New Mexico Energy, Minerals and Natural Resources Department

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Governor

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Mining and Minerals

September 3, 2010

John DeJoia, Manager
Roca Honda Resources, LLC
4001 Office Court Drive, Suite 102
Santa Fe, NM 87507

RE: Agency Review Comments and Request for Additional Information, Part 6 New Mine Permit Application, Baseline Data Report (BDR), Roca Honda Mine, Permit No. MK025RN – McKinley County, New Mexico

Mr. DeJoia:

The New Mexico Mining and Minerals Division (MMD) has reviewed the Permit Application Package (PAP), for a Regular New Mine Permit, submitted October 23, 2009, by Roca Honda Resources, LLC (RHR), pursuant to Part 6 of the New Mexico Mining Act Rules (Rules). The PAP was determined Administratively Complete by MMD on November 25, 2009. In addition to the Permit Application, the October 23 PAP submittal also included a revised Sampling and Analysis Plan, Baseline Data Report, Mine Operation Plan and a Reclamation Plan. MMD provides herewith, only its review comments on the Baseline Data Report (BDR). Also enclosed with this letter are the written comments received by MMD from the following reviewing state agencies: the New Mexico Environment Department (NMED), the NM Office of the State Engineer (NMOSE), the New Mexico Department of Game and Fish (NMDG&F), and the New Mexico Department of Cultural Affairs, Historic Preservation Division (NMDCA).

MMD requests that RHR address these comments within a revised BDR submittal to MMD. MMD continues its review of other documents (Mine Operations Plan, Reclamation Plan) included with the PAP submittal and will provide RHR with review comments on those documents separately, in the near future.

Should you have any questions, comments, or require additional information concerning this letter or any enclosures, please contact me at (505) 476-3437, or James Hollen, Permit Lead, at (505) 476-3436 or via email at: james.hollen@state.nm.us.

Sincerely,

for

Holland Shepherd, Program Manager
Mining Act Reclamation Program (MARP)
New Mexico Mining and Minerals Division

Enclosures

cc with enclosure: Chuck Thomas, Executive Manager, MMD
Kurt Vollbrecht, Team Leader, NMED/MECS-GWQB
Diane Tafoya, Geologist Cibola and Kaibab, USDA Forest Servive
Matthew Wunder, Ph.D., Chief, Conservation Services Division, NMDG&F
Mike Johnson, Chief, Hydrology Bureau, NMOSE
Michelle Ensey, Archaeologist, NMDCA/HPD
James Hollen, Permit Lead (MK025RN), MARP/MMD
Mine File MK025RN

MINING AND MINERALS DIVISION COMMENTS ON THE ROCA HONDA URANIUM MINE BASELINE DATA REPORT (BDR)

GENERAL COMMENTS (ON OVERALL DOCUMENT)

REVIEWER: DJ ENNIS

1.) References to additional work to be performed under the SAP
General; Multiple Locations in BDR

Comment: Throughout the BDR, there are numerous statements like:

"The extent of communication between the alluvium and underlying formations that contain potable ground water is not clear and will be investigated under the SAP" (Section 8 page 8-13); or
"A wetlands area and livestock tanks may exist up Canones Canyon within the San Lucas Canyon watershed on the north side of Jesus Mesa; its presence will be verified during field work detailed in the RHR SAP" (Section 8 page 8-4);

Please note that the SAP is only a workplan; it is a description of the scope of work that is to be completed for baseline sampling. Once the SAP has been implemented, the data, results and subsequent interpretation of the results are presented in the Baseline Data Report (BDR). Statements such as those above should not be made in the BDR; by including these statements in the BDR, it renders the BDR incomplete since it indicates that the SAP hasn't been completely implemented.

The revised BDR should eliminate all references and statements to additional work that will be performed under the SAP, and the results of the additional work presented in the revised BDR. Reference should be made to continuing to collect baseline data, which will then be addressed in the BDR.

SECTION 1 INTRODUCTION

REVIEWER: DJ ENNIS

No comments are required to be addressed by RHR for this section.

SECTION 2 CLIMATOLOGY AND AIR QUALITY

REVIEWER: DJ ENNIS

2.) Lab data and field notes
General

Comment: Please provide copies of the field logs and field notes documenting field work results, as well as copies of laboratory analytical sheets for analyses performed in a revised BDR.

3.) Measurement units
Table 2-2 and Table 2-3

Comment: Tables 2-2 and Tables 2-3 present data that are difficult to compare due to mixed units (°F vs. °C, inches vs. millimeters). Since the SAP comment/response specifically requested SI units for data collection, please convert the data in Table 2-2 to °C and mm in a revised BDR.

4.) Temperature data
Table 2-2 and Table 2-3

Comment: Tables 2-2 and 2-3 present the temperature data differently: "average maximum temperature" and "average minimum temperature" (Table 2-2) vs. "average temperature" (Table 2-3). In a revised BDR, please revise Table 2-3 to include average maximum temperatures and average minimum temperatures instead of average temperature.

5.) Precipitation data
Table 2-2 and Table 2-3

Comment: Average total precipitation in Table 2-3 represents rain plus snow where Table 2-2 breaks out rain from snow. Since the SAP comment/response specifically requested SI units for data collection, please convert the data in Table 2-2 from inches to mm to assist comparisons across the tables in a revised BDR.

6.) Wind speed data
Section 2.2.2, Figures 2-2 & 2-3

Comment: It is difficult to compare historic and recent wind speed data due to mixed units in the figures (miles/hour vs. meters/second). Since the SAP comment/response specifically requested SI units for data collection, please describe in Section 2.2.2 the range of wind speeds represented in Figure 2-2 in meters/second in a revised BDR.

7.) Temperature extremes
Section 2.2.3, Table 2-2

Comment: Section 2.2.3 states "The monthly and annual climate summary of average temperature and precipitation for the San Mateo weather station (Table 2-2) shows that temperature extremes have ranged from a low of -35° F in January 1971 to a high of 103° F in June 1962 (GMRC 1979)." Table 2-2 actually only shows the *average* maximum and the *average* minimum temperature, not the temperature extremes as stated above. Please delete the reference to Table 2-2 in this section for the revised BDR.

8.) Diurnal temperatures
Section 2.2.3

Comment: Section 2.2.3 states "Diurnal temperature range at San Mateo is generally 25° F to 30° F." Is this diurnal temperature range for a specific month? Please specify in the revised BDR what this range refers to, or correct the sentence accordingly.

9.) Graphs
General

Comment: Graphical representation of some of the 2007-2009 climate data in a revised BDR would be helpful:

a. Graph of time versus average monthly high, average monthly, and average monthly low temperatures versus time on same graph or graph of time versus maximum monthly high and minimum monthly low temperatures
b. Graph of time versus average monthly wind speed
c. Graph of time versus total monthly precipitation

10.) Pan evaporation gage data
General

Comment: The revised SAP and SAP comment/response document states that a pan evaporator gage would be installed in Spring 2010. Please revise the BDR with respect to pan evaporation rates observed within the permit area since the pan evaporation gage was installed.

11.) TSP
Section 2.4

Comment: Section 2.5.2 of the SAP states "Air quality parameters to be monitored at the Roca Honda permit area include TSP, radon, radioactive particulates, and direct gamma radiation levels." Section 2.4 of the BDR provides results for gross alpha, gross beta, radium, thorium, uranium, radon alpha-track and gamma, but does not appear to provide results for TSP (total suspended particulates). Please clarify in a revised BDR what was meant by TSP (PM100 ? ; dust ?) and whether TSP was sampled as part of the baseline data gathering. If so, please revise the BDR to include this data. If not, please update the BDR with the rationale for eliminating TSP from the sample scope.

SECTION 3 TOPOGRAPHY

REVIEWER: DJ ENNIS

12.) Stream channel morphology
General

Comment: The revised SAP states, in response to a comment from NMED SWQB, that "The pre-mining stream channel morphology will be defined in more detail, including channel plan, profile, and cross-section using these aerial photographs and/or conventional survey techniques. These pre-mining data will be used to aide in designing reclamation channels, where necessary, that are naturally stable."

The BDR does not appear to contain this information. Since this was a specific request of NMED SWQB, that was subsequently proposed by RHR in the revised SAP, MMD requests that this information be presented in a revised BDR. MMD also believes that this information is critical in the evaluation of potential hydrologic consequences associated with the RHR project.

SECTION 4 VEGETATION

REVIEWER: DAVE CLARK

13.) Data collected versus data analyzed
Vegetation Baseline Data 2008 Field Season, Section 1.1.2, page 4 in Appendix 4-C
July 12, 2010 memo

Comment: The reason for the discrepancy between the number of samples reported as collected in Table 2, and the number of samples reported as analyzed in Table 3, is not clear. Processing only a portion of the collected data is potentially biasing the reported results. Please analyze all of the collected data, and submit tabular results for each transect line, band transect, species diversity square, exclosure, and tree that was measured.

14.) Number of transects reported
Vegetation Baseline Data 2008 Field Season, Table 9, page 30 in Appendix 4-C
July 12, 2010 memo

Comment: In Table 9, the number of transects don't add up to the total reported for the shrub-grassland, or for the ponderosa pine-piñon-juniper, or for the transects that were taken across the un-named tributary to San Mateo Creek. As requested above, please submit results for all of the samples.

15.) Inaccurate reporting of area

Vegetation Baseline Data 2008 Field Season, page 39 in Appendix 4-C
July 12, 2010 memo

Comment: In the last sentence on page 39, the area of the band transects should be approximately 538 square feet, not 164. Please correct.

SECTION 5 WILDLIFE

No comments from MMD on Section 5 of the BDR.

SECTION 6 TOPSOIL

REVIEWER: JOE VINSON

16.) Additional soil sampling and analysis for revised BDR
General
June 29, 2010 email

Comment: For the revised BDR for soils, it is necessary for RHR to describe how a soil mass balance will be achieved in salvage/stockpile/reclamation operations. RHR should describe how sampling and field survey methods will be used to verify current mapping information and approximate soil salvage depths from descriptions/lab information gathered.

The current BDR occasionally conflates soil quality ("topsoil suitability") with the practicability of soil salvage. If soil material is of good quality but is difficult to salvage (e.g. steep slopes, depth to lithic contact) this distinction should be made clear. Estimates of salvageable materials need not rule out pedons that may have suitable surface materials that are underlain by unsuitable horizons. For example, a buried sodic horizon may have one or two feet of suitable and salvageable materials that should be counted as suitable volume. Likewise, a shallow but suitable soil may be salvageable. Materials containing high rock content (up to 60 percent) may be desirable for reclamation of steep slopes.

The items that MMD is looking for are:

a) confirmation of previous mapping accuracy
b) confirmation of similar/dissimilar soils in adjoining sections for units 40 v 230, 34 v 305 and 166 v 305 due to different mapping approaches (USFS vs. NRCS) in sections 9 and 16
c) estimates of salvageable volume of suitable soil across the (planned) disturbed areas based on sampling, and
d) gross estimates of salvageable volume of suitable soil across the permit area based on previous mapping/descriptions that have been confirmed.

A proposal for the sampling of soils, submitted July 21, 2010, has been reviewed by MMD as an addendum to the Sampling and Analysis Plan (SAP). Comments on the sampling proposal for soils have been submitted to RHR representatives by MMD through e-mail. The resultant field work and results from implementation of the sampling proposal for soils should be included in the revised BDR. Any mapping and extrapolation/interpretation of sampling to larger areas should be conducted by a qualified soil scientist.

SECTION 7 GEOLOGY

REVIEWER: DJ ENNIS

17.) Geochemical alteration of overburden
Section 7.4

Comment: MMD agrees with the statement made by RHR that there is likely little potential for geochemical alteration of the overburden based on the formations that will be encountered. However, MMD will require a demonstration that the overburden materials that will be stockpiled during shaft excavation will not cause an impact to surface water, ground water, or hinder reclamation. This demonstration could be performed through analysis of various metals and general chemistry parameters using Synthetic Precipitation Leaching Procedure (SPLP) on the drill cuttings from the overburden formations obtained previously during exploration with the results presented in a revised BDR. Alternatively, if insufficient core material exists, MMD would allow RHR to sample the overburden formations for SPLP analysis simultaneously with shaft excavation. This option would require modification of the Mine Operation Plan (i.e. section 3.4 and/or section 5.2.5) to describe the procedure for sample collection and analysis.

18.) Lithologic log label
Page 7-16

Comment: The middle lithologic log on Page 7-16, labeled as S2, may be mis-identified; well S2 does not appear to be present on Figure 7-7. Perhaps this log represents well S1 ?

SECTION 8 SURFACE WATER

REVIEWER: DJ ENNIS, MONTE ANDERSON

19.) Springs / maps
Section 8.4, Table 8-2, Figure 8-2

Comment: Baseline springs information refers to Table 8-2 and Figure 8-2. They have different coordinate systems and do not show the springs referred to. Also, several statements on pages 8-4 and 8-5 are made

that state: "A more detailed field survey of the permit area will be conducted to verify surface water conditions" and "[The location of springs] will be inspected and the source of the water identified." Please present the results of the inspection/field survey in a revised BDR, and revise Figure 8-2 to include spring locations as required by 19.10.6.602.D.13(g)(i) NMAC.

20.) Watershed acreage
Figure 8-2

Comment: On Figure 8-2, please indicate the approximate number of square miles or acres that comprise each of the identified watersheds.

21.) Surface drainage quality
General

Comment: 19.10.6.602.D.13(g)(ii) requires "a description of surface drainage systems sufficient to identify the seasonal variations in surface water quantity and quality within the proposed permit and affected areas to the extent possible." The BDR contains sediment sampling in lieu of surface water sampling, but appears to be missing two potentially important parameters: sulfate (leachable through SPLP) and TDS (leachable through SPLP). Analysis of these parameters may assist in the determination of probable hydrologic consequences with respect to the possibility of creating a shallow alluvial aquifer when the discharge of mine water begins.

22.) Watershed identification
Page 8-5

Comment: Page 8-5, second paragraph, refers to the San Marcos Creek watershed in Figure 8-2, however there is no apparent watershed labeled in Figure 8-2 as the San Marcos Creek. Did RHR intend to refer to the San Mateo Creek watershed in this sentence? If so, the Upper San Mateo Creek or the Lower San Mateo Creek?

23.) USGS gauging station 08343000 location on the Rio San Jose
Page 8-6, Figure 8-3

Comment: USGS gauging station 08343000 appears particularly relevant in demonstrating that mine discharge water from the Johnny M and Mt. Taylor mines did not reach the Rio San Jose, and, therefore, mine water from the RHR project is also unlikely to reach the Rio San Jose. In order to better evaluate this hypothesis, please place the location of this gauging station on a map.

24.) Potential for beneficial use of mine discharge water
Page 8-18

Comment: The second paragraph on page 8-18 states "local ranchers and irrigators may seek to divert a portion of this flow under existing or new water rights, in which case stream flow will be reduced." This

statement seems logical and may be true, however has RHR researched the potential demand or interest in diverting the mine discharge water for potential beneficial use ? Documenting potential rancher or irrigator interest in the mine discharge water is not required for the BDR, however such information could assist in MMD's assessment of hydrologic balance for performance of the proposed mine.

25.) Sediment sampling results and leachable concentration units
Appendix 8-A (Table A-1) and Appendix 8-B (Table B-1)

Comment: The sediment sampling results outlined in Tables A-1 and B-1 are unusual. In many cases, the leached concentrations are higher than the total concentrations. For example, sample SED-0 has a total aluminum concentration of 5480 mg/kg-dry, but a leachable aluminum concentration of 6060 mg/kg-dry [sic, fairly sure the leachable units should be reported in a "wet/dissolved" unit of measurement like mg/L or µg/L). Looking at the data further, this reviewer presumes that the leachable concentrations should most likely be reported in µg/L, however this should be verified by RHR and corrected in the revised BDR. It would also be informative to report in these tables the depth from which the sediment samples were collected, or state a range of depths in the BDR if the depths are mostly similar (i.e. 6-8" depth).

The revised BDR should also include all analytical data sheets (including chain-of-custody documentation and laboratory QA/QC sheet) and copies of field notes from RHR representatives who conducted the sediment sampling.

26.) References to on-going studies under the SAP
Various sections of BDR

Comment: Similar to the general comment made on the BDR document, Section 8 contains many references to on-going studies being conducted. For example:

- first paragraph on page 8-13 - "the extent of communication between the alluvium and underlying formations that contain potable ground water is not clear and will be investigated under the SAP."
- last paragraph on page 8-13 - "... more detailed information to be obtained as proposed in the SAP will help quantify movement potential in the San Mateo Creek bed. Information regarding grain size of the sediments, presence and extent of armoring, potential to form additional armor, and water flow under normal and storm conditions will also be collected."
- second paragraph on page 8-18 - "...hydrologic aquifer tests will be performed as described in the SAP" and the third paragraph states "additional data on existing stream morphology and flow will be collected under the SAP..."
- third paragraph on Page 8-5 - "on-going studies will provide the information to allow an analysis of the probable flow distance of the discharge stream."
- third paragraph on page 8-10 - "the potential for discharge to reach areas of intermittent or perennial flow will be investigation further under the SAP."
- fourth paragraph on page 8-10 - "hydrologic studies described in more detail in the SAP will be performed to provide a better estimate of the volume of water anticipated to be produced from the Roca Honda mine."

- third paragraph on page 8-15 - "the presence and seasonal persistence of springs along San Mateo Creek and their flow rates will be confirmed as part of the SAP."
- third paragraph on page 8-17 - "...will conduct hydrologic studies as discussed in the SAP that will aid in assessing whether the dewatering of the Gallup Sandstone in the area of the proposed mine during the initial construction of the mine shaft will impact well B-01442."

The results of these studies and additional field observations should be included in a revised BDR, and statements such as these should be removed from the revised BDR.

27.) NMEI study (1974)
General

Comment: The NMEI study (1974) is cited fairly regularly in the BDR. MMD requests a copy of this document be mailed to MMD at RHR's earliest convenience. MMD would like to review this document as it pertains to the proposed increased stream discharge associated with mine dewatering.

28.) Probable hydrologic consequences and interpretation of sediment sampling results
Various, but mostly in Section 8.6

Comment: Some statements made by RHR need further investigation or explanation. i.e. "A portion of the discharged water will enter the alluvium of the receiving arroyo and farther downstream, into the creek. This recharge may create a temporary shallow water system beneath the arroyo or cause the water table in that shallow system or in the underlying aquifers to rise." While this by itself is a potential impact to the hydrologic regime, what additional impacts could this cause? i.e. is it possible that this will cause the creation of a contaminant plume in a shallow alluvial aquifer where there previously wasn't an aquifer or a contaminated aquifer?

A discussion of the probable hydrologic consequences should also include interpretation of the total vs. leachable concentrations from the sediment samples; currently no interpretation of the total and leachable sediment data is presented in the BDR (i.e. does the sediment data indicate that it is likely/unlikely that a contaminant plume will be created in the discharge created shallow water system? Why/why not?)

29.) Probable hydrologic consequences – impacts from mine water discharge
Section 8.6

Comment: It is MMD's opinion that the potential impacts from discharging mine water to the unnamed arroyo and to San Mateo creek are inadequately defined. The potential adverse effects regarding the proposed discharge of an estimated 4,000-8,000 gpm of treated water to an ephemeral arroyo are needed in the BDR, specifically in Section 8.6 of the BDR (Potential Impacts to the Hydrologic Regime). A previous comments on Section 3 (Topography) requested additional baseline details about the pre-mining condition of the channel morphology, which could also be addressed in Section 8 (Surface Water) of the BDR. Additional details needed include:

a.) modeling or other deterministic evaluation of the potential effects of water discharge to the stream morphology, erosion, contribution to the potential for flooding, etc.

b.) supporting documentation to the statement made on page 8-18 of the BDR that "proper design of the discharge structure will mitigate such potential erosion." The discharge structure design, or a more detailed description of the engineering controls that will be implemented, should be included in the Mine Operation Plan and cross-referenced in the BDR. The Mine Operation Plan (page 48) gives a general description of the use of energy dissipaters and armoring, but should provide additional design details pertaining to the discharge of mine water (i.e. length of arroyo armoring, materials to be used for armoring [rip rap, gabions, shotcrete, etc.], check dams, types and sizes of energy dissipaters, etc.). The discharge design should be cross-referenced in Section 8.6 of the BDR as a demonstration of how the hydrologic regime will be maintained during mine operation. Also, how will design of a discharge structure mitigate erosion downstream from the discharge structure?

30.) Additional sediment samples from upstream
Section 8.3.5

Comment: MMD recommends that at least two additional sediment samples be collected from upstream of the proposed dewatering location in order to document upstream baseline conditions prior to mining.

SECTION 9 GROUND WATER

REVIEWER: DJ ENNIS, MONTE ANDERSON

31.) Labels on Figure 9-6
Figure 9-6 on page 9-10

Comment: The contour labels for the Westwater Canyon data are unusual, and are likely mislabeled (the 6600' contour in the middle is peculiar). It would be helpful if this figure showed the well identification numbers adjacent to the well symbols so the completion information could be compared against the wells in Table H-1. It would also be helpful if a table presenting the raw data for the wells used to create the potentiometric surfaces for the Westwater Canyon and Menefee Formations (i.e. surveyed top of casing elevation or surface elevation, measured depth to water, calculated potentiometric surface elevation, etc.) were included in the revised BDR.

32.) Pump test data
General comment on Section 9.0

Comment: Several references to future ground water pump tests are made in Section 9.0. The revised BDR should include the results of the pump test(s) and include information such as the well(s) utilized for extraction, a list of the wells used for observation, and the completion details on the extraction and observation wells (if available).

33.) Ground water flow direction for Point Lookout Sandstone
Section 9.3.3

Comment: The second paragraph under Section 9.3.3 on page 9-14 states "ground water moves eastward through sandstones of the Point Lookout Sandstone...." Looking at the contour intervals in Figure 9-10, it appears that the ground water flow direction in the vicinity of the RHR project area is generally toward the northwest. Please correct for submittal in the revised BDR.

34.) Principal locally-used aquifers
Section 9.4, page 9-16

Comment: The first paragraph on page 9-16 states "the principal locally-used aquifers within the Roca Honda/San Mateo area are the Menefee Formation and the Point Lookout Sandstone." Is this statement based on the well inventory presented in Table H-1? Please provide a reference as to how this determination was made in the revised BDR.

35.) Plate 1 from the SAP, revisions to Plate 1
Section 9.4.1, page 9-16

Comment: Plate 1 located in the SAP should be reproduced for the revised BDR so that the well information presented in Table H-1 of the BDR and a map showing the locations of these wells are contained within the same document. Also, the well symbols in Plate 1 for the aerial photograph inset (showing the community wells in San Mateo) do not match the symbols presented in the larger scale section of the figure. Please correct the inset symbols for the revised BDR.

36.) Wells used for the RGWSP
Section 9.4.1, page 9-17

Comment: The second paragraph states "out of the 142 wells in Appendix 9-H, Table H-1, 25 were included in the RGWSP." This reviewer counted 51 wells for which historic or modern data is presented (Tables 9-1 through 9-10), and 29 wells that have just modern (2008-2009) data (Appendices 9-A through 9-G). It is unclear which wells RHR has designated as part of the on-going monitoring program. In the revised BDR, please indicate in Table H-1 which wells are part of the RGWSP.

37.) Table H-1
Appendix 9-H, Table H-1

Comment: In Table H-1, Well #120 and Well #121 appear to be the same well (same specifications, same GPS location, etc.). Is there a reason for listing them separately? Also, the list skips over well ID #139. Minor edits, but it is a little confusing for the reviewer based on the statement on page 9-17 about 142 wells listed in Appendix 9-H. Also, the monitoring wells drilled by RHR (S1-, S3- and S4-Jmw-CH-07) should be included in Table H-1 in the revised BDR.

38.) Continuation of RGWSP
Page 9-17

Comment: Page 9-17 states "the RGWSP will be continued under the SAP." The revised BDR should provide the most recent data collected based on the scope of work outlined in the SAP.

39.) Maps for contaminant and well locations
General

Comment: It would be helpful if the alluvial wells, Menefee wells, Point Lookout Sandstone wells, Gallup Sandstone wells, and Westwater Canyon wells were all placed on their own individual figures (5 figures total) in the revised BDR so that the locations of these wells could be more easily compared to the water chemistry data presented in Tables 9-1 through 9-10 and Appendices 9-A through 9-F.

40.) Well #116
Table 9-9, Table E-1 and Table 9-1

Comment: Well #116 is shown in Plate 1 as being completed in alluvium (Qal), but is listed in Table 9-9 as a well that is completed in the Westwater Canyon member (Jmw). Please check the completion data for this well and correct this inconsistency in the revised BDR.

41.) Well #122
Table 9-5 and Table 9-6

Comment: Well #122 is listed in Table 9-5 and Table 9-6 as a well that is completed within the Point Lookout Sandstone, however this same well is shown in Plate 1 and in Table H-1 as being completed in an unknown formation. The chemistry data presented in Table 9-5 and Table 9-6 for well #122 is quite disparate from the rest of the wells in this table, suggesting that well #122 is not completed within the Point Lookout Sandstone. Please review and correct in the revised BDR.

42.) Well #137
Table H-1 and Plate 1 from SAP

Comment: Well #137 is shown in Table H-1 to be completed within the Westwater Canyon member, but is shown on Plate 1 from the SAP to be completed in the Gallup Sandstone. Please correct this inconsistency in the revised BDR.

43.) Reference to well S2
Section 9.5, Page 9-41

Comment: The third paragraph on page 9-41 refers to the geophysical log for well S2 drilled by RHR. This should be referring to well S1, correct?

44.) Model results and impacted wells
Section 9.6.1, Page 9-44

Comment: The last sentence on page 9-44 states "these drawdowns would be expected to cause temporary water level declines within these radii in one existing well within each of these three geologic units." Please identify, by well number in Table H-1, or by well location (i.e., Township, Range, Section, q/q/q), the wells that are anticipated to be impacted based on the results of the model.

45.) Pump test and hydrologic consequences
Section 9.6.1, Page 9-45

Comment: Page 9-45 states "the proposed aquifer testing program contained in the SAP will provide additional data that will allow RHR to refine the model, more accurately analyze the potential effects, and develop a mitigation strategy, as necessary." Please supply the results of the aquifer testing program and the results of the revised model in the revised BDR.

SECTION 10 PRIOR MINING OPERATIONS

No comments from MMD for this section.

SECTION 11 HISTORICAL PLACES AND CULTURAL PROPERTIES

REVIEWER: JIM O'HARA

46.) Number of sites eligible
Section 11.2.1
July 1, 2010 memo

Comment: Sections 9 and 10 the total number of sites (94) and the number of sites eligible, not determined or not eligible (90) are different.

47.) Mineral estate
Section 11.2.4
July 1, 2010 memo

Comment: The statement in Section 11.2.4 concerning RHR's opinion the mineral estate is "private" land under the non-contributing provisions of the Mt. Taylor nomination is inaccurate and should be removed. The definition that applies to the National Register of Historic Places of "owner or owners" can be interpreted to apply to surface owners (see definition below). The Mt. Taylor nomination also appears to exempt fee simple private surface owners (see Nomination Attachment 7). In addition, RHR only holds a claim in Sections 9 and 10 and a lease in Section 11. RHR holds no "fee simple" interest in the minerals. It may be appropriate to obtain an opinion from the Historic Preservation Division (HPD) on this issue.

36 CFR Part 60.2(k) Owner or owners. The term owner or owners means those individuals, partnerships, corporations or public agencies holding fee simple title to property. Owner or owners does not include individuals, partnerships, corporations or public agencies holding easements or less than fee interests (including leaseholds) of any nature.

48.) Number of sites identified
Section 11.3.1
July 1, 2010 memo

Comment: Section 11.3.1 totals (75 eligible, 62 undetermined and 11 not eligible) for identified, eligible, non-determined and not eligible sites do not add up to what is reported in section 11.2.1, 11.2.2 and 11.2.3 (75 eligible, 57 undetermined and 14 not eligible).

49.) Official determinations, discrepancies between appendix 11-A and Figures
Appendix 11-A
July 1, 2010 memo

Comment: Appendix 11-A must reflect the results of an official determination between HPD and the BLM. Also, please note the following discrepancies between Appendix 11-A and Figures CP 3, 4, 5 and 6:

LAs 13167, 13246, 16870, 16871 are missing from the Appendix, but are on the map.
LAs 13243 and 154051 are missing from the maps, but are in the Appendix.

The following corrections need to be made to the Legal Description in the Appendix:
LA 13192 is only in Section 4, not 4 and 9.
LA 162737 is in both Sections 9 and 16.
LAs 162746 and 162753 are in both Sections 16 and 15.

50.) Mitigation and testing
Appendix 11-B
July 1, 2010 memo

Comment: Appendix 11-B is a good start, but provisions for testing and mitigation will require more detailed plans prepared to specific BLM and State guidelines. It may be worthwhile to simply say:

"Plans will be prepared for testing and mitigation consistent with appropriate agency criteria for approval before implementation."

51.) Policy and procedures
General
July 1, 2010 memo

Comment: RHR will control access to the permit area. RHR will be held responsible for site protection and avoidance. All your employees should be educated as to the importance of site protection. MMD recommends preparation of a training program for your employees addressing the importance of avoiding all fences areas and archeological properties. MMD also recommends you create a strict corporate policy prohibiting collect or excavation of any archaeological resources located within the permit area. You may also want to include provisions for disciplinary action associated with a failure to comply with the policy, because RHR risks the potential to receive notices of violations from MMD for a failure to properly protect properties eligible to the National Register of Historic Places. In addition, RHR may also face possible prosecution under the Archaeological Resources Protection Act as it applies to federal lands.

SECTION 12 PRESENT AND HISTORIC LAND USE

No comments from MMD for this section.

SECTION 13 RADIOLOGICAL SURVEY

REVIEWER: DJ ENNIS

52.) Section missing
General

Comment: A radiological survey was proposed in the revised SAP, but the results are not presented in the BDR. A radiological survey of the permit area, particularly in the areas proposed for disturbance, is required to be submitted as part of a revised BDR.

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
Santa Fe

John R. D'Antonio, Jr., P.E.
State Engineer

BATAAN MEMORIAL BUILDING, ROOM 102
SANTA FE, NM 87504-5102
(505) 827-6120
Fax: (505) 827-6682

February 23, 2010

James Hollen, Permit Lead, MARP
Mining and Minerals Division
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: NM OSE Comments for Roca Honda Resources, LLC's, New Mine Permit Application for the Roca Honda Mine, MMD Permit No. MK025RN.

Mr. Hollen:

The New Mexico Office of the State Engineer (NM OSE) has reviewed the Roca Honda Resources (RHR), LLC's, New Mine Permit Application for the Roca Honda Mine, Permit No. MK025RN. The Permit Application documents include: Permit Application Mine Operations Plan (MOP), Basic Data Report (BDR), Reclamation Plan. The Mining and Minerals Division (MMD) requested agency reviews within 60 days of receiving a cover letter, which NM OSE received on December 17, 2009.

Given the large size and scope of the proposed new mine permit, multiple branches of NM OSE participated in the review process. The following comments consolidate all NM OSE comments into a single document. Each group of comments pertains to a particular bureau.

Dam Safety Bureau

The mine surface facilities proposed two detention basins, several evaporation ponds and a treated water reservoir with associated settling ponds. In summary, the information submitted is incomplete for the Detention Basins, Ponds and Treatment Reservoir. Additional information is needed to verify that Permits to Construct and Operate a Dam from the OSE Dam Safety Bureau are not needed.

The following shortcomings are noted in the Mine Operations Plan (MOP):

1. MOP. The MOP acknowledges that ponds or basins may be constructed from embankment fill but provides no information on the height of the fill and storage potential. A link to the OSE Dam Safety document "Evaluation of Non-jurisdictional Dams" is provided. www.ose.state.nm.us/doing-business/DamSafety/EvaluationOfNonJurisdictionalDams.pdf.
2. Section 4, MOP. Contour maps in Section 4 fail to label the contours for the ponds, detention basins and water treatment reservoir and settling basins.
3. Section 4 and 5, MOP. Section 4 directs the reader to Section 5 for more detailed design information on the detention basins and evaporation ponds; however, Section 5 fails to provide design details regarding height and storage capacity.
4. Section 4, MOP. Section 4 acknowledges a detailed design for the water treatment plant will be sent to NMED but fails to recognize the OSE may have jurisdiction over the treated water reservoir and settling ponds.
5. Section 4, Figure 4-5, MOP. Figure 4-5 shows the Detention Basin Dam tying into a stockpile. It is unacceptable for a water storage embankment to rely on a dumped stockpile for part of the embankment.
6. Section 4.2, MOP. Section 4.2 recognizes the Evaporation Ponds could approach overflow conditions, which is unacceptable. No discussion of freeboard considerations are mentioned except for the Treatment Plant ponds.
7. Section 4.2, MOP. Section 4.2 discusses the design storm event that will be used for roadside swales but fails to discuss the design rainfall event to size the ponds and detention basins. This is an unacceptable oversight in the MOP and leads to the conclusion that more thought was placed on designing the roadside swales than the ponds and detention basins.

Hydrology Bureau

8. Pages 16-17, Section 3.3, MOP; and Page 9, Section D.11, Permit Application. As described, some dewatering of Gallup and Dakota may be necessary during construction of mine dewatering shafts. If necessary, these two sets of 14 shallower wells around two shafts (Sections 10 and 16) would be pumped for a shorter term (during initial shaft construction) compared to the mine dewatering activities. In addition to the mine dewater permit and the permit to appropriate water for mine facilities, RHR may need a temporary permit from NM OSE Water Rights Division to appropriate water during construction.
9. Page 66, Section 5.3.10, MOP. NM OSE concurs that the proposed construction of dewatering wells require RHR to follow 19.27.4 NMAC regulations with emphasis on 19.27.4.31 NMAC because of the artesian conditions present at the site. Note that amongst the requirements of this section for artesian conditions, the regulations require plans of operation for both new well construction (for wells in artesian aquifers) and for plugging. The plans of operation must be submitted to NM OSE for review and approval prior to drilling the wells. A link to the form is provided:
   http://www.ose.state.nm.us/PDF/WellDrillers/WD-09.pdf
   http://www.ose.state.nm.us/PDF/WellDrillers/WD-08.pdf

10. Page 26, Section 3.3.2; and Page 29, Section 3.3.6, Reclamation Plan. These sections mention construction of stock ponds to be consistent with a post mining land use of grazing. These livestock water impoundments may require approval from NM OSE. A link to a form is provided: http://www.ose.state.nm.us/doing-business/forms-inst/stocktank/LivestockWaterImpoundmentForm.pdf
11. Page 7-5, Figure 7-3, BDR: It would be helpful to have additional information describing the orientation of the geologic units (i.e. strikes and dips).
12. Page 7-7, Section 7.2.1, BDR: The cited reference (OSE, 2008) was the source of well logs to describe the thickness of alluvium in the area. If the intent of the report is to refer to well logs filed with the OSE, it is recommended that a phrase be included in that sentence that makes reference to the source of the data. Also, the list of references (Page 7-22) is unclear whether the source is an OSE database, paper file or report.
13. Page 7-10, Section 7.2.8, BDR: The second-to-last sentence reads *" The Westwater Canyon Member consists of gray, light yellow-brown, and reddish-gray claystone (Fitch, 2006) and is as much as 250 ft thick in the permit area."* As a clarification, should the sentence include reference to sandstone in the Westwater Canyon Member?
14. Page 8-2, Figure 8-1, BDR: The figure shows a drainage map of the Rio Puerco. Additional tributaries to the Rio San Jose to the east of Mount Taylor should be included. Also, it would be helpful to have a figure included which shows the locations of all areas referenced in this section (e.g., where is San Miguel Creek?)
15. Page 8-4, Section 8.2, BDR. Contact the City of Grants to determine where they currently discharge their treated wastewater. Also, provide additional explanation of the influence of spring flow in Rio San Jose west of the Acoma Pueblo.
16. Page 8-5, Section 8.2, BDR; and Page 9-43, Section 9.6, Potential Impact No. 3, BDR: There is mention of the possibility of discharge from the dewatering of Roca Honda mine reaching the Rio San Jose. Provide further explanation how this increased stream flow and ground water recharge would impact currently contaminated sites such as at Homestake, which maintains systems to capture and treat ground water.
17. Page 8-5, Section 8.2, BDR; and Page 37, Section 4.0 MOP. RHR states that dewatering of the proposed Roca Honda Mine may result in a discharge of up to 8.9 cfs (approximately 4,000gpm). No citation or documentation is provided for this estimated flow rate until five pages later (Section 8.3, page 8-10). Also, Section 4.0 of the MOP indicates a water treatment facility capable of processing 8,000 gpm. For future submittals, NM OSE strongly recommends that RHR provide a basis for such estimates, such that reviewers can easily find and evaluate the rationale.
18. Page 8-8, Figure 8-5, BDR: Correct the title of this figure so it reads *"Daily Stream Flow from Rio San Jose at Grants..."* instead of *"Daily Streamflow from Rio San Jose at Gallup..."* If available, compare the stream flow data with records of discharge from mines contributing to flow in San Mateo Creek.

19. Page 8-9, Table 8-1, BDR: The last line in the table lists the constituent as "total solids." Provide clarification whether this should be total suspended solids. This comment applies to subsequent tables with this constituent name.
20. Page 8-15, Section 8.4, BDR. Provide a map that shows spring locations.
21. Page 8-15, Section 8.4, BDR; Page 8-17, Section 8.5, BDR; and Page 8-18, Section 6.0, BDR. Section 8.4 states *"No water rights claims are on file with the OSE for any springs in the vicinity of the permit area, although Lee Ranch has compiled an inventory of springs used by the ranch."* As in comment number 18, NM OSE recommends that RHR document what district offices, publications and databases were consulted to form the basis of the statement about water rights for springs. Define the areal extent of the "permit area" that was evaluated when considering impacts on springs.
22. Pages 8-17 to 8-18, Section 8.5, BDR; Page 8-18, Section 8.6, BDR; Page 9-43, Section 9.6, BDR; and Page 65, Section 5.3.10, MOP. While identifying the need to obtain a mine dewatering permit and a permit to appropriate underground water , RHR makes several statements such as in Section 8.5, *"Discharge of mine water or dewatering operations will not have any impact on the availability of water to these water rights."* These statements are preliminary assessments by RHR. NM OSE Water Rights Division and Hydrology Bureau will evaluate potential impacts to surface water and ground water based upon the submittal and review of permit applications, not these preliminary statements.
23. Page 8-18, Section 8.6, BDR. In references to the multi-year perennial flows in San Mateo Creek due to mine discharge water, RHR states *"Local ranchers and irrigators may seek to divert a portion of this flow under existing or new water rights, in which case the stream flow will be reduced."* Note that the NM OSE Water Rights Division determines the validity to any claims (existing or new) for appropriating these temporary flows of mine discharge waters.
24. Page 9-3, Section 9.2, BDR: Provide information about whether any of the discharge in Kernodle's (1996) model goes to other streams mentioned in the BDR besides the San Juan River and Rio Puerco.
25. Page 9-10, Figure 9-6, BDR: The potentiometric surface contours for the Westwater Canyon Member of the Morrison Formation do not appear to be correctly labeled based on a change in contour interval that is not uniform 6400-6600-6500 feet above mean sea level. Consider expanding the area for this map because the local area covered in this map appears too small to evaluate potential effects in the central and western part of the Ambrosia Lake region.
26. Page 9-10, Figure 9-6, BDR; Page 9-11, Figure 9-7, BDR; and Page 9-12, Figure 9-8, BDR. RHR should specify the year that water level data were collected for the potentiometric map and cross sections. In addition to ongoing work through the implementation of the SAP, RHR should evaluate other sources of data for more

recent water level measurements such as the USGS GWSI database to obtain present day water levels.

27. Pages 9-15 to 9-16, Section 9.4, BDR. RHR statement that the Westwater Canyon Member (WCM) of the Morrision Formation is too deep to be targeted by local wells does not account for future uses. For example, this aquifer has already been under consideration by the Mount Taylor Mine to pipe deep water to cities at some distance from the San Mateo Creek area. Water supplies are scarce in New Mexico. Deeper wells and pipelines are being considered in several parts of the state.
28. Page 9-16, Section 9.4, BDR: Provide a basis for a 5-mile area around the Roca Honda permit area. Provide an explanation that addresses the 5-mile area's size relative to the potential impacts of mine dewatering.
29. Page 9-34, Section 9.4.8, BDR: Add the units for the hydraulic conductivity values of the Morrison Formation.
30. Page 9-35, Section 9.4.8, BDR. RHR mentions historically poorer quality water (>3,000 mg/L TDS instead of 500 mg/L) observed in some wells screen across the Westwater Canyon Member (WCM) of the Morrison Formation along San Mateo Creek near its confluence with Arroyo del Puerto. The "historical" data may be influenced by poorly sealed wells, de-pressurization of aquifers, mixing of poorer quality Dakota Sandstone aquifer into the WCM (from both natural and anthropogenic made hydraulic connections), and infiltration of untreated surface mine water flows. When data are available prior to mining activities, the WCM aquifer generally has low total dissolved solids in the vicinity of Ambrosia Lake. NM OSE Hydrology notes the importance of following 19.27.4.31 NMAC in order to seal and prevent further inter aquifer hydraulic connections under artesian conditions such as the WCM of the Morrison Formation.
31. Page 9-43, Section 9.6, Potential Impact No. 1, BDR: Provide more data to support the claim that shallower and deeper aquifers will not be impacted by the proposed mine dewatering.
32. Page 9-44, Section 9.6.1, BDR. RHR provides some text about ground water flow modeling. As presented, the text discusses results and calculations without providing the information that would allow reviewers to evaluate the results. Specifically, reviewers require more information regarding the aquifer properties and boundary conditions simulated and the results of the steady state and transient calibration. Additionally, more detailed information is requested about the Roca Honda mine dewatering simulation, including: pumping rates simulated; time period of simulations; predicted impacts to streams and springs; distribution of predicted drawdown in each aquifer. NM OSE Hydrology recommends future submittals provide input files and other model documentation as may be necessary to evaluate the model simulations.
33. Appendices 9-A through 9-H, BDR and other water quality data tables in Section 9, BDR. RHR presented only tabular data for water quality. NM OSE Hydrology

recommends that future reports add a few graphs of selected water quality concentrations versus time.

District I – Water Rights

34. Page 9, Table D-2, Permit Application. After a preliminary review, the Water Rights Division (WRD) found no existing permits, declarations or licenses by which they could pump water for operations. Therefore, RHR shall file an Application for Permit to Appropriate the Underground Waters of the State of NM within the Bluewater Basin. In short, the application needs to be detailed in content and must contain the specific requirements listed on the application. The Application will be reviewed for completeness. If complete, WRD District 1 will draft the notice for publication and send it to the applicant(s) with instructions for publication. WRD will select the newspaper(s) the applicant is to publish legal notice. After publication is complete, all affidavits are filed, if no protests are filed, WRD will review the application and make recommendation based on all applicable statutes, rules, regulations, policies and procedures. If the application is protested the WRD will collect the names of all Protestants and forward our standard packet to the administrative litigation unit (ALU) for hearing. The application shall not impair existing water rights, be detrimental to public welfare or contrary to conservation of water within New Mexico. The application may be approved in full or approved in part followed by our Conditions of Approval that the permittee must comply with. It may also be denied, and the applicant may aggrieve our decision.
35. Page 9, Table D-2, Permit Application. In addition to a Permit to Appropriate the Underground Waters of the State of NM, RHR must apply for a Mine Dewatering Permit (72-12A NMSA) and a Permit to Appropriate Waters during the construction of shafts. Forms may be found at the following site: http://www.ose.state.nm.us/water_info_rights_apps_forms.html

If you have any questions, please contact Kevin Myers at 505-827-3521 of the Hydrology Bureau. Specific questions may also be directed to Wayne Canon at 505-383-4007 of the Water Rights District 1 Office in Albuquerque and to Elaine Pacheco (Bureau Chief) at 505-827-6111 of the Dam Safety Bureau.

Sincerely,

John T. Romero, PE, Director
Water Resource Allocation Program

cc: Holland Shepherd, Program Manager, MARP
Jim Sizemore, PE, Water Rights Director
Mike Johnson, Hydrology Bureau Chief
Elaine Pacheco, PE, Dam Safety Bureau Chief
Jess Ward, Water Rights District 1 Manager

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

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William C. Olson, Bureau Chief

RON CURRY
Secretary

MEMORANDUM

DATE: February 16, 2010

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

FROM: Kurt Vollbrecht, Mining Act Team Leader, NMED Ground Water Quality Bureau KV
Neal Schaeffer, NMED Surface Water Quality Bureau

RE: Comments on Roca Honda Resources, LLC, New Mine Permit Application, Permit No. MK025RN

The New Mexico Environment Department (NMED) received correspondence from the Mining and Minerals Division (MMD) on December 18, 2009 requesting NMED review and provide comments on the Roca Honda Resources (RHR) New Mine Permit Application (Application) referenced above. MMD requested comments be submitted no later than February 16, 2010, within 60 days of receipt. The NMED Surface Water Quality Bureau (SWQB) and Ground Water Quality Bureau (GWQB) have submitted comments in this memorandum jointly. Comments from the Air Quality Bureau are provided by a separate memorandum.

NMED SWQB Comments:

- The applicant should consult with the U.S. Army Corps of Engineers to verify whether any of the proposed activities will require Clean Water Act §404 permitting.
- Section 3.3.6 indicates that some detention basins may be left in place if the land owners so desire. It should be noted that water in any permanent ponds left in place must meet applicable water quality standards.

NMED GWQB Comments:

The NMED GWQB is currently reviewing a Discharge Permit Application for the proposed mine site. As part of the technical review of the application for Ground Water Discharge Permit DP-1717 the NMED GWQB will be reviewing the proposed Mine Operations Plan and Reclamation Plan relative to the requirements of the Water Quality Control Commission Regulations, 20.6.2 NMAC. These documents, included with the Application have also been submitted to NMED in partial response to a

Request for Additional Information for DP-1717 as they are integral to the evaluation pursuant to the WQCC Regulations. The NMED GWQB will continue to review and provide comments as necessary to RHR on the Discharge Permit Application. MMD will be copied on detailed correspondence relative to the Mine Operations Plan and Reclamation Plan and MMD Permit No. MK025RN.

If you have any questions, please contact Kurt Vollbrecht at 827-0195.

cc: William C. Olson, Chief, GWQB
Glenn Saums, Acting Chief, SWQB
Mary Ann Menetrey, NMED MECS
Charles Thomas, Chief, Mine Reclamation Bureau

BILL RICHARDSON
Governor

DIANE DENISH
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ENVIRONMENT DEPARTMENT
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RON CURRY
Secretary

JON GOLDSTEIN
Deputy Secretary

MEMORANDUM

DATE: February 16, 2010

TO: Kurt Vollbrecht,
Mining Act Team Leader
Ground Water Quality Bureau

THROUGH: Mary Uhl,
Bureau Chief, Air Quality Bureau

FROM: Sufi Mustafa,
Manager Air Dispersion Modeling Section

RE: Roca Honda Resources, New Mine Permit Application, Roca Honda Mine, Permit No. MK025RN
The New Mexico Air Quality Bureau (AQB) has completed its review of the above mentioned mining project. Pursuant to 19 NMAC 10.2, Subpart 302.G of the New Mexico Mining Act Rules, the AQB has the following comments:

Air Quality Permitting History

The AQB has no previous record of this operation.

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:

20 NMAC 2.72 states:

> Air Quality permits must be obtained from the Department 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. Air Quality permits must be obtained prior to startup of the permitted operation or activity.
>
> Any person constructing or modifying any source or installing any equipment that is subject to 20 NMAC 2.77, New Source Performance Standards, must comply with those applicable federal New Source Performance Standards (NSPS).

Also, 20 NMAC 2.73 states:

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

Details

Applicant proposes to disturb up to 183 acres of surface lands to develop underground uranium mine. Applicant has been monitoring air quality of this area since 2008. This data will be useful to provide baseline air quality information. This mine may need an air quality permit if they are going to process the mined material.

NOx and CO emissions are expected to be generated by the engines that drive the equipment and dust (TSP, PM_{10} and $PM_{2.5}$) from road traffic. These procedures could produce more than 10 pounds per hour or 25 tons per year of any single regulated air pollutant.

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

Fugitive Dust

Fugitive dust is a common problem at mining sites. The Air Quality Bureau does not regulate fugitive dust, however we do recommend controls to minimize emissions of particulate matter from fugitive dust sources. The following control strategies can be included in a comprehensive facility 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.

The Air Quality Bureau or the US EPA may implement requirements, regulations and standards for the control of fugitive dust sources in the future. This written determination does not supercede the applicability of any forthcoming state or federal regulations.

If you have any questions, please contact me at (505) 476-4318.

STATE OF NEW MEXICO
DEPARTMENT OF CULTURAL AFFAIRS
HISTORIC PRESERVATION DIVISION

BILL RICHARDSON
Governor

BATAAN MEMORIAL BUILDING
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February 12, 2010

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

Re: Request for Review and Comment, Roca Honda Resources, LLC's New Mine Permit Application for the Roca Honda Mine, Permit No. MK025RN

Dear Mr. Hollen:

This letter is in response to new mine permit application for Roca Honda Resources, LLC. received on December 16, 2009. According to 19.10.6.602 NMAC, the permit application shall include baseline data, including a list and map indicating all sites on or eligible for listing on the National Register of Historic Places and/or the State Registers of Cultural Properties and known cemeteries and human burials within the proposed permit area. In addition, this list shall include a description of the effects the proposed mining operations may have on these sites and any proposed mitigation measures.

To satisfy the requirement of 19.10.6.602 NMAC, two cultural resource survey reports were submitted: one for the project area within the Cibola National Forest (NF) in Township 13 North, Range 8 West, Sections 9 and 10 (NMCRIS # 101072) and one for the project area within State Trust land in Township 13 North, Range 8 West, Section 16 (NMCRIS # 101380). These surveys were conducted in 2006 and the State Historic Preservation Office (SHPO) received copies for review on May 19, 2009. In addition, the Baseline Data Report (Page 11-1) states that a more recent survey was performed for the access route (LMASI 1233). The SHPO does not have a copy of this report, although we anticipate receiving it from the Cibola NF.

Because land owned and managed by the Cibola NF land is included in the proposed permit area, the Cibola NF is required to comply with Section 106 of the National Historic Preservation Act (NHPA). The SHPO recommends that the Cibola NF consider the entire permit area to be one undertaking for the purposes of consultation under Section 106. As the lead federal agency, the standard process would be for the Cibola NF to consult with the State Land Office for determinations of eligibility for listing in the National Register of Historic Places (National

Register) and effect for the archaeological sites located on State Trust Land. The Cibola NF would then submit their determination of effect for the entire project to the SHPO for review after they have had adequate time to conduct consultations with Native American tribes and review the mining plan of operations.

The Cibola NF submitted the report NMCRIS # 101072 to the SHPO in December 2009 for concurrence on their determinations of eligibility for the 94 archaeological sites documented during the survey of the Cibola NF land. On January 26, 2010, the SHPO concurred with the determinations of eligibility (enclosed). To summarize, 21 archaeological sites are eligible for listing in the National Register of Historic Places, 11 archaeological sites are not eligible, and 62 archaeological sites are of undetermined eligibility and need to be tested before their eligibility for listing in the National Register can be determined.

According to the report for the State Trust land portion (NMCRIS 101380), 54 archaeological sites were recorded with the permit area. The report recommends that 20 sites are eligible for listing in the National Register of Historic Places, 32 archaeological sites are of undetermined eligibility, and 2 sites are not eligible. The State Land Office must review the cultural resource survey report sand provide its determinations of eligibility and effect to the Cibola NF.

Although the access route (or haul road) was surveyed, it does not appear as if the utility corridor crossing Section 15 has been surveyed for cultural resources. The Cibola NF should require additional survey of these areas since these corridors are part of the proposed mining plan of operation.

As indicated by the permit application, the permit area is located within the boundaries of the Mount Taylor Traditional Cultural Property (TCP), which was determined to be eligible for listing to the National Register of Historic Places on March 14, 2008 and added to the State Register of Cultural Properties on June 5, 2009. The Cibola NF will determine whether there is an effect to the National Register Mount Taylor TCP and submit its determination to the SHPO for review under Section 106 of the NHPA. Under Section 18-6-8.1 of the Cultural Properties Act, Mining and Minerals Division shall afford the SHPO a reasonable and timely opportunity to participate in planning an undertaking (or project) in order to preserve and protect and to avoid or minimize adverse effects on the State Registered TCP.

According to the Baseline Data Report (page 11-4), Strathmore proposes to avoid and plan anticipated surface activities around known archaeological site locations to the extent possible. Strathmore provided a "CONFIDENTIAL "Cultural Properties Map that locates the "footprint' of the proposed surface disturbances, including all mine-site construction and the archaeological sites. Strathmore indicates that only two archaeological sites cannot be avoided and they propose to have an archaeological monitor present during all ground disturbing activity. SHPO does not agree with the assessment that all but two sites can be avoided. In some instances, archaeological sites are located in-between areas that will be disturbed by construction activity; thus it appears that more than two sites could potentially be affected, either directly or indirectly, by mining activities. Even if the archaeological sites are avoided by direct impacts from construction, they could be adversely affected by indirect impacts from erosion, drainage, water run-off, etc. Rather than trying to construct their mining operations around archaeological sites,

in these situations Strathmore should consider archaeological testing and/or data recovery to mitigate the effects of the mining operation on the sites before construction. It has been the SHPO's experience that the costs of having an archaeological monitor present during construction exceed the costs of testing and data recovery and after testing and/or data recovery.

If you have any questions regarding these comments, please do not hesitate to contact me at (505) 827-4064.

Sincerely,

Michelle M. Ensey
Archaeologist

Log: 88369
Enc.: SHPO Concurrence with Cibola NF determinations of eligibility
Cc/Email: Cynthia Benedict, Forest Archaeologist, Cibola National Forest
David Eck, Trust Land Archaeologist, New Mexico State Land Office

USDA United States Department of Agriculture | Forest Service | Cibola National Forest and National Grasslands | 2113 Osuna Road NE Albuquerque, NM 87113-1001 (505) 346-3900 FAX: 346-3901

File Code: 2360
Date: December 1, 2009

Ms. Jan Biella
State of New Mexico
Historic Preservation Division
Bataan Memorial Building
407 Galisteo St., Suite 236
Santa Fe, NM 87501

DEC - 7
NM

Dear Ms. Biella:

Enclosed is report 2006-03-107 entitled *Cultural Resource Inventory of 1,280 acres on Jesus Mesa, McKinley County, New Mexico*. The survey was conducted in 2006, at the request of Strathmore Minerals Corporation (Strathmore), in anticipation of submitting a Plan of Operation to the Cibola National Forest for exploratory uranium drilling.

Over the last few years, Strathmore has submitted and withdrawn a number of Plans. In June 2009 the company informed the Forest Service of its intent to submit a new Plan of Operation that combines drilling and the development of a mine.

While awaiting the new Plan of Operation, we decided to process this 2006 report as an inventory. This will allow us to get the survey and site information into the system, and complete the National Register eligibility determinations.

Strathmore recently submitted a new Plan of Operation. I anticipate that the company will ask Lone Mountain to prepare a report for Section 106 compliance, based on their current Plan. The compliance report will be based upon the survey and site recording documented in this inventory report.

For your convenience, and to assist us in tracking the eligibility status of all 94 sites, we have enclosed a table for your use. I would appreciate it if you would fill out the HPD eligibility determination, and return the table to us. If you have any questions, please contact Forest Archaeologist Cynthia Benedict directly at (505) 346-3834 or via email at cbenedict@fs.fed.us.

Sincerely,

Nancy Rose

NANCY ROSE
Forest Supervisor

Concur with recommendation of eligibility [redacted]s as proposed.

for NM State Historic Preservation Officer

Enclosures

USDA - Forest Service

R3-FS-2300-4 (7/00)

Forest: Cibola
District: Mt Taylor
State Project Number: 101072

INVENTORY STANDARDS AND ACCOUNTING

(Reference FSM 2361)

1. Report Number:				2. Report Date:		
Year	Forest	Number	Series	Month	Day	Year
2006	03	107		09	26	2006

3. Routing: Copies to

☒ District ☐ RO ☒ SHPO ☐ 2360 ☒ SO: ☒ Other: D.Tafoya/J.Velasquez

4. Author:

A. Walley S B. Allison P

5. Project Name/Report Title (Abbreviate if Necessary):

Cultural Resource Inventory of 1,280 acres onJesus Mesa, McKinley County, NM

6. Abstract/Summary of Report and Findings:

Lone Mountain Archaeological Services Inc. completed a 1,280 acre survey on the Mt. Taylor Ranger District in 2006. The survey was conducted at the request of Strathmore Minerals Corporation, in anticipation of submitting a Plan of Operation to the Forest for exploratory uranium drilling. This report is being treated as an inventory only. A total of 94 archaeological sites were documented, 69 of which are newly recorded, and the remaining 25 are updates of previously recorded sites. All National Register eligibility determinations are listed in an attached table.

Continued Page 2 ☐

7. Consultation/Clearance

A. Conditions of Clearance:

☐ None (No potentially eligible sites in project area) ☐ Avoid sites specified below
☐ Monitor sites specified below ☐ Report new sites to Forest Archeologist
☒ Other/additional comments

This is an inventory report documenting 1,280 acres of survey and documentation of 94 sites. This is not a clearance report.

Continued Page 2 ☐

B. Additional Fieldwork Required: ☐ Evaluate sites specified below ☒ Other, see below

Continued Page 2 ☐

C. Report Accepted: ☒ Yes ☐ No

D. Clearance Recommended: ☐ Yes ☐ No ☒ N/A

Forest Archaeologist: Cynthia Benedict **Date:** 12/1/09

E. Effect: ☐ No Effect ☐ No Adverse ☐ Adverse ☒ N/A ☐ Beneficial

F. Consult SHPO on: ☐ Effect ☒ Eligibility ☐ Info Only ☐ Other

Forest Supervisor: (for) [signature] **Date:** 12/2/09

G. SHPO Concurrence: ☒ Yes ☐ Yes, per comment below ☐ No, per comment below

☐ Case-by-case concurrence not required per R-3 Programmatic Agreement

SHPO: for [signature] **Date:** 1/26

H. Clearance Approved: ☐ Yes ☐ No

Forest Supervisor: **Date:**

National Register Eligibility Table

New Sites

Site Number	Lone Mtn Recommendation	Forest Service Determination	HPD
03-03-02-2697/LA154027	undetermined	undetermined	
03-03-02-2698/LA154028*	eligible, d	undetermined	
03-03-02-2699/LA154029	undetermined	undetermined	
03-03-02-2700/LA154030	ineligible	ineligible	
03-03-02-2701/LA154031	eligible, d	eligible, d	
03-03-02-2702/LA154032	undetermined	undetermined	
03-03-02-2703/LA154033	undetermined	undetermined	
03-03-02-2704/LA154034	undetermined	undetermined	
03-03-02-2705/LA154035	ineligible	ineligible	
03-03-02-2706/LA154036	undetermined	undetermined	
03-03-02-2707/LA154037	undetermined	undetermined	
03-03-02-2708/LA154039*	eligible, d	undetermined	
03-03-02-2709/LA154040	ineligible	ineligible	
03-03-02-2710/LA154041	eligible, d	eligible, d	
03-03-02-2711/LA154042	undetermined	undetermined	
03-03-02-2712/LA154043	undetermined	undetermined	
03-03-02-2713/LA154044	ineligible	ineligible	
03-03-02-2714/LA154045	undetermined	undetermined	
03-03-02-2715/LA154046	ineligible	ineligible	
03-03-02-2716/LA154047	undetermined	undetermined	
03-03-02-2717/LA154048	undetermined	undetermined	
03-03-02-2718/LA154049	undetermined	undetermined	
03-03-02-2719/LA154050	undetermined	undetermined	
03-03-02-2720/LA154051	undetermined	undetermined	
03-03-02-2721/LA154052	undetermined	undetermined	
03-03-02-2722/LA154053	undetermined	undetermined	
03-03-02-2723/LA154054	ineligible	ineligible	
03-03-02-2724/LA154055*	eligible, d	undetermined	
03-03-02-2725/LA154056	eligible, d	eligible, d	
03-03-02-2726/LA154057	undetermined	undetermined	
03-03-02-2727/LA154058	undetermined	undetermined	
03-03-02-2728/LA154059	undetermined	undetermined	
03-03-02-2729/LA154060	undetermined	undetermined	
03-03-02-2730/LA154061	eligible, d	eligible, d	
03-03-02-2731/LA154062	undetermined	undetermined	
03-03-02-2732/LA154063	undetermined	undetermined	

03-03-02-2733/LA154064	undetermined	undetermined	
03-03-02-2734/LA154065	undetermined	undetermined	
03-03-02-2735/LA154066	undetermined	undetermined	
03-03-02-2736/LA154067*	eligible, d	undetermined	
03-03-02-2737/LA154068	eligible, d	eligible, d	(d)
03-03-02-2738/LA154069	eligible, d	eligible, d	(d)
03-03-02-2739LA154070	undetermined	undetermined	
03-03-02-2740/LA154071	undetermined	undetermined	
03-03-02-2741/LA154072	undetermined	undetermined	
03-03-02-2742/LA154073	undetermined	undetermined	
03-03-02-2743/LA154074	undetermined	undetermined	
03-03-02-2744/LA154075	undetermined	undetermined	
03-03-02-2745/LA154076*	eligible, d	undetermined	
03-03-02-2746/LA154077	undetermined	undetermined	
03-03-02-2747/LA154078	undetermined	undetermined	
03-03-02-2748/LA154079	undetermined	undetermined	
03-03-02-2749/LA154080	ineligible	ineligible	in
03-03-02-2750/LA154081	ineligible	ineligible	in
03-03-02-2751/LA154082	undetermined	undetermined	
03-03-02-2752/LA154083	undetermined	undetermined	
03-03-02-2753/LA154084	undetermined	undetermined	
03-03-02-2754/LA154085	undetermined	undetermined	
03-03-02-2755/LA154086	undetermined	undetermined	
03-03-02-2756/LA154087	ineligible	ineligible	in
03-03-02-2758/LA154088	undetermined	undetermined	
03-03-02-2759/LA154089	ineligible	ineligible	in
03-03-02-2760/LA154090	undetermined	undetermined	
03-03-02-2761/LA154091	eligible, d	eligible, d	(d)
03-03-02-2762/LA154092	eligible, d	eligible, d	(d)
03-03-02-2763/LA154093	undetermined	undetermined	
03-03-02-2764/LA154094	undetermined	undetermined	
03-03-02-2765/LA154095*	eligible, d	undetermined	
03-03-02-2766/LA154096*	eligible, d	undetermined	

National Register Eligibility Table

Previously Recorded Revisited Sites

Site Number	Eligibility Status	Lone Mtn Recommendation	Forest Service Determination	HPD
02-003/LA13167 (03-009/LA13173)	eligible,d	no change	concur	d
02-004/LA13168	eligible, d	no change	concur	d
02-005/LA13169	undetermined	no change	concur	ND
02-006/LA13170	undetermined	eligible, d	eligible, d	d
02-007/LA13171	undetermined	eligible, d	eligible, d	(d)
02-008/LA13172	undetermined	eligible, d	eligible, d	(d)
02-011/LA13175	undetermined	eligible, d	eligible, d	(d)
02-012/LA13176	undetermined	eligible, d	eligible, d	(d)
02-016/LA13180	undetermined	ineligible	ineligible	in
02-026/LA13190	undetermined	eligible, d	eligible, d	(d)
02-027/LA13191	undetermined	eligible, d	eligible, d	(d)
02-028/LA13192	undetermined	no change	concur	ND
02-029/LA13193	undetermined	no change	concur	ND
02-030/LA13194	undetermined	eligible, d	eligible, d	(d)
02-031/LA13239	undetermined	no change	concur	ND
02-033/LA13241	undetermined	no change	concur	ND
02-034/LA13242	undetermined	no change	concur	ND
02-035/LA13243	undetermined	eligible, d	eligible, d	d
02-036/LA13244	undetermined	no change	concur	ND
02-037/LA13245	undetermined	eligible, d	eligible, d	d
02-038/LA13246 (02-039/LA13247) 03-040/LA13248)	undetermined	eligible, d	eligible, d	(d)
02-041/LA13249	undetermined	no change	concur	ND
02-043/LA13251	undetermined	no change	concur	ND
02-061/LA13269	undetermined	no change	concur	ND
02-062/LA13270	undetermined	no change	concur	ND

FS review by Cynthia Benedict 11/30/2009
HPD review

GOVERNOR
Bill Richardson

DIRECTOR AND SECRETARY
TO THE COMMISSION
Tod Stevenson

Robert S. Jenks, Deputy Director

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

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Visit our website at www.wildlife.state.nm.us
For information call: 505/476-8000
To order free publications call: 1-800-862-9310

April 20, 2010

James Hollen, Permit Lead
EMNRD Mining & Minerals Division
1220 South St. Francis Drive
Santa Fe NM 87505

Re: Roca Honda New Mine Permit Application No. MK025RN; NMDGF Project No.13122

Dear Mr. Hollen:

In response to your letter dated December 15, 2009, the New Mexico Department of Game & Fish (NMGF) has reviewed documents submitted in support of the above referenced permit application. In addition to the application itself, we were provided with a Baseline Data Report (BDR), Mine Operations Plan (MOP), and a Reclamation Plan. Roca Honda Resources, LLC, proposes to develop a new underground uranium mine located on Sections 9, 10 and 16, Township 13N, Range 8W, 2 to 3 miles northwest of the community of San Mateo in McKinley County, NM. Surface ownership is Cibola National Forest and the NM State Land Office. Current land use is grazing, as is the proposed post-mining land use. Proposed total surface disturbance is 183 acres, mostly located around the base of Jesus Mesa. In addition to the 500-foot sandstone walls of the mesa, habitat features on the project area include grama grasslands, scattered juniper with a major component of large mature trees, and a large unnamed arroyo running north-to-south through Section 16, with a saltbush shrub plant community in the bottom. A site visit was conducted in connection with this consultation request on May 12, 2009. Present at the site inspection were Rachel Jankowitz of NMDGF, Kathy Economy and Joe Vinson of MMD, Kurt Vollbrecht of the NM Environment Department, and five persons representing Strathmore Resources.

We have identified the following recommendations and need for additional information:

Baseline Data Report

Please add a list of Tables and Figures to the Table of Contents for Appendix 4-C.

Habitat types are reported inconsistently throughout Sections 4 and 5. For example, vegetation categories shown on Figure 4 of Appendix 4-C do not coincide with wildlife habitat types shown on Figure 5-1, Section 5. In particular, the area labeled Juniper-Savanna on Figure 4 coincides roughly with the area labeled Desert Grassland on Figure 5-1, whereas the area labeled Juniper-Savanna on Figure 5-1 has no apparent counterpart on Figure 4. Another example: 9 out of the 24 vegetation transects on Table 9 of Appendix 4-C are described as occurring across the arroyo tributary to San Mateo Creek, yet the results from those transects have apparently been lumped into one of the other vegetation types as they do not appear separately anywhere in the report. Results from the reference area are either not reported, or have been lumped together with project area results. We recommend that vegetation and habitat type stratification should be reviewed and standardized throughout the BDR. Please depict on Figure 15, Appendix 5-C all five habitat types described on pages 23-24.

The method chosen for calculating line transect point intercepts can result in cover values greater than %100, since multiple canopy hits at a given point are each counted separately. However it is not entirely clear how it is possible that basal cover for the ponderosa pine vegetation type (Table 16 of Appendix 4-C) totals >%100, whereas basal cover for the semi-stabilized dune vegetation type (Table 17, Appendix 4-C) totals <%100. The methods that were used to calculate basal and canopy cover in this report do not appear to conform with those described in the web reference cited on page 8 of Appendix 4-C (www.forestandrange.org).

Habitat associations have not been compiled for wildlife observed or captured during the surveys. Text at the bottom of Appendix 5-C, page 35, implies that a supplemental report will be forthcoming to include that information. Please also include in the supplemental report a map showing locations of pellet count stations, and quantitative information to support the conclusions reported at the bottom of page 37.

The pools of water occurring along drainages on the sides of Jesus Mesa, in Sections 10 and 16, may be potential habitat for the State Endangered wrinkled marshsnail (*Stagnicola caperata*), although the species has not previously been documented in McKinley County. Development of the proposed mine would not involve surface disturbance in the vicinity of the surface water occurrences; however, erosion control best management practices should be specified to prevent any impact to these special habitat features that might result from the Section 10 vent shaft located on the mesa above.

The project area includes suitable habitat for the State Threatened spotted bat (*Euderma maculatum*). This species roosts on cliffs and rock crevices, and is known to occur at Mount Taylor. The Roca Honda Wildlife Survey protocol for bats consisted of mist-netting over water on three occasions. Bats were caught on one survey effort and did not include any spotted bats. Due to the relative inefficiency of netting as a sampling method given the project

area habitat conditions, NMDGF recommends supplementary acoustic surveys targeted to evaluate the presence or absence of this Threatened species.

Two active Great Horned Owl nests and one active Red-tailed Hawk nest were documented at the project site. In order to avoid disturbing breeding raptors, observe a construction activity buffer of ½ mile for the Red-tailed Hawk nest (if active) and a ¼ mile buffer for the Great Horned Owl nests (if active), between the dates of February 1 and June 30. These spatial buffers can be reduced, for construction activities other than drilling or blasting, in the presence of intervening topographic or other visual barriers.

Mine Operations Plan.

Planned surface facilities include seven evaporation ponds, two settling ponds, one treated water reservoir, a stormwater detention pond, and an unspecified number of temporary drilling pits. The settling ponds, treated water reservoir, detention basin, and some of the evaporation ponds will be situated within fences constructed so as to exclude medium to large size terrestrial wildlife, as described on page 59. The bottom of these fences should be wrapped with a durable small mesh material, so as to exclude smaller wildlife. Impoundments containing substances at concentrations which may be harmful to wildlife should be netted over the top to exclude flying animals. A US Fish & Wildlife Service suggested netting design for long-term impoundments is shown at http://www.r6.fws.gov/contaminants/contaminants1c.html. NMDGF recommends the use of extruded, knit or woven material, which is less likely to ensnare wildlife and cause injury or death than monofilament netting material. Netting should be maintained taut around the frame. Steep-sided or lined impoundments which will contain only water or other inert materials, should be provided with ramps or rafts to allow the escape of wildlife which may become trapped. Drilling mud additives which contain detergents, acids, salts, surfactants, dispersants, or heavy metals are potentially harmful to wildlife, through lethal or sub-lethal ingestion toxicity, or by the mechanism of reducing or eliminating the insulating properties of fur or feathers. Drilling pits which will contain such additives should be covered or netted to exclude flying and terrestrial animals. If the pits will contain only water and inert ingredients such as bentonite and they are not to be covered or netted ramps should be installed to allow the escape of wildlife which may become trapped. If space allows, ramps may consist of sloping back one side of the pit to a 3:1 or greater horizontal:vertical ratio. Constructed ramps are commonly made from sheets of expanded metal for steel tanks, or constructed of packed earth for earthen pits. Ramps made of material with roughened surface texture can be used in the presence of smooth liners or other slippery substrate. To be effective, the escape mechanism must be intercepted by an animal swimming around the periphery of the tank or pit at any anticipated water level. NMDGF is available for consultation regarding netting or escape ramp options for any specific size and configuration of pit or impoundment. Above-ground tanks should also be covered, netted or provided with a means of escape. Standard barbed-wire fencing does not keep out wildlife.

The MOP specifies (on page 59) that trenching placement will be conducted using practices which conform with the enclosed NMDGF Trenching Guideline. The MOP also states that "Power lines and associated equipment such as transformers and substations will be built raptor-safe." NMDGF recommends that power lines should be aligned and constructed in conformance with the enclosed Powerline Guideline. In particular, Roca Honda Resources should follow the recommendations of the Avian Powerline Interaction Committee 2006 guidance for protecting birds from electrocution.

The project area includes important year-round habitat for mule deer and winter habitat for elk. These game species will be protected by the 15 mile-per-hour speed limit proposed in the MOP, which should be posted and enforced.

NMDGF recommends that ground-clearing should take place outside the general avian breeding season (April – August), to avoid possible violation of the Migratory Bird Treaty Act. Blasting and drilling should also be avoided during the nesting season to the extent feasible.

Page 71 of the MOP asserts that vegetation community data presented in the Baseline Data Report "will be used as benchmarks for establishing revegetation success criteria". This statement appears to contradict the statement on page 72 that "The success of revegetation will be determined through comparison . . . of the reclaimed areas with reference areas." The same paragraph mentions technical guidance published by the US Department of Agriculture, but does not specify a particular referenced document. Please clarify whether revegetation success will be based on a technical or a reference area standard, and which data from the BDR will contribute to the standard.

Although no data that would indicate stand age composition (height, stem count, dbh or basal diameter) was presented in the BDR , the project area does include a high proportion of mature trees. These trees are an important habitat resource for cavity-nesting birds, tree-roosting bats, and an assortment of mammals. Table 8 of the BDR (Appendix 4-C, page 29) identifies 124 acres of Juniper-Ssavanna and 45 acres of various woodland classifications that will be directly affected by mining. The permit application should identify steps that will be taken to minimize removal of mature trees, and measures that will be taken to mitigate the loss of these important habitat features.

Reclamation Plan.

The project area includes important year-round habitat for mule deer and winter habitat for elk. Standard barbed-wire fencing does not keep out wildlife. The wire perimeter fences around reclaimed vegetation, described on page 9 of the Reclamation Plan, should be aligned and constructed in conformance with the enclosed Fencing Guideline, to minimize potential for injury to animals crossing the fence. Any concentration areas or travel corridors identified from pellet group studies should also be considered when designing the fences. NMDGF is available for consultation regarding appropriate site-specific fence design.

The BDR (Appendix 4-C, page 24) describes the occurrence of the following NM Department of Agriculture noxious weeds on the Roca Honda site: saltcedar, Canada thistle and musk thistle (field bindweed is not included on the latest update of the list, dated April 2009). The Reclamation Plan refers to weed control on page 26. NMDGF recommends that Roca Honda should prepare a Weed Control Plan, documenting the current locations, extent and intensity of weed infestation, and commit to specific actions that will be taken to monitor, eradicate, control or prevent their spread to new locations.

Please describe the type and amount of soil amendments that are proposed for the topsoil during revegetation (top of page 24).

Please identify and describe any down-gradient riparian or wetland areas that might be affected by mine operations, as mentioned on page 29-30, and explain how those areas will be "enhanced" by additional flow of treated mine water. Please describe modifications that will be made to San Mateo Creek, as mentioned on page 34.

The reclamation seed mix shown on Table 3-4, page 36, is heavily weighted to western wheatgrass and mountain brome, two cool-season species which do not currently occur at high levels on the project area. A mix with a greater proportion of grama grass is more likely to succeed at establishing a self-sustaining ecosystem.

Thank you for the opportunity to consult on this permit application. If there are any questions, please contact Rachel Jankowitz at 505-476-8159, or rjankowitz@state.nm.us.

Sincerely,

Matthew Wunder, Ph.D, Chief
Conservation Services Division

cc: Ecological Services Field Supervisor, USFWS
Brian Gleadle, NW Area Office Supervisor, NMGF
Kurt Vollbrecht, NMED Groundwater Quality Bureau
Diane Tafoya, Cibola National Forest

NEW MEXICO DEPARTMENT OF GAME AND FISH

Power line Project Guidelines
September 2003

1) TRANSMISSION LINE STRUCTURAL DESIGN All eagles, hawks, owls and vultures are protected under New Mexico state law (New Mexico Statutes Annotated, 1978, 17-2-14, as amended). Bald and golden eagles are also protected under federal law. Transmission lines **should be designed to prevent or minimize risk of electrocution of raptors.** A variety of alternatives were set forth in Olendorff et al. 1981 in *Suggested Practice for Raptor Protection on Power Lines: The State of the Art in 1981* (Raptor Research Report No.4, Raptor Research Foundation, Inc., St. Paul, Minnesota, 111 pages). This report was updated by the Avian Power Line Interaction Committee in 1996 as *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996* (Edison Electric Institute/Raptor Research Foundation, Washington, D.C.). A Copy of this report may be requested by calling the Raptor Research Foundation at (612) 437-4359.

2) LOCATION Existing roads, trails, and rights-of-way should be followed where possible. Roads and rights-of-way should avoid critical wildlife habitat, saddles, ridge tops, riparian, meadows, edges of meadows, and big game migration routes. Construction using helicopters should be considered in remote critical wildlife areas where construction of new roads would otherwise be necessary.

3) CLEARING Rights-of–way clearing should be selective, leaving shrubs and brush undisturbed where possible. Clearing should be avoided in riparian areas and on steep slopes. Brush and limbs should be piled at intervals to enhance wildlife habitat.

4) STRUCTURES Bridges and culverts should be designed so that fish passage is not impeded. Water hydrology and stream courses should remain unchanged. Special techniques and structures should be employed as necessary to minimize erosion and sedimentation to riparian areas (e.g., catch basins, raised culverts for roads runoff, water bars).

5) CLOSURES Roads and rights-of-way that provide access to critical wildlife areas should be designed for easy and effective closure. Gates should be installed at the onset of construction and closed immediately after completion of the project. Temporary roads should be obliterated and revegetated immediately after construction.

6) SCHEDULING Winter construction is preferred on critical big game summer range. Summer construction is preferred on big game winter range. No construction should be conducted in winter range from December 15-April 15. No construction should occur in elk calving areas from May 1-June 30. No

construction should occur in deer fawning areas from June 1-August 31 (northern New Mexico) or July 1-September 31 (southern New Mexico). No construction should occur in turkey nesting areas from April 15-June 30. Construction in big game migration areas should be restricted during migration.

7) SPECIAL CONSIDERATION FEATURES (Areas such as seeps, springs, wet meadows, marshes, wallows, salt licks and water development areas). Protect these features from damage during construction. No roads within 200 feet of feature. Remove debris from wildlife trails. Protect rock talus areas from disturbance by heavy equipment.

8) RIPARIAN AREAS AND FISHERIES Develop site-specific measures where appropriate. Maintain at least 100-foot buffer along streams. Debris left in streams and drainages may be detrimental or beneficial and should be assessed on a site-specific basis. Prevent siltation to streams. Fine sediment (less than 0.85 mm diameter) should remain at < 20% of spawning gravel in trout streams. In streams: maintain $\geq$ 80% natural shade over water; maintain $\geq$ 80% natural bank protection; composition of sand, silt, and clay should remain within 20% of natural levels.

9) FENCES Provide jumps or top rails on fences, or lay-down fences, within areas of high wildlife use (e.g., travel corridors). Bottom wire should be barbless and at least 16" above ground in antelope or deer habitat. Maximum fence height should be 42". Minimum spacing between top two wires should be 10". Do not use woven wire fencing.

10) REVEGETATION AND RESTORATION A reclamation plan is recommended for all short-term or long-term temporary surface disturbances. Stockpile topsoil at the time of original construction. When the disturbed area is no longer needed, re-contour the site to blend visually with surroundings, and return the drainage pattern as close as feasible to pre-existing conditions. For best results, topsoil should be spread to a minimum depth of 20 inches. Where no topsoil is available, or topsoil has been stored over one or more winters, amend with organic matter and fertilizer. Create furrows perpendicular to slope, if on a hillside. Seed with an appropriate certified weed-free mix of native grasses, forbs and shrubs beneficial to wildlife. In some cases seeding or transplant of woody species may be desirable.

Incremental revegetation is preferred in areas where work is conducted during spring and summer. Sections of right-of-way should be rehabilitated as construction is completed. Follow up by monitoring to assure no development of erosion problems and successful establishment of vegetation. Revegetated areas, which have not become established by the end of the growing season, should be treated to prevent erosion and site degradation (e.g., mulching, contouring, water bars).

SPECIES-SPECIFIC RECOMMENDATIONS

1) THREATENED AND ENDAGERED SPECIES Determine which state and/or federally listed species could occur in the project area. Sources of information include:

New Mexico Department of Game and Fish
PO Box 25112
Santa Fe, New Mexico 87504
(505) 476-8101 [State-listed wildlife]

New Mexico Department of Energy, Minerals and Natural Resources
Forestry Division
1220 St. Francis Dr.
Santa Fe, New Mexico 87505
(505) 476-3200 [State-listed plants]

U.S. Fish and Wildlife Service
New Mexico Ecological Services State Office
2105 Osuna, NE
Albuquerque, New Mexico 87113
(505) 346-2525 [Federally-listed plants and animals]

Contact the above agencies for assistance in determining presence or absence of threatened and endangered species and critical habitats. Work with these agencies to develop protective strategies.

2) DEER AND ELK Protect browse and forage plants.

3) TURKEY Identify and protect roost tree groups (winter roost trees are most critical). Roost tree groups can be described as:

- Large open topped trees ($\geq$ 13" dbh, > 40' tall, especially ponderosa pine)
- Canopy cover > 55%;
- Basal area > 100 ft²/ac.
- Accessible from clearing directly up slope, not isolated from stand.
- Provide nesting habitat in ponderosa pine or mixed conifer where practical by creating slash piles (10' diameter x 3' high) or leaving unlopped treetops. Nesting habitat should be within ½ mile of dependable water.

4) RAPTORS Protect known nest tree groups. Protect perch and roost trees adjacent to cliffs, major ridges and openings.

5) BEAR Protect mast (oak & juniper) and forage plants. Leave large diameter dead or down trees for insect forage.

6) TREE SQUIRRELS Protect stands with high squirrel activity (e.g., nest trees, large middens). Protect trees with existing cavities.

7) NON-GAME BIRDS When abandoning or realigning old electric lines, leave 10% to 30% of the abandoned poles standing for perching and cavity nesting birds, especially in areas lacking natural snags. Numbers and location of poles to be left standing should be coordinated with the U.S Fish and Wildlife Service and New Mexico Department of Game and Fish. The taller the poles the better, but under existing lines, leaving four to ten feet of the old pole standing will provide useful habitat. If poles are still sound, artificial nesting cavities can be created. Heavily creosoted, potentially toxic poles should be cut at ground level and removed.

TRENCHING GUIDELINES

NEW MEXICO DEPARTMENT OF GAME AND FISH

September 2003

Open trenches and ditches can trap small mammals, amphibians and reptiles and can cause injury to large mammals. Periods of highest activity for many of these species include nighttime, summer months and wet weather. Implementing the following recommendations can minimize loss of wildlife.

- Keep trenching and back-filling crews close together, to minimize the amount of open trenches at any given time.

- Trench during the cooler months (October – March). However, there may be exceptions (e.g., critical wintering areas) that need to be assessed on a site-specific basis.

- Avoid leaving trenches open overnight. Where trenches cannot be back-filled immediately, escape ramps should be constructed at least every 90 meters. Escape ramps can be short lateral trenches or wooden planks sloping to the surface. The slope should be less than 45 degrees (1:1). Trenches that have been left open overnight should be inspected and animals removed prior to backfilling, especially where endangered species occur.

On a statewide basis there are numerous threatened, endangered or sensitive species potentially at risk by trenching operations. Project initiators should seek county species list to evaluate potential impact of projects. Risk to these species depends upon a wide variety of conditions at the trenching site, such as trench depth, side slope, soil characteristics, season, and precipitation events.