



STATE OF NEVADA

Department of Conservation & Natural Resources

DIVISION OF ENVIRONMENTAL PROTECTION

Brian Sandoval, Governor

Leo M. Drozdoff, P.E., Director

Colleen Cripps, Ph.D., Administrator

NOTICE OF DECISION – Bureau of Mining Regulation and Reclamation

Web posting: 09/19/2011

Deadline for appeal: 09/29/2011

**Gold Hill Project
Permit #NEV2010110**

**Round Mountain Gold Corporation
PO Box 480
Round Mountain, NV 89045**

The Nevada Division of Environmental Protection (the Division) has decided to issue Water Pollution Control Permit NEV2010110 (the Permit) to Round Mountain Gold Corporation (RMGC). This Permit authorizes the construction, operation, and closure of approved mining facilities in Nye County. The Division has been provided with sufficient information, in accordance with Nevada Administrative Code (NAC) 445A.350 through NAC 445A.447, to assure the Division that the waters of the State will not be degraded by this operation, and that public safety and health will be protected.

The Permit will become effective October 4, 2011. The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to Nevada Revised Statute (NRS) 445A.605 and NAC 445A.407. All requests for appeals must be filed by 5:00 PM, September 29, 2011, on Form 3, with the State Environmental Commission, 901 South Stewart Street, Suite 4001, Carson City, Nevada 89701-5249. For more information, contact Rob Kuczynski, P.E. at (775) 687-9441 or visit the Division's Bureau of Mining Regulation website at www.ndep.nv.gov/bmrr/bmrr01.htm

Comments were received from Mr. Bradley Berthold of Manhattan, NV (letter received August 8, 2011), Mr. Paul Rupp of Silver Peak, NV (FAX received August 12, 2011, hard copy received August 15, 2011), and Mr. John Hadder, Staff Scientist, Great Basin Resource Watch (GBRW) (FAX and E-mail received August 20, 2011).

Division responses to their comments are attached to this Notice of Decision. The Division acknowledges the assistance of RMGC environmental staff in preparing these responses.

Mr. Berthold's Comments: "...I am concerned about the suitability of another large scale open pit operation in the Smoky Valley."..."I question whether opening another massive open

pit...is an environmentally sound decision.”...“I am skeptical of RMGC's ability to restore the topography of its current [Smoky Valley Common Operation] mine site.”...“[T]he leach pads can be reseeded, the actual pit poses a problem”...“I doubt that RMGC will find it economically feasible to 'reclaim' the actual pit site.”...“Echo Bay Minerals walked away from their open pit operation here leaving a massive hole with a toxic lake at the bottom.”...“I sense that the Round Mountain operation will end much the same way.”...“I believe an open pit operation will seriously mar the overall landscape picture of the Smoky Valley.”...“The current operation has already irrevocably altered the landscape in a less than natural manner.”...“The proposed Gold Hill site would fall right under Mt. Jefferson, one of the signature peaks of the Toiyama Mountain Range.”...“I hope that the Nevada Bureau of Mining Regulation and Reclamation will seriously examine and debate the environmental good sense of the Gold Hill proposal.”

Division Response: *The Division acknowledges that a pit lake is expected to form based on the current mine plan, however the pit lake will not degrade waters of the State.*

Mr. Rupp's Comments: “[RMGC] personnel, Mine Safety Health Administration (MSHA), Nevada Mine Safety and Training Section [NVMSTS] continue to cover-up [RMGC] employee safety, health, harassment[,] **VIOLATIONS** [Mr. Rupp's emphasis added] and manufactured false records on file, promoting-practicing law without a Nevada Law License, violation(s) of privileged federal license ... reported racism formal complaints.”

“RMGC...can NOT [Mr. Rupp's emphasis added] be trusted to follow their own published policies as shown by actively harassing employees.”...“MSHA, NV Mine Safety and Training Section **REFUSE** to investigate timely valid formal complaints placed on the on **Record** and continue working harder to protect state's and corporate interest's” [Mr. Rupp's emphasis added], failing to protect the “health and safety of Nevada's working shift miner's”... ***so how can these same greedy lawbreakers be trusted with Nevada's most precious resource WATER???*** [Mr. Rupp's emphasis added]”

Division Response: *Personnel issues, grievances, and health and safety concerns are not the purview of this Permit.*

GBRW Comments #1: “Our principle concern is that the Gold Hill Project (Project) will degrade “waters of the State.”...“The analysis in the FEIS [Final Environmental Impact Statement] shows that the Gold Hill Pit Lake [Pit Lake] is expected to become degraded water in fluoride, sulfate, antimony, manganese, arsenic, and TDS.”...“The pit lake modeling assumed groundwater input using data from well GHB-03-4, which is only elevated in antimony at 0.03 mg/L and manganese at 0.20 mg/L and this groundwater then becomes degraded as the pit lake forms and reaches its equilibrium level.”...“[T]he lake will continue to evapoconcentrate, resulting in gradually increasing concentrations of solutes.”

“In addition to the creation of a degraded surface water lake, there is also the potential to degrade groundwater.”...“When the pit lake approaches its final elevation, about 200 years after cessation of mining, the pit lake could become a flow-through pit lake...GBRW urges the NDEP to take a stronger position to assure that the groundwaters of the state are not degraded as a

result of this flow-through process.”...“In our [GBRW] view the only way to prevent water degradation in the pit lake and to the groundwater...water table, would be a carefully implemented backfill plan.”...“GBRW would like to see as part of this permit’s schedule of compliance a requirement that RMG develop a backfill plan to be evaluated by the bureau and subject to public review that will examine the methodology and feasibility of a backfilling procedure.”

“NAC 445A.429...requires that [the Permittee] must institute appropriate procedures to ensure that all mined areas do not release contaminants that have the potential to degrade the waters of the State.”...“The statute also requires...bodies of water which are a result of mine pits penetrating the water table [pit lakes]..not have the *potential* [GBRW emphasis added] to degrade the groundwaters of the State...or... the *potential* [GBRW emphasis added] to affect adversely the health of human, terrestrial or avian life (GBRW emphasis added)”....“GBRW requests that NDEP explain on what basis this is satisfied.”...“[T]he Gold Hill pit lake has the potential to adversely the health of human, terrestrial or avian life,” and degrade groundwater by inflow.”

Division Response: *Water quality impacts associated with the Pit Lake were evaluated based on NAC 445A.429(3) which provides that such bodies of water will not have the potential to degrade the groundwaters of the State, or the potential to affect adversely the health of human, terrestrial or avian life. Based on the geologic information and the hydrologic modeling included with the application submittal, together with the ecological risk assessment, the Division has determined that the regulatory requirements will be met. Water quality standards are not applicable to the waters in the pit lake.*

While it is not expected that the waters of the State will be degraded by the pit lake, additional monitoring may be warranted to confirm this. The monitoring network will be reevaluated to determine the impact of drawdown on the alluvial and bedrock aquifers due to dewatering, provide additional geological and hydrological structure data, and determine the potential of a post-mining flow-through pit lake after the pit lake elevation reaches steady-state. The Division will continue to evaluate the monitoring data throughout the life of the Project including the post-mining stage to further understand the groundwater and surface water and any potential impacts to waters of the State. Based on further monitoring and evaluation, additional mitigation measures currently proposed by RMGC can be implemented if conditions warrant.

GBRW Comment #2: “GBRW does not see the existing monitoring as sufficient even if backfilling is not done.”...“The...Pit Lake would be a sink with a final elevation five to ten feet below the alluvium on the west side of the pit. That is a very low margin of error; slight differences in the inflow rate or the evaporation rate could cause the final level to be within the level of the alluvium into which some pit lake water could discharge.”

“Because of the poor quality of the expected pit lake, it is essential that RMG[C] and the Division establish plans now for accurately modeling the pit lake near closure and for mitigating the potential impacts.”...“Because the predictions are highly uncertain...there are equal chances the ultimate concentrations will be higher than lower than those predicted and that the time at which

concentrations will exceed standards will be shorter as longer than predicted.”...“The uncertainty includes the inability to model preferential flow, especially through bedrock fractures or areas that would cause higher inflow concentrations than one upgradient well would represent.”

“The FEIS also shows the uncertainty in the pit lake modeling by demonstrating that the final stage in the pit lake could range from 5922 to 6000 feet, after 200 years. The water level differences depend on the rate of inflow to the pit. The actual variability may be more or less, and because of the potential poor water quality, an accurate prediction prior to closure is essential.”

“The FEIS mentions that monitoring will be critical. It also notes that additional mitigation and bonding could be required and implemented at any time based on the results of “further monitoring and evaluation” regarding the gradient of groundwater and potential for inflow to the pit lake as it forms.”

“Monitoring during the pit development should include the collection of data to improve groundwater and pit lake quality modeling so that the long-term quality predictions for the pit can be improved as closure draws near.”

Division Response: *Refer to the Division Response to Comment #1. GBRW comments related to the May 24, 2010 Round Mountain Expansion Project (RMX), Final Environmental Impact Statement (FEIS) is not the purview of WPCP NEV2010110. It should be noted that the FEIS was developed as part of the Federal National Environmental Policy Act process, which is separate and distinct from the State regulatory process.*

GBRW Comment #3: *“All, but one, bedrock monitoring wells [sic] will be removed by pit construction, including GHB-03-4 used for the pit lake water quality estimation.”...“The monitoring will...not include the inflow to the pit lake, as is necessary if the pit lake model is to be accurately updated prior to closure.”...“NDEP [Division] should require that RMG install three upgradient wells in the bedrock to monitor the water quality for the pit lake.”*

Division Response: *The Division has evaluated the dewatering well locations proposed by RMGC in the Permit application and their suitability to monitor the expected chemical composition of the bulk of the water inflow into the pit lake.*

The response of the groundwater system to dewatering and the collection and water quality of any water in mine sumps will be closely monitored during mining. RMGC will install additional monitoring wells should water quality monitoring results dictate the need.

GBRW Comment #4: *“Dewatering wells are not a substitute for dedicated bedrock monitoring wells because the sample may not be representative of the background water quality.”...“The flushing may cause some parameters to be higher or lower than background.”...“[T]he pumping may draw from a particular fracture zone such that that zone is overrepresented in a sample.”*

Division Response: *Dewatering wells target the primary conductive lithologic units in the vicinity of the pit. These same units will provide the majority of the water that flows to the pit during formation of the pit lake, making them the most representative locations for assessing background groundwater chemical compositions. Inducing a flow through the conductive units will result in an integration of water compositions for water sources entering the conductive unit. Monitoring of this integrated composition in the dewatering wells is the best approach for characterizing the chemical compositions of the lithologic units that will provide the bulk of the water to the pit lake.*

GBRW Comment #5: “The geology around the pit is complicated and the degree of hydraulic connection among the formations is in question.”...“The fact that alluvial and bedrock water are both sodium calcium-bicarbonate suggests there is a general connection.”...“Monitoring should be established to determine how the water levels in each formation respond to what is essentially a long-term pump test with a large-diameter well.”...“This information would be used to calibrate a detailed flow model near the pit.”

Division Response: *All of the water in the vicinity of Gold Hill and the Round Mountain Mine could be classified as sodium-calcium-bicarbonate compositions; therefore, using major element composition as an indication of hydraulic connectivity is unlikely to produce meaningful interpretations. The response of the groundwater system to dewatering and the collection of any water in mine sumps will be closely monitored during mining because these are critical operational components for maintaining safe conditions. We agree that these types of monitoring data from the dewatering systems will be useful for improving the water balance incorporated in the pit lake hydrochemical model.*

GBRW Comment #6: “Most alluvial wells are downgradient of the pit. There may be a sufficient number of these if and only if they do not go dry due to dewatering. The permit should require that wells be deepened or replaced if they go dry.”

Division Response: *Comment noted.*

GBRW Comment #7: “There should also be at least three bedrock wells downgradient of the pit...[to] monitor whether the chemistry changes as the water level drops.”...“Changing chemistry may establish where the alluvium drains into the bedrock, including the volcanics, west of the pit.”

Division Response: *Predictive hydrologic modeling results indicate that the pit lake will be a terminal hydrologic sink with all groundwater flow to the pit lake. As a result, the pit lake water will not impact groundwater quality in the surrounding bedrock or alluvium.*

As mining and dewatering progresses, RMGC’s understanding of pit lake behavior will improve. Based on the hydrological data generated, the Division may require the installation of downgradient monitoring wells. The Division concurs with RMGC’s assessment that it is premature to require monitoring wells at this point in time when available hydrologic information indicates they would not provide useful information.

Furthermore, Schedule of Compliance item I.B.4 states the following:

“Each application for renewal of this Permit, or any application for modification of the Permit which incorporates a change that could affect the pit lake model, must be accompanied by an updated version of the Gold Hill Project pit lake water quality and ecological risk assessment studies. These updates shall include, but not be limited to: all new data developed during the period elapsed since the previous submittal; an updated model of the most likely scenario or alternative; and, as applicable, revised conclusions and recommendations based on current Nevada Administrative Code and best engineering and scientific principles and practices.”

GBRW Comment #8: The monitoring plan should include a requirement that RMG[C] report the presence of seeps which may form in the pit wall. They should also estimate the flow and sample the water, if it can be done safely.

Division Response: *Comment noted.*

GBRW Comment #9: “RMGC’s ABA testing is curious. They tested 72 samples of rhyolite tuff, more than the highly acid-producing Mt. Jefferson tuff, when it makes up just 3% of the future waste rock.”...

“Did RMGC expect the rhyolite tuff to produce acid? This sampling causes Table 14 to be very misleading...the table claims that 69% of the samples are “classified as NAG” for NP:AP, which is correct but misleading.”...“RMGC should have sampled the waste rock so that rock type was approximately representative of the amount of rock present so that the table would represent future water [sic] rock dumps.”

Division Response: *Table 3.3-14 presents a summary of the ABA testing for the Gold Hill Project waste rock. This table shows that 75 percent of the Mt. Jefferson Tuff is potentially acid generating (PAG) based on 71 samples characterized.*

GBRW Comment #10: “Appendix B shows the overall waste rock may be much more acid-producing than would be gleaned from reading the discussion. Fifty-nine of the Mt. Jefferson tuff samples have NNP less than -10, therefore the acid producing potential exceeds the neutralizing potential by at least 10 kg/CaCO₃/ton.”...“RMGC acknowledges the low NNP “can be attributed to a relative lack of carbonate and an **overall deficit in neutralizing capacity** [emphasis added by GBRW] in the Gold Hill system.”....“Taken as a whole the site has the potential to be significantly acid generating with pockets of very PAG rock. Acid generated anywhere within the waste rock will flow through the system without being neutralized, a fact which accentuates the importance of the capping.”

Division Response: *The proposed alluvial cover for the GHP Waste Rock Dump (WRD) is designed to prevent infiltration of precipitation. The effectiveness of this cover will be evaluated with a pilot test of at least five years in duration. The Division will reevaluate the cover design*

after the field test and make required adjustments to the thickness of the cap to ensure that water does not infiltrate the WRD.

GBRW Comment #11. “Figure 3.3-28 shows a major section of the proposed Gold Hill pit was not sampled for geochemistry. At least a fifth of the pit on the east end has no sample points. This would be unacceptable in a pit expected to be mostly neutralizing rock, but in a pit for which the PAG rock exceeds NAG rock by 50%, it is a glaring deficiency in the data collection.”...

“The DEIS should be withdrawn until additional data, as necessary to adequately define the acid-producing characteristics of the waste rock, can be collected. This is especially important because a primary waste management strategy is to encase the PAG rock in 20-feet of NAG rock.”...“Because the DEIS does not have data from so much of the pit, there is a huge uncertainty around whether there will be sufficient rock to carry out the plans. There is also a huge uncertainty around the amount of PAG actually present in the proposed pit.”

Division Response: *Table 3.3-14 shows that 71 samples were taken from the Mt. Jefferson Tuff, which is located in the east end of the proposed pit area and that the Mt. Jefferson Tuff is PAG. This is sufficient to demonstrate the expected acid generating nature of the Mt. Jefferson Tuff.*

GBRW comments related to the September 29, 2009 RMX, Draft Environmental Impact Statement (DEIS) are not the purview of WPCP NEV2010110.

GBRW Comment #12: “RMGC will rely on 20 feet of alluvium [note: GBRW is referring to NAG rock] to prevent seepage from reaching the PAG rock and forming AMD.”...“[The] one-dimensional model of infiltration through the liner has too many assumptions and ignores too many things to be accurate. Their conclusion [is] that based on a variety of “realistic combinations of material properties and vegetation distribution, infiltration through an alluvium cover down to a depth greater than 2 ft is likely to be negligible” [and] is unlikely to be correct. They rely on various sensitivity analyses with changed hydraulic properties and climate properties to reach the conclusion.”

“Two huge assumptions inherent in the modeling may render the results incorrect.”...“The first is the model was one-dimensional...the model effectively considers a column with infiltration entering at the top, evapotranspiration leaving the top, water being stored in the model layers, and seepage exiting at the bottom. Infiltration is the difference between precipitation and runoff...spread[ing] storm events over a day rather than considering more intense storms.”...

“In reality, runoff flows downstream where it may infiltrate.”...“Most infiltration likely occurs due to runoff collecting or ponding at low points or flowing through the small drainages which will form on top of the waste rock dump.”...“Ponding...could cause the effective infiltration over small areas to be many times the average annual precipitation.”...“The BLM [and the Division] should require RMGC to reconsider this modeling in three dimensions with runoff routing and an allowance for ponding and channel formation.”

“The second assumption is the infiltration will flow vertically through the waste rock in a wetting front.”...“The reality is there will be zones of preferential flow due to seepage around embedded rocks which will erode smaller particles and enlarge the pathway.”...“NDEP should not rely on the model results of the cover system to prevent AMD, and require a better water balance cap that can accommodate runoff to prevent AMD.”

Division Response: *RMGC has committed to performing a five-year field pilot test of the proposed alluvial cover for the GHP WRD. Following the completion of the five-year field test, the potential for infiltration of precipitation will be evaluated by the Division and adjustments will be made to the cover design on an as-needed basis to ensure that water will not infiltrate into the underlying PAG waste rock.*