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**FAX MESSAGE**

**DATE:** July 10, 2001  
**TO:** Dave Darby-UDOGM  
**FAX:** (801) 359-3940  
**FROM:** Tom Paluso *Tom*  
**SUBJECT:** Lila MRP Modifications

**NUMBER OF PAGES INCLUDING COVER SHEET: 18**

Attached are the final changes that you wanted made on the Lila MRP. The hard copy will follow in the mail. I believe all of the changes have been made as per your request. A new Plate 7-4 with the additional monitoring points (L-11-G and L-12-G) will also be included in the mailing.

Please call me if you have any questions.

*07/10/01*  
*Madaming*  
*(already copied Dave D.)*

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surface will be prepared. Pocking will be the primary method used to roughen the surface. Pocking consists of imprinting the surface with a pattern of depressions as per Figure 1 in Appendix 5-8. The purpose of these pocks is to capture and retain water (moisture), and provide a cradle for seedlings and other plant materials. Wood fiber mulch will be applied to the reclaimed areas that have been regraded and covered by topsoil or substitute topsoil. (See Appendix 5-8).

*244.300. Rills and gullies, which form in areas that have been regraded and topsoiled and which either:*

**244.300.** Any rills and gullies of an excessive nature, which form on regraded and retopsoiled areas and disrupt the approved postmining land use or cause or contribute to a violation of water quality standards for receiving streams, will be filled, regraded or stabilized. The area will then be reseeded.

*244.310. Disrupt the approved postmining land use or the reestablishment of the vegetative cover, or*

**244.310.** This section has been addressed in 244.300.

*244.320. Cause or contribute to a violation of water quality standards for receiving streams will be filled, regraded, or otherwise stabilized; topsoil will be replaced; and the areas will be reseeded or replanted.*

**244.320.** This section has been addressed in 244.300.

## **250. Performance Standards.**

*251. All topsoil, subsoil and topsoil substitutes or supplements will be removed, maintained and redistributed according to the plan given under R645-301-230 and R645-301-240.*

**251.** All topsoil, subsoil and topsoil substitutes or supplements will be removed, maintained and redistributed according to the plan given under sections 230 and 240.

*252. All stockpiled topsoil, subsoil and topsoil substitutes or supplements will be located, maintained and redistributed according to plans given under R645-301-230 and R645-301-240.*

**252.** All stockpiled topsoil, subsoil and topsoil substitutes or supplements will be located, maintained and redistributed according to plans given under sections 230 and 240.

**Chapter VIII  
VEGETATION**

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or mine related activity. A copy of historical raptor data as well as current survey results are attached as Appendix 3-5.

A one-half mile buffer zone of no disturbance during critical nesting periods will be maintained during that portion of the year that the nest sites are active.

*358.300. Nothing in the R645 Rules will authorize the taking of an endangered or threatened species or a bald or golden eagle, its nest, or any of its eggs in violation of the Endangered Species Act of 1973 or the Bald Eagle Protection Act, as amended, 16 U.S.C. 668 et seq.*

**358.300.** This section is addressed in 358.200.

*358.400. The operator conducting coal mining and reclamation operations will avoid disturbances to, enhance where practicable, restore, or replace, wetlands and riparian vegetation along rivers and streams and bordering ponds and lakes. Coal mining and reclamation operations will avoid disturbances to, enhance where practicable, or restore, habitats of unusually high value for fish and wildlife.*

**358.400.** There are no wetlands and / or riparian areas within the area of potential disturbance.

*358.500. Each operator will, to the extent possible using the best technology currently available:*

**358.500.** Each operator will, to the extent possible using the best technology currently available:

*358.510. Ensure that electric powerlines and other transmission facilities used for, or incidental to, coal mining and reclamation operations on the permit area are designed and constructed to minimize electrocution hazards to raptors, except where the Division determines that such requirements are unnecessary;*

**358.510.** All power and transmission lines will be designed with the best technology available to safeguard raptors.

*358.520. Design fences, overland conveyers, and other potential barriers to permit passage for large mammals, except where the Division determines that such requirements are unnecessary; and*

**358.520.** All structures; fences, conveyors etc., will be designed to allow free movement of

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Table 7-2

Table 7-2						
Water Rights						
Water Right/Owner	cfs	gpm	ac.ft.	Source	Use	Point of Diversion
91-557 Hawkins, Floyd	0	-	0	So. Fork Horse Canyon Creek	Stockwatering	SW 34, T. 15 S., R. 14 E.
91-557 Hawkins, Floyd	0	-	0	So. Fork Horse Canyon Creek	Stockwatering	NE 34, T. 15 S., R. 14 E.
91-1903 State of Utah	0.08	36	0	Spring	Stockwatering	SE 35, T. 15 S., R. 14 E.
*91-148 IPA	0.30	135	0	U. G. Tunnel	Other	NW 3, T. 16 S., R. 14 E.
*91-149 IPA	0.10	45	0	U. G. Tunnel	Other	NW 3, T. 16 S., R. 14 E.
*91-150 IPA	0.10	45	0	U. G. Tunnel	Other	NW 3, T. 16 S., R. 14 E.
*91-4959 IPA	0.00	-	5.00	Redden Spring	Mining	NE 3, T. 16 S., R. 14 E.
91-2616 BLM	0	-	0	Stream	Stockwatering	NW 3, T. 16 S., R. 14 E.
*91-183 IPA	0.8	359	0	Horse Canyon Creek	Domestic, Other	SE 1/4 3, T. 16 S., R. 14 E.
91-185 Minerals Devel. Co.	0.0190	9	0	Well	Domestic, Other	NW 9, T. 16 S., R. 14 E.
91-618 Mont Blackburn	0.0110	5	0	Mont Spring	Stockwatering	NE 11, T. 16 S., R. 14 E.
91-2615 BLM	0	-	0	Stream	Stockwatering	NW 10, T. 16 S., R. 14 E.
91-617 Mont Blackburn	0.0110	5	0	Leslie Spring	Stockwatering	NW 11, T. 16 S., R. 14 E.
91-4650 BLM	0	-	0	Tributary to Flat Wash	Stockwatering, Other	SW 9, T. 16 S., R. 14 E.
*91-399 IPA	0.050	22	0	Unnamed Spring	Mining, Other	SE 12, T. 16 S., R. 14 E.

impacts will be evaluated prior to discharging to any drainage and at least quarterly during pumping to determine what, if any, streamflow alteration is occurring;

- (4) If adverse impacts to the receiving stream are noted, steps will be taken, with Division input and approval, to minimize or eliminate those impacts.

(Also See Appendix 7-3)

*728.334. Ground-water and surface-water availability; and*

### **728.334 Water Availability**

(See Appendix 7-3)

*728.335. Other characteristics as required by the Division; and*

### **728.335 Other Characteristics**

(See Appendix 7-3)

*728.340. Whether the proposed SURFACE COAL MINING AND RECLAMATION ACTIVITY will proximately result in contamination, diminution or interruption of an underground or surface source of water within the proposed permit or adjacent areas which is used for domestic, agricultural, industrial or other legitimate purpose.*

### **728.340 Surface Mining Activity**

N/A - Underground Mine

*728.400. An application for a permit revision will be reviewed by the Division to determine whether a new or updated PHC determination will be required.*

### **728.400 Permit Revision**

To be reviewed by the Division.

*729. Cumulative Hydrologic Impact Assessment (CHIA).*

### **729. Cumulative Hydrologic Impact Assessment (CHIA)**

*729.100. The Division will provide an assessment of the probable cumulative hydrologic impacts of the proposed coal mining and reclamation operation and all anticipated coal mining and reclamation operations upon surface- and ground-water systems in the cumulative impact area. The CHIA will be sufficient to determine, for purposes of permit approval whether the proposed coal mining and reclamation operation has been designed to prevent material damage to the hydrologic balance outside the permit area. The Division may allow the applicant to submit data and analyses relevant to the CHIA with the permit application.*

include analytical results from each sample taken during the approved reporting period. When the analysis of any ground-water sample indicates noncompliance with the permit conditions, then the operator will promptly notify the Division and immediately take the actions provided for in 145 and 731.

*731.213. If an applicant can demonstrate by the use of the PHC determination and other available information that a particular water-bearing stratum in the proposed permit and adjacent areas is not one which serves as an aquifer which significantly ensures the hydrologic balance within the cumulative impact area, then monitoring of that stratum may be waived by the Division;*

### **731.213 Waiver of Monitoring**

N/A - No waiver is requested.

*731.214. Ground-water monitoring will proceed through mining and continue during reclamation until bond release. Consistent with the procedures of R645-303-220 through R645-303-228, the Division may modify the monitoring requirements including the parameters covered and the sampling frequency if the operator demonstrates, using the monitoring data obtained under R645-301-731.214 that:*

### **731.214 Ground-Water Monitoring Duration**

Ground-water monitoring will continue through mining and reclamation until bond release. If the ground water is a discharge strictly from the mining operations, monitoring will continue, or until the ground water source is no longer accessible. Other monitoring will continue until:

*731.214.1. The coal mining and reclamation operation has minimized disturbance to the prevailing hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses and the SURFACE COAL MINING AND RECLAMATION ACTIVITY has protected or replaced the water rights of other users; or*

#### **731.214.1**

"The coal mining and reclamation operation has minimized disturbance to the prevailing hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses"; or,

*731.214.2. Monitoring is no longer necessary to achieve the purposes set forth in the monitoring plan approved under R645-301-731.211.*

#### **731.214.2**

until "Monitoring is no longer necessary to achieve the purposes set forth in the monitoring plan approved under R645-301-731.211."

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The following is a list of proposed monitoring sites:

<u>Station No.</u>	<u>Location</u>	<u>Type</u>
L-1-S	Lila Canyon	Intermittent Stream
L-2-S	Rt. Fork Lila (above mine)	Ephemeral Stream
L-3-S	Lila Canyon Below Mine	Intermittent Stream
L-4-S	Sediment Pond Discharge	UPDES
L-5-G	Mine Water Discharge	UPDES (Groundwater)
L-6-G	Lila Canyon Wash	Spring
L-7-G	Cottonwood Spring	Spring
L-8-G	Unnamed Spring	Spring
L-9-G	Pine Spring	Spring
L-10-G	Williams Draw	Spring
L-11-G	Lila Canyon Wash	Spring
L-12-G	Section 25 Wash	Spring
IPA-1	Little Park Wash	Borehole
IPA-2	Little Park Wash	Borehole
IPA-3	Little Park Wash	Borehole

Locations of all monitoring sites are shown on Plate 7-4 , "Water Monitoring Location Map".

Proposed monitoring methods, parameters and frequencies are described in Table 7-3, "Water Monitoring Stations", Table 7-4, "Surface Water Monitoring Parameters", and Table 7-5 "Ground Water Monitoring Parameters".

Monitoring reports will be submitted to the Division at least every 3 months, within 30 days following the end of each quarter.

*731.221. The permit application will include a surface-water monitoring plan based upon the PHC determination required under R645-301-726 and the analysis of all baseline hydrologic, geologic and other information in the permit application. The plan will provide for the monitoring of parameters that relate to the suitability of the surface water for current and approved postmining land uses and to the objectives for protection of the hydrologic balance as set forth in R645-301-731 as well as the effluent limitations found in R645-301-751;*

#### 731.221 Surface-Water Monitoring Plan

The proposed surface-water monitoring plan is detailed in Section 731.220. This plan is based on PHC determination and analysis of all baseline hydrologic, geologic and other information in this permit application. The plan provides for monitoring of parameters that relate to the suitability of the surface water for current and approved postmining land uses and to the objectives for protection of the hydrologic balance as set forth in 751 (see Table 7-4).

<b>Lila Canyon Mine Surface Monitoring Parameters Operational and Post Mining</b>						
<b>Site L-1-S</b>	<b>July 24, 2000</b>	<b>November 28, 2000</b>	<b>February 7, 2001</b>	<b>June 6, 2001</b>	<b>July 3, 2001</b>	
<b>Field Measurements</b>						
Water Level or Flow, Depth, Flow	No Flow	No Flow	No Flow	No Flow	No Flow	
pH, standard units	0	0	0	0	0	
Specific Conductivity, umhos.cm @ 25 °C	0	0	0	0	0	
Temperature, °C	0	0	0	0	0	
Dissolved Oxygen, mg/l	0	0	0	0	0	
<b>Laboratory Measurements</b>						
Total Dissolved Solids, mg/l	n/a	n/a	n/a	n/a	n/a	
Total Settleable Solids, (UPDES)	n/a	n/a	n/a	n/a	n/a	
Total Suspended Solids, mg/l	n/a	n/a	n/a	n/a	n/a	
Total Hardness (CaCO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Total Alkalinity, mg/l	n/a	n/a	n/a	n/a	n/a	
Carbonate (CO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Bicarbonate (HCO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Calcium (Ca) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Chloride (Cl), mg/l	n/a	n/a	n/a	n/a	n/a	
Iron (Fe) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Iron (Fe) (Total), mg/l	n/a	n/a	n/a	n/a	n/a	
Magnesium (Mg) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Manganese (Mn) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Manganese (Mn) (Total), mg/l	n/a	n/a	n/a	n/a	n/a	
Potassium (K) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Sodium (Na) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Sulfate (SO <sub>4</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Oil and Grease, mg/l	n/a	n/a	n/a	n/a	n/a	
Cations, meq/l	n/a	n/a	n/a	n/a	n/a	
Anions, meq/l	n/a	n/a	n/a	n/a	n/a	

n/a not available

**LHa Canyon Mine  
Surface Monitoring Parameters  
Operational and Post Mining**

<b>Site L-2-S Field Measurements</b>	July 24, 2000	November 28, 2000	February 7, 2001	June 6, 2001	July 3, 2001	
Water Level or Flow, Depth, Flow	No Flow	No Flow	No Flow	No Flow	No Flow	
pH, standard units	0	0	0	0	0	
Specific Conductivity, umhos.cm @ 25 °C	0	0	0	0	0	
Temperature, °C	0	0	0	0	0	
Dissolved Oxygen, mg/l	0	0	0	0	0	
<b>Laboratory Measurements</b>						
Total Dissolved Solids, mg/l	n/a	n/a	n/a	n/a	n/a	
Total Settleable Solids, (UPDES)	n/a	n/a	n/a	n/a	n/a	
Total Suspended Solids, mg/l	n/a	n/a	n/a	n/a	n/a	
Total Hardness (CaCO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Total Alkalinity, mg/l	n/a	n/a	n/a	n/a	n/a	
Carbonate (CO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Bicarbonate (HC <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Calcium (Ca) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Chloride (Cl), mg/l	n/a	n/a	n/a	n/a	n/a	
Iron (Fe) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Iron (Fe) (Total), mg/l	n/a	n/a	n/a	n/a	n/a	
Magnesium (Mg) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Manganese (Mn) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Manganese (Mn) (Total), mg/l	n/a	n/a	n/a	n/a	n/a	
Potassium (K) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Sodium (Na) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Sulfate (SO <sub>4</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Oil and Grease, mg/l	n/a	n/a	n/a	n/a	n/a	
Cations, meq/l	n/a	n/a	n/a	n/a	n/a	
Anions, meq/l	n/a	n/a	n/a	n/a	n/a	

n/a not available

Lila Canyon Mine Surface Monitoring Parameters Operational and Post Mining						
Site L-3-S Field Measurements	July 24, 2000	November 28, 2000	February 7, 2001	June 6, 2001	July 3, 2001	
Water Level or Flow, Depth, Flow	No Flow	No Flow	No Flow	No Flow	No Flow	
pH, standard units	0	0	0	0	0	
Specific Conductivity, umhos.cm @ 25 °C	0	0	0	0	0	
Temperature, °C	0	0	0	0	0	
Dissolved Oxygen, mg/l	0	0	0	0	0	
Laboratory Measurements						
Total Dissolved Solids, mg/l	n/a	n/a	n/a	n/a	n/a	
Total Settleable Solids, (UPDES)	n/a	n/a	n/a	n/a	n/a	
Total Suspended Solids, mg/l	n/a	n/a	n/a	n/a	n/a	
Total Hardness (CaCO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Total Alkalinity, mg/l	n/a	n/a	n/a	n/a	n/a	
Carbonate (CO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Bicarbonate (HC <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Calcium (Ca) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Chloride (Cl), mg/l	n/a	n/a	n/a	n/a	n/a	
Iron (Fe) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Iron (Fe) (Total), mg/l	n/a	n/a	n/a	n/a	n/a	
Magnesium (Mg) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Manganese (Mn) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Manganese (Mn) (Total), mg/l	n/a	n/a	n/a	n/a	n/a	
Potassium (K) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Sodium (Na) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Sulfate (SO <sub>4</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Oil and Grease, mg/l	n/a	n/a	n/a	n/a	n/a	
Cations, meq/l	n/a	n/a	n/a	n/a	n/a	
Anions, meq/l	n/a	n/a	n/a	n/a	n/a	

n/a not available

Lila Canyon Mine Surface Monitoring Parameters Operational and Post Mining						
Site L-4-S Field Measurements	July 24, 2000	November 28, 2000	February 7, 2001	June 6, 2001	July 3, 2001	
Water Level or Flow, Depth, Flow	No Flow	No Flow	No Flow	No Flow	No Flow	
pH, standard units	0	0	0	0	0	
Specific Conductivity, umhos.cm @ 25 °C	0	0	0	0	0	
Temperature, °C	0	0	0	0	0	
Dissolved Oxygen, mg/l	0	0	0	0	0	
Laboratory Measurements						
Total Dissolved Solids, mg/l	n/a	n/a	n/a	n/a	n/a	
Total Settleable Solids, (UPDES)	n/a	n/a	n/a	n/a	n/a	
Total Suspended Solids, mg/l	n/a	n/a	n/a	n/a	n/a	
Total Hardness (CaCO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Total Alkalinity, mg/l	n/a	n/a	n/a	n/a	n/a	
Carbonate (CO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Bicarbonate (HC <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Calcium (Ca) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Chloride (Cl), mg/l	n/a	n/a	n/a	n/a	n/a	
Iron (Fe) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Iron (Fe) (Total), mg/l	n/a	n/a	n/a	n/a	n/a	
Magnesium (Mg) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Manganese (Mn) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Manganese (Mn) (Total), mg/l	n/a	n/a	n/a	n/a	n/a	
Potassium (K) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Sodium (Na) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Sulfate (SO <sub>4</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Oil and Grease, mg/l	n/a	n/a	n/a	n/a	n/a	
Cations, meq/l	n/a	n/a	n/a	n/a	n/a	
Anions, meq/l	n/a	n/a	n/a	n/a	n/a	

n/a not available

LHa Canyon Mine Surface Monitoring Parameters Operational and Post Mining						
Site L-5-G Field Measurements	July 24, 2000	November 28, 2000	February 7, 2001	June 6, 2001	July 3, 2001	
Water Level or Flow, Depth, Flow	No Flow	No Flow	No Flow	No Flow	No Flow	
pH, standard units	0	0	0	0	0	
Specific Conductivity, umhos.cm @ 25 °C	0	0	0	0	0	
Temperature, °C	0	0	0	0	0	
Laboratory Measurements						
Total Dissolved Solids, mg/l	n/a	n/a	n/a	n/a	n/a	
Total Hardness (CaCO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Total Alkalinity, mg/l	n/a	n/a	n/a	n/a	n/a	
Carbonate (CO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Bicarbonate (HCO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Calcium (Ca) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Chloride (Cl), mg/l	n/a	n/a	n/a	n/a	n/a	
Iron (Fe) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Iron (Fe) (Total), mg/l	n/a	n/a	n/a	n/a	n/a	
Magnesium (Mg) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Manganese (Mn) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Manganese (Mn) (Total), mg/l	n/a	n/a	n/a	n/a	n/a	
Potassium (K) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Sodium (Na) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Sulfate (SO <sub>4</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Oil and Grease, mg/l	n/a	n/a	n/a	n/a	n/a	
Cations, meq/l	n/a	n/a	n/a	n/a	n/a	
Anions, meq/l	n/a	n/a	n/a	n/a	n/a	

n/a not available

Lila Canyon Mine Surface Monitoring Parameters Operational and Post Mining						
Site L-6-G Field Measurements	July 24, 2000	November 28, 2000	February 7, 2001	June 6, 2001	July 2, 2001	
Water Level or Flow, Depth, Flow	Not sampled	No Access	No Access	No Flow	No Flow	
pH, standard units	0	0	0	0	0	
Specific Conductivity, umhos.cm @ 25 °C	0	0	0	0	0	
Temperature, °C	0	0	0	0	0	
Laboratory Measurements						
Total Dissolved Solids, mg/l	n/a	n/a	n/a	n/a	n/a	
Total Hardness (CaCO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Total Alkalinity, mg/l	n/a	n/a	n/a	n/a	n/a	
Carbonate (CO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Bicarbonate (HCO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Calcium (Ca) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Chloride (Cl), mg/l	n/a	n/a	n/a	n/a	n/a	
Iron (Fe) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Iron (Fe) (Total), mg/l	n/a	n/a	n/a	n/a	n/a	
Magnesium (Mg) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Manganese (Mn) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Manganese (Mn) (Total), mg/l	n/a	n/a	n/a	n/a	n/a	
Potassium (K) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Sodium (Na) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/a	
Sulfate (SO <sub>4</sub> ), mg/l	n/a	n/a	n/a	n/a	n/a	
Oil and Grease, mg/l	n/a	n/a	n/a	n/a	n/a	
Cations, meq/l	n/a	n/a	n/a	n/a	n/a	
Anions, meq/l	n/a	n/a	n/a	n/a	n/a	

n/a not available

Lila Canyon Mine Surface Monitoring Parameters Operational and Post Mining						
Site L-7-G Field Measurements	July 24, 2000	November 28, 2000	February 7, 2001	June 6, 2001	July 7, 2001	
Water Level or Flow, Depth, Flow	Not sampled	No Access	No Access	Not Sampled	1.67 gpm	
pH, standard units	0	0	0	0	7.72	
Specific Conductivity, umhos.cm @ 25 °C	0	0	0	0	779	
Temperature, °C	0	0	0	0	15.2	
Laboratory Measurements						
Total Dissolved Solids, mg/l	n/a	n/a	n/a	n/a	n/r	
Total Hardness (CaCO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/r	
Total Alkalinity, mg/l	n/a	n/a	n/a	n/a	n/r	
Carbonate (CO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/r	
Bicarbonate (HCO <sub>3</sub> ), mg/l	n/a	n/a	n/a	n/a	n/r	
Calcium (Ca) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/r	
Chloride (Cl), mg/l	n/a	n/a	n/a	n/a	n/r	
Iron (Fe) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/r	
Iron (Fe) (Total), mg/l	n/a	n/a	n/a	n/a	n/r	
Magnesium (Mg) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/r	
Manganese (Mn) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/r	
Manganese (Mn) (Total), mg/l	n/a	n/a	n/a	n/a	n/r	
Potassium (K) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/r	
Sodium (Na) (Dissolved), mg/l	n/a	n/a	n/a	n/a	n/r	
Sulfate (SO <sub>4</sub> ), mg/l	n/a	n/a	n/a	n/a	n/r	
Oil and Grease, mg/l	n/a	n/a	n/a	n/a	n/r	
Cations, meq/l	n/a	n/a	n/a	n/a	n/r	
Anions, meq/l	n/a	n/a	n/a	n/a	n/r	

n/a not available n/r not received back from the lab

**Lila Canyon Mine  
Surface Monitoring Parameters  
Operational and Post Mining**

<b>Site L-8-G Field Measurements</b>	<b>July 24, 2000</b>	<b>November 28, 2000</b>	<b>February 7, 2001</b>	<b>June 6, 2001</b>	<b>July 7, 2001</b>	
<b>Water Level or Flow, Depth, Flow</b>	Not sampled	No Access	No Access	1.5 gpm	2.5	
<b>pH, standard units</b>	0	0	0	7.4	7.21	
<b>Specific Conductivity, umhos.cm @ 25 °C</b>	0	0	0	964	726	
<b>Temperature, °C</b>	0	0	0	0	11.9	
<b>Laboratory Measurements</b>						
<b>Total Dissolved Solids, mg/l</b>	n/a	n/a	n/a	640	n/r	
<b>Total Hardness (CaCO<sub>3</sub>), mg/l</b>	n/a	n/a	n/a	407	n/r	
<b>Total Alkalinity, mg/l</b>	n/a	n/a	n/a	439	n/r	
<b>Carbonate (CO<sub>3</sub>), mg/l</b>	n/a	n/a	n/a	<1	n/r	
<b>Bicarbonate (HCO<sub>3</sub>), mg/l</b>	n/a	n/a	n/a	536	n/r	
<b>Calcium (Ca) (Dissolved), mg/l</b>	n/a	n/a	n/a	68.8	n/r	
<b>Chloride (Cl), mg/l</b>	n/a	n/a	n/a	10	n/r	
<b>Iron (Fe) (Dissolved), mg/l</b>	n/a	n/a	n/a	<0.02	n/r	
<b>Iron (Fe) (Total), mg/l</b>	n/a	n/a	n/a	0.04	n/r	
<b>Magnesium (Mg) (Dissolved), mg/l</b>	n/a	n/a	n/a	57.2	n/r	
<b>Manganese (Mn) (Dissolved), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Manganese (Mn) (Total), mg/l</b>	n/a	n/a	n/a	<0.01	n/r	
<b>Potassium (K) (Dissolved), mg/l</b>	n/a	n/a	n/a	0.8	n/r	
<b>Sodium (Na) (Dissolved), mg/l</b>	n/a	n/a	n/a	68.2	n/r	
<b>Sulfate (SO<sub>4</sub>), mg/l</b>	n/a	n/a	n/a	153	n/r	
<b>Oil and Grease, mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Cations, meq/l</b>	n/a	n/a	n/a	11.13	n/r	
<b>Anions, meq/l</b>	n/a	n/a	n/a	12.26	n/r	

n/a not available n/r not received back from lab

**Lila Canyon Mine  
Surface Monitoring Parameters  
Operational and Post Mining**

<b>Site L-9-G Field Measurements</b>	<b>July 24, 2000</b>	<b>November 28, 2000</b>	<b>February 7, 2001</b>	<b>June 6, 2001</b>	<b>July 3, 2001</b>	
<b>Water Level or Flow, Depth, Flow</b>	Not sampled	No Access	No Access	Not Sampled	5 gpm	
<b>pH, standard units</b>	0	0	0	0	7.84	
<b>Specific Conductivity, umhos.cm @ 25 °C</b>	0	0	0	0	900	
<b>Temperature, °C</b>	0	0	0	0	19.4	
<b>Laboratory Measurements</b>						
<b>Total Dissolved Solids, mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Total Hardness (CaCO<sub>3</sub>), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Total Alkalinity, mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Carbonate (CO<sub>3</sub>), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Bicarbonate (HC<sub>3</sub>), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Calcium (Ca) (Dissolved), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Chloride (Cl), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Iron (Fe) (Dissolved), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Iron (Fe) (Total), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Magnesium (Mg) (Dissolved), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Manganese (Mn) (Dissolved), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Manganese (Mn) (Total), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Potassium (K) (Dissolved), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Sodium (Na) (Dissolved), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Sulfate (SO<sub>4</sub>), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Oil and Grease, mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Cations, meq/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Anions, meq/l</b>	n/a	n/a	n/a	n/a	n/r	

n/a not available

n/r not received back from lab

**Lila Canyon Mine  
Surface Monitoring Parameters  
Operational and Post Mining**

<b>Site L-10-G Field Measurements</b>	<b>July 24, 2000</b>	<b>November 28, 2000</b>	<b>February 7, 2001</b>	<b>June 6, 2001</b>	<b>July 3, 2001</b>	
<b>Water Level or Flow, Depth, Flow</b>	Not sampled	No Access	No Access	Not Sampled	5 gpm	
<b>pH, standard units</b>	0	0	0	0	7.31	
<b>Specific Conductivity, umhos.cm @ 25 °C</b>	0	0	0	0	2030	
<b>Temperature, °C</b>	0	0	0	0	20.2	
<b>Laboratory Measurements</b>						
<b>Total Dissolved Solids, mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Total Hardness (CaCO<sub>3</sub>), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Total Alkalinity, mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Carbonate (CO<sub>3</sub>), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Bicarbonate (HC<sub>3</sub>), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Calcium (Ca) (Dissolved), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Chloride (Cl), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Iron (Fe) (Dissolved), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Iron (Fe) (Total), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Magnesium (Mg) (Dissolved), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Manganese (Mn) (Dissolved), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Manganese (Mn) (Total), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Potassium (K) (Dissolved), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Sodium (Na) (Dissolved), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Sulfate (SO<sub>4</sub>), mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Oil and Grease, mg/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Cations, meq/l</b>	n/a	n/a	n/a	n/a	n/r	
<b>Anions, meq/l</b>	n/a	n/a	n/a	n/a	n/r	

n/a not available

n/r not received back from lab