EARTHWORKS

April 30, 2025

Mystic District Ranger Office,
8220 S. Mt Rushmore Rd.,
Rapid City, SD 57702.
Comments submitted online at
https://cara.fs2c.usda.gov/Public/CommentInput?Project=67838

re: Scoping Comments on the Rochford Mineral Exploratory Drilling Project

Thank you for the opportunity to submit scoping comments on the proposed Rochford Mineral Exploratory Drilling Project. These comments are submitted on behalf of Earthworks, a non-profit organization dedicated to protecting communities and the environment against the adverse effects of mineral and energy development, while seeking sustainable solutions.

This project proposes exploratory drilling at approximately 18 drill sites, at a maximum depth of 1,000 feet and up to a 45-degree angle. The primary access to the project area will be Rochford Road and South Rochford Road. To access general site locations, National Forest System roads 190 and 125 will be utilized for the northern drill sites and NFS roads 132 for the southern drill sites. In addition, approximately 5,060 linear feet of new temporary overland routes may be constructed for drill site access.

The proposed action should not be subject to a Categorical Exclusion due to extraordinary circumstances, including its overlap with cultural lands and resources of exceptional importance (Pe'Sla), and its location at the headwaters of a municipal watershed. There are significant direct, indirect and cumulative effects that must be analyzed under the National Environmental Policy Act (NEPA).

Please see our more detailed scoping comments below.

Sincerely,

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I. The proposed action must be analyzed under the National Environmental Policy Act (NEPA), and not subject to a Categorical Exclusion (CE)

According to the Public Notice, the preliminary assessment is that this proposal falls within a category of actions listed in regulations at 36 CFR 220.6 that are excluded from documentation in an environmental assessment (EA) or environmental impact statement (EIS), and that no known extraordinary circumstances exist that would preclude use of this category. Specifically, it says that this project falls under 36 CFR 220.6(e)(8), which categorically excludes mineral investigations that will not exceed a one-year period: Short-term (1 year or less) mineral, energy, or geophysical investigations and their incidental support activities that may require cross-country travel by vehicles and equipment, construction of less than 1 mile of low standard road, or use and minor repair of existing roads.

A. The Plan of Operations (POO) fails to demonstrate that exploration activities will be confined to one year, and it is missing essential information necessary to a CE determination.

The proposed action fails to meet the stated criteria for a categorical exclusion because the Plan of Operation (POO) does not demonstrate that activities will be confined to one year. The POO states that PLS will construct approximately 5,060 linear feet of 15-foot wide new temporary overland routes for drill site access, which the Notice says will be obliterated and returned to natural conditions. Exploration equipment transport will compact the soils, result in the loss of and damage to vegetation including loss of trees, and the introduction of invasive plant species. Obliterating these impacts to soil and vegetation, and then returning the area to natural condition will require more than one season of activity.

As stated in the POO (p. 14), PLS will commit to annual field inspections of drill sites and the lay-down area to monitor for reclamation effectiveness and noxious weed infestations for 3 years. Field inspection information will be compiled at the end of each field season and provided to the USFS. According to the POO (p. 14-15), revegetation will be considered adequate when species composition is like that of adjacent areas; and the vegetation crown cover is 60 to 75 percent of the existing parent vegetation crown cover of adjacent areas not disturbed by operations authorized by this plan. As described, it is clear that operations, including reclamation activities, revegetation work, and annual site inspections, will extend beyond a one-year period.

Furthermore, as described below, the primary access route for the proposed action cuts directly through Pe'Sla, a sacred site of profound cultural significance, and a number of mining claims and at least one of the proposed drill sites overlap with Pe'Sla (see map below).

The POO (p. 11) states that PLS has hired HDR to conduct cultural surveys, and that HDR will work with the USFS to identify areas needing survey and conduct surveys per Secretary of Interior standards. This information is necessary to inform the POO, and to identify mitigation measures to avoid or prevent impacts. The Forest Service must not authorize a CE without this essential information.

B. The proposed action is ineligible for a Categorical Exemption due to extraordinary circumstances.

A proposed action may be categorically excluded from further analysis and documentation in an EIS or EA *only if there are no extraordinary circumstances* related to the proposed action. (emphasis added). The proposed action must not be considered eligible for a CE because of the following extraordinary circumstances:

1) American Indians and Alaska Native religious or cultural sites and Archaeological sites, or historic properties or areas.

Pe'Sla is a unique high mountain meadow in the Black Hills and a sacred site to which Lakota people return ceremonially on an annual basis or other times of the year. Due to their extraordinary cultural value, these lands were placed under Trust Land status in January 2017. As described by the Assistant Secretary of Interior, Indian Affairs, in the December 2016 decision:

> The land is located within the historical territory of the Great Sioux Nation. The Tribes explain that Pe'Sla is "innately tied" to their creation and existence. Their application explains that Pe'Sla is one of their "most precious sacred sites . . . in the heart of everything that is, in the middle of the place where [they] originate from, and is central" to their existence. A study of the Property directed by Rosebud and performed by a group of Lakota, Dakota, and Nakota has identified 484 traditional cultural properties, 5 historic sites, 3 archeological sites, and 4 disturbed cultural sites within Pe'Sla.[1]

According to the POO, primary access to the proposed drill site will be along South Rochford Road, which cuts directly through Pe'Sla. The transport of industrial equipment along this primary access route will increase traffic, dust, noise, risk of wildfire, risk of hazardous materials spills, risk of wildlife impacts/fatalities and increased disruption of the cultural and ceremonial activities associated with this site.

In addition, according to a map created by the Black Hills Clean Water Alliance,[2] a number of the mining claims and at least one proposed drilling location overlap with Pe'Sla (see map below). Drilling activities will have direct, indirect and cumulative effects on the cultural lands, resources and activities associated with Pe'Sla. Surface disturbance will result in compaction of soils and loss or damage to vegetation and the loss, disruption, degradation or damage to cultural resources in the vicinity.

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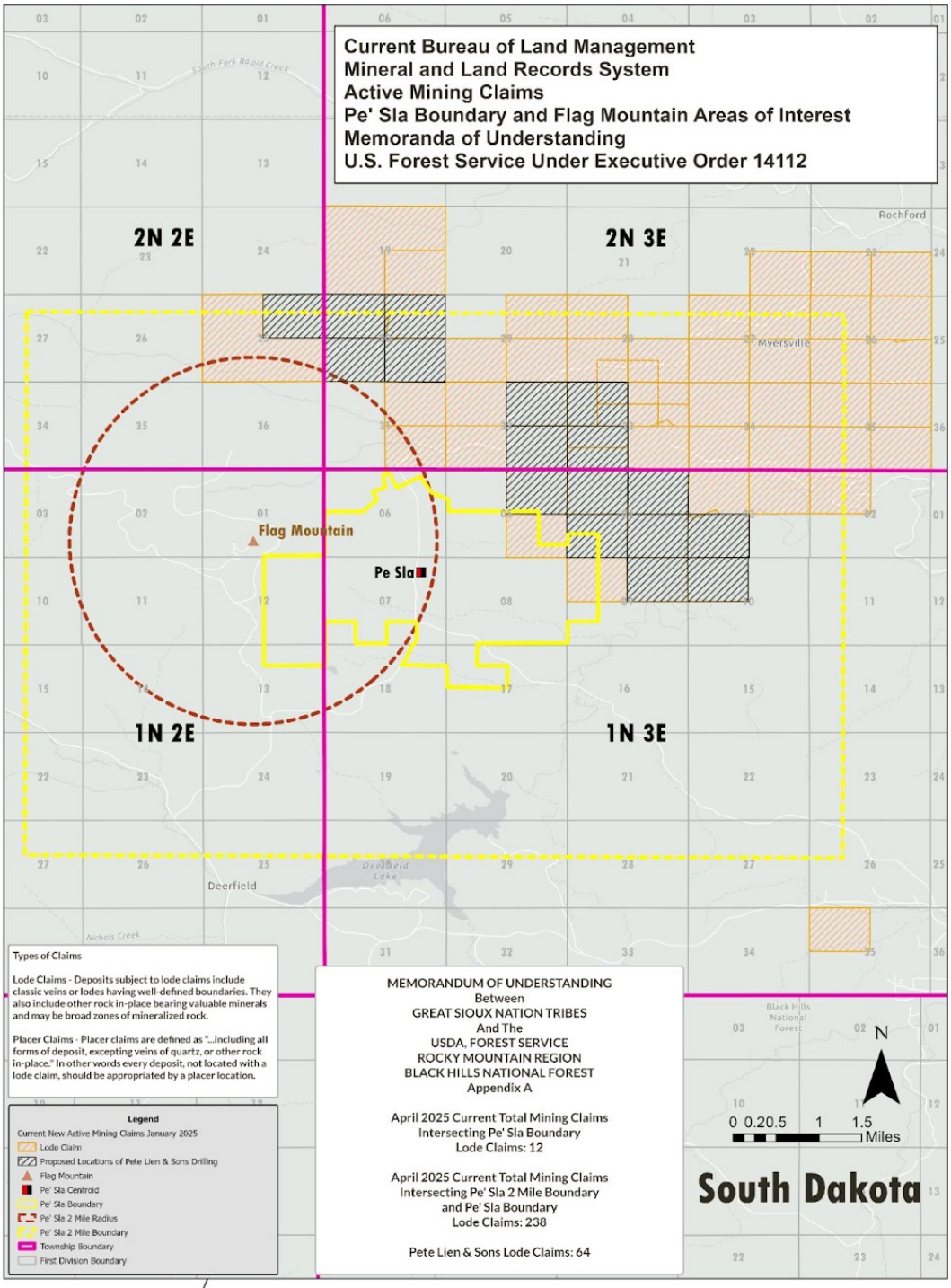
[1] Assistant Secretary - Indian Affairs, State of South Dakota v. Great Plains Regional Director Bureau of Indian Affairs, Pe'Sla Property (2,022.66 acres) Decision, December 2, 2016. Available at: https://turtletalk.blog/wp-content/uploads/2016/12/signed-decision-pe-sla.pdf

[2] Map created by Black Hills Clean Water Alliance by Mato Ohitika Analytics, LLC, Current Bureau of Land Management Mineral and Land Records System Active Mining Claims and Pe'Sla Boundary and Flag Mountain Areas of Interior per Memoranda of Understanding, U.S. Forest Service Under Executive Order 14112.



Strategic Mapping Provided by:
Mato Ohitika Analytics LLC

South Dakota Study Area
BLM Mining Claims
Pe' Sla Boundary
(Black Hills, South Dakota)
April 22, 2025

Black Hills Clean Water Alliance
www.bhcleanwateralliance.org

MAPBOOK
BLM Mining Claims
Lode Claims
Updated Claims
Q2 2025

The construction and use of transportation routes and drilling activities, which the POO says may occur 24-hours a day, will increase noise and light that disrupt wildlife and cultural ceremonies. Infiltration galleries will result in impacts to soils and potentially to groundwater since no lining is mentioned in the POO.

In addition, the POO (p. 11) states that PLS has hired HDR to conduct cultural surveys, and that HDR will work with USFS to identify areas needing survey and conduct surveys per Secretary of Interior standards. It is clear from the POO that these cultural surveys have not been completed. Given the immediate proximity of the proposed drilling activities to Pe'Sla, it is likely that these ancestral lands also contain important cultural resources. This information is necessary to understand the direct, indirect and cumulative effects of the proposed action, and require NEPA analysis.

NEPA analysis is necessary to analyze the potential direct, indirect and cumulative impacts of exploration activities in this sacred site, and cumulative effects to this cultural area and the Indigenous Peoples who regularly use this area.

2) Floodplains, wetlands or municipal watersheds

The proposed action should also be excluded from CE consideration because it is located in the headwaters of a municipal watershed. The proposed action is located in the Rapid Creek Watershed, which flows to Pactola Reservoir, which serves as the municipal watershed to Rapid City.

The proposed action should also be considered ineligible for a CE while a watershed survey is conducted. The POO fails to provide a wetland survey to identify wetlands and other groundwater dependent ecosystems within the project area. However, according to the Upper Rapid Creek Watershed Assessment,[3] there are unusual geologic and groundwater characteristics in the Castle Creek and North Fork Castle Creek watersheds that result in the formation of iron bogs. Bogs are a type of freshwater wetland characterized by waterlogged, acidic soils. The oxidized iron precipitates discolor the water light red-orange.

The POO includes drilling 1,000 feet deep, with up to a 45-degree angle. Even though the POO (p. 8) claims that "drill sites will not be in streams or wetlands," and drill sites and infiltration galleries will be located 200 feet from wetlands, the proposed angled drilling could intercept groundwater that supports these groundwater dependent ecosystems (wetlands) and infiltration galleries could result in seepage to groundwater that alters the groundwater associated with these unique wetlands. A wetland survey is necessary to identify whether wetlands are in the project area, and NEPA analysis is necessary to consider the impacts of intercepting the acidic groundwater associated with these iron bogs, while drilling the proposed boreholes in the area, and potentially forming a connection with other aquifers through faults, fractures, or other potential mechanisms that could result in adverse impacts to water resources.

[3] Dr. Scott Kenner et al., "Upper Rapid Creek Watershed Assessment: An Evaluation of Conditions Impacting Water Quality in North Fork Rapid Creek, Castle Creek and North Fork Castle Creek in the Black Hills, South Dakota, November 2024. Available at: https://danr.sd.gov/Conservation/WatershedProtection/ReportsPublications/upperrapidcreek_assess_final.pdf

3) Forest Service sensitive species

Similarly, the POO fails to provide a list of sensitive species, which is necessary to make a determination of whether the proposed action is subject to extraordinary circumstances. The proposed action involves surface disturbance, lights, noise and other activities that adversely affect wildlife and wildlife habitat. This information is necessary to an informed decision.

II. NEPA analysis must provide baseline data and consider the potential direct, indirect and cumulative effects to important resources.

A. Geochemical Data

The POO fails to provide geochemical information to determine the potential direct, indirect or cumulative effects of drilling, including the potential for metals leaching, acid-generation, or other adverse impacts from drilling activities. This information is necessary to determine whether significant impacts may occur as a result of the POO as required under NEPA.

B. Water Resources

As described in the Upper Rapid Creek Watershed Assessment, geologic investigations indicate the source of iron in this part of the Black Hills is due to the weathering of iron sulfide. The weathering process results in groundwater with a very low pH (2 to 4). Acidic groundwater in the Castle Creek and North Fork Castle Creek contains dissolved iron, aluminum, and sulfate, which discharge to the land surface as springs and directly into creeks. NEPA analysis is necessary to consider the impacts of intercepting this type of acidic groundwater, and potentially transporting this water to the surface or into other aquifers through faults, fractures, or other potential mechanisms.

The Plan of Operations (POO) (p. 4) proposes 18 drill sites, with a maximum drilling depth of 1,000 feet and up to a 45-degree angle. It proposes to construct in-ground or above-ground infiltration galleries to dispose of drill water. An in-ground infiltration gallery may be 2-4 feet deep and up to 20 feet long. The POO states that water will be collected in the gallery, allowing the cuttings to settle out and permitting the water to be recycled. According to the POO, once the drill hole is complete, water in the gallery will naturally infiltrate and the site can be reclaimed.

The POO may cause significant direct, indirect and cumulative impacts on groundwater that must be analyzed under NEPA. The POO fails to provide essential baseline hydrologic information, such as depth to groundwater, hydrologic flow, characterization of alluvial or bedrock aquifers. It also fails to provide baseline data to accurately characterize groundwater quality. This information is necessary to understand the potential impacts to groundwater.

Exploratory drilling of this nature has had unexpected consequences before, particularly if the drill hole is not completely cemented top to bottom: Improperly plugged wells compromise

aquifer integrity by destroying its natural isolation, and exposing it to potentially toxic materials from nearby formations.

While the EA states that the drill holes will be sealed, it does not describe the potential negative effects if the drill holes are not adequately sealed. Furthermore, there is no information on the track record for fully sealing drill holes. Factors to consider are the type of rock (particularly sulfide), whether the area is fractured, whether aquifers are encountered. Contamination can be from a variety of sources, including introduction of fuel into the hole that stimulates bacterial growth and changes the redox potential which can lead to mobilization of metals, opening up reactive rock (like sulfides) to water and oxygen, and effects of introducing the mud itself which can result in pH changes, introduction of arsenic, salts and oxygen into a formerly anaerobic environment, acid mine drainage, and cation exchange. In addition, lime and other additives from the cement mix may have adverse impacts on water quality. *See* Fate and Effects of Whole Drilling Fluids and Fluid Components in Terrestrial and Freshwater Ecosystems: A Literature Review, to EPA Marcy 13, 1981, by John G. Ferrante, Lisa Sumi, Research Director, Oil and Gas Accountability Project, Chemical Release Incidents, attached.

In areas that are hydrologically connected, the pressure of drilling fluids during active drilling can result in changes in groundwater flow. This type of flow change is not mitigated by casing or closing the drilling hole as described by Standard Operating Procedures.

As a general matter, drilling an exploratory borehole can impact the local groundwater conditions if the drilling fluid leaves the borehole through bedrock fractures or through unconsolidated geologic material. This can happen both above and below the water table (in the unsaturated zone and into the aquifer). The amount leaked and the consequences of the added water (drill fluid) are dependent on local geologic and hydrologic conditions. If the rock fractures are interconnected and extensive, then impacts can be more complex than if the rock is less fractured. Determining what impacts there might be from drilling exploratory holes depends on many details, including the drilling procedures and the geologic and hydrologic character of the site.

Hydraulic pumping tests should be conducted to characterize locally significant aquifers intercepted by the drilling. Water quality samples should also be collected to characterize the groundwater quality to establish baseline geochemical conditions horizons prior to mining. This data may then be used to help develop an appropriate mining technique that will protect sources of clean water from degradation.

Following completion of drilling, the borings should be fully plugged from the bottom up with swelling clay bentonite, if below the water table, or cement grout, if above the water table to completely plug all interconnections created by the borings. Special attention should be given to carefully seal any flowing artesian aquifers intercepted by the borings as conventional borehole plugging techniques may not be effective.

Improperly plugged wells compromise aquifer integrity by destroying its natural isolation, and exposing it to potentially toxic materials from nearby formations.

The POO fails to provide information on whether there are springs, seeps, wetlands, or other groundwater dependent ecosystems in the area that could be harmed by direct, indirect or cumulative effects of drilling.

The POO also fails to provide information on the location of Riparian Conservation Areas. Baseline information is necessary to characterize RCAs, given the extent of angled borehole drilling.

C. Fish and wildlife and their habitat

Baseline data and NEPA analysis is necessary to characterize existing conditions and to analyze the potential impacts to fish and wildlife and their habitat. Exploratory drilling involves surface disturbance, loss and damage to vegetation including trees, increased noise and lights and human activity. Drilling up to 1,000 feet into groundwater has the potential to intercept other aquifers and adversely affect hydrologically connected surface water and/or groundwater dependent ecosystems, which provide habitat for fish and wildlife and other aquatic organisms.

D. Cultural resources

As described above, the primary access route to the proposed action cuts directly through an important cultural site, and mining claims and associated drilling activities overlap with Pe'Sla. A cultural survey is necessary to characterize existing conditions, and NEPA analysis is necessary to understand and disclose the potential direct, indirect and cumulative impacts.

III. The Forest Service should consider alternatives and/or mitigation measures that would avoid/minimize impacts to important cultural resources.

As described above, the proposed action includes transportation and drilling activities that overlap with important cultural lands and resources (Pe'Sla). The Forest Service should consider actions to avoid/mitigate impacts, including alternative locations for drilling, changes in timing, and other potential alterations to the POO.