NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

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MEMORANDUM

DATE: August 12, 2010

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

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

RE: Comments on Laramide Resources (USA) Inc., La Jara Mesa Mine, Sampling and Analysis Plan, Permit no. CI008RN

The New Mexico Environment Department (NMED) received correspondence from the Mining and Minerals Division (MMD) on July 13, 2010 requesting NMED review and provide comments on the Sampling and Analysis Plan (SAP) referenced above. MMD requested comments be submitted within 30 days of receipt in accordance with the New Mexico Mining Act Requirements. The NMED Surface Water Quality Bureau (SWQB) and Ground Water Quality Bureau (GWQB) have submitted comments in this memorandum jointly.

NMED SWQB Comments:

The SAP describes using siphon samplers as a contingency if ephemeral channels are not running. These samples must be identified, including in any data comparisons also involving ambient grab samples. Laramide Resources should attempt to identify the date and approximate time when the siphon samplers are filled, to estimate the time before sample preservation.

NMED GWQB Comments:

Section 7, Orebody and Geology

In Section 7.2 it is stated that characterization of waste rock will be done in such a manner that "The number of samples of each unit is proportional to the expected volumes in the piles." A review of Table 7-1 indicates that over half the material (151,900 yd^3) will be derived from the Westwater Canyon Member. The number of samples proposed for the Westewater Canyon Member is five, the same number as that proposed for the Bluff Sandstone which will represent half as much waste rock material (86,600 yd^3) as the Westwater Canyon Member volume. Given the high volume of

Westwater Canyon Member waste material being brought to the surface and the greater potential for contaminants within the Westewater Canyon Member relative to the other formation material brought to the surface, NMED recommends a much greater frequency of sampling this material. Further, it is indicated in Section 7.2.1 that a geologist will study core samples obtained during exploration and "...evaluate the core samples for uniformity and select sections that are representative of the formation". It is unclear how this will result in a selection of samples that represent any spatial variability that may be encountered during the excavation of inclines over 5000' in length.

Further sampling and analysis is likely to be required during operations to characterize material as it is brought to the surface. Analytical requirements may include analysis such as EPA Method 1312 (SPLP) to determine the potential for leaching of metals. Although sampling of core will be representative of the material encountered during exploration activities, it is unclear if the existing core will be representative of the actual material removed during excavation of the inclines and escape raise, and during mine development.

Section 8, Surface Water

Section 8.0: At the bottom of the second paragraph it is stated that "Additional minor surface water features are located in the vicinity of the proposed mine site, including...and springs south/southwest of the site that would not be affected by the proposed activities..." Section 8.2.4 mentions that springs located within several miles of the proposed activity are located "...outside of the La Jara Mesa site drainage basin". No discussion is provided regarding the possible aquifer source or pathway of the water being discharged from the springs nor the associated recharge areas for the springs. As such it is unclear how the determination has been made by the applicant that the proposed activities will not affect these springs. NMED recommends that the water within these springs be sampled on a quarterly basis for one year at a minimum to establish background conditions as required under the New Mexico Mining Act. Further investigation regarding the source and recharge areas for these springs may be necessary.

Section 9, Ground Water

In Section 9.1.2 it is stated that one (1) water sample will be collected from the proposed water supply well during the one year baseline period. One data point is inadequate to establish trends and/or variability in water quality over time. NMED recommends quarterly samples be collected during the one year baseline period to establish background conditions as required under the New Mexico Mining Act.

In Section 9.1.1 it is indicated that the hydrogeologic regime of the aquifers within the permit area will be described based on available published sources. In Section 9.1.3 it is indicated that an inventory of wells and springs within a one mile radius of the main facility will be conducted and water levels will be recorded of all existing wells documented through this investigation. No water quality sampling is proposed. NMED recommends that an inventory of wells and spring be based on the results of the hydrogeologic characterization of the area surrounding the proposed facilities and mine, rather than an arbitrary one mile radius from the main facility. Further, any wells or springs inventoried during this investigation should be sampled on a quarterly basis for one year to establish background conditions as required under the New Mexico Mining Act.

Further review and evaluation of the SAP relative to a Ground Water Discharge Permit application may result in additional comments. At this time Laramide Resources has not made any contact with NMED regarding permitting requirements for the La Jara Mesa Mine pursuant to the Water Quality Control Commission Regulations, 20.6.2 NMAC.

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

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