mud and cuttings and any natural vegetation recruitment. Deeply buried drill mud and cuttings will reduce the availability of the sulfides to shallow ground water and oxidation and delay the groundwater from reaching nearby surface waters.

- HighGold will cease exploration activities when the ground is no longer able to absorb discharge due to being frozen or saturated.
- Silt fences will be placed downgradient of sumps to prevent accidental overflows from spreading into the environment.
- Drillholes will be filled and plugged to inhibit flow after drilling is complete.
- All products associated with drilling and drillhole reclamation (including products used to seal artesian wells) will always be kept in containment to prevent escape to the environment.
- Drill cuttings and fluids will not be discharged directly into any standing or flowing water or vegetated areas.
- HighGold will conduct daily inspections of the drill sites, water sources, and sumps to identify potential issues. Issues will be reported to the NPS immediately.
- Any gross introduction of sediment/turbidity to a water source will be reported to the NPS and Alaska Department of Environmental Conservation immediately.
- Reclamation of sumps and bare ground, using stockpiled overburden and topsoil, will greatly reduce the volume of sediment exposed to potential erosive forces.
- In reclamation, no excavated ground is left with a slope >15% greater than the surrounding slopes and soil will be covered by rocks of the same average size as the surrounding rocks, or if initially vegetated, native vegetation.
- Drillpad and sump location coordinates will be provided to the NPS annually.
- HighGold will support an NPS visit to each drillpad and sump location two years following reclamation to determine the success of their efforts.

## **4. Public Involvement/Agency Consultation**

The EA was placed on the NPS Planning, Environment and Public Comment (PEPC) website on September 16, 2020 where it was available for public review and comment through October 16, 2020. A virtual public informational session was conducted on September 24, 2020. A recording of this session was available online for 20 days, with a copy available from LACL after that period expired. Notification of the availability of the EA for public comment included a press release, posting on park website, email to commercial service providers, and email to local residents.

### **Tribal and Alaska Native Corporation Consultation**

Letters were sent to Chickaloon Native Village, Kenaitze Indian Tribe, Native Village of Tyonek, Ninilchik Traditional Council, Salamatof Tribal Council, and Seldovia Village Tribe on May 26, 2020 informing about the project details and offering Government to Government consultation.

A follow-up email was sent to Chickaloon Native Village, Kenaitze Indian Tribe, Native Village of Tyonek, Ninilchik Traditional Council, Salamatof Tribal Council, and Seldovia Village Tribe on

June 11, 2020 to discuss the project and determine if formal consultation was requested. A second follow-up email was sent to and to Chickaloon Native Village, Native Village of Tyonek, and Seldovia Village Tribe on June 25, 2020.

Consultation with Chickaloon Village Traditional Council occurred via video-conference on July 10, 2020.

### **Endangered Species Consultation**

Informal consultation with the U.S. Fish and Wildlife Service through the IPAC system was initiated on July 31, 2020 to determine if threatened and endangered species occur within the proposed project area. No species were identified, and a formal Biological Assessment was not prepared for this project.

### **Summary**

The project received nineteen (19) separate comment letters during the public comment period, from these letters the NPS determined that there were forty-eight (48) substantive comments that warranted response. The comments did not change the conclusions in the EA regarding the environmental effects of the action. Responses to substantive comments are found in Appendix A. Errata are reflected in the Revised EA.

## **5. Finding of No Significant Impact**

As described in the EA, the selected alternative has the potential for adverse impacts on water resources, aquatic resources, wildlife, natural soundscape, vegetation and soils, and viewshed; however, no potential for significant adverse impacts was identified. Section 3: Mitigation Measures identifies stipulations that will be included in the RWCA to protect park resources and values.

- **Water Resources:** The issuance of a RWCA authorizing up to 150 drillpads, helipads, and water pump pads over an 8-year period will disturb a maximum of 2.7 acres. Construction of infrastructure will disturb soil and could remove vegetation, water pumping will reduce flows to lower reaches of streams, and drill cuttings will contain sulfide minerals.
- **Aquatic Resources:** The issuance of a RWCA authorizing withdrawal water from surface waters in the North Tract. Resident and anadromous fish are found in waters of the North Tract, and water pumping will reduce flow and water pumps could draw in juvenile fish, causing mortality. The presence of chalcopyrite in drill cuttings could lead to increased concentrations of copper in the nearby streams, which fish are sensitive to.
- **Wildlife:** The issuance of a RWCA authorizing helicopter use to support construction and operations will increase noise on the North Tract. Noise created by drilling, water pumps, and helicopters will disturb wildlife. Infrastructure construction will reduce habitat. Humans on the landscape will increase encounters with bears, increasing the risk of negative bear-human interactions.



- **Natural Soundscape:** Over the 8-year project, human induced noise will be present from June 1 to October 31 on the North Tract. Drilling operations will run for up to 24 hours per day, creating continuous mechanical noise during this period.
- **Vegetation and Soils:** The natural vegetation and soils in the North Tract will be disturbed at up to 150 sites within the drill areas. The risk of damaging or destroying unknown occurrences of rare plants. An increase in human activity and introduction of materials from outside the area will increase the risk of establishing exotic plants.
- **Viewshed:** The presence of drillpads, helipads, and water pump pads will degrade the natural viewshed within the North Tract. Alternative 2 will not result in significant adverse impacts to water resources, aquatic resources, wildlife, natural soundscape, vegetation and soils, of viewshed. The impacts to these park resources will begin during the initial construction for exploratory drilling and persist through the 8 years authorized by the permit.

There will be no effects to subsistence resources in the area because the project occurs within an area of Lake Clark National Park in which current subsistence use is not occurring. There will be no significant impacts on public health, public safety, or unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the NPS selected alternative will not violate any federal, state, or local environmental protection law. The NPS has prepared a Non-Impairment Finding that is included as Appendix B.

## 6. Conclusion

As described above, the selected alternative does not constitute an action meeting the criteria that normally requires preparation of an environmental impact statement (EIS). The selected alternative will not have a significant effect on the human environment in accordance with Section 102(2)(c) of NEPA. Based on the foregoing, it has been determined that an EIS is not required for this project and, thus, will not be prepared.

This action complies with the Endangered Species Act, the National Historic Preservation Act, and Executive Orders 12898 and 13175. There will be no significant restriction of subsistence activities as documented by the ANILCA Title VIII, Section 810 summary evaluation and findings.

### Appendices include:

- Appendix A: NPS Response to Public on the Environmental Assessment for Right-of-Way Certificate of Access for North Tract of Johnson Tract
- Appendix B: Non-Impairment Finding on the Environmental Assessment for Right-of-Way Certificate of Access for North Tract of Johnson Tract



## Appendix A:

### NPS Responses to Public Comments and Errata Indicating Text Changes to EA for Right-of-Way Certificate of Access for North Tract of Johnson Tract Appendix Heading AKR

#### Lake Clark National Park and Preserve

In response to the environmental assessment the NPS received nineteen (19) comments through the Planning, Environment & Public Comment system, email, postal mail, or delivered by hand to the Lake Clark National Park and Preserve headquarters in Anchorage, Alaska. Of these comments, fifteen (14) were from private individuals (PI), one (1) from the applicant HighGold, one (1) was from the State of Alaska, ANILCA Program (SOA), and three (3) were from a non-profit organizations (National Parks Conservation Association (NPCA), Alaska Wildlife Alliance (AWA), Cook Inletkeeper (CIK)).

The NPS has read and considered all comments received. Responses to substantive comments are provided below. A substantive comment is defined as one which leads the NPS to: (1) modify an alternative, including the proposed action; (2) develop and evaluate an alternative not previously given serious consideration; (3) supplement, improve, or modify the environmental analysis; or (4) make factual corrections (CEQ NEPA Regulations 40 CFR 1503.4).

**Comment #1 PI:** Several individuals recommended studies to be funded by the applicant to monitor impacts on wildlife other than bears, specifically wolverines.

**Response #1 NPS:** Overall, direct disturbance to wildlife habitat is less than 3 acres. Indirectly, the infrastructure and project activity will likely cause avoidance by some species which will cause wildlife to use other areas. For wolverines, avoidance of the area is likely. Wolverines exist at low densities throughout their range and require large home ranges to meet their biological needs. In Alaska, resident males have home ranges between 200-260 mi<sup>2</sup>, with resident females having a range as large as 115 mi<sup>2</sup> (<https://www.nps.gov/articles/wolverine.htm>). Outside Alaska, wolverines in the Greater Yellowstone Ecosystem had home ranges of 116mi<sup>2</sup> for females and 307mi<sup>2</sup> for males (Inman et.al. 2012). Density estimates for wolverines in high-quality habitat averaged 6.2 wolverines/1,000 km<sup>2</sup> in British Columbia, Canada (Lofroth and Krebs 2007). In south-central Alaska, density estimates were 3.0 wolverines/1000km<sup>2</sup> (Golden et.al. 2007). The North Tract is 15mi<sup>2</sup>, with the low potential drilling area encompassing 5.8mi<sup>2</sup> of that area. If wolverines avoid the North Tract, the habitat loss would represent less than 13% of the average female home range. Given their low expected density, large home ranges, and the small direct and indirect loss of habitat within the North Tract, the effects on wolverines will be minor and temporary.

Golden, H. N., Henry, J.D., Becker, E.F., Goldstein, M.I., Morton, J.M., Frost, D., Sr. & Poe, A.J. 2007: Estimating wolverine *Gulo gulo* population size using quadrat sampling of tracks in snow. Wildlife Biology 13(Suppl. 2): 52-61.

Inman, R. M. , M. L. Packila, K. H. Inman, A. J. Mccue, G. C. White, B. C. Aber, M. L. Orme, K. L. Alt, S L. Cain, J. A. Fredrick, B. J. Oakleaf, and S. S. Sartorius. 2012. Spatial Ecology of wolverines at the southern periphery of distribution. *Journal of Wildlife Management* 76(4): 778-792.

Lofroth, E. C., And J. Krebs. 2007. The abundance and distribution of wolverines in British Columbia, Canada. *Journal of Wildlife Management* 71(7): 2159-2170.

**Comment #2 PI:** Several commenters expressed concerns over helicopter disturbance of wildlife

**Response #2 NPS:** Little scientific research has been devoted to assessing helicopter disturbance in relation to species expected to be found on the North Tract. Wildlife are expected to be most susceptible to disturbance of helicopters in this area are bears, wolverines, and wolves. Research in northern Scandinavia (Stoen et. al. 2010) investigating brown bear response to helicopter approach, found that bears decreased their movement and remained within similar habitat types and terrain. Movements were influenced for a period of about two hours and didn't reduce the size of area used by bears. Approach by helicopter in this work was direct towards the animals and to within 50-100 meters. Sensitivity to disturbance is greatest during biologically and physiologically demanding periods, such as denning. Female wolverines enter reproductive dens within deep snowpack during with kits born in mid-February to early March, and they occupy these dens through late April or mid-May (Hash 1987, Magoun and Copeland 1998, Persson et. al. 2006, Copeland et. al. 2010, Inman et al. 2012). Bear research in the interior of Lake Clark National Park and Preserve found average den entry dates to be 20 October and 28 October for female and male brown bears, respectively (Mangipane et al. 2018). Work for the project is planned to occur between June and October which is outside of the denning period for wolverines. Bears will likely be moving towards denning habitat in October, so to mitigate disturbance, work in identified bear denning habitat will be undertaken from June to September to avoid disturbing bears as they move to denning habitat. During summer, if bears are observed during flight the helicopter is to maintain a one kilometer distance from the bear and if that is not possible, find an alternative flight path. Wolves are not expected to use the North Tract as their primary prey species on the coast, moose, are not commonly found in the habitat types common on the North Tract.

Copeland, J. P., et al. 2010. The bioclimatic envelope of the wolverine (*Gulo gulo*): Do climatic constraints limit its geographic distribution? *Canadian Journal of Zoology* 88:233–246.

Hash, H. S. 1987. Wolverine. Pages 575–585 in M. Novak, editor. *Wild furbearer management and conservation in North America*. Ontario Trappers Association, North Bay, Ontario, Canada.

Inman, R. M. , M. L. Packila, K. H. Inman, A. J. Mccue, G. C. White, B. C. Aber, M. L. Orme, K. L. Alt, S L. Cain, J. A. Fredrick, B. J. Oakleaf, and S. S. Sartorius. 2012. Spatial Ecology of wolverines at the southern periphery of distribution. *Journal of Wildlife Management* 76(4): 778-792.

Magoun, A. J., and J. P. Copeland. 1998. Characteristics of wolverine reproductive den sites. *Journal of Wildlife Management* 62:1313–1320.

Mangipane L. S., J. L. Belant, D. D. Gustine, G. V. Hilderbrand, and B. A. Mangipane. 2018. Sex-specific variation in denning by brown bears. *Mammalian Biology* 93: 38-44.

Persson, J., A. Landa, R. Andersen, and P. Segerstrom. 2006. Reproductive characteristics of female wolverines (*Gulo gulo*) in Scandinavia. *Journal of Mammalogy* 87:75–79.

Stoen, O. G., W. Neumann, G. Ericsson, J. E. Swenson, H. Dettki, J. Kindberg, and C. Nellemann. 2010. Behavioural response of moose *Alces alces* and brown bears *Ursus arctos* to direct helicopter approach by researchers. *Wildlife Biology* (16): 292-300

**Comment #3 PI:** Many commenters requested that permit duration of 8 years was too long and should be a 1- or 2-year permit.

**Response #3 NPS:** CIRC and HighGold applied for an eight-year RWCA permit from the NPS. Under ANILCA Section 1110(b) and through regulation 43 CFR 36.10 the NPS is directed to grant the inholders “adequate and feasible access” and by the route and method desired by the applicant unless otherwise adequate and feasible access exists. In addition, when NPS developed the RWCA permit system to meet the intent of ANILCA, it was acknowledged that unlike other types of discretionary permits that the NPS issues, RWCA's should provide more guaranteed and reliable access to inholders as they are tied to a statutory right to access. A shorter permit period would not meet this standard and the NPS did not find that the full eight-year permit period would create additional impacts on park resources that were not being mitigated by the RWCA stipulations. Finally, standard in every RWCA, is the stipulation the RWCA may be amended to adjust the terms and conditions for changed conditions, to correct oversights, or to address conditions not previously contemplated.

**Comment #4 PI:** Several individuals commented on potential wildlife impacts in Tuxedni Bay, including impacts to humpback whale, beluga whale and spectacled eider.

**Response #4 NPS:** The EA has assessed the impacts of the project as proposed by the applicant. They are requesting helicopter access to the North Tract of the Johnson Tract. The EA and RWCA permit would authorize access and landing of helicopters by the applicant only within the North Tract of Johnson Tract. Tuxedni Bay is not contiguous to the North Tract and the access and activities authorized by this EA will not impact endangered wildlife that use Tuxedni Bay.

**Comment #5 PI:** An individual expressed concern that impacts of long-term plans for future development actions were not adequately considered.

**Response #5 NPS:** This EA assesses the RWCA and exploratory drilling proposed by the subsurface titleholder and its lessee. The proposed action was assessed, and the impact analysis considered reasonably foreseeable future actions. At this time, it is indefinite if the exploration activities will result in development of a mine requiring land-based access. Therefore, it was not included in the future actions. Similarly, other future developments are considered speculative at this time.

**Comment #6 PI:** Several commenters expressed that the impact analysis did not cover a large enough area.

**Response #6 NPS:** For resources analyzed in the EA, effects that could extend beyond the boundary of the North Tract were considered. Project effects having the potential to go beyond the North Tract boundary were considered for both water and aquatic resources. For both, mitigation measures to monitor and maintain water quality and quantity have been created to ensure that degradation is avoided through proactive measures and monitoring.

**Comment #7 HighGold:** The project area is not defined and seems to imply the North Tract in some instances but a larger area in other sections of the EA.

**Response #7 NPS:** The project area is the North Tract. There are some resources such as water and aquatic resources which originate on the North Tract but extend beyond its boundaries. In those instances, areas outside of the North Tract may be described and included in analysis.

**Comment #8 HighGold:** The EA does not adequately describe the other aircraft activity in the general area, so the Natural Soundscape section overstates the sound impact of the project helicopter and understates the sound impact of the commercial fixed-wing traffic.

**Response #8 NPS:** The EA acknowledges that air traffic is common along the western shorelines of Cook Inlet. This area is approximately 13 miles from the North Tract, so has limited affected on the natural soundscape. While overflights occur, higher altitude flight patterns traversing the area impact the soundscape throughout the region and are not any less or more common over the North Tract. The localized noise of the drilling operation and supporting helicopter flights will noticeably add to the human caused noise in the North Tract.

**Comment #9 HighGold:** Alternative 1 – is not a viable alternative. CIRI as the dominate estate owner could seek other means to access the subsurface mineral estate.

**Response #9 NPS:** NEPA requires a No Action alternative and selecting it would only be appropriate if an adequate means of access otherwise exists. In this instance, the No Action alternative does not provide adequate and feasible access to the inholding that is required by ANILCA.

**Comment #10 HighGold:** The impact analysis does not clearly discuss potential impacts, mitigation measures, and the resulting net impacts. There is also a lack of supporting discussion and evidence for some of the impacts that are identified.

**Response #10 NPS:** The NPS identifies issues, potential impacts, and mitigation measures enacted through permit stipulations in the EA, as well as measures proposed by the project proponent. The analysis was conducted assuming all of these resource protection measures would be implemented, as they will be required under the terms of the permit. While the mitigation measures, manifested as stipulations, will greatly limit the likelihood and magnitude of impacts, impacts remain. As stated in

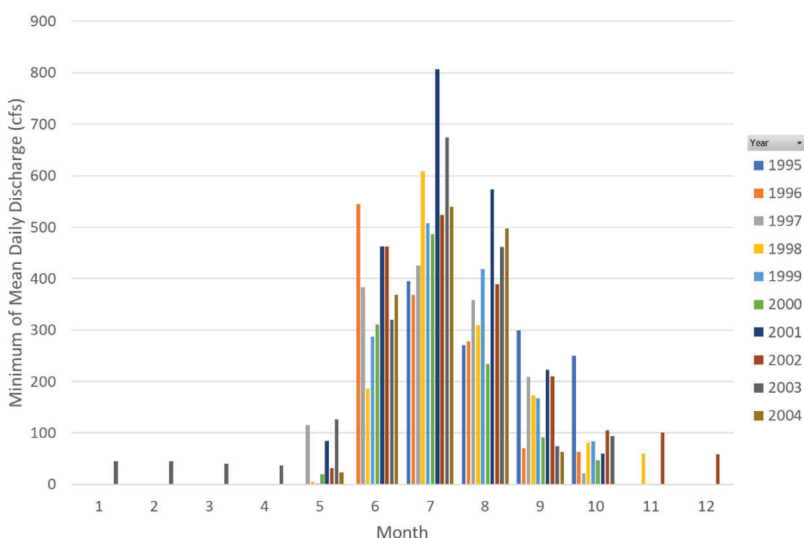
the conclusion, these impacts are estimated to be limited in context and intensity and affected resources are expected to recover after operations cease.

**Comment #11 HighGold:** There should be better descriptive language of stream flow relative to proposed water withdrawal. JTMI will draw up to 0.04cfs (0.25gps) from its water pump site(s). This is extremely small compared to the base flow for the Johnson River where monthly summer average flows range from 183cfs (1,369gps) to 719cfs (5,378gps). Flow will remain within the normal range of summer flows regardless of water withdrawals for drilling. This suggests that the water withdrawal is extremely unlikely to have any impact on vegetation or aquatic organisms.

**Response #11 NPS:** In the context of base flow for the Johnson River, the proposed withdrawal is indeed small and likely to be inconsequential during months when work is planned (i.e., June – October). However, mean daily flows in October for the Johnson River reached minimum values below 100 cfs in most years on record (1995-2003; Figure 1). Therefore, when considering potential impacts of work on base flows for the Johnson River, it makes more sense to quantify flow in October than July, as suggested by the reviewer.

Furthermore, impacts are likely to be greater when considered in the context of the smaller tributaries that overlap the focus core drilling areas of the North Tract (e.g., Difficult, Hungryman, Kona, and Ore creeks), all of which support resident and/or anadromous fish. Continuous hourly flow data are unavailable for these tributaries. However, discrete data indicate that flows in September reach 45 cfs at Hungryman Creek, 14 cfs at Kona Creek, and 9 cfs at Ore Creek (Table 1). Base flows at these tributaries are undoubtedly lower. In smaller creeks such as these, the proposed water withdrawals could be impactful, and the mitigation measure of suspended drilling during low flows is conservative and appropriate.

**Figure 1:** Minimum of mean daily discharge, by month, at the USGS' Johnson River stream gage (site ID 15294700), which operated from August 1995 through August 2004. Data are available at <https://waterdata.usgs.gov/nwis>.



**Table 1:** Discrete discharge measurements compiled for four creeks located in the North Tract.

Creek	Date	Discharge (cfs)	Source	Specific location
Difficult	6/17/1997	151.8	Deschu unpublished data	
Hungryman	6/17/1997	214.9	Deschu unpublished data	
Hungryman	9/1/1997	44.9	Deschu unpublished data	
Kona	8/24/1993	37.7	Deschu unpublished data	
Kona	6/23/1995	190.0	Deschu unpublished data	
Kona	7/31/1996	49.7	Deschu unpublished data	
Kona	9/3/1996	14.3	Deschu unpublished data	
Kona	8/31/1997	64.8	Deschu unpublished data	
Kona	7/24/2000	123.0	Brabets and Riehle 2003	0.85 mi above mouth
Kona	7/26/2000	56.0	Brabets and Riehle 2003	3 mi above mouth
Kona	7/26/2000	67.0	Brabets and Riehle 2003	2.5 mi above mouth
Ore	8/24/1993	11.3	Deschu unpublished data	
Ore	8/23/1994	34.6	Deschu unpublished data	
Ore	6/23/1995	56.0	Deschu unpublished data	
Ore	7/31/1996	8.7	Deschu unpublished data	
Ore	9/3/1996	8.6	Deschu unpublished data	
Ore	6/16/1997	27.8	Deschu unpublished data	
Ore	8/30/1997	11.9	Deschu unpublished data	
Ore	7/24/2000	24.0	Brabets and Riehle 2003	Near mouth

**Comment #12 HighGold:** The EA says that the sumps will separate cuttings and the bentonite caps would limit the contents from exposure to water or oxygen. We suggest that the EA should state more clearly that NO impacts from oxidation of sulfide drill cuttings are expected as a result of how they will be managed.

**Response #12 NPS:** The EA accurately articulates the issue, potential impacts, and how impacts will be diminished through the use of mitigation measures. Paragraph 3 describes how 3 mitigation measures will prevent or limit impacts of drilling and the handling and containment of drilling cuttings.

**Comment #13 HighGold:** The statement is correct, and we suggest that you add to the sentence, “and the potential impacts to Aquatic Resources will thereby be mitigated.” In addition, the same conclusion should be drawn for the Water Resources Section and in Table 4.

**Response #13 NPS:** The statement in the EA accurately describes the mitigation measure and its effect.

**Comment #14 HighGold:** We note that the final conclusions at the end of the section are appropriate but suggest that throughout the section you insert sentences about the mitigation steps that offset the impacts right after describing each impact.



**Response #14 NPS:** The EA discusses the effects of mitigation measures on resources in the impact analysis therefore, they were not reiterated or specifically mentioned in the conclusion.

**Comment #15 HighGold:** We suggest adding some additional language here for perspective. Drill sites are largely in alpine environment on steep, unstable, mostly barren slopes where native vegetation communities are not well established. As a result, the disturbance of 2.7 acres over an 8-year period is not expected to measurably increase the likelihood of sediments reaching nearby waters, even after rain events.

**Response #15 NPS:** The description in the Affected Environment, Vegetation section of the EA describes the typical ecotypes and landcover on the North Tract. The conclusion does not indicate that activities would result in a measurable increase in overland flow and sediments reaching adjacent waters.

**Comment #16 HighGold:** Table 4 would be more informative with two additional columns listing all the proponent-offered mitigation for each impact, and a column show the net impacts.

**Response #16 NPS:** The premise of the table is to summarize the issues and the associated impacts from each alternative. As configured, it meets the desired goal of providing a condensed version of this information. Impact analysis assumes all mitigation measures will be implemented (those proposed by the project proponent as well as the permit stipulations).

**Comment #17 HighGold:** Table 4 Water Resources Category, last column, 2nd bullet: The sentence starts with “exposed sulfides” but JTMI will be burying the drill cuttings in sumps and capping the sumps with clay. There will be no “exposed sulfides” left at the site and these are exploratory drillholes that may not even intersect sulfide mineralization. This should be deleted or better described.

**Response #17 NPS:** The premise of the table is to summarize the issues and the associated impacts from each alternative. As configured, it meets the desired goal of providing a condensed version of this information.

**Comment #18 PI:** Several commenters made the request to extend the 30-day comment period for the EA.

**Response #18 NPS:** The NPS feels that reasonable effort was made to make the public aware of this project and comment during the 30-day period. The NPS issued a press release, social media posts, direct emails to commercial operators, landowners and other stakeholders to ensure the public was aware of the opportunity to comment. In addition, the NPS hosted an online public information meeting to give an overview of the permit request and environmental assessment and take questions to ensure interested parties had a full understanding of the EA.

**Comment #19 PI:** There is a conflict between CIRI’s mineral rights and the National Park’s mission. To what extent do these two sides have to be balanced?



**Response #19 NPS:** The NPS does have to balance access guaranteed to CIRI under ANILCA, the Cook Inlet Land Exchange Act and the NPS Organic Act. The EA/FONSI contains stipulations and mitigating measures which will be included in the RWCA in order to protect park resources and values while also meeting the intent of ANILCA and the Cook Inlet Land Exchange.

**Comment #20 PI:** Several commenters expressed concern over the use of a barge anchored near Fossil Point to offload supplies.

**Response #20 NPS:** The NPS does not have jurisdiction over the location of the barge in Tuxedni Bay. This EA is focused on the NPS jurisdiction over granting access to the North Tract per the RWCA application.

**Comment #21 SOA:** Consultation requirement if artesian conditions are encountered when drilling. The current language in the EA suggests contacting the Alaska Department of Environmental Conservation (AKDEC) and the Division of Mining, Land, and Water of the AKDNR. We recommend having the procedures and definitions in place prior to lease issuance.

**Response #21 NPS:** The response to artesian conditions was revised in the errata to reflect having procedures in place that follow the Best Management Practices (BMP) outlined in “Alaska Best Management Practices: maintaining or decommissioning water well and boreholes” (<https://dec.alaska.gov/media/8482/dwp-alaska-bmps-for-decommissioning-water-wells-and-boreholes.pdf>). Inclusion of provisions identified in the BMP’s will be requested as part of annual operations plans submitted by HighGold to the NPS as part of the RWCA permit stipulations.

**Comment #22 SOA:** There are four stipulations related to invasive species that appear to be interconnected. We recommend combining them into a single stipulation.

**Response #22 NPS:** The NPS believes that retaining separate stipulations regarding invasive plants helps clarify that the mitigation measures described in each, target different periods during the life of the project.

**Comment #23 SOA:** The stipulation requiring only the use of water as a drilling fluid may not be the best practice. Drilling fluids usually have additives that serve multiple purposes, including lubricating the drilling head and helping to seal fractures in the host rock.

The NPS would be better served by stipulating drilling best management practices be followed and requiring that the driller use environmentally friendly additives for Water Based Muds.

**Response #23 NPS:** The NPS has acknowledged that drilling fluids other than water may be necessary and addressed this in the errata.

**Comment #24 SOA:** Sumps: The EA includes stipulations that require the sumps to be unlined and, upon closure, be capped with 6-inches of bentonite clay with the intended purpose of encouraging water runoff and seepage to travel around the sump. This stipulation may be too prescriptive and not allow for the driller to provide a potentially better alternative to prevent sulfide contact with surface and ground waters such as capping with geotextiles.

The EA references drilling muds several times throughout without defining what the NPS is classifying as drilling muds.

**Response #24 NPS:** The NPS and applicant discussed the use of lined versus unlined sumps. Based on this information, the NPS decided that the lined sumps were more prone to holding water and liners becoming exposed over time by weathering which would cause visual impacts that likely exceed than the potential adverse impacts of the waste material. The fractured nature of the rock and the rock characteristics provided to us by the project engineers suggest that water from the sumps would move rapidly down through fractures back to areas of in-situ mineralization and that the likelihood of lateral migration to surface streams would be minimal. The NPS reference to drill muds includes both drilling fluid mixture and the resulting fluid that contains rock fines.

**Comment #25 SOA:** We request that the NPS and permittee coordinate with the Alaska Department of Fish and Game Habitat Section regarding Title 16 permit requirements for any in water work in fish bearing streams.

**Response #25 NPS:** The NPS acknowledges that the permittee would need to coordinate with Alaska Department of Fish and Game Habitat Section regarding Title 16 permit requirements.

**Comment #26:** Several commenters expressed concerns regarding project impacts to bears. Concerns included seasonality of work impacting feeding and denning, increases in bear-human interactions having a negative effect on bear behavior, adequacy of a 1km buffer for helicopter flight to minimize bear disturbance, and lack of requirement to report bear observations.

**Response #26 NPS:** Research conducted in the interior of LACL, found the average den emergence date to be 8 May and 1 May for females and males, respectively (Mangipane et al 2018). In early June, most bears have moved from higher elevation denning habitat to lower elevations where greening vegetation and other food resources are available. This limits the likelihood of bears remaining on the North Tract. Research found average den entry dates to be 20 October and 28 October for female and male brown bears, respectively (Mangipane et al. 2018). Bears will likely be moving towards denning habitat in October, so to mitigate disturbance, work in identified bear denning habitat will be undertaken from June to September to avoid disturbing bears as they move to denning habitat. These considerations will be part of the review and approval process of the annual workplan submitted by HighGold to the NPS.

The coast of LACL supports a high density of brown bears (Olson and Putera 2007), that attracts a substantial number of visitors (<https://www.nps.gov/articles/visitor-use.htm>) due to the consistent, high quality bear-viewing opportunities. This high density of brown bears exists due to the presence of rich food resources found in salt marsh meadows (Smith and Partridge 2004) and rivers that support runs of salmon (Miller et al. 1997). These high-quality food resources exist primarily outside of the North Tract, limiting its use by bears during the bulk of the period in which exploratory operations will be occurring. This greatly limits the likelihood of human-bear encounters. Additionally, items that are likely to attract bears at drill sites will be stored in a manner that limits bear access to them. HighGold has provided a bear management plan as part of the RWCA

application package that includes best practices for the storage of foods and materials and bear human interactions that follow NPS recommendations (<https://www.nps.gov/subjects/bears/safety.htm>).

The 1 km distance buffer for observed bears is based on recommendations and findings in Linnell et al (2000) and Stoen et al (2010). Linnell investigated denning bears vulnerability to disturbance. This biologically and physiologically demanding period is when bears are most sensitive to disturbance. A recommendation to maintain a 1 km buffer from a den site to minimize disturbance was made by Linnell. Stoen et al (2010) investigated brown bear response to close, direct helicopter approach. Their findings showed that bears decreased their movement and remained within similar habitat types and terrain. Movements were influenced for a period of about 2 hours and didn't reduce the size of area used by bears. Approach by helicopter in this work was directly towards and within 50-100 meters of bears and resulted in limited effect on bear movements and habitat use. Based on available research, it can be expected that maintaining a minimum of 1 km distance from an observed bear will result in minimal disturbance.

The stipulation of maintaining a 1 km buffer to bears applies on all park lands. With most helicopter flight operations taking place between the camp on the South Tract and the North Tract, no bear concentration areas will be traversed. If flight is required over an area with a high concentration of bears, such as Tuxedni Bay, the 1 km buffer must be maintained, or an alternative flight path chosen. Adequate flight altitude, 1000 feet above ground level, is also acceptable when traversing high concentration areas.

As part of current NPS special use permit stipulations, HighGold is providing data on all bear observations to the NPS. If an observation is of bear denning activity or involves a negative bear-human interaction, it is to be reported as soon as practical. These requirements will continue under the RWCA permit.

Linnell, J.D.C, J. E. Swenson, R. Andersen, and B. Barnes. 2000. How Vulnerable are Denning Bears to Disturbance. *Wildlife Society Bulletin* 28(2) 400-413.

Mangipane L. S., J. L. Belant, D. D. Gustine, G. V. Hilderbrand, and B. A. Mangipane. 2018. Sex-specific variation in denning by brown bears. *Mammalian Biology* 93: 38-44.

Miller, S. D., G. C. White, R. A. Sellers, H. V. Reynolds, J. W. Schoen, K. Titus, V. G. Barnes, R. B. Smith, R. R. Nelson, W. B. Ballard, and C. C. Schwartz. 1997. Brown and black bear density estimation in Alaska using radiotelemetry and replicated mark-resight techniques. *Wildlife Monographs* 133.

Olson, T. L., and J. A. Putera. 2007. Refining monitoring protocols to survey brown bear populations in Katmai National Park and Preserve and Lake Clark National Park and Preserve. Alaska Region Natural Resources Technical Report NPS/AR/NRTR-2007-66, National Park Service, Anchorage, AK.

Smith, T. S., and S. T. Partridge. 2004. Dynamics of intertidal foraging by coastal brown bears in Southwestern Alaska. *Journal of Wildlife Management* 68(2): 233-240.

Stoen, O. G., W. Neumann, G. Ericsson, J. E. Swenson, H. Dettki, J. Kindberg, and C. Nellemann. 2010. Behavioural response of moose *Alces alces* and brown bears *Ursus arctos* to direct helicopter approach by researchers. *Wildlife Biology* (16): 292-300.

**Comment #27 NPCA:** While the EA addresses impacts to the creeks within the north tract, it does not address potential downstream impacts to Johnson River, the Johnson River salmon run, or the wildlife that depend on that run. We support strong water quality monitoring protocol and are concerned that there will be no real-time water quality data monitoring, with the possibility of many months going by before park staff are aware of any specific spill events. Once again, it is important that the EA outline potential impacts not just on the north tract property but to park resources in general. NPCA recommends that the NPS require JTMI to record and submit water quality data at a greater frequency than the proposed annual data submission within 3-months of the end of the field season.

**Response #27 NPS:** Water quality is not expected to be impaired on or downstream of the North Tract with the incorporation of the following mitigation measures: use of clay lined sumps with specific closure criteria to contain drill cuttings and drill water, reclamation of drill sites, hole plugging procedures, secondary containment for all fuels and drill liquids, use of water or non-toxic drilling additives, and 50 ft distancing of drill sites from active streams.

Real-time data transmission is not feasible given the expected impacts and the constraints of more elaborate sensors, additional power requirements, and Geostationary Operational Environmental Satellite data access. Data collected from the loggers to detect spikes in pH and conductivity serve as a proxy for other water quality parameters and will be reported monthly.

**Comment #28 NPCA:** The EA also chooses not to consider air quality impacts, noting that the use would not appreciably alter air quality. Because of the proximity of Tuxedni Wilderness Area, one of only a few Category I air quality areas within Alaska, NPCA recommends that NPS expand upon its conclusion that the activities on the north tract and the accompanying increase in air traffic will not have impacts to the air quality of Tuxedni.

**Response #28 NPS:** The NPS exclusion of air quality from the issues considered for further analysis was based on the small contribution project flight operations would add to the already significant air traffic along the west side of Cook Inlet. This small increase in emissions is not expected to adversely affect the Class I airshed in Tuxedni Wilderness.

**Comment #29 NPCA:** The EA also does not discuss bonding required of JTMI for potential damage to NPS resources or for failure to reclaim exploration sites.

**Response #29 NPS:** Under the terms and conditions of the RWCA permit, a bond shall be furnished to the park Superintendent prior to the commencement of activities in an amount determined by the NPS. The surety must be satisfactory to the NPS and guarantee the Permittee's compliance with all

terms and conditions of the RWCA permit and with all applicable laws and regulations. The bond must be maintained throughout the life of the RWCA permit. In addition, the permittee must procure and maintain in force and effect during the term of this permit commercial general liability insurance to protect against claims arising out of the acts or omissions of the permittee while conducting the activities authorized by the permit. The NPS may update insurance requirements at any time during the life of this permit.

**Comment #30 AWA:** What are the impacts of helicopter flight on park solitude?

**Response #30 NPS:** The NPS visitor use data shows no current visitor use occurring on the North Tract. Visitors using the Johnson River will experience additional aircraft noise associated with the exploration activities. This impact will be localized and temporary.

**Comment #31 PI:** The EA does not adequately describe the impacts to small mammals, or even reference available data to understand impacts to this wildlife. Before a permit is authorized, the Park must release information on wolverine density and movement, and address mitigation for impacts to wolverine and other small mammals.

**Response #31 NPS:** Discussion of impacts to wolverines is included in response to comment 1. Small mammals likely to occur on the North Tract include red fox, porcupine, shrews and voles (Cook et. al. 2005). The habitat loss for small mammals will come mostly from the direct impacts of the project infrastructure, so will total 2.7 acres over the 8-year project. The small area and limited habitat selection for alpine habitat by several of the small mammal species, red fox and porcupine, so results in minimal impacts expected for small mammals.

Cook, J. A., and S. O. MacDonald. 2005. Mammal inventory of Alaska's National Parks and Preserves: Southwest Alaska Network: Kenai Fjords National Park, Lake Clark National Park and Preserve, and Katmai National Park and Preserve. National Park Service Alaska Region, Inventory and Monitoring Program Final Report. 57 pages + appendices.

**Comment #32 CIK:** The eight-year term for mineral exploration fails to ensure mitigation and related safeguards will be completed on an annual or regular basis. The NPS should assess - through field inspections and document reviews – the permittee's mitigation and compliance benchmarks on an annual basis, with work in any subsequent year contingent on successful mitigation and compliance in the previous year. Ongoing violations should preclude future operations until remedied.

**Response #32 NPS:** The RWCA permit the submission and approval of annual operations plans from HighGold. Approval by the NPS will require adherence to stipulations during prior years' work.

**Comment #33 CIK:** The EA rightly recognizes the potential for acid mine drainage from exploration activities. However, provisions for monitoring, testing and compliance remain unclear or incomplete. For example, while the proposed permit stipulations require compliance with State of Alaska Department of Environmental Conservation (ADEC) sampling protocols for sediments, similar protocols are not required for water testing. Additionally, the proposed permit stipulations do



not require compliance with State of Alaska Water Quality Standards, and other than reporting data to NPS, the proposed stipulations create no quantifiable limits nor any duty or obligation to remedy any observed water quality exceedances. These deficiencies should be addressed so there are bright-line compliance limits, stipulated penalties and clear regulatory responses in the event of water or sediment quality violations.

**Response #33 NPS:** As part of the RWCA permit, a water and soils protection plan will be required. A draft has been developed by HighGold and the NPS incorporating the mitigations included in the EA and additional information pertaining to NPS water quality standards. Additionally, the work will require permits from the State of Alaska that will require adherence to State of Alaska Water Quality Standards and require any exceedances be reported immediately.

**Comment #34 CIK:** Proposed stipulations around water intakes are vague and fail to identify key components for minimizing impacts. For example, there is no estimate for the volume of water to be required to drill each well bore, and no effort to identify specific standing or flowing waters that may be used for well drilling purposes. The permittee should also be required to identify any fish-bearing streams down gradient from its operations, and obtain temporary water use authorizations from the Alaska Department of Natural Resources (DNR) for all ground and surface waters where drawdowns may affect instream flows important to fish and wildlife. The permittee should also be required to submit an annual drilling program, identifying among other things the specific waterbodies from which it will obtain water for drilling and their capacity to support intended withdrawals.

**Response #34 NPS:** The water withdrawal is projected to be 0.04cfs. Although a small amount of water, the NPS is requiring via permit stipulation that water pumping is moved to another water body or suspended when water flow is inadequate for aquatic resources. All impact analyses included 150 drill platforms over the 8-year period, accounting for the largest possible level of disturbance. All permits required by the Alaska Department of Natural Resources for work North Tract will be required.

**Comment #35 CIK:** The EA states that drill hole closure and capping requirements will comply with Alaska Department of Natural Resources (DNR) requirements, but the permit stipulations are vague regarding these requirements. In order to facilitate compliance and enforcement and to protect NPS assets - the statutory and regulatory citations for these requirements should be specifically spelled-out in the permit stipulations so there are clear, enforceable standards around capping and closure procedures and compliance.

**Response #35 NPS:** The drill hole closure and capping requirements established by the Alaska Department of Natural Resources are required for work on the North Tract. HighGold has provided procedures in use during drilling operations on the South Tract that meet the requirements of AK DNR.

**Comment #36 CIK:** The EA contains generalized conditions for invasive species management which should be clarified. To avoid the introduction of invasive species, the permittee should be

required to develop and submit to NPS an annual invasive species mitigation plan, which should be approved by NPS.

**Response #36 NPS:** The RWCA permit will require submission of annual workplans. Workplans will require specific measures needed to meet stipulations defined in the EA. This includes provisions that must satisfy the four stipulations focused on the preventing introduction, reporting on observations, and monitoring for establishment of exotic plants.

**Comment #37 CIK:** The permit stipulations fail to ensure the protection of NPS surface estate assets for the management of drilling wastes. While the stipulations suggest all drilling muds and cutting would be contained in sumps to prevent acid mine drainage or other contamination, they do not provide clear standards that will ensure such protections. Furthermore, the use of unlined sumps would present higher probabilities for contaminant migration, and as a result, all sumps should be lined. To ensure long term pollution is mitigated to the extent practicable, all muds and cuttings should be reinjected back into formation and all sumps should be reclaimed to pre-operational condition. Otherwise, NPS will be left with potentially dozens or hundreds of capped sumps dotting the Lake Clark National Park landscape, and these sumps and the drilling wastes in them will invariably leak and leach over time, causing ongoing pollution and habitat impacts. NPS must cite specific state or federal statutory or regulatory criteria for the management of drilling wastes to ensure short- and long-term protection of the surface estate and down gradient waters. All drilling waste storage and management sites should be inspected daily, and any physical or chemical pollution resulting from drilling wastes should be immediately reported to NPS, with mitigation plans developed and approved by NPS to cure the problem. Finally, the permittee should be required to submit to NPS for approval annual drilling waste management plans which lay out locations for drilling waste management, compliance criteria, procedures to ensure compliance, and short- and long-term monitoring programs to ensure the protection of lands and waters down gradient from waste management activities.

**Response #37 NPS:** The NPS and applicant discussed lined versus unlined sumps and determined in the physical environment of the North Tract, lined sumps were more prone to holding water and the liners having potential of becoming exposed by weathering which results in a visual impact greater than the potential adverse impacts of the waste material. The fractured nature of the rock and the rock characteristics suggest that water from the sumps would move rapidly down through fractures back to areas of in-situ mineralization and that the likelihood of lateral migration to surface streams would be minimal. The discussion of waste rock volumes indicated most of the cuttings would not be carried to the surface during drilling but would remain in the hole. This will result in only very small volume of drill cuttings to be disposed of in sumps. The very small volumes and low acid potential of the waste would not necessitate the suggested intensive waste management plan.

**Comment #38 PI:** Several commenters were concerned over the use of the words "could," "would," and "should" as part of permit stipulations.

**Response #38 NPS:** The stipulations included in the EA were proposed by the NPS, thus the use of would or should. As listed in the FONSI, these are more definitive, and use will and shall.



**Comment #39 PI:** The EA includes provision for monitoring of the effect of an access permit and associated operations on some of the natural resources. But I don't see anything in the EA about monitoring of Permittee compliance with the provisions and conditions of the Permit or with other rules and regulation that might apply.

**Response #39 NPS:** Under the standard terms and conditions of the RWCA permit, the NPS does have authority to and will monitor compliance with the permit requirements.

**Comment #40 PI:** Management of human access associated with roads will help to reduce mortalities of brown bears in proximity to roads. However, this will not address mortalities of brown bears resulting from collisions with Project vehicles on the road or the fragmentation of habitat due to the reluctance of brown bears to cross or approach the road when it is in service.

**Response #40 NPS:** The EA did not consider road access for this project so no road will be authorized for construction.

**Comment #41 PI:** A review of the Environmental Assessment indicates that certain information available regarding aquatic resources may be lacking. Evaluating the potential for as-yet undocumented anadromous resources deserves priority status. I respectfully request that the National Park Service move to ensure an investment is made in further study and surveying of anadromous resources in freshwater streams and wetlands in the North Tract.

**Response #41 NPS:** The NPS acknowledges that fish inventories have not been completed for all waters of the North Tract and that the Alaska Department of Fish and Game Anadromous Waters Catalog is incomplete. As a result of this information gap, mitigation measures to protect the quality and quantity of water on the North Tract were developed to ensure protections for both resident and anadromous fish.

## **Appendix B:**

### **Non-Impairment Determination**

#### **On the Environmental Assessment for Right-of-Way Certificate of Access for North Tract of Johnson Tract**

##### **Lake Clark National Park and Preserve**

A determination of non-impairment is made for each of the resource impact topics carried forward and analyzed in the environmental assessment for the preferred alternative. The following criteria was used as a basis for determining the significance of the resource and whether or not impairment would occur:

- Necessary to fulfill specific purposes identified in the enabling legislation or proclamation of the park;
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the Park;
- Identified in the park's general management plan or other relevant NPS planning documents as being of significance.

##### **Water Resources**

Management for water resources is included in the park's enabling legislation, general management plan, and foundation statement.

Lake Clark National Park and Preserve was established to protect unimpaired waters and the ecosystems they support.

Alternative 2 will impact water resources within the North Tract via a minor reduction in water flow and introduction of sediments from ground disturbance. These impacts will be localized within the North Tract and resources are expected to recovery upon cessation of activities.

##### **Aquatic Resources**

Management for aquatic resources is included in the park's enabling legislation, general management plan, and foundation statement.

Fish populations, including salmon populations that support complex ecosystems and both subsistence and commercial fisheries, are foundational to Lake Clark National Park and Preserve.

Alternative 2 will impact aquatic resources and associated fish habitat within the North Tract through a minor reduction in water flow and introduction of sediments from ground disturbance. These impacts will be localized within the North Tract and resources are expected to recovery upon cessation of activities.

## **Wildlife**

Management for wildlife is included in the park's enabling legislation, general management plan, and foundation statement.

Lake Clark National Park and Preserve protects vast, undisturbed landscapes that support a full complement of wildlife species.

Alternative 2 will impact wildlife species, including adverse impacts to brown bear, birds, and other mammals within the North Tract. The adverse impacts include minor habitat loss, disturbance, and displacement in areas of exploration within the North Tract. Construction of infrastructure, exploration, and helicopter use will cause local disturbance of wildlife. These impacts will be localized within the North Tract and will not result in impairment of these resources.

## **Soundscape**

Management for soundscape is not specifically identified as a purpose in the establishing legislation of the park and is not specifically identified in the park's general management plan or foundation statement. Alternative 2 will authorize helicopter use and exploratory mineral drilling. These impacts will be localized within the North Tract and resources are expected to recovery upon cessation of activities.

## **Vegetation and Soils**

Management for vegetation and soils is not specifically identified as a purpose in the establishing legislation of the park and is not specifically identified in the park's general management plan or foundation statement. Alternative 2 will impact approximately 2.7 acres of vegetation and soils. These impacts will be localized within the North Tract and resources are expected to recovery upon cessation of activities.

## **Viewshed**

Management of the viewshed is included in the park's enabling legislation, general management plan, and foundation statement.

Alternative 2 will impact the viewshed within the North Tract. The adverse impacts include infrastructure comprised of drillpads, helipads, and water pump pads. These impacts will be localized within the North Tract and resources are expected to recovery upon cessation of activities.

## **Conclusion**

In conclusion, as guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the Superintendent's professional judgment that there will be no impairment of park resources and values from implementation of Alternative 2.