

**APMA J20195690#1**  
**The Palmer Project, Alaska**  
**Juneau Mining District**  
**Memorandum of Decision**

**Applicant(s):**

Constantine North, Inc.-Mineral Property Owner  
Constantine Mining, LLC. - Operator

August 7, 2023

**1. Requested Land Use and Proposed Activity Description:**

***Broad Proposed Activity Description:*** The applicants propose to conduct sonic geotechnical drilling, hydrogeological monitoring, seismic refraction studies, and associated access construction on ten state mining claims located within the Haines State Forest. Seismic refraction studies would utilize small charge, gellatin dynamite to generate refraction waves for geophone instrumentation and analysis. The purpose of drilling, monitoring, and seismic studies for subsurface investigation to understand the regolith and hydrogeological conditions to determine feasibility and design considerations at two sites (Klehini and Plateau) for potential future mine infrastructure for the Palmer Project.

***Proposed Surface Occupancy:*** Proposed surface occupancy consists of access trails, drill pads and cleared brush for seismic refraction survey lines.

***Acreage Disturbance and Reclamation Bonding:*** Pursuant to AS 27.19.030, this operation is more than five acres and requires a reclamation plan approval. This amendment proposes to include the additional acreage with the existing reclamation plan approval associated with APMA J20195690. The total proposed disturbance for 2023 in this amendment is 19.59 acres, which is rounded up to 20 acres for the purposes of bonding. The applicants have provided the appropriate bond pool deposits and payments for these 20 acres and 16 acres associated with the remainder of their operations at the Palmer Project.

***Water, Fish, Wildlife, Wetlands and Cultural Surveying:***

Water use and water quality, fish and habitat mitigation, wildlife mitigation, wetlands impact and cultural resources are managed and regulated by the following agencies:

- Alaska Department of Natural Resources, Division of Mining, Land & Water, Water Section (DMLW-Water)
- Alaska Department of Natural Resources, Office of History and Archeology (OHA)
- Alaska Department of Fish and Game, Habitat Division (ADFG)
- Alaska Department of Environmental Conservation (ADEC)
- U.S. Army Corps of Engineers, Alaska District (USACE)
- U.S. Fish and Wildlife Service (USFWS)

**2. Relevant Statutory Authorities**

- AS 38.05.020 Authority and Duties of the Commissioner
- AS 38.05.035 Powers and Duties of the Director
- AS 38.05.255 Surface Use of Land or Water
- AS 38.05.850 Permits
- AS 27.19 Reclamation
- AS 41.15.300 through .330 Haines State Forest Resource Management Area

**Relevant Regulatory Authorities**

- 11 AAC 97 Mining Reclamation
- 11 AAC 96 Miscellaneous Land Use
- 11 AAC 86 Mining Rights

**3. Proposed Permit Area Location**

- a. **Geographic Location:** Uplands near the Glacier Creek confluence with the Klehini River, Haines Alaska.
- b. **Legal Description:**  
C028S053E Sec. 26,28  
C028S054E Sec. 29, 30

**4. Land Status Information**

The requested activities lie within the State of Alaska mental health land selection MH 16. The subject lands received Patent #50-65-0019 to the State on July 20, 1964.

Interests within or near the sections listed above: These interests are identified in Alaska's Land Administration System and Alaska Mapper both available online at <http://dnr.alaska.gov/mlw/index.htm>

**Mineral Closing Orders**

None

**Leasehold Location Order**

None

**Municipal Selection**

None

**Other Permits, Leases or Actions**

Baby Brown Timber Sale (Division of Forestry) -NSE 1549

Baby Brown/Glacier Side Sale (Division of Forestry) - 1594

**Land Agreements, Settlements, Conveyances, Reconveyances and Municipal Entitlements of land**

None

**Other Land Information**

Description of activities above lie within the management provisions or may be affected by the

Haines State Forest Management Plan, adopted in August 2002 for the following region:

**Management Plan: Haines State Forest Management Plan**

**Unit Name: Klehini Unit**

**Description:** 3 – E Jarvis / Glacier Creek

- **Classification:** Forest Land
- **Prohibited Uses:** Personal Use Cabins, Commercial Helicopter Landings (Heli-skiing, Tours)
- **Management Intent:** Subunit 3e (Jarvis/Glacier Creeks) encompasses the forested state land west of Porcupine Creek. The subunit, containing approximately 4,400 acres of operable forest land, is classified Forest Land and will be managed primarily for commercial timber harvest. Mineral and material values include silver, lead, and limestone east of Jarvis Creek and gold on Glacier Creek. A barite deposit on federal land is near the headwaters of Glacier Creek. The bridge crossing Glacier Creek has failed, and the Division of Forestry will need to replace it to provide access to the area. Mining operations and minerals extraction will also be allowed. Habitat, recreation, and scenic values are present within this subunit.

**5. Access**

Access from outside the claim block is via the Porcupine Creek Logging Road.

**6. Permitting Background/History of Applicant Compliance**

Constantine Mining, LLC and Constantine North, Inc. have had no compliance issues with the Alaska Department of Natural Resources until May of 2023. Operations at the Palmer Project have been ongoing for over a decade under APMA 5690.

During the comment period, the Division was advised by several commenters that clearing work for seismic lines was initiated at the Klehini Site prior to the issuance of a permit, with some portions of the lines in excess of 5' in width. Constantine provided a preliminary verbal notification shortly after that their contractor had deviated from Generally Allowed Uses and had cleared in excess of 5'. Constantine indicated that they would be providing a follow-up verbal and written report regarding their findings from field teams walking the cleared lines.

On June 18th, Constantine provided DNR the results of a full ground survey of the cleared lines, indicating that approximately a half mile of lines at the Klehini Site were cleared in a width more than 5', but that no areas in excess of 15' were noted. Areas cleared that were wider than 5' of width were in areas of dense devils' club or alder and were cleared to address potential poking, tripping, or travel hazards to the clearing crew. In the report, it was discussed that the contractor understood it to be permissible to clear wider for those above-listed reasons. Constantine also noted that the few standing trees cut were already dead or infested. The Division conducted a follow-up site to the Klehini site on August 2nd and noted that the forest undergrowth, grasses, ferns, and forbs that have grown over the summer have made it difficult in places to determine that the line clearing has occurred.

The Division has determined that commenters are correct in that clearing in a width more than 5' prior to receiving a permit or other written authorization is a violation of 11 AAC 96.010 ("Uses

requiring a permit”). Pursuant to 11 AAC 96.145(a), “A person who violates this chapter or a provision of a permit issued under this chapter is subject to any action available to the department for enforcement and remedies, including revocation of the permit, civil action for forcible entry and detainer, ejectment, trespass, damages, and associated costs, or arrest and prosecution for criminal trespass in the second degree. The department may seek damages available under a civil action, including restoration damages, compensatory damages, and treble damages under AS 09.45.730 or 09.45.735 for violations involving injuring or removing trees or shrubs, gathering geotechnical data, or taking mineral resources.”

Upon review of the totality of the circumstances (and that the Division has determined that it is appropriate to issue the requested permit authorizing clearing up to 15’ in width for seismic studies); no remedy is required beyond the requirement for the posting of a performance guaranty to ensure compliance with the terms of the issued permit. The required performance guaranty is \$5,000 USD. The pursuit of damages (“punitive or compensatory damages”) for the clearing activity is unwarranted. Those cleared areas are now part of a permitted and authorized surface use and civil action would be subject to the principle of *de minimis non curat lex*<sup>1</sup>. Commercially valuable timber cleared (if any) prior to the issuance of the permit is now required to be salvaged according to the terms of the permit.

## **7. Project Review and Agency Notice**

The Division provided the application for review and the opportunity to comment for the activities considered for authorization under this summary. The following entities were notified on May 2, 2023, for comment on the application: The Alaska Department of Fish and Game (ADFG), Alaska Department of Environmental Conservation (ADEC), ADNR Water Resources Section (ADNR-Water), ADNR State Historic Preservation Office (AK SHPO), U.S. Army Corps of Engineers (USACE), Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS) and all interested parties that requested notification. Agencies were given an opportunity to review the application materials and submit comments for a 30-day period from May 2, 2023 through June 3, 2023.

### **Agency Review Comment and Issue Response**

Agency Comments were received from the Alaska Department of Fish and Game and the US Fish and Wildlife Service. See Attachments C & D for comments and response documents.

### **Public Notice:**

The Division issued a public notice of the application and supporting documents on June 9, 2023. Notice was distributed using the State of Alaska Online Public Notice System. During the Public Notice Period, 189 individual public comment letters were received, as well as 12,919 public comment form letters<sup>2</sup>. DMLW comment responses are located in Appendix B of this document.

## **8. Potential Environmental Risk**

This decision considers the environmental factors directly related to the authorization for use of state lands, specifically whether the approval of the authorization is in the State’s interest. The purpose of this consideration is to identify any associated mitigation measures

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<sup>1</sup> *De minimis non curat lex* or “principal that the law is not concerned with insignificant or minor matters”.

<sup>2</sup> Form letters are automatically submitted when the commenter puts their name and contact info into a website(s) that was created for the purposes of transmitting comments to DNR by an outside entity or stakeholder.

or other requirements necessary to protect the public interest while informing the overall decision of whether or not to approve the authorization.

**Fuel:**

The project proposes to fuel equipment from truck bed mounted fuel tanks at the Klehini site and via helicopter delivered 100 gallon fly tanks to the Plateau site. Fuel onboard during creek crossings will be limited the internal tanks of the equipment.

**Camp Reclamation, Remediation and Removal:**

Camp is located on private land is outside the scope of this decision.

**9. Performance Guaranty**

Pursuant to 11 AAC 96.060(b), a performance guaranty is determined “based on the scope and nature of the activity planned and the potential cost of restoring the permit site.”

Upon review of the scope and nature of the proposed activities which include the use of explosives, in combination with the applicants’ history compliance history<sup>3</sup>, the DNR has determined to requirement under 11 AAC 06.060 for a performance guaranty of **\$5,000 USD**. The DNR reserves the right to evaluate the performance guaranty at any time during the life of the permit, and at least annually. If a performance guaranty is required and not timely provided, the authorization will be nullified without further consideration.

**10. Insurance**

Insurance is a means to protect the state from liabilities incurred through the use of state property, or from damage to state property as a result of accidental or catastrophic events. This type of protection is necessary in the event of an accident or negligence that was consequentially connected to activities conducted on state land, and/or if the state is named in a lawsuit as a result of an accident or negligence.

In consideration of the requirements of 11 AAC 96.065, the DNR waives this requirement based on the scope and nature of the proposed activities. The DNR reserves the right to evaluate the insurance requirement at any time during the life of the permit, and at least annually. If insurance is required and not timely provided, the authorization will be nullified without further consideration.

**11. Discussion**

See the Division’s Response to Agency and Public Comments documents<sup>4</sup> for a comprehensive discussion on the issues and concerns raised during the adjudicatory process.

**12. Determination**

DNR has determined it appropriate to issue a stipulated miscellaneous land use permit to conduct hardrock exploration (geotechnical investigations) and reclamation activities on lands owned by the State of Alaska.

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<sup>3</sup> See Section 6 Permitting Background/ History of Applicant Compliance for more information.

<sup>4</sup> Attachments B, C, and D.

The applicant is advised to review authorization documents carefully as well as the regulations under AS 27.19 (Reclamation), AS 38.05 (Alaska Land Act), 11 AAC 86 (Mining Rights), 11 AAC 96 (Miscellaneous Land Use), and 11 AAC 97 (Reclamation).

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Michael LaDouceur  
Geologist III

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Date

*David Charron*

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08/07/2023

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David Charron  
Geologist IV

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Date

### 13. Appeal

An eligible person affected by this decision, and who provided timely written comment or public hearing testimony to the department, may appeal the decision to the DNR Commissioner per AS 44.37.011 and 11 AAC 02. Any appeal must be received within twenty (20) calendar days after issuance of this decision under 11 AAC 02.040. An eligible person must first appeal a decision to the Commissioner before seeking relief in superior court. The Alaska Court System establishes its own rules for timely appealing final administrative orders and decisions of the department. Appeals may be mailed or hand-delivered to the DNR Commissioner's Office, 550 W. 7<sup>th</sup> Avenue, Suite 1400, Anchorage, Alaska, 99501; or faxed to (907)-269-8918; or sent by electronic mail to [dnr.appeals@alaska.gov](mailto:dnr.appeals@alaska.gov). Appeals must be accompanied by the fee established in 11 AAC 05.160(d)(1)(F), which has been set at \$200 under the provisions of 11 AAC 05.160 (a)-(b). A copy of 11 AAC 02 is available on the department's website at <https://dnr.alaska.gov/mlw/pdf/DNR-11-AAC-02.pdf>.

Attachment A- Map of the Permitted Permitted Area.

Attachment B-Public Comments and Responses

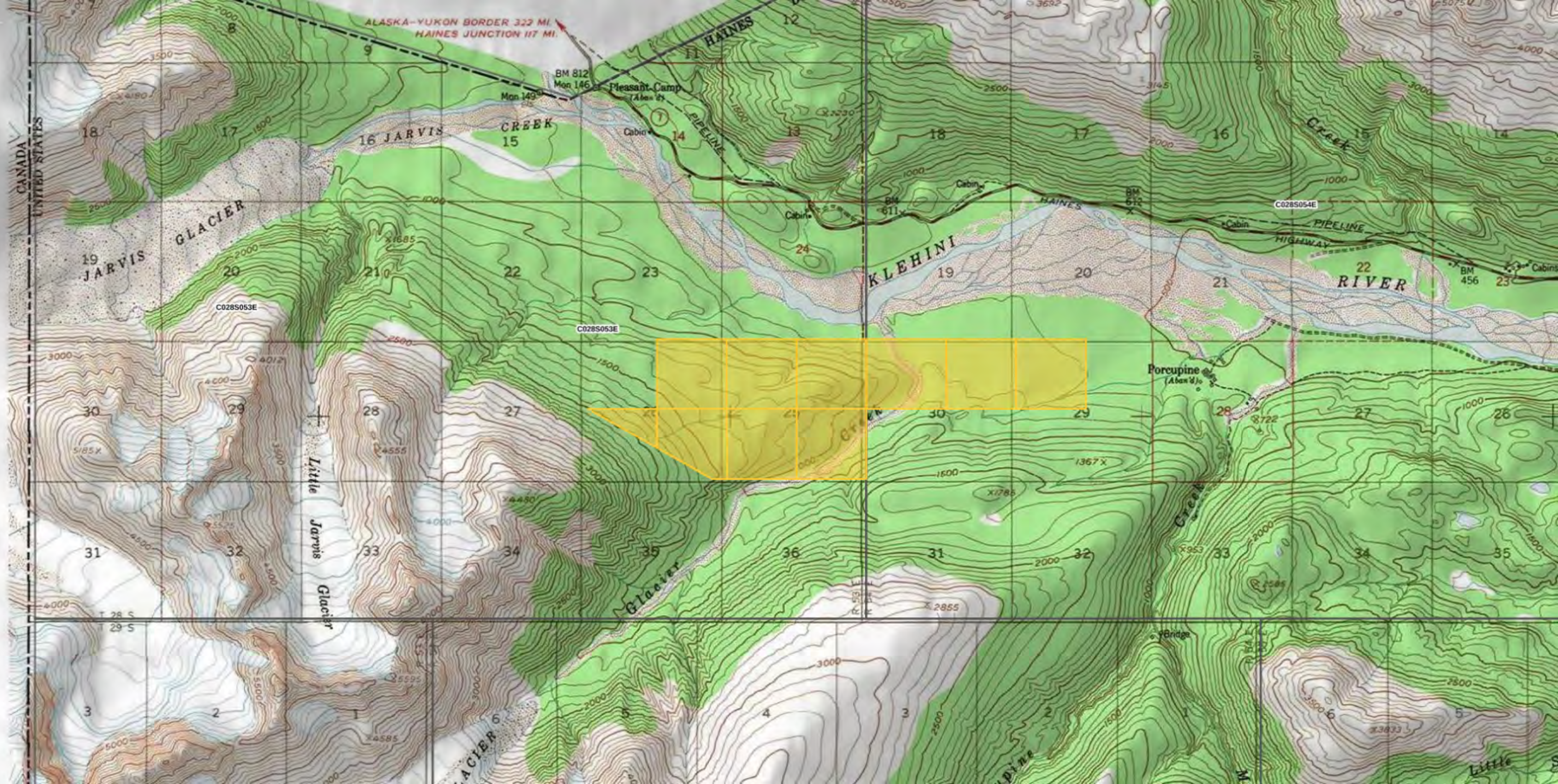
Attachment C- Response to Agency Comments (Dept of Fish and Game)

Attachment D- Response to Agency Comments (US Fish and Wildlife Service)

Attachment E- Airblast Attenuation Memo

Attachment F- Scaled PPV Worksheet (Peak Particle Velocity)







Following are responses to the public comments that were submitted in email to the Department of Natural Resources' (DNR's) Division of Mining, Land and Water<sup>1</sup> concerning an amendment submission to Application for Permits to Mine in Alaska (APMA) J20195690 (hereinafter the "amendment submission" and the "permit") requesting authorization to conduct geotechnical drilling, hydrogeological monitoring, seismic refraction surveys, and associated access construction on ten state mining claims held by Constantine Mining, LLC.

### **Comment Overview**

In rendering a decision on this application, the Department considered comments submitted during the comment period which ran from May 2<sup>nd</sup>, 2023 to June 3<sup>rd</sup>, 2023<sup>2</sup>.

DNR received 189 individual public comment letters and 12,919 public form letter comment submissions.

Comments within the scope of the application review were considered, as well as relevant, competent, and scientifically sound information that the commenter cited in support of their comments.



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<sup>1</sup> "DNR" "ADNR", the "Department", the "Division", "DMLW" and "Mining Section," are used to indicate the Alaska Department of Natural Resources, Division of Mining, Land & Water.

<sup>2</sup> A comment response document is not required by statute or regulation but provides a useful summary of the relevant comments on the application that were submitted to DNR during the comment period and the Department's responses.

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## **1. ISSUE TOPIC: OPINION COMMENTS AGAINST THE ISSUANCE OF THE PERMIT.**

**Comment Summary:** Commenters voiced their opposition to the activities proposed in the amendment submittal. The commenters stressed the importance of salmon in the Klehini and Chilkat Rivers. One commenter described the runs as “provid(ing) the backbone of the healthy subsistence, commercial and sport fisheries that occur in the watershed”.

**DMLW Response:** Comments Noted. General support/opposition comments were noted. The Division agrees with the need to adequately manage fishery resources, and in administering this permit, DNR will continue to work closely with the Alaska Department of Fish and Game, which has regulatory expertise considering the management and protection of fish, wildlife, and habitat resources. The activities proposed in the amendment request are discrete and are of limited duration, with a de minimis likelihood of adverse environmental impact. The Division has completed a “hard look” and has issued a reasoned decision considering the material facts and issues presented. The provisions implemented in the terms of the permit protect the public interest. As noted in the comment response 21 below, Constantine is participating in the Statewide Reclamation Bonding Pool under AS 27.19.040(b) Additionally, pursuant to 11 AAC 96.060(a) the Division has required that the permittee will provide a performance guaranty<sup>3</sup> conditioned upon compliance with all terms of the permit. The reclamation bond pool and additional performance guaranty are put in place to protect the state and public lands in the event that the permittee is unable or unwilling to meet permit obligations and complete the required reclamation.

## **2. ISSUE TOPIC: OPINION COMMENTS IN FAVOR OF ISSUANCE OF THE PERMIT.**

**Comment Summary:** Commenters expressed support for the activities proposed and that the project provides economic benefits to the Haines area and the overall state.

**DMLW Response:** Comments Noted.

## **3. ISSUE TOPIC: NEW APPLICATION VERSUS AMENDMENT SUBMITTAL**

**Comment Summary:** Comments received included assertions that the Division should not be reviewing this contemporary submittal as an amendment to an existing Application for Permits to Mine in Alaska (APMA) J20195690, rather maintaining that Constantine’s proposed activities warrant a new, separate application. Asserted rationales comprised of statements such as “new project, new location”, “this activity requires a full new application and analysis”, and “this proposal moves Constantine’s activity downstream and away from the existing project”.

**DLMW Response:** Comments Noted. The Division finds these statements unpersuasive for the following reasons:

The Department of Natural Resources, Division of Mining, Land & Water administers the Application for Permits to Mine in Alaska (APMA) Program to provide the state’s mining industry a multi-agency, multi-

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<sup>3</sup> Performance guaranties are typically provided by a personal or corporate surety bonds.

purpose application<sup>4</sup> for placer mining, suction dredging, hard rock exploration (including geophysical and geotechnical investigations). This “unified” approach provides efficiencies for both the industry and agencies, prevents duplication of submittals, and offers a centralized point of information for regulatory agencies. APMA’s and amendments thereto can be submitted for exploration and mining activities on all land ownership statuses including federal, state, mental health trust, ANSCA corporation, and private lands. Constantine’s initial 2019 application which is now being amended included exploratory operations on federal claims, private land, and mental health trust lands. The Palmer Project is similarly situated with other exploration projects statewide that have multiple land ownerships and statuses included in one operation. Pursuant to AS 38.05.035(a)(4), the Director (of Mining, Land, and Water) “**shall prescribe application procedures and practices for the sale, lease, or other disposition of available land, resources, property, or interest in them.**” This includes authorizing the director to decide what information is needed to process an application for the sale or use of state land and resources. The DMLW Mining Section operates under delegated authority from the Director to process and adjudicate applications for Land Use Permits under AS 38.05.035 “Powers and Duties of the Director”, AS 38.05.850 “Permits”, and regulation 11 AAC 96.030 “Applications”.

- The contemporary amendment submittal that is the subject of this decision utilized the application form narrative prompts and directions (the “APMA”) and contained all the information required by the APMA for the type of activity proposed. No substantive comments regarding what information is required by the APMA form that was omitted in Constantine’s amendment request submission and the Division has determined that it is complete under 11 AAC 96.030(a). Constantine has paid all applicable fees for the Division’s review and adjudication of a Land Use Permit.
- The state mining claims<sup>5</sup> requested in the amendment submittal are part of Constantine’s contiguous mineral interest tenure at the Palmer Project and are immediately adjacent to both Alaska Mental Health Trust Mineral Lease MHT 9100759 and within 500’ of the federal mining claims that were authorized in Constantine’s 2019 application. The Alaska legislature has defined that work done on these adjacent non-state mineral interests held in common can be credited towards labor due to fulfill annual requirements to maintain the state mining claim<sup>6</sup>.
- While it is true that the amendment adds new activities on state mining claims that are not currently under a permit, the commenter’s statements imply that this proposal is in a geographically new and distinct area away from the current Palmer Project activities under APMA J20195690 are misleading.
- Once determined complete, this amendment submittal was subjected to the same technical review, adjudication, agency notice, public notice, and decision-making process that a new application would receive.
- Statements received implying that the amendment submittal provided by the applicant is a permitting shortcut are untrue and misleading.

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<sup>4</sup> The Department’s factsheet on the Application for Permits to Mine in Alaska (APMA) program can be found at: <https://dnr.alaska.gov/mlw/cdn/pdf/factsheets/mining-permits-through-apma.pdf>

<sup>5</sup> AS 38.05.195 “Mining Claims”

<sup>6</sup> Sec. 38.05.210 (a) Annual labor. **Labor shall be performed or improvements made annually on or for the benefit or development of each mining claim, leasehold location, and mining lease on state land, except that, where adjacent claims, leasehold locations, or mining leases are held in common, including adjacent federal or private mineral interests held in common, the expenditure may be made on or for the benefit of any one claim, leasehold location, mining lease, or mineral interest.**

- Additionally, the activities proposed are for the benefit of the overall Palmer Project and are part and parcel with the same “mining operation”<sup>7</sup> for the Division’s regulatory oversight of Constantine’s exploration drilling reclamation plan.

With consideration of the above reasons and the potential for disparate treatment between Constantine and other similarly situated applicants via the APMA process; the Division finds that it would be arbitrary and capricious to require the submission of a new/separate APMA application packet and such an action would constitute a baseless delay.

#### 4. ISSUE TOPIC: PUBLIC NOTICE AND COMMENT PERIOD

**Comment Summary:** A substantial number of comments received by the Division remarked on the adequacy and legality of the initial 14-day comment period, which was extended by the Division to 30 days due to public interest. Many commenters indicated that a 90-day comment period was required.

**DMLW Response:** Comment Noted. Commenters are mixing up federal agency NEPA/EIS<sup>8</sup> comment periods that typically range from 45-90 days (depending on the scope of the project) with public notice requirements for state land use permits. Revocable permits and authorizations such as the issued land use permit are not a disposal of a state interest and are exempt from formal public notice requirements by AS 38.05.945(e). Pursuant to Alaska Constitution Article VIII, Section 10, the Alaska Legislature enacted AS 38.05, including the provisions of AS 38.05.945.

This exemption is why the online public notice site positing language describes the notice as a courtesy notice. However, the department does retain the discretion to issue an online notice posting under 11 AAC 96.030(c) for Land Use Permit Applications. The Division determined that it was appropriate to post our standard exploration permit courtesy 14-day posting<sup>9</sup>, which is used for comparable exploration projects elsewhere on state lands. This is the typical timeframe that land use permits are noticed by the Mining Section and that the Division’s Regional Land Offices notice for non-mining related land use permits. Due to public interest, the Division extended the public notice posting and comment period to a total period of 30 days.<sup>10</sup> It is of note that 30 days is the comment period that would be required if this wasn’t exempt from formal public notice periods under AS 38.05.945, even for things like disposals of state interest such as sale, conveyances, and non-mining state land leases.

The Division provided a reasonable and substantial opportunity to participate in the adjudicatory process governing the issuance of the permit, received numerous substantive comments, and provided a response to comments document addressing public interests and concerns.

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<sup>7</sup> AS 27.19.100 Definitions

(5) “mining operation”

(A) means each function, work, facility, and activity in connection with the development, extraction, and processing of

(i) a locatable or leasable mineral deposit except oil, gas, or coal;

(ii) other materials or of a sand and gravel deposit; and

(iii) each use reasonably incident to the development, extraction, and processing of a locatable or leasable mineral deposit or materials;

(B) includes the construction of facilities, roads, transmission lines, pipelines, and other support facilities;

<sup>8</sup> National Environmental Policy Act (NEPA) / Environmental Impact Statement (EIS)

<sup>9</sup> <http://notice.alaska.gov/210962> (Notice to the Public & Request for Information APMA J0195690 Amendment #1)

<sup>10</sup> <http://notice.alaska.gov/211120> (Extended Notice to the Public and Request for Information)

## 5. ISSUE TOPIC: PUBLIC HEARING

**Comment Summary:** A common remark in comments and correspondence received by DMLW during the public comment period was that a “public meeting”, “public hearing” and “open house” is required or requested for DMLW to make a permitting decision.

**DMLW Response:** Comments Noted. There is no legal requirement for public meetings or hearings in the adjudication of AS 38.05.850 Land Use Permits. Permits and other authorizations that are revocable are also exempt from AS 38.05.945 public notice requirements and thus, are exempt from AS 38.05.946 public hearings<sup>11</sup>. DMLW has provided a detailed response to comments document to address concerns and questions raised during the 30-day public notice period.

## 6. ISSUE TOPIC: HAINES BOROUGH ASSEMBLY MEETING

**Comment Summary:** Several commenters remarked about the Haines Borough Assembly hearing public testimony regarding the amendment proposal and a failed resolution to “direct the Manager to draft a letter to the DNR or other state agency to sincerely consider the content of the proposed amendment to be treated as a new application and to have a comment period of at least 90 days.”

**DMLW Response:** Comments Noted. Proceedings and actions of the Haines Borough Assembly are outside of the scope of this Land Use Permit decision.

## 7. ISSUE TOPIC: CHILKAT BALD EAGLE PRESERVE ADVISORY COUNCIL MEETING

**Comment Summary:** Several commenters remarked about the cancellation due to the lack of quorum of the Chilkat Bald Eagle Preserve Advisory Committee (CBEP AC), in which the APMA J20195690 Amendment # 1 was an agenda item.

**DMLW Response:** Comment Noted. The Chilkat Bald Eagle Preserve is a unit of the Alaska State Parks system managed by the Alaska Department of Natural Resources, Division of Park and Outdoor Recreation (DPOR). The closest lands designated by the Alaska Legislature as part of the CBEP are approximately 5.75 miles east of the claims listed in this APMA J2019560 Amendment #1. There is no legal or procedural requirement that the CBEP AC meet or hold hearings regarding an application for a Land Use Permit within the Haines State Forest. CBEP AC members were provided by DPOR staff with a link to the open comment period and application materials.

## 8. ISSUE TOPIC: TRIBAL (GOVERNMENT TO GOVERNMENT) CONSULTATION

**Comment Summary:** Several commenters, including the Chilkat Indian Village (CIV) indicated that a formal tribal consultation must occur for the Division to decide on APMA J201995960 Amendment # 1. From CIV’s comment letter:

*The proposed project is extensive and has the potential to be very damaging and disruptive. DNR failed to*

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<sup>11</sup> Under AS 38.05.946

*notify CIV of the project amendment. To date, DNR has declined to engage in Tribal consultation, and it has failed to arrange any public meetings, make presentations to the public, or provide any opportunities for the public to meet with and ask questions of Constantine, its consultants, and agency officials. Before approving any aspect of the proposed activities, DNR should remedy these failures by scheduling at least one Tribal consultation on a government-to-government basis that is respectful of the Tribe's sovereignty and expertise. DNR should also schedule at least one public meeting or workshop, with options for both in-person and online participation, presentation of substantive information in a concise and readily understandable manner, and ample opportunity for public input and dialogue with the project proponent and agency decision-makers.*

**DMLW Response:** Comment Noted. The Division provided public notice of the amendment request on May 2, 2023, and again for an extended notice period on May 15, 2023. No existing legal obligation warrants government-to-government consultation for the issued authorization. A 2017 Alaska Attorney General Opinion discussed the status of federally recognized tribes in Alaska and the authority of a sovereign government over its citizens, its land, and people who enter<sup>12</sup> its land. The opinion recognizes that sovereignty includes the power of native tribes to form a government and laws, determine tribal citizenship, assert sovereign immunity, and enter certain agreements with the federal government. This advisory opinion does not indicate that the State has a legal obligation to provide a sovereign government with additional or greater rights or consultation opportunities than the rest of the public, or, for example, a municipality.

In contrast with advisory opinions, the notice requirement for Land Use Permits is governed by statute and regulation. Upon receipt and review of an application or application amendment, law<sup>13</sup> provides the Division with discretionary authority to determine whether notice is performed. As beforementioned, the Division provided notice and a 30-day comment period. CIV participated in this public notice process by submitting comments during that time and the Division has responded with a comment response document.

In summary, although the Division did not engage in any specific government-to-government consultation as none is legally required, DMLW provided CIV a substantial opportunity to participate in the adjudicatory process governing the issuance of the permit and CIV substantially participated. The Division received, reviewed, and responded to CIV's (and other) comments as appropriate. The administrative record supports this finding, and no other law currently mandates DMLW to conduct government-to-government consultation.

## **9. ISSUE TOPIC: CULTURAL RESOURCES**

**Comment Summary:** Several commenters, including the Chilkat Indian Village (CIV) remarked on the concerns regarding the potential for heritage resources within the Klehini and Plateau Sites. Additionally, some references were included that the "State of Alaska has a legal responsibility under Section 106 of the National Historic Preservation Act" regarding the proposed activities.

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<sup>12</sup> All activities proposed in APMA J20195690#1 are located on state lands, within the Haines State Forest.

<sup>13</sup> AS 38.05.945(e) provides that notice is not required under this section for a permit or other authorization revocable by the commissioner. 11 AAC 96.030(c) further provides that the department may give public notice of any application. May is used to indicate a permissive provision, an express grant of discretion on the part of the agency.

**DMLW Response:** Comments Noted. The Division consulted with the Department of Natural Resources, Office of History and Archeology, Review and Compliance Unit (OHA)<sup>14</sup> who reviewed the proposed activities, the Alaska Heritage Resource Survey (AHRS) data repository, as well as CIV's comment letter. OHA indicated that cultural resources survey work is always encouraged. The Office, however, expressed no concerns precluding the proposed work to commence and advised that the standard inadvertent discovery language within DNR permits to be suitable.

As a protective measure, the permit has been stipulated with specific requirements, including a stop work order if cultural or paleontological resources are resources are inadvertently discovered as a result of or during activities authorized by this permit. **All of Constantine's activities under the permit must be in full compliance with the Alaska Historic Preservation Act (AS 41.35).**

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires **federal agencies**<sup>15</sup> to consider the effects on historic properties of projects they carry out, assist, fund, permit, license, or approve throughout the country. However, the review, adjudication, and issuance of a Land Use Permit<sup>16</sup> by the Division is purely a state action, with no federal nexus. Thus, Section 106 does not apply to this decision and does not warrant consideration by the Division.

## **10.ISSUE TOPIC: APPLICANT PARENT ENTITIES**

**Comment Summary:** Several commenters remarked on denying the permit due to the foreign parent corporation joint venture ownership of Constantine Metals and the Palmer Project.

**DMLW Response:** Comments Noted. Constantine Mining, LLC (organized in the State of Delaware) is qualified to do business in Alaska<sup>17</sup> and thus qualified to acquire and hold State Mining Claims under AS 38.05.190(a)(5). Operator Constantine North, Inc<sup>18</sup>. is an Alaska domestic business corporation. Both are in good standing with the Alaska Department of Commerce, Community, and Economic Development and are qualified to do business in the State of Alaska. Pursuant to Land Use Permit Regulation 11 AAC 96.030(d), both are qualified applicants to obtain a Land Use Permit under 11 AAC 96.010. As Constantine Mining, LLC., and Constantine North, Inc. have met the applicable legal requirements, ownership disposition and/or status is outside the scope of this Land Use Permit decision.

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<sup>14</sup> The Office of History and Archaeology (OHA) is Alaska's primary office with knowledge and expertise in historic preservation dedicated to preserving and interpreting Alaska's past, and serves as Alaska's State Historic Preservation Office (SHPO) pursuant to the National Historic Preservation Act of 1966. OHA administers programs authorized by both the National Historic Preservation Act of 1966 and the Alaska Historic Preservation Act of 1971.

<sup>15</sup> If a federal or federally-assisted project has the potential to affect historic properties, a Section 106 review will take place and is administered by the appropriate federal officials in cooperation with the State Historic Preservation Officer.

<sup>16</sup> AS 38.05.850 and 11 AAC 96.010

<sup>17</sup> Alaska Department of Commerce, Community and Economic Development Entity # 10063019.

<sup>18</sup> Alaska Department of Commerce, Community and Economic Development Entity # 63048D



## 11. ISSUE TOPIC: APPLICANT STARTING PROJECT WORK BEFORE ISSUANCE OF LAND USE PERMIT.

**Comment Summary:** Several commenters discussed that advanced clearing of access or seismic lines was occurring during the public comment period<sup>19</sup> and in advance of the issuance of a permit. Of particular concern to the commenters was clearing in excess of 5' in width (which is the limit of clearing allowed under 11 AAC 96.020 without a permit or written authorization from the Department of Natural Resources).

**DMLW Response:** Comments Noted. During the comment period, the Division was advised by several commenters that clearing work for seismic lines was initiated at the Klehini Site prior to the issuance of a permit, with some portions of the lines in excess of 5' in width. Constantine provided a preliminary verbal notification shortly after that their contractor had deviated from Generally Allowed Uses and had cleared in excess of 5'. Constantine indicated that they would be providing a follow-up verbal and written report regarding their findings from field teams walking the cleared lines.

On June 18<sup>th</sup>, Constantine provided DNR the results of a full ground survey of the cleared lines, indicating that approximately a half mile of lines at the Klehini Site were cleared in a width more than 5', but that no areas in excess of 15' were noted. Areas cleared that were wider than 5' of width were in areas of dense devils' club or alder and were cleared to address potential poking, tripping, or travel hazards to the clearing crew. In the report, it was discussed that the contractor understood it to be permissible to clear wider for those above-listed reasons. Constantine also noted that the few standing trees cut were already dead or infested. The Division conducted a follow-up site to the Klehini site on August 2<sup>nd</sup> and noted that the forest undergrowth, grasses, ferns, and forbs that have grown over the summer have made it difficult in places to determine that the line clearing has occurred.

The Division has determined that commenters are correct in that clearing in a width more than 5' prior to receiving a permit or other written authorization is a violation of **11 AAC 96.010** (“**Uses requiring a permit**”). Pursuant to **11 AAC 96.145(a)**, “A person who violates this chapter or a provision of a permit issued under this chapter is subject to any action available to the department for enforcement and remedies, including revocation of the permit, civil action for forcible entry and detainer, ejection, trespass, damages, and associated costs, or arrest and prosecution for criminal trespass in the second degree. The department may seek damages available under a civil action, including restoration damages, compensatory damages, and treble damages under AS 09.45.730 or 09.45.735 for violations involving injuring or removing trees or shrubs, gathering geotechnical data, or taking mineral resources.”

Upon review of the totality of the circumstances (and that the Division has determined that it is appropriate to issue the requested permit authorizing clearing up to 15' in width for seismic studies); **no remedy is required beyond the requirement for the posting of a performance guaranty<sup>20</sup> to ensure compliance with the terms of the issued permit.** The required performance guaranty is \$5,000 USD. The pursuit of damages (“punitive or compensatory damages”) for the clearing activity is unwarranted. Those cleared areas are now part of a permitted and authorized surface use and civil action would be subject to the principle of *de minimis non curat lex*<sup>21</sup>. Commercially valuable timber cleared (if any) prior to the issuance of the permit is now required to be salvaged according to the terms of the permit.

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<sup>19</sup> Public comment period ran from May 2, 2023 through June 3, 2023.

<sup>20</sup> 11 AAC 96.060(a)

<sup>21</sup> De minimis non curat lex or “principal that the law is not concerned with insignificant or minor matters”.

## 12. ISSUE TOPIC: FUTURE MINE TAILINGS FACILITY

**Comment Summary:** Commenters discussed the potential of future mine tailings facilities at the Klehini and/or Plateau sites. One commenter remarked as follows: “In addition to the direct, induced, and cumulative impacts of the activities explicitly described in the application, DNR must consider the long-term impacts of the intended development of the Plateau and Klehini sites. Constantine’s Preliminary Economic Assessment identifies the Klehini Site as its preferred alternative for a tailings storage site. Liz Cornejo, vice-president of DOWA Alaska, the majority owner of the Palmer Project joint venture, confirmed on public record at the May 25, 2023 Haines Borough Assembly meeting that the developments proposed in the application for the Plateau and Klehini sites are intended for tailings storage. In considering this permit application, DNR must not limit itself to a reductionist, piecemeal analysis of the proposed activities as described, but instead analyze the potential direct, induced, and cumulative impacts of the intended result: tailings storage at the confluence of the anadromous Glacier Creek and Klehini River.”

**DMLW Response:** Comments Noted. The issuance of this permit is limited to surface uses associated with geotechnical and hydrogeological investigations of the Klehini and Plateau sites. While Constantine has indicated the Klehini location as a potential site in corporate documents; no plans have been reduced to a specific proposal, nor are they in front of the Division. Any discussions of tailings facility proposals are highly speculative at this point and would be subject to a separate future permitting process via the Division’s Large Mine Program. In contrast, the work proposed in Amendment # 1 is part of an iterative process with the geotechnical and hydrogeological investigations advancing design and feasibility considerations.

Pursuant to AS 38.05.255(a) and 11 AAC 86.145(a), surface use of land or water is limited to those “necessary for the prospecting for, extraction of, or basic processing” of mineral deposits, and is subject to reasonable concurrent use. Constantine’s proposed geotechnical drilling and seismic studies meet these requirements. Geotechnical boreholes expand understanding of the regolith in relation to mine design (primarily the siting of mine facilities). Advancing the understanding of the unconsolidated material under potential mine facilities is in the interest of the State as it is directly related to the management of risk associated with the potential construction of tailings and other mine site facilities. It is not in the state’s interest to review or evaluate future mine facility development plans without first requiring the collection of necessary geotechnical, geologic, and hydrogeologic data. These types of data are characterized through the collection of rock and substrate samples, hydrogeologic monitoring, and resource modeling. Permitting the applicant to conduct such work allows Constantine to design realistic facility proposals and allows the Division to review permit proposals with legitimate, rigorous scientific data rather than hypothetical ideals

## 13. ISSUE TOPIC: WASTE MANAGEMENT PERMIT (AS 46.03.100)

**Comment:** “Because it has been verified that this is for siting tails facilities, this is a mining permit and requires a new, substantive mining permit, pursuant to Alaska Statute (AS) S 46.03.100(c) for integrated waste management and disposal authorization and under provisions of Title 18 Alaska Administrative Code (AAC) Chapter 60 (18 AAC 60).”

**DMLW Response:** Comment noted. The proposed land uses and activities are for geotechnical and geophysical investigations of two sites located within the applicant’s state mining claims to obtain information on the physical properties of the soil earthworks (regolith) and localized hydrogeology. This

is to advance engineering and design efforts that are being undertaken by the applicant. This issued Miscellaneous Land Use Permit does not authorize the deposition of mine tailings or any other regulated wastes within the requested state mining claims. As such, a Waste Management Permit from the Alaska Department of Environmental Conservation under AS 46.03.100 and 18 AAC 60 is not required.

#### **14. ISSUE TOPIC: ECONOMICS OF MINING THE PALMER AND OTHER DEPOSITS IN THE UPPER GLACIER CREEK DRAINAGE**

**Comment Summary:** Several commenters remarked that the Palmer deposit has not been shown to be economic to mine or that insufficient exploration has been conducted to date.

**DMLW Response:** Comments Noted. The Palmer Project is an advanced-exploration-stage, zinc-copper-silver-gold-barite deposit with 15.7 million tons of mineralization defined<sup>22</sup> as of 2020. While a review of the overall project economics is outside the scope of adjudication for this proposed Miscellaneous Land Use Permit application, the Division has determined that Constantine's activities proposed at the Plateau and Klehini<sup>23</sup> are following a reasonable and customary mineral exploration, development, mining, and reclamation sequence. The Division conducts technical reviews of all activities proposed on state mining claims to prevent unnecessary impacts from operations that are conducted out of sequence with the reasonable and customary mineral exploration, development, mining, and reclamation cycle. Constantine has proposed using geotechnical and geophysical investigation methods, studies, and equipment that is appropriate to the geological terrain and stage of development.

#### **15. ISSUE TOPIC: RESTRICTION OF PUBLIC ACCESS**

**Comment Summary:** Many commenters expressed concerns that activities proposed in the amendment submittal would preclude access to both the Klehini and Plateau sites for recreation, subsistence hunting, berry and medicinal plant harvest, sport hunting, and firewood cutting.

**DMLW Response:** Comment Noted. According to 11 AAC 86.145(a)(1), the locator (of a mining claim) does not have exclusive use of the surface of the location... and a locator may not restrict public access or other use of the surface unless approved in writing by the director. The director may allow the locator to restrict access or other surface uses of the location only to protect public safety or prevent unreasonable interference with the rights of the locator.

In the issued Land Use Permit, DMLW has stipulated that the locator may not restrict public access or use, except for limited public safety closures associated with seismic refraction line blasting operations. These closures will only be in effect for the exclusion areas around the seismic line as described in the amendment submittal and be limited to only the timeframe reasonably necessary to conduct the setup, blasting, and other safety-related tasks deemed necessary by the permittee, subcontractors, and licensed blaster.

The public should note that any other access restrictions for the general management of the Haines State Forest, authorized timber harvest activities, and other public safety considerations are outside of the scope of this Land Use Permit issuance decision.

While public access restrictions are narrowly tailored in this approval to be limited to the public safety closures associated with seismic line operations, access by third parties (members of the public and other forest users) to the project area must be consistent with 11 AAC 96.020 "Generally Allowed Uses" and 11

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<sup>22</sup> Twelker, Evan, Werdon, M.B., and Athey, J.E., 2022, Alaska's mineral industry 2020: Alaska Division of Geological & Geophysical Surveys Special Report 76, 75 p. <https://doi.org/10.14509/30848>

<sup>23</sup> As well as the overall Palmer Project.

AAC 96.025 “Conditions for generally allowed uses”. 11 AAC 96.025(9) requires that “on lands subject to a mineral or land estate property interest, entry by a person other than the holder of the property interest, or the holder’s authorized representative, **must be made in a manner that prevents the unnecessary or unreasonable interference with the rights of the holder of that property interest.**”

## **16. ISSUE TOPIC: ACCESS ROAD CONSTRUCTION**

**Comment Summary:** A number of commenters remarked on the terminology used in the amendment submittal (“access trail” vs “access road”), that they view 25’ wide as an excessive access footprint, and concerns about slope gradient.

**DMLW Response:** Comments Noted. The term exploration or access trail is commonly used to describe routes constructed in the mineral exploration industry that have limited fill or elevated driving surfaces. These are pioneer routes. Terminology aside, the Division has determined that access with an overall maximum width of 25’ is acceptable due to several considerations; including building on sidehills, the need for room at turns for equipment and log skidding, any necessary ditching or water control features, and for appropriate line of sight for safety.

The 25’ is the max width requested, however, the Division anticipates that not all stretches will require that width, especially the routes that will be utilizing the prior, existing logging roads at the Klehini site.

In the submission, Constantine did reference potential horizontal to vertical incline gradients of up to 30% on the temporary secondary access trails (at the Plateau site). These gradients are the short pitch maximums, which means as a design driver they will not be indicative of a significant portion of secondary access trails. Short sections of 30% are not adverse for skidding salvage timber downhill with a log skidder to the appropriate staging area. Reclamation of these short sections may require the installation of water bars or other water management BMPs either above or within the section to give the trail sufficient time to revegetate.

The Division appreciates that Constantine is minimizing the overall access trail impacts by utilizing prior, existing logging road/skidder trail infrastructure and developing new access that co-insides with the planned Baby Brown access road.

## **17. ISSUE TOPIC: REQUIREMENT OF AN ENVIRONMENTAL IMPACT STATEMENT (EIS)**

**Comment Summary:** Several commenters remarked that this amendment required a new Environmental Impact Statement (EIS).

**DMLW Response:** Comments noted. An Environmental Impact Statement is a report mandated by the National Environmental Policy Act of 1969 (NEPA) to assess the potential impact of actions “significantly affecting the quality of the human environment” for activities that involve a federal nexus. NEPA is a federal law that does not apply to the review, adjudication, and issuance of a state Miscellaneous Land Use Permit. Rather, in this case, the Department of Natural Resources was guided by the provisions Article 8 (Natural Resources) of the Alaska Constitution, the Haines State Forest enabling legislation AS 41.15.300 - .330. the Alaska Forest Resources and Practices Act AS 41.17, the Alaska

Lands Act AS 38.05, and the provisions of the Haines State Forest RMA Management Plan in determining whether it is appropriate to issue a Miscellaneous Land Use Permit.

DMLW's adjudication of the proposed activities has taken a careful and reasoned review of the potential environmental impacts of the proposed land use activities in accordance with state law, which included agency consultation listed in Section 8 of the memorandum of decision.

## 18. ISSUE TOPIC: BASELINE DATA

**Comment Summary:** Many commenters mentioned a perceived lack of baseline data provided with the submitted amendment request.

**DMLW Response:** Comment Noted. The proposed activities are for a discrete and limited duration with a limited, temporary impact on the land. The Division has reviewed the extensive amendment materials and proposed activities, as well as consulted with agency partners with the Alaska Departments of Fish and Game and Environmental Conservation. No additional baseline data needs were identified by the State of Alaska or by the federal agencies that were provided notice or participated in the agency review process.

## 19. ISSUE TOPIC: RECLAMATION PLAN

**Comment Summary:** Several commenters remarked that the reclamation plan is inadequate, with one stating "note the complex micro-topography of the site that the permit applicant is going to remove and then somehow put back together" in the notes to a photo provided.

**DMLW Response:** Comments Noted. The Division reviewed the proposed reclamation measures included in the amendment request, including the drill site pad and access trail closure work. These measures meet or exceed the State of Alaska's Mine Reclamation performance standards under AS 27.19.020 and 11 AAC 97.200. The Division has amended the existing reclamation plan approval issued under APMA J20195690 to include the reclamation at the Plateau and Klehini sites.

The proposed plan described to the Division how the operation will be conducted in a manner that prevents unnecessary and undue degradation of land and water resources along with reclamation measures that will leave the site in a stable condition<sup>24</sup> as required by law. In addition, restoration of the microtopography is not required<sup>25</sup> to meet the stable condition requirement under the performance

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<sup>24</sup> **11 AAC 97.200(a)(1)** *For the purposes of AS 27.19.100 (6) and this section, a stable condition that "allows for the reestablishment of renewable resources on the site within a reasonable period of time by natural processes" means a condition that can reasonably be expected to return waterborne soil erosion to pre-mining levels within one year after the reclamation is completed, and that can reasonably be expected to achieve revegetation, where feasible, within five years after the reclamation is completed, without the need for fertilization or reseeding. If rehabilitation of a mined site to this standard is not feasible because the surface materials on the mined site have low natural fertility or the site lacks a natural seed source, the department recommends that the miner fertilize and reseed or replant the site with native vegetation to protect against soil erosion; however, AS 27.19 does not require the miner to do so. Rehabilitation to allow for the reestablishment of renewable resources is not required if that reestablishment would be inconsistent with an alternate post-mining land use approved under AS 27.19.030 (b) on state, federal, or municipal land, or with the post-mining land use intended by the landowner on private land.*

<sup>25</sup> **11 AAC 97.200(b)** A miner shall reclaim an area disturbed by a mining operation so that the surface contours after reclamation is complete are conducive to natural revegetation or are consistent with an alternate post-mining land use approved under AS 27.19.030 (b) on state, federal, or municipal land, or with the post-mining land use intended by the landowner on private land. Measures taken to accomplish this result may include backfilling, contouring, and grading, but a miner need not restore the site's approximate original contours. A miner shall stabilize the reclaimed site to a condition that will retain sufficient moisture for natural revegetation or for an alternate post-mining land use approved under AS 27.19.030 (b) on state, federal, or municipal land, or for the post-mining land use intended by the landowner on private land.

standards described in **11 AAC 97.200(b)** and such a requirement to do so would be arbitrarily prescriptive.

## **20. ISSUE TOPIC: RECLAMATION BONDING**

**Comment:** “The bonding requirement signed by Dave Charron is grossly inadequate for the permit amendment proposed activities. We know the specific contractor that the permit applicant is currently using for their reclamation activities. As an example, for 300 yards of drainage repair to our personal driveway, where charged \$5000, yet somehow, the proposed activities, which include roadbuilding and clearing in old growth forest, wetlands, and salmon streams, will only cost \$3,712.00 to remediate entirely.”

**DMLW Response:** Comment Noted. Constantine North is participating in the State of Alaska Mine Reclamation Bond Pool established by the Alaska Legislature in AS 27.19.040(b), which is administered by the Department of Natural Resources, Division of Mining, Land & Water. The bond pool is a program where the overall mining industry’s payments along with compounding interest have been contributing to an increased account corpus since 1992. These funds<sup>26</sup> are available to DMLW after an administrative process should the operator default on their reclamation obligation. The \$3712 payment referenced by the commenter is the required deposit and 2023 annual non-refundable fee payment according to amounts set up by the Legislature to participate in the program. Constantine is also liable to the state in a civil action for the full amount of reclamation and administrative cost incurred upon a violation and default.

## **21. ISSUE TOPIC: EXPLOSIVES USE**

**Comment:** Commenters remarked on the use of explosives, purposes of blasting, and concerns (including noise, blasting vibrations, impacts to fisheries, and ANFO).

**DMLW Response:** Comments Noted. The application amendment proposes utilizing small amounts of dynamite (1/2 pound sticks) to conduct seismic refraction surveys. The seismic refraction method utilizes the refraction of seismic waves by rock or soil layers to characterize the subsurface geologic conditions and geologic structure. It is commonly used throughout Alaska to investigate potential road alignments, pipeline right-of-way scouting, dam and infrastructure sites, and for mine engineering and design studies. Some commenters incorrectly asserted that blasting is occurring on site for the actual construction of a mine tailings facility or for purported removal of rock. Commenters also incorrectly provided noise decibel data associated with unconfined use of dynamite. The shot holes proposed by Constantine are confined and will be buried in 3-5’ below the surface.

The Division conducted a desktop analysis<sup>27</sup> of airblast (noise) based on estimates from the federal Office of Surface Mining and Reclamation Enforcement’s Airblast prediction excel. At 1’ adjacent to the shot hole, the peak unweighted decibels is less than the open air discharge of a .30-06 rifle commonly used for subsistence and sport hunting. The airblast (noise) attenuates over distance with decibels estimated to drop to around 103(dBA) by 660’ distance from the shot.

In consideration of the findings of the desktop analysis; these short, intermittent shots are unlikely to cause a civil nuisance or have adverse impacts on wildlife or other nearby land uses. Additionally, the Division calculated the ground peak particle vibration (PPV) caused by the detonation of the largest single charge in a survey line (2 ½ pounds). These ground vibrations are 0 PPV (in/pers second) at 660’

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<sup>26</sup> As of Oct 17, 2022, the full amount of the bond pool was **\$3,211,134.00** with an equity balance (immediately available to the Department) of **\$2,645,614.00**.

<sup>27</sup> For more information, see Attachment D (Airblast Attenuation Memo)

and due to the siting of the seismic lines will not impact any resident or anadromous fish that may be present in Glacier, Plateau, or the Klehini River.

Some commenters remarked about the use of Ammonium Nitrate/Fuel Oil (ANFO) explosives having adverse effects on water quality and fisheries. ANFO explosives were not requested for use, nor are they authorized by the issuance of the Land Use Permit. In contrast, modern, gelatin-based dynamite sticks used by Constantine will not present any environmental concerns.

## **22. ISSUE TOPIC: FOREST RESOURCES**

**Comment Summary:** Several commenters expressed concern that logging and tree/brush clearing activities would be required for access, sonic drilling pads, and seismic survey lines.

**DMLW Response:** Comment Noted. In accordance with AS 38.05.255(a), the Division has determined that lands subject to this issued permit are “timberlands”. Pursuant to 11 AAC 86.145(a)(3), the locator of a mining claim must purchase timber or make arraignments with the Division of Forestry (DOF) before using or clearing timber from timberlands<sup>28</sup>. During adjudication of the permit, the Division of Forestry was contacted and provided salvage requirements for commercially viable timber that would be harvested during operations authorized by the permit. Stipulations regarding the harvest and salvage have been added to the terms of the issued permit.

Due to past DOF-authorized timber sale activities and the concurrent Baby Brown sale/access roads, the acreage for clearing any mature timber stands is minimal. The Division conducted a desktop GIS review and determined that approximately 2.21 acres of access and pad construction at the Klehini site would require harvesting and that no more than 4.80 acres would be required at the Plateau site.

## **23.ISSUE TOPIC: WETLANDS**

**Comment Summary:** Commenters remarked concerns about impacts and the correct locations of wetlands within the Plateau site.

**DMLW Response:** Comments Noted. Constantine has provided the Division with a map showing identified wetland locations within the Plateau site based on a field study conducted by HDR Consultants during the summer of 2023. Constantine will avoid impacts to these wetlands identified in the HDR mapping<sup>29</sup>. All work must be in full compliance with the requirements of Section 404 of the Clean Water Act administered by the US Army Corps of Engineers (USACE). The USACE (Alaska District) regulatory staff were provided a copy of the application amendment via the agency notice distribution and had submitted no comments or concerns to the Division. The Division is satisfied that no significant, adverse impacts to wetlands will result from the permitted activities and that the mapping is sufficient.

## **24. ISSUE TOPIC: STREAM CROSSING / FORDING**

**Comment Summary:** Commenters noted objections to stream crossings / fording with equipment of both Glacier and “Plateau” Creek due to fisheries concerns.

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<sup>28</sup> Except for those activities permissible under Generally Allowed Uses of State Lands **11 AAC 96.020**.

<sup>29</sup> Constantine submittal page 7 and the Division’s communications on-site with Constantine environmental staff on August 2, 2023.

**DMLW Response:** Comments Noted. The Division took all the public and agency comments regarding stream crossing/fording into account when making the determination to issue the permit. Below are the Division’s conclusions for both Glacier and Plateau Creeks.

*Glacier Creek:* Glacier Creek is a dynamic, high-gradient creek with a large cobble substrate (cobble up to 10” in diameter). This substrate is more than adequate to support the listed equipment within the application with no adverse impacts on the creek bed during crossing. From the Alaska Department of Fish and Game’s comments on Glacier Creek;

“ADF&G Habitat Section biologists have surveyed Glacier Creek and its tributaries for adult and juvenile fish presence since 2014 and since 2016 we have completed aquatic biomonitoring studies at two sites in Glacier Creek (Krull 2022). Throughout our fish surveys we captured one adult cutthroat trout and one juvenile rainbow trout near the old bridge location and Dolly Varden up to Middle Glacier Creek, however in relatively low numbers compared to other drainages in the region. We usually captured fish in small side channels or pools, which are limited in Glacier Creek. Additionally, since 2018 we have completed fall adult fish surveys in Glacier Creek capturing a total of three adult coho salmon; Glacier Creek does not provide high quality habitat for coho salmon due to steep gradient, swift current, large gravel and cobble substrate, turbidity, and lack of habitat complexity (such as pools and woody debris jams). All salmon were captured below the proposed crossing location. Due to the channel conditions at lower Glacier Creek (e.g., consistent riffle habitat, large bedload, elevated turbidity) during summer high flows, when the proposed work would occur, fording Glacier Creek will not adversely affect fish habitat.”

ADF&G staff also indicated that a Fish Habitat Permit was not required for fording of Glacier Creek at the requested location, as the crossing location is about 500’ above the current cataloged extent<sup>30</sup> in the creek.

The Division finds that due to the limited crossings requested in the application amendment, poor habitat, durable substrate, and Constantine’s plans to cross the creek with minimal fuel onboard<sup>31</sup> that it is appropriate to issue the permit for the crossing of Glacier Creek.

*Plateau Creek:* Plateau Creek is a small, intermittent stream that at times has limited or no water flowing through it during drought conditions. From the Alaska Department of Fish and Games comments on Plateau Creek:

In 2014, ADF&G staff surveyed “Plateau Creek” and captured juvenile coho salmon, cutthroat trout, and Dolly Varden up to a point where the stream gradient increases to 13-23%. Using these data, we submitted a nomination to correct the stream course in the anadromous waters catalog (Giefer and Graziano 2023) nomination number 14-684). We resurveyed the creek several times since and have captured cutthroat trout and Dolly Varden, in fewer numbers than previous surveys. In 2019, we observed the creek largely dry from a region-wide drought and have not observed fish in the stream during 2021 or 2022 surveys. Constantine plans to use the existing Porcupine Road to cross Plateau Creek within the anadromous reach, which has a 36 inch culvert installed. Constantine proposes to ford Plateau Creek about 0.75 mile above the current cataloged reach.

According to topographic maps, between the upper extent of the cataloged reach and the proposed ford location, the stream increases in elevation about 400 ft, making fish presence at the site unlikely. We plan

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<sup>30</sup> Alaska Department of Fish and Game Anadromous Waters Catalog ( <https://www.adfg.alaska.gov/sf/sarr/awc/> )

<sup>31</sup> From APMA J20195690 Amendment # 1 Submission “Plateau Site: A helicopter will sling fuel in an as-needed basis to all respective equipment. Fuel fly-tanks are double hulled or will be placed in secondary containment and have a capacity of ~100 gallons.”



to resurvey the stream for fish presence during June 2023. At this time a permit is not required for fording or withdrawing water from Plateau Creek at the proposed locations.

We request Constantine limit vehicle traffic across the stream to the extent practicable and use log cribbing or other methods to reduce turbidity and stream disturbance. ADF&G commented on the Temporary Water Use Application F2019-048 Amendment #3 submitted along with this application by Constantine to use water from Plateau Creek and recommended adequate water remain in the stream for fish habitat downstream of the project area.

The Division finds that the limited fording of upper reaches of Plateau Creek requested in the application amendment is appropriate to permit with the following stipulations- "Overall project activities must be sequenced as such that the permittee is limiting the in-water fording of Glacier and Plateau Creek to the maximum extent practicable." and "Where practicable, the permittee shall utilize log corduroy, geotextile matting, or similar methods to limit the disturbance caused by in water- fording of Plateau Creek and immediately adjacent wetlands to reduce sediment turbidity and stream disturbance."

## 25. ISSUE TOPIC: INCREASED WATER TEMPERATURE

**Comment Summary:** Several comments expressed specific concerns about stream water temperatures from the requested activities, referenced increases in stream temperatures with timber operations in other areas, and impacts of water temperature to anadromous fish.

**DMLW Response:** Comments Noted. There are various studies regarding the increase in surface water temperatures from **landscape-scale timber harvesting operations** in warmer climates than the Klehini River Valley, especially where shading riparian stands of timber are removed near perennial streams. These are also in areas that have limited groundwater influence on stream discharge quantities.

The issued permit is only authorizing those timber clearing operations necessary for linear access routes (access trails and seismic lines) and drill sites. Due to the trivial scale of clearing activity authorized by this issued Land Use Permit and the heavy glacial and groundwater influence on surface water temperatures, DMLW finds that increased surface water temperatures highly unlikely and further consideration is unwarranted.

## 26. ISSUE TOPIC: WATER USE

**Comment Summary:** Several commenters expressed concern for the quantity of water proposed for use, and the relative lack of information regarding temporary water use and stream reaches within the amendment application.

**DMLW Response:** Comments Noted. The benefit of sonic overburden drilling as proposed is the ability to require minimal or no water (fluids) usage. Water Use Authorizations are reviewed and issued pursuant to applicable Statutes (AS 46) and Regulations (11 AAC 93) by the DNR Water Section and are outside the scope of the MLUP permit adjudication process. Temporary Water Use Authorization applications are not disposals of state interest subject to state constitutional public notice requirements.

All MLUPs are stipulated on the receipt and maintenance of all other applicable State and Federal permits (MLUP J20195690#1, Section 3). Section 3 of the MLUP notes that issuance of the permit does not relieve the applicant of the responsibility of securing any other permits or authorizations required and conditions the approval on conformance with all other applicable State, Federal and local laws, and

regulations in effect during the life of the permit term.

## 27. ISSUE TOPIC: BALD EAGLES

**Comment Summary:** Many commenters remarked on concerns that the activity proposed within the amendment would have adverse impacts on local Bald Eagle populations, particularly breeding and nesting eagles rearing juveniles in the area.

**DMLW Response:** Comment Noted. The Division took a hard look at all factors associated with potential impacts on Golden and Bald Eagles and included pertinent protective stipulations as terms of the permit.

Pursuant to the amendment request, Constantine operates under a Raptor Management Plan and is committed to an annual survey for Golden and Bald Eagle nesting activity prior to fieldwork. The 2023 Raptor Survey was conducted in May 2023. In consideration of known and documented timeframes of the utilization of nests and breeding/rearing periods in the greater Haines area, May is an appropriate time to determine nest locations and occupancy. **Constantine proposes a half-mile buffer if an active nest is identified.**

The Division received comments from the US Fish and Wildlife Service (USFWS) regarding buffers and mitigation measures to prevent adverse impacts on Bald and Golden Eagles, including a reminder that Constantine's activities are subject to the provisions of the federal Bald and Golden Eagle Protection Act (BGEPA). The BGEPA prohibits the take of bald and golden eagles, their parts, nests, and eggs either directly or indirectly. Under the BGEPA, "disturb" means to agitate or bother an eagle to a degree that causes, or is likely to cause: Injury (including a decrease in an eagle's chances of survival). A decrease in its productivity (including by substantially interfering with normal behavioral patterns, including breeding, feeding, or sheltering behavior). Nest Abandonment.

The USFWS recommended a buffer of 660 feet of an in-use or alternate nest bald eagle nest unless it involves blasting, in which case the Service recommended a half-mile buffer. Additionally, the Service recommended a half-mile buffer for the more sensitive golden eagle nests.

### ***From the Division's response to the USFWS buffer comment:***

DMLW concurs with the Service that avoidance buffers around in-use and alternate nests are necessary for the mitigation of impacts to Bald and Golden Eagles. The applicant has proposed a larger half-mile buffer for project activities. DMLW has reviewed your comment and the Service's National Bald Eagle Management Guidelines NBEMG (2007).

**DMLW has required a general avoidance buffer for Bald Eagle Nests of 660' from access construction utilizing heavy equipment and at the Geotech drill sites.** For the use of small charge explosives during seismic refraction studies, DMLW has conducted a desktop air blast attenuation and vibration study analysis. Our office understands that the Service's recommendations were based on application materials that did not include an estimated sound pressure level or peak particle velocity (ground vibration). **As the blasts are contained (buried under 3-5' of soil), the peak linear unweighted decibels of the largest charge shot are anticipated to be around 157 (dB) at the blast site, which is comparable to the open-air firing of a .30-06 rifle commonly used for subsistence and sport hunting.** DMLW understands that the half-mile buffer recommendation is derived from the NBEMG Category H (Blasting and other loud, intermittent noises). However, the activity is more suitably related to Construction Category B (660' buffer) or even Cat F which includes firearms discharges due to hunting.

**Due to the limited number of blasts along each seismic line and the attenuation of the air blast (air overpressure) as distance increases away from the shot hole, DMLW has determined that a 1320' or quarter mile buffer requirement for blasting purposes is appropriate. The applicant may continue to implement their proposed half-mile buffer for Bald Eagle nests at their discretion.**

DMLW has also included **the requested half-mile spatial avoidance buffer for Golden Eagles as a provision of the land use permit.** However, DMLW does not anticipate any Golden Eagle nests located within a half-mile of any of the project activities.

## **28. ISSUE TOPIC: SUBSISTENCE AND SPORT HUNTING**

**Comment Summary:** General concerns were listed by several commenters regarding subsistence and sport hunting at the Klehini and Plateau sites.

**DMLW Response:** Comments Noted. During agency review, the Division consulted with both the Alaska Department of Fish and Game and the US Fish and Wildlife Service. Neither agency recommended or suggested that any additional permit provisions were needed to mitigate impacts or manage conflict with subsistence or sport hunting in the area. Activities conducted under this permit may cause a temporary localized displacement of certain game animals, but overall harvest numbers in the area are not anticipated to be impacted by the issuance of this permit.

## **29. ISSUE TOPIC: BEAR BAITING STATIONS**

**Comment Summary:** Several comments expressed concerns regarding the impacts of the proposed activities on active bear baiting stations for sport hunting in the area.

**DMLW Response:** Comments noted. According to State of Alaska Sport Hunting regulations, black bear bait stations/ gear in the proposed area of Constantine's activities must be removed by June 15<sup>th</sup> and the general season black bear season ends on June 30<sup>th</sup>. At the time of the issuance of this permit, both baiting and the general season are closed, and the permit only covers activities in 2023<sup>32</sup>.

## **30. ISSUE TOPIC: SUBSISTENCE PLANT HARVESTING**

**Comment Summary:** Several Commenters remarked a perception that issuance of this permit will preclude access to permit area for traditional subsistence and medicinal plant harvesting<sup>33</sup>.

**DMLW Response:** Comment Noted. As discussed in Issue Topic 16 "Restriction of Public Access" above, issuance of this permit does not provide Constantine with authority to exclude public uses of their state mining claims, except for those limited closures directly related to the seismic line studies and

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<sup>32</sup> If an extension of the permit is requested under 11 AAC 96.040(c) or a new permit application under 11 AAC 96.030 is submitted for activities beyond 2024, the Division will consider impacts to bear baiting activities at that time.

<sup>33</sup> The Division reminds commenters and members of the public that commercial harvesting of non-timber forest products requires a permit from DNR. Commercial harvesting of non-timber forest products (NTFP), up to certain quantities of harvest, are permitted through the Department of Natural Resources (DNR) through a Limited Non-timber Forest Products Commercial Harvest Permit, under 11 AAC 96.035. Non-timber forest products are generally defined as products derived from biological resources. Examples may include mushrooms, conks, chaga, boughs, cones, leaves, burls, landscaping transplants, and seeds, roots, flowers, fruits, and berries. Not included are minerals, rocks, soil, water, animals, and animal parts. <https://dnr.alaska.gov/mlw/cdn/pdf/factsheets/limited-non-timber-forest-products-commercial-harvest-permit.pdf>

explosives use. Additionally, the applicant has designed their proposed activities to effectively minimize the disturbance outside of existing access roads and the access associated with the Baby Brown Timber sale. Issuance of this Land Use Permit will have de minimis adverse impacts to plant harvesting.

### **31. ISSUE TOPIC: HAINES HIGHWAY VIEWSHED/KLEHINI RIVER RAFTING**

**Comment Summary:** Some commenters expressed concerns that activities proposed in the application amendment will impact the Haines Highway viewshed and that noise from the seismic refraction studies could impact rafting along the Kleheni River.

**DMLW Response:** Comment noted. DMLW has reviewed the topography and the view buffers provided by the forest between the project activities. It is unlikely that the activities proposed will be visible from the highway, except for the already planned and authorized Baby Brown Timber access road to the Plateau site. DMLW has conducted an air blast attenuation/noise analysis and has determined that noise impacts along the Kleheni River will be de minimis. If heard during rafting, the noise will be short and intermittent comparable in rapport to firearms utilized for sport and subsistence hunting.

**RESPONSE TO AGENCY COMMENTS: ALASKA DEPARTMENT OF FISH AND GAME**

Item #	Issue Topic	ADFG Comments	DMLW Response
1	Introduction	<p>Alaska Department of Fish and Game (ADF&amp;G) biologists reviewed Constantine North Inc.'s (Constantine) Amendment to Multi-Year 2019-2023 Application for Permits to Mine in Alaska (APMA) #5690 to the Alaska Department of Natural Resources (ADNR). The amendment includes the addition of overburden drilling at 51 sites, geophysical seismic surveys, and the installation of 8-10 monitoring wells to map overburden depth and bedrock type. The work proposed is near Glacier Creek; the "Klehini Site" on the east side of the creek and the "Plateau Site" on the west side. Access to the sites will be through the Haines State Forest Road system including through the planned road as a part of the Baby Brown Timber Sale across Glacier Creek. Helicopter support maybe needed to assist construction. Seismic surveys will be laid out in lines (10 lines, 5.2 miles long total) brushed to a width of 5-15 feet. Along the lines, 12-15 holes will be excavated, by hand, and ½ pounda charges placed within the hole and buried by 3 feet of soil and debris prior to detention. Blasting will occur once or twice a day. Overburden drilling will consist of drilling 4-6 holes to depths 65-275 ft using a 350 horsepower Sonic track mounted drill unit; to verify the results from the seismic surveys. A drill pad (30 ft x 100 ft) will be constructed at each drill site. The application does not state if rock will be placed to construct these pads; however, they will be reclaimed with top soil and wood debris and planted if needed. Exact locations of the monitoring wells are not listed in the application, but the de minimis activity will not result in impacts to fish or wildlife in the area.</p>	Comment Noted

Item #	Issue Topic	ADFG Comments	DMLW Response
2	Road Construction	<p>To access the sites Constantine proposes to construct 12 miles of road, 5.9 miles of trails, and a bridge over Glacier Creek. The road construction and the installation of the Glacier Creek bridge are a part of ADNR Division of Forestry's (DOF) Baby Brown Timber Sale; sold to NWFP Inc. in 2021, who plan to begin construction on the road network in 2023 (Greg Palmieri, Haines Area Forester ADNR DOF, personal communication May 31, 2023). Therefore, Constantine may not be constructing the forest roads or fording Glacier Creek, as presented in this APMA amendment application. However, if fording Glacier Creek is necessary to access the Plateau site (if the bridge is not constructed) we recommend crossings occur perpendicular to the direction of flow, avoiding small braided channels within riffles, in areas with large cobble. The proposed ford location is about 500 ft upstream of the current cataloged extent of Glacier Creek. Therefore, a Fish Habitat Permit is not required for fording the creek. A fish habitat permit will be required for installing a bridge, but will be issued to ADNR DOF.</p>	<p>Comment Noted. As a term of the issued permit, DMLW has included the following stipulation: <b>In-water fords are subject to the following:</b></p> <ol style="list-style-type: none"> <li>1. Crossings shall be made from bank to bank in a direction substantially perpendicular to the direction of stream flow; avoiding small braided channels within riffles, in areas with large cobble.</li> <li>2. Crossings shall be made only at locations with gradual down sloping banks. There shall be no crossings at locations with sheer or cut banks.</li> <li>3. Beyond ordinary impact, stream slopes or banks shall not be altered or disturbed in any way to facilitate crossings. Any inadvertent damage to banks or slopes shall be immediately stabilized by recontouring the slope or bank; planting seed or transplanting vegetation (if necessary), to avoid sediment erosion into the stream. Examples of corrective measures include, recontouring soil and replacing vegetation in disturbed sand and gravel areas; covering frozen ground with the vegetation mat or other vegetation, etc. In all cases, avoid causing additional damage. Within the trip completion report, the Permittee shall include location maps, photos and description of corrective measures taken to stabilize affected slopes and banks. Upon inspection, if damage has not been properly corrected, the permittee may be required to reconstruct and revegetate the slopes and banks according to measures defined by the Division of Mining, Land &amp; Water and the Alaska Department of Fish &amp; Game.</li> </ol>
	Klehini Site	<p>Constantine plans to drill 31 overburden holes and complete 4 lines of seismic blasting (2.5 miles) throughout this site. This site is mostly within a series of small recent timber sales, referred to as Klehini Beetle harvest area, which has an established network of forest roads. We are not aware of streams or wetlands within the site. To limit disturbance to the regenerating forest and terrestrial wildlife habitat, we recommend using the existing network of forest roads to the maximum extent possible when moving between drill sites.</p>	<p>Comment Noted. DMLW appreciates that the applicant is utilizing the existing next work of forest roads within the Klehini stite to the maximum extent practicable. No additional action is required.</p>
	Plateau Site	<p>Constantine plans to drill 19 overburden holes and complete 6 lines of seismic blasting (2.7 miles) throughout this site. Portions of this site are within harvest unit U7-02 of the Baby Brown Timber Sale. Plateau Creek is the only stream in the site. An unnamed tributary of Stream number 115-32-10250-2077-3159c is less than 500 ft north of the site, and the proposed activities will not impact the stream.</p>	<p>Comment Noted.</p>

Item #	Issue Topic	ADFG Comments	DMLW Response
	Plateau Site/ Plateau Creek	<p>In 2014, ADF&amp;G staff surveyed "Plateau Creek" and captured juvenile coho salmon, cutthroat trout, and Dolly Varden up to a point where the stream gradient increases to 13-23%. Using these data, we submitted a nomination to correct the stream course in the anadromous waters catalog (Giefer and Graziano 2023) nomination number 14-684). We resurveyed the creek several times since and have captured cutthroat trout and Dolly Varden, in fewer numbers than previous surveys. In 2019, we observed the creek largely dry from a region-wide drought and have not observed fish in the stream during 2021 or 2022 surveys. Constantine plans to use the existing Porcupine Road to cross Plateau Creek within the anadromous reach, which has a 36 inch culvert installed. Constantine proposes to ford Plateau Creek about 0.75 mile above the current cataloged reach.</p> <p>According to topographic maps, between the upper extent of the cataloged reach and the proposed ford location, the stream increases in elevation about 400 ft, making fish presence at the site unlikely. We plan to resurvey the stream for fish presence during June 2023. At this time a permit is not required for fording or withdrawing water from Plateau Creek at the proposed locations.</p>	Comment Noted.
	Plateau Site / Plateau Creek	<p>We request Constantine limit vehicle traffic across the stream to the extent practicable and use log cribbing or other methods to reduce turbidity and stream disturbance. ADF&amp;G commented on the Temporary Water Use Application F2019-048 Amendment #3 submitted along with this application by Constantine to use water from Plateau Creek and recommended adequate water remain in the stream for fish habitat downstream of the project area.</p>	<p>Comment Noted. As a term of the issued permit, DMLW has included the following stipulations: "Overall project activities must be sequenced as such that the permittee is limiting the in-water fording of Glacier and Plateau Creek to the maximum extent practicable." and "Where practicable, the permittee shall utilize log corduroy, geotextile matting, or similar methods to limit the disturbance caused by in water- fording of Plateau Creek and immediately adjacent wetlands to reduce sediment turbidity and stream disturbance."</p>

Item #	Issue Topic	ADFG Comments	DMLW Response
	Glacier Creek	<p>ADF&amp;G Habitat Section biologists have surveyed Glacier Creek and its tributaries for adult and juvenile fish presence since 2014e and since 2016 we have completed aquatic biomonitoring studies at two sites in Glacier Creek (Krull 2022). Throughout our fish surveys we captured one adult cutthroat trout and one juvenile rainbow trout near the old bridge location and Dolly Vardenf up to Middle Glacier Creek, however in relatively low numbers compared to other drainages in the region. We usually captured fish in small side channels or pools, which are limited in Glacier Creek. Additionally, since 2018 we have completed fall adult fish surveys in Glacier Creek capturing a total of three adult coho salmon; Glacier Creek does not provide high quality habitat for coho salmon due to steep gradient, swift current, large gravel and cobble substrate, turbidity, and lack of habitat complexity (such as pools and woody debris jams). All salmon were captured below the proposed crossing location. Due to the channel conditions at lower Glacier Creek (e.g., consistent riffle habitat, large bedload, elevated turbidity) during summer high flows, when the proposed work would occur, fording Glacier Creek will not adversely affect fish habitat.</p>	<p>Comment Noted. DMLW considered this comment in authorizing fording of Glacier Creek and concurs with the ADFG's assessment.</p>
	Noise	<p>Blasting noise has the potential to disturb wildlife. We encourage Constantine to employ all available methods to reduce noise from blasting, if possible.</p>	<p>Comment Noted. For the use of small charge explosives during seismic refraction studies, DMLW has conducted as desktop airblast attenuation and vibration study analysis. Our office understands that the ADFG recommendations were based on application materials that did not include an estimated sound pressure level or peak particle velocity (ground vibration). As the blasts are contained (buried under 3-5' of soil), the peak linear unweighted decibels of the largest charge shot are anticipated to be around 157 (dB) at the blast site, which is comparable to open air firing of a .30-06 rifle commonly used for subsistence and sport hunting. For more information, please see the Airblast Attenuation Memo.</p>
	Hunting	<p>Black bears use the area, and the hunting season is open through June 30th. Hunting season for brown bears, black bears, mountain goats, and moose are open in September, and the Klehini Valley is a popular area for hunting. ADF&amp;G appreciates Constantine's commitments stated in the application on reducing impacts on raptors and migratory birds and the implementation of the Bear Management Plan. We ask the applicant to provide a summary of any observed furbearer or big game species seen in and around the work area with the locations and dates of observations. Finally, we encourage the applicant to contact ADF&amp;G Division of Wildlife staff if any wildlife-human conflicts occur; in which case, please contact Carl Koch at (907) 465-4329 or carl.koch@alaska.gov.</p>	<p>Comment Noted. At the time of the issuance of this permit, the general black bear season is now closed and this permit only covers activities in 2023. Activities conducted under the issued permit may cause a temporary localized displacement of game animals, but overall harvest numbers in the area are not anticipated to be impacted by the issuance of this permit. DMLW has shared ADFG's request to provide a summary of furbearers or big game species seen in and around the work area with the locations and dates of observations to ADFG along to the applicant. DMLW further advises that pursuant to land use regulation 11 AAC 96.040, the department can modify the provisions of a issued permit during the term of the permit if needed to address wildlife issues.</p>



**RESPONSE TO AGENCY COMMENTS: US FISH AND WILDLIFE SERVICE**

Item #	Issue Topic	USFWS Comments	DMLW Response
1	Introduction	<p>The Chilkat watershed produces Alaska’s highest vascular plant species richness and the greatest mammal diversity in Southeast Alaska due to an overlap of coastal and interior species. It also provides some of the best salmon habitat in Southeast Alaska. This high-quality salmon habitat facilitates the annual congregation of thousands of bald eagles (<i>Haliaeetus leucocephalus</i>) in the Chilkat River valley from hundreds of miles away. Given the area’s rich biodiversity and relative lack of legislative and administrative protection, the Service encourages the Alaska Department of Natural Resources (ADNR) to implement measures that will limit adverse impacts from permitted activities to fish and wildlife within the action area.</p>	<p>Comment Noted. The Haines State Forest is managed pursuant to the provisions Article 8 (Natural Resources) of the Alaska Constitution, Haines State Forest enabling legislation AS 41.15.300 - .330. the Alaska Forest Resources and Practices Act AS 41.17, the Alaska Lands Act AS 38.05 and the provisions of the Haines State Forest RMA Management Plan. As described in AS 41.15.300(a) <b>"The primary purposes for the establishment of the Haines State Forest Resource Management Area are the utilization, perpetuation, conservation, and production of the land and water including but not limited to the use of renewable and nonrenewable resources through multiple-use management and the continuation of other beneficial uses including traditional uses and other recreational activities."</b> From Haines State Forest Management Plan (Chapter 2): <b><u>The State Forest contains valuable habitats for fish and wildlife species that support the economy and lifestyle of the Haines community. The management of the Forest will minimize the impact on these resources, even in units classified as Forest Land. 1. Maintain and enhance the fish and wildlife resources that support commercial, recreational, and subsistence activities in the Haines area. 2. Maintain or improve the level of water quality through sound land management, stream bank management, and silvicultural practice. 3. Maintain and enhance the existing diversity of fish and wildlife habitat through coordinated interagency management, habitat enhancement, site rehabilitation and research programs.</u></b></p>
	Introduction	(continued from Comment 1 above)	<p>(continued from DMLW Response 1 above) In addition to the creation and management of the Haines State Forest and adjacent Chilkat Valley Bald Eagle Preserve, and the requirements of the Land Use Permitting process; the State of Alaska has robust regulatory programs to manage the use and appropriation of water AS 46.15 via the Alaska Water Use Act, to protect resident anadromous fish through the Alaska Department of Fish and Game's implementation of the fish habitat requirements of AS 16.05, and to protect and improve Alaska's water quality via the Alaska Department of Environmental Conservation's implementation of Alaska's strict water quality standards and the regulation of the discharge of pollutants via the Alaska Pollutant Discharge Elimination System. (APDES). With all of the above taken as a whole, its clear that the Service's comment regarding the "relative lack of legislative and administrative protections" is unfounded and promotes an unwarranted narrative.</p>

Item #	Issue Topic	USFWS Comments	DMLW Response
2	Introduction	The following is a summary of issues of concern to the Service that we recommend the ADNR consider in their evaluation of the Palmer Project APMA Amendment. This is not an exhaustive list that identifies every issue for inclusion; rather, it is a list of issues that the Service requests specific attention to, either because of our responsibilities under Federal law or their importance to fish, wildlife, and their habitat.	Comment Noted. DMLW has responded to the presented issues of concern in this Comments Response Matrix.
3	Bald and Golden Eagles	The Bald and Golden Eagle Protection Act (BGEPA; <a href="https://www.fws.gov/law/bald-and-golden-eagle-protection-act">https://www.fws.gov/law/bald-and-golden-eagle-protection-act</a> ) prohibits the take of bald and golden eagles, their parts, nests, and eggs either directly or indirectly. Under the BGEPA, “disturb” means to agitate or bother an eagle to a degree that causes, or is likely to cause: Injury (including a decrease in an eagle’s chances of survival). A decrease in its productivity (including by substantially interfering with normal behavioral patterns, including breeding, feeding, or sheltering behavior). Nest Abandonment	Comment Noted. DMLW has required that as a term of the issued permit that "Operations under this permit shall be conducted in conformance with applicable Federal, State, and local laws and regulations now, or hereafter, in effect during the life of the permit."
4	Bald and Golden Eagles	During the nesting period (defined in Alaska as March 1 to August 31), breeding eagles occupy and defend territories. A territory includes an in-use nest and may include one or more inactive, alternate nests that are built or maintained but not used for nesting in a given year. Both in-use eagle nests and alternate nests are protected under the BGEPA.	Comment Noted.
5	Bald and Golden Eagles	Eagles do not have to be present during the period of human activity for such actions to result in take. Actions that result in habitat loss or degradation (e.g., vegetation clearing) may result in take if they interfere with normal breeding, feeding, or sheltering habits and cause injury, a loss of productivity, or nest abandonment. Take becomes more likely with the loss or degradation of key landscape features, such as eagle nest sites, roost sites, and foraging areas.	Comment Noted.

Item #	Issue Topic	USFWS Comments	DMLW Response
6	Bald and Golden Eagles	The Service maintains an eagle nest database that may provide insight into nesting activity in the project area. These data are available in an online spatial database ( <a href="https://eagle.abrinc.com/">https://eagle.abrinc.com/</a> ) but have historical value only; nests displayed on the Historical Bald Eagle Nest Map may no longer exist on the landscape, and new nests may have been built that are not identified in the database. The Historical Bald Eagle Nest Map is not intended to take the place of a survey to determine the presence/absence, status, or exact location of a current eagle nest. Current eagle nests and potential habitat may or may not overlap with the nesting areas shown.	Comment Noted. DMLW has provided your comment letter to the applicant.
7	Bald and Golden Eagles	The Service appreciates the inclusion of annual raptor surveys as a mitigation measure in the amendment application, and we encourage the project proponent to submit survey results to the Service (preferably in WGS 84) format so that we can provide technical assistance as needed and update our nest database with the most current information.	Comment Noted. DMLW has required that as a term of the issued permit that Constantine Metals disclose the location of any prior identified raptor nests (in use, alternate, or even presumed abandoned), nests identified in any continuing surveys during the duration of this permit, and any nests inadvertently discovered during field activities prior to the onset of project activities or within 48 hour for future discoveries. This requirement applies to any nest within a half mile of the activities authorized in the issued Land Use Permit.
8	Bald and Golden Eagles	To avoid disturbing nesting bald eagles, we recommend avoiding activities within 660 feet of an in-use or alternate nest, unless it involves blasting, in which case we recommend a half mile buffer. Golden eagles are more sensitive to human disturbance than bald eagles, so we recommend a half mile spatial buffer around in-use and alternate nests for all types of disturbance.	<p>Comment Noted. DMLW concurs with the Service that avoidance buffers around in-use and alternate nests are necessary for mitigation of impacts to Bald and Golden Eagles. The applicant has proposed larger half mile buffer for project activities. DMLW has reviewed your comment and the Service's National Bald Eagle Management Guidelines NBEMG (2007). DMLW has required a general avoidance buffer for Bald Eagle Nests of 660' from access construction utilizing heavy equipment and at the Geotech drill sites. For use of small charge explosives during seismic refraction studies, DMLW has conducted a desktop airblast attenuation and vibration study analysis. Our office understands that the Service's recommendations were based on application materials that did not include an estimated sound pressure level or peak particle velocity (ground vibration). As the blasts are contained (buried under 3-5' of soil), the peak linear unweighted decibels of the largest charge shot are anticipated to be around 157 (dB) at the blast site, which is comparable to open air firing of a .30-06 rifle commonly used for subsistence and sport hunting. DMLW understands that the half mile buffer recommendation is derived from the NBEMG Category H (Blasting and other loud, intermittent noises). However, the activity is more suitably related to Construction Category B (660' buffer) or even Cat F which includes firearms discharges due to hunting. Due to the limited number of blasts along each seismic line and the attenuation of the air blast (air overpressure) as distance increases away from the shot hole, the DMLW has determined that a 1320' or quarter mile buffer requirement for blasting purposes is appropriate. The applicant may continue to implement their proposed half mile buffer for Bald Eagle nests at their discretion.</p> <p>DMLW has also included the requested half mile spatial avoidance buffer for Golden Eagles as a provision of the land use permit and anticipates that it unlikely that any Golden Eagle nests are located within a half mile of any of the project activities.</p>

Item #	Issue Topic	USFWS Comments	DMLW Response
9	Bald and Golden Eagles	If it is not possible to complete work outside of the nesting season and if eagle nests are located within a half mile of the project site, the project proponent may need an eagle nest disturbance permit, in which case we recommend coordinating with the Service. Please visit our Eagle Permits website for additional guidance ( <a href="https://www.fws.gov/program/eagle-management/eagle-permits">https://www.fws.gov/program/eagle-management/eagle-permits</a> ).	Comment Noted. The DMLW has required reporting of nests located within a half mile of the activities authorized in the issued Land Use Permit. See DMLW Response to Comment 8 regarding the desktop airblast and vibration analysis.
10	Migratory Birds	The Service appreciates the consideration of vegetation clearing timing windows during peak avian breeding (April 15 to July 15) in the project area. To the maximum extent possible, we recommend avoiding activities that may displace birds after they have laid their eggs and before the young have fledged.	Comment Noted.
11	Migratory Birds	Construction and operational lighting should also be planned and implemented to ensure they do not unnecessarily overlap with native bird breeding seasons. To the maximum extent practicable, limit construction activities to the time between dawn and dusk to avoid the illumination of adjacent habitat areas. If construction activity time restrictions are not possible, use down-shielding, directional lighting, and/or low intensity lighting to avoid light trespass into bird habitat.	Comment Noted. DMLW has provided a copy of your comments to the applicant.
12	Migratory Birds	The Service also recommends the following conservation measures to prevent birds from becoming trapped in project structures or perching and nesting in project areas that may endanger them:	Comment Noted. DMLW has provided these recommendations to the applicant. As a standard permit stipulation all borehole casings are required to be capped until they are plugged or removed.
13	Migratory Birds	Install anti-perching devices on facilities and equipment where birds may commonly nest or perch.	See comment response 12 above
14	Migratory Birds	Cover or enclose all potential nesting surfaces on the structure with mesh netting, chicken wire fencing, or other suitable exclusion material prior to the nesting season to prevent birds from establishing new nests. The	See comment response 12 above
15	Migratory Birds	Cap pipes and cover/seal all small dark spaces where birds may enter and become trapped.	See comment response 12 above
16	Migratory Birds	The following deterrents are also encouraged to prevent birds from nesting on structures where they may cause conflicts, endanger themselves or create a human health and safety hazard:	Comment Noted. DMLW has provided these recommendations to the applicant.

Item #	Issue Topic	USFWS Comments	DMLW Response
17	Migratory Birds	During the nesting season, monitor potential nesting surfaces at least once every three days for nesting activity. It is preferable to remove non-active nests (without birds or eggs), partially completed nests, or new nests as they are built (prior to occupation). If birds have started to build nests, the nests should be removed before they are completed. Water should not be used to remove the nests if nests are located within 50 feet of any surface waters.	See comment response 16 above
18	Migratory Birds	If an active nest becomes established (i.e., there are eggs or young in the nest), avoid work that could result in abandonment or destruction of the nest until the young have fledged or the nest is unoccupied. Avoid construction activities that may displace birds after they have laid their eggs and before the young have fledged, if possible.	See comment response 16 above
19	Migratory Birds	The Chilkat watershed is home to many “species of concern” such as marbled murrelets ( <i>Brachyramphus marmoratus</i> ), Queen Charlotte goshawks ( <i>Accipiter gentilis laingi</i> ), olive-sided flycatchers ( <i>Contopus cooperi</i> ), varied thrushes ( <i>Ixoreus naevius</i> ), and rufous hummingbirds ( <i>Selasphorus rufus</i> ). These species are on one or more “watch lists” for declining populations, and are vulnerable to habitat loss, environmental contaminants, and threats during the breeding season or at other critical times throughout the year. The Service recommends project proponents avoid disturbing habitats these species rely on to the maximum extent possible.	Comment Noted. DMLW has provided these recommendations to the application.
20	Fish	Streams are an integral constituent of freshwater aquatic habitats and provide a variety of fish habitat, including migration corridors, resting, feeding, spawning, rearing, and over-wintering. Retaining the biologic and hydrologic integrity of streams is essential to conserving the Chilkat watershed’s fish species and their habitats. In addition to the following conservation measures, projects proposing in-stream and river work may require authorization from other agencies including the Alaska Department of Fish and Game (ADF&G), the Army Corps of Engineers, and the National Marine Fisheries Service.	Comment Noted. The Alaska Department of Natural Resources manages the Haines State Forest RMA with the goal of maintaining and enhancing the fish and wildlife resources that support commercial, recreational, and subsistence activities in the Haines Area. DMLW’s adjudication of the proposed activities has taken a careful and reasoned review of the potential impacts to streams within the project area and included agency consultation with the Alaska Department of Fish and Game’s fish habitat subject matter experts.

Item #	Issue Topic	USFWS Comments	DMLW Response
21	Fish	<p>Use screened intake for water withdrawals. Appropriate screening prevents suction entrapment and entrainment injury to small and juvenile fish present in the area of the withdrawal. The ADF&amp;G Habitat Division Technical Report No. 97-8 (<a href="https://dot.alaska.gov/stwddes/research/assets/pdf/tr_97_08.pdf">https://dot.alaska.gov/stwddes/research/assets/pdf/tr_97_08.pdf</a>) contains additional information on screening criteria for various species and life stages of fish as well as methods for design and fabrication of cylindrical water intakes.</p>	<p>Comment Noted. DMLW has included the following stipulation as a term of the issued Land Use Permit. "In any fish bearing waters, each water intake structure shall be centered and enclosed in a screened box designed to prevent fish entrapment, entrainment or injury. The effective screen opening may not exceed ¼ inch. To reduce fish impingement on screened surfaces, water velocity at the screen/water interface may not exceed 0.5 feet per second when the pump is operating." Smaller screen sizes may be required by ADFG's issued Fish Habitat Permit.</p>
22	Fish	<p>To prevent bank erosion and maintain natural velocities, bank stabilization and/or restoration practices should follow bioengineering techniques to the maximum extent practicable (e.g., root wads and bundled water tolerant willows). The use of sheet pile, riprap and rock should be avoided. See ADF&amp;G's Streambank Revegetation and Protection guide for more information on recommended site specific techniques.</p>	<p>Comment Noted.</p>
23	Fish	<p>Maintain a minimum 200-foot setback from waterways when storing hazardous or toxic material.</p>	<p>Comment Noted. The applicant must follow all applicable state, federal, and local laws regarding storage of hazardous materials.</p>
24	Fish	<p>Containers with an aggregate storage capacity of greater than 55 gallons that contain fuel or hazardous substances should not be stored within 100 feet of a waterbody or within 1,500 feet of a current surface drinking water source.</p>	<p>Comment Noted. DMLW includes the following as a standard stipulation in Miscellaneous Land Use Permits for Hardrock Exploration: "Storing containers within 100 feet of water bodies. Containers with a total capacity larger than 55 gallons which contain fuel or hazardous substances shall not be stored within 100 feet of a water body."</p>
25	Fish	<p>During equipment use, storage, or maintenance, ensure that the site is protected from leaking or dripping fuel and hazardous substances by the placement of drip pans or other surface liners designed to catch and hold fluids under the equipment, or by creating an area for storage or maintenance using an impermeable liner or other suitable containment mechanism.</p>	<p>Comment Noted. While a best practice for storage and maintenance operations, drip pans or surface liners are not required by the terms of the issued Land Use Permit. The applicant must follow all applicable state, federal, and local laws regarding spills or releases of hazardous substances from equipment.</p>
26	Fish	<p>During fuel or hazardous substance transfer, ensure that a secondary containment or a surface liner is placed under all container or vehicle fuel tank inlet and outlet points, hose connections, and hose ends. Appropriate spill response equipment, sufficient to respond to a spill of up to five gallons, should be on hand during any transfer or handling of fuel or hazardous substances.</p>	<p>Comment Noted. DMLW includes this language as a standard stipulation in Miscellaneous Land Use Permits for Hardrock Exploration.</p>

Item #	Issue Topic	USFWS Comments	DMLW Response
27	Bats	The project area is located within the known range of at least three bat species: little brown myotis ( <i>Myotis lucifugus</i> ), western long-eared myotis ( <i>Myotis evotis</i> ), and silver-haired bat ( <i>Lasiurus noctivagus</i> ). Bats use a variety of habitat types but are typically associated with forests and woodlands. Roosting sites, particularly maternity roosts and hibernacula, are especially important and may include buildings, trees, rock piles, and caves and crevices. The Service recommends the following conservation measures for bats within the action area:	Comment Noted. The proposed activities include limited forest clearing. DMLW has forwarded this comment and recommendations below to the applicant.
28	Bats	Avoid disturbing or destroying known or suspected bat roosts, especially when likelihood of use is high (e.g., maternity, day, and night roosts in the active season and hibernacula during the winter).	See comment response 27 above.
29	Bats	Bat distribution, seasonal activity patterns, and the timing of reproduction are all poorly documented throughout much of Alaska. Collecting and reporting bat observations will help improve our understanding of bats in the state. documentation of the following information:	See comment response 27 above.
30	Bats	Specifically, we encourage documentation of the following information: o Groups of three or more bats (either flying or roosting). This may indicate high quality foraging habitat, a nearby maternity roost (May to mid-July), or a nearby migration stopover or overwintering area (August to September). Observations of bats from late fall (October to November) to early spring (March to April). This will help us determine if bats are migrating or overwintering locally.	See comment response 27 above.
31	Invasive Species	Invasive species are one of the greatest threats to native biodiversity and are a significant driver of native species loss worldwide. Alaska is particularly vulnerable to the expansion of invasive species because of rapidly changing habitat caused by shifting weather conditions, altered hydrologic regimes, and increasing urban and natural resource development. The following measures aim to prevent the introduction and spread of invasive species within the action area.	Comment Noted. DMLW has stipulated that Constantine follow the project's existing invasive species management plan that was reviewed and approved by BLM.
32	Invasive Species	Equipment should arrive and leave the project clean without visible soil clumps, plant, or animal material.	See comment response 31 above.
33	Invasive Species	Equipment washing should occur at the same location during project operations; this site should then be surveyed regularly and treated as necessary. Do not clean equipment in or near waterways as it may promote the spread of invasive plant species downstream.	See comment response 31 above.

Item #	Issue Topic	USFWS Comments	DMLW Response
34	Invasive Species	Identify locations of known invasive plant infestations and avoid infested areas to the extent possible. Visit <a href="http://aknhp.uaa.alaska.edu/botany/akepic/">http://aknhp.uaa.alaska.edu/botany/akepic/</a> to view infestations in your area. If not possible, consider the seasonality of the work to minimize the operations when invasive species seeds or would be viable and readily moved.	See comment response 31 above.
35	Invasive Species	Re-vegetate bare soils as soon as feasible to minimize the possible establishment of invasive plant species.	See comment response 31 above.
36	Invasive Species	Use certified invasive-free materials.	See comment response 31 above.
37	Topsoil	The following conservation measures will help project proponents minimize some of the potential impacts caused by topsoil removal to improve the chances of successful revegetation or restoration of the project site.	Comment Noted. Mine Reclamation performance standard regulation 11 AAC 97.200(a)(2) requires that "(2) If topsoil from an area disturbed by a mining operation is not promptly redistributed to an area being reclaimed, a miner shall segregate it, protect it from erosion and from contamination by acidic or toxic materials, and preserve it in a condition suitable for later use". Constantine's submission/ reclamation plan discusses the storage and reuse of topsoil for both access construction and at the drill sites. In addition, DMLW has included in depth topsoil/overburden muck/organic material "duff" reclamation stipulations as a term of the issued Land Use Permit.
38	Topsoil	Plan to sequence construction activities such that existing surface vegetation can initially be removed, followed by grubbing roots of trees (unless whole trees are needed for root wad work in stream restoration) and blading remaining organic and topsoil layers for stockpiling for reclamation.	See comment response 37 above
39	Topsoil	Salvage and re-spread topsoil concurrently with construction, when possible, to ensure topsoil is used in similar habitats.	See comment response 37 above
40	Topsoil	When spread, redistribute topsoil to a uniform and stable thickness and protect it from compaction and erosion wind and water until vegetation is established.	See comment response 37 above
41	Topsoil	Salvage the maximum amount of organic material and topsoil practicable, even during winter construction, and store separately (e.g., away from other overburden) for use during reclamation.	See comment response 37 above
42	Topsoil	Salvage the organic and topsoil layers and stockpile separately. At sites where the organic (O) and topsoil (A) layers are hard to distinguish or are very limited, we recommend salvaging the uppermost 6 inches of the soil profile.	See comment response 37 above



Item #	Issue Topic	USFWS Comments	DMLW Response
43	Topsoil	If topsoil cannot be applied immediately, it should be stockpiled separately from subsoil and labeled as topsoil for use later in reclamation.	See comment response 37 above
44	Topsoil	We recommend direct hauling of topsoil from the salvage location to a site prepared for reclamation. Direct hauling increases the viability of native seeds and propagules in the salvaged topsoil by allowing them to begin reestablishment as soon as site conditions permit.	Comment noted. Direct haul technique is not required by this project. The applicant proposes small stockpiles and berms of charged (seed banked) overburden and topsoil near the area of disturbance. The short term overburden berms and stockpiles are not likely to have significant loss of banked seed viability as may be seen with large topsoil stockpiles. In the event that erosion control revegetation is quickly needed, the applicant will utilize the approved seed mix.
45	Topsoil	If topsoil is stored for more than one growing season, where practicable, use topsoil for interim reclamation by spreading it over cut and fill areas, around outer boundaries of facilities, embankments, and drainage ditches.	See comment response 37 above.
46	Topsoil	Stockpiled materials that will not be used within the first year should be placed on a stable area, labeled as topsoil, left undisturbed and protected from the elements by seeding it with an interim seeding mix	See comment response 37 above.
47	Erosion Control and Revegetation	The Service provides the following recommendations with the goal of maintaining self-sustaining functioning habitat for fish, wildlife, and their habitats before, during, and after project development.	Comment Noted.
48	Erosion Control and Revegetation	Recontour slopes to blend with surrounding topography; consider using waterbars or contour furrowing on steeper slopes ( <a href="http://www.dot.alaska.gov/stwddes/desenviron/assets/pdf/bmp/bmp_11_00.pdf">http://www.dot.alaska.gov/stwddes/desenviron/assets/pdf/bmp/bmp_11_00.pdf</a> ).	Comment Noted. Mine Reclamation performance standard regulation 11 AAC 97.200(b) requires that "A miner shall reclaim an area disturbed by a mining operation so that the surface contours after reclamation is complete are conducive to natural revegetation or are consistent with an alternate post-mining land use approved under AS 27.19.030 (b) on state, federal, or municipal land, or with the post-mining land use intended by the landowner on private land. Measures taken to accomplish this result may include backfilling, contouring, and grading, but a miner need not restore the site's approximate original contours. A miner shall stabilize the reclaimed site to a condition that will retain sufficient moisture for natural revegetation or for an alternate post-mining land use approved under AS 27.19.030 (b) on state, federal, or municipal land, or for the post-mining land use intended by the landowner on private land."
49	Erosion Control and Revegetation	We recommend strategic placement of root wads, large logs, or rocks after seeding, to provide topographical relief, increase habitat complexity, and provide micro-climates for the re-establishment of plant species ( <a href="https://www.adfg.alaska.gov/static/home/library/pdfs/habitat/98_03.pdf">https://www.adfg.alaska.gov/static/home/library/pdfs/habitat/98_03.pdf</a> ).	Comment Noted. The applicant has proposed return topsoil and woody debris to reclaimed access trails and drill sites.

Item #	Issue Topic	USFWS Comments	DMLW Response
50	Erosion Control and Revegetation	Create surface roughness to help control surface water runoff and reduce sedimentation ( <a href="http://www.dot.alaska.gov/stwddes/desenviron/assets/pdf/bmp/bmp_30_00.pdf">http://www.dot.alaska.gov/stwddes/desenviron/assets/pdf/bmp/bmp_30_00.pdf</a> ).	Comment Noted.
51	Erosion Control and Revegetation	Use native, weed-free seed (preferably locally collected) specific to the habitat type, applied at specified rates, and cover the seed to specified depth.	Comment Noted. The applicant has consulted with the Alaska Department of Natural Resources, Division of Agriculture (Plant Material Center) to craft a suitable seed mix for erosion control revegetation. This mix has also been approved by Haines State Forest staff and DMLW for this project.
52	Erosion Control and Revegetation	Interim seeding may be necessary to keep topsoil viable, control erosion, reduce surface runoff, and maintain other habitat characteristics	Comment Noted. Due to the limited duration of proposed activities, interim seeding is not anticipated.
53	Erosion Control and Revegetation	Use tackifier, mulch, or other bonding agents to keep seed in place ( <a href="http://www.dot.alaska.gov/stwddes/desenviron/assets/pdf/bmp/bmp_56_00.pdf">http://www.dot.alaska.gov/stwddes/desenviron/assets/pdf/bmp/bmp_56_00.pdf</a> ).	Comment Noted.
54	Erosion Control and Revegetation	After final grading and before replacing topsoil and other segregated materials, the regraded land should be ripped to promote root penetration.	Comment Noted. DMLW anticipates that there will be limited soil compaction concerns requiring ripping prior to placement of topsoil/charged (dormant seeded) overburden veneer and woody debris.



# MEMORANDUM

Department of Natural Resources

STATE OF ALASKA

Division of Mining, Land & Water

Mining Section

TO: **Memo to Casefile APMA J20195690#1**

DATE: 6/15/2023

TELEPHONE: 451-2736

FROM: Dave Charron  
Geologist 4

SUBJECT: Airblast Attenuation

Notes from review of Constantine North Seismic Refraction Study using explosives at the Klehini and Plateau sites as requested in APMA application amendment J20195690#1.

Energy released in an explosion creates an air overpressure, commonly called an airblast, in the form of a propagating wave. If the receiver is close enough to the blast, the overpressure can be felt as a pressure front as the airblast passes. The accompanying booming sound lasts for only a few seconds. The explosive charges are buried 3-5' below ground surface resulting in an airblast with a frequency content below about 250Hz<sup>1</sup>. Its important to note that there is a exponential difference in noise from a confined blast than an unconfined or open air blast. Several public comments incorrectly referenced unconfined blast decibels.

Using the federal Office of Surface Mining and Reclamation Enforcement's Airblast Prediction excel spreadsheet I calculated the estimated sound pressure level (SPL) unweighted decibels (dB) and weighted decibels (dBA)<sup>2</sup> from 2.5 lb explosive charge at 1', 660', 1320', 1 mile (5280') from a confined detonation<sup>3</sup>. A-weighted decibel (dBA) is an expression of relative loudness of sounds as perceived by the human ear. These estimates are based on worst case scenario as far as having zero wind, unfavorable atmospheric & weather conditions, and without the additional attenuation of the forest and topography.

Distance	Peak unweighted decibels (dB) <sup>4</sup> and Peak A-weighted decibels (dBA)	Comparative Peak Noises
1 foot adjacent to shot hole	157(dB)	.30-06 hunting rifle 24" barrel is 163(dB)
660 feet or 1/8 mile	112(dB)/103(dBA)	Chainsaw is 110(dB) or single riding lawnmower passing close by is 103(dBA) noise.
1320 feet or 1/4 mile	107(dB)/98(dBA)	Weedeater Trimmer is 96 (dBA)
5280 feet or 1 mile	97(dB)/88(dBA)	Bedside alarm clock ringing 85(dBA)

ATTENUATION MAPS FOR KLENINI AND PLATEAU SITE ARE ATTACHED

<sup>1</sup> 250hz used in calculating A-weighted decibels (dBA)

<sup>2</sup> Utilizing A-weighting conversion calculator and at 250hz.

<sup>3</sup> Explosives to be confined 3-5' under the soil.

<sup>4</sup> Rounded Up.



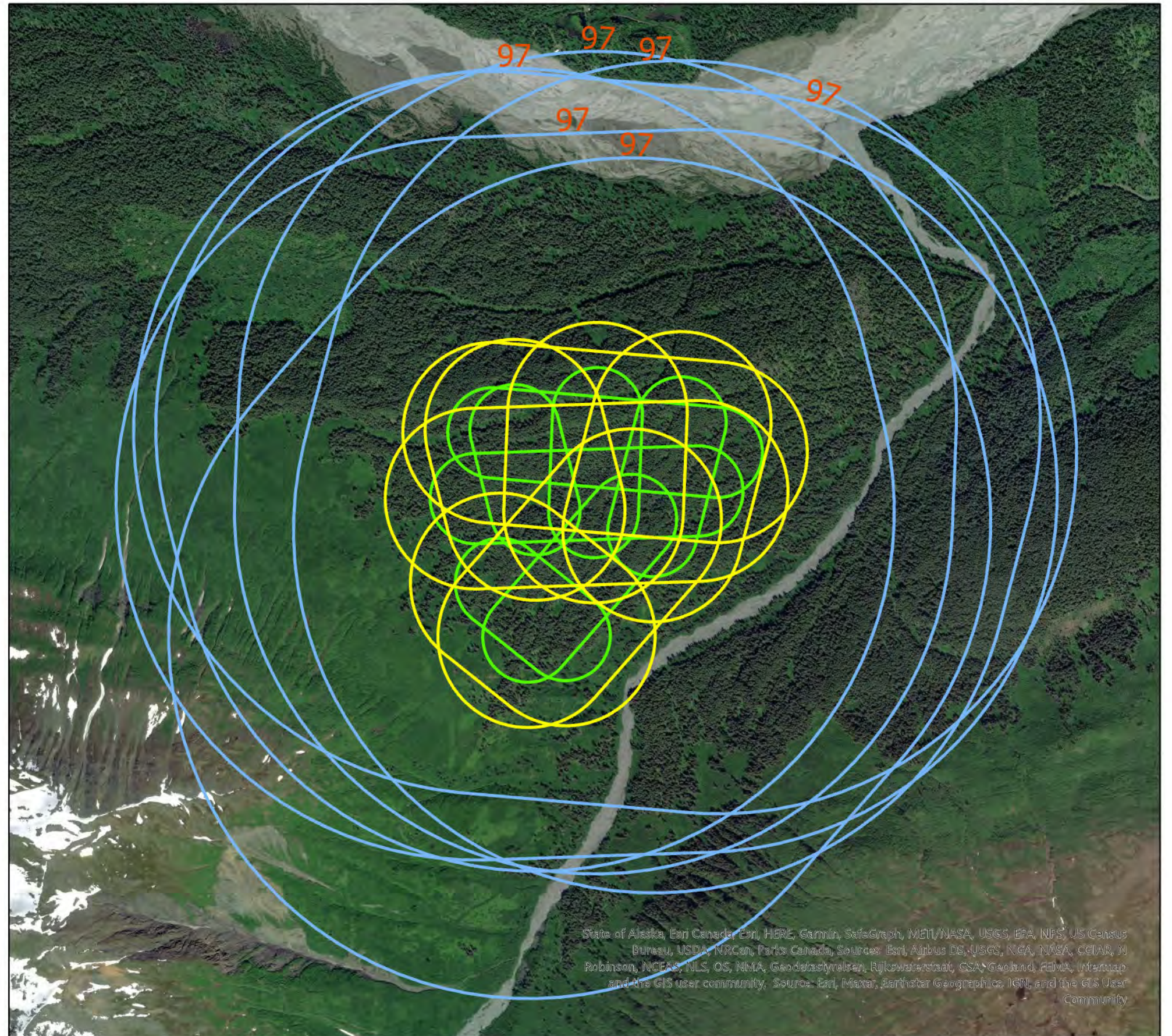
## APMA J20195690 AMENDMENT # 1

Seismic Refraction Study (Airblast Attenuation, Worst Case Scenario\*)  
Peak unweighted dB @ 1' from largest shot end detonation is 157dB sound pressure level

Comparative Noise @ 1' from detonation  
Muzzle Braked, Standard .338 Win Mag Hunting Rifle  
Peak unweighted 170dB sound pressure level

### Legend

-  Plateau\_SL 1mi Airblast 97dB
-  Plateau\_SL 1320' Airblast 107dB
-  Plateau\_SL 660' 112dB



State of Alaska, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCan, Parks Canada, Sources: Esri, Airbus DS, USGS, NGA, NASA, CGLAR, M Robinson, NCEAS, NLS, OS, NIMA, Geodatasystemen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community. Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community





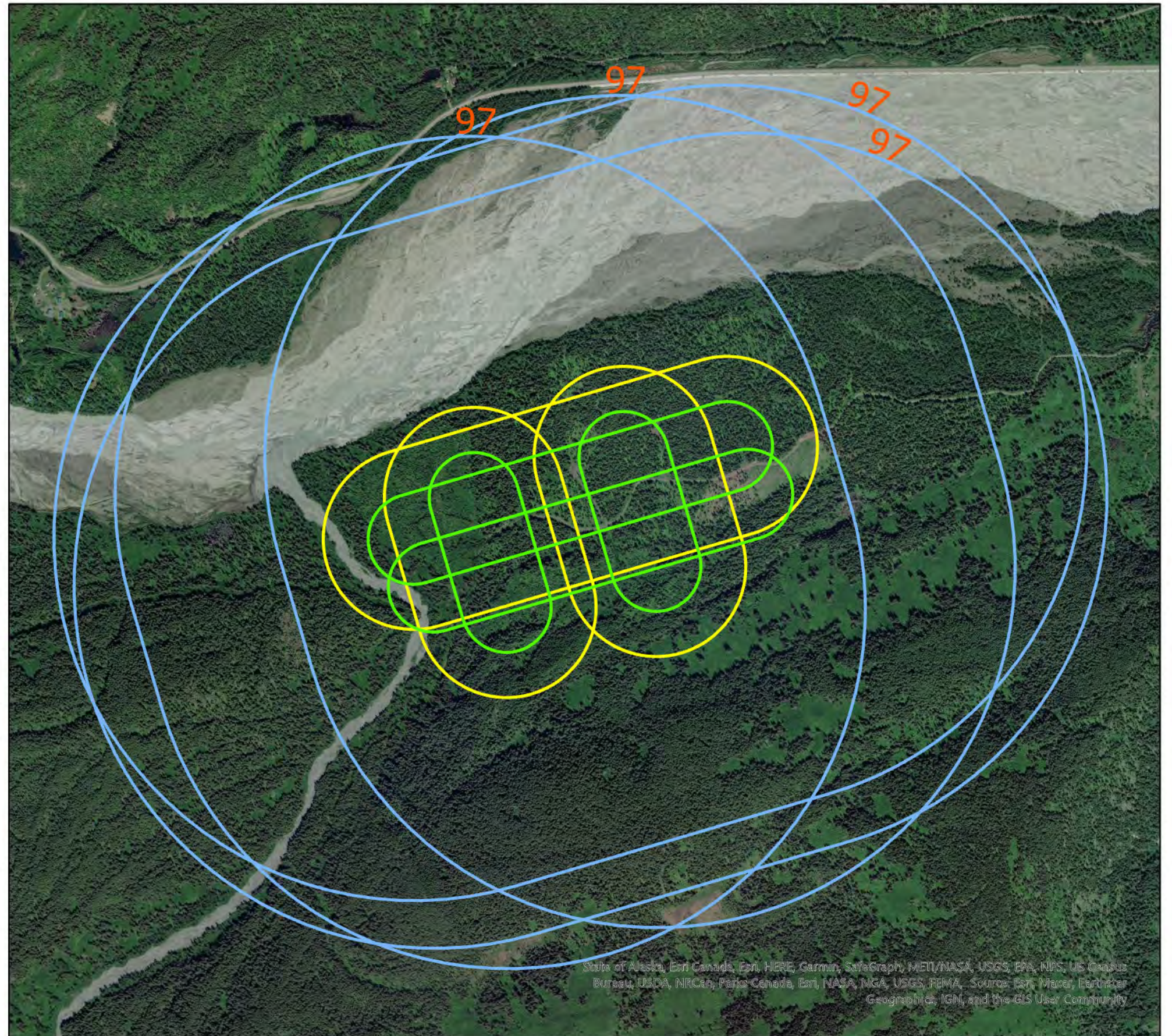
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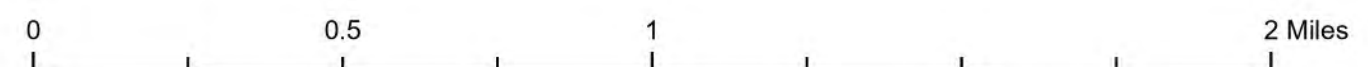
Comparative Noise @ 1' from detonation  
Muzzle Braked, Standard .338 Win Mag Hunting Rifle  
Peak unweighted 170dB sound pressure level

### Legend

-  Klehini\_SL 660' Airblast 112db
-  Klehini\_SL 1320' Airblast 107dB
-  Klehini\_SL 1mi Airblast 97dB



State of Alaska, Esri Canada, Esri, HERE, Garmin, safeGraph, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCAN, Parks Canada, Esri, NASA, MGA, USGS, FEMA, Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community





## Scaled Distance Blasting Vibration Calculation

$PPV = K(SD)^b$

[Online documentation](#)   [Parameter Variations](#)   [Additional Notes](#)   [Tips](#)   [Reference](#)   [Disclaimer](#)   [Calculate](#)

To use: Type in your desired values for each parameter. All are required. Standard parameter values are shown column titles in **bold italic**. It is recommended that you use the standard values unless you have specific need to change them. Additional parameter combinations may be entered in gray cells, but variations in parameters will only be calculated for first data row. You can separately choose metric or U.S. units for each data row calculation. Sheet will recalculate automatically as you change values. The variations area, below the data entry area, shows the results of varying one parameter in the first data row, leaving the others constant. Cells in which you should not input or change information are locked. Values in U.S. units appear in **blue**; those in metric units appear in **green**. Results or parameters which exceed U.S. OSM limits will appear in **bold italic**. See the Reference section for these limits. PPV results should be applied with at least a 2x safety factor, to take into account limitations of the calculation approach and accuracy. When blasting vibration monitoring is done, the measured PPV's should be the determinant of charge weights, not these calculated estimates.

Parameters						Messages	Calculation Results				
<b>Desired Input units</b> (ft., m, or Metric)	<b>Charge Weight per delay</b> (lb. or kg.)	<b>Charge weight scaling:</b> square root (0.5), cube root (0.33)	<b>Distance from charge</b> (ft. or m)	<b>Attenuation exponent b</b> (typically 1.6, range from about 0.6 to 2.0)	<b>Confinement factor (K)</b> (Metric units - typical 1140, range 500-5000); U.S. units - typical 150, range 20-500)		<b>Peak particle velocity, PPV</b> (in/sec or mm/sec)	<b>Scaled distance (SD, Ds)</b> (ft/(lb <sup>0.5</sup> or m/(kg <sup>0.5</sup> ))	<b>Maximum charge weight allowed w/o monitoring</b> (per U.S. OSM SD limits) (lb or kg)	<b>Maximum charge weight allowed w/ monitoring</b> (per U.S. OSM PPV limits) (lb or kg)	<b>Minimum vibration safe distance</b> (based on U.S. OSM PPV limits w/ monitoring) (ft. or m)
1	2.5	0.5	660	1.8	160		0.00	417.4	144.0	1549.1	#NUM!
1	2	0.5	660	1.8	160		0.00	466.7	144.0	1549.1	#NUM!
1	0.5	0.5	660	1.8	160		0.00	933.4	144.0	1549.1	#NUM!

### Parameter Variations (leaving all others constant) for first data row only

Chosen values repeated in first row below, variations follow

Vary charge weight (lbs)	Calculated PPV (in/sec)	Vary distance (ft)	Calculated PPV (in/sec)	Vary exponent b	Calculated PPV (in/sec)	Vary K factor (ft/(lb <sup>0.5</sup> ))	Calculated PPV (in/sec)	Vary charge wt. scaling	Calculated PPV (in/sec)
2.5	0.000	660	0.000	1.8	0.000	160	0.000	0.5	0.000
5	0.006	50	0.319	0.6	4.283	20	0.000	0.5	0.003
10	0.011	100	0.092	0.7	2.343	50	0.001	0.33	0.002
20	0.020	150	0.044	0.8	1.281	100	0.002		
50	0.048	200	0.026	0.9	0.701	150	0.003		
100	0.085	250	0.018	1	0.383	200	0.004		
150	0.122	300	0.013	1.1	0.210	250	0.005		
200	0.158	350	0.010	1.2	0.115	300	0.006		
250	0.194	400	0.008	1.3	0.063	350	0.007		
300	0.228	450	0.006	1.4	0.034	400	0.008		
350	0.262	500	0.005	1.5	0.019	450	0.009		
400	0.296	550	0.004	1.6	0.010	500	0.010		
450	0.329	600	0.004	1.7	0.006	550	0.011		
500	0.361	650	0.003	1.8	0.003	600	0.012		
550	0.394	700	0.003	1.9	0.002	650	0.012		
600	0.426	750	0.002	2	0.001	700	0.013		

### Additional Notes

Although scaled distance calculations are most commonly used for blasting vibration, they have also been shown to be valuable in construction vibrations from equipment. You can use the calculator in those settings as well, if you have the source energy parameters (equivalent to the charge weights) and the corresponding K values.

Safe distances are not calculated here because blasting limits are frequency-dependent. Scaled distances less than the U.S. OSM limits are considered "unsafe" from a vibration standpoint. They are flagged in **bold italic** when they occur. Blasting vibration PPV's in excess of the U.S. OSM limits for monitored blasts are similarly highlighted. The limits are for single blasts; those for multiple blasts should be somewhat lower, as multiple blasts increase the damage probability. PPV results should be applied with at least a 2x safety factor, to take into account limitations of the calculation approach and accuracy.

### Tips:

If you plan to use the same parameter values for multiple or all calculations, select the parameter cell(s) that have the value you want and use the drag handle at the lower right of the cell to drag the same value down the column. Choose "Fill without formatting" from the drop down fill menu. This trick is particularly useful for those parameters (units, charge weight scaling, b exponent and K factor) which often remain at the default values shown in the first row. Remember that you must use a K factor of the correct unit type for your chosen units. To clear data, you can use the drag handle to select the data you want to delete, then press the Delete key. It is recommended that you NOT delete parameters in the first data row, although you can

### Reference

U.S. Blasting Limits	Max PPV (in/sec)	Max PPV (mm/sec)
USBM R18507 Mid-frequency suggested		
Homes with plaster walls	0.50	12.7
Homes without plaster walls	0.75	19.1
OSM Mid-frequency limit	0.75	19.1

U.S. OSM Blasting Regulations (0.5 charge weight scaling factor required)					
Distance (D) from the blasting site, in feet	Distance (D) from the blasting site, in meters	Allowable PPV (V max, in/sec) with monitoring	Allowable PPV (V max, mm/sec) with monitoring	Scaled-distance factor to be applied without seismic monitoring (Ds), ft./lb	Scaled-distance factor to be applied without seismic monitoring (Ds), m/kg
0 to 300	0 to 91.44	1.25	31.8	50	22.6
301 to 5,000	91.74 to 1524	1.00	25.4	55	24.9
5,001 and beyond	1524.3 and beyond	0.75	19.1	65	29.4

*Disclaimer: The pages, documents, illustrations and tools on VibrationDamage.com are not offered, and should not be considered, as advice or counsel on the law in any jurisdiction or form. Seek the advice of an attorney having construction vibration damage claim experience and knowledge, if you need legal help. Trademarks appearing on the site and in the CVDG are the properties of their respective owners and are used in the CVDG only for the purpose of identification. Information appearing on the site and in the CVDG is believed correct, but the site contents and the CVDG are provided "as-is". They are not guaranteed or warranted in any way, nor are your uses of them warranted or guaranteed.*

Too