

State of New Mexico  
Energy, Minerals and Natural Resources Department

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**Michelle Lujan Grisham**  
Governor

**Sarah Cottrell Propst**  
Cabinet Secretary

**Todd E. Leahy, JD, PhD**  
Deputy Cabinet Secretary

**Jerry Schoeppner, PG, Director**  
Mining and Minerals Division



**Electronic Transmission**  
May 26, 2021

Joe Kizis  
Southern Silver Exploration Corp. (U.S.)  
4790 Caughlin Pkway, #207  
Reno, NV 89519-0907

**RE: Agency Review Comments and Request for Additional Information, Turquoise Mountain Project, Minimal Impact Exploration Permit Application, Permit No. GR087EM – Grant County, New Mexico**

Dear Mr. Kizis,

The New Mexico Mining and Minerals Division (“MMD”) has reviewed the Permit Application Package (“PAP”), for a minimal impact exploration permit, submitted by Southern Silver Exploration Corp. (U.S.), (“Southern Silver”), under Subpart 3 of the New Mexico Mining Act Rules (“Rules”). MMD has also received agency comments on the March 5, 2021 submittal from Southern Silver.

Enclosed with this letter are the reviewing agency comment letters submitted by the following state agencies: the New Mexico Environment Department (“NMED”), the New Mexico Department of Game and Fish (“NMDG&F”), the New Mexico Office of the State Engineer (“NMOSE”), and the New Mexico Department of Cultural Affairs - Historic Preservation Division (“NMDCA/HPD”).

In addition to State agencies, the Navajo Nation Heritage and Historic Preservation Department, Hopi Cultural Preservation Office, and White Mountain Apache Tribe have commented on the Permit No. GR087EM PAP. Please take the tribal comments into consideration during this process. Additionally, please find general comments from MMD based on review of this application. Attached to this letter are all comments from State and Tribal agencies.

**General Comments:**

MMD has reviewed the PAP and deemed it administratively complete, pursuant to §19.10.3.302 G NMAC, in a letter to Southern Silver dated March 8, 2021. However, MMD has reviewed the PAP and has found it to be *technically incomplete* pending receipt of acceptable supplemental information identified in this letter. **Please respond no later than 30 days of receipt of this letter, to the information requested.**

**Agency Review Comments and Request for Additional Information, Turquoise Mountain Project, Minimal Impact Exploration Permit Application, Permit No. GR087EM – Grant County, New Mexico**

May 26, 2021

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MMD has conducted a review of the PAP and has the following comments to be addressed in writing:

1. During the site visit on May 11, 2021, we discussed changes to the proposed roads due to some site conditions. Please provide updated:
  - a. Total surface disturbance acreage including the new road and excluding roads to any boreholes that were withdrawn from the application on April 15, 2021;
  - b. Map showing the new roads.

**NMED Mining Environmental Compliance Section, Ground Water Quality Bureau Comments (“MECS”)**

Please review the comment letter received by NMED MECS Ground Water Quality and respond to the following concerns.

**NMED Surface Water Quality Bureau Comments:**

Please review the comment letter received by NMED Surface Water Quality Bureau and respond to the following concerns.

**NMED Air Quality Bureau Comments:**

Please review the comment letter received by NMED Air Quality Bureau and respond to the following concerns.

**NMDG&F Comments:**

Please review the comment letter received by NMDG&F and respond to the following concerns.

**NMOSE Comments:**

Please review the comment letter received by NMOSE and respond to the following concerns.

**NMDCA/HPD Comments:**

Please review the comment letter received by NMDCA/HPD and respond to the following concerns.

**Navajo Nation Heritage and Historic Preservation Department:**

Please review the comment letter received by the Navajo Nation Heritage and Historic Preservation Department and respond to the following concerns.

**Hopi Cultural Preservation Office Comments:**

Please review the comment letter received by the Hopi Cultural Preservation Office and respond to the following concerns.

**Agency Review Comments and Request for Additional Information, Turquoise Mountain Project, Minimal Impact Exploration Permit Application, Permit No. GR087EM – Grant County, New Mexico**

May 26, 2021

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**White Mountain Apache Tribe Comments:**

Please review the comment letter received by the White Mountain Apache Tribe and respond to the following concerns.

Should you have any questions, comments, would like to schedule a meeting, or require additional information concerning this letter, please contact me at (505) 470-5354, or via email at: [jennifere.johnson@state.nm.us](mailto:jennifere.johnson@state.nm.us).

Sincerely,



Jenn Johnson, Permit Lead  
Mining Act Reclamation Program (“MARF”)

**Enclosures:**

April 1, 2021, Letter to MMD from NMED  
April 9, 2021 Letter to MMD from NMDGF  
April 5, 2021 Letter to MMD from NMOSE  
March 22, 2021 Letter to MMD from NMDCA/HPD  
March 25, 2021 Letter to MMD from NMDCA/HPD  
March 26, 2021 Letter to MMD from NMDCA/HPD  
May 17, 2021 Letter to MMD from NMDCA/HPD  
April 1, 2021 Letter to MMD from the Navajo Nation Heritage and Historic Preservation Department  
March 29, 2021 Letter to MMD from the Hopi Cultural Preservation Office  
April 1, 2021 Letter to MMD from White Mountain Apache Tribe

**Cc w/o enclosures:**

Holland Shepherd, Program Manager, MARP/MMD  
Mine File (GR087EM)



**Michelle Lujan Grisham**  
Governor

**Howie C. Morales**  
Lieutenant Governor

**NEW MEXICO  
ENVIRONMENT DEPARTMENT**

Ground Water Quality Bureau

1190 Saint Francis Drive / PO Box 5469  
Santa Fe, NM 87502-5469  
Phone (505) 827-2900 Fax (505) 827-2965

[www.env.nm.gov](http://www.env.nm.gov)



**James C. Kenney**  
Cabinet Secretary

**Jennifer J. Pruett**  
Deputy Secretary

**MEMORANDUM**

Date: April 1, 2021

To: Holland Shepherd, Program Manager, Mining Act Reclamation Program

Through: Anne Maurer, Mining Environmental Compliance Section

From: George Llewellyn, Mining Environmental Compliance Section  
John Moeny, Surface Water Quality Bureau  
Sufi Mustafa, Air Quality Bureau

Subject: **NMED Comments, Turquoise Mountain Project, Minimal Impact Exploration Permit Application, Southern Silver Exploration Corp., Grant County, New Mexico Mining Act Permit No. GR087EM**

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The New Mexico Environment Department (NMED) received correspondence from the Mining and Minerals Division (MMD) on March 12, 2021 requesting that NMED review and provide comments on the above-referenced MMD permitting action. Pursuant to the Mining Act this proposed operation requires a minimal impact exploration permit. MMD requested comments on the application within 20 days of receipt of the request for comments. NMED has the following comments.

**Background**

Southern Silver Exploration Corp. (U.S.) (applicant) is applying for a new minimal impact exploration permit in Grant County. The applicant proposes to disturb a total of up to 1.66 acres of Bureau of Land Management and State Land property. This will include drilling eight (8) exploration holes and construction of eight (8) drill pads. The area of disturbance is located approximately 50 miles southwest of Deming, NM off Route 9 in Grant County.

**Air Quality Bureau**

The Air Quality Bureau comments are attached.

Holland Shepherd, Program Manager

April 1, 2021

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**Surface Water Quality Bureau**

The Surface Water Quality Bureau comments are attached.

**Mining Environmental Compliance Section (MECS)**

MECS has no comments.

**NMED Summary Comment**

NMED finds that exploration as proposed in the application will be protective of the environment if done in accordance with the approved permits, pollution controls, and the comments above

If you have any questions, please contact Anne Maurer at (505) 660-8878.

cc: Jennifer Johnson, Permit Lead, EMNRD-MMD  
Kurt Vollbrecht, Program Manager, MECS  
Shelly Lemon, Bureau Chief, NMED-SWQB  
Elizabeth Bisbey-Kuehn, Bureau Chief, NMED-AQB



**NEW MEXICO  
ENVIRONMENT DEPARTMENT**

525 Camino de los Marquez, Suite 1  
Santa Fe, New Mexico, 87505  
Phone (505) 476-4300 Fax (505) 476-4375



**Michelle Lujan Grisham**  
Governor

[www.env.nm.gov](http://www.env.nm.gov)

**James C. Kenney**  
Cabinet Secretary

**Howie C. Morales**  
Lt. Governor

**Jennifer J. Pruett**  
Deputy Secretary

**MEMORANDUM**

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**DATE:** March 25, 2021

**TO:** Kurt Vollbrecht, Program Manager, Mining Environmental Compliance Section

**FROM:** Sufi Mustafa, Staff Manager, Air Dispersion Modeling and Emission Inventory Section, Air Quality Bureau

**RE:** Request for Review and Comment, Turquoise Mountain Project, New Minimal Impact Exploration Permit Application, Grant County, New Mexico Mining Act Permit No. GR087EM

The New Mexico Air Quality Bureau (AQB) has completed its review of the above-mentioned mining project. Pursuant to the New Mexico Mining Act Rules, the AQB provides the following comments.

**Air Quality Permitting History**

The AQB has not issued an air quality permit for this project

**Details**

Southern Silver Exploration proposes to core drill 8 holes and create 9 drill pads to explore for minerals. Total area disturbed is estimated to be less than 1.13 acres.

**Air Quality Requirements**

The New Mexico Mining Act of 1993 states that "Nothing in the New Mexico Mining Act shall supersede current or future requirements and standards of any other applicable federal or state law." Thus, the applicant is expected to comply with all requirements of federal and state laws pertaining to air quality.

20.2.15 NMAC, *Pumice, Mica and Perlite Processing*. Including 20.2.15.110 NMAC, *Other Particulate Control*: "The owner or operator of pumice, mica or perlite process equipment shall not permit, cause, suffer or allow any material to be handled, transported, stored or disposed of or a building or road to be used, constructed, altered or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne."

Paragraph (1) of Subsection A of 20.2.72.200 NMAC, *Application for Construction, Modification, NSPS, and NESHAP - Permits and Revisions*, states that air quality permits must be obtained by:

“Any person constructing a stationary source which has a potential emission rate greater than 10 pounds per hour or 25 tons per year of any regulated air contaminant for which there is a National or New Mexico Ambient Air Quality Standard. If the specified threshold in this subsection is exceeded for any one regulated air contaminant, all regulated air contaminants with National or New Mexico Ambient Air Quality Standards emitted are subject to permit review.”

Further, Paragraph (3) of this subsection states that air quality permits must be obtained by:

“Any person constructing or modifying any source or installing any equipment which is subject to 20.2.77 NMAC, *New Source Performance Standards*, 20.2.78 NMAC, *Emission Standards for Hazardous Air Pollutants*, or any other New Mexico Air Quality Control Regulation which contains emission limitations for any regulated air contaminant.”

Also, Paragraph (1) of Subsection A of 20.2.73.200 NMAC, *Notice of Intent*, states that:

“Any owner or operator intending to construct a new stationary source which has a potential emission rate greater than 10 tons per year of any regulated air contaminant or 1 ton per year of lead shall file a notice of intent with the department.”

The above is not intended to be an exhaustive list of all requirements that could apply. The applicant should be aware that this evaluation does not supersede the requirements of any current federal or state air quality requirement.

### **Fugitive Dust**

Air emissions from this project should be evaluated to determine if an air quality permit is required pursuant to 20.2.72.200.A NMAC (e.g. 10 lb/hour or 25 TPY). Fugitive dust is a common problem at mining sites and this project will temporarily impact air quality as a result of these emissions. However, with the appropriate dust control measures in place, the increased levels should be minimal. Disturbed surface areas, within and adjacent to the project area, should be reclaimed to avoid long-term problems with erosion and fugitive dust. EPA's *Compilation of Air Pollutant Emission Factors, AP-42, "Miscellaneous Sources"* lists a variety of control strategies that can be included in a comprehensive facility dust control plan. A few possible control strategies are listed below:

Paved roads: covering of loads in trucks to eliminate truck spillage, paving of access areas to sites, vacuum sweeping, water flushing, and broom sweeping and flushing.

Material handling: wind speed reduction and wet suppression, including watering and application of surfactants (wet suppression should not confound track out problems).

Bulldozing: wet suppression of materials to “optimum moisture” for compaction.

Scraping: wet suppression of scraper travel routes.

Storage piles: enclosure or covering of piles, application of surfactants.

Miscellaneous fugitive dust sources: watering, application of surfactants or reduction of surface wind speed with windbreaks or source enclosures.

### **Recommendation**

The AQB has no objection to issue this permit.

This written evaluation does not supersede the applicability of any forthcoming state or federal regulations.

If you have any questions, please contact me at 505.476.4318.





**Michelle Lujan Grisham**  
Governor

**Howie C. Morales**  
Lt. Governor

## NEW MEXICO ENVIRONMENT DEPARTMENT

Harold Runnels Building  
1190 Saint Francis Drive, PO Box 5469

Santa Fe, NM 87502-5469

Telephone (505) 827-2855

[www.env.nm.gov](http://www.env.nm.gov)



**James C. Kenney**  
Cabinet Secretary

**Jennifer J. Pruett**  
Deputy Secretary

### MEMORANDUM

Date: March 31, 2021

To: Anne Maurer, Mining Act Team Leader  
Mining Environmental Compliance Section  
Ground Water Quality Bureau (GWQB)

From: John Moeny  
Watershed Protection Section  
Surface Water Quality Bureau (SWQB)

Subject: **Request for Review and Comment, Minimal Impact Exploration Operation Permit Application, Turquoise Mountain Project, Grant Co., NM, Permit Tracking No. GR086EM**

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On March 17, 2021, NMED received a request for comments regarding a new minimal impact exploration permit submitted by Southern Silver Exploration Corp ("Applicant"). The project is in Grant County, approximately 5 air miles west of Hachita on a mix of private, State and Federal lands.

#### *Summary of Proposed Action*

The Applicant seeks to explore for base (copper, lead, zinc) and precious (gold, silver) metals at up to 8 locations within the Turquoise Mountain project area. Four inch diameter bore holes will be drilled to a maximum depth of 3,300 feet using drilling mud with an adjacent sump to collect mud and cuttings. Drill pads and sump pits will be constructed adjacent to the drilling locations. Total disturbance is estimated at 1.66 acres. Each site will be reclaimed by filling sump pits, regrading to match preexisting contour and topography, replacing topsoil and reseeded using a species mix specified by the Bureau of Land Management.

#### *Relevant State and Federal Water Quality Regulations*

This Project will disturb one or more acres and storm water discharges may be covered under either the U.S. Environmental Protection Agency (USEPA) National Pollutant Discharge

Elimination System (NPDES) Construction General Permit (CGP) or under the Multi-Sector General Permit (MSGP) under Sector G Metal Mining.

Operators of certain small construction activity (disturbance of one to five acres) may be waived from permit requirements under limited circumstances. To be eligible for this waiver, operators must certify to EPA that they are eligible (see Section 9 Appendix C of the CGP).

Waivers are only available to stormwater discharges associated with small construction activities (i.e., 1-5 acres). If this Project transitions into mining activities, MSGP coverage would be required at that time.

The CGP was re-issued January 11, 2017 and is effective February 16, 2017. The CGP and the eReporting tool (NeT-CGP) to apply for coverage or waivers is available at:

<https://www.epa.gov/npdes/2017-construction-general-permit-cgp>.

The MSGP is effective March 2021 and permit information is available at:

at <https://www.epa.gov/npdes/stormwater-discharges-industrial-activities>

In addition to the regulations above, the following practices are recommended to protect surface water quality.

- Any water produced during drilling must be contained on-site and not discharged to adjacent drainages unless a discharge permit has been secured from the EPA.
- Sump pits may not be used as disposal sites for oil, gas, grease or other potential contaminants to surface and ground water.
- Fuel, oil, hydraulic fluid, lubricants, and other petrochemicals must have a secondary containment system to prevent spills.
- Appropriate spill clean-up materials such as absorbent pads must be available on-site at all times during road construction, site preparations, drilling and reclamation to address potential spills.
- Report all spills immediately to the NMED as required by the New Mexico Water Quality Control Commission regulations (20.6.2.1203 NMAC). For non-emergencies during normal business hours, call 505-428-2500. For non-emergencies after hours, call 866-428-6535 or 505-428-6535 (voice mail, twenty-four hours a day). For emergencies only, call 505-827-9329 twenty-four hours a day (NM Dept of Public Safety).

The comments above should be considered provisional and may change once a field visit can be scheduled with the Applicant and the Mining and Minerals Division.

If you have any questions, please phone me at (575) 956-1545.



DIRECTOR AND SECRETARY  
TO THE COMMISSION  
Michael B. Sloane

STATE OF NEW MEXICO  
DEPARTMENT OF GAME & FISH

One Wildlife Way, Santa Fe, NM 87507  
Post Office Box 25112, Santa Fe, NM 87504  
Tel: (505) 476-8000 | Fax: (505) 476-8123  
For information call: (888) 248-6866

[www.wildlife.state.nm.us](http://www.wildlife.state.nm.us)

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Las Cruces  
ROBERTA SALAZAR-HENRY  
Las Cruces

9 April 2021

Jenn Johnson, Permit Lead  
Mining Act Reclamation Program (MARP)  
Mining and Minerals Division (MMD)  
1220 South St. Francis Drive  
Santa Fe, NM 87505

***RE: New Minimal Impact Exploration Permit Application, Turquoise Mountain Project, Grant County, New Mexico, Permit No. GR087EM; NMDGF Project No. NMERT-1091.***

Dear Ms. Johnson,

The New Mexico Department of Game and Fish (Department) has reviewed the proposed minimal impact exploration project referenced above. Southern Silver Exploration Corporation (Southern Silver) is proposing to drill eight exploratory holes, to depths of approximately 3,300 feet. The drill pad sites will be located in Sections 35 and 36, Township 27S, Range 16W and Sections 1,2 and 3 Township 28S, Range 16W. The Department provides the following comments.

To minimize the likelihood of adverse impacts to migratory bird nests, eggs or nestlings during drill pad and access road development, the Department recommends that ground disturbance and vegetation removal activities be conducted outside of the primary breeding season for migratory songbirds and raptors (1 March – 1 September). If ground disturbing and clearing activities during the breeding season cannot be avoided, the area should be surveyed for active nest sites (with birds or eggs present in the nesting territory), and when occupied, nest disturbance should be avoided until young have fledged. For active nests, adequate buffer zones should be established to minimize disturbance to nesting birds. Buffer distances should be  $\geq 100$  feet from songbird and raven nests, and 0.25 mile from raptor nests. Active nest sites in trees or shrubs that must be removed should be mitigated by qualified biologists or wildlife rehabilitators. Department biologists are available for consultation regarding nest site mitigation, and can facilitate contact with qualified personnel.

In order to eliminate the potential for wildlife to become entrapped in drilling mud pits, the Department recommends the use of closed loop drilling systems. Closed loop systems eliminate the need to build fences or install netting to exclude wildlife, reduce the amount of surface disturbance associated with the well pad site, and consume significantly less water. Southern Silver is proposing to use mud pits that will be fenced, with one side sloped at 3:1 to provide an escape ramp for wildlife. The Department also recommends that fenced mud pits are also netted to exclude birds and bats. Extruded plastic, knit, or woven netting material is preferred. Monofilament netting should not be used due to its tendency to ensnare wildlife and cause injury or death. The Department recommends a mesh size of  $\frac{3}{8}$  inch to exclude smaller animal species. Netting material must be held taught over a rigid and adequately

supportive frame to prevent sagging into the drilling fluids. During drilling operations, it is also important to prevent wildlife from entering and becoming trapped in stockpiled drill pipes. Capping piping is the most effective way to prevent wildlife entry but at a minimum, prior to use, each section of pipe should be visually inspected to verify that no wild animals are inside.

The Department also recommends that Southern Silver contact the New Mexico Endangered Plant Program (<http://www.emnrd.state.nm.us/SFD/ForestMgt/Endangered.html>) of the Energy, Minerals, and Natural Resources Department, regarding potential presence and conservation needs for state-listed plants. The state endangered and BLM sensitive plant night-blooming cereus cactus (*Peniocereus greggii* var. *greggii*) has been documented near the proposed project area, and may need to be considered and/or mitigated for while implementing project drilling activities.

For post project site reclamation, Southern Silver proposes to use a BLM recommended native seed mix. The Department recommends that the seed mix and mulch be certified weed-free, and that seed test results are requested from the vendor to avoid inadvertently introducing non-native species to the reclamation site. Any alternate seeds used to substitute for primary plant species that are unavailable at the time of reclamation should also be native. When possible, seeds that are sourced from the same region and habitat type as the reclamation site should also be used.

Thank you for the opportunity to review and comment on the proposed exploration permit application. If you have any questions, please contact Ron Kellermueller Mining and Energy Habitat Specialist, at (505) 476-8159 or [ronald.kellermueller@state.nm.us](mailto:ronald.kellermueller@state.nm.us).

Sincerely,

Matt Wunder, Ph.D.  
Chief, Ecological and Environmental Planning Division

cc: USFWS NMES Field Office

**MEMORANDUM**  
**OFFICE OF THE STATE ENGINEER**  
*Hydrology Bureau*

DATE: April 5, 2021  
TO: Jennifer Johnson, Permit Lead, Mining Act Reclamation Program (“MARF”)/MMD  
Holland Shepherd, Program Manager, MARF/MMD  
THROUGH: Ghassan Musharrafieh, Ph.D., P.E., Hydrology Bureau Chief *JPM*  
FROM: Katie Zemlick, Ph.D., Hydrology Bureau *KZ*  
SUBJECT: Review and Comment, Minimal Impact Exploration Permit Application, Turquoise Mountain Project/Southern Silver Exploration Corp. (U.S.), Grant County, NM, Permit No. GR087EM

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**I. Introduction and Conclusions**

On March 12, 2021, New Mexico Office of the State Engineer Hydrology Bureau received a request for comments from Mining and Minerals Division (MMD) regarding the New Minimal Impact Exploration Permit Application, Turquoise Mountain Project, Grant County, New Mexico, Permit No. GR08EM. The project will explore for minerals containing gold, silver, copper, zinc, molybdenum and other associated minerals. Core drilling will occur at 8, 4 in. diameter drill holes to a maximum depth of 3,300 ft. The project location is approximately 60 miles southwest of Silver City, New Mexico in Grant County. The locations of the proposed boreholes are within Section 36 of Township 27 South, Range 16 West and Section 2 of Township 28 South, Range 16 West.

**Comment Summary**

1. Groundwater
  - a. Based on the proposed borehole depth, it is likely that groundwater will be encountered. Groundwater encountered through proposed exploration depth ranging from 2000 to 3600 feet may be under artesian conditions and/or require segregation from shallow groundwater sources when the bore holes are decommissioned. Therefore, NMOSE regulations 19.27.4 NMAC would apply. This would require administrative filings through the NMOSE District 1 Office.
  - b. The application does not indicate forms WR-07 (Application for permit to drill a well with no consumptive use of water) and WD-08 (Well plugging plan of operations) have been filed with the District office of the State Engineer nor were they able to confirm their filing.
2. Borehole Abandonment
  - a. Because it is assumed that water will be encountered, NMOSE well plugging regulations (19.27.4.36, Subsection C of NMAC 19.27.4.30 NMAC for non-artesian conditions; Subsection K of 19.27.4.31 NMAC for artesian conditions) should be followed.

**II. Surface Water**

GIS Data from NMOSE Geographic Information System database was used to locate surface water bodies in the vicinity of the proposed drill sites. The site is between two unnamed ephemeral streams/ivers.

It is recommended to avoid drilling in or within 100 feet of any drainages. NMOSE regulation 19.27.4.29.P.(2) NMAC notes that drilling fluids and cuttings shall not be allowed to migrate or be discharged off property under the control of the well owner, and that no drilling fluid or cuttings be discharged into any waters of the State.

### III. Groundwater

Using the New Mexico Water Right Reporting System (NMWRRS), 67 wells were identified within approximately 5 miles of the proposed project area. Out of those, two wells have well depth and depth to water information as shown in the following table. However, because well depth and depth to water in HA-68 POD1 is identical, it is not useful in determining depth to water in the area of the project.

NMOSE POD Number	UTM Easting (m)	UTM Northing (m)	Approximate distance from centroid of proposed wells (ft.)	Depth of Well (ft.)	Depth to Water (ft.)
HA-68 POD1	168940	3538511	6,900	85	85
HA-68 POD2	168916	3538583	7,000	605	48

Since it is likely that groundwater will be encountered, the NMOSE requirements for the drilling and plugging of the proposed boreholes should be met. A *Permit to Drill a Well with No Water Right* (WR-07) for the proposed boreholes (that encounter water) is required. The District I Office has not been able to confirm that the applicant has done so. The District Office may require additional filings such as an *Artesian Well Plan of Operations* if artesian conditions are encountered. The NMOSE regulation 19.27.4 also requires that boreholes be drilled by a New Mexico licensed well driller.

### IV. Exploratory Borehole Abandonment

If groundwater is encountered during borehole drilling, pluggings should be according to either a pre-approved “plugging conditions” attached to the NMOSE drilling permits or can be separately conditioned by a *Well Plugging Plan of Operations*, as dictated by the District I Office. Additional details regarding well plugging requirements under 19.27.4 NMAC are included in the attached document (“General Concerns Related to NMOSE Regulation of Exploratory Borehole Drilling Encountering Groundwater and Associated Plugging of these Borings”).

### V. References

New Mexico Office of the State Engineer and New Mexico Interstate Stream Commission. New Mexico Water Rights Reporting System (NMWRRS). URL: <http://nmwrrs.ose.state.nm.us/nmwrrs/index.html>

## **General Concerns Related to NMOSE Regulation of Exploratory Borehole Drilling Encountering Groundwater and Associated Plugging of those Borings**

Well drilling activities - including mineral exploration borehole drilling (“mine drill holes”) that penetrate a water-bearing stratum - and well plugging, are regulated in part under 19.27.4 NMAC (New Mexico Administrative Code). Most recently promulgated 6/30/2017, these regulations require any person engaged in the business of well drilling within New Mexico to obtain a Well Driller License issued by the NMOSE (New Mexico Office of the State Engineer). Therefore, a New Mexico licensed Well Driller shall perform the drilling and plugging of exploratory boreholes that encounter groundwater.

Exploration drilling where a water-bearing stratum is encountered will be subject to pertinent sections of 19.27.4 NMAC, including but not limited to Sections 19.27.4.30.C NMAC for plugging and abandonment of non artesian wells / borings; 19.27.4.31 NMAC for artesian wells / borings; and 19.27.4.36 NMAC for mine drill holes that encounter water. A complete version of the NMOSE 19.27.4 NMAC regulations can be found on the NMOSE website at: <http://164.64.110.134/parts/title19/19.027.0004.html> . The Mining and Mineral Division (MMD) will likely place additional conditions on the drilling and plugging of all mineral exploration borings via the MMD project permit.

All onsite drilling and plugging activities where groundwater is encountered shall be conducted under the supervision of the New Mexico-licensed Well Driller or a NMOSE-registered Drill Rig Supervisor under the direction of the licensed Well Driller.

Additional NMOSE filings will be required where it is requested that an exploratory borehole be converted to a water well. The well design and construction shall be subject to the provisions of 19.27.4 NMAC Regulations. Appropriation of water from such a conversion may require a water right. **The MMD may disallow the conversions of exploratory borings to water wells if not permitted specifically in the MMD permit.**

### **Use/extraction of Temporary Casing**

When drilling through caving overburden or unconsolidated geologic units, use of temporary casing may be desired. Any temporary casing should be installed with the full intention of its removal before well plugging, therefore it should be inserted into a borehole of sufficiently large diameter to allow easy extraction upon termination of drilling. NMAC 19.27.4 regulations dictate methodology for the installation of permanent well casing, including the installation of required annular seal, should that option be prudent.

If temporary casing lacking an appropriate annular seal becomes stuck in-place, the potential for commingling of aquifers or surface water drainage may occur via an unsealed annulus. In these cases, remedial casing perforation and squeeze-cementing may be required as part of the well decommissioning. Steps should be taken to prevent deleterious fall-in or drainage of cuttings/sediments into the annulus outside the temporary casing to best allow for full retrieval and proper borehole plugging.

When setting of temporary casing occurs or is expected, appropriate detail of the proposed casing extraction and borehole clean-out process prior to plugging will be required in the NMOSE *Well Plugging Plan of Operations* form.

**Exploratory Borehole Plugging**

Terms of borehole plugging will be established jointly by the evaluation of the NMOSE *Well Plugging Plan of Operations* and the review of the relevant MMD application for water-bearing boreholes. Approved high-solids bentonite abandonment-grade sealants and/or approved cement slurries will be required for plugging as deemed hydrogeologically appropriate by the agencies. If the exploratory borings do not encounter groundwater, MMD plugging regulations (19.10.3 NMAC) prevail over those of 19.27.4 NMAC.

NMOSE well plugging regulations require tremie placement of the column of well sealant, which shall extend from the bottom of the borehole to ground surface. The NMOSE defers to the discretion of the MMD for the choice of sealant versus natural fill in the uppermost portion of a borehole plug to facilitate site restoration.

Required plugging of water-bearing exploratory borings shall occur within the timeframe specified by either the NMOSE or MMD to minimize cave-in and the potential for incomplete plugging due to blockages in the borehole.

**Drill Rig Fuels, Oils and Fluids**

Drill rigs contain and consume fuels, oil, and hydraulic fluids, and are subject to leaks. Drill rigs often remain in-place longer than other pieces of exploration equipment onsite, are frequently running, and are positioned immediately above and adjacent to the open borehole. As a standard practice to prevent contamination and reduce site cleanup activities, it may be beneficial to use bermed, impermeable ground sheeting under the drill rig. Consideration of bermed containment volume sufficient to accommodate a high-intensity precipitation event is also a good practice.





Michelle Lujan  
Grisham  
Governor

STATE OF NEW MEXICO  
**DEPARTMENT OF CULTURAL AFFAIRS**  
**HISTORIC PRESERVATION DIVISION**

BATAAN MEMORIAL BUILDING  
407 GALISTEO STREET, SUITE 236  
SANTA FE, NEW MEXICO 87501  
PHONE (505) 827-6320 FAX (505) 827-6338

March 22, 2021

Jenn Johnson  
Permit Lead, Mining Act Reclamation Program  
Mining and Minerals Division  
1220 South Saint Francis Drive  
Santa Fe, NM 87505

Re: HPD Log# 114793, Request for Comments on New Minimal Impact Exploration Permit Application, Turquoise Mountain Project, Grant County, New Mexico, Permit No. GR087EM

Dear Ms. Johnson:

I am writing in response to your request for comment on the above referenced exploration permit application received at this office March 15, 2021

Pursuant to 19.10.4. 403 NMAC: "Cemeteries and burial grounds and the disturbance of cultural resources listed on or eligible for the national register of historic places or the state register of cultural properties shall be avoided until clearance has been granted by the director after consultation with the state historic preservation officer"

According to our files, portions of the proposed permit project area are situated within a State Register Property (SR 721- Old Hachita Mine). Portions of this State Register Property have already been surveyed for cultural resources, but large areas of the property have never been surveyed. Therefore, therefore a cultural resources survey should be conducted on any undisturbed portions of the project area where proposed new ground disturbance will occur for this permit. This survey should be performed by a qualified professional to determine if any historic or archaeological properties are present and if so, to provide documentation of those resources to our office. This information can then be used to evaluate the National Register of Historic Places and State Register of Cultural Properties eligibility of any resources identified during the survey and determine project effects on those resources.

It is come to our attention that a survey of the permit area has recently been completed by Westland Resources. Please provide the SHPO with a copy of this survey report so that we can conclude our review of this submission.

Finally, the permit application indicates that land ownership in the proposed permit area includes the U.S. Bureau of Land Management (BLM), the BLM should be contacted regarding requirements for identification of cultural resources in areas that will be affected by proposed mining activities

If you have any questions concerning these comments, please do not hesitate to contact me by phone at (505)-452-6115 or e-mail me at [richard.reycraft@state.nm.us](mailto:richard.reycraft@state.nm.us)

Sincerely,

*Richard Reycraft*

Richard. Reycraft  
HPD Staff Archaeologist

**From:** [Reycraft, Richard, DCA](#)  
**To:** [Johnson, Jennifer E, EMNRD](#)  
**Subject:** Fw: HPD Log# 114793, Request for Comments on New Minimal Impact Exploration Permit Application, Turquoise Mountain Project, Grant County, New Mexico, Permit No. GR087EM  
**Date:** Thursday, March 25, 2021 2:53:13 PM  
**Attachments:** [Log#114793.pdf](#)

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Ms. Johnson,

Please disregard the statement below about survey of the permit area completed by Westland Resources. We were contacted by the author of this survey, but it was completed for another Mining and Minerals project on another State Register property.

My Apologies.

Rick Reycraft  
HPD Review

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**From:** Reycraft, Richard, DCA  
**Sent:** Monday, March 22, 2021 3:14 PM  
**To:** Johnson, Jennifer E, EMNRD  
**Subject:** HPD Log# 114793, Request for Comments on New Minimal Impact Exploration Permit Application, Turquoise Mountain Project, Grant County, New Mexico, Permit No. GR087EM

Dear Ms. Johnson:

I am writing in response to your request for comment on the above referenced exploration permit application received at this office March 15, 2021

Pursuant to 19.10.4. 403 NMAC: "Cemeteries and burial grounds and the disturbance of cultural resources listed on or eligible for the national register of historic places or the state register of cultural properties shall be avoided until clearance has been granted by the director after consultation with the state historic preservation officer"

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It is come to our attention that a survey of the permit area has recently been completed by Westland Resources. Please provide the SHPO with a copy of this survey report so that we can conclude our review of this submission.

Finally, the permit application indicates that land ownership in the proposed permit area includes the U.S. Bureau of Land Management (BLM), the BLM should be contacted regarding requirements for identification of cultural resources in areas that will be affected by proposed mining activities

If you have any questions concerning these comments, please do not hesitate to contact me by phone at (505)-452-6115 or e-mail me at [richard.reycraft@state.nm.us](mailto:richard.reycraft@state.nm.us)

Sincerely,

Richard. Reycraft

HPD Staff Archaeologist



Michelle Lujan  
Grisham  
Governor

STATE OF NEW MEXICO  
**DEPARTMENT OF CULTURAL AFFAIRS**  
**HISTORIC PRESERVATION DIVISION**

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SANTA FE, NEW MEXICO 87501  
PHONE (505) 827-6320 FAX (505) 827-6338

March 26, 2021

Jenn Johnson  
Permit Lead, Mining Act Reclamation Program  
Mining and Minerals Division  
1220 South Saint Francis Drive  
Santa Fe, NM 87505

Re: HPD Log# 114793B, Request for Comments on New Minimal Impact Exploration Permit Application, Turquoise Mountain Project, Grant County, New Mexico, Permit No. GR087EM

Dear Ms. Johnson:

I am writing in response to your request for comment on the above referenced exploration permit application received at this office March 15, 2021

I have been contacted by a mine representative who requested that I provide additional information concerning which drill locations fall inside State Register 721, Two drill locations, 21C and 21G, fall inside the State Register property. These two locations have not been surveyed for cultural resources. If these locations are to be utilized, they should be surveyed as per specifications discussed in my previous correspondence (HPD Log#114793-March 22). The other drill locations fall outside of the SR property, and have not been previously surveyed. We recommend that these drill locations also be surveyed before any new ground disturbance occurs for this project.

If you have any questions concerning these comments, please do not hesitate to contact me by phone at (505)-452-6115 or e-mail me at [richard.reycraft@state.nm.us](mailto:richard.reycraft@state.nm.us)

Sincerely,

*Richard Reycraft*

Richard. Reycraft  
HPD Staff Archaeologist



Michelle Lujan  
Grisham  
Governor

STATE OF NEW MEXICO  
**DEPARTMENT OF CULTURAL AFFAIRS**  
**HISTORIC PRESERVATION DIVISION**

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SANTA FE, NEW MEXICO 87501  
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May 17, 2021

Jenn Johnson  
Permit Lead, Mining Act Reclamation Program  
Mining and Minerals Division  
1220 South Saint Francis Drive  
Santa Fe, NM 87505

Re: HPD Log# 115146, amendment to the application for the Turquoise Mountain Exploration Project Permit  
No. GR087EM

Dear Ms. Johnson:

I am writing in response to your request for comment on the above referenced exploration permit application amendment received at this office May 7, 2021

If the two drill locations, 21C and 21G, which fall inside the State Register (SR# 721) property, are removed from the project permit, the State Historic Preservation Officer has no further concerns or comments regarding this permit application.

If you have any questions concerning these comments, please do not hesitate to contact me by phone at (505)-452-6115 or e-mail me at [richard.reycraft@state.nm.us](mailto:richard.reycraft@state.nm.us)

Sincerely,

*Richard Reycraft*

Richard. Reycraft  
HPD Staff Archaeologist

**From:** [Timothy Begay](#)  
**To:** [Johnson, Jennifer E, EMNRD](#)  
**Subject:** [EXT] EXPLORATION PERMIT APPLICATION  
**Date:** Thursday, April 1, 2021 9:16:38 AM

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Dear Ms. Johnson:

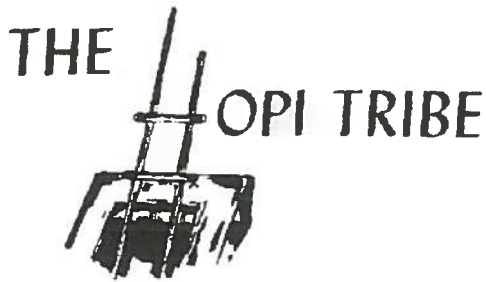
The Navajo Nation Heritage and Historic Preservation Department's (NNHHPD) Traditional Culture Program is (TCP) in receipt of your letter regarding the State of New Mexico Energy, Minerals and Natural Resources Department request for comments on Minimal Impact Exploration Permit Application, Turquoise Mountain Project, Grant County, New Mexico .

After reviewing your letter and cross referencing our Traditional Cultural Properties (TCP's) database, NNHHPD-TCP has determined that there are No Navajo TCP's within the project area and you may proceed without further consultation for this project.

If you have any additional questions, concerns or would like to discuss these issues further, please don't hesitate to contact our office at (928) 871-7198 or (928) 871-7152. Thank you for including the Navajo Nation in the consultation process.

Sincerely,

**Timothy C. Begay**  
Navajo Cultural Specialist  
Navajo Nation Heritage and Historic Preservation Department  
P.O. Box 4950  
Window Rock AZ 86515  
Office Phone: (928)871-7152  
[tbegay@navajo-nsn.gov](mailto:tbegay@navajo-nsn.gov)



Timothy L. Nuvangyaoma  
CHAIRMAN

Clark W. Tenakhongva  
VICE-CHAIRMAN

March 29, 2021

Jerry Schoeppner, Director, Mining and Minerals Division  
Attention: Jenn Johnson  
New Mexico Energy, Minerals, and Natural Resources Department  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Dear Mr. Schoeppner,

This letter is in response to your correspondence dated March 17, 2021, regarding Request for Comments on Minimal Impact Mining Application, Turquoise Mountain Project, Grant County, Permit No. GR087EM. The Hopi Cultural Preservation Office appreciates the New Mexico Energy, Minerals, and Natural Resources Department, Mining and Minerals Division (MMD)'s solicitation of our input and your efforts to address our concerns.

The Hopi Tribe claims cultural affiliation to prehistoric cultural groups in New Mexico. The Hopi Cultural Preservation Office supports identification and avoidance of prehistoric archaeological sites and Traditional Cultural Properties, and we consider the archaeological sites that are habitations of our ancestors to be "footprints" and Hopi Traditional Cultural Properties. We are interested in consulting on any proposal in New Mexico with the potential to adversely affect prehistoric sites.

Your correspondence requests consultation to identify known cultural resources. As we have stated previously, when requested to identify traditional cultural or religious properties that we would like to taken into consideration during government-to government consultations, we routinely request a copy of the cultural resources survey of the area of potential effect. This specific information on the location of historic properties is important to us to identify sites and potential impacts. Without cultural resources survey or a traditional cultural properties survey we are unable to determine if proposals may affect cultural resources significant to the Hopi Tribe.

We understand the proposed project would involve six boreholes on Bureau of Land Management land and two boreholes on New Mexico Land Office land, and that an archaeological survey will be conducted. To enable us to determine if this proposal may affect cultural resources significant to the Hopi Tribe, please provide us with a copy of the archaeological survey report for review and comment. Thank you for your consideration.

Respectfully,

Stewart B. Koyiyumptewa, Program Manager/THPO  
Hopi Cultural Preservation Office

xc: Bureau of Land Management  
New Mexico State Historic Preservation Office





# White Mountain Apache Tribe

Office of Historic Preservation

PO Box 1032

Fort Apache, AZ 85926

Ph: (928) 338-3033 Fax: (928) 338-6055

**To:** Jerry Schoeppner, Director Mining and Minerals Division New Mexico

**Date:** April 01, 2021

**Re:** *Deming Alpha Mine, Luna County, New Mexico Permit No. LU042MN*  
*Turquoise Mountain Project, Grant County, New Mexico, Permit No. GR087EM*  
*Summa Silver Mogollon Project, Catron County, New Mexico, Permit No. CA027EM*  
*Magdalena Tailings Repurposing Exploration Project, Socorro County, NM Permit No. SO023EM*

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The White Mountain Apache Tribe Historic Preservation Office appreciates receiving information on the project dated; March 2021. In regards to this, please attend to the following statement below.

Thank you for allowing the White Mountain Apache tribe the opportunity to review and respond to the above four (4) proposed projects by the New Mexico Energy, Minerals and Natural Resources Department

Please be advised, we reviewed the consultation letter and the information provided, and we've determined that the four (4) proposed projects will ***"Not have an Adverse Effect"*** on the tribe's cultural heritage resources and/or traditional cultural properties.

Thank you for your continued collaborations in protecting and preserving places of cultural and historical importance.

Sincerely,

*Mark T. Altaha*

White Mountain Apache Tribe – THPO  
Historic Preservation Office