Form MR-REV-att (DOGM – Revise/Amend Change Form)
(Revised September 14, 2005)

Application for Mineral Mine Plan Revision or Amendment

Operator: LISBON VALLEY MINING CO LLC

Mine Name: LISBON VALLEY MINE **File Number: M/** 037 / 020

Provide a detailed listing of all changes to the mining and reclamation plan that will be required as a result of this change. Individually list all maps and drawings that are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise or amend the existing Mining and Reclamation Plan. **Include page, section and drawing numbers as part of the description.**

DETAILED SCHEDULE OF CHANGES TO THE MINING AND RECLAMATION PLAN

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
☐ ADD	☑ REPLACE	☐ REMOVE	TOC (IV)
☐ ADD	☑ REPLACE	☐ REMOVE	PAGE 23
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
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☐ ADD	☐ REPLACE	☐ REMOVE	

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments and obligations, herein.

LANTE INDERGARD
Print Name

Sign Name, Position ENVIRONMENTAL MANAGER

Date 4-6-10

Return to:

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801
Phone: (801) 538-5291 Fax: (801) 359-3940

O:\FORMS\MR-REV-att.doc

FOR DOGM USE ONLY:
File #: M/ /
Approved:
Bond Adjustment: from ($)
to $

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Appendix A - Sentinel East Pit Backfilling Amendment .....

Appendix B – Surface Water Diversion Design.....

two liners to act as a drainage pathway for the leak detection system. A gravel sump will be installed in the low corner of the pond floor to collect seepage in the geodrain material. A riser pipe will extend up between the liners to the crest of the pond to serve as the monitoring well of the leak detection system. The riser pipe will be a 4-inch diameter pipe so that a sump pump may be installed for solution removal in the event a leak occurs in the primary liner.

3.3.8 Surface Water Diversion

A series of diversion channels have been designed to route runoff around the active mining areas. The diversion channels are designed to pass the peak flow resulting from the 100-yr., 24-hr. design storm event. Based on data presented by NOAA for this region, this event produces 3.4 inches of precipitation. Based on the topography and upgradient drainage areas, the typical channel cross section to carry the estimated peak flows will be a trapezoidal section with a 5-ft bottom width, side slopes excavated at 2H:1V and to maximum depth of four feet. Rock check structures will be installed in the diversion channels to control erosion and sediment. Diversion channel dimensions, rock size, and flow depths are included in Appendix B.

3.4 SUPPORT FACILITIES

LISBON VALLEY MINING CO

April 6, 2010

Mr. Lynn Jackson
US Bureau of Land Management
82 East Dogwood
Moab Utah 84532

Mr. Tom Munsen
Utah Division of Oil, Gas, & Mining
1594 West North Temple Suite 1210
Salt Lake City, UT 84114-5801

Re: Adjustment to Approved Mine Plan Amendment. Drainage Detail Sentinel East Backfilling. Lisbon Valley Mining Company LLC. 920 South County Road 313, La Sal, Utah, 84530.

Dear Lynn and Tom:

The Lisbon Valley Mining Co LLC (LVMC) has attached additional detail pertaining to diversion design around the toe of Waste Dump C. The embedded site plan on the following page shows the location of Diversion Channels C1 and C4.

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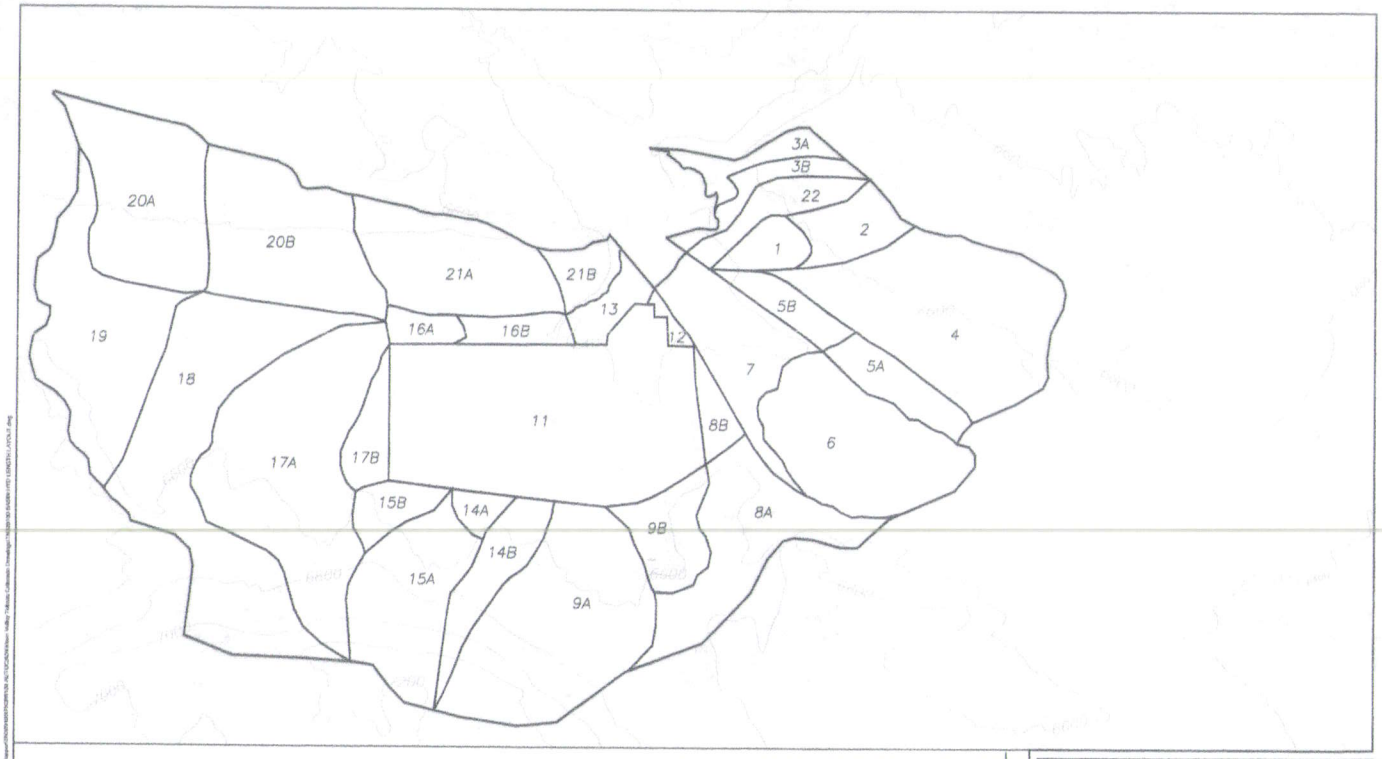


SCALE IN FEET

0 1200 2400

LISBON VALLEY
STORM-WATER SUB-BASINS

PROJECT: TN309100 | FIG. 3

PREPARED BY: TELESTO

PREPARED FOR:

Constellation Copper
Lisbon Valley Project
8/23/2005

100-Year, 24 Hour Precip Depth = 2.94 in.

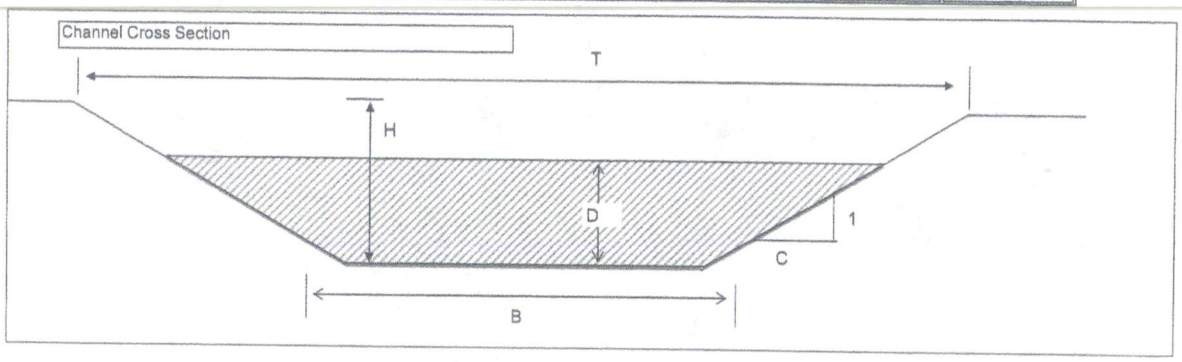
HEC-HMS RESULTS

HYDROLOGIC SUB BASIN	DISCHARGE PEAK (CFS)	TIME OF PEAK	TOTAL VOLUME (AC-FT)	DISCHARGE AREA (MI^2)
B-1	7.52	01 Jan 04 1204	0.649	0.0280
B-2	35.74	01 Jan 04 1205	1.657	0.0450
B-3A	18.59	01 Jan 04 1208	0.907	0.0309
B-3B	18.71	01 Jan 04 1207	0.872	0.0297
B-4	76.74	01 Jan 04 1208	4.901	0.2430
B-5A	28.60	01 Jan 04 1217	2.062	0.0460
B-5B	21.85	01 Jan 04 1215	1.471	0.0330
B-6	101.44	01 Jan 04 1215	5.411	0.1690
B-7	50.06	01 Jan 04 1221	3.278	0.1020
B-8A	55.96	01 Jan 04 1214	4.442	0.1420
B-8B	5.25	01 Jan 04 1208	0.522	0.0220
B-9A	79.85	01 Jan 04 1206	7.407	0.2360
B-9B	21.16	01 Jan 04 1204	1.759	0.0560
B-11	NA	NA	NA	NA
B-12	1.48	01 Jan 04 1222	0.114	0.0070
B-13	6.16	01 Jan 04 1220	0.448	0.0270
B-14A	1.41	01 Jan 04 1203	0.113	0.0140
B-14B	5.05	01 Jan 04 1205	0.452	0.0580
B-15A	51.77	01 Jan 04 1203	4.140	0.1320
B-15B	13.22	01 Jan 04 1201	0.978	0.0310
B-16A	5.57	01 Jan 04 1213	0.312	0.0190
B-16B	6.85	01 Jan 04 1215	0.416	0.0250
B-17A	85.91	01 Jan 04 1208	8.546	0.2730
B-17B	22.06	01 Jan 04 1205	1.286	0.0330
B-18	46.81	01 Jan 04 1219	6.548	0.2780
B-19	63.63	01 Jan 04 1217	5.783	0.1850
B-20A	18.25	01 Jan 04 1218	2.492	0.1590
B-20B	22.84	01 Jan 04 1212	2.660	0.1700
B-21A	18.28	01 Jan 04 1212	2.130	0.1360
B-21B	4.52	01 Jan 04 1207	0.434	0.0280
B-22	23.44	01 Jan 04 1209	1.177	0.0400

Conceptual Channel Design
Constellation Copper
Lisbon Valley
8/23/2005

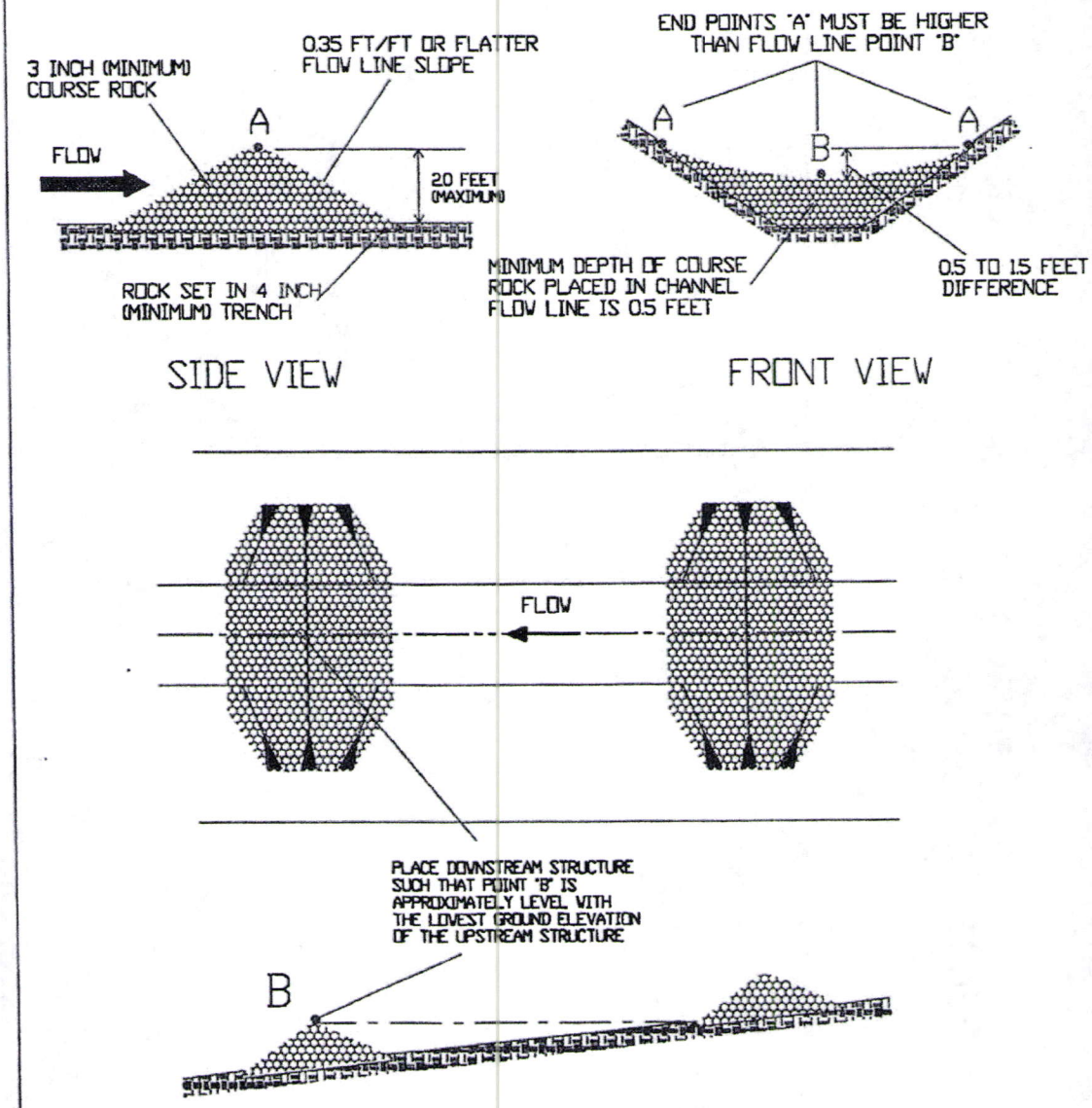
CHANNEL SUMMMARY

Channel Name	Average Channel Slope	Estimated Channel Length	100-Year, 24-Hour Design Flow (Peak Discharge)	Flow Depth (D)	Average Flow Velocity	Base Width (B)	Right Sideslope (C)	Left SideSlope (C)	Freeboard	Design Depth (H)	Design Top Width (T)	Estimated RipRap D_{50} Size
	(ft/ft)	(ft.)	(cfs)	(ft)	(ft/s)	(ft)			(ft)	(ft.)	(ft.)	(in.)
C-1	0.100	1159	35.73	0.68	7.19	6.0	2	2	1.0	1.7	12.7	8.0
C-2	0.100	611	119.97	0.84	8.53	15.0	2	2	1.0	1.8	22.4	10.0
C-3A	0.030	2472	28.60	0.86	5.81	4.0	2	2	1.0	1.9	11.4	4.0
C-3B	0.030	2066	50.45	1.20	6.59	4.0	2	2	1.0	2.2	12.8	5.5
C-4	0.020	4049	76.74	1.59	6.69	4.0	2	2	1.0	2.6	14.4	5.5
C-5A	0.028	2900	55.96	1.29	6.61	4.0	2	2	1.0	2.3	13.2	6.0
C-5B	0.053	1000	61.21	1.03	7.39	6.0	2	2	1.0	2.0	14.1	7.5
C-6	0.017	986	235.14	1.81	19.66	3.0	2	2	1.0	2.8	14.2	HDPE LINED
C-7	0.017	718	215.14	2.59	7.42	6.0	2	2	1.0	3.6	20.4	7.5
C-8A	0.023	1170	172.46	2.10	8.08	6.0	2	2	1.0	3.1	18.4	8.0
C-8B	0.023	1910	172.46	1.45	20.24	3.0	2	2	1.0	2.4	12.8	HDPE LINED
C-9	0.013	1087	151.30	2.57	6.46	4.0	2	2	1.0	3.6	18.3	5.5
C-10	0.014	2120	66.40	1.64	5.55	4.0	2	2	1.0	2.6	14.6	4.0
C-11	0.017	2343	22.06	0.85	4.52	4.0	2	2	1.0	1.9	11.4	3.0
C-15	0.039	433	161.15	1.34	8.23	12.0	2	2	1.0	2.3	21.3	8.0



D-50 OF ROCK (INCHES)	DOWNSTREAM FLOWLINE SLOPE OF STRUCTURE (FT/FT) 0.35	0.30	0.25	0.20	0.15	0.10
	MAXIMUM WATER DEPTH OVER ROCK (INCHES)					
3	0.6	0.7	0.8	1.0	1.3	1.9
6	1.2	1.4	1.6	2.0	2.6	3.9

RECOMMENDED ROCK SIZE & FLOW DEPTHS



SMALL ROCK CHECK STRUCTURE FOR WIDE OR NARROW DRAINAGE CHANNELS 4/93

Figure 22: Illustration of How Rock Check Structures are to be Installed.