UtahAmerican Energy, Inc.

Lila Canyon Project
P. O. Box 910
East Carbon, Utah 84501
Phone: (435) 888-4000
(435) 650-3157
Fax: (435) 888-4002

c/007/013
Incoming
#4453

November 21, 2013

Daron Haddock
Permit Supervisor
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Re: **UtahAmerican Energy, Inc. Lila Canyon Mine, ACT/009-013, Mid-Term Review, Task ID #4406, (L13-003)**

Dear Mr. Haddock:

Please find attached three (3) copies of the Response to Mid-Term Review.

The C1 and C2 forms as well as Red Line Strikeouts are included.

If you have any questions please give me a call.

Sincerely,

R. Jay Marshall

R. Jay Marshall P.E.
Project Manager / Chief Engineer
Lila Canyon Mine

APPLICATION FOR PERMIT PROCESSING

t Change ☐	New Permit ☐	Renewal ☐	Transfer ☐	Exploration ☐	Bond Release ☐	Permit Number: ACT/007/013
Title of Proposal: Mid Term Review (13-003)						Mine: Horse Canyon
						Permittee: UtahAmerican Energy, Inc.

Description, include reason for application and timing required to implement:

Instructions: *If you answer yes to any of the first 8 questions (gray), submit the application to the Salt Lake Office. Otherwise, you may submit it to your reclamation*

☐ Yes	☐ No	1. Change in the size of the Permit Area? ____ acres Disturbed Area? ____ acres ☐ increase ☐ decrease.
☐ Yes	☐ No	2. Is the application submitted as a result of a Division Order? DO #
☐ Yes	☐ No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes	☐ No	4. Does application include operations in hydrologic basins other than as currently approved?
☐ Yes	☐ No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes	☐ No	6. Does the application require or include public notice/publication?
☐ Yes	☐ No	7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes	☐ No	8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes	☐ No	9. Is the application submitted as a result of a Violation? NOV #
☐ Yes	☐ No	10. Is the application submitted as a result of other laws or regulations or policies? Explain: **Mid Term Review**
☐ Yes	☐ No	11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes	☐ No	12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2?)
☐ Yes	☐ No	13. Does the application require or include collection and reporting of any baseline information?
☐ Yes	☐ No	14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes	☐ No	15. Does application require or include soil removal, storage or placement?
☐ Yes	☐ No	16. Does the application require or include vegetation monitoring, removal or revegetation activities?
☐ Yes	☐ No	17. Does the application require or include construction, modification, or removal of surface facilities?
☐ Yes	☐ No	18. Does the application require or include water monitoring, sediment or drainage control measures?
☐ Yes	☐ No	19. Does the application require or include certified designs, maps, or calculations?
☐ Yes	☐ No	20. Does the application require or include subsidence control or monitoring?
☐ Yes	☐ No	21. Have reclamation costs for bonding been provided for?
☐ Yes	☐ No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
☐ Yes	☐ No	23. Does the application affect permits issued by other agencies or permits issued to other entities?

X Attach 3 complete copies of the application.

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, undertakings, and obligations, herein.

R Jay Marchus 11/18/13
Signed - Name - Position - Date

Subscribed and sworn to before me this 18th day of November, ~~19~~ 2013

Linda Kerns
Notary Public

My Commission Expires: 3.27.17, ~~19~~ }
Attest: STATE OF Utah }
COUNTY OF Carbon }

LINDA KERNS
NOTARY PUBLIC • STATE of UTAH
COMMISSION # 663615
COMM. EXP. 03/27/2017

} ss:

Received by Oil, Gas & Mining
RECEIVED
NOV 22 2013
DIV. OF OIL, GAS & MINING
DIV. OF OIL, GAS & MINING

ASSIGNED TRACKING NUMBER

Form DOGM - C2 (Last Revised 6/93) File Folder #3

Application for Permit Processing
Detailed Schedule of Changes to the MRP

Permit Number: ACT/007/013

Mine: Horse Canyon

Permittee: UtahAmerican Energy, Inc.

Mid Term Review (13-003) deficiencies TASK ID#4406

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed permit application. Individually list all maps and drawings which 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 the existing mining and reclamation plan. **Include page, section and drawing numbers as part of the description.**

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
☐ ADD	☐ **REPLACE**	☐ REMOVE	Plate 1-2 with new Plate 1-2
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ **REPLACE**	☐ REMOVE	Plates 2-2 and 2-3 with new Plates 2-2 and 2-3
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ **REPLACE**	☐ REMOVE	Plates 5-2 and 5-6 with new Plates 5-2 and 5-6
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ **REPLACE**	☐ REMOVE	Plates 7-2, 7-5, and 7-7 with new Plates 7-2, 7-5, and 7-7
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ **REPLACE**	☐ REMOVE	Chapter 3 Text with new Pages 10, 13, 20 to end
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ **REPLACE**	☐ REMOVE	Chapter 7 Text Pages 56-67 with new Pages 56-67
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ **REPLACE**	☐ REMOVE	Chapter 8 Appendix 8-1 with new Appendix 8-1 (All)
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
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Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

RECEIVED
NOV 22 2013
DIV. OF OIL, GAS & MINING

Response to Mid-Term Deficiencies
Lila Canyon Mine
December 4, 2013

Reclamation Plan

Bonding

R645-301-830.140 The Permittee must update the unit costs used to develop the 2008 reclamation cost estimate using 2013 R.S. Means unit costs from their Heavy Construction Data manual. That total, including direct and indirect costs, must be escalated to 2018 using the current 2013 escalation factor of 1.5% to determine the bond amount required to be maintained to keep the Lila Canyon Mine in compliance.

Unit costs for all sections, Demolition, Earthwork and Reclamation, have been revised using the R.S. Means Heavy Construction Data Manual online for 2013 Quarter 3. All line item numbers were updated from the 1995 master format to the 2010 master format. The labor type used was open shop and the location used was Price, Utah.

Operation Plan

HABITAT ENHANCEMENT AND MITIGATION

R646-301-322, 301-333, 301-342, 301-358 According to the text on page 10, Chapter 3 the eagle nests were to be mitigated by a prey base off-site vegetation treatment project with a reference to page 19. The reference needs to be corrected to pages 11, 17 and 18. The vegetation treatment is scheduled to be completed in the fall of 2013.

Page 20 of Chapter 3 has been revised to reference pages 11, 17, and 18.

RAPTOR AND NEST PROTECTION

For possible subsidence impacts to raptor nests, the Permittee will develop a mitigation plan, that must be submitted and approved within 6 months after issuance of permit and apply for take permit though USFWS 2 years prior to subsidence of the nests. The mitigation is scheduled to be completed in the Fall of 2013. The permittee needs to identify which nests are being referred to (previously identified or from future surveys). If nests are identified through aerial surveys the permittee us apply for taker permit through USFWS 2 years prior to subsidence of the nests.

The nests that are referred to in the mitigation plan are nests 456 and 946. The text in chapter 3 page 10 has been revised to identify the nests referred to in the mitigation plan by number. The only nest within the subsidence zone is nest #719, which can no longer be found.

RAPTOR PROTECTION

Employee education to remove road kill from the coal haul road. Ongoing, the permittee needs to correct the pagination error that begins on page 20. The employee awareness program should include annual training and as needed as well as text that describes the removal of animal carcasses.

The pagination error beginning on page 20 of Chapter 3 has been corrected. The employee environmental awareness program does include annual training that addresses the removal of animal carcasses.

Escarpment barrier of at least 200' to prevent cliff habitat loss. The text of Chapter three, page 13, Section 332 (1) needs to be revised tor clarified to demonstrate how the 200' barrier will be measured.

Chapter three page 13 has been revised to clarify that the escarpment barrier is measured from the coal outcrop.

SEED MIX TAGS

Provide the division biologist with seed mix tags prior to or during interim, contemporaneous, and final reclamation projects. The division is recommending that the topsoil pile and disturbed areas not being utilized for mining activities be scarified and seeded in the Fall of 2013 to minimize the current infestation of halogeton. Seed tags should be provided to the inspector.

Seed tags describing the seed used for interim, contemporaneous and final reclamation projects will be provided to the inspector.

VEGETATION TEST PLOT

To test whiter summer seeding will increase establishment of the warm season species (blue gramma and galleta). Area 1 and 4 were seeded in July and area 2 and 3 were seeded in October following construction. The Division needs to meet with the permittee in the Spring of 2014 to visit the test plot areas and discus the information provided in the 2012 annual report to determine what recommendation should be made regarding the warm season seeding of blue gramma and galleta spp.

The operator will meet with the Division to visit the test plots in the spring of 2014 whenever the Division would like to schedule the meeting. The Division will notify the operator of the scheduled meeting.

NOXIOUS WEED CONTROL

To control invasive species in and adjacent to the disturbed area. The permittee should

implement a noxious/invasive species weed control program. The Division is recommending that this commitment be added to the Lila Canyon MRP list of commitments. The regulatory basis is found at R645-301-357.320-324. The permittee needs to address the current infestation of halogeton and Russian thistle. In these areas. The Division has recommended scarifying and seeding in the Fall of 2013 and spraying based on a site inspection in the Spring of 2014.

The operator will scarify and reseed the area North of the topsoil pile in the fall of 2013. The area will be inspected in the Spring of 2014.

TOPSOIL AND SUBSOIL

R645-301-251. The phased construction plan should not preclude follow through on statement in Section 234.230 that the topsoil stockpile will have an irregular, pitted surface and will be mulched and seeded (and treated with inoculum) and have a silt fence at the base. The south half of the topsoil requires final treatment as soon as possible, regardless of the progress of construction. The Division requests that the MRP include a deadline for completion of topsoil pile construction and that the deadline be set for late fall (late November - mid December) 2014.

The operator will grade, pock, mulch and reseed the south end of the topsoil pile as discussed with DOGM. The previously mentioned work will be done in the fall of 2013.

At this time UEI cannot set a deadline for the completion of Phase II and the final topsoil construction. The completion of Phase II depends completely upon the coal market and the need for the coal to fill existing contracts. At this time the MRP will not be revised to reflect arbitrary deadlines that the operator cannot committed to.

HYDROLOGIC GENERAL

r645-301-700-731.214 The MRP should be updated in the following sections to more clearly define the current water monitoring plan:

Page 56 of Chapter 7 should be updated to reflect the current monitoring plan for Quaker Spring now that baseline data collection has been completed.

Chapter 7 Page 56 has been revised to reflect the current monitoring plan for Quaker Spring.

Section 731.224.2 should be updated to clarify which sites are temporarily suspended.

Section 731.224.2 has been revised to reference Table 7-3 which should clarify which sites are temporarily suspended.

Table 7-3 should be updated to indicate the current water monitoring plan for Quaker Spring.

Table 7-3 has been updated to indicate the current water monitoring plan for Quaker Spring.

MAPS FACILITIES

R645-301-121.100 Plate 5-2 should reflect current site conditions with regard to shading of the disturbed area within the permit boundary. Placement of an aerial photo laid over the Plate 5-2 design would enable distinction between existing conditions and future approved construction depicted on the map.

An aerial phot was laid over Plate 5-2 to help distinguish between existing and future approved conditions. While correcting plate 5-2 the operator also corrected the following plates to accurately show the permit boundary and the areas of undisturbed within the disturbed. Plates 1-2, 2-2, 2-3, 5-2, 5-6, 7-2, 7-5, and 7-7.

mitigated and is defined in the Environmental Assessment submitted in association with the Right-Of-Way applications.

The USFWS recognizes that the permit area is within range of endangered species, including the black-footed ferret, MSO, and the bald eagle (Letter dated February 4, 1998, Appendix 3-3).

Raptor surveys were initiated in 1998 and continue annually with the exception of 2004. These surveys were initiated before ground-breaking of the Lila project. The results of these surveys are in Appendix 3-5. The entire Book Cliffs escarpment within the permit area was inventoried for cliff nesting raptors. In addition, a 1-mile buffer zone was inventoried around areas of potential development.

An active golden eagle nest, (456) with possible young, was documented during the 1999 spring raptor survey. In 2005 nest 946 contained a chick that was possibly dead. USFWS, Laura Roma, UDWR, Chris Colt, and BLM, Dave Mills determined, during the EA process, that there was a high probability these nest sites would be abandoned. A cooperative agreement with the regulatory agencies and UEI was finalized and is made part of the mitigation for the Lila Canyon EA. One nest discussed above, also lies in an area of potential subsidence which is a mute point due to its close proximity to the mine site. Since the nests are located so close to the mine surface facility and that there was a high probability these nest sites would be abandoned, these nests will be mitigated by a prey base off-site vegetation treatment project approved by the USFWS, UDWR and BLM (See page ~~19~~s 11, 17, and 18 for BLM mitigation information).

Although it was predicted that these nests might be abandoned, the Operator will coordinate closely with USFWS, DWR, and the Division to avoid "take" of golden eagles prior to

discharge and for the mine discharge and have a habitat consisting of an overstory of pinion-juniper.

330. Operation Plan. A plan for protection of vegetation, fish and wildlife resources follows:

331. The Lila permit area is approximately 4664.32 acres of which only 42.6 acres are within the surface disturbance area. All incidental disturbance, which will not be utilized in operations, will be revegetated with an interim seed mix proven beneficial to wildlife. The revegetation plan is addressed in Section 341 and the seed mixes are addressed in Tables 3-4 and 3-5. Revegetation will occur the first desirable period following disturbance and/or abandonment.

332. The extent and degree of subsidence will be in large dependent on both the amount of overburden as well as the mining method. Employees and or consultants of the operator have numerous years of experience mining the Bookcliffs and Wasatch areas and none have observed nor are aware of any negative impacts on wildlife or vegetation, as a result of subsidence, with the exception of

1) Escarpment Failure which is not anticipated.

2) Disruption of Surface and / or Ground Water, which is not anticipated.

(1) Escarpments will be protected by implementing escarpment barriers. An escarpment barrier of a minimum of 200' from the outcrop, within which no second mining will take place, will be used to protect escarpments immediately above the coal seam and protect against unplanned holeouts.

(2) Disturbance of Surface and / or Ground Water. Considering, the permit area has no surface water with the exception of intermittent or ephemeral flow associated with precipitation events and / or snow melt, subsidence should have no adverse effect. The ephemeral stream channels, in the area's of potential subsidence, will be monitored to insure there are no adverse impacts to the ephemeral flow.

No negative impacts to vegetation are anticipated. However, vegetation will be monitored in conjunction with subsidence monitoring, utilizing infrared aerial photography once every five

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Permittee to conduct activity near or within the 0.5 mile buffer zone of raptor nest and during raptor exclusionary periods (February 1 to July 15 for golden eagles), the Permittee will immediately contact the Division, BLM, DWR, and USFWS. The agencies will immediately coordinate to determine appropriate measures that may include conducting ground surveys, in coordination with DWR, to determine if birds are tending nests or nesting and possibly determine the life stage of the offspring; developing a mitigation plan, in coordination with the agencies, for possible impacts to nests or birds; or ceasing operations until the end of breeding season to avoid 'take'. If the agencies recommend surveys, the Permittee must submit all survey results to the Division in Annual Reports. If the agencies recommend mitigation, the Permittee must submit all mitigation plans to the Division for incorporation into Appendix 3 of the MRP.

The Applicant does not plan to monitor any wildlife species during the life of the operation with the exception of raptors. Spring raptor surveys will be conducted at a minimum of a 1-mile radius around any new or potentially disruptive mining activity, 2-years prior and annually after the proposed activity. The Operator will contact the USFWS and the Division immediately following raptor surveys if raptors are observed tending nests or nesting.

The mine will emphasize their commitment to legal requirements of firearm and off-road vehicle-use by employees. This type of program has been adopted by the operator and will continue throughout the operation. An education program aimed at minimizing potential negative impacts by employees will be presented during the Operators annual retaining programs. Employees will be informed about the wildlife in the area and about which species are protected. They will be counseled to refrain from poaching or harassing animals and about the need to

preserve the wildlife. They will also be instructed on the danger of animals on the road during dusk and night hours and consequently the need to reduce speed to avoid colliding with animals difficult to see in these periods of poor light. All threatened or endangered wildlife sighted within or adjacent to the permit area will be reported to the appropriate state and / or federal agency.

The location and construction of the haulage road, as well as measures for the protection of surface hydrology, from sedimentation, including the sedimentation pond and other drainage control structures, are discussed in Chapter 7, Hydrology.

Any waters discharged from the facility will be monitored in accordance with UPDES Permit No.UTG040024. Major disturbances will be scheduled to avoid deer / antelope fawning times.

No use of pesticides or chemicals that have serious consequences to plants or wildlife will be used on the permit area, unless recommended by a regulatory agency and under their direction.

Prevention of fires and their spreading outside the permit area will be accomplished through; water sprays, and fire extinguishers located at all facilities . Wild fires will be addressed by the appropriate state and federal agencies. Operation and reclamation activities will be done in compliance with the Endangered Species Act of 1973. As instructed by the Bureau of land Management and the Utah Division of Wildlife Resources, fencing will be removed when DOGM determines that all reclamation standards have been met. Further measures taken to enhance wildlife habitat during reclamation are discussed under the "Reclamation Plans" section of this chapter.

The interim reseeding of small areas will provide some small amounts of additional forage and

seed. Reseeding will particularly benefit rodents and passerine birds seeking seeds in this sparse vegetative type. The seeding of sediment pond slopes usually provides a bonus crop of seeds as the plants are watered by intermittent runoff.

Within the disturbed area, there are areas of undisturbed ground such as in topsoil storage areas. These areas will be posted so as to preclude trespass by vehicles and/or mine equipment. In addition, dust control will be practiced throughout the life of the mine to minimize impacts from blowing dust .

The sediment pond on the disturbed area will hold water during short periods and will provide some additional surface water for wildlife. The stored water may prolong use of that portion of the winter range by deer because water is often the limiting factor on dry winter ranges. Migrating small birds and mourning doves will also utilize this water to recuperate during their flights, as well as a small indigenous flock of chukkers. In the event the water in the pond were to contain any material which would be hazardous to wildlife (ex: oil, grease), the material would be removed by the use of petroleum selected filtration material. The filtration material will be used when an apparent sheen is visible on the pond. If hazardous materials are observed the Division will be notified immediately to develop a protection plan for wildlife. The pond will be monitored visually daily by surface personnel for signs of oil and grease.

340. Reclamation Plan.

A reclamation plan for final revegetation is presented below.

341.100. TABLE 3-3 is a timetable of reclamation activities upon cessation of operation. The tentative life of a mine is twenty years depending on market and mining conditions. As such, the time table is generic and no set year will be specified for the cessation and

abandonment of operations.

341.200. This section is addressed in 341.210.

341.210. TABLE 3-4 indicates the species and amounts per acre of seeds to be used in revegetation.

The seed mixture used to revegetate the disturbed areas at Lila Canyon Mine is given on TABLE 3-4, along with the rates of application. The seed mixture was developed for the disturbed area with respect to a number of considerations. Climatic conditions of area and the availability of water were reviewed to assess the need for drought-tolerant species. The vegetation information was evaluated to determine the seed mixture needs corresponding to productivity, cover and diversity requirements. Data was gleaned from the soils report to select species adapted to the physical and chemical characteristics of the potential seedbed.

341.220. The disturbed area will be reclaimed after all operations have ceased at the mine site and all pertinent structures have been removed. The coal will be loaded out and the surface will be left relatively free of debris. The area will be recontoured to approximate pre-mine configurations. The soil will then ripped to a depth of 16 -18 inches.

The previously salvaged top soil will then be redistributed over the total disturbed area. Soil depth and soil cover are addressed in Chapter 2.

The seedbed will be prepared by completing the final grading and again either gouged or ripped to a depth of 6-18 inches or to bedrock. Ripping the soil will be completed at a speed that maximizes the action of the ripper shanks and promotes spoil material disruption to the required depth.

During the final ripping or gouging process, seedbed material will be collected and sent to a laboratory for analysis to determine fertilizer

requirements. The fertilizer recommendations will be added to the soil at the specified rate of application. Seed and fertilizer will be distributed utilizing a hydroseeder . Fertilizer and seed will not be mixed during hydroseeding operations.

Hydroseeding operations will not be conducted when wind velocities would interfere with the even distribution of the material. All efforts will be made to attain an even distribution of seed. (See Appendix 5.8)

Once Hydroseeding is complete, the area will be hydromulched, see Appendix 5-8 and Section 341.230.

The area will be seeded and fertilized (if needed) with the recommended species (see TABLE 3-4), and nutrients at the specified rate of application. At present a general recommendation indicates that 100 pounds per acre of 16-16-8 will need to be added as a nutrient.

All efforts will be made to insure the quality of materials purchased for reclamation activities are maintained throughout all work. Commercially purchased seed will have the seed names, lot number, percentages of purity, germination, hard seed and percentage of maximum weed seed count clearly marked on each container. No seed will be accepted if they contain seeds of a state-recognized noxious weed species. Sources for "common" seed should be those with climatic and elevational characteristics as close to site characteristics as possible. Legume seed will be inoculated with the correct Rhizobium.

341.230. The site will be hydro-seeded with seed and an initial 500#/acre of mulch and 100#/acre of tac agent. Followed shortly by an additional 1500 to 2000#/acre of mulch. Finally, an additional 100#acre of tac and fertilizer, choice and application rate to be determined by the testing

in section 243, will be applied. Fertilizer and seeds will not be mixed together during the hydro-mulching operations.

341.240. There will be no irrigation or supplementary water used during or after the revegetation of the area. There are no planned pest or disease control measures for the mine site reclamation. Pest or disease control measures may be included in this plan if results from the test plot and / or reference area indicate a need. The measures will be consistent with proper rangeland and wildlife management.

341.250. A reference area for the mine site disturbance was established adjacent to the proposed facilities during the summer of 2003 (Figure 1, Appendix 3-1). The reference area was chosen in an area which represents the natural premining conditions of the permit area. This reference area will facilitate the determination of successful revegetation and the resultant final bond release for the Applicant.

Comparisons of the revegetated area and the reference area will be made using the data obtained from the ninth and tenth year sampling. This data will be used to obtain statistical information that will show the site meets the requirements for bond release.

341.300. The methods outlined have a proven performance based on the successful reclamation of the Horse Canyon Mine in the immediate drainage to the north (less than two miles) in like habitat and aspect.

The Operator will conduct a study to determine the optimum time for seeding warm seasons species (refer to page 29).

Table 3.4/3.5
INTERIM AND FINAL RECLAMATION SEED MIX
Recommended Seed Mix for Lila Canyon Mine

Species	Latin Name	Seeds/lb	# Seeds per Acre Planted	%Mix Planted	Seeding Rate Lbs / acre	Seeds / ft²
Grasses						
Needle And Thread	Stipa Comata	115,000	230,432	5	2.00	5.3
Indian Ricegrass	Achnatherum humenoides	141,000	282,269	6	2.00	6.5
Basin Wild Rye	Leymus cinereus	130,000	129,373	3	1.00	3.0
Galleta	Hilaria jamesii	314,500	313,632	6	1.00	7.2
Bluebunch Wheatgrass	Pseudoroegneria spicata	140,000	139,392	3	1.00	3.2
Slender Wheatgrass	Elymus trachycaulus	159,000	317,988	6	2.00	7.3
Blue Gamma	Bouteloua gracilis	825,000	827,640	17	1.00	19.0
Subtotal						51.4
Forbs						
Blue Flax	Linum lewisii	293,000	294,030	6	1.00	6.8
Palmer Penstemon	Penstemon palmeri	610,000	152,460	3	0.25	3.5
Globemallow	Sphaeralcea ambigua	500,000	250,470	5	0.50	5.8
Indian Paintbrush	Castilleja linariaefolia	4,915,000	479,160	10	0.10	11.0
Fringed Sage	Artemisia frigida	4,536,000	435,600	9	0.10	10.0
Subtotal						37.0
Shrubs						
Wyoming Big Sage	Artemisia tridentata	2,576,000	653,400	13	0.25	15.0
Green Rabbitbrush	Chrysothamnus nauseosus	400,000	41,382	1	0.10	1.0
Fourwing Saltbush	Atriplex canenscens	52,000	43,560	1	0.84	1.0
Winterfat	Ceratoides lanata	56,700	56,628	1	1.00	1.3
Shadscale	Antriplex confertifolia	64,900	64,904	1	1.00	1.5
Cliffrose	Cowania mexicana	64,600	64,469	1	1.00	1.5
Black Sage	Artemisia nova	907,200	230,868	5	0.25	5.3
Subtotal						26.5
TOTAL PER ACRE		**16,799,900**	**5,007,658**	**100**	**16.39**	**115**

342. Fish and Wildlife. A fish and wildlife plan follows:

342.100. The sediment pond will be maintained through the life of the operation and will be removed when effluent criteria is met following reclamation.

342.200. Rangeland for domestic stock is the secondary intended postmining land use with wildlife habitat as the primary land use. Plant species appropriate for enhancing the wildlife habitat were selected on the basis of known wildlife requirements including nutritional value for fish and wildlife, use as cover for fish and wildlife and ability to support and enhance fish and wildlife habitat. The Pinyon/Juniper area will be enhanced and reclaimed to the Grass/Shrub community type. The habitat type provides excellent winter range for big game, as well as, an increase in rodent populations which in turn are beneficial to raptors. The Lila Canyon EA has stipulated that in excess of 70 acres of wildlife habitat will be enhanced to help offset negative impacts.

342.210. This section is addressed in 342.200.

342.220. This section is addressed in 342.200.

342.230. This section is addressed in 342.200.

342.300. This section is not applicable.

342.400. This section is not applicable.

350. Performance Standards

351. All coal mining and reclamation operations will be carried out according to plans provided under R645-301-330 through R645-301-340.

352. Lila Canyon Mine will implement contemporaneous reclamation on all areas that are disturbed through construction or in the course of mining that will not be utilized for future activity that constitutes continued disturbance.

353. General Requirements. The Permittee will establish on regraded areas and on all other disturbed areas a vegetative cover that is in accordance with the approved permit and reclamation plan. The first available season following abandonment / completion the area will be seeded and mulch in accordance with the approved reclamation plan.

353.100 The contemporaneous seed mix TABLE 3-5 is capable of self-regeneration.

The seed mix in Table 3-5 is designed to be compatible with native plant species and beneficial to the animals indigenous to the area for both forage and cover.

All seed used in contemporaneous revegetation will be certified and in compliance with all state and federal laws governing seeding.

353.130. The vegetative cover will be at least equal in extent of cover to the natural vegetation of the area; and

353.140. Capable of stabilizing the soil surface from erosion.

353.200. The reestablished plant species will:

353.210. Be compatible with the approved postmining land use:

353.220. Have the same seasonal characteristics of growth as the original vegetation:

353.230. Be capable of self-regeneration and plant succession:

353.240. Be compatible with the plant and animal species of the area; and:

353.250. Meet the requirements of applicable Utah and federal seed, poisonous and noxious plant; and introduced species laws or regulations.

353.300. The Division may grant exception to the requirements of 353.220 and 353.230 when the species are necessary to achieve a quick-growing, temporary, stabilizing cover, and measures to establish permanent vegetation are included in the approved permit and reclamation plan.

353.400. There are no prime farm lands within the permit area or anticipated crop lands.

354. Timing: Seeding will occur between September 30 and may proceed up until March 30 depending on snow and frost condition

DOGM has expressed a concern over the fall planting of the warm season species, Blue grama and Galleta. Both of these species are in evidence at the Horse Canyon Site, which was reclaimed in the fall of 1991. However, UEI is committed to use these species in the interim seed mix, adjacent to the sediment pond. Area 1, the Southeast corner, and Area 4 the Northwest corner of the pond disturbance, will be seeded mid summer (July) following the construction. Area 2, the Southwest quarter and Area 3 the Northeast quarter of the disturbance, will be seeded late fall (October) following construction. The line separating the four areas will be staked on the ground. Ocular estimates of the success of the reclamation will be implemented each fall for 3 years following the reclamation. In year 4, if there appears to be an apparent difference in success, a quantitative sample will be taken. The sample will identify both species composition as well as overall vegetative cover for both areas.

If in the event a conclusion as to the timing of planting results in a significant degree of success, the reclamation plan can be modified during the 5 year renewal process.

355. Mulch will be applied on the same bases as indicated for permanent reclamation.

356. Standards for Success:

356.100 Success of revegetation will be judged on the effectiveness of the vegetation for the approved postmining land use, the extent of cover compared to the extent of cover of the reference area.

356.110. Standards for success, statistically valid sampling techniques for measuring success, and approved methods are identified in the Division's "Vegetation Information Guidelines, will be followed closely. (See "Lila Canyon Vegetation Inventory" found in Appendix 3-1)

356.120. Standards for success recommended in the "Vegetation Information Guidelines" will be followed closely. (See "Lila Canyon Vegetation Inventory" found in Appendix 3-1)

356.200. Standards for success will be applied in accordance with the approved postmining land use of wildlife and incidental use by domestic stock.

356.210. This Section does not apply since the area is post mining wildlife habitat, with incidental use by domestic stock.

356.220. This Section does not apply since there are no agriculture lands within the permit area and no prime farm lands. See Chapter 2, Appendix 2-1 (Prime Farmland Letter).

356.230. Success of vegetation will be determined on the basis of tree and shrub stocking and vegetative ground cover. Such parameters are described as follows:

The requirements for cover, productivity and woody plant density are, at least 90% of the cover, woody plant density and productivity of the reference area with 90% statistical adequacy. The site will be sampled in a manner similar to the

method used to sample the reference area.

Diversity will be determined with the following method:

1) All species encountered with at least a 20% frequency in the vegetation sampling will be categorized into life forms. The life form categories that will be used are native grass, native broadleaf forbs, native shrub, desirable introduced, and undesirable. Undesirable species are those generally classified as weeds or that are poisonous to livestock. If there is any question whether a species should be considered undesirable, the Division and UtahAmerican will consult with the Emery County Weed Department.

2) The standard will be that the reclaimed area must have at least as many native grass, native broadleaf forbs, and native shrub species occurring at 20% or greater frequency as the reference area. For example, if the reference area has 3 native shrub species occurring at 20% or greater frequency, the reclaimed area must also have this many species. The species do not need to be the same.

Essentially the same method would be used to judge seasonality, but the only categories would be warm and cool season.

Erosion control relative to both vegetation density and species composition would be based on effluent standards as committed in the UDPES permit. All drainages leading away from the permit area will be sampled as often as practical. When effluent standards are met, the vegetation will have demonstrated its erosion control effectiveness. Woody plant density for the entire area will be established with 1,500 plants per acre, unless the Divisions consultation

with area agencies determines a different density.

356.231. (See Section 256.230)

356.232. Tree stocking / woody plant density will meet or exceed UDOGM guidelines for bond release.

356.233. Success standards for vegetative ground cover: (See Section 256.230)

356.240. This Section does not apply since no portion of the permit area will be used for industrial, commercial or residential use.

356.250. No pre-law mining occurred on the Lila Canyon Permit area.

356.300. Lila Canyon Mine is committed to maintain siltation structures until vegetative cover is adequate to allow runoff to meet affluent limits as directed by UDOGM at a minimum two years following vegetation establishment.

356.400. Lila Canyon Mine will have all disturbance associated with removal of siltation structures seeded and mulch in accordance with the approved revegetation plan.

357. Revegetation: Extended Responsibility Period.

357.100. The period of extended responsibility for successful vegetation will begin after the last year of seeding, fertilization, irrigation, or other work, excluding approved husbandry practices.

357.200. Vegetation parameters will equal or exceed the

approved success standard during the growing seasons for the last two years of the responsibility period. The period of extended responsibility will continue for five or ten years based on precipitation data.

357.210. Since Lila Canyon has an average annual precipitation of less than 26.0 inches this section is not applicable.

357.220. The mine plan area averages nine inches at the lowest elevation (area of greatest disturbance) to fourteen to sixteen inches at the highest elevation. Lila Canyon Mine will assume the ten year bond liability period.

357.300. Husbandry Practices - General Information

357.301. Lila Canyon Mine would like to reserve the right to apply for augmentation of reclaimed area extending the bond liability period on a site specific case scenario.

357.302. Husbandry practices proposed for the reclaimed areas are not necessitated by inadequate grading practices, adverse soil conditions, or poor reclamation procedures.

357.303. The Division will consider the entire area that is bonded within the same increment, as defined in R645-301-820.110, when calculating the extent of area that may be treated by husbandry practices.

357.304. If it is necessary to seed or plant in excess of the limits set forth under R645-301-357.300, the Division may allow a separate extended responsibility period for these reseeded or replanted areas in accordance with R645-301-820.330.

357.310. Reestablishing trees and shrubs

357.311. Trees or shrubs may be replanted or reseeded at a rate of up to a cumulative total of 20% of the required stocking rate through 40% of the extended responsibility period.

357.312. Lila Canyon Mine has incorporated wood plant / tree seeding into the seed mix (see TABLE 3-4). If after two years following seeding and mulching it is apparent that woody plant density / tree cover appear to be insufficient for bond release; the mine may elect to re-enter selected areas and augment the direct seeding with either / or containerized or bare root seedlings, this determination will need to be made on a site specific bases. The goal for bond release is the establishment of 1500 woody plants per acre.

357.320. Based on similar reclamation projects in adjacent areas, the need to control weeds other than by selected removal is unlikely. In the unlikely event that weed control is required by chemical means, R645-357357.321 will be followed. In the unlikely event that weed control is required by Biological means, R645-357.323 will be followed. In the unlikely event that weed control is required by mechanical means, R645-357.322 will be followed.

357.321. In the unlikely event that weed control is required by Chemical means, R645-357.321 will be followed by mine personnel.

357.322. In the unlikely event that weed control is required by Mechanical means, R645-357.322 will be followed by mine personnel.

357.323. In the unlikely event that weed control is required by Biological

means, R645-357.323 will be followed by mine personnel.

357.324. In the unlikely event that weed control practices damage desirable vegetation, R645-357.324 will be followed by mine personnel.

357.330. Wildlife habitat is the priority post mining land use. As such, control of wildlife is not anticipated.

357.331. Wildlife habitat is the priority post mining land use. As such, control of wildlife is not anticipated.

357.332. Mine personnel do not anticipate a need to implement control measures for small mammals or insects. However, in the unlikely event that control is necessary, R645-357.332 will be followed. The Division must approved animal control methods sited in R645-357.332.

357.340. Natural Disasters and Illegal Activities Occurring After Phase II Bond Release. Where necessitated by a natural disaster, excluding climatic variation, or illegal activities, such as vandalism, not caused by any lack of planning, design, or implementation of the mining and reclamation plan on the part of the Permittee, the seeding and planting of the entire area which is significantly affected by the disaster or illegal activities will be allowed as an accepted husbandry practice and thus will not restart the extended responsibility period. Appendix C of the Division's "Vegetation Information Guidelines" references publications that show methods used to revegetate damaged land. Examples of natural disasters that may

necessitate reseeding which will not restart the extended responsibility period include wildfires, earthquakes, and mass movements originating outside the disturbed area.

357.341. The extent of the area where seeding and planting will be allowed will be determined by the Division in cooperation with the Permittee.

357.342. All applicable revegetation success standards will be achieved on areas reseeded following a disaster, including R645-301-356.232 for areas with a designated postmining land use of forestry or wildlife.

357.343. Seeding and planting after natural disasters or illegal activities will only be allowed in areas where Phase II bond release has been granted.

357.350. No Irrigation is anticipated.

357.360. Rills and gullies in excess of eight inches width and / or depth will be repaired on a seasonal bases. Repairs will be made in such manner that minimizes additional disturbance and yet is cost effective based on site specific conditions.

357.361. After the first 20% of the extended responsibility period but prior to the end of the first 60% of the responsibility period or until Phase II bond release, whichever comes first, highly erodible area and rill and gully repair will be considered augmentative, and will thus restart the responsibility period, if the area

to be repaired is greater than 3% of the total disturbed area or if a continuous area is larger than one acre.

357.362. The extent of the affected area will be determined by the Division in cooperation with the Permittee.

357.363. The area affected by the repair of highly erodible areas and rills and gullies is defined as any area that is reseeded as a result of the repair. Also included in the affected areas are interspacial areas of thirty feet or less between repaired rills and gullies. Highly erodible areas are those areas which cannot usually be stabilized by ordinary conservation treatments and if left untreated can cause severe erosion or sediment *damage.*

357.364. The repair and/or treatment of rills and gullies which result from a deficient surface water control or grading plan, as defined by the recurrence of rills and gullies, will be considered an augmentative practice and will thus restart the extended responsibility period.

357.365. The areas of concern on the initial reclamation are those natural drainage channels which will be reconstructed during the earth moving phase of reclamation. Specific design and specifications are included in Chapter 7 (Drainage Design). All regraded areas in excess of three percent slope will be sacrificed to aid in the retention of moisture and minimize

erosion. Areas in excess of 3:1 slopes will receive additional mulch and tac to facilitate vegetation establishment.

358. Protection of Fish, Wildlife Values: Mine personnel will be trained annually on environmental awareness, a portion of the training will deal with wildlife concerns, such as avoidance during stress periods, caution in driving to and from work during peak usage periods, recognition of any threatened and endangered species etc. Speed limits will be posted to minimize vehicular / wildlife accidents. In addition, all suitable water encountered during mining will be discharged in such a manner to make it available to wildlife.

358.100. Appendix 3-3 is a letter from U.S. Fish and Wildlife Service identifying all threatened and endangered species that could occur in the permit area or within a one-half mile proximity. All mine personnel will be trained about these species and notify the environmental coordinator at the mine. The environmental coordinator will confirm, if possible, the identification, notify USFWS and the Division, and then take what ever actions are necessary to safeguard both the species and it's habitat.

In addition, a threatened and endangered species inventory will be conducted prior to any disturbance. Historical as well as current threatened and endangered inventories are included in Appendix 3-4.

Prior to any new surface disturbance a raptor inventory will be conducted to ensure that no raptors or their nests or young would be adversely impacted through any mining 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 new disturbance during critical nesting periods will be maintained during that portion of the year that the nest sites are active.

As part of normal mining operation requirements, the Permittee must submit all results of the raptor surveys to the Division in Annual Reports and must immediately contact the Division, BLM, and USFWS following any raptor survey that shows that eagles are tending nests or nesting. The agencies will immediately coordinate to determine if the Permittee must implement appropriate measures. If the agencies recommend mitigation, the Permittee must submit all plans to the Division for incorporation into Appendix 3 of the MRP.

In the event of unforeseen changes in construction or mine plans, or in the case of emergency situations that may force the Permittee to conduct activity near or within the 0.5 mile buffer zone of raptor nest and during raptor exclusionary periods (February 1 to July 15 for golden eagles), the Permittee will immediately contact the Division, BLM, DWR, and USFWS. The agencies will immediately coordinate to determine appropriate measures that may include conducting ground surveys, in coordination with DWR, to determine if birds are tending nests or nesting and possibly determine the life stage of the offspring; developing a mitigation plan, in coordination with the agencies, for possible impacts to nests or birds; or ceasing operations until the end of breeding season to avoid 'take'. If the agencies recommend surveys, the Permittee must submit all survey results to the Division in Annual Reports. If the agencies recommend mitigation, the Permittee must submit all mitigation plans to the Division for incorporation

358.200. No coal mining and reclamation operations will be conducted in a manner which would result in the unlawful taking of a bald or golden eagle, its nests, or any of the eggs.

358.300. This section is addressed in 358.200.

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:

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

358.520. All structures; fences, conveyors etc., will be designed to allow free movement of large mammals except in those areas where it is necessary to preclude large animals for their own safety; example: power substations, oil storage area etc.

358.530. All structures; fences, conveyors etc., will be designed to allow free movement of large mammals except in those areas where it is necessary to preclude large animals for their own safety; example: power substations, oil storage area etc.

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."

Therefore, UEI requests that the ground water monitoring plan be modified as follows:

One spring to the north of the northern edge of the permit boundary named Quaker Spring, will be monitored for two years to develop a baseline data set. It will be designated as L-20-G. Following the baseline data collection its monitoring will follow the operational monitoring schedule for the upper springs (shown on Table 7-3).

As baseline for the ground water conditions has been described by the monitoring to date for the Lila Canyon permit area, UEI ~~would like to~~will discontinue monitoring of the monitoring well water levels until mining intercepts the projected regional piezometric surface, as shown on Plate 7-1, and the springs and seeps until just before second mining takes place within the mine permit area. If mining encounters the regional piezometric surface, then water level monitoring will be resumed. Two years before second mining is anticipated to ~~start~~enter into an area that could affect the surface waters, then monitoring of the wells and springs and seeps will resume and the data compared with the baseline. All surface water monitoring will not start at the same time. Monitoring will resume as the second mining enters an area where the mining could affect the surface waters.

UEI recognizes the Division's concerns for springs, L-G-16 and L-G-17, located at the top of the Mancos Shale, below the escarpment. While concerns of the use of these springs for wildlife have been suggested, UEI does not believe that the wildlife are using these waters. The TDS values have been excessive which are believed to limit or preclude the use of this water by wildlife. At the Division's request, these sampling sites will continue to be monitored, while additional evaluation of wildlife use is made.

The existing baseline data shows the current ground water conditions for the permit area. No significant groundwater impacts have been identified from current first mining

As baseline for the surface water conditions have been described by the monitoring to date for the Lila Canyon permit area, UEI ~~would like to~~will discontinue monitoring of the surface water sites away from the surface facilities until just before second mining takes place within the mine permit area. Two years before second mining is anticipated to start, then monitoring will commence again and the data compared with the baseline.

The existing baseline data shows the current surface water conditions for the permit area. No significant surface water impacts have been identified from current first mining activities. Continuous additional monitoring will only unnecessarily duplicate costs for data that has already been collected.

As the two years of ephemeral wash characterization data have been collected and the data reflects the flow conditions as described in the surface water hydrology sections of the PAP, the sites CG-1 through CG-7 will be suspended and discontinued. Also, the upper rain gauge RS-2 will be suspended. These sites were installed and data were collected, as part of a Board Order settlement, to demonstrate that the upper drainages were ephemeral in nature and that the flow characteristics had been correctly described in the PAP.

Additionally, the sampling frequency for sites ~~L-S-1~~L-1-S, ~~L-S-2~~L-2-S, and ~~L-S-3~~L-3-S be changed from monthly to quarterly. As the baseline for these sites have been determined and there is no impact from the mining, reduction of the sampling frequency is justified. These sites will be sampled quarterly and flows will be recorded when they occur.

Also, it is desired that the monitoring during the first quarter not be continued. During the data collection period, there have been few first quarter periods when it was feasible to gain access to the upper elevations of the Book Cliffs and when access was available to the top during these periods, the snow cover in the canyons prevented access to the sampling locations and the sites which were accessed were either dry or frozen. Therefore, it would be realistic to

recognize the existing field conditions and adjust the monitoring plan accordingly.

The monitoring plan would be modified to require monitoring during the 2nd, 3rd, and 4th quarters.

See Table 7-3 for the surface water monitoring schedule.

731.225 Monitoring Equipment Equipment, structures and other devices used in conjunction with monitoring the quality and quantity of surface water on-site and off-site will be properly installed, maintained and operated and will be removed by the operator when no longer needed.

731.300 Acid- and Toxic-Forming Materials Drainage from acid- and toxic-forming materials and underground development waste into surface water and ground water will be avoided by implementation of a Spill Prevention Control and Countermeasure (SPCC) Plan and by the following:

731.311 Identification/Burial of Acid- or Toxic-Forming Materials
Potentially acid- or toxic-forming materials will be identified by use of Material Safety Data Sheets (MSDS), or by direct sampling and analysis in the case of underground development waste.

Any material which exhibits acid- or toxic-forming characteristics will be properly stored, protected from runoff, removed to an approved disposal site or buried on site beneath a minimum of 4' of non-acid, non-toxic material.

731.312 Storage of Acid- or Toxic-Forming Materials Storage of potentially acid- or toxic-forming materials, such as fuel, oils, solvents and non-coal waste will be in a controlled manner, designed to contain spillage and prevent runoff to surface or ground water resources.

All oils and solvents will be stored in proper containers within enclosed structures. Fuels will be stored in appropriate tanks, enclosed within concrete or earthen bermed areas designed to contain any spillage.

Table 7-3
Lila Canyon Mine
Water Monitoring Stations

Station	Location	Type	Frequency	Remarks
L-11-G	Lila Canyon	Spring	**Sampling Temporarily Suspended 3Qtr 2011**	Mont/Leslie Spring Replaces L-6-G Water Right 91-618
L-12-G	Section 25 Spring	Spring	**Sampling Temporarily Suspended 3Qtr 2011**	Replaces L-10-G
L-13-S	Little Park Wash	Dry Wash	**Sampling Temporarily Suspended 3Qtr 2011**	At Road Crossing
L-14-S	Section 25 Noname Wash	Dry Wash	**Sampling Temporarily Suspended 3Qtr 2011**	At Road Crossing
L-15-S	Williams Draw Wash	Dry Wash	**Sampling Permanently Suspended 1Qtr of 2003**	At Road Crossing
L-16-G	Stinky Spring Wash	Seep	Quarterly 2-3-4	Top of Mancos
L-17-G	Stinky Spring Wash	Seep	Quarterly 2-3-4	Top of Mancos
L-18-S	Stinky Springs Wash	Dry Wash	**Sampling Temporarily Suspended 3Qtr 2011**	Adjacent to Access Road
L-19-S	Little Park Wash	Dry Wash	**Sampling Temporarily Suspended 3Qtr 2011**	At Permit Boundary

Table 7-3
Lila Canyon Mine
Water Monitoring Stations

Station	Location	Type	Frequency	Remarks
L-20-G	Quaker Spring	Seep	**Sampling ~~Commenced 1Qtr~~Temporarily Suspended 3Qtr 2011~~2~~**	North of Permit Boundary
IPA-1	Little Park	Borehole	**Sampling Temporarily Suspended 3Qtr 2011**	Water Level Only
IPA-2	Little Park	Borehole	**Sampling Temporarily Suspended 3Qtr 2011**	Water Level Only
IPA-3	Little Park	Borehole	**Sampling Temporarily Suspended 3Qtr 2011**	Water Level Only

NOTE: Sites CG-2, CG-3, CG-4, CG-5, CG-6, and CG-7 were suspended following completion of wash characterization study.

Other sites temporarily suspended until two year prior to second mining influence.

Due to access concerns only the 2nd, 3rd and 4th quarters will be sampled. First quarter has been no access.

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."

Therefore, UEI requests that the ground water monitoring plan be modified as follows:

One spring to the north of the northern edge of the permit boundary named Quaker Spring, will be monitored for two years to develop a baseline data set. It will be designated as L-20-G. Following the baseline data collection its monitoring will follow the operational monitoring schedule for the upper springs (shown on Table 7-3).

As baseline for the ground water conditions has been described by the monitoring to date for the Lila Canyon permit area, UEI will discontinue monitoring of the monitoring well water levels until mining intercepts the projected regional piezometric surface, as shown on Plate 7-1, and the springs and seeps until just before second mining takes place within the mine permit area. If mining encounters the regional piezometric surface, then water level monitoring will be resumed. Two years before second mining is anticipated to enter into an area that could affect the surface waters, then monitoring of the wells and springs and seeps will resume and the data compared with the baseline. All surface water monitoring will not start at the same time. Monitoring will resume as the second mining enters an area where the mining could affect the surface waters.

UEI recognizes the Division's concerns for springs, L-G-16 and L-G-17, located at the top of the Mancos Shale, below the escarpment. While concerns of the use of these springs for wildlife have been suggested, UEI does not believe that the wildlife are using these waters. The TDS values have been excessive which are believed to limit or preclude the use of this water by wildlife. At the Division's request, these sampling sites will continue to be monitored, while additional evaluation of wildlife use is made.

The existing baseline data shows the current ground water conditions for the permit area. No significant groundwater impacts have been identified from current first mining

activities. Continuous additional monitoring will only unnecessarily duplicate costs for data that has already been collected.

Also, it is desired that the monitoring during the first quarter not be continued. During the data collection period, there have been few first quarter periods when it was feasible to gain access to the upper elevations of the Book Cliffs and when access was available to the top during these periods, the snow cover in the canyons prevented access to the spring locations and the springs which were accessed were frozen. Therefore, it would be realistic to recognize the existing field conditions and adjust the monitoring plan accordingly.

The monitoring plan would be modified to require monitoring during the spring, summer and fall quarters.

731.215 Monitoring Equipment equipment, structures and other devices used in conjunction with monitoring the quality of ground water on-site and off-site will be properly installed, maintained and operated and will be removed by the operator when no longer needed.

731.220 Surface Water Monitoring Surface water monitoring will be conducted in accordance with the plan described in this section.

Based on results of the PHC determination, baseline study and other available information, numerous small springs and seeps exist within, and adjacent to, the permit area. In addition, ephemeral drainages in the area flow in response to snow melt and precipitation events. The proposed surface water monitoring program will monitor the significant surface water sources, including drainages above and below the disturbed mine site area, and all point-source discharges (i.e. sediment pond). Seeps, springs and potential mine water discharge will be monitored in accordance with the Ground Water Monitoring Plan in the previous section.

It should be noted that field sheets in Appendix 7-2 refer to a point HC-2, while Bar Graphs and Spreadsheets refer to a station B-1. It has been determined that these are the same point. The site is designated B-1 on Plate 7-1, with a red HC-2 in parenthesis. The

electronic data inventory (EDI) also shows both B-1 and HC-2 designations for this site.

Another HC-2 site is listed in the seep/spring inventories in Appendix 7-6 and in the baseline data in Appendix 7-1. This station is also occasionally referred to as H-2 in the seep/spring inventories (Appendix 7-6). It has been determined that the H-2 and HC-2 sites referred to in these two appendices are the same station. The station location is shown on Plate 7-1, where it is designated H-2 with a green (HC-2) in parentheses.

There is one other station with confusing designations in the data from Appendix 7-2 and 7-6 - station HCSW-1. This station has 3 different designations in the data - HCSW-1, HSW-1, and HC-1. The point is shown as HC-1 on Plates 7-1 and 7-4; however, a note has been added to Plate 7-1 to show the station is also called (HCSW-1), to eliminate confusion. It should also be noted that there is a seep/spring site designated as H-1 on Plate 7-1. This is not to be confused with any of the above listed HC, HSW or HCSW sites.

These are the only known duplication or wrong designation of sample site numbers. It appears that different samplers or companies conducting seep/spring inventories occasionally used different designations for the same sites - the main problem being the use of H-# or HC-# for the same location, in some instances. Every effort has been made to refine the station identifications and locations on Plate 7-1 to reflect the sampling data provided in Appendices 7-1, 7-2 and 7-6. Wherever a site has 2 different designations, both are shown with one in parentheses.

Table 7-3 presents a list of proposed surface water monitoring sites. Based on the two years of surface water sampling at locations CG-2, CG-3, CG-4, CG-5, CG-6, and CG-7 which characterized the drainages as Intermittent by rule with ephemeral flow or ephemeral, which matched the description of these drainages provided in the PAP, these sampling locations will no longer be sampled. Additionally, the surface water sites for these drainages are also requested to be discontinued as explained below in Section 731.224.2.

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".

In any active quarter, a minimum of three unsuccessful attempts will be made by using either 4 wheel drive vehicles or ATV's to access all water monitoring sites prior to reporting any site as "No Access". However, safety and common sense will prevail while making these attempts.

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

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).

731.222 Surface-Water Monitoring Parameters The surface-water monitoring parameters are shown in Table 7-4. Water monitoring locations and sample frequencies are described in Table 7-3 and on Plate 7-4 .

The plan will provide data to show impacts to potentially affected springs, seeps, impoundments and drainages within and adjacent to the permit area, by comparison with relevant baseline data and with applicable effluent limitations.

731.222.1 Non-point Source Locations The parameter list in Table 7-4 provides monitoring for all parameters required by this section. The monitoring locations and frequencies described in Table 7-3 show that all significant springs, seeps, impoundments and drainages that could potentially be impacted by the mining and reclamation operations will be monitored on a regular basis.

731.222.2 Point-source Discharges Point-source discharge monitoring will be conducted in accordance with 40 CFR Parts 122 and 123, R645-301-751 and as required by the Utah Division of Environmental Health for Utah Pollutant Discharge Elimination System (U.P.D.E.S.) permits. A U.P.D.E.S. discharge permit application has been submitted to the Division of Environmental Health for the proposed sediment pond and mine water for the Lila Canyon operation. Existing U.P.D.E.S. permit applications for the Lila Canyon Mine are provided in Appendix 7-5.

731.223 Reporting As indicated in Section 731.220, surface-water monitoring data will be submitted at least every 3 months during active monitoring for each monitoring location. When analysis of any surface water sample indicates non-compliance with the permit conditions, the company will promptly notify the Division and immediately take actions to identify the source of the problem, correct the problem and, if necessary, to provide warning to any person whose health and safety is in imminent danger due to the non-compliance.

731.224 Duration Surface-water monitoring will continue through mining and reclamation until bond release. Locations, parameters and/or sampling frequency (other than U.P.D.E.S. discharge points) may be modified by the Division if:

731.224.1 "The operator has minimized disturbance to the 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,

731.224.2 "Monitoring is no longer necessary to achieve the purposes set forth in the monitoring plan approved under 731.221.

Therefore, UEI requests that the surface water monitoring plan be modified as follows:

As baseline for the surface water conditions have been described by the monitoring to date for the Lila Canyon permit area, UEI will discontinue monitoring of the surface water sites away from the surface facilities until just before second mining takes place within the mine permit area. Two years before second mining is anticipated to start, then monitoring will commence again and the data compared with the baseline.

The existing baseline data shows the current surface water conditions for the permit area. No significant surface water impacts have been identified from current first mining activities. Continuous additional monitoring will only unnecessarily duplicate costs for data that has already been collected.

As the two years of ephemeral wash characterization data have been collected and the data reflects the flow conditions as described in the surface water hydrology sections of the PAP, the sites CG-1 through CG-7 will be suspended and discontinued. Also, the upper rain gauge RS-2 will be suspended. These sites were installed and data were collected, as part of a Board Order settlement, to demonstrate that the upper drainages were ephemeral in nature and that the flow characteristics had been correctly described in the PAP.

Additionally, the sampling frequency for sites L-1-S, L-2-S, and L-3-S be changed from monthly to quarterly. As the baseline for these sites have been determined and there is no impact from the mining, reduction of the sampling frequency is justified. These sites will be sampled quarterly and flows will be recorded when they occur.

Also, it is desired that the monitoring during the first quarter not be continued. During the data collection period, there have been few first quarter periods when it was feasible to gain access to the upper elevations of the Book Cliffs and when access was available to the top during these periods, the snow cover in the canyons prevented access to the sampling locations and the sites which were accessed were either dry or frozen. Therefore, it would be realistic to recognize the existing field conditions and adjust the monitoring plan accordingly.

The monitoring plan would be modified to require monitoring during the 2nd, 3rd, and 4th quarters.

See Table 7-3 for the surface water monitoring schedule.

731.225 Monitoring Equipment Equipment, structures and other devices used in conjunction with monitoring the quality and quantity of surface water on-site and off-site will be properly installed, maintained and operated and will be removed by the operator when no longer needed.

731.300 Acid- and Toxic-Forming Materials Drainage from acid- and toxic-forming materials and underground development waste into surface water and ground water will be avoided by implementation of a Spill Prevention Control and Countermeasure (SPCC) Plan and by the following:

731.311 Identification/Burial of Acid- or Toxic-Forming Materials
Potentially acid- or toxic-forming materials will be identified by use of Material Safety Data Sheets (MSDS), or by direct sampling and analysis in the case of underground development waste.

Any material which exhibits acid- or toxic-forming characteristics will be properly stored, protected from runoff, removed to an approved disposal site or buried on site beneath a minimum of 4' of non-acid, non-toxic material.

731.312 Storage of Acid- or Toxic-Forming Materials Storage of potentially acid- or toxic-forming materials, such as fuel, oils, solvents and non-coal waste will be in a controlled manner, designed to contain spillage and prevent runoff to surface or ground water resources.

All oils and solvents will be stored in proper containers within enclosed structures. Fuels will be stored in appropriate tanks, enclosed within concrete or earthen bermed areas designed to contain any spillage.

Non-coal waste (garbage) will be stored in a designated location, in dumpsters, and removed to an approved landfill (East Carbon Development Contractors - ECDC) on a regular, as-needed basis.

Unused or obsolete equipment or supplies will be stored in a designated area. Drainage from the storage area will be directed to the sediment pond as shown on the Sediment Control Map, Plate 7-5.

Underground development waste (if any) will also be stored in a designated area. Such waste will be tested for acid- or toxic-forming potential, and if found to be acid- or toxic-forming, the waste site will be protected from surface runoff by the use of earthen berms.

731.320 Storage, Burial, Treatment All storage, burial and treatment practices will be as described in this permit, and consistent with applicable material handling and disposal provisions of the R645-Rules.

731.400 Transfer of Wells There are presently three piezometers on this permit. When these piezometers are no longer required, they will be sealed in a safe, environmentally sound manner in accordance with regulations (see Section 631.200). The Horse Canyon Well has been donated to the College of Eastern Utah as part of the Post Mine Land Use Change.

731.500 Discharges The only proposed discharges from this operation will be from the sediment pond and/or underground mine water. Each of these potential discharges would be monitored and controlled within requirements of approved U.P.D.E.S. Discharge Permits.

731.510 Discharges into an Underground Mine There are no plans to discharge any water into an underground mine. This section is not applicable.

731.512 Types of Discharge The only planned discharges from this site are water, in the form of sediment pond discharge or underground mine water discharge.

731.512.1 Water See Section 731.512.

731.512.2 Coal Processing Waste N/A - There are no plans to process coal or discharge coal processing waste from this site.

731.512.3 Fly Ash from a Coal-Fired Facility N/A - There are no plans for a coal-fired facility at this time.

731.512.4 Sludge from Acid-Mine-Drainage Treatment N/A There are no plans for an acid-mine-drainage treatment facility at this time.

Table 7-3
Lila Canyon Mine
Water Monitoring Stations

Station	Location	Type	Frequency	Remarks
L-1-S	Lila Canyon	Int. Stream	**Quarterly**	At mine Site
L-2-S	Rt. Fork Lila (above mine)	Ephemeral Stream	**Quarterly**	RF Above Mine Site
L-3-S	Lila Canyon (below mine)	Int. Stream	**Quarterly**	RF Below Mine Site
L-4-S	Sediment Pond	Discharge	Monthly or as occurs	Per UPDES Permit
L-5-G	Mine Water	Discharge	Monthly or as occurs	Per UPDES Permit
L-6-G	Lila Canyon	Spring	**Sampling Permanently Suspended 1Qtr 2003**	Replaced by L-11-G Water Right 91-617
L-7-G	Little Park	Spring	**Sampling Temporarily Suspended 3Qtr 2011**	Cottonwood Spring Sample Site 9 Water Right 91-2521
L-8-G	Little Park	Spring	**Sampling Temporarily Suspended 3Qtr 2011**	Unnamed Spring Sample Site 10 Water Right 91-2538
L-9-G	Little Park	Spring	**Sampling Temporarily Suspended 3Qtr 2011**	Pine Spring Sample Site 16Z Water Right 91-2539
L-10-G	Williams Draw	Spring	**Sampling Permanently Suspended 1Qtr 2003**	Replaced by L-12-G Water Right 91-809

Table 7-3
Lila Canyon Mine
Water Monitoring Stations

Station	Location	Type	Frequency	Remarks
L-11-G	Lila Canyon	Spring	**Sampling Temporarily Suspended 3Qtr 2011**	Mont/Leslie Spring Replaces L-6-G Water Right 91-618
L-12-G	Section 25 Spring	Spring	**Sampling Temporarily Suspended 3Qtr 2011**	Replaces L-10-G
L-13-S	Little Park Wash	Dry Wash	**Sampling Temporarily Suspended 3Qtr 2011**	At Road Crossing
L-14-S	Section 25 Noname Wash	Dry Wash	**Sampling Temporarily Suspended 3Qtr 2011**	At Road Crossing
L-15-S	Williams Draw Wash	Dry Wash	**Sampling Permanently Suspended 1Qtr of 2003**	At Road Crossing
L-16-G	Stinky Spring Wash	Seep	Quarterly 2-3-4	Top of Mancos
L-17-G	Stinky Spring Wash	Seep	Quarterly 2-3-4	Top of Mancos
L-18-S	Stinky Springs Wash	Dry Wash	**Sampling Temporarily Suspended 3Qtr 2011**	Adjacent to Access Road
L-19-S	Little Park Wash	Dry Wash	**Sampling Temporarily Suspended 3Qtr 2011**	At Permit Boundary

Table 7-3
Lila Canyon Mine
Water Monitoring Stations

Station	Location	Type	Frequency	Remarks
L-20-G	Quaker Spring	Seep	**Sampling Temporarily Suspended 3Qtr 2012**	North of Permit Boundary
IPA-1	Little Park	Borehole	**Sampling Temporarily Suspended 3Qtr 2011**	Water Level Only
IPA-2	Little Park	Borehole	**Sampling Temporarily Suspended 3Qtr 2011**	Water Level Only
IPA-3	Little Park	Borehole	**Sampling Temporarily Suspended 3Qtr 2011**	Water Level Only

NOTE: Sites CG-2, CG-3, CG-4, CG-5, CG-6, and CG-7 were suspended following completion of wash characterization study.

Other sites temporarily suspended until two year prior to second mining influence.

Due to access concerns only the 2nd, 3rd and 4th quarters will be sampled. First quarter has been no access.

Bonding Calculations
Horse Canyon MineC/007/013
Lila Canyon Section

Bond Summary

Direct Costs		
Subtotal Demolition and Removal	$563,565.00	
Subtotal Backfilling and Grading	$494,315.00	
Subtotal Revegetation	$238,309.00	
Direct Costs	$1,296,189.00	
Indirect Costs		
Mob/Demob	$129,619.00	10.0%
Contingency	$64,809.00	5.0%
Engineering Redesign	$32,405.00	2.5%
Main Office Expense	$88,141.00	6.8%
Project Mainagement Fee	$32,405.00	2.5%
Subtotal Indirect Costs	$347,379.00	26.8%
Total Cost	$1,643,568.00	
Escalation factor for 2013 @1.5%		1.50%
Number of years		5
Escalation	$127,022.00	
Reclamation Cost	$1,770,590.00	
Bond Amount (rounded to nearest $1,000) 2013 Dollars	$1,771,000.00	
Bond Posted Up to December 2010	$1,807,000.00	
Difference Between Cost Estimate and Bond	$36,000.00	
Percent Difference	1.99%	

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Office Bathhouse																			$95,424
Shop Warehouse																			$125,092
Security Shack																			$893
Mine Substation																			$11,116
Underground Power Lines																			left in place
Water Treatment Plant																			$1,963
Potable Water Tank																			1345
Process Water Tank																			1345
Sewer Tank																			$1,431
Drain Field																			left in place
Ventilation Fan																			$51,977
Conveyor Tunnels to Coal Stockpile																			33236
Conveyor ROM Stockpile to Crusher																			11954
Conveyor Crusher to Loudout Bin																			$8,375
Conveyor Loudout Bin Truck Loadout																			$838
Reclaim Escape Tunnel Fan Fan House																			18849
ConveyorStoragePileStakingTube																			11475
Crusher Screen Plant																			4905
Truck Scale to Loadout																			$7,807
Coal Storage Bin																			$4,034
Guard Rail																			4149.68
Underground Pipes																			Left in Place
Chain Link Fence																			$5,115
Mine Facilities Rd Truck Loadout Rd																			$32,900
Office Bathhouse Warehouse Parking																			$55,623
Mine Parking																			$14,015
Fuel Tanks																			$2,842
Powder and Cap Magazine																			$2,440
Culverts																			13534.35
Old Horse Canyon Fan Portals in Lila Canyon																			$5,000
Lila Ventilation Portals North and South																			$29,000
Pole Barn																			$6,413
Rock Dust Silo																			$2,142
Total																			$563,566

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Office Bathhouse																			
Structure's Demolition Cost	Steel Bld. Large	024116130020	0.28	/CF	150	100	15								FT		225000	CF	63000
Structure's Vol. Demolished																0.3	2500	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													600	Ton	8178
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								480			lb/cf		600	ton	4200
Subtotal																			75378
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost	Concrete demolition	024116170440	6.53	/BCY	150	100	1								FT		555.5	CY	3683
Concrete's Vol. Demolished																1.3	722	CY	
Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													722	CY	13988
Transportation Cost				/LCY													722	CY	0
Disposal Costs	On site disposal	024116174200	9.54	/LCY													361	CY	3444
Subtotal																			21116
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			96494

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Shop Warehouse																			
Structure's Demolition Cost	Steel Bld, Large	024116130020	0.28	/CF	150	100	20								FT		300000	CF	84000
Structure's Vol. Demolished																0.3	3333	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													800	ton	10904
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								480			lb/cf		800	ton	5600
Subtotal																			100504
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost	Concrete demolition	024116170440	6.63	/CY	150	100	1								FT		556	CY	3686
Concrete's Vol. Demolished																1.3	723	CY	
Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													723	CY	14005
Transportation Cost				/LCY													723	CY	0
Disposal Costs	On site disposal	024116174200	9.54	/LCY													723	CY	6897
Subtotal																			24588
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			125092

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Security Shack																			
Structure's Demolition Cost	Steel Bld. Large	024116130020	0.28	/CF	20	10	8								FT		1600	CF	445
Structure's Vol. Demolished																0.3	15	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													4	ton	55
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								480			lb/cf		4	ton	29
Subtotal																			531
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost	Concrete demolition	024116170440	6.63	/CY	20	10	0.25								FT		2	CY	13
Concrete's Vol. Demolished																1.3	3	CY	
Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/CY													3	CY	58
Transportation Cost				/CY													3	CY	0
Disposal Costs	On site disposal	024116174200	9.54	/CY													3	CY	29
Subtotal																			100
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			631

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Mine Substation																			
Structure's Demolition Cost																			
Structure's Vol. Demolished																			
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																			
Subtotal																			
Equipment 's Disposal Cost	Mechanical equipment heavy	230505103600	641.65	/ton							4			4	ton		15	ton	10266
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			10266
Equipment 's Disposal Cost	Chain link remove 8'-10'	24113601750	3.41	/LF	160										FT		160	FT	546
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			546
Concrete Demolition																			
Demolition Cost	Concrete demolition	024116170440	6.63	/CY	20	20	0.5							4	FT		7	CY	46
Concrete's Vol. Demolished																1.3	9	CY	
Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/CY													9	CY	174
Transportation Cost				/CY													9	CY	0
Disposal Costs	On site disposal	024116174200	9.54	/CY													9	CY	86
Subtotal																			306
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			11118

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Underground Power Lines																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			**left in place**

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Water Treatment Plant																			
	Structure's Demolition Cost	Steel Bld. Large	024116130020	0.28	/CF						1800					CF		1800	CF	504
	Structure's Vol. Demolished																0.3	20	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													5	ton	68
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								490			lb/cf		5	ton	35
	Subtotal																			607
	Equipment 's Disposal Cost																			
	Dismantling Cost	3000 gal. to 5000 gal. tank	026510300110	484.43	Ea.										1	EA		1	EA	484
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs	3000 gal. to 5000 gal. tank	026510301023	719.96	Ea.										1	EA		1	EA	720
	Subtotal																			1204
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	024116170440	6.83	/CY	15	15	0.5								FT		4	CY	27
	Concrete's Vol. Demolished																1.3	5	CY	
	Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/CY													5	CY	97
	Transportation Cost				/CY													5	CY	0
	Disposal Costs	On site disposal	024116174200	9.54	/CY													5	CY	48
	Subtotal																			172
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1983

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diamet	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Potable Water Tank																			
	Structure's Demolition Cost	Steel Bld, Large	024116130020	0.28	/CF			20	15							FT		3534	CF	990
	Structure's Vol. Demolished																0.3	33	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													9	ton	123
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								460			lb/cf		9	ton	63
	Subtotal																			1176
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	024116170440	6.63		15	15	0.5								FT		4	CY	27
	Concrete's Vol. Demolished																1.3	5	CY	0
	Loading and trucking Cost	Loading and Trucking	024119193080	19.37														5	CY	97
	Transportation Cost																	5	CY	0
	Disposal Costs	On site disposal	024116174200	9.54														5	CY	48
	Subtotal																			172
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1348

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Process Water Tank																			
Structure's Demolition Cost	Steel Bld. Large	024116130020	0.28	/CF			20	15							FT		3534	CF	990
Structure's Vol. Demolished																0.3	35	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													9	ton	123
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								480			lb/cf		9	ton	63
Subtotal																			1176
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost	Concrete demolition	024116170440	6.63	/BCY	15	15	0.5								FT		4	CY	27
Concrete's Vol. Demolished																1.3	5	CY	
Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													5	CY	97
Transportation Cost				/LCY													5	CY	0
Disposal Costs	On site disposal	024116174200	9.54	/LCY													5	CY	48
Subtotal																			172
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			1348

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Sewer Tank																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Remove Tank	3000 gal. to 5000 gal. tank	026510300110	484.43	Ea.										1	EA		1	EA	484
	Remove Sludge	3000 gal. to 5000 gal. tank	026510300300	227.22	Ea.										1	EA		1	EA	227
	Disposal Costs	3000 gal. to 5000 gal. tank	026510301023	719.95	Ea.										1	EA		1	EA	720
	Subtotal																			1431
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1431

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Drain Field																			
	Structure's Demolition Cost	will remain in place at reclamation																		
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			left in place

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Ventilation Fan																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost	Mechanical equipment heavy	15055 300 3600	641.65	/ton							10			4	ton		40	ton	25666
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			25666
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs	Helicopter	15433603550	2600.5	/HR									10		HR		10	HR	26005
	Disposal Costs																			
	Subtotal																			26005
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	024116170440	6.63	/BCY	20	20	0.5								FT		7	CY	46
	Concrete's Vol. Demolished																1.3	9	CY	
	Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													9	CY	174
	Transportation Cost				/LCY													9	CY	0
	Disposal Costs	On site disposal	024116174200	9.54	/LCY													9	CY	86
	Subtotal																			306
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			51977

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Conveyor Tunnels to Coal Stockpile																			
Structure's Demolition Cost	Steel Bld, Large	024116130020	0.28	/CF	810	6	20								FT		97200	CF	27216
Structure's Vol. Demolished																0.3	1080	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													259	ton	3530
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								480			lb/cf		259	ton	1813
Subtotal																			32559
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost	Concrete demolition	024116170440	6.63	/BCY						15							15	CY	99
Concrete's Vol. Demolished																1.3	20	CY	
Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													20	CY	387
Transportation Cost				/LCY													20	CY	0
Disposal Costs	On site disposal	024116174200	9.54	/LCY													20	CY	191
Subtotal																			677
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			33236

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Conveyor ROM Stockpile to Crusher																			
	Structure's Demolition Cost	Steel Bld. Large	024116130020	0.28	/CF	675	5	10								FT		33750	CF	9450
	Structure's Vol. Demolished																0.3	375	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													90	ton	1227
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								480			lb/cf		90	ton	630
	Subtotal																			11307
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	024116170440	6.63	/BCY							15						15	CY	99
	Concrete's Vol. Demolished																1.3	20	CY	
	Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													20	CY	387
	Transportation Cost				/LCY													20	CY	0
	Disposal Costs	On site disposal	024116174200	9.54	/LCY													20	CY	191
	Subtotal																			677
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			11984

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Conveyor Crusher to Loudout Bin																			
	Structure's Demolition Cost	Steel Bld. Large	024116130020	0.28	/CF	230	5	20								FT		23000	CF	5440
	Structure's Vol. Demolished																0.3	356	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													61	ton	831
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								480			lb/cf		61	ton	427
	Subtotal																			7696
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	024116170440	6.63	/BCY						15							15	CY	99
	Concrete's Vol. Demolished																1.3	20	CY	
	Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													20	CY	387
	Transportation Cost				/LCY													20	CY	0
	Disposal Costs	On site disposal	024116174200	9.54	/LCY													20	CY	191
	Subtotal																			677
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			8375

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Conveyor Loudout Bin Truck Loadout																			
Structure's Demolition Cost	Steel Bld, Large	024116130020	0,28	/CF	5	5	20								FT		500	CF	140
Structure's Vol. Demolished																0.3	5	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13,63	/Ton													1	ton	14
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel	Nielsons Construction	Nielsons	7,00	/TON								450			lb/cf		1	ton	7
Subtotal																			161
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost	Concrete demolition	024116170440	6,63	/BCY						15							15	CY	99
Concrete's Vol. Demolished																1.3	20	CY	
Loading and trucking Cost	Loading and Trucking	024119193080	19,37	/LCY													20	CY	387
Transportation Cost				/LCY													20	CY	0
Disposal Costs	On site disposal	024116174200	9,54	/LCY													20	CY	191
Subtotal																			677
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			838

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Reclaim Escape Tunnel Fan Fan House																			
Currugated Steel	Steel Bld. Large	024116130020	0.28	/CF						26880					CF		26880	CF	7526
Escape Tunnel	Steel Bld. Large	024116130020	0.28	/CF						1257					CF		1257	CF	352
Fan	Steel Bld. Large	024116130020	0.28	/CF						64					CF		64	CF	18
Fan House	Steel Bld. Large	024116130020	0.28	/CF						512					CF		512	CF	143
Structure's Vol. Demolished																0.3	319	CF	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck	Transporation to Nielsons Dump	Scamp	13.63	/Ton													77	77	1050
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								480			lb/cf		77	ton	539
Subtotal																			9628
Excavation and Backfill																			
Reclaim Tunnel	Excavation bulk bank 2CY	312316420260	1.71	/CY	350	14	10								FT		1815	CY	3104
Reclaim Tunnel	Backfill Trench 1CY	312316133020	1.92	/CY													1815	CY	3455
Escape Tunnel	Excavation bulk bank 2CY	312316420260	1.71	/CY	325	4	10								FT		481	CY	823
Escape Tunnel	Backfill Trench 1CY	312316133020	1.92	/CY													481	CY	924
Subtotal																			8336
Concrete Demolition																			
Demolition Cost	Concrete demolition	024116170440	6.63	/BCY						20							20	CY	133
Concrete's Vol. Demolished																1.3	26	CY	
Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													26	CY	504
Transportation Cost				/LCY													26	CY	0
Disposal Costs	On site disposal	024116174200	9.54	/LCY													26	CY	245
Subtotal																			885
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			18849

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	ConveyorStoragePileStakingTube																			
	Structure's Demolition Cost	Steel Bld. Large	024116130020	0.28	/CF			80	20							FT		25133	CF	7037
	Structure's Vol. Demolished																0.3	279	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													67	ton	913
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								430			lb/cf		67	ton	469
	Subtotal																			8419
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	024116170440	6.63	/BCY	25	25	3								FT		69	CY	457
	Concrete's Vol. Demolished																1.3	90	CY	
	Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													90	CY	1743
	Transportation Cost				/LCY													90	CY	0
	Disposal Costs	On site disposal	024116174200	9.54	/LCY													90	CY	859
	Subtotal																			3059
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			11478

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Crusher Screen Plant																			
	Structure's Demolition Cost	Steel Bld. Large	024116130020	0.28	/CF						12000					CF		12000	CF	3360
	Structure's Vol. Demolished																0.3	133	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													32	ton	436
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								480			lb/cf		32	ton	224
	Subtotal																			4020
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	024116170440	6.63	/BCY						20							20	CY	133
	Concrete's Vol. Demolished																1.3	26	CY	
	Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													26	CY	504
	Transportation Cost				/LCY													26	CY	0
	Disposal Costs	On site disposal	024116174200	9.54	/LCY													26	CY	248
	Subtotal																			885
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			4905

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Truck Scale to Loadout																			
Structure's Demolition Cost	**Steel Bld, Large**	024116130020	0.28	/CF						18850					CF		18850	CF	5278
Structure's Vol. Demolished																0.3	209	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													50	ton	682
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								480			lb/cf		50	ton	350
Subtotal																			6310
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost	Concrete demolition	024116170440	6.63	/BCY						34							34	CY	225
Concrete's Vol. Demolished																1.3	44	CY	
Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													44	CY	852
Transportation Cost				/LCY													44	CY	0
Disposal Costs	On site disposal	024116174200	9.54	/LCY													44	CY	420
Subtotal																			1497
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			7807

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Coal Storage Bin																			
	Structure's Demolition Cost	Steel Bld. Large	024116130020	0.28	/CF						10000					CF		10000	CF	2800
	Structure's Vol. Demolished																0.9	111	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													27	ton	368
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								480			lb/cf		27	ton	189
	Subtotal																			3357
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	024116170440	6.63	/BCY						15							15	CY	99
	Concrete's Vol. Demolished																1.3	20	CY	
	Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													20	CY	387
	Transportation Cost				/LCY													20	CY	0
	Disposal Costs	On site disposal	024116174200	9.54	/LCY													20	CY	191
	Subtotal																			677
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			4034

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Guard Rail																			
	Structure's Demolition Cost	Guard Rail corrugatged steel	024113200100	2.53	LF	1520										FT		1520	FT	3846
	End Sections	End Sections	024113200200	37.96	Each										8	Each		8	EA	303.68
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																				4149.68
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																				4149.68

Post removal is in the linear foot calculation

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Underground Pipes	will remain in place at reclamation																		
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			Left in Place

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Chain Link Fence																			
Structure's Demolition Cost 1995 format	Chain link remove 8'-10'	024113601700	3.41	/LF	1500										FT		1500	FT	5115
Structure's Vol. Demolished																			
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																			
Subtotal																			5115
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			5115

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Mine Facilities Rd Truck Loadout Rd																			
Structure's Demolition Cost																			
Structure's Vol. Demolished																			
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																			
Subtotal																			
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Facilities Road																			
Asphalt Demolition																			
Demolition Cost	Pavement Removal 4-6"	024113175050	4.07	/SY	1750	24									SY		4667	SY	18996
Asphalt's Vol. Demolished							4.00								IN	1.3	874	CY	
Loading Cost																			
Transportation Cost	Transportation to Nielsons Dump	Scamp	13.63	/Ton													874	Ton	9187
Disposal Costs	Nielsons Construction	Nielsons	7.00	/TON									1		CY/Ton		874	Ton	4715
Subtotal																			32900
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Total																			32900

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Office Bathhouse Warehouse Parking																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Office Area																			
	Asphalt Demolition																			
	Demolition Cost	Pavement Removal 4-6"	024113175050	4.07	/SY	475	150									SY		7917	SY	32222
	Asphalt's Vol. Demolished							4.00								IN	1.3	1144	CY	
	Loading Cost																			
	Transportation Cost	Transportation to Nielsons Dump	Scamp	13.63	/Ton													1144	CY	15593
	Disposal Costs	Nielsons Construction	Nielsons	7.00	/TON									1		CY/Ton		1144	CY	8008
	Subtotal																			55823
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Total																			55823

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Mine Parking																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Parking Lot																			
	Asphalt Demolition																			
	Demolition Cost	Pavement Removal 4-6"	024113175050	4.07	/SY	100	200									SY		2222	SY	9044
	Asphalt's Vol. Demolished							3.00								IN	1.3	241	CY	
	Loading Cost																			
	Transportation Cost	Transportation to Nielsons Dump	Scamp	13.63	/Ton													241	241	3285
	Disposal Costs	Nielsons Construction	Nielsons	7.00	/TON								1			CY/Ton		241	CY	1687
	Subtotal																			14016
	Total																			14016

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Fuel Tanks																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Removal Tanks	**3000 gal. to 5000 gal. tank**	026510301023	719.96	Ea.										3	EA		3	EA	2160
	Remove sludge water products	**3000 gal. to 5000 gal. tank**	026510300300	227.22	Ea.										3	EA		3	EA	682
	Haul tank recycle center														3	EA		3	EA	0
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			2842
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			2842

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Powder and Cap Magazine																			
	Structure's Demolition Cost	Mechanical equipment heavy	230505103600	641.65	/ton							4				TON		4	TON	2567
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			2567
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			2567

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Culverts																			
	DC-5	Excavation Bulk Bank 2 CY (322E	312316420260	1.71	/CY	50	1.5	3								FT		8	CY	14
	DC-5	Backfill Trench Mininal Haul 2 1/4	312316133020	1.92	/CY	50	1.5	3								FT		8	CY	15
	DC-6	Excavation Bulk Bank 2 CY (322E	312316420260	1.71	/CY	80	2	3								FT		18	CY	31
	DC-6	Backfill Trench Mininal Haul 2 1/4	312316133020	1.92	/CY	80	2	3								FT		18	CY	35
	DC-7	Excavation Bulk Bank 2 CY (322E	312316420260	1.71	/CY	110	2	3								FT		24	CY	41
	DC-7	Backfill Trench Mininal Haul 2 1/4	312316133020	1.92	/CY	110	2	3								FT		24	CY	45
	DC-8	Excavation Bulk Bank 2 CY (322E	312316420260	1.71	/CY	85	1.5	3								FT		14	CY	24
	DC-8	Backfill Trench Mininal Haul 2 1/4	312316133020	1.92	/CY	85	1.5	3								FT		14	CY	27
	DC-9	Excavation Bulk Bank 2 CY (322E	312316420260	1.71	/CY	40	1.5	3								FT		7	CY	12
	DC-9	Backfill Trench Mininal Haul 2 1/4	312316133020	1.92	/CY	40	1.5	3								FT		7	CY	13
	UC-1	Excavation Bulk Bank 2 CY (322E	312316420260	1.71	/CY	480	5	6								FT		533	CY	911
	UC-1	Backfill Trench Mininal Haul 2 1/4	312316133020	1.92	/CY	480	5	6								FT		533	CY	1023
	Subtotal																			2192
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	36" CMP (5)	024113400180	11.98	LF	365		3								LF		365		4373
	Demolition Cost	72" CMP (1)	024113400200	38.15	LF	480		6								LF		480		18312
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			13534

Ref.	Description Lila Old Fan Portals	Materials	Means Reference Number	Unit Cost	Unit													Quantity	Unit	Cost
	Structure's Demolition Cost	Old Horse Canyon Lila Fan Portal		3000	2															6,000
		Seal Lila North and South Portals		5700	5															28500
	Total	Total			7															33,500

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Pole Barn																			
Structure's Demolition Cost	Steel Bld. Large	024116130020	0.28	/CF	50	30	10								FT		15000	CF	4200
Structure's Vol. Demolished																0.3	167	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck	Transportation to Nielsons Dump	Scamp	13.63	/Ton													40	ton	545
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel	Nielsons Construction	Nielsons	7.00	/TON								480			lb/cf		40	ton	280
Subtotal																			5025
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost	Concrete demolition	024116170440	6.63	/BCY	50	30	0.25								FT		14	CY	93
Concrete's Vol. Demolished																1.3	18	CY	
Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													18	CY	349
Transportation Cost				/LCY													18	CY	0
Disposal Costs	On site disposal	024116174200	9.54	/LCY													18	CY	172
Subtotal																			614
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			5639

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume In Gallons	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Rock Dust Silo																			
Structure's Demolition Cost	Silos, selective demol	130505600050	1344.4	Each			40	11	1572	28434					Each		1	Each	1344
Structure's Vol. Demolished																			
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck	To Scamp Yard/Salvage	Scamp Quote	135	hr									3				3	hr	405
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																			
Subtotal																			1749
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost	Concrete demolition	024116170440	6.63	/CY	15.5	15.5	1			240							8.9	BCY	59
Concrete's Vol. Demolished																	11.6	BCY	224
Loading and trucking Cost	Loading and Trucking	024119193080	19.37	/LCY													11.6	LCY	0
Transportation Cost				/LCY															
Disposal Costs	On site disposal	024116174200	9.54	/LCY						9						1.3	11.6	LCY	110
Subtotal																			393
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			2142

T	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Load and Haul Backfill Material															159529
Load and Haul Topsoil															221539
Support															101098
Total															482316

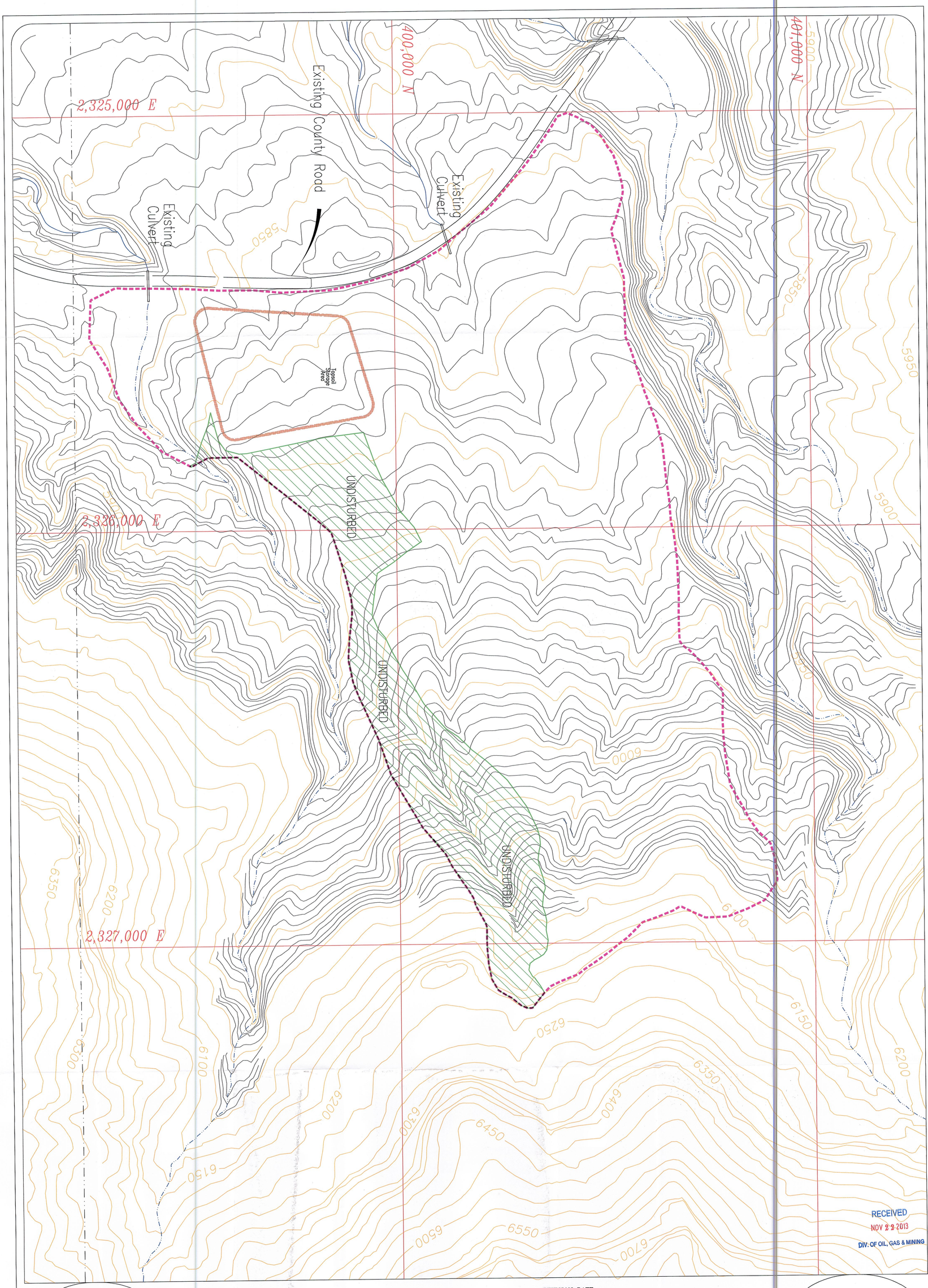
	Means Number	Per Day Equipment Rent Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. - Labor Time/Dis.	Units	Cost
Horse Canyon Mine Lila Canyon Project Grading																
Load and Haul Backfill Material																
Scraper 631E	015433203700	2197.65	132.68	0.1	60.45	330.48	3	991.45	$/HR	28928	CY	393	CY/HR	73.6	HR	73971
D9R	015433204360	2173.50	130.36	0.1	60.45	326.65	1	326.65	$/HR					73.6	HR	24041
Subtotal																97012
Spread and Compact Material																
Assume 4 passes 8 mph 10 in. lift																
D9R	015433204360	2173.50	130.36	0.1	60.45	326.65	1	326.65	$/HR					73.6	HR	24041
Compactor 825B	015433201200	190.00	6.75	0.1	58.20	76.84	1	76.84	$/HR					73.6	HR	5655
Subtotal																29696
Upper Road Area																
Cat 769 D off road truck 40 Ton	015433205810	1569.75	99.40	0.1	48.30	167.71	1	167.71	$/HR	5000	CY	289	CY/HR	17.3	HR	2901
988 Loader 8CY	015433204810	1738.80	111.70	0.1	60.45	187.00	4	748	$/HR					17.3	HR	12940
CAT 325BL (10-21)(2nd04)	015433200320	1497.30	105.83	0.1	48.30	120.67	1	120.67	$/HR					17.3	HR	11135
D9R	015433204360	2173.50	130.36	0.1	60.45	267.11	1	267.11	$/HR	5000		120	CY/HR	41.7	HR	42320
Subtotal																
Total																169528

	Means Number	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. - Labor Time/Dys.	Units	Cost
Horse Canyon Mine Lila Canyon Project																
Grading																
Load and Haul Topsoil																
631E Scraper	015433203700	2197.65	132.68	0.1	60.45	330.48	3	991.45	$/HR	58000	CY	393	CY/HR	142.5	HR	141282
D9R	015433204360	2173.50	130.36	0.1	60.45	326.65	1	326.65	$/HR					142.5	HR	46543
Subtotal																187825
Cat 769 D off road truck	015433205610	1569.75	99.40	0.1	48.30	167.71	1	167.71	$/HR	10000	CY	289	CY/HR	34.6	HR	5803
988 Loader	015433204810	1738.80	111.70	0.1	60.45	187.00	4	748	$/HR					34.6	HR	25851
CAT 325BL (10-21)(2nd04)	015433200320	1497.30	105.83	0.1	48.30	120.67	1	120.67	$/HR					34.6	HR	4175
Subtotal																35829
Total																223654

	Means Number	Rent / Day Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Horse Canyon Mine Lila Canyon Project																
Grading																
Support																
5,000 gallon water truck 015433406900	015433406950	763.14	86.12	0.1	47.05	180.87	1	180.87	$/HR					384.2	HR	69490
Pickup Truck Crew 4x4 1 ton (20-17) (2N04)	015433407200	71.00	14.68	0.1	63.15	82.27	1	82.27	$/HR					384.2	HR	31603
Foreman Average, Outside							1	0	$/HR					384.2	HR	0
																101093
Total																101093

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Vegetation																			
	Ground Preparation																			
	See Chapter 5 page 95-96 Sec. 553.230																			
	Soil to be ripped	75 HP Dozerw/scarifiers	329113233100	3.93	MSF					34						AC		1481	MSF	5820
	Gouging/Pocking																			
	Assume 340 CY/AC	Track Hoe 3 CY = 260CY/HR	312316420500	1.71	/CY					34						AC		11560	CY	19768
	Subtotal																			25588
	Seeding																			
	Fertilize Material	Fertilizing, hydro spread, water soluable	320190130180	4.63	/MSF					34						AC		1481	MSF	6857
	Seeding Materials	Grasses for Lila Canyon	Maple Leaf 11-2013	182	/AC					34						AC		34	AC	6188
	Seeding Materials	Forbs for Lila Canyon	Maple Leaf 11-2013	67	/AC					34						AC		34	AC	2278
	Seeding Materials	Shrubs for Lila Canyon	Maple Leaf 11-2013	118	/AC					34						AC		34	AC	4012
	Seeding Application	Hydro Mulcher Equip Labor Material 1" stra	329113160700	56.23	/MSF					34						AC		1481	MSF	83277
	Mulch Application	Seeding hydro spread	329219145800	26.47	/MSF					34						AC		1481	MSF	39205
	Subtotal																			141814
	Reseeding	Reseeding 25%																		70907
	Assume 50% reseeding rate																			
	Subtotal																			70907
	Total																			238309

G:\Current Drawings\MRP Maps\Lila Canyon\11-2013\Plate1-2 10-001 11-20-13.dwg, Model, 11/20/2013 9:11:48 AM



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NOV 22 2013
DIV. OF OIL, GAS & MINING

LEGEND:

- NATURAL DRAINAGE:
- DISTURBED AREA BOUNDARY:
- UNDISTURBED AREA BOUNDARY:

R 14 E, T 16 S

50' 0' 100' 200'

REVISION DATE:

DATE:	BY:	DATE:	BY:
JAN 2008	RJM		
NOV. 2013	PJJ		

UTAH REGISTERED
#132606
R. Jay Marshall
11/20/13
PROFESSIONAL ENGINEER

LILA CANYON MINE

DISTURBED AREA MAP

DATE:	DESIGNED BY:
SEPTEMBER 2000	EIS
SCALE: AS SHOWN	PLATE #: 1-2

2,325,000 E
2,326,000 E
2,327,000 E
2,328,000 E
401,000 N
400,000 N
399,000 N
5800
5850
5900
5950
6000
6050
6100
6150
6200
6250
6300
6350
6400
6450
6550
6700
6850
6900
SBG
DSH
XBS
RBL
RBT
VBJ
LC1
LC2
LC3
LC4
LC5
LC6
LC7
LC8
LC9
LC10
LC11
LC12
T1L
T2L
A.S.C.A.
Disturbed
A.S.C.A.
Disturbed
Section 15
Section 22

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NOV 22 2013
DIV. OF OIL, GAS & MINING

LEGEND:

- Soil Description Sites
- Soil Transects
- Disturbed Area Boundry
- Countour Interval: 5 feet
- Contour Interval: 25 feet

SOIL MAP UNITS:

SBG: Strych Bouldery fine sandy loam, 5 to 15 percent slopes (grass)

VBJ: Strych Very bouldery fine sandy loam, 5 to 15 percent slopes (pinyon - juniper)

XBS: Strych Extremely bouldery sandy loam, 10 to 45 percent slopes

DSH: Strych Fine snady loam variant, 3 to 8 percent slopes

RBL: Rubbeland-Strych-Gerst Complex, 20 to 70 percent slopes

RBT: Rockland-Travessilla Complex

N

R 14 E, T 16 S

100' 0' 200' 400'

UTAH REGISTERED
#162606
R. Jay Marshall
11/20/13
PROFESSIONAL ENGINEER

REVISION DATE:

Jan 2008	RJM		
Dec 2010	RJM		
Nov. 2013	PAJ		

LILA CANYON MINE

DETAILED SOILS MAP OF THE MINE FACILITIES SITE

DATE: JULY 1999

SCALE: AS SHOWN

PLATE: PLATE 2 - 2

DESIGNED BY: E.I.S.

Cartography by: Kalla McDonald / Allyson Trafficonte
Base Map: Blackhawk Engineering

G:\Current Drawings\MRP Maps\Lila Canyon\11-2013\Plate 2-2 10-010 11-20-13.dwg, Model, 11/21/2013 8:09:16 AM

2,325,000 E
2,326,000 E
2,327,000 E
2,328,000 E
401,000 N
400,000 N
399,000 N
5800
5850
5900
5950
6000
6050
6100
6150
6200
6250
6300
6350
6400
6450
6500
6550
6700
6850
6900
LC1
LC2
LC3
LC4
LC5
LC6
LC7
LC8
LC9
LC10
LC11
LC12
SEDIMENT POND
LOADOUT
CRUSHER
RECLAIM CONVEYOR
BATH HOUSE
PARKING
SBG 18" Reclaimed Topsoil 28080 YD3
DSH 18" Reclaimed Topsoil 2822 YD3
COAL STORAGE
WAREHOUSE
COAL MINE WASTE
OVERHEAD CONVEYOR
MATERIAL STORAGE
Area Below the Road Disturbed But No Topsoil Stripped
RBL 8" Reclaimed Topsoil 1956 YD3
FAN #1
FAN #2
Slope Elevation 6145.0
RBL 8" Reclaimed Topsoil 358 YD3
A.S.C.A.
Disturbed
UNDISTURBED
VBJ 18" Reclaimed Topsoil 497 YD3
XBS 12" Reclaimed Topsoil 11263 YD3
XBS 12" Reclaimed Topsoil 646 YD3
VBJ 18" Reclaimed Topsoil 355 YD3
TOPSOIL STORAGE
Topsoil Storage Area
VBJ UNDER TOPSOIL PILE NOT STRIPPED
VBJ 18" Reclaimed Topsoil 2895 YD3
SEDIMENT POND Reclaimed Topsoil 2298 YD3
A.S.C.A.
Disturbed
Section 15
Section 22

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LEGEND:

SOIL DESCRIPTION SITE ⊙
COAL MINE WASTE —

DISTURBED AREA BOUNDRY - - -
UNDISTURBED AREA BOUNDRY - - -
TOPSOIL BERM —

Amount of Topsoil Removed, Stored and Replaced

SBG	18"	28100 YD3
RBL	8"	2340 YD3
VBJ	18"	8227 YD3
XBS	12"	14207 YD3
DSH	18"	2809 YD3
TOTAL		55683 YD3

SUBSOIL CUT & FILL:

SBG: Strych Bouldery fine sandy loam, 5 to 15 percent slopes (grass)
AVERAGE VOLUME CUBIC YDS: CUT; 14,076 YD3, FILL 17,338 YD3

VBJ: Strych Very bouldery fine sandy loam, 5 to 15 percent slopes (pinyon - juniper)
AVERAGE VOLUME CUBIC YDS: CUT; 2,662 YD3, FILL 3,492 YD3

XBS: Strych Extremely bouldery sandy loam, 10 to 45 percent slopes
AVERAGE VOLUME CUBIC YDS: CUT; 1.067 YD3, FILL 487 YD3

DSH: Strych Fine sandy loam variant, 3 to 8 percent slopes
AVERAGE VOLUME CUBIC YDS: CUT; 643 YD3

REVISION DATE:

DATE:	BY:	DATE:	BY:
2/4/08	RJM		
12/28/09	RJM		
12/08/10	RJM		
11/20/13	PJJ		

N

UTAH REGISTERED PROFESSIONAL ENGINEER
#155606
R. Jay Marshall
11/20/13

T16S, R14E

100' 0' 200' 400'

LILA CANYON MINE

Soil Salvage and Replacement

NOVEMBER 1999
SCALE: AS SHOWN
PLATE: 2-3
DESIGNED BY: UEI

G:\Current Drawings\WRP Maps\Lila Canyon\11-2013\Plate 2-3 10-010 11-20-13.dwg, Model, 11/21/2013 8:09:48 AM

EXISTING MINE WORKINGS

OUTCROP

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LILA CANYON MINE

SURFACE AREA
Official Disturbed Boundary Map

DRG.	DESIGNED BY:	PLATE #
January 2008	R. Jay Marshall	5-2
SCALE: AS SHOWN		

BLM R.O.W. #UTU-77122

Water Treatment Plant

Powder and Cap Magazines

Mine Portal Road

Stream Buffer Zone

CAT Trail

AREA BETWEEN ROADS DISTURBED, BUT NO TOPSOIL STRIPPED.

UNDERGROUND MINE WORKINGS

CONTROL POINT ALPHA
NORTHING: 6,962,462.96
EASTING: 1,964,465.17
ELEVATION: 5821.37'

SECURITY

EMPLOYEE PARKING 191 SPACES

MINE PARKING 51 SPACES

ROM Coal Stockpile

Rock Slope Material 17'+4' Cover 68,000 cyd

CONTROL POINT DELTA
NORTHING: 6,962,106.13
EASTING: 1,967,416.52
ELEVATION: 6129.72'

60" Conveyor

48" RECLAIM CONVEYOR

EMERG RECLAIM FEEDER

RECLAIM FEEDERS

SCATTERED BRUSH AND TREES

UNDISTURBED

Truck Loadout Road

CONTROL POINT BETA
SCATTERED BRUSH AND TREES
NORTHING: 6,961,805.36
EASTING: 1,965,144.01
ELEVATION: 5859.34'

ELECTRICAL SUB-STATION

OVERHEAD POWER

Existing County Road RS-2477 ROW Width of Disturbance

6' High Chain Link Fence

TOPSOIL ACCESS ROAD

TOPSOIL COLLECTED FROM ROAD AROUND TOPSOIL PILE WILL BE PLACED IN BERM BERM 10' WIDE x 2' HIGH WITH 2:1 SIDE SLOPES

Topsoil Pile Capacity
Bot. pile = 5856
Top pile = 5930
Volume req. = 65,000 c.y.
at 1:1 slope

20' EACH SIDE OF CONVEYOR DISTURBED, BUT NO TOPSOIL STRIPPED.

OUTCROP

A.S.C.A. Disturbed

CONTROL POINT GAMMA
NORTHING: 6,960,389.91
EASTING: 1,965,487.50
ELEVATION: 5914.05'

Mine Facility List

1. Office/Bathhouse
2. Shop Warehouse
3. Security Shack
4. Mine Substation
5. Underground Power Lines
6. Water Treatment Plant
7. Potable Water Tank
8. Process Water tank
9. Sewer Tank
10. Drain Field
11. Ventilatin Fan
12. 60" Conveyor Tunnels to Coal Stockpile
13. (ROM) Underground Belt from Stockpile to Crusher
14. 48" Conveyor from Crusher to Loadout Bin
15. Drop from Loadout Bin to Truck Loadout
16. Reclaim Tunnel, Escape Tunnel, Fan and Fan House
17. (ROM) Storage Pile, Coal Stacking Tube
18. Crusher Screen Plant
19. Truck Scale and Loadout
20. Coal Loadout Storage Bin
21. Guardrails
22. Undergound Pipes
23. Chain Link Fence
24. Non-Coal Waste Area
25. Equipment & Supplies Storage Area
26. Topsoil Pile
27. Refuse Pile
28. Sediment Pond #1
29. Slope Access Road/Portal Access Road
30. Rock Slopes
31. Truck Loadout Road
32. Office/Bathhouse/Warehouse Asphalt Parking Area
33. Mine Parking
34. Diesel Fuel Tanks with concrete containment
35. Powder and Cap Magazines
36. Containment Pond #2
37. Grounding Field

PROFESSIONAL ENGINEER
R. JAY MARSHALL
STATE OF UTAH

NOTE:
CONTROL POINT COORDINATE SYSTEM IS U.S. STATE PLANE 1983 - UTAH CENTRAL (4302) ADJUSTED TO SEA LEVEL.

REVISION DATE:

DATE:	BY:	DATE:	BY:
JAN 2008	RJM	JUNE 2011	PJJ
APR. 2009	PJJ	JAN. 2012	PJJ
DEC. 2009	PJJ	NOV. 2013	PJJ
AUGUST 2010	PJJ		
SEPT. 2010	PJJ		
APRIL 2011	PJJ		
MAY 2011	PJJ		

N

R 14 E, T 16 S

300' 150' 0' 75'

LEGEND:

- UNDISTURBED WITHIN THE DISTURBED AREA
- DISTURBED AREA BOUNDARY:
- NATURAL DRAINAGE:
- 6' HIGH CHAIN LINK FENCE
- INCIDENTAL ROCK DISTRIBUTION:
- STREAM BUFFER ZONE SIGNS
- STRUCTURAL FILL:
- TEMP. REFUSE PILE (COAL MINE WASTE):
- TOPSOIL BERM:
- Stream Buffer Zone
- TEMPORARY FACILITIES:
- TEMPORARY ROADWAYS:
- LEASE MODIFICATION:
- BLM R.O.W. BOUNDARY LINE:

NOTES:
(1) REFER TO PLATE 5-7MAB FOR CROSS-SECTIONS.

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LILA CANYON MINE

POST MINING TOPOGRAPHY

DATE	DRAWN BY	PLATE #
JUNE 1998	BLACKHAWK ENG.	5-6
SCALE		
AS SHOWN		

2,325,000 E | 2,326,000 E | 2,327,000 E

401,000 N

400,000 N

Projected Coal Outcrop

Rock Slopes

A.S.C.A.
Disturbed

A.S.C.A.
Disturbed

RD-1

RD-2

UC-1

FINAL RECLAMATION
CONCRETE STORAGE AREA

Topsoil Storage Area

Existing County Road

Portion of UC-1 Beneath County Road Will be Installed by the County and Left in Place After Reclamation

Reclaimed Stream Channel Profile

Creek Bed Outlet Bank Reclaimed Channel

End of Reclaimed Channel Natural Gradient

R 14 E, T 16 S

N

0' 100' 200'
50'

NOTES:
1. REFER TO PLATES 5-7A-1, 5-7A-2, 5-7A-3, 5-7A-4, AND 5-7B-1, 5-7B-2, AND 5-7B-3 FOR CROSS SECTION INFORMATION.
2. REFER TO PLATE 5-7C FOR RECLAIMED PROFILE INFORMATION.
3. SILT FENCES WILL BE INSTALLED AS NEEDED.

LEGEND:
- NATURAL DRAINAGE:
- DISTURBED DRAINAGE
- DISTURBED AREA BOUNDARY:
- UNDISTURBED AREA BOUNDARY:
- RECLAIMED PROFILE SECTION:
- RECLAMATION CONTOURS:
- CONCRETE STORAGE

REVISION DATE:

DATE:	BY:	DATE:	BY:
JAN 2001	BJ	Dec 2010	RJM
February 2008	RJM	Nov. 2013	PJJ
MAR 2001	BJ		
NOV 2002	RJM		
AUG 2003	RJM		
DEC 2004	RJM		
JULY 2004	PJJ		

UTAH REGISTERED ENGINEER 142306 PROFESSIONAL
Jay Marshall

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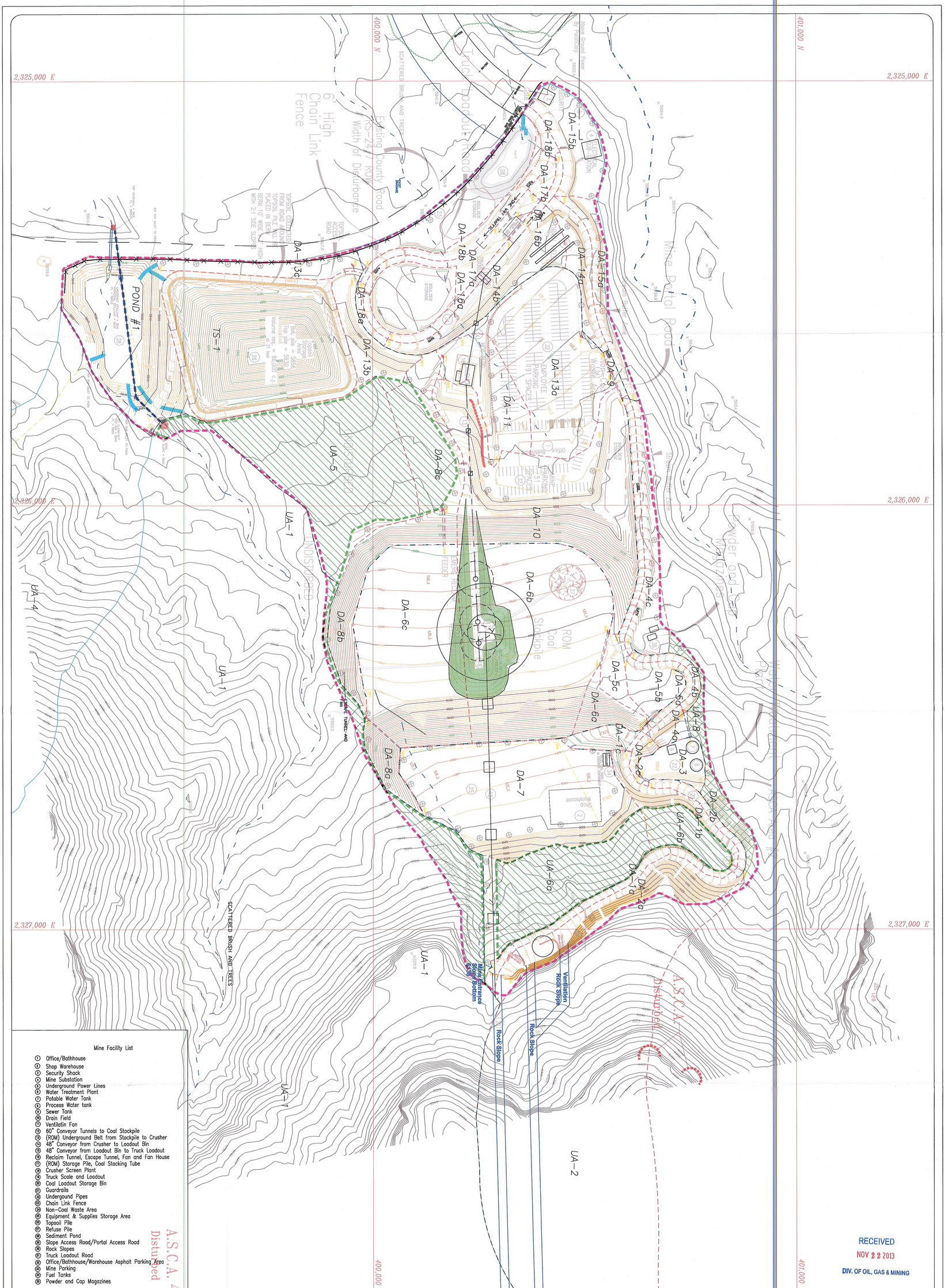


Mine Facility List

1. Office/Bathhouse
2. Shop Warehouse
3. Security Shack
4. Mine Substation
5. Underground Power Lines
6. Water Treatment Plant
7. Potable Water Tank
8. Process Water tank
9. Sewer Tank
10. Drain Field
11. Ventilation Fan
12. 60" Conveyor Tunnels to Coal Stockpile
13. (ROM) Underground Belt from Stockpile to Crusher
14. 48" Conveyor from Crusher to Loadout Bin
15. 48" Conveyor from Loadout Bin to Truck Loadout
16. Reclaim Tunnel, Escape Tunnel, Fan and Fan House
17. (ROM) Storage Pile, Coal Stacking Tube
18. Crusher Screen Plant
19. Truck Scale and Loadout
20. Coal Loadout Storage Bin
21. Guardrails
22. Underground Pipes
23. Chain Link Fence
24. Non-Coal Waste Area
25. Equipment & Supplies Storage Area
26. Topsoil Pile
27. Refuse Pile
28. Sediment Pond
29. Slope Access Road/Portal Access Road
30. Rock Slopes
31. Truck Loadout Road
32. Office/Bathhouse/Warehouse Asphalt Parking Area
33. Mine Parking
34. Fuel Tanks
35. Powder and Cap Magazines

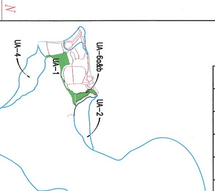
A.S.C.A. Disturbed

LEGEND:

- UNDISTURBED WITHIN THE DISTURBED AREA
- DISTURBED AREA BOUNDARY:
- NATURAL DRAINAGE:
- 6' HIGH CHAIN LINK FENCE
- INCIDENTAL ROCK DISTRIBUTION:
- STREAM BUFFER ZONE SIGNS
- STRUCTURAL FILL:
- TEMP. REFUSE PILE (COAL MINE WASTE):
- TOPSOIL BERM:
- Stream Buffer Zone
- Berm
- Ditch
- Culvert
- WS Bound

NOTES:
(1) REFER TO PLATE 5-7A&B FOR CROSS-SECTIONS.

R 14 E, T 16 S
OFF-SITE FOOTPRINT:



REVISION DATE:

DATE:	BY:	DATE:	BY:
JAN 2008	RJM		
APR 2008	TJS		
JUL 2008	TJS		
JUN 2009	TJS		
JAN 2010	TJS		
Dec 2010	RJM		
Nov. 2013	PJJ		

NOTE: "UNDISTURBED" DENOTES DRAINAGE AND IS NOT APPLICABLE TO SOILS.

UTAH REGISTERED #152606 R. Jay Marshall PROFESSIONAL ENGINEER

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LILA CANYON MINE

DISTURBED AREA HYDROLOGY AND WATERSHED MAP

DATE:	DESIGNED BY:
January 2008	R. Jay Marshall
SCALE: AS SHOWN	PLATE #: 7-2

LILA CANYON MINE

PROPOSED
SEDIMENT CONTROL

DRG. JUNE 1998 | DRAWN BY BLACKHAWK ENG.
SCALE: AS SHOWN | PAGE # 7-5

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DIV. OF OIL, GAS & MINING

STATE OF UTAH
REGISTERED PROFESSIONAL ENGINEER
No. 157886
R. Jay Marshall

REVISION DATE:

DATE:	BY:	DATE:	BY:	DATE:	BY:
OCT 1998	WJ	NOV 2003	RJM	JAN. 2012	PJJ
JAN 1999	WJ	JAN 2005	RJM	NOV. 2013	PJJ
MAR 2000	BHE	APR 2008	TJS		
SEP 2000	BHE	JUL 2008	TJS		
JAN 2001	BHE	JUN 2009	TJS		
MAR 2001	BJ	JAN 2010	TJS		
NOV 2002	RJM	Dec 2010	RJM		

ASCA Area #2

AREA BETWEEN ROADS UNDISTURBED AND NO TOPSOIL STRIPPED.

20' EACH SIDE OF CONVEYOR DISTURBED, BUT NO TOPSOIL STRIPPED.

NOTE:
UNDISTURBED DENOTES DRAINAGE AND IS NOT APPLICABLE TO SOILS.

R 14 E, T 16 S

LEGEND:

- UNDISTURBED WITHIN THE DISTURBED AREA
- DISTURBED AREA BOUNDARY:
- NATURAL DRAINAGE:
- 6' HIGH CHAIN LINK FENCE
- INCIDENTAL ROCK DISTRIBUTION: STREAM BUFFER ZONE SIGNS
- STRUCTURAL FILL:
- TEMP. REFUSE PILE (COAL MINE WASTE):
- TOPSOIL BERM:
- Stream Buffer Zone
- Berm
- Ditch
- Culvert
- WS Bound

NOTES:
(1) REFER TO PLATE 5-7A&B FOR CROSS-SECTIONS.

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LILA CANYON MINE
POST MINING HYDROLOGY
Phase I Bond Release
DATE: JUNE 1998
SCALE: AS SHOWN
DESIGNED BY: BLACKHAWK ENG.
PLATE #: 7-7
RECEIVED
NOV 2 2 2013
DIV. OF OIL, GAS & MINING
UTAH REGISTERED PROFESSIONAL ENGINEER
R. Jay Marshall
REVISION DATE:
DATE: BY:
JAN 1999 WJ
NOV 1999 BHE
SEP 2000 BHE
MAR 2001 BJ
NOV 2002 RJM
NOV 2003 RJM
JAN 2005 RJM
Dec 2010 RJM
Nov. 2013 PJJ
R 14 E, T 16 S
50' 0' 100' 200'
NOTE:
SILT FENCES WILL BE
INSTALLED AS NEEDED.
LEGEND:
NATURAL DRAINAGE:
DISTURBED DRAINAGE
DISTURBED AREA BOUNDARY:
UNDISTURBED AREA BOUNDARY:
Reclaimed Contours
Projected Coal Outcrop
A.S.C.A.
Disturbed
A.S.C.A.
Disturbed
RW-1
23.46 ac
RW-2
19.13 ac
RD-1
RD-2
FINAL RECLAMATION
CONCRETE STORAGE AREA
UNDISTURBED
UNDISTURBED
Topsoil
Storage
Area
Existing County Road
Portion of UC-1 beneath
County Road to be left
in place.
NOTE:
Sediment Pond, RD-1, RD-2, and Upper Portion
UC-1 to be removed upon Phase II Bond release.
2,325,000 E
2,326,000 E
2,327,000 E
401,000 N
400,000 N
5850
5875
5900
5950
6100
6150
6200
6250
6300
6350
6400
6450
6500
6550
6700