Roca Honda Resources Response to Agency 9/3/10 and 9/23/10 Comments Of Roca Honda Project October 2009 MMD Mine Permit Application No. MK025RN

January 2011

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1.	BDR - General	General	Throughout the BDR, there are numerous statements like:	
			"The extent of communication between the alluvium and underlying formation potable ground water is not clear and will be investigated under the SAP" (Section "A wetlands area and livestock tanks may exist up Canones Canyon within the Canyon watershed on the north side of Jesus Mesa; its presence will be verified work detailed in the RHR SAP" (Section 8 page 8-4);	tìon 8 page 8-13); he San Lucas
			Please note that the SAP is only a workplan; it is a description of the scope of v completed for baseline sampling. Once the SAP has been implemented, the da subsequent interpretation of the results are presented in the Baseline Data Re Statements such as those above should not be made in the BDR; by including t in the BDR, it renders the BDR incomplete since it indicates that the SAP hasn't implemented.	eta, results and eport (BDR). These statements
			The revised BDR should eliminate all references and statements to additional vectors performed under the SAP, and the results of the additional work presented in	

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	RHR Response		MMD's comment is noted. RHR has revised the BDR to the extent appropriate to address the commenter's concern. RHR notes, however, that at the time the SAP and BDR were submitted in October 2009 the SAP was still under review by MMD. It was understood by both MMD and RHR that the BDR was and would continue to be a "living" document to be supplemented as more data became available. RHR disagrees with the commenter's conclusion that referring to activities to be performed in the future renders the BDR incomplete. Rather, it recognizes the dynamic nature of the process from which we are all learning as we proceed with review of the Mine Permit Application to its approval. RHR has submitted its BDR Revision 1, in conjunction with this response to comments.
2.	BDR – Sec 2, Clim & Air Qual, Lab data & field notes - general	Air data	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.
	RHR Response		Data sheets, field notebook copies, and field sampling sheets will be compiled on a CD(s) and available upon request.
3.	BDR – Sec 2, Clim & Air Qual, Tables 2-2 & 2-3	Data	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.
	RHR Response		Temperature data in all tables in the BDR, Revision 1 is now reported in degrees Celsius and Fahrenheit. Precipitation data in all tables is reported in millimeters and inches. Additionally, the wind rose units have been revised to m/s, and Tables 2-4 to 2-8 have been revised to include 2010 1Q and 2Q data.
4.	BDR – Sec 2, Clim & Air Qual, Tables 2-2 & 2-3	Data	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.

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	RHR Response		Temperature data for the Roca Honda meteorological station are reported in the BDR, Revision 1 as average maximum and average minimum temperatures to correspond to data from the historic San Mateo met station. The data tables have been revised per RHR's response to comment no. 3.	
5. BDR – Sec 2, Data Clim & Air Qual, Tables 2-2 & 2-3		Data	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.	
	RHR Response		All precipitation data are now reported in <i>millimeters and inches</i> in the BDR, Revision 1. The data tables have been revised per RHR response to comment no. 3.	
6.	BDR - Sec 2, Clim & Air Qual, Sec 2.2.2, Figs 2- 2 & 2-3	Data	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	
	RHR Response		Figure 2-2 is a figure extracted directly from a historic reference, i.e., the Gulf Minerals 1979 mill license application report. As such, RHR does not have the data to revise the figure. However, RHR has used both SI and English units in this section of the BDR, Revision 1 to better facilitate comparisons.	
7.	BDR - Sec 2, Clim & Air Qual, Sec 2.2.3, Table 2-2	Data	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 <i>average</i> maximum and the <i>average</i> minimum temperature, not the temperature extremes as stated above. Please delete the reference to Table 2-2 in this section for the revised BDR.	

Reviewer: DJ Ennis Review Date: September 3, 2010 Agency: NM MMD Item# Section/Page Topic Comment (or general) Section 2.2.3 of the BDR, Revision 1 has been revised to state: The monthly and annual climate summary of average temperature and precipitation for the San Mateo weather RHR Response station shows that temperature extremes have ranged from a low of -37.2 °C in January 1971 to a high of 39.4 °C in June 1962 (GMRC 1979). 8. BDR - Sec 2, Data Section 2.2.3 states "Diurnal temperature range at San Mateo is generally 25°F to 30°F." Is this Clim & Air Qual, diurnal temperature range for a specific month? Please specify in the revised BDR what this Sec 2.2.3 range refers to, or correct the sentence accordingly Using the data from the San Mateo meteorological station, the diurnal temperature variation **RHR** Response averages 15.1 °C throughout the year at San Mateo. The text in the BDR, Revision 1 has been revised accordingly. 9. BDR -General Graphs 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 the 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 Section 2, Climatology and Air Quality, of the BDR, Revision 1 has been revised to include climate data graphs as suggested. These graphs are shown as Figures 2-3, 2-4, and 2-5. In **RHR Response** addition, Table 2-3 has been updated in the BDR, Revision 1 with data collected on-site since the previous submittal. 10. The revised SAP and SAP comment/response document states that a pan evaporator gage BDR - General Data 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.

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	RHR Response		An evaporation pan will be installe spring, 2011.	ed as part of the Roca Honda meteorological station in
11.	BDR – Sec 2, Clim & Air Qual, Sec 2.4	Air quality	Section 2.5.2 of the SAP states "Air quality parameters to be monitored at the Rocal permit area include TSP, radon, radioactive particulates, and direct gamma radiation Section 2.4 of the BDR provides results for gross alpha, gross beta, radium, thorium, radon alpha-track and gamma, but does not appear to provide results for TSP (total particulates). Please clarify in a revised BDR what was meant by TSP (PM100?; dust whether TSP was sampled as part of the baseline data gathering. If so, please revise include this data. If not, please update the BDR with the rationale for eliminating TSF sample scope.	
	RHR Response		National Ambient Air Quality Stand criteria pollutants. TSP is an additi monitored at the permit area begin	hin an air quality control region classified by the EPA as a dard attainment area and therefore, must be monitored for ional regulated constituent of concern that will be nning the first quarter of 2011. It is measured as PM ₁₀ , cribes the air quality status of the permit area and current
12.	BDR – Sec 3, Topography - general	Hydrology	The revised SAP states, in response stream channel morphology will be cross-section using these aerial pho	to a comment from NMED SWQB, that "The pre-mining defined in more detail, including channel plan, profile, and stographs and/or conventional survey techniques. These predesigning reclamation channels, where necessary, that are
			SWQB, that was subsequently proping information be presented in a revise	n this information. Since this was a specific request of NMED osed by RHR in the revised SAP, MMD requests that this ed BDR. MMD also believes that this information is critical in gic consequences associated with the RHR project.
	RHR Response		A new Appendix 8-A, "San Mateo C BDR, Revision 1. This appendix des	Creek Level 1 Stream Survey," has been included with the scribes the initial Level 1 survey of San Mateo Creek,

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			intermittent, or perennial an initial assessment of th detailed engineering surve	es of determining the nature of creek flow; i.e., ephemeral, identifying any springs or perennial bodies of water; and making e nature of the stream channel. RHR will be performing a more by for the design of channel modifications and armoring may be nature will be submitted as part of the project engineering design.			

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13.	BDR – Sec 4, Veg, App 4-C, Sec 1.1.2, p 4	Vegetation data	2, and the number of samples reported a portion of the collected data is potential	as analyzed in ally biasing the alts for each tra	of samples reported as collected in Table in Table in Table 3, is not clear. Processing only a reported results. Please analyze all of the ansect line, band transect, species diversity
	RHR Response		2008, during a time prior to submittal o October 2009. Table 2 of Appendix 4-C the data gathered, without regard to pe BDR identified that data that was analy extent data was available and useful for Additional field work was performed by	of RHR's mine contained in ermit area bo yzed, i.e., with or the permit of y PWI after the	the October 2009 BDR identified all of bundaries. Table 3 of the October 2009 hin the permit area boundary, to the application as of September 30, 2009.

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			the entire set of data relevant to RHR's proposed activity.
14.	BDR – Sec 4, Veg, App 4-C, Table 9, p 30	Vegetation data	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 unnamed tributary to San Mateo Creek. As requested above, please submit results for all of the samples.
	RHR Response		Table 9 of the Appendix 4-C of the October BDR reflected the data for only those transects located in the permit area. As noted in RHR's response to comment no. 13 above, the BDR, Revision 1 contains an analysis of the entire set of data relevant to RHR's proposed activity. Data is now grouped by vegetation type in Tables 17, 20, 24, 26, 27, and 30 of revised Appendix 4-C. The number of transect lines is shown in the table headers.
15.	BDR – Sec 4, Veg, App 4-C, p 39	Vegetation	In the last sentence on page 39, the area of the band transects should be approximately 538 square feet, not 164. Please correct.
	RHR Response		The reference to the 164 ft ² area has been deleted and corrected to 538 ft ² in the BDR, Revision 1, Appendix 4-C.

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16.	BDR – Sec 6, Topsoil - General	Soils	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 soil salvage. If soil material is of good quality but is difficult to salvage (e.g. steep slopes, dept 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) m 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 16 v 305 due to different mapping approaches (USFS vs. NRCS) in sections 9 and 16 c) estimates salvageable volume of suitable soil across the (planned) disturbed areas based on sampling, a 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 a 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.
	RHR Response		Section 6, Topsoil, of the BDR has been revised to incorporate the results of the soil sampli proposal dated August 31, 2010, and approved by NM MMD on September 14, 2010. The

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	(or general)		field sampling was conducted on September 28 and 29, 2010. The proposed 31 sampling locations were revised to 19 per an agreement with NM MMD on September 29, 2010. The purpose of the revision was to concentrate the sampling within the four major soil units comprising 95% of the proposed mine facility disturbance area. As approved by NM MMD, a qualified soil scientist, Dr. Bruce Buchanan, a recognized Professional Soil Scientist and Soil Classifier was used to supervise the field sampling and testing and to assist in conducting the extrapolations/interpretation of samples. The results of the Soils Survey are contained in Appendix 6-A of the BDR, Revision 1. Results of the field investigations indicate that USFS and NRCS soil mapping is generally representative of conditions on the site, and that soil maps units as mapped by USFS and NRCS exhibited similar soil profiles across section boundaries. Therefore, the original map unit descriptions can be used to estimate the quantity of topsoil. In response to the four items NM MMD wanted addressed: a) The previous mapping of soil unit characteristics is accurate even though USFS and NRCS use differing number classification systems. b) The soils survey conducted in 2010 confirmed that while the numbers used for classification differ between USFS and NRCS, the soil units 40 and 230, 34 and 305 and 166 and 305 are, in fact, respectively similar. c) Based on the field survey conducted RHR estimates that the salvageable volume of suitable soil across the planned disturbed areas, i.e., units 305 and 34 have an average topsoil depth of 21 inches and units 205, 40, and 166 have an average topsoil depth of 60 inches. d) A gross estimate of suitable soil from the previous mapping is not necessary as would not vary significantly from the sampled results as discussed in (c) above.
			Approximately 98% of the disturbed area provides an average depth of 41 inches of suitable

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			cover the disturbance. Therefore	quire a minimum of 12 inches of suitable topdressing to there is sufficient soil to support the reclamation plan. RHR se when the facility area design is more complete and the d.			

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17.	BDR – Sec 7, Geology, Sec 7.4	Geochemistry	MMD agrees with the statement made by RHR that there is likely geochemical alteration of the overburden based on the formation. However, MMD will require a demonstration that the overburder stockpiled during shaft excavation will not cause an impact to such inder reclamation. This demonstration could be performed through and general chemistry parameters using Synthetic Precipitation Is the drill cuttings from the overburden formations obtained previct the results presented in a revised BDR. Alternatively, if insufficient would allow RHR to sample the overburden formations for SPLP is shaft excavation. This option would require modification of the Notes section 3.4 and/or section 5.2.5) to describe the procedure for sample the overburden that there is likely geochemical with the formation of the Notes and the section 3.4 and/or section 5.2.5) to describe the procedure for sample the overburden that there is likely geochemical with the section 3.4 and/or section 5.2.5) to describe the procedure for sample the overburden formations for SPLP is shaft excavation.	ons that will be encountered. In materials that will be rface water, ground water, or bugh analysis of various metal Leaching Procedure (SPLP) on lously during exploration with ant core material exists, MMD analysis simultaneously with Mine Operation Plan (Le.
	RHR Response		RHR notes MMD's requirement to demonstrate that the excava stockpiled during shaft excavation will not cause an impact to s hinder reclamation. NMED has voiced a similar concern. To that	urface or groundwater or

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			submitted to NMED and to MMD on January 18, 2011 an Materials Handling Plan that includes a proposal on how it will characterize, handle, store and monitor the stockpiled material. RHR will modify the Mine Operations Plan, the design drawings, and the Reclamation Plan in conformance with the Materials Handling Plan, which will be incorporated into the Mine Operations Plan. Briefly, RHR plans to drill a future core-hole prior to shaft construction. The core will be characterized by a qualified geologist and samples taken, as appropriate, to provide the information needed. Further, RHR plans to eliminate the shaft excavation material stockpiles from long-term on-site storage. This material will be removed from the permit area and not cause an impact to surface water or groundwater, or hinder reclamation.
18.	BDR – Sec 7, Geology, p 7-16	Figures/maps	The middle lithologic log on Page 7-16, labeled as 52, may be mis-identified; well 52 does not appear to be present on Figure 7-7. Perhaps this log represents well 51?
	RHR Response		The middle lithologic log on Page 7-16 is labeled correctly as S2 (not 52). Drill hole S2 was drilled in 2007 by RHR but not completed as a well. Figure 7-7 has been revised in the BDR, Revision 1 to more accurately present the information.

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19.	BDR – Sec 8, Surface Water, Sec 8.4, Table 8-	Hydrology/data	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

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	2, Fig 8-2		water identified." Please present t	ne location of springs] will be inspected and the source of the the results of the inspection/field survey in a revised BDR, and locations as required by 19.10.6.602.D.13(g)(i) NMAC.
			location of these springs. In addit	re 8-2 in RHR's October 2009 BDR inadvertently omitted the tion, the coordinates provided in Figure 8-2 were UTM inates are State Plane coordinates. These errors have been
	RHR Response		BDR, Revision 1. This appendix de purposes of determining the natu	Creek Level 1 Stream Survey," has been included with the escribes the initial Level 1 survey of SMC, performed for the tree of creek flow; i.e., ephemeral, intermittent, or perennial; al bodies of water; and making an initial assessment of the
20.	BDR – Sec 8, Surface Water, Fig 8-2	Maps/figures		approximate number of square miles or acres that comprise
	RHR Response		Per MMD's request, the area of eather the BDR, Revision 1.	ach watershed, in square miles, is indicated on Figure 8-2 of
21.	BDR – Sec 8, Surface Water, General	Hydrology	affected areas to the extent possib water sampling, but appears to be (leachable through SPLP) and TDS (assist in the determination of prob	description of surface drainage systems sufficient to identify water quantity and quality within the proposed permit and ole." The BDR contains sediment sampling in lieu of surface missing two potentially important parameters: sulfate (leachable through SPLP). Analysis of these parameters may table hydrologic consequences with respect to the possibility or when the discharge of mine water begins.
	RHR Response		TDS and sulfate were not analyzed the October 2009 BDR.	d as part of the 2008 sediment sampling event reported in

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			On January 18, 2011 RHR submitted to NMED and MMD a proposed sediment sampling and alluvial groundwater sampling plan for the San Mateo Creek drainage in response to a NMED Request for Work Plans to support the Discharge Plan. As indicated in the BDR, Revision 1, the results of this sampling program, which will be implemented in spring of 2011 following NMED and MMD approval of the Work Plan, will be included in a future revisions to the BDR. Sulfate and TDS will be included in the chemical analyses.		
22.	BDR – Sec 8, Surface Water, p 8-5	Hydrology	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?		
	RHR Response		The reference to the San Marcos Creek watershed is an error; the text has been revised in the BDR, Revision 1 to refer to the San Mateo Creek watershed.		
23.	BDR – Sec 8, Surface Water, p 8-6, Fig 8-3	Maps/figures	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.		
	RHR Response		Figure 8-1 of the BDR, Revision 1 has been revised to show the location of USGS gaging station 08343000 as indicated.		
24.	BDR – Sec 8, Surface Water, p 8-18	Hydrology	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.		

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	RHR Response		RHR has spoken with ranchers they have encountered during the Level 1 Stream Survey and asked them whether the creek ever flowed through their land and whether they could use the water if it did. The ranchers stated that the stream flowed very rarely and that they could definitely use the water if it did flow. It is reasonable to expect that in a dry area, people will want to use surface water if it is available. There are continuing discussions with the ranchers about the possibility of using water produced from RHR's activities. RHR believes interest and demand are high based on these discussions. However, no concrete plans exist today.
25.	BDR – Sec 8, Surface Water, App 8-A (Table A-1) and App 8- B (Table B-1)	Hydrology/data	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 OA/QC sheet) and copies of field notes from RHR representatives who conducted the sediment sampling.
			The revised BDR should also include all analytical data sheets (including chain-of-custody documentation and laboratory OA/QC sheet) and copies of field notes from RHR representatives who conducted the sediment sampling.
	RHR Response		Table B-1 was erroneously labeled as presenting "leachable" results. Unfortunately, leachable constituent analyses were not performed for the sediment samples collected during the 2008 sampling event as the laboratory instructions in the Chain of Custody forms failed to instruct the lab correctly. As such, these data constitute baseline chemistry analytical results of a second sample collection from this sampling event. The entire data set is presented for

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			"total" concentration in Table 8-C-2, Appendix C, Section 8 of the revised BDR. The sediment samples were surface samples collected from a 0 to 2" depth.
			As noted in RHR's response to comment No. 21, RHR will be performing an in-depth sediment survey of San Mateo Creek. The samples obtained from this survey will be analyzed for total and leachable constituent concentrations.
			While MMD's request that all of the analytical data sheets, chain-of-custody documentation, field notes, and laboratory QA/QC be included in the revised BDR is noted, such an addition would result in an extraordinary increase in volume of the report as this information takes up several file drawers. RHR proposes that we can make all such information available in electronic form upon request.
26.	BDR – various sections	References to SAP	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

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			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 SAF 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 revise BDR, and statements such as these should be removed from the revised BDR.
	RHR Response		Per MMD's comments, the BDR, Revision 1 contains the data gathered and field observations made to date. However, consist with RHR's response to comment no. 1, we must all recognize the dynamic nature of the process from which we are all learning as we proceed with review of the Mine Permit Application to its approval.
27.	BDR - General	Reference	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.
	RHR Response		RHR has obtained a copy of those portions of the NMEI study used by RHR in preparing the BDR and will provide it to MMD as requested. The complete document is available at the UNM Zimmerman library.
28.	BDR – various sections, primarily Sec 8.6	Hydrology	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 o

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			itself is a potential impact to the i.e. is it possible that this will ca	illow system or in the underlying aquifers to rise." While this by hydrologic regime, what additional impacts could this cause? buse the creation of a contaminant plume in a shallow alluvial vasn't an aquifer or a contaminated aquifer?
			total vs. leachable concentration total and leachable sediment dat	Irologic consequences should also include interpretation of the s from the sediment samples; currently no interpretation of the a is presented in the BDR (i.e. does the sediment data indicate contaminant plume will be created in the discharge cre
			survey of San Mateo Creek. The	omment No. 21, RHR will be performing an in-depth sediment samples obtained from this survey will be analyzed for total ntrations, the results of which will be presented in future
	RHR Response		therefore, cannot constitute a "c further noted that NMED conclu Interpretation of Ground Water Uranium Mill Site Investigation (CER in areas where concentrations of	or exceed state and federal regulatory standards and, contaminant plume" as postulated in this comment. It is des in the recent report "Geochemical Analysis and Data Collected as a Part of the Anaconda Company Bluewater CERCLIS ID NMD007106891) and San Mateo Creek Site Legacy CLIS ID NMN00060684)," that saturation of sediments, even f chemical constituents are high, has not historically led to t plume within San Mateo Creek alluvium. As such, the unded.
29.	BDR – Sec 8, Surface Water, Sec 8.6	Hydrology	It is MMD's opinion that the po- arroyo and to San Mateo cree regarding the proposed discharg ephemeral arroyo are needed i	tential impacts from discharging mine water to the unnamed ek are inadequately defined. The potential adverse effects ge of an estimated 4,000-8,000 gpm of treated water to an n the BDR, specifically in Section 8.6 of the BDR (Potential e). A previous comments on Section 3 (Topography) requested

Agency Review of Strathmore New Mine Permit Application Documents for the Roca Honda Uranium Mine Site Reviewer: DJ Ennis, Monte Anderson Review Date: September 3, 2010 Agency: NM MMD item# Section/Page Topic Comment (or general) 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? RHR has performed an initial survey of the hydrologic and morphological aspects of San Mateo Creek, during which the creek was walked by an engineer and a hydrologist the entire length from the proposed discharge location in an unnamed arroyo and down San Mateo Creek to where the creek bed became indistinguishable from the surrounding countryside approximately 14 miles. Approximately 200 photographs were taken, Level 1 Stream Survey RHR Response sheets were completed, and notes were made regarding the condition of the streambed. A report summarizing this work as been added as Appendix 8-A to the BDR, Revision 1. The photographs and survey sheets are available on CD. The engineering study will build on this

Engineering design of stream bed structures to prevent erosion will be accomplished during

preliminary work.

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			the 60% design phase of the project. The BDR does not include design documents.		
30.	BDR – Sec 8, Surface Water, Sec 8.3.5	Hydrology	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.		
	RHR Response		As noted in RHR's response to comment No. 21, RHR will be performing an in-depth sediment survey of San Mateo Creek. This survey will included the two additional sediment samples requested by MMD. Figure 8-7 of the BDR, Revision 1, has been modified to the location of the two additional sediment sampling locations.		
31.	31. BDR – Sec 9, Groundwater, Fig 9-6, p 9-10	Maps/figures	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.		
	RHR Response		Figure 9-6 has been corrected and modified per MMD's request in the BDR, Revision 1. The well identification numbers have been added and additional data that have become available since submission of the October 2009 BDR have been incorporated. The raw data used to create the potentiometric surface are included in Table A-1 of the BDR, Revision 1. Table H-1 of the October 2009 BDR is now Table A-1 located in Appendix 9-A of the BDR, Revision 1.		
32.	BDR – Sec 9, Groundwater, General	Hydrology/data	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).		
	RHR Response		The results of the aquifer test conducted in 2010, including the requested information, have been added as Appendix 9-I to the BDR, Revision 1.		

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33.	BDR – Sec 9, Groundwater, Sec 9.3.3	Hydrology	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.
	RHR Response		The information shown on Figure 9-10 is at a large scale and was not intended to depict the direction of movement of water in the Point Lookout Sandstone in the vicinity of the RHR project. The last sentence of the paragraph referred to by the commenter correctly describes the purpose of Figure 9-10, i.e., to provide a regional perspective of the water level and potentiometric surface for the Point Lookout Sandstone in the San Juan Basin, not the RHR vicinity. The first paragraph on page 9-14 of the October 2009 BDR indicates that [t]he Point Lookout Sandstone is present at the surface within the Permit Area and is probably not saturated in most areas of the Fernandez monocline and an aquifer in the vicinity of the community of San Mateo. The limited geologic and well data available indicate that the statement in the BDR that groundwater within the Point Lookout Sandstone moves eastward is correct for the RHR permit area; it may have a north-east component, but it definitely does not move westward. The Point Lookout Sandstone caps Jesus Mesa in Section 9 and then dips eastward in Section 10 down the flank of the Fernandez monocline. It is likely that groundwater enters the formation through the outcrops on Section 10 and then moves down the dip of the unit. Groundwater cannot move westward within the Point Lookout in the permit area because the unit is not present in the subsurface west of Section 10. A close inspection of the potentiometric head data near the permit area shown on Figure 9-10 indicates that groundwater within the Point Lookout Sandstone moves to the northeast.
34.	BDR – Sec 9, Groundwater, Sec 9.4, p 9-16	Hydrology	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-I? Please provide a reference as to how this determination was made in the revised BDR.

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	RHR Response		This statement is based on the well inventory in Table A-1, which is a compilation of data gathered from reference sources such as Brod and Stone and the New Mexico Office of the State Engineer WATERS database (NMOSE WATERS). Reference to Brod and Stone already exists and a reference to the NMOSE has been added in Section 9.4 to the BDR, Revision 1.
35.	BDR – Sec 9, Groundwater, Sec 9.4.1, p 9-16	Maps/figures	Plate 1 located in the SAP should be reproduced for the revised BDR so that the well information presented in Table H-I 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.
	RHR Response		Plate 1 of the SAP has been added to the BDR, Revision 1 as Figure A-1 in Appendix 9-A. The well symbols have been corrected, as necessary.
36.	BDR – Sec 9, Groundwater, Sec 9.4.1, p 9-17	Hydrology/data	The second paragraph states "out of the 142 wells in Appendix 9-H, Table H-I, 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-I which wells are part of the RGWSP.
	RHR Response		Table H-1 of the October 2009 BDR is a compilation of all 142 wells that RHR identified as it canvassed the available historic data base in the area of the RHR project as it initiated its baseline groundwater development plans. All of these wells were evaluated as candidates for inclusion in a Regional Groundwater Sampling Program (RGWSP). As described in section 9.4.1 of the October 2009 BDR, after reviewing the information gathered on each well, RHR chose a subset of these wells (25) that met our criteria for inclusion in the RGWSP (see paragraph one on page 9-17 of the October 2009 BDR) and began to sample them on a quarterly basis. The tables in Appendix 9-A through 9-E and Appendix G of the October 2009 BDR presented the data obtained by aquifer. The first row of each table contains the well no

and date of each well sampled. Well numbers correspond to the well nos. contained on Table

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			H-1 of the October 2009 BDR, including the twenty five wells of the RGWSP. The following twenty five wells were sampled as included in RHR's RGWSP; wells no. 5, 7, 12, 16, 21, 22, 27 32, 33, 47, 62, 83, 87, 90, 100, 102, 106, 111, 113, 114, 115, 116, 120, 121, and 138. (Note tha Appendix F of the October 2009 BDR provided the water quality data for the three Westwate wells, S1, S3, and S4, drilled by RHR and located within the Permit Area and are wells include in the RGWSP in addition to the 25 wells identified above.
			The purpose of Tables 9-1 through 9-10 of the October 2009 BDR was not to identify the RGWSP wells. They were to provide as much information (historic and modern) as RHR had available for each respective formation being discussed in the sections of the October 2009 BDR and that could reasonably be relied upon as being accurate given the condition of the well and the condition of the data.
			RHR apologizes for the confusion resulting from the manner in which the data was presented and the amount of data. We thought it important to provide as comprehensive a package as possible regarding water quality. We have endeavored to clarify the content of our RGWSP in the BDR, Revision 1 submitted to accompany RHR response to comments. TableH-1 and Plate 1 have been updated to include four additional wells that have been identified in the field since October 2009. Plate 1 is now Figure A-1 and Table H-1 is now Table A-1 in Appendix 9-A of Section 9 of the BDR, Revision 1. The data on Figure A-1 and Table A-1 now consists of 149 wells, the 142 wells originally in Table H-1, plus the four wells identified since October 2009, plus the 3 RHR permit area wells drilled in 2007.
			New Section 9.7 of the BDR, Revision 1, contains Figure 9-16 and Table 9-14 that identify 23 wells that constitute the current RGWSP, 19 of which are a subset of the 142 wells identified in the old Table H-1 of the October 2009 BDR, one which was identified after October 2009, and the three RHR wells drilled in the permit area in 2007 (wells no. S1, S3 and S4).

Reviewer: DJ Ennis, Monte Anderson Review Date: September 3, 2010 Agency: NM MMD Item # Section/Page Topic Comment (or general) 37. BDR – Sec 9, In Table H-1, Well #120 and Well #121 appear to be the same well (same specifications, same Hydrology Groundwater, GPS location, etc.). Is there a reason for listing them separately? Also, the list skips over well 10 App 9-H, Table #139. Minor edits, but it is a little confusing for the reviewer based on the statement on page 9-H-1 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. Wells 120 and 121 are not the same well, despite the similarity in reported construction and water levels. They are both alluvial wells located at one of the local ranch sites. RHR field personnel have found and sampled both wells. **RHR Response** The data for #139 was inadvertently omitted and has been added to the BDR, Revision 1. The RHR monitoring wells have been added to Figure A-1, Appendix 9-A (the old Plate 1) and Table A-1 of the BDR, Revision 1 (the old Table H-1) and Plate 1 of the revised BDR. Some additional wells located by RHR since October 2009 have also been added and other corrections made. 38. BDR - Sec 9, Hydrology/data 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. Groundwater, p 9-17 The purpose of revising the BDR is to update the ongoing program with the most recent data RHR Response collected. RHR's BDR, Revision 1 provides the most recent data. 39. BDR - Sec 9. Maps/figures It would be helpful if the alluvial wells, Menefee wells, Point Lookout Sandstone wells, Gallup Groundwater. Sandstone wells, and Westwater Canyon wells were all placed on their own individual figures (5 General 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. Per MMD's request, Figures showing sampled well locations by aquifer have been added to the beginning of each Appendix 9-B through 9-G. RHR Response

Reviewer: DJ Ennis, Monte Anderson Review Date: September 3, 2010 Agency: NM MMD Section/Page Item# Topic Comment (or general) 40. BDR – Sec 9. Hydrology/data Well #116 is shown in Plate 1 as being completed in alluvium (Qal), but is listed in Table 9-9 as a Groundwater. well that is completed in the Westwater Canyon member (Jmw). Please check the completion Table 9-9. Table data for this well and correct this inconsistency in the revised BDR. E-1, Table 9-1 Well #116 is completed in the Westwater formation (Jmw). Plate 1 (now Figure A-1 of **RHR Response** Appendix 9-A in the BDR, Revision 1) has been corrected. 41. BDR - Sec 9. Hydrology/data Well #122 is listed in Table 9-5 and Table 9-6 as a well that is completed within the Point Groundwater, Lookout Sandstone, however this same well is shown in Plate 1 and in Table H-1 as being Table 9-5, Table completed in an unknown formation. The chemistry data presented in Table 9-5 and Table 9-6 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. RHR agrees with MMD. The formation in which the well is completed is unknown. Tables 9-5 **RHR Response** and 9-6 of the BDR, Revision 1 have been modified to remove the data for well no. 122. 42. BDR - Sec 9, Well #137 is shown in Table H-1 to be completed within the Westwater Canyon member, but is Hydrology/data Groundwater, shown on Plate 1 from the SAP to be completed in the Gallup Sandstone. Please correct this Table **H**-1 (& inconsistency in the revised BDR. Plate 1 from SAP) Well #137 is completed in the Westwater formation (Jmw). Plate 1 (now Figure A-1 of **RHR Response** Appendix 9-A of the BDR, Revision 1) has been corrected. BDR - Sec 9, 43. Hydrology data The third paragraph on page 9-41 refers to the geophysical log for well 52 drilled by RHR. This Groundwater, should be referring to well 51, correct? Sec 9.5, p 9-41 The third paragraph on page 9-41 of the 2009 BDR refers to RHR geophysical logs for wells S-2 **RHR Response** (not 5-2), S-3 and S-4. The sentence is correct as written.

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44.	BDR – Sec 9, Groundwater, Sec 9.6.1, p 9-44	Hydrology	temporary water level decline geologic units." Please identif	A states "these drawdowns would be expected to cause es within these radii in one existing well within each of these three y, by well number in Table H-1, or by well location (Le., Township, ells that are anticipated to be impacted based on the results of the
	RHR Response		NMOSE which will identify w groundwater flow model and	tering permit application and water appropriations permit to the ells that may be impacted and will include the results of a the other model results. RHR anticipates that this application 11. The information contained therein will be provided to MMD
45.	BDR – Sec 9, Groundwater, Sec 9.6.1, p 9- 45	Hydrology	Page 9-45 states "the propose additional data that will allow effects, and develop a mitigat	ed aquifer testing program contained in the SAP will provide RHR to refine the model, more accurately analyze the potential ion strategy, as necessary." Please supply the results of the he results of the revised model in the revised BDR.
	RHR Response		groundwater flow model and submitted to the NMOSE in 2	uded in the BDR, Revision 1, Appendix 9-I. A report on the the simulated impacts of RHR mine depressurization will be 011 in support of a Mine Dewatering Permit and an Application Water. The report will also be provided to NM MMD.

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46.	BDR – Sec 11, Hist Places & Cult Prop, Sec 11.2.1	Historical/cultural	Sections 9 and 10 the total number of sites (94) and the number of sites eligible, not determined or not eligible (90) are different.		
	RHR Response		Section 11.2.1 has been corrected to reflect a total number of 94 sites.		
47.	BDR – Sec 11, Hist Places & Cult Prop, Sec 11.2.4	Historical/cultural	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.		
	RHR Response		RHR's opinion regarding the private property nature of the mineral estate and the TCP is not inaccurate. It is, in fact, the subject of litigation and RHR will continue to represent that it believes that mineral property is in fact private property for the purposes of any determinations made by the New Mexico CPRC and its Mt. Taylor TCP designation. The commenter is correct that RHR holds a mineral claim in Sections 9 and 10. The text in section 11.2.4 has been modified to reflect this.		
48.	BDR – Sec 11, Hist Places & Cult Prop, Sec 11.3.1	Historical/cultural	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).		

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	RHR Response		Sections 11.2.1, 11.2.2, 11.2.3 and 11.3.1 have been corrected in the BDR, Revision 1. The number of sites and their designation is 50 eligible, 89 undetermined, and 11 ineligible. These numbers changed significantly after receiving USFS and SHPO final determinations.			
49.	BDR – Sec 11, Hist Places & Cult Prop, App 11-A	Historical/cultural	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. LAs 162737 is in both Sections 9 and 16. LAs 162746 and 162753 are in both Sections 16 and 15.			
	RHR Response		Appendix 11-A reflects the results of RHR's archaeological consultant, Lone Mountain Archaeological Survey results as reported to the HPD and US Forest Service (not BLM). HPD and USFS reviewed Lone Mountain's finding and provided RHR with their final determinations in early 2011. Section 11 of the BDR, Revision 1 has been modified to reflect these determinations LAS 16870 and 16871 were missing from Appendix 11-A of the October 2009 BDR and have been added to Appendix 11-A of the BDR, Revision 1. LA 13167 and LA 13246 were, in fact present in Appendix 11-A of the October 2009 BDR. LA 13167 was located at the bottom of the 6 th page of Appendix 11-A in the last row, column two and LA 13246 was located at the top of the 7 th page in the first row, column two. With regard to LA13243 and LA154051, they did not show on the maps because they were inadvertently hidden by the section number symbols when the map was generated for the October 2009 BDR report. These symbols have been relocated on the maps so that the location of these sites can be seen. The "legal description" shown on Appendix 11-A for LA13192, LA162737, LA162746 and LA162753 has been corrected as noted. These discrepancies occurred because in the field it is difficult to			

Reviewer: Jim O'Hara Review Date: September 3, 2010 Agency: NM MMD Item# Section/Page Topic Comment (or general) determine exactly where the surveying individual is, in fact, located, particularly when near a Section line. All of these modifications have been made in the BDR, Revision 1. 50. BDR - Sec 11. Historical/cultural Appendix 11-B is a good start, but provisions for testing and mitigation will require more Hist Places & detailed plans prepared to specific BLM and State guidelines. It may be worthwhile to simply Cult Prop, App say: "Plans will be prepared for testing and mitigation consistent with appropriate agency 11-B criteria for approval before implementation." Appendix B was prepared by RHR's archaeological consultant, Lone Mountain Archaeological Services after consultation with the State as US Forest Service (not BLM). In the absence of any specific request to-date with respect to mitigation of any specific site, Lone Mountain used its best professional judgment to outline the structure of a mitigation plan and identified sites at RHR's direction that Lone Mountain anticipated may require mitigation **RHR Response** and/or protection based on the current status of a site and its location relative to RHR's proposed activities. Appendix B should be reviewed in context with Section 11.3.1 of the BDR. Certainly, RHR will prepare plans for testing and mitigation consistent with agency criteria. The reviewers proposed language has been incorporated into Section 11.3.1 of the BDR. 51. BDR - Sec 11, Historical/cultural RHR will control access to the permit area. RHR will be held responsible for site protection and Hist Places & avoidance. All your employees should be educated as to the importance of site protection. Cult Prop, MMD recommends preparation of a training program for your employees addressing the General 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.

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	RHR Response		The commenter's observati prepares its archaeological	ons are noted. These points will be taken into account as RHR resources mitigation and protection plans.

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52.		Radiological	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.		
	RHR Response		The results of the radiologic	Il survey are included as Section 13 of the BDR, Revision 1	

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1.	Mine Ops Plan - General	Design	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
	RHR Response		At this time RHR does not expect any of the ponds or basins to have banks sufficiently high or with a storage capacity sufficiently high enough to fall under the jurisdiction of the OSE. The level of design presented in the 2009 Permit Application was a conceptual 30% design. The design has proceeded to 60% design completion stage. The 60% design package will be submitted to NM MMD and will be available for OSE review to ensure that OSE regulatory requirements are being met.
2.	Mine Op s Plan – Sec 4	Maps/figures	Contour maps in Section 4 fail to label the contours for the ponds, detention basins and water treatment reservoir and settling basins.
	RHR Response		The Proposed Grading and Drainage Plan figures (Figures 4-5 and 4-6) are at a scale which makes the labeling of all contours or the following of the labeled contours difficult. As the design progresses, the drawings will be prepared to detail the existing grades and the proposed construction grades.
3.	Mine Ops Plan – Sec 4 & 5	Design	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.
	RHR Response		See RHR response to Ops Plan Comment No. 1 above.
4.	Mine Ops Plan – Sec 4	Regulatory	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.

Reviewer: Dam Safety Bureau Review Date: February 23, 2010 NM OSE Agency: Item# Section/Page Topic Comment (or general) **RHR Response** See RHR response to Ops Plan Comment No. 1 above. 5. Mine Ops Plan – Design Figure 4-5 shows the Detention Basin Dam tying into a stockpile. It is unacceptable for a water Sec 4, Fig 4-5 storage embankment to rely on a dumped stockpile for part of the embankment. Figure 4-5 shows the location of the detention basin relative to the topsoil stockpile. It is not meant to depict or otherwise imply any connection between the stockpile and the detention **RHR Response** basin. More detailed design drawings will be produced as part of the surface facility design yet to be submitted to clarify that the stockpile material is not used for the detention basin dam. 6. Mine Ops Plan – Section 4.2 recognizes the Evaporation Ponds could approach overflow conditions, which is Design Sec 4.2 unacceptable. No discussion of freeboard considerations are mentioned except for the Treatment Plant ponds. The reviewer misrepresents the intent of RHR's statement with regard to the potential for reaching overflow conditions. The purpose of RHR's statement "In the unlikely event the evaporation ponds approach overflow conditions, the water will be diverted to the water treatment facility" is to represent that RHR is aware of the possibility, even though unlikely, and to account for that possibility by providing a means by which the water is safely diverted to water treatment, thus avoiding overflow conditions, even considering freeboard. Certainly, it is also unacceptable to RHR that overflow conditions occur. Section 4.2 is not the place where design parameters such as freeboard considerations need to be discussed. RHR RHR Response is aware that such basic design considerations must be incorporated and they will be in the design of these facilities.

Reviewer: Dam Safety Bureau Review Date: February 23, 2010 Agency: NM OSE Item # Section/Page Topic Comment (or general) 7. Mine Ops Plan -Section 4.2 discusses the design storm event that will be used for roadside swales but fails to Design discuss the design rainfall event to size the ponds and detention basins. This is an unacceptable Sec 4.2 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. The reviewer's conclusion is misplaced and is indicative of a misunderstanding of what is presented in the RHR. The MOP presented as part of the Mine Permit Application package is admittedly a preliminary document. RHR and MMD have agreed that more detailed design documentation will be required as we proceed through the review process. RHR refers to the design storm event used for roadside swales simply because there is a standard approach to **RHR Response** roadside swale design. The evaporation ponds and detention basins have not yet been designed in detail. When they are the reviewer can be assured that considerable engineering thought will be placed on their design. For example, a complete Corps of Engineers Hydrologic Engineering Center (HEC) modeling effort will be performed to determine the storm flow volume from the drainage areas within the Roca Honda permit area. The detention basins, evaporation ponds and roadside swales will be sized accordingly.

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8.	Mine Ops Plan - Sec 3.3, pp 16- 17; Permit App- Sec D.11, p 9	Permits	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.
	RHR Response		Section 3.3 of the Mine Operations Plan has a limited purpose, i.e., to describe the dewatering process. Table D-2 on page 9 of the Permit Application document identifies the need for a permit to appropriate underground waters and a permit to dewater the mine. A dewatering permit application to be submitted to the OSE in 2011 will address short term, temporary diversion of water from the Gallup Sandstone and Dakota Sandstone, as well as a longer-term diversion from the Westwater Canyon Member of the Morrison Formation. Regarding the construction water, RHR is currently evaluating alternative sources of construction water, ranging from drilling an additional well (with the appropriate pertinent permits) to purchasing water from local sources. RHR understands the requirements to obtain the appropriate regulatory permissions for such activities.
9.	Mine Ops Plan – Sec 5.3.10, p 66	Permits	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

Reviewer: Hydrology Bureau Review Date: February 23, 2010 NM OSE Agency: Item# Section/Page Topic Comment (or general) RHR submitted artesian well plans of operation to OSE for construction of its existing wells S-**RHR Response** 1, S-3 and S-4 and will do the same for any new wells. 10. Rec Plan - Sec These sections mention construction of stock ponds to be consistent with a post mining land Regulatory / 3.3.2, p 26, Sec use of grazing. These livestock water impoundments may require approval from NM OSE. A Design 3.3.6, p 29 link to a form is provided: http://www.ose.state.nm.us/doing-business/formsinst/stocktank/LivestockWaterImpoundmentForm.pdf RHR recognizes the potential requirements for approval of livestock impoundments. Nothing contained in the reclamation presumes that required approvals will not be obtained. Should **RHR Response** such structures be included in the reclamation of the project site RHR and the rancher will work with the appropriate regulatory agencies to get those approvals. BDR - Fig 7-3, Maps/figures 11. It would be helpful to have additional information describing the orientation of the geologic p 7-5 units (i.e. strikes and dips). Strikes and dips shown on the Geologic Map presented as Figure 7-3 are from the San Mateo **RHR Response** Geologic map produced by Santos. Additional strike and dip information has been added to that figure in the BDR, Revision 1. BDR - Sec 7.2.1, 12. Hydrology The cited reference (OSE, 2008) was the source of well logs to describe the thickness of alluvium p 7-7 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. The reference is to the OSE on-line database of Well Records. The text and reference have **RHR Response** been clarified in the revised BDR, Revision 1.

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13.	BDR - Sec 7.2.8, p 7-10	Geology	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?
	RHR Response		The reviewer's comment is noted. The reference to "claystone" has been replaced with sandstone in the text of the BDR, Revision 1.
14.	BDR - Fig 8-1, p 8-2	Maps/figures	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?)
	RHR Response		Figure 8-1 is intended to be a regional drainage map showing the major drainages in relation to the permit area. The tributaries that drain the east side of Mt. Taylor were not put on Figure 8-1 because they are relatively small and do not impact the permit area. However, Rinconada Canyon, Water Canyon, Arroyo Chico and Rio Paguate have been added for clarity and San Miguel Creek has been indentified on Figure 8-1 of the BDR, Revision 1.
	nnn nesponse		Figure 8-2 of the BDR, Revision 1 shows a number of the features referenced in the text, including San Miguel Creek. The following additional locations have been labeled on this figure: Marques Canyon, Maruca Canyon, American Canyon, Colorado Canyon, Cañones Canyon, El Rito Spring, San Lucas Spring, Bridge Spring, North Spring, South Spring, La Mosca Spring, Johnny M Mine, and Mt. Taylor Mine.
15.	BDR - Sec 8.2, p 8-4	Hydrology	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.

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	RHR Response		The City of Grants has Discharge Permit DP-695, which allows it to discharge up to 1,800,000 gpd into the Rio San Jose from its wastewater treatment plant. Since 2003, discharge from the wastewater treatment plant has been discharged to ponds on the City golf course. According to Risser (1982), in pre-development times, the natural stream flow of the Rio San Jose at the western boundary of Acoma Pueblo was composed of water from runoff upstream of the pueblo, Horace Spring, and Ojo del Gallo Spring. Risser found that by 1980, the flow of Ojo del Gallo into the Rio San Jose had ceased, wastewater from the Grants municipal treatment plant augmented stream flow, and Horace Spring contributed the majority of the natural water entering the pueblo. He estimated that the flow of Horace Spring was about 3,600 acre-feet/year or 4.9 cfs, as calculated from records from 1959. This information has been added to the text of the BDR, Revision 1.	
16.	BDR - Sec 8.2, p 8-5; Sec 9.6, p 9-43, Potential Impact No. 3	p 8-5; Sec 9.6, p 9-43, Potential	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.	
	RHR Response		After further investigation and field work along San Mateo Creek, RHR concludes that the water discharged from the RHR mine into San Mateo Creek will not reach the Rio San Jose. RHR has walked the course of San Mateo to where the channel becomes indeterminate about a ½ mile west of NM 605. RHR also discussed San Mateo Creek with personnel of Homestake and field-checked Homestake diversion structures and the remnants of San Mateo Creek channel near Homestake. The field search confirmed that San Mateo Creek near its presumed confluence with the Rio San Jose does not exist. A local farmer who has been in the area for 73 years told RHR that the SMC channel was plowed up about 40 years ago above where it formerly entered the Rio San Jose above Milan.	
			The location and extent of the contaminated plumes on Homestake's property are not the	

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			note that water discharged by I standards. Movement downsti	or is it RHR's responsibility to assess their program except to RHR will meet USEPA and New Mexico regulatory discharge ream of that clean water either in the subsurface or as surface eration of a process that would occur naturally when high Mateo Creek to flow.
17.	BDR - Sec 8.2, p 8-5; Mine Ops Plan - Sec 4.0, p 37	Hydrology	8.9 cfs (approximately 4,000 gpr flow rate until five pages later (S water treatment facility capable	he proposed Roca Honda Mine may result in a discharge of up to m). No citation of documentation is provided for this estimated Section 8.3, page 8-10). Also, Section 4.0 of the MOP indicates a of processing 8,000 gpm. For future submittals, NM OSE provide a basis for such estimates, such that reviewers can onale.
	RHR Response		review by the NMED, the representation mine dewatering is based activities in the area, i.e., from a support its part of the data needed to support its part information requested in the for performed at the site in May, 20 the pump test confirm RHR's processed in the part of the part of the sign flow will with respect to the 8,000 gpm of purpose of Discharge Plan perm	and Discharge Plan Permit Application 1717 currently under sentations made by RHR as to the anticipated volume of flow on historical information from previous mine dewatering values reported in the New Mexico Environmental eport Water Quality Data for Discharges from Uranium Mines alf Mt. Taylor mine records. RHR clearly identifies in the SAP the need to perform site-specific hydrologic testing to provide permitting actions. The BDR, Revision 1 provides the form of modified text that reflects the results of a pump test of modified text that reflects the results of a pump test of reliminary assessment of 4000 gpm. The MOP text and the ll similarly be revised to reflect the results of the aquifer test. estimate, it was derived as a worst-case estimate for the nit application assuming two mines would be dewatering in assumed rate. The reviewer is advised that all of the

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			information needed for OSE analysis will be provided in a Mine Dewatering Plan to be submitted to OSE in 2011.		
18.	BDR - Fig 8-5, p 8-8	Maps/figures	Correct the title of this figure so it reads "Daily Stream Flow from Rio San Jose at <u>Grants</u> " instead of "Daily Streamflow from Rio San Jose at <u>Gallup</u> " If available, compare the stream flow data with records of discharge from mines contributing to flow in San Mateo Creek.		
	RHR Response		The Figure 8-5 title has been corrected in the BDR, Revision 1. A comparison of the mean daily flow of the Rio San Jose with mine discharge records is provided in Figure 8-3 of the BDR, and the text in this section has been modified to indicate that there was little or no effect of mine discharge on the Rio San Jose even when that discharge was in the 30 to 40 cfs range.		
19.	BDR - Table 8-1, p 8-9	Data	The last line in the table lists the constituent as "total solids." Provide clarification whether this should be total <u>suspended</u> solids. This comment applies to subsequent tables with this constituent name.		
	RHR Response		The last line in Table 8-1 was incorrect. It has been corrected in the BDR, Revision 1 Table 8-1 to reflect the data as "total dissolved solids."		
20.	BDR - Sec 8.4, p 8-15	Maps/figures	Provide a map that shows spring locations.		
	RHR Response		Section 8.4 of the BDR, Revision 1 has been revised to indicate that the spring locations shown on Table 8-2 can be found on Figure 8-2.		
21.	BDR - Sec 8.4, p 8-15; Sec 8.5, p 8-17; Sec 6.0, p 8-18	Water rights / hydrology	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.		

Agency Review of Strathmore New Mine Permit Application Documents for the Roca Honda Uranium Mine Site Reviewer: Hydrology Bureau Review Date: February 23, 2010 Agency: NM OSE Item# Section/Page **Topic** Comment (or general) RHR searched the OSE's on-line WATERS database for water rights claims to springs within the permit area and around the permit area to the east and south where springs, if present, could potentially be impacted by the mine. The "permit area" is defined in Section 1 "Introduction" **RHR Response** of the BDR, and is shown on Figure 1-1. It is comprised of Sections 9, 10, and 16 in Township 13 North, Range 8 West. 22. BDR - Sec 8.5, **Permits** While identifying the need to obtain a mine dewatering permit and a permit to appropriate pp 8-17 to 8-18, underground water, RHR makes several statements such as in Section 8.5, "Discharge of mine Sec 8.6, p 8-18, water or dewatering operations will not have any impact on the availability of water to these Sec 9.6, p 9-43; water rights." These statements are preliminary assessments by RHR. NM OSE Water Rights Mine Ops Plan -Division and Hydrology Bureau will evaluate potential impacts to surface water and ground Sec 5.3.10, p 65 water based upon the submittal and review of permit applications, not these preliminary statements. RHR understands that the statements referred to by the reviewer reflect the results of RHR Response analyses by RHR. 23. BDR - Sec 8.6, In references to the multi-year perennial flows in San Mateo Creek due to mine discharge Water rights p 8-18 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. **RHR Response** RHR understands OSE's authority over such matters. 24. BDR - Sec 9.2, Hydrology / Provide information about whether any of the discharge in Kernodle's (1996) model goes to

p 9-3

RHR Response

modeling

other streams mentioned in the BDR besides the San Juan River and Rio Puerco.

Kernodle's report (USGS WRI 95-4187) does not specify the distribution of the 195 cfs of

groundwater discharge simulated by the model. The San Juan basin is drained mainly by the San Juan River and its tributaries, part of the Colorado River system. The next most extensive

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			stream system is the Rio Puerco, of which the Rio San Jose is a tributary. The only other stream systems draining the San Juan Basin are short reaches of the Rio Chama and Rio Salado, which drain to the Rio Grande, and the Puerco River, which drains the far southwestern part of the Basin and empties into the Colorado.
25.	BDR - Fig 9-6, p 9-10	Maps/figures	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.
	RHR Response		The 6600 foot contour line in Figure 9-6 was incorrectly labeled. It should have been labeled "6450". Figure 9-6 has been revised in the BDR, Revision 1 based on the most recent data available. Potentiometric surface maps for the Morrison Formation that cover a larger area are presented in Figure 9-4 and Figure 9-5. In addition, a separate report has been prepared that details the construction of a three-dimensional groundwater flow model and reports the simulated impacts of the potential impacts of mine dewatering. This report includes additional larger-scale potentiometric surface maps. This report will be submitted to the OSE in support of applications to dewater and appropriate water.
26.	BDR - Fig 9-6, p 9-10; Fig 9-7, p 9-11; Fig 9-8, p 9-12	Maps/figures	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.
	RHR Response		The water level data used in the creation of Figures 9-6, 9-7, and 9-8 are the most recent data available and include water levels collected within the last three years from USGS GWSI database, water levels reported in the OSE WATERS database for new wells drilled in the area, and water levels measured by Roca Honda Resources. As noted in RHR response to comment no. 26, above, Figure 9-6 has been revised in the BDR, Revision 1, to include the

Hydrology Bureau Reviewer: Review Date: February 23, 2010 NM OSE Agency: Item# Section/Page Topic Comment (or general) locations of the wells used to create the potentiometric surfaces and tables of the data used. 27. BDR - Sec 9.4, Hydrology RHR statement that the Westwater Canyon Member (WCM) of the Morrison Formation is too pp 9-15 to 9-16 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. The referenced statement represents a discussion of the use of the Westwater Canyon Member aquifer by existing water users at the present time. It would be inappropriate and unverifiable for RHR to speculate about future water appropriation or water rights, including RHR Response the possible intentions or desires of Rio Grande Resources, the present owner of the Mt. Taylor Mine. Any such potential use of water diverted from the Mt. Taylor Mine will require application to the OSE for the appropriate permits. 28. BDR - Sec 9.4, Regulatory/ Provide a basis for a 5-mile area around the Roca Honda permit area. Provide an explanation p 9-16 hydrology that addresses the 5-mile area's size relative to the potential impacts of mine dewatering. RHR did not limit its hydrogeologic investigations to the area within a five-mile radius of the Permit Area. The RHR BDR discusses the hydrogeology of the entire San Juan Basin, and the groundwater flow model covers the entire basin. RHR concentrated on collecting water level and water quality data from wells located within the five-mile radius because initial investigations and calculations indicated that geologic structure and the nature of the aquifers would limit the more significant impacts of mine dewatering to this area. As is **RHR Response** discussed in Section 9-6 of the BDR, Revision 1, further analysis has supported this projection. Initial model simulations indicate that the 10-foot potentiometric head decline contour will extend up to two miles from the Permit Area within the Dakota Sandstone and Gallup Sandstone, and 8 miles from the Permit Area in the Westwater Canyon aquifer. Potentiometric surface declines within the Westwater Canyon will range from 10 to 50 feet within five and eight miles of the Permit Area.

Reviewer: Hydrology Bureau Review Date: February 23, 2010 Agency: NM OSE Item# Section/Page Topic Comment (or general) 29. Hydrology BDR - Sec 9.4.8, Add the units for the hydraulic conductivity values of the Morrison Formation. p 9-34 Section 9.4.8 of the October 2009 BDR is now Section 9.4.7 of the BDR, Revision 1. The following text has been added to address OSE's comment; "Kernodle calibrated his steady-**RHR Response** state model of ground-water flow within the San Juan Basin using a horizontal hydraulic conductivity of 0.1 ft/day and vertical hydraulic conductivity of 0.001 ft/day for the Morrison Formation." 30. BDR - Sec 9.4.8, Hydrology RHR mentions historically poorer quality water (>3,000 mg/L TDS instead of 500 mg/L) observed p 9-35 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. RHR has stated (Page 66, Section 5.3.10. MOP) that it will follow 19.27.4.31 NMAC. Please see **RHR Response** RHR response to comment No. 9, above. 31. BDR - Sec 9.6, p Hydrology Provide more data to support the claim that shallower and deeper aquifers will not be impacted 9-43, Potential by the proposed mine dewatering. Impact No. 1 The statement is based on knowledge about the hydrogeologic system, the proposed mining operation, and reasonable projections. Water level monitoring during and after operation of **RHR Respons**e the Gulf Mt. Taylor mine (which also depressurized the Westwater Canyon Member) in wells completed in the Point Lookout Sandstone found that water levels were unaffected by withdrawal of water from the Westwater Canyon Member. (See records in NMED files for the

Reviewer: Hydrology Bureau Review Date: February 23, 2010 Agency: NM OSE Item# Section/Page Topic Comment (or general) Gulf Mt. Taylor mine). This information has been added to Section 9.6 of the BDR, Revision 1. 32. BDR - Sec 9.6.1, Hydrology/ RHR provides some text about ground water flow modeling. As presented, the text discusses p 9-44 modeling 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. The groundwater flow model documentation, input, and simulated results will be provided in **RHR Response** a separate report and submitted with RHR's applications to the NMOSE to dewater and to Appropriate Underground Water. BDR - Apps 9-A 33. Hydrology RHR presented only tabular data for water quality. NM OSE Hydrology recommends that future -9-H; other reports add a few graphs of selected water quality concentrations versus time. water quality data tables in Sec 9 As work continues and more data are collected, such graphs may be generated, as RHR Response appropriate. To date, no systematic change in water quality over time has been noted.

 Reviewer:
 District 1 – Water Rights

 Agency:
 NM OSE

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34.	Permit App - Table D-2, p 9	Permits	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, WR 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 statues, 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.
	RHR Response		OSE's comment is noted. RHR is familiar with the procedures specified in Article 1 and Article 3 in OSE Rules and Regulations Governing the Appropriation and Use of Groundwater in New Mexico.
35.	Permit App - Table D-2, p 9	Permits	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
	RHR Response		RHR has listed the Mine Dewatering Permit as a requirement in "Table 3, List of Federal and State Permits," in "Section D.11 Permits Required" of the RHR "Permit Application as Phase 1 of Permit Application for a New Mine."

Agency Review of Strathmore New Mine Permit Application Documents for the Roca Honda Uranium Mine Site Reviewer: **SWQB** Review Date: February 16, 2010 Agency: **NMED** Item# Section/Page Topic Comment (or general) 1. Permit App -The applicant should consult with the U.S. Army Corps of Engineers to verify whether any of the Permits General proposed activities will require Clean Water Act §404 permitting. The RHR staff has consulted with the US Army COE concerning Clean Water Act 404 Permits. The Durango Regional Office of COE and NMED personnel visited the Roca Honda site in April 2008 to gather initial information for the jurisdictional determination. The Chief of the Regulatory Division, Albuquerque District, stated in accordance with the Regulatory Guidance Letter (No. 08-02) dated June 26, 2008, that the Corps should not provide either an approved jurisdictional decision or a preliminary jurisdictional decision because the EPA required an RHR Response NPDES for discharge of water to the arroyos. This represents the federal position for jurisdictional purposes. In addition, because the USFS requires an EIS for the RHR project, an application for a 404 permit should be submitted once the draft EIS is finalized. RHR will be constructing arroyo crossings for roads and utilities, detention basins within arroyos, inlet structures for treated water discharge, and arroyo enhancements for erosion protection. It is not clear at this time whether the 404 permit will be regional, individual, or nationwide. 2. Rec Plan - Sec Hydrology Section 3.3.6 indicates that some detention basins may be left in place if the land owners so 3.3.6 desire. It should be noted that water in any permanent ponds left in place must meet applicable water quality standards. The Reclamation Plan will be modified to clarify that any structures left as part of the Plan will **RHR Response** meet regulatory requirements.

Reviewer: GWQB Agency: NMED			Review Date: February 16, 2010
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1.	Ground Water Discharge Permit DP-1717 - General	Hydrology	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.
	RHR Response		RHR understands NMED's GWQB responsibilities with regard to RHR's DP-1717 application and the role it has regarding RHR's MMD mine permit application. RHR is committed to working with all of our regulating agencies to address these responsibilities and obtain all of the permissions needed to operate the RHR mine.

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Reviewer: AQB Agency: NMED Review Date: February 16, 2010							
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1.	Permit App - General	Air quality	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				

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Agend	cy Review of Si	trathmore Ne	ew Mine Permit Application Documents for the Roca Honda Uranium Mine Site
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	(e. general)		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 <i>there</i> is a National or New Mexico Ambient Air Quality Standard. If the specified threshold in this subsection is exceeded for anyone 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 I ton per year of lead shall file a notice of intent with the division.
			<u>Details</u>
			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

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			current federal or state air quality requirement.
			RHR will prepare emission calculations for all regulated pollutants that may be emitted from the regulated activities at the RHR project. The results of these emission calculations will determine the appropriate air quality permitting path and the work with NMED AQB to obtain the required approvals.
			If emissions of any regulated pollutants are each individually less than 10 tons per year, RHR will submit the appropriate documents to obtain a No Permit Required determination from the NMED.
	RHR Response		If emissions of any regulated pollutants are each individually greater than 10 tons per year, RHR will submit the appropriate documents to obtain a Notice of Intent determination pursuant to 20.2.73 NMAC.
			Pursuant to the existing requirements stated in 20.2.70 or 20.2.72 NMAC, RHR will submit a complete application for an Operating Permit or Construction Permit, respectively, as indicated by the potential emission rate calculated for each regulated pollutant for the facility.
			The Roca Honda Mine is not a named source pursuant to 20.2.74.501 Table 1. In the unlikely event that a Prevention of Significant Deterioration (PSD) Permit would be required, RHR wisubmit a complete PSD Permit application and comply with the requirements contained in 20.2.74 NMAC.
			RHR will not process any ores at the mine.
2.	Permit App - General	Air quality	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 matte from fugitive dust sources. The following control strategies can be included in a comprehensiv facility dust control plan (from EPA's Compilation of Air Pollutant Emission Factors, AP-42):

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			application of surfactant, watering and traffic controls, such as speed <i>limits</i> 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 supersede the applicability of any forthcoming state or federal regulations.
	RHR Response		RHR understands that fugitive dust can be a problem at operating mine sites. RHR will work with the NMED AQB and the MMD to develop as fugitive dust control program that minimizes these types of emissions.

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1.	Permit App	Cultural resources	corridor crossing Section 15 has b	ul road) was surveyed, it does not appear as if the utility been surveyed for cultural resources. The Cibola NF should e areas since these corridors are part of the proposed mining
	RHR Response		The Section 15 utility corridor ha and, as such, not subject to USFS distributed in order to protect the	as been surveyed. However, because it is private property of requirements, the information has not been widely ne privacy of the landowner.
2.	Permit App	Cultural resources	Rather than trying to construct the situations Strathmore should con the effects of the mining operation experience that the costs of having	neir mining operations around archaeological sites, in these isider archaeological testing and/or data recovery to mitigate on on the sites before construction. It has been the SHPO's ong an archaeological monitor present during construction at a recovery and after testing and/or data recovery.
	RHR Response		We are confident that we have a extent that sites cannot be avoic additional mitigation activities, a	ght to avoidance as a mitigation strategy wherever possible. avoided the vast majority of sites identified. However, to the ded or to the extent that regulating authorities require as stated in Section 11.3.1 of the BDR, RHR will prepare roval and implementation as appropriate.

		athmore New M	ine Permit Application Documents for the Roca Honda Uranium Mine Site
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1.	BDR – Sec 4, Vegetation, App 4-C	General	Please add a list of Tables and Figures to the Table of Contents for Appendix 4-C.
	RHR Response		A list of Tables and a list of Figures have been added as requested in the BDR, Revision 1.
2.	BDR – Sec 4, Vegetation, Sec 5, Wildlife, General	Vegetation/wildlife data	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.
	RHR Response		RHR has updated the vegetation map in Section 4, Figure 4-1 of the BDR, Revision 1 to match the Figure 5 in Appendix 4-C. Figure 4-1 in the October 2009 BDR was created from the initial field surveys performed in 2006, the details of which are reported in Appendices 4-A and 4-B of the October 2009 BDR. The revised Figure 4-1 and Figure 5 in Appendix 4-C was created from the 2008 and 2010 field surveys. The text of Section 4 has been updated in the BDR, Revision 1, to coincide with the revised Figure 4-1, however, the detailed results of the 2008 and 2010 field surveys are found in Appendix 4-C. The inconsistencies have been resolved by using the latest and more detailed surveys for vegetation mapping. One example is the change from a large area of Desert Grassland to Juniper-savanna and smaller

			The second secon	nents for the Roca Honda Uranium Mine Site
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			map found as Figure 18 in Appendix not always strictly adhere to vegeta usage by wildlife. For example, the of Jesus Mesa becomes the piñon-juthe October 2009 BDR has been elintransects across the arroyo tributar Appendix 4-C of the BDR, Revision 1 were not analyzed. The reference as	er 2009 BDR has been replaced with the wildlife habitat of 5-C of the BDR, Revision 1. Specific wildlife habitats do ation type stratifications due to differences in habitat Disturbed piñon-juniper mosaic vegetation type on top uniper woodland wildlife habitat. Section 4.0, Table 9 of minated. Vegetation transect results for the four y to San Mateo Creek are now in Section 1.3.2.7, a. The other five transects were on private property and rea referred to was established for wildlife only.
3.	BDR, Sec 4, Veg, App 4-C, Tables 16 & 17, web ref on p 8	Vegetation data	greater than %100, since multiple ca However it is not entirely clear how i vegetation type (Table 16 of Append stabilized dune vegetation type (Tab used to calculate basal and canopy of	ne transect point intercepts can result in Cover values nopy hits at a given point are each counted separately. it is possible that basal cover for the ponderosa pine ix 4-C) totals >%100, whereas basal cover for the semile 17, Appendix 4-C) totals <%100. The methods that were over in this report do not appear to conform with those on page 8 of Appendix 4-C (www.forestandrange.org).
	RHR Response		1.2.2.2 of BDR, Revision 1. The www ForestandRange.org reference did n	o measure cover and density are described in Section v.ForestandRange.org is 1 of 4 references discussed. The not include basal cover as a preferred method in 2008. as deviated from that position. The method was provided

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			sentence of the 2 nd paragraph of Section 1.2.2.2 in the BDR, Revision 1, Appendix 4-C. Canopy cover and the ground cover that was not occupied by forb, shrub, and grass canopy were measured. Tree canopy was often high above the ground and well over the surveyor's head. As such, it was not summed with the canopy cover contributed by grass, shrubs and forbs.
4.	BDR – Sec 5, Wildlife, App 5- C, pp 35 & 37	Wildlife	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.
	RHR Response		Information regarding wildlife habitat associations has been summarized in Tables 9, 11, 12, and 13 in Appendix 5-C of the BDR, Revision 1. Additionally, a map showing mid to large mammal stations has been added as Figure 12 on page 11 in Appendix 5-C.
5.	BDR – Sec 5, Wildlife, General	Wildlife / design	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.
	RHR Response		RHR's proposed activity is all located down-gradient from the location of these pools, except the ventilation shaft in Section 10. As such, RHR does not envision any impacts on them. A Stormwater Pollution Prevention Plan will be prepared by RHR and implemented to contain sediment and control sedimentation.

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6.	BDR – Sec 5, Wildlife, General	Wildlife	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.
	RHR Response		Mist-netting surveys were conducted in 2008 over two seasons on three occasions at two localities which held water and were on public lands. Although bats were captured during the survey, no spotted bats were trapped. Other locations may have held water; however, these locations were either void of water, or on private land where permission for survey access was not granted. Additionally, bats have a strong tendency to refrain from making noise when a researcher is in the vicinity. The acoustic inventory techniques that are mentioned by NMDGF involve use of an ANABAT echolocation recorder which has been shown to varying degrees to be an accurate estimator of species diversity at a given site (see Gannon et al. 2003; Ellison et al. 2005). There are recognized issues with the use of this technology. As such, mist-netting techniques still predominate as the best method to ensure proper identification (see Miller et al. 2003 for a critical review of bat habitat survey techniques).
7.	BDR – Sec 5, Wildlife, General	Wildlife	Two active Great Homed 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 1/2 mile for the Red-tailed Hawk nest (if active) and a 1/4 mile buffer for the Great Homed 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.
	RHR Response		The construction schedule for each mine site proposed at Roca Honda is over two years in length. The start of construction is entirely dependent upon when final approvals are

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	(or general)		obtained. Nesting raptor surveys will be conducted, as appropriate, after the permit is issued in an attempt to mitigate potential impact to nesting raptors.
8.	Mine Ops Plan – p 59	Design	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 of packed earth

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			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. Aboveground tanks should also be covered, netted or provided with a means of escape. Standard barbed-wire fencing does not keep out wildlife.
	RHR Response		NMDGF's comment is noted. Designs for reasonable wildlife protection, to the extent warranted, will be provided in the 60% design Mine Operations Plan. They may include design details such as exclusion fencing, impoundment netting or other deterrent device, and escape ramps. It is noted however, that none of these ponds or detention basins are expected to contain materials deleterious to wildlife.
	Mine Ops Plan – p. 59	Design	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.
	RHR Response		The reviewer's comment is noted. The 60% design Mine Operations Plan will include design and installation details for power lines.
10.	Mine Ops Plan - General	Design	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.
	RHR Response		The reviewer's comment is noted. The Mine Operations Plan will note posting of appropriate on-site traffic speeds consistent with safety and wildlife protection.
11.	Mine Ops Plan - General	Design	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.

breeding season (April-August), to avoid possible violation of the Migratory Bird Treaty Act.

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			Blasting and drilling should also be avoided during the nesting season to the extent feasible.
	RHR Response		RHR estimates that the total acreage to be disturbed in some manner by its proposed activities is approximately 183 acres. This is a very small area in comparison to the choices migratory birds will have amongst the vast area of migration. The purpose of the baseline wildlife program is to assess the potential for the presence of wildlife, including birds that may migrate through the permit area. In general, the surveys did not identify any sensitive species using the area during the four seasons. The construction schedule will attempt to take the reviewer's comments into consideration, to the extent possible. However, construction is anticipated to take 2-3 three years. It is therefore, very problematic to disrupt the schedule for 5 months each year.
12.	Mine Ops Plan – pp 71 & 72	Vegetation	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.
	RHR Response		The success of revegetation will be based on a reference area standard. A statistically valid vegetation reference area has been proposed as 137 acres in Section 16. Additional information regarding potential vegetation reference areas is provided in the BDR, Revision 1, Section 4, Vegetation, Appendix 4-C.
13.	BDR – App 4-C, Table 8, p 29	Vegetation	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-Savanna and 45 acres of various woodland classifications that

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			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.
	RHR Response		Height and dbh data have been provided in Table 38 in Appendix 4-C of the BDR, Revision 1. Limbing of trees rather than felling will be implemented where possible during construction and operations activities. Also, only trees in the direct path of permanent structures will be removed. Although removal of mature trees may be necessary in limited amounts, the impact of their loss is expected to be negligible given the number of mature trees present in and around the permit area.
14.	14. Reclamation Plan – p 9	Reclamation	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.
	RHR Response		The reviewer's comment is noted. The Reclamation Plan will be revised to include reference to the Fencing Guideline and a discussion of fence design details to exclude wildlife, to the extent practicable, from reclaimed areas.
15.	BDR – App 4-C, p 24 Reclamation Plan – p 26	Vegetation	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.

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	RHR Response		A Weed Control Plan has been prepared and will be included in the revised Reclamation Plan.
16.	Reclamation Plan – p 24	Revegetation	Please describe the type and amount of soil amendments that are proposed for the topsoil during revegetation (top of page 24).
	RHR Response		A large percentage of the available topsoil is rated as good. This soil will be stockpiled, vegetated, and protected until reclamation begins. There is likely no need for amendments. However, this will be evaluated during the preparation of the Reclamation Plan.
17.	Reclamation Plan – pp 29-30, p 34	Reclamation	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.
	RHR Response		Riparian and wetlands surveys down-gradient of the permit area are described in Section 5 of the SAP. The term "enhanced" refers to the presence of water in otherwise arid settings, creating opportunity for the potential riparian and/or wetland areas to be more conducive to flora and fauna. Any modifications to San Mateo Creek during reclamation, such as removing armor protection placed on banks during operations, will be discussed in the revised Reclamation Plan.
18.	Reclamation Plan – Table 3-4, p 36	Reclamation	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.
	RHR Response		The revised Reclamation Plan will include a revegetation plan that incorporates the proper seed mix for the project area. It is noted that the approved post mining land use is grazing, not establishment of a self-sustaining ecosystem.

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1.	SAP - Response to comments, No. 5, p 51	Map s /figures	The RHR response appears to illustrate some confusion about the mentioned US DOE background wells. As a clarification, these wells are located south of San Mateo Creek and near the confluence with Arroyo del Puerto. RHR mentions that the wells are somehow close to the Homestake Mill, which is not the case. Please see Figure 2.1 in the May 31, 2001 repor entitled Application for Alternate Concentration Limits in the Alluvial Materials at the Quivira Mill Facility Ambrosia Lake, New Mexico with US NRC document number ML011690068.
	RHR Response		US DOE wells 0594 and 0595 are located north of San Mateo Creek near the confluence of that channel with Arroyo del Puerto. US DOE wells 0596 and 0597 are located about a mile south of San Mateo Creek. According to the NMED (conversation with Jerry Schoeppner, April 14, 2010), these wells were sampled only once by DOE and for a very limited number constituents.
2.	SAP - Response to comments, No. 14, p 54	Maps/figures	The RHR response indicates that Figure 9.6 (actually Figure 9-2, Potentiometric Surface of Westwater Canyon Member) has been revised to incorporate recent water level data, yet the water levels used are from 1955 to 1978, when there exists water level data for measurements made over the last 20 years. As presented in Section 9, it is unclear if any figure shows a representation of a potentiometric surface from recent water level measurements in the Westwater Canyon member.
			The reference was <i>not</i> to Figure 9-2 "Potentiometric Surface of the Westwater Canyon Member," which is from Stone et al. (1980), and is included in the SAP as a representation of general regional conditions under pre-development conditions.
	RHR Response		The response to comment No. 14 should have referenced Figure 9-4, "Roca Honda/San Mateo Area Wells with Menefee Formation and Westwater Canyon Member of the Morrison Formation Potentiometric Surfaces," of the RHR SAP or Figure 9.6 of the RHR BDR, not Figure 9.6, of the RHR SAP. The potentiometric surfaces presented in Figure 9-4 of the SAP and Figure 9.6 of the BDR were created from recent water level measurements. See the

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			revised Figure 9-6, of	BDR, Revision 1, created in response to OSE Comment no. 26 above.

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1.	BDR, SAP, & comment responses – Regulatory authority – bottom of p. 1, 1st 3 para of p 2	Air quality	 The National Emissions Standards for Hazardous Air Pollutants, 40 CFR Part 61, subparts (61 61.01 to 61.359) apply under this application. Specifically: B, National Emission Standards for Radon Emissions from Underground Uranium Mines T, National Emission Standards for Radon Emissions from the Disposal of Uranium Mill Tailings; W, National Emission Standards for Radon Emissions from Operating Mill Tailings. In reference to the Roca Honda uranium mining there would be 2 main pollutants of concern. The first is particulate matter. In New Mexico there are 3 regulated PM air pollutants; 2 feder criteria pollutants, PM10 and PM2.5; and 1 state regulated pollutant, Total Suspended Pollutants (TSP). National Ambient Air Quality Standards (NAAQS) apply with reference to the federal criteria pollutants. The applicant is correct that the McKinley County is in attainment of PM. The second main air pollutant would be radionuclides, which is an EPA Hazardous Air Pollutant. According to the Roca Honda Plan of Operations, the mining would take place underground. There would be only construction activity and stock piles on the surface. Presently, the New

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			Mexico Air Quality Bureau does not regulate particulate matter emissions from c onstruction activities or stock piles. Nor does the AQB regulate radionuclide air pollution. EPA Region 6 had that authority. EPA Region 6 may or may not require air permitting for the underground uranium mining activities. Further consultation by the applicant would be required.
			In addition to permitting requirements that Region 6 may have, there are 2 air related federal regulations that may apply to this project. These federal regulations would apply regardless if an air permit is required by EPA Region 6. The 3 regulations are 40 CFR 61, Subparts B, T, and (see link above). It appears that MMD state regulations require this baseline air monitoring.
			RHR disagrees. Only Subpart B applies to the Roca Honda project. The RHR project is neither an operating mill that generates tailings (Subpart W) nor a disposal site for tailings (Subpart T.) It is conventional underground uranium mine.
	RHR Response		RHR will prepare emission calculations for all regulated pollutants that may arise from material handling of stock piles at the surface using the most current emission factors. The results of these emission calculations will determine the appropriate air quality permitting path. Pursuant to the applicable requirements, RHR will submit an application for the appropriate permit.
			The Roca Honda mine is subject to the NESHAP Subpart B, emissions of Radon-222 from underground uranium mines. 40 CFR 61.22 sets the effective dose equivalent that any member of the public may receive from air emissions of Radon-222. The NESHAP speaks only to an emission standard, determining compliance to the standard, and annual reporting requirements. RHR will comply with all applicable regulations for air emissions of radionuclides from underground uranium mining, including any permit requirements that EP Region 6 may impose.
2.	BDR – para 1 & 2	Air quality	Overall, the applicant's revised description of regional climate, site air quality, and climatological factors representative of the permitting area respond directly to the state's July 2009 comments and are satisfactory. The applicant has reasonably addressed state agency

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			questions brought forward regarding meteorological data, precipitation, pan evaporation, air quality. The exception would be graphic description of prevailing winds (Figure 2-2). The applicants own narrative states that:
			Local wind conditions at the Roca Honda permit area are affected by topographic features that modify general synoptic wind patterns.
			NMED Air Quality Bureau commonly monitors prevailing winds and reports wind rose data at least on a monthly basis to describe the range of variability in wind direction and speed. Given the complexity of the terrain in the permit area, the risk of PM drift from mine portals, vents, and the states defined concerns about weather station sufficiency, the baseline prevailing wind reporting should be presented more than an annual average. Individual wind roses for the 12 months of the year would be more descriptive of conditions at the site.
	RHR Response		RHR will provide qualitative descriptions of wind conditions (speed and direction) at the site by creating monthly wind rose graphs from the meteorological data used in the modeling in subsequent revisions to the BDR.
3.	SAP - Sampling p 2, last para; p 3, all para	Air quality	In terms of content of the sampling and analysis plan and applicant responses to the state's July 2009 comments, Roca Honda has reasonably addressed such issues as sampling objectives, data needs, air quality, methods of collection, air quality monitoring, air particle pump, radon detectors. There is some minor disagreement between the applicant and the state on where to document radiation data and collection methodology (Doc. 3 Item 2. P.4). The applicant's discussion and response to NMED SWQB categorizing radon and gamma data gathering as an ambient air quality characterization appear reasonable.
			NM MMD also questions the adequacy of location of meteorological monitoring stations to characterize site-level wind patterns. The fundamental concern is terrain complexity in the mining area and variable effects on dust collection, transport, and accumulation. NMED AQB staff specialists familiar with sampling protocols and uranium mining also expressed surprise that only one monitoring station was in place. The applicant's response (Doc.3 Item 9 p.17)

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			discounts the state's concern and fails to address micro-climatic variability and potential mine dust impact on biological components that could occur in the small canyons, differing slopes, or open mesa.
			The direction of any potential drift and fate of PM from the uranium mine site, roads, or vents is a USFS concern as well. Understanding how any dust moves relative to the mine site, where it deposits, how much deposits, form the basis of understanding environmental impact on Forest Service and surrounding land. This would facilitate more meaningful mitigation. At this scale, any terrain complexity should be taken more seriously in the sampling and analysis plan. While this reviewer presumes stringent mitigation to prevent any such PM drift would be placed on this land use, were it to be permitted, I agree with NM MMD and NMED AQB caution and comments.
			A representative network of 'mini'- stations, as requested by NM MMD, installed on high ridges, north and south facing valleys, coves, open plateaus, along haul roads, at least in the short-term is good science for the purpose of protecting people and the environment. This state request for a data collection should be well considered, given the nature of the mineral to be mined. Further consultation with EPA Region 6 on this permit, the comments here, NESHAP adherence, and these monitoring questions is also recommended.
	RHR Response		If emissions of regulated pollutants from the Roca Honda site are such that an air quality permit is required, it will be necessary to perform air quality dispersion modeling to determine the air quality impacts that result from these emissions. Two key inputs to the modeling are meteorology that is representative of the site and accurate representation of topography in the modeling domain.
			RHR will perform dispersion modeling using the most current version of AERMOD (Version 09292). The meteorological data inputs into AERMOD include hourly values for wind speed, wind direction and 13 other parameters. These data will be derived from on-site representative meteorological data and will be prepared for input to the model using AERMET

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			and AERSURFACE, the EPA-approved meteorological and surface data processors. Land use and land cover in the vicinity of RHR will be obtained from site observations as well as data available from the United States Geological Survey via the seamless server whereby such da sets are made available to the public. RHR will obtain approval from the NMED AQB prior to using these data in the dispersion models.
			The use of hourly meteorological data in an AERMOD model provides an accurate, quantitative assessment of pollutant impacts and is representative of such impacts as has been demonstrated through AERMOD model performance studies by USEPA. Meteorologic data that is representative of the area will be used in the most current versions of EPA AERMOD which includes wet and dry deposition. This approach will result in the best available quantitative assessment of air quality impacts due to activities at Roca Honda.
			The current met station is located in an area fully exposed to the prevailing winds at the RHF site and does not appear to be distinctly influenced by drainage winds or effects of Jesus Mesa, the topographical feature with potentially the most significant meteorological effect. remote siting review by a certified meteorologist resulted in a determination that if the station were relocated, an area in the NW/4 of the NE/4 of Section 15 at an elevation of approximately 7200 ft and 1.5 km east of Jesus Mesa would be a good candidate location. However, this determination also concludes that the potential relocation site does not present an obvious advantage over the current met station location in terms of representativeness. In fact, representativeness would be about equal to the current site. In short, the current met station has been determined to be located in a representative manne for the area and appropriately collects representative site data.
			The recommendation to install many additional met stations throughout the area is unjustified and does not fit with the objectives or the limits of the current EPA regulatory models. Regardless of how many met data sets are collected and analyzed, ultimately only one set of hourly meteorological data collected at one site will provide input into the dispersion modeling. EPA's justification for this approach is the track record of performance

Reviewer: AQB (Joe Vieira) Review Date: December 10, 2009 Agency: **USFS** Section/Page Item# Topic Comment (or general) in modeling the highest concentrations and deposition rates even considering just one representative met data set at or near a source. Using other current models, the next best model would be CALPUFF but even it does not generally resolve the horizontal field down to a few hundred meters (1k to 4km is about as good as CALPUFF can resolve). Another issue that multiple met sets poses is lack of a regulatory binding tool that would allow these various met stations to interact and be considered as a single input as required by AERMOD.

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1.	SAP - General	Hydrology	It is understood that the intent of this document is to respond to the State of NM permit process. Because of this, some elements that would be needed for Forest Service purposes are not included in these documents. This includes, but is not limited to: a. Watershed condition/values b. Characterization of watercourses using morphological/physical parameters c. Cumulative effects
	RHR Response		The reviewer's comment is noted. RHR has attempted to provide data needed for USFS as well as the state.
2.	SAP - General	Hydrology	Sampling regimes/protocols are somewhat general and not specified so as to e nable evaluation of whether or not such sampling will be adequate.

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	RHR Response		RHR has developed SOPs to address specific field data collection, and/or identified the publicly available protocol documents which will be followed; e.g., the USGS "National Field Manual for Collection of Water Quality Data", (Book 9 of the USGS's TWRI series for groundwater sampling). These documents, procedures, protocols, etc, can be made available on request.
3.	SAP - Sec 6, Topsoil	Soils	Agree with state comments about not relying on composite samples. Individual sample analysis is better for characterization of site.
	RHR Response		A field soil sampling survey program to characterize soils in more detail was performed by RHR in the Summer 2010 after review and approval by USFS and NM MMD. The approved program addressed and resolved concerns raised by this comment. The results of the survey are available in Section 6 of the BDR, Revision 1.
4.	SAP - Sec 8, Surface Water Quality	Hydrology	References used in the response to comment 5. From MMD, on page 40 in regards to sample location, number of samples, field protocols being determined using protocols and techniques used by the USGS for the NWQAP (National Water Quality Assessment Program) may not be completely suitable for this purpose since sampling includes radiologic parameters which may require other considerations and protocols.
	RHR Response		The field protocols and sampling guidelines used by the USGS for the NWQAP are detailed in the 2008 USGS publication "National Field Manual for Collection of Water Quality Data." The manual is Book 9 of the USGS's TWRI (Techniques for Water Resource Investigations) series. The manual covers collection and processing of all constituents potentially present in water, including radiometrics.
5.	SAP - Sec 8, Surface Water Quality	Hydrology	Characterization of stream reaches by only perennial, intermittent, and ephemeral does not capture the full diversity of these stream systems. Morphological parameters should be considered such as Rosgen stream classification methods. This would provide information on how the stream reach would adjust to proposed change to perennial flows.

Agency Review of Strathmore New Mine Permit Application Documents for the Roca Honda Uranium Mine Site Reviewer: Hydrology (Livia Crowley) Review Date: December 14, 2009 Agency: USFS Item# Section/Page Topic Comment (or general) The NMED Draft Hydrologic Protocol includes documentation of the physical nature of the stream reaches as well as flow classification. The protocol documentation and field forms are available from the NMED website. RHR's understanding of the Rosgen stream classification **RHR Response** methods is that they are not designed to provide information regarding how a stream reach would adjust from ephemeral to perennial flow. Rather, they are designed to apply to remediation of already impacted stream systems. 6. SAP - Sec 8. Hydrology Sediments should be analyzed in regards to size so that information is available on the Surface Water distribution of parameters by size class. This is important since streams transport and sort Quality sediments by size. The finest particles are transported the farthest and most easily. Larger sediment collects in bends and on bars. Additional sediment sampling will be performed in 2011 to further the baseline data of San Mateo Creek and grain size determination will be included. Work Plan #3, prepared in **RHR Response** response to a Request for Work Plans from the GWQB of the NMED, dated July 27, 2010, a copy of which has been provided to USFS, provided details of this proposed work. 7. SAP - Sec 8. Drainage profiles should include cross sections at representative reaches as determined by an Hydrology Surface Water appropriate stream typing classification system such as Rosgen's method. Not just engineering Quality methods. (section 8.5.1.8) Rosgen's methods are not appropriate for RHR's baseline characterization analysis. Rosgen's method involves using "engineering methods;" i.e., measurements of stream morphological and physical characteristics, to place a stream in a particular classification for purposes of determining how that stream should be "restored" to its "natural" state. The purpose of **RHR** Response developing cross sections of the channel of San Mateo Creek would be to identify sections of the creek which might be vulnerable to erosion or degradation if treated mine water were discharged, so that engineering solutions could be devised pre-discharge to prevent the

damage from occurring.

Reviewer: Hydrology (Livia Crowley) Review Date: December 14, 2009 Agency: USFS Item# Section/Page Topic Comment (or general) 8. SAP - Sec 8. Spring data should include basic characteristics of springs including type of spring, morphology, Hydrology Surface Water and discharge in addition to water quality data. Quality Field work to date is described in Section 8.3 of the BDR, Revision 1. The springs were RHR Response determined to be very small and have insufficient flow for measurement. 9. SAP - Sec 8. Hydrology Sampling of runoff water should also be completed in the ephemeral watercourse draining the Surface Water project area. Quality RHR plans to install a stream gage in San Mateo Creek in 2011. Sampling an ephemeral watercourse is very difficult as a practical matter because, by definition, its flows largely in **RHR** Response response to precipitation. Every effort is made to develop as much baseline data as possible, within reason. 10. SAP - Sec 9, Please discuss the relevance of the Fernandez Monocline which crosses the project area. Hydrology Groundwater, General Insufficient data are available to determine the relevance of the Fernandez Monocline. Brod (1981) speculated the San Mateo dome (another term for the Fernandez Monocline) and associated San Mateo fault defined a regional groundwater divide. He considered that it is possible that the monocline acts as a barrier to groundwater flow and that groundwater RHR Response within the aquifers stagnates across the crest of the monocline. Brod cited the high values of TDS found in groundwater at the crest of the dome as evidence of little movement of groundwater and as support of his theory. However, groundwater sampled from RHR wells drilled in the Westwater Canyon Member had low TDS. 11 SAP - Sec 9. Hydrology Groundwater sampling and site monitoring should include the vadose zone perhaps through the Groundwater, use of lysimeters. General

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	RHR Response		RHR has developed a plan involving vadose zone monitoring in the area of the evaporation ponds. Work Plan #1, prepared in response to a Request for Work Plans from the GWQB of the NMED, dated July 27, 2010, also submitted to USFS, details this proposed plan. Preliminary work indicates that within the Permit Area, the first aquifer is 500 hundred feet below land surface in Section 16 and 75 to 150 feet below land surface in Section 10.
12.	SAP - Sec 9, Groundwater, General	Hydrology	Water level monitoring should be done more continuously than quarterly. Water level data collectors are not expensive or hard to use. Sample frequency should utilize the water level data to capture the variability to see if there is a relationship.
	RHR Response		The wells available for water level monitoring are the three RHR wells on Section 16. Data collected over the last two years indicate that the potentiometric heads measured in these wells respond to barometric pressure changes, but are otherwise stable. Water chemistry in these wells has also been relatively stable; it would not be possible to separate out variation in laboratory analyses from changes in chemistry due to another small effect. RHR believes that to monitor more frequently than quarterly would add nothing to the statistical validity of the database.
13.	SAP - Sec 9, Groundwater, Fig 9-7	Maps/figures	Figure 9-7 is not of sufficient detail to see where proposed sample locations are located.
	RHR Response		Figure 9-7 of the SAP does not show proposed sampling locations, but rather the locations of wells that might be utilized for aquifer tests. As is noted on Table 9-13, the locations of the alluvial wells had not yet been determined at the time the SAP was submitted. Work Plan #1, prepared in response to a Request for Work Plans from the GWQB of the NMED, dated July 27, 2010, also submitted to USFS, provides details as to the locations of the proposed monitor wells.
14.	SAP - Sec 10, Radiological Survey, Fig 10-1	Maps/figures	What constitutes a steep slope? Map (figure 10-1) is not of sufficient detail.

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	RHR Response		A steep slope assessment was made in the field by survey crews based on their ability to safely traverse the surface. A steep slope is any surface that cannot be safely traversed by personnel capable of reasonably rigorous hiking, including such terrain as cliff edges, open excavations, impassible brush & trees, and potential cave-in hazards. Personnel safety is first priority, and employees will cover only as much ground as they can do so safely. Please note that the radiological baseline survey was completed in the summer of 2010. The results of the survey are available in Section 13 of the BDR, Revision 1.
15.	SAP - Sec 10, Radiological Survey, General	Radiological	Soils samples will be taken from typical areas. What are 'typical' areas? Please define.
	RHR Response		In the context of the SAP, soil samples collected from areas that are "typical" of the site and analyzed for radionuclides and heavy metals to establish "background," are samples collected from land surfaces and soil types that exhibit the essential characteristics of the land areas being surveyed. This assessment was made in the field during the radiological survey and upon reviewing the gamma walkover data as it was generated. Typical soil types found at the site were sampled that represented the general, average, gamma radiation conditions at the site. The results of the radiological survey are presented in Section 13 of the BDR, Revision 1.
16.	SAP - Sec 10, Radiological Survey, General	Radiological	How is this date used to determine the background? From the highest samples? The lowest? Is there a range?
	RHR Response		There are several ways to determine "background," or existing conditions but the simplest method is to sum all the data and divide by the number of measurements taken. Additional statistical analysis provides the standard deviation information (sigma ranges) about this average. For multi-modal distributions, background may be developed for each distinct data set or the upper data sets may be redacted from the overall data set to provide a clean, lower end, or background data set.

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			lower "background" end of the data s surfaces). These minor variances are givariance indicative of uranium ore beau have an average background that is 20 comparison to the difference exhibite data and in the gamma drawings develonda permit area, samples were coll average background to determine "ba	bus methods (e.g., bi-modal distributions may exist at to spectrum that may be indicative of rock rather than so e generally of no significance in comparison with the earing material. As an example; rock, on average, may 20% higher than soil, but this difference is insignificant ted by ore bearing material. Ore will be clearly visible it veloped (10s of sigma above background). For the Roca ollected from areas that were well within 1 sigma of background", or existing condition for the area. The presented in Section 13 of the BDR, Revision 1.

Reviewe	r: Wildlife		Po	view Date: January 4, 2010
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1.	SAP - Gener al	Wildlife	concern, notation should be made of "F	or District; along with the table listing species of orest Service Sensitive Species". Roca Honda's itive species. If not I can provide a FS wildlife contact.
	RHR Response		A table of Forest Service Sensitive Spec 5, Appendix C.	ies has been inserted into the BDR, Revision 1, Section

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1.	SAP & comm responses - Sec 4, Veg, Fig 4.3	Vegetation	The revised SAP states that a minir should be an adequate number of statistical sufficiency.	The revised SAP states that a minimum 15 transects per vegetation type will be utilized. This should be an adequate number of transects, however Strathmore should provide an analysis of statistical sufficiency.	
	RHR Response		woodland 21 and in shrub grasslar was adequate to achieve a 90% co was the true mean of the populati	lines surveyed) in Juniper savanna were 28, in piñon juniper nd 12. For each vegetation type, the number of samples onfidence level that the measured total vegetation cover ion. A detailed statistical analysis of sample adequacy can 1.3.2.2, Descriptions of Vegetation Cover and Mapping on 1.	
2.	SAP & comm responses - Sec 4, Veg, Fig 4.3	Vegetation	The response to comments also classifier the wildlife studies, and not for the Mining Act Rules to identify a varea is typically an element of the (19.10.6.603), and logic suggests the demonstrate suitability of the se	erifies that the reference areas are meant to serve as control the vegetation data collection. There is no requirement in regetation reference area in the SAP, however a reference reclamation plan portion of a mine permit application hat similar data should be collected simultaneously in order elected location for that purpose. We request that MMD or establishment of a vegetation reference area for measuring	
	RHR Response		vegetation reference area has bee	e based on a reference area standard. A statistically valid n proposed as 137 acres in Section 16. Additional egetation reference area is provided in Appendix 4-C, DR, Revision 1.	
3.	SAP & comm responses - Sec 4.4.2.2, Data Collection and	Vegetation	recorded where multiple species ov cover that precludes double-counti	onfusing. The response states that each species will be verlap, but does not demonstrate a method of calculating ng of cover layers. It also states that basal cover (bare at each point. However a laser monitoring device will	

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	Analysis of Cover		apparently be employed, and layer (the uppermost). NMGF point intercept methodology.	we are not familiar with a laser device that counts more than o requests that Strathmore provide more detail describing their
	RHR Response		light point intercepts a leaf, b if the light from the laser split densely covered areas, and hi is listed as a hit so that the co This was not common but wh species "hit." If the light poin than once. In this way, the ca method is used so that vegeta these results can be presente	im in diameter. Canopy and ground cover is recorded. If the pare ground, rock, or litter, etc., it is recorded as such. However its as it hits the edge of a leaf, as it sometimes does in more its another leaf of a different species, the canopy of both species over of grass, shrubs, and forbs is not underestimated. It happened, it was considered important to record all not splits but hits a leaf of the same species, it is not counted meanopy cover over an area could potentially be over 100%. This lation canopy and species diversity is not underestimated, and d. For statistical calculations, the relative total ground cover octing the dominant (upper) layer.
4.	SAP & comm responses - Sec 4.4.2.2, Data Collection and Analysis of Cover	Vegetation	response states that represent breast height (dbh), and number seen from aerial photos. Dbh aging or describing stand structure "stump height", one foot above photography), and/or height, and/or height.	the age structure of the woodlands on the Roca Honda site, the tative measurements will be taken of tree height, diameter at per of stems. Observations will also be taken of the dimensions is suitable for ponderosa pine, but the standard methods for cture in pinyon-juniper are basal diameter (usually measured at we the ground), canopy projection (such as seen on aerial as correlated with age determined from representative core erence for the validity of measuring number of stems as a metri
	RHR Response		The methods described in the	SAP were used to characterize the age structure of the BDR reported the results and the BDR, Revision 1 reports the

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			following response is provided here only to discuss the validity of the methods used. With regard to vegetation, the baseline data was gathered primarily to prepare a vegetation map. Age structure was not specifically addressed in this initial study. It was suggested that the data collected can be used to imprecisely estimate tree age.
			For example, in a study of piñons near Santa Fe, Little (1987) followed the growth of piñon trees over a 47 year period beginning in 1938 when the trees were between 5 and 6 m tall and reported an average annual height growth of 3 cm and an annual growth at breast height of 0.15cm or 2.5 cm every 16.8 years (Gottfried et al. 1995). Using figures from this and other studies (e.g. those reported by Burns and Honkala 1991), it may be possible to extrapolate thage of the trees from their diameters and heights at the project site.
			Measurements to determine the range of tree sizes within the project site was collected, and tree density will be estimated from the aerial photos. The height and circumference of piñon and ponderosa pine trees within the 10-meter belt transects were measured on the ground along with their UTM coordinates. Because there were relatively few trees along transect lines, the height and circumference of 30 additional piñon and ponderosa pines were also measured to increase the sample size. One method of determining tree size (USDA Forest Service 2007) is by calculating the following:
			Trunk Circumference at breast height + Height + ¼ Average Crown Spread (to be generated from the aerial photos) = an arbitrary but standardized size
			The piñons at the project site are typically single stemmed. Chojnacky (1999) reported that when piñon diameters are measured at the root collar, they cannot be compared to other trees. To make tree sizes standard, he described a method of converting tree diameter at the root collar to diameter at breast height (Chojnacky 1999). Therefore, to standardize the data collected at the site, the same values were collected for both ponderosa pine and piñon since these values can be used to indicate the range of tree sizes at the site.
			It was recognized that juniper trees have to be treated differently because of their multiple

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			stemmed habit and it was planned that estimates of size would be made by using he (measured on the ground along with their UTM coordinates) and canopy cover as me on aerial photos. Only a limited number of stem numbers and their circumferences were measure whether the method of Chojnacky (1997) could be applied in this case. Data collection method was discontinued after only a few trees since it was very time consuming. to relate numbers of stems to biomass have also been made in the past with varyin (i.e., Miller et al. 1981). In regards to providing insight into the ecology of the area et al. (2009) wrote that "Capony fuel continuity is influenced by using he	ed to test on for this Research ng success , Rommie
			etal (2009) wrote that "Canopy fuel continuity is influenced most directly by total adensity, crown width, and crown fullness and continuity between individuals (often tree age and total stand age)." This paper was concerned with disturbance regimes a structure as they relate to landscape dynamics in piñon-juniper vegetation.	related to
			With regard to wildlife, there has been some quantification performed to evaluate the relationship between juniper stem number and bat habitat (e.g. Medlin and Risch 20 Published evidence includes recognition of high bat diversity in p-j woodland compare adjacent higher elevation forest types such as Douglas fir, and a preponderance of reproductively active females in p-j woodland, as related to increased reproductive states a result of using these habitat types (Chung-MacCoubrey 2005; Chung-MacCoubrey 2 This increased success is due to warmer average temperatures during breeding seaso correlated higher abundance of food resources. In addition, there is a recognized associated between bat use in p-j woodland and the quality of woodland, such as low disturband protected-area sites, and stand maturity and heterogeneity (Lacki and Baker 2007; Scand Chambers 2009). Generally bat roosts occupy cracks within trunks of (in decreas order) ponderosa pine, piñon pine, and juniper and site fidelity over repeated breeding seasons is high (Chung-MacCoubrey, 2003).	08). red with uccess as 003). on and a cociation ce or olvesky ing

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5.	SAP & comm responses - Sec 5, Wildlife, Permits	Wildlife	The Response to Agency Comments states that scientific collection permits will be obtained, but we cannot find where the SAP has been revised to reflect this.		
	RHR Response		The only wildlife taken as part of the baseline data collection effort was small mammals. The New Mexico Department of Game and Fish Authorization for Taking can be found in the BDR Revision, Section 5, Appendix 5-C, Figure 25.		
6.	SAP & comm responses - Sec 5, Wildlife, Introduction and Background	Wildlife	Strathmore contends that spotted bat was not a special status species at the time of their survey. Spotted bat has been on the NM Threatened list since 1988 and would have been included on any list of special status species obtained from NMGF. They also contend that gray vireo was included in their survey. Gray vireo is not included in the report which is in our possession. Possibly there may have been an additional special status species survey of which we are not aware; hopefully this situation will become clear when the full set of reports is provided along with the Baseline Data Report. The SAP has been revised to include targeted protocol surveys for state special status species.		
			Spotted bat and grey vireo were not discussed in the SAP submitted in April 2009. They are discussed in the October 2009 SAP. The spotted bat and grey vireo discussions are also included in the BDR, Revision 1.		
			A mist netting bat survey was conducted in the summer of 2008; although bats were captured during the survey, no spotted bats were trapped.		
	RHR Response		There is one unverified report of a gray vireo in Section 16 from September 9, 2006. This species is easily confused with the more common plumbeous vireo. September 9 is an extremely late date for this migratory species to be present this far north in New Mexico. Gray vireos generally vacate the State by mid-August. Also, the site is probably too high in elevation for gray vireo breeding. In central and northwest New Mexico, gray vireos breed locally in open juniper savanna at the base of foothills at elevations between 5500-6300 feet. The lowest part of the Roca Honda site is above 7000 feet. No gray vireos were observed		

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			during extensive breeding bird point count surveys conducted from May 25-June 30, 2008.	
7.	SAP & comm responses - Sec 5, Wildlife, Figure 5-1, Wildlife Habitat Types	Wildlife	Strathmore's response that the information will be included with the Baseline Data Report accompanying their Mining Act permit application is acceptable. Note that these might be considered "special or unique wildlife habitat features" as described in 19.10.6.D(13)(d)(i).	
	RHR Response	the BDR, Revis	The "special and unique" wildlife habitat features are addressed in Section 5, Appendix 5-C of the BDR, Revision 1.	
8.	SAP & comm responses - Sec 5, Wildlife, Sec 5.4.2.3, Field Methodology	Wildlife	Please describe and identify the location of standing water where bat netting will take place, and any other wildlife-available waters on or near the permit area. Due to the potential presence of a number of sensitive and one Threatened bat species, the apparent presence of good roosting habitat (older junipers with dead branches and loose bark and deeply creviced vertical rock faces) and the limited availability of appropriate netting locations, NMGF recommends that netting surveys be supplemented with acoustic inventory techniques.	
			Mist-netting surveys were conducted on three occasions at two localities over 2 seasons which held water and were on public lands. The two survey locations on public lands are provided in Section 5, Appendix 5-C of the BDR, Revision 1.	
	RHR Response		The acoustic inventory techniques recommended by NMDGF involve use of an ANABAT echolocation recorder which has been shown to varying degrees (see Gannon et al. 2003; Ellison et al. 2005) to be an accurate estimator of species diversity at a given site. There are recognized issues with the use of this technology. As such, mist-netting techniques still predominate as the best method to ensure proper identification (see Miller et al. 2003 for a critical review of bat habitat survey techniques).	
9.	SAP & comm responses - Sec	Wildlife	Strathmore responds that survey protocols and sampling locations will be provided in the Baseline Data Report. We believe the intent of requiring "methods of [data] collection" as part	

Agency Review of Strathmore New Mine Permit Application Documents for the Roca Honda Uranium Mine Site Reviewer: Review Date: November 30, 2009 Agency: NM Department of Game and Fish Item# Section/Page Topic Comment (or general) 5, Wildlife, Fig of an SAP (19.10.6.D(12)(a)(iii)), was to allow agency confirmation that the methods would be 5-2. Wildlife sufficient to meet the reporting requirements of 19.10.6.E (d) regarding the Baseline Data Survey and Report. In the absence of detailed information regarding methodology, NMGF is unable to Transect make that determination. Locations This information was provided in the October 2009 BDR, Section 5, Appendix 5-C and RHR Response repeated in the BDR, Revision 1. 10. SAP & comm Wildlife In addition to bat acoustic surveys, we also recommend that a survey for raptor nests in suitable responses - Sec habitat within one mile of any proposed mine facilities should be added to the SAP. 5, Wildlife, Fig. 5-2. Wildlife Survey and Transect Locations Raptor specific surveys were conducted in the Permit Area, plus a one-mile line of sight. Five RHR Response raptor species and three active raptor nests were found during these surveys. Further details are provided in Appendix 5-A and Appendix 5-B of the BDR, Revision 1.

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1.	SAP - General Vegetation	Vegetation	I have reviewed the material for Roca Honda, primarily the State's comments. I concur with all of the statements. I would like to add on page 25 of the State's comments Items # 6 and 8 tha "There should be at least one enclosure site identified as the reference area for vegetation, no just wildlife. This area should be identified in cooperation by Forest Service Specialist and Strathmore and approved by the Forest Service. The area should be the best site that represents desired condition for reclamation of the site."		
	RHR Response		A statistically valid vegetation reference area has been proposed as 137 acres in Section 16. Additional information regarding potential vegetation reference area is provided in Section 4, Appendix 4-C of the BDR, Revision 1.		