

**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

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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>

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	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>

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	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 <a href="mailto:carl.koch@alaska.gov">carl.koch@alaska.gov</a>.</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>