

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Cabinet Secretary

Fernando Martinez, Director
Mining and Minerals Division



CERTIFIED MAIL – RETURN RECEIPT REQUESTED

January 3, 2018

Frank Bain, Geologist
Lordsburg Resources, Inc.
2425 Chof Trail
Flagstaff, AZ 86005

**RE: Agency Review Comments and Request for Additional Information,
Lordsburg Playa Lithium Exploration Project,
Permit No. HI018EM – Hidalgo County, New Mexico**

Mr. Bain:

The New Mexico Mining and Minerals Division (“MMD”) has reviewed the Permit Application Package (“PAP”), for a minimal impact exploration permit, submitted by Lordsburg Resources, under Subpart 3 of the New Mexico Mining Act Rules (“Rules”). MMD has also received agency comments on the original September 27, 2017, submittal and amended November 29, 2017, information to the application from Lordsburg Resources. Enclosed with this letter are the reviewing agency comment letters submitted by the following state agencies: the New Mexico Environment Department (“NMED”), the NM Office of the State Engineer (“OSE”), the New Mexico Department of Game and Fish (“NMDG&F”), and the New Mexico Department of Cultural Affairs - Historic Preservation Division (“NMDCA/HPD”), and the New Mexico Department of Transportation (“NMDOT”). Because this exploration project is proposed to take place on Federal Bureau of Land Management (“BLM”) lands, Lordsburg Resources will be required to follow the approved BLM Plan of Operations in conjunction with MMD’s Minimal Impact Exploration Permit (“Permit”). Additionally, please find general comments from MMD based on review of this application.

General Comments:

MMD has reviewed the PAP and deemed it administratively complete, pursuant to §19.10.3.302 G NMAC, in a letter to Lordsburg Resources dated October 2, 2017. **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.**

**RE: Agency Review Comments and Request for Additional Information,
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MMD Comments:

Please provide the following:

1. Estimated amount of total disturbance in acres including, but not limited to, constructed roads, drill pads, and mud pits. MMD would like this number to reflect the potential of all five holes being drilled.
2. Anticipated maximum mud pit size in cubic yards.
3. BLM Mining Claim numbers for the exploration area.
4. Written permission from Kinder Morgan authorizing vehicle and equipment access of the pipeline Right of Way.
5. Copy of Cultural Resource Survey.
6. Copies of all OSE well drilling and plugging permits.
7. Approved seed mix for reclamation from BLM.
8. Financial Assurance: Joint Financial Assurance (“FA”) will be held with BLM on this project because the project takes place on BLM property. Please refer to §19.10.12.1203 NMAC for approved forms of FA. Once you decide which mechanism you would like to use, we can move forward with that paperwork. Below is the proposed FA for this project with calculations.

Lordsburg Resources Inc. Cost Estimate: Minimal Impact Exploration Project HI018EM

Subsurface Plugging and Abandonment Financial Assurance

\$ Cost/Ft.	Ft.	Number of Holes	Total
17	750	2	25500

Surface Reclamation Financial Assurance

Category	\$Cost/Acre	Number of Acres	Total
First acre or less	8900	1	8900
Additional acres	4900		

Total FA (\$) 34400

BLM Comments: MMD has not received any formal comments from the BLM, but MMD is aware that Lordsburg Resources is working on separate permitting actions with the BLM such as the Plan of Operations. Because BLM is the land management agency for this exploration project, the BLM must acknowledge or approve the application before MMD will be able to issue the state exploration permit.

NMED Mining Environmental Compliance Section, Ground Water Quality Bureau

Comments (“MECS”): Please find enclosed a memorandum from NMED dated on December 18, 2017 providing comments based on MECS review of the PAP submittal. Please address all

**RE: Agency Review Comments and Request for Additional Information,
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concerns from MECS as noted in their memorandum. Below are two specific items that will need to be addressed in addition to the other comments enclosed in the memorandum:

1. The application does not contain the information necessary to determine the depth to ground water or the total dissolved solids concentration. NMED requests the Applicant obtain this information from an agricultural or domestic well that is proximal to the exploration project.
2. It does not appear the drilling mud pits are sized appropriately to contain additional ground water production that may occur during drilling, or that a contingency plan has been developed for such an occurrence.

NMED Surface Water Quality Bureau Comments: Please find enclosed a memorandum from NMED, dated December 14, 2017 providing comments based on the Surface Water Quality Bureau's review of the PAP submittal. Please address all concerns from NMED Surface Water Quality Bureau noted in their memorandum.

NMED Air Quality Bureau Comments: Please find enclosed a memorandum from NMED's Air Quality Bureau (AQB) dated December 18, 2017 providing general comments and recommendations based on the AQB's review of the PAP. Please address all concerns and recommendations from NMED Air Quality Bureau noted in their memorandum.

NMDCA/HPD Comments: In a letter from NMDCA to MMD dated November 2, 2017, the NMDCA/HPD provided comments based on their review of the PAP submittal. Please address each of the general issues and recommendations from NMDCA/HPD.

NMOSE Comments: Please find enclosed an e-mailed correspondence from the NMOSE, dated November 20, 2017. The NMOSE's review provides general and specific review commentary, including a listing of general NMOSE exploratory drilling project comments that are pertinent to the project. Keep in mind that all NMOSE requirements regarding well drilling and plugging must be met in order for MMD to issue its permit. Please address each of the general issues and recommendations from the NMOSE. Also, in addition to the general issues and recommendations from NMOSE provided in their November 20, 2017, letter, below are three administrative and technical issues that must be addressed specifically:

- The closest water well to both of the proposed investigatory boreholes is reported to produce highly saline groundwater. Applicant response to MMD Part 3 application page 15 – Section 6D, notes proposal to plug the completed exploratory borings with a high-solids bentonite grout, which appears an inappropriate choice where water chemistry is characterized by high chloride concentration.
- Applicant may not yet have received approval of NMOSE (Form WR-07) Application for Permit to Drill a Well with No Water Right or NMOSE (Form WD-08) Well Plugging Plan of Operations.
- The proposed use of a high-solids bentonite grout appears inappropriate for plugging and abandonment of the project boreholes, given stated groundwater chemistry in the area. Attached Baroid specification sheet for Quik-Grout high-solids bentonite grout notes, "The use of bentonite may not be appropriate in environments where the formation

Frank Bain, Geologist – Lordsburg Resources

**RE: Agency Review Comments and Request for Additional Information,
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water chemistry has a total hardness greater than 500 parts per million and/or a chloride content of greater than 1500 parts per million.” It is likely the NMOSE will disallow use of either a bentonite grout or chip / pellet bentonite to plug the project boreholes without substantiation of appropriate groundwater chemistry, leaving cement grout as the likely alternative.

NMDG&F Comments: In a letter from NMDG&F to MMD dated November 20, 2017, the NMDG&F provided comments based on their review of the PAP submittal. Please address all general issues and recommendations from NMDG&F.

NMDOT Comments: Please find enclosed an e-mailed correspondence from the NMDOT, dated October 17, 2017. The NMDOT’s review provides general and specific review commentary. Please address all comments and recommendations from the NMDOT.

NMSFD Comments: Please find enclosed an e-mailed correspondence from the NMSFD, dated November 30, 2017. The NMSFD’s review provides general and specific review commentary. Please address all comments and recommendations from the NMSFD.

Should you have any questions, comments, or require additional information concerning this letter or any enclosures, please contact me at (505) 476-3413, or via email at: clinton.chisler@state.nm.us.

Sincerely,



Clint Chisler – Permit Lead, HI018EM
Mining Act Reclamation Program (“MARF”)
New Mexico Mining and Minerals Division

Enclosures:

November 20, 2017, Letter to MMD from NMDGF
December 14/18, 2017, Letters to MMD from NMED
November 2, 2017 Letter to MMD from NMDCA/HPD
November 20, 2017, E-mailed Correspondence to MMD from NMOSE
November 30, 2017, E-mailed Correspondence to MMD from NMSFD
October 17, 2017, E-mailed Correspondence to MMD from NMDOT

Cc w/o enclosures: Fernando Martinez, Director, MMD
Holland Shepherd, Program Manager, MARF/MMD
Leighandra Keeven, Geologist, BLM Las Cruces District Office
Jeff Lewellin, Mining Act Team Leader, NMED
Matthew Wunder, Ph.D., Chief, Conservation Services Division, NMDG&F
Ghassan R. Musharrafieh, Chief, Hydrology Bureau, NMOSE
Bob Estes, Ph.D., Archaeologist, NMDCA/HPD
Daniella Roth, Botanist, NMSFD
Trent Botkin, Natural Resources Section Supervisor, NMDOT
Mine File (HI018EM)



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NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau
1190 South St. Francis Drive (87505)
P.O. Box 5469, Santa Fe, New Mexico 87502-5469
Phone (505) 827-2900 Fax (505) 827-2965

www.env.nm.gov



BUTCH TONGATE
Cabinet Secretary

J.C. BORREGO
Deputy Secretary

MEMORANDUM

Date: December 18, 2017

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

Through: Jeff Lewellin, Mining Act Team Leader, Mining Environmental Compliance Section

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

Subject: **NMED Comments, Lordsburg Resources, Lordsburg Playa Lithium Minimal Impact Exploration Project Hidalgo County, New Mexico, MMD Permit No. HI018EM**

The New Mexico Environment Department (NMED) received correspondence from the Mining and Minerals Division (MMD) on October 3, 2017 requesting NMED review and provide comments on the above-referenced MMD permitting action. Subsequent to the October 3, 2017 MMD request for comments, an inspection was scheduled that resulted in MMD extending the comment period for all agencies to December 19, 2017. NMED has the following comments.

Background

Lordsburg Resources (Applicant) proposes a minimal impact exploration project to advance a minimum of two and a maximum of five borings in the Lordsburg Playa, located approximately 13 miles WSW of Lordsburg, Hidalgo County, New Mexico. As stated in the application, the specific area of disturbance includes approximately 1.71 acres of land which contains drill pads and roads located in T23S, R20W, Sections 8, 9, 10, 15, 17, 20, 21, and 22 on land managed by the Bureau of Land Management. The borings will be advanced to a depth of 750 feet below ground surface to determine if economic reserves of lithium exist to warrant future mining of lithium.

Air Quality Bureau

The Air Quality Bureau comments are attached under separate letterhead.

Surface Water Quality Bureau

The Surface Water Quality Bureau comments are attached under separate letterhead.

Mining Environmental Compliance Section

Personnel from the Mining Environmental Compliance Section (MECS) reviewed databases maintained by the Office of the State Engineer (OSE) related to water rights and distribution. Production wells south of the proposed site are described as agricultural and/or domestic wells. No water quality information was observed in the OSE databases. Depth of the wells reviewed in the OSE databases ranged from 30 to 140 feet below ground surface.

Regulations associated with minimal impact exploration operations are found at 19.10.3.302 NMAC. Required information associated with application for a minimal impact exploration operation with regard to ground water are found at 19.10.3.302 D(5) NMAC and state, "an estimate of depth to ground water and total dissolved solids concentration". The application does not contain the information necessary to determine the depth to ground water or the total dissolved solids concentration. NMED requests the Applicant obtain this information from an agricultural or domestic well that is proximal to the exploration project.

Based on the information NMED acquired from the OSE database it appears likely the exploration drilling project will encounter groundwater. It does not appear the drilling mud pits are sized appropriately to contain additional groundwater production that may occur during drilling, or that a contingency plan has been developed for such an occurrence.

NMED Summary Comment

NMED finds that the exploratory project is likely to have a minimal impact to the environment if operated and reclaimed with the approved permits, pollution controls and the comments above. This determination is based solely on the application and Plan of Operations submitted to the Bureau of Land Management and does not pertain to any production and processing facility that may be proposed following this exploratory phase.

If you have any questions, please contact Jeff Lewellin at (505) 827-1049.

cc: Bruce Yurdin, Division Director, NMED-WPD
Shelly Lemon, Bureau Chief, SWQB
Richard Goodyear, Bureau Chief, AQB
Fernando Martinez, Division Director, EMNRD-MMD
Clinton Chisler, Lead Staff, EMNRD-MMD
Kurt Vollbrecht, Program Manager, MECS



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BUTCH TONGATE
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Deputy Secretary

MEMORANDUM

TO: Jeff Lewellin, Mining Act Team Leader
Mining Environmental Compliance Section
Ground Water Quality Bureau (GWQB)

FROM: John Moeny, Surface Water Quality Bureau

SUBJECT: **Request for Comments, Minimal Impact Exploration Project, Lordsburg Resources, Lordsburg Playa Lithium Exploration Project, Hidalgo County, MMD Permit No. HI018EM**

DATE: December 14, 2017

On October 3, 2017, the NMED received a request for comments regarding the Lordsburg Playa Lithium Exploration Project, a minimal impact exploration project located in Hidalgo County, approximately 15 miles west of Lordsburg. The project is located on lands administered by the Bureau of Land Management.

Summary of Proposed Action

The operator, Lordsburg Resources Inc., intends to drill a minimum of two and a maximum of five 6" exploratory holes in the Lordsburg Playa to a depth of 750 feet. Test holes with economically recoverable lithium will be maintained as production wells, while holes without recoverable lithium will be plugged according to New Mexico State Engineers Office specifications. Access to the drill sites will combine existing roads, Rights-of-Way and grading new roads where necessary. Sump pits of approximately 1,500 square feet will be constructed to capture ground water emanating from the drill holes and will be unlined to allow water to percolate back into the playa sub-surface.

Relevant State and Federal Water Quality Regulations

Playa lakes are considered surface waters of the state as defined in NMAC 20.6.4.7.S(5), and subject to the State's Antidegradation Policy and Implementation Plan, as described in NMAC 20.6.4.8. As an ephemeral water body, it retains the following designated uses: livestock

watering, wildlife habitat, limited aquatic life and secondary contact which must be protected during the duration of this project.

Construction activities in support of the drilling, mining or hauling in ephemeral drainages may require a federal Clean Water Act Section 404 Dredge and Fill Permit and the corresponding Section 401 State of New Mexico Certification of the federal permit. For details contact the US Army Corps of Engineers Las Cruces Regulatory Office at 575.268.8612.

Certain mining activities may require a permit from EPA under Section 402 (NPDES) of the Clean Water Act, under the Multi-Sector General Permit (MSGP). The permittee must submit the appropriate application to EPA prior to initiating activities that may result in a discharge. For additional information, contact:

EPA Region 6
1445 Ross Avenue
Suite 1200
Dallas, Texas 75202
Ph: 800-887-6063 or 214-665-2760 if calling from outside Region 6

If you have questions about this coverage please contact Sarah Holcomb, SWQB, at (505) 827-2798

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

- Fuel, oil, hydraulic fluid, lubricants, and other petrochemicals must have a secondary containment system to prevent spills.
- Ground water sump pits may not be used as disposal locations for hydraulic fluids, oils, contaminated drilling mud or other materials that may pose a pollution risk to surface and ground water.
- 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).
- Reclamation should include regrading the site to pre-construction elevation and topography to preserve run-on hydrology to the playa.

- Overland travel should be suspended when saturated soil conditions are present to prevent soil compaction and preserve surface water percolation into the playa.

Impacts to Surface Water Quality

The SWQB finds that Lordsburg Resources Inc.'s exploratory operation is likely to have a minimal impact to surface waters if operated and reclaimed with the approved permits and pollution controls and the comments above. This determination is based solely on the application and Plan of Operations submitted for review of the exploratory drilling and does not pertain to any processing facility that may be required following this exploratory phase.

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



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BUTCH TONGATE
Cabinet Secretary
JUAN CARLOS BORREGO
Deputy Cabinet Secretary

MEMORANDUM

DATE: December 18, 2017

TO: Jeff Lewellin, Mining Act Team Leader
Mining Environmental Compliance Section, Ground Water Quality Bureau

FROM: Neal Butt, Environmental Analyst
Control Strategies Section, Air Quality Bureau

RE: Request for Review and Comment, Minimal Impact Exploration Operation Permit Application, Lordsburg Playa Lithium Exploration Project, Hidalgo Co., NM Permit Tracking No. HI018EM

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 any air quality permits for this operation.

Details

The applicant, Lordsburg Resources, is proposing to drill two test holes initially, with potentially three more to follow, disturbing approximately 1.71 acres, to explore the Lordsburg Playa located on federal lands managed by the Bureau of Land Management. The operator has applied to drill these exploration test holes on Federal Lode Mining Claims LPB 1-261 (LBP-59 and LBP-76 cited in permit application). The Plan of Operations (PoO) states that "at this time Lordsburg Resources is proposing to drill only 2 holes. One hole will be on claim number 5 near an historic salt well that was drilled in the 1950's and the other on claim 131 or as an alternative claim 67. The remaining holes are being permitted so that if a discovery is made addition drilling can take place without the need for additional review by NMMD or the BLM. All drill holes will be 6 inches in diameter. Drill holes will be up to 750 feet in depth." The proposed mining project is located in Township 23 S Range 20 W Sections: 7, 8, 9, 10, 15, 17, 18, 19, 20, 21 and 22, 13 miles WSW of Lordsburg, within the Lordsburg Playa (North of I-10), in Hidalgo County New Mexico. A site inspection to visit the two project areas was scheduled for November 7, 2017, with a follow up on December 5, 2017.

The PoO claims that operations are of a scale that will have minimal or no impact on air quality. All personnel will be required to maintain a prudent vehicle speed on dirt roads, especially while on the “playa” to reduce impacts from dust. The operator is aware of problems associated with dust blowing across Interstate Highway 10 that originates on the playa and if necessary, the onsite water truck will be used for dust suppression on access roads.

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. Current requirements which may be applicable in this mining project include, but are not limited to the following:

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.”

In addition, pursuant to Subsection A of 19.10.3.302 NMAC, *Minimal Impact Exploration Operations*:

“A minimal impact exploration operation will not exceed 1000 cubic yards of excavation per permit. Disturbances for constructed roads, drill pads and mud pits shall be no more than 5 acres total and will not be counted in the excavated materials. The type of road construction, the number and type of drill pads, and other disturbances when considered with site specific conditions will be major factors in determining eligibility for minimal impact status which is in the discretion of the director.”

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

Although fugitive dust is a common problem at mining sites, the AQB does not have a rule that regulates fugitive dust at this time. The AQB is in the early stages of developing a rule to address fugitive dust and expects to hold a hearing before the Environmental Improvement Board to adopt the rule in July of 2018. Meanwhile, we recommend controls to minimize emissions of particulate matter from fugitive dust sources to limit public health and traffic safety impacts. The following control strategies can be included in a comprehensive fugitive dust control plan (from EPA's *Compilation of Air Pollutant Emission Factors, AP-42*):

Unpaved haul roads and traffic areas: paving of permanent and semi-permanent roads, application of surfactant, watering, and traffic controls, such as speed limits and traffic volume restrictions.

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 concerns about proposed construction disturbing the playa soil crust and exacerbating the problems of windblown dust in the area. But, if the applicant is circumspect in its approach to this project, then the AQB has no objection to the current request for exploration.

The applicant is expected to comply with all requirements of federal and state laws pertaining to air quality. 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) 476-4317.

GOVERNOR
Susana Martinez



DIRECTOR AND SECRETARY
TO THE COMMISSION
Alexandra Sandoval

DEPUTY DIRECTOR
Donald L. Jaramillo

STATE OF NEW MEXICO DEPARTMENT OF GAME & FISH

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Roswell

THOMAS "DICK" SALOPEK
Las Cruces

20 November 2017

Clint Chisler, Permit Lead
Mining Act Reclamation Program
New Mexico Mining and Minerals Division
1220 South St. Francis Drive
Santa Fe, NM, 87505

RE: Minimal Impact Exploration Operation Permit Application, Lordsburg Playa Lithium Exploration Project, Permit No. HI018EM; NMDGF No. 18073

Dear Mr. Chisler:

In response to your letter dated 3 October 2017 regarding the above referenced minimal impact exploration project, the Department of Game and Fish (Department) does not anticipate significant impacts to wildlife or sensitive habitats, with implementation of the applicable mitigation or avoidance measures included within the project description.

The playa lakes within the Lordsburg Playa contain limited riparian/wetland vegetation primarily along their borders, and during periods of high run-off the playa lakes contain water that provides an important stopover and wintering site for migratory shorebirds and waterfowl. While the Department does not anticipate significant impacts to wildlife or sensitive habitats for the minimal impact exploratory phase of the project, we feel that the uniqueness and value of these large playa lakes to migratory birds could subject them to adverse impacts from large resource extraction operations, and that the Lordsburg Playa should be managed as important wildlife habitat.

Thank you for the opportunity to review and comment on your project. If you have any questions, please contact Ron Kellermueller, Mining and Energy Habitat Specialist at (505) 476-8159 or ronald.kellermueller@state.nm.us.

Sincerely,

Chuck L. Hayes, Assistant Chief
Ecological and Environmental Planning Division

cc: USFWS NMES Field Office



Susana Martinez
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

November 2, 2017

Clint Chisler
Permit Lead
Mining Act Reclamation Program
Mining and Minerals Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Application for Minimal Impact Exploration Permit, Lordsburg Playa Lithium project, Hidalgo County, New Mexico, HI018EM

Dear Mr. Chisler:

This letter is in response to the above referenced new minimal impact exploration permit application received at the Historic Preservation Division (HPD) on October 10, 2017 (HPD log 106574). According to the application, the proposed project is within Township 23 South, Range 20 West, in portions of Sections 8, 9, 10, 15, 17, 20, 21, and 22. .

In accordance with rule 19.10.3 NMAC, *Minimal Impact Operations*, I reviewed our records to determine if cemeteries, burial grounds or cultural resources listed on the State Register of Cultural Properties or the National Register of Historic Places exist within or near the permit area. Our records show that there are no cultural resources listed on the National Register or State Register within or near the proposed permit area and no known cemeteries or burial grounds.

Although there are no cultural resources listed on the State or National Register, our records show that the area has not been surveyed for cultural resources. There is not enough information to assess the potential for cultural resources in the project area or the access routes.

The application states that the surface and mineral estate is owned by the Bureau of Land Management (BLM), and is probably subject to review under Section 106 of the National Historic Preservation Act. To the best of my knowledge, the BLM has not consulted with the SHPO. The BLM may require a cultural resources survey, and will review the results of the survey report and consider project effects on any archaeological sites that may be eligible

for listing on the National Register pursuant to Section 106 of the National Historic Preservation Act. The BLM may require avoidance of any eligible archaeological sites and an archaeological monitor to ensure that eligible sites are not affected.

Please do not hesitate to contact me if you have any questions regarding these comments. I can be reached by telephone at (505) 827-4225 or by email at bob.estes@state.nm.us.

Sincerely,

A handwritten signature in cursive script that reads "Bob Estes".

Bob Estes PH.D.
Archaeologist

Log: 106574

From: [Rappuhn, Doug H., OSE](#)
To: [Chisler, Clinton, EMNRD](#)
Cc: [Musharrafieh, Ghassan R., OSE](#); [Valentine, Lloyd, OSE](#)
Subject: NMOSE Hydrology Bureau review of MMD HI018EM Part 3 Minimal Impact Exploration Operation Permit Application for Lordsburg Resources, Lordsburg Playa Lithium Exploration Project, Hidalgo County
Date: Monday, November 20, 2017 6:43:55 PM
Attachments: [A-675 NMOSE Declaration.pdf](#)
[QUIK-GROUT.pdf](#)
[MMD mineral exploration boreholes encountering groundwater NMOSE general comments 2017 11 20.pdf](#)

Hello Mr. Chisler –

The NMOSE Hydrology Bureau has reviewed the MMD HI018EM Part 3 Minimal Impact Exploration Operation Permit Application for the Lordsburg Resources Lordsburg Playa Lithium Exploration Project. The project is to consist of the drilling and evaluation of two, approximately 750'-deep exploratory borings (initial filings with NMOSE note proposed 750 – 1000'-deep borings); to be plugged upon completion of drilling.

The exploratory drilling for lithium will occur at a location approximately 10 miles southwest of the Town of Lordsburg, in Hidalgo County. I did not attend a joint regulatory site inspection for the proposed project.

Two administrative concerns were noted in the NMOSE review:

- The closest water well to both of the proposed investigatory boreholes is reported to produce highly saline groundwater. Applicant response to MMD Part 3 application page 15 – Section 6D, notes proposal to plug the completed exploratory borings with a high-solids bentonite grout, which appears an inappropriate choice where water chemistry is characterized by high chloride concentration.
- Applicant may not yet have received approval of NMOSE (Form WR-07) Application for Permit to Drill a Well With No Water Right or NMOSE (Form WD-08) Well Plugging Plan of Operations.

Surface water

USGS topographic maps of the project area indicate the existence of a large playa throughout much of the LBP Claim Block, incorporating the two requested drill sites. This suggests surface water and/or very shallow groundwater is present, at least ephemerally, throughout much of the LBP Claim Block. No through-flowing streams or watercourses exist in the project area, although the distal ends of Rustler, Volcano, and Sixtysix Draws are found within two miles of the proposed drill holes. Discharge from these draws is presumed to find its way to the playa as ephemeral surface flow or shallow groundwater.

No springs were mapped within a minimum two-mile radius of the project claims.

Groundwater

In general, water wells may tap locally-perched groundwater, an unconfined local aquifer, or a regional unconfined or confined groundwater system. All represent forms of groundwater subject to the application of NMOSE regulations and required Water Rights Division filings. Most water wells in the Lordsburg area tap water-bearing basin-fill / alluvial deposits, with far fewer other wells tapping fractured bedrock along the flanks of local mountainous areas.

Information regarding current water rights in the project area was retrieved from the NMOSE-NMWRRS database within an approximate two-mile radius of the proposed project well sites. Only one water well was identified within said radius – A-675 (depth: 150', static water level: unreported; located approximately 0.8 miles west of proposed Project Drill Hole 1). Terrain is fairly flat in the area, with elevation of the proposed drill hole locations about 10' less than that at A-675 per USGS 7.5-minute topographic map of the area.

The NMOSE Declaration of Owner of Underground Water Right on file for A-675 (attached) notes an original well capacity of 20 gpm, confirming encountering of groundwater. Page 2 – Item 8 of the NMOSE Declaration notes "Well has extreme salt content", not unusual for a well that likely taps groundwater connected to that found in the playa covering much of the LBP Claim Block. Additionally, in filing the MMD Part 3 Application, the Applicant notes (page 13 – Section 6A.) TDS concentration of local groundwater in excess of 10,000 mg/L.

Exploratory Drilling – NMOSE Considerations

The Applicant shall file and receive NMOSE approval of NMOSE Application(s) for Permit to Drill a Well With No Water Right (http://www.ose.state.nm.us/WR/Forms/17/WR-07%20Application%20for%20Permit%20to%20Drill%20a%20Well%20with%20No%20Consumptive%20Use_2016-11-17_final.pdf) prior to initiating drilling of the proposed borings.

The Applicant shall concurrently file and receive approval of NMOSE Well Plugging Plan(s) of Operations (http://www.ose.state.nm.us/WR/NewForms/WD-08%20Well%20Plugging%20Plan%20of%20Operations_2017-06-30_final.pdf) in accordance with Subsection C of NMAC 19.27.4.30, as revised 6/30/2017, prior to initiating drilling of the proposed borings.

The proposed use of a high-solids bentonite grout appears inappropriate for plugging and abandonment of the project boreholes, given stated groundwater chemistry in the area. Attached Baroid specification sheet for Quik-Grout high-solids bentonite grout notes, "The use of bentonite may not be appropriate in environments where the formation water chemistry has a total hardness greater than 500 parts per million and/or a chloride content of greater than 1500 parts per million." It is likely the NMOSE will disallow use of either a bentonite grout or chip / pellet bentonite to plug the project boreholes without substantiation of appropriate groundwater chemistry, leaving cement grout as the likely alternative.

A listing of general NMOSE exploratory drilling project comments otherwise potentially pertinent to the project is also attached to this e-mail.

Douglas H. Rappuhn
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The actual MMD application may be viewed on the MMD website at:
<http://www.emnrd.state.nm.us/MMD/MARP/LordsburgPlaya.html>

From: [Roth, Daniela, EMNRD](#)
To: [Chisler, Clinton, EMNRD](#)
Subject: RE: Request for Review and Comment, Minimal Impact Exploration, Lordsburg Playa Lithium Exploration Project (Permit No. HI018EM)
Date: Monday, October 30, 2017 8:02:48 AM

Dear Clint Chisler:

Thank you for providing me with the opportunity to review and comment on the Minimal Impact Exploration Operation Permit application for the Lordsburg Playa Lithium Exploration Project in Hidalgo County, NM (Permit No. HI018EM).

This exploration project is located in the vicinity of known locations of the NM State Endangered night-blooming cereus (*Peniocereus greggii* var. *greggii*), which is also a BLM sensitive species. The night-blooming cereus has the potential to occur in the project area. Therefore I highly recommend surveys for this cryptic species during the flowering season, when it is easiest to detect. If plants are found, they should be avoided, or impacts should be minimized through a variety of mitigation measures available.

Please let me know if I can be of further assistance.

Sincerely,

Daniela Roth

Botany Program Coordinator
EMNRD – Forestry Division
1220 S. Saint Francis Drive
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505-476-3347

<http://www.emnrd.state.nm.us/SFD/>

From: [Botkin, Trent, NMDOT](#)
To: [Chisler, Clinton, EMNRD](#)
Cc: [Hutchinson, William S, NMDOT](#)
Subject: Comments on Lordsburg Playa Lithium Exploration Project
Date: Tuesday, October 17, 2017 11:13:11 AM
Attachments: [NMDOT ACEC Nomination 2017.doc.pdf](#)

Clinton,

Below are comments for the Lordsburg Playa Mining Permit. As you are aware, the NMDOT is in the fourth year of an extensive assessment of the dust storm issue within the Lordsburg Playa. We currently have an advisory panel consisting on BLM, NRCS, NMSU, DPS, SLO, and others. The Jorlanda Experimental Range is currently working on plans to set up a monitoring station as part of its national wind erosion research network and is coordinating with the research project funded through the NMDOT. From my time studying the situation and talking with state, national, and world experts on the issue, I can say for certain that all soil-destabilizing activities on the Lordsburg Playa increase the chance of death on adjacent I-10. We are in the bureaucratically exhausting process of working with the BLM to get this area closed to ALL soil disturbing uses and designated as an Area of Critical Environmental Concern. So to have a mining operation with haul roads dropped into the middle of this very fragile situation is pretty much a worst case situation that has significant potential to go very wrong. If this mining operation goes into effect, we (FHWA/NMDOT/BLM/NMSU) will essentially have to reevaluate the entire dust mitigation project, potentially delaying the EA and the dust mitigation actions and costing untold amounts of money and possibly lives lost. I haven't had time to review the NMAC regs, but I'm pointing all this out because I don't see how this falls under a minimal impact permit.

Comments on the Permit

The NMDOT has nominated the Lordsburg Playa and its watershed as an Area of Critical Environmental Concern due its threat to public health (attached). Even though it is not designated as an ACEC yet, the BLM has to take the nomination into account when approving ROW impacts. The FHWA/NMDOT is currently in the process of conducting a BLM Environmental Assessment on the land use of the entire playa. At issue is erodible soils have contributed to low/zero visibility conditions causing at least 40 vehicular deaths in the past 40 years, including 11 in the past 6 months.

Sect. 7 (A): The surface of the playa contains saline crust that protects the soil from wind erosion. This crust is established as the playa water evaporates and is considered imperative to preventing dust storms.

(B): Wind erosion of loose soil is major contributing cause to dust storms which have resulted in numerous fatalities on I-10. The FHWA/NMDOT/BLM is currently conducting extensive analyses to determine methods and land uses to reduce wind erosion and resulting sediment input that decreases visibility. Any actions on the playa (roads, pads, vehicles) would need to be assessed for soil disturbance and immediate mitigation actions taken to reduce available dust (soil stabilizers,

etc.).

(D): Re-contouring: Imprinting or other methods of compaction, including the addition of low velocity water spraying, could be used to help establish a crust and reduce erodible soil surfaces. 1.1 acres of bulldozed disturbed land has a very high potential to be a point source dust source that could result in low visibility conditions on I-10 and result in vehicle accidents. The NMDOT has numerous cameras in the area in addition to environmental contractors working on the playa that will be observing conditions.

Road Reclamation: Water bars and bladed roads need to be coordinated with the FHWA/NMDOT/BLM effort to reduce wind eroded soil. Part of our preliminary plan is to eliminate all vehicle traffic on the playa, beyond the existing off-highway vehicle ban that is already in place. Creation of bladed roads and water bars on the playa surface will definitely result in a new source of erodible soils that will contribute to poor visibility. It will also alter the hydrology/drainage which will have negative impacts by de-watering both existing vegetation and the imprinted/seeded vegetation that is part of the FHWA/NMDOT restoration process.

Re-vegetation: The FHWA/NMDOT/BLM has extensively studied revegetation within the playa area and determined that the correct seed type/mix determines the efficacy of revegetation efforts. Saline-tolerant grass seeds are available to be used to areas that have appropriate soils for growth. The NRCS has recently completed a soil survey on the playa and can be consulted as to whether revegetation is possible. If revegetation is possible, it must be completed in a specific and documented manner to increase the probability of successful establishment, as incorrect revegetation efforts could make the situation worse.

Here is a list of all the actions the NMDOT is taking to increase safety and reduce dust storms visibility issues on Lordsburg Playa:

SIGNAGE:

1. **Static signs:** NMDOT will place clusters of five sequential signs every two miles in each direction (in Burma Shave theme) telling drivers: IN A DUST STORM. PULL OFF ROADWAY. TURN VEHICLE OFF. FEET OFF BRAKES. STAY BUCKLED. Aluminum sheeting has been ordered and will arrive in 2-3 weeks. Signs will be fabricated and installed immediately after sheeting delivery. Installation is expected to be completed within approximately 8 weeks.
2. **Dynamic Message Signs:** NMDOT plans to place dust sensors and additional electronic roadside signs near to and along the Lordsburg Playa that would direct drivers to pull off the road if a dust storm is near and would enact advisory variable speed limits when soil and wind conditions are conducive to dust storms. NMDOT currently has two Road Weather Information Systems with cameras on I-10 that capture weather information regarding the Lordsburg Playa and dynamic message signs at mile marker 3 eastbound and at Lordsburg westbound.

ROADWAY IMPROVEMENTS:

1. **I-10 Shoulder Expansion.** NMDOT is developing a plan to expand highway shoulders to 18 feet wide on I-10 near to and along the Lordsburg Playa to create safe spaces where motorists can pull off the highway before or during a dust storm.
2. **Pavement Marking:** NMDOT is developing a plan to enhance visibility of roadway striping through use of raised pavement markers and other high-visibility materials.

DUST MITIGATION:

1. **\$500,000 FHWA Highway Safety Improvement Program Grant.** This grant was split and awarded to two land restoration companies with the notice to proceed issued September, 2016.
 - a. Phase I restored 140 acres of private and state land north of Deming on the west side of US 180.
 - b. Phase II will address about 200 acres land at the Road Forks exit, MP 7 on I-10 near the site of the May 2014 crash which claimed seven lives. The plan will restrict grazing, re-establish hydrologic flow blocked by ranching activity, imprint and overseed, and reduce erosion within the upland area. We are currently in the environmental permitting process, and implementation should begin in the spring of 2018.
 - c. Phase III will address the playa areas north of I-10, including the areas near the June 19, 2017 deadly crash. The treatments be similar to Phase II for this location and will also include an alternative analysis that includes grazing impact and new fencing.
2. **\$1 million FHWA Highway Safety Improvement Grant.** Funding will be used to expand current efforts to implement interventions to reduce windborne dust on Lordsburg Playa.
3. **\$185,000 FHWA/NMDOT Research Bureau Grant.** Contracted with New Mexico State Climatologist to install sensors on the Lordsburg Playa to study the current visibility conditions and the effectiveness of the dust mitigation actions.

Thank you,
Trent

Trent Botkin
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