

C/007/0013
Received 6/2/16
Task ID #5197



Lila Canyon Project
P. O. Box 910
East Carbon, Utah 84520
Phone: (435) 888-4000
(435) 650-3157
Fax: (435) 888-4002

Utah Division of Oil, Gas & Mining
Utah Coal Program
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, UT 84114-5801

June 1, 2016

Attn: Daron Haddock
Permit Supervisor

Re: Lila Canyon Mine, UtahAmerican Energy, Inc. C/007/013
IBC Ventilation Breakout, Task #5081

Dear Mr. Haddock,

In response to the Division's review of the application for an IBC for the new Ventilation Breakouts, please find in this submittal the corrections to the deficiencies for Task #5081, C1 and C2 forms, redline strikeouts, and maps.

As a part of this submittal, a new Appendix 5-9 is included which describes all needed material for the Ventilation Breakouts.

If you have any questions, or need any additional information regarding this submittal, please contact me directly at 435-888-4000.

Sincerely,

A handwritten signature in black ink, appearing to read 'K. Madsen', written over a horizontal line.

Karin Madsen
Engineering Tech
UtahAmerican Energy, Inc.

APPLICATION FOR PERMIT PROCESSING

<input checked="" type="checkbox"/> Permit Change X	<input type="checkbox"/> New Permit	<input type="checkbox"/> Renewal	<input type="checkbox"/> Transfer	<input type="checkbox"/> Exploration	<input type="checkbox"/> Bond Release	Permit Number: ACT/007/013
L16-001 Lila Canyon Incidental Boundary Change for New Ventilation Breakout						Mine: Lila 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

<input type="checkbox"/> Yes	<input type="checkbox"/> No	1. Change in the size of the Permit Area? Add <u>40</u> acres Disturbed Area? _____ acres X increase <input type="checkbox"/> decrease.
<input type="checkbox"/> Yes	<input type="checkbox"/> No	2. Is the application submitted as a result of a Division Order? DO # _____
<input type="checkbox"/> Yes	<input type="checkbox"/> No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	4. Does application include operations in hydrologic basins other than as currently approved?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	6. Does the application require or include public notice/publication?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	7. Does the application require or include ownership, control, right-of-entry, or compliance information?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	9. Is the application submitted as a result of a Violation? NOV # _____
<input type="checkbox"/> Yes	<input type="checkbox"/> No	10. Is the application submitted as a result of other laws or regulations or policies? Explain: _____
<input type="checkbox"/> Yes	<input type="checkbox"/> No	11. Does the application affect the surface landowner or change the post mining land use?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2?)
<input type="checkbox"/> Yes	<input type="checkbox"/> No	13. Does the application require or include collection and reporting of any baseline information?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	14. Could the application have any effect on wildlife or vegetation outside the current disturbed area? Insignificant
<input type="checkbox"/> Yes	<input type="checkbox"/> No	15. Does application require or include soil removal, storage or placement? Insignificant
<input type="checkbox"/> Yes	<input type="checkbox"/> No	16. Does the application require or include vegetation monitoring, removal or revegetation activities?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	17. Does the application require or include construction, modification, or removal of surface facilities?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	18. Does the application require or include water monitoring, sediment or drainage control measures?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	19. Does the application require or include certified designs, maps, or calculations?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	20. Does the application require or include subsidence control or monitoring?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	21. Have reclamation costs for bonding been provided for?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	23. Does the application affect permits issued by other agencies or permits issued to other entities?

X Attach 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.


 Karin Madsen / Engineering Tech / 6-116
 Signed - Name - Position - Date

Subscribed and sworn to before me this 1st day of June, 192016

My Commission Expires: _____
 Attest: 
 Notary Public
 STATE OF Utah
 COUNTY OF Carbox



Received by Oil, Gas & Mining
ASSIGNED TRACKING NUMBER

Application for Permit Processing Detailed Schedule of Changes to the MRP

L16-001 Lila Canvon	Permit Number: ACT/007/013
	Mine: Lila Canvon
	Permittee: UtahAmerican Energy, Inc.

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
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<p>Plates 1 through 41 have been revised, and replaced with the following:</p> <p>Plate 1-1 Permit Area Map Revised Plate 2-1 Soils Map Revised Plate 3-1A Wildlife Habitat: Raptors (Confidential) Revised Plate 3-1B Wildlife Habitat: Big Horn Sheep / Antelope Revised Plate 3-1C Wildlife Habitat: Elk Revised Plate 3-1D Wildlife Habitat: Mule Deer Revised Plate 3-2 Vegetation Map Revised Plate 4-1 Surface Ownership Revised Plate 4-2 Grazing Allotments Revised Plate 4-3 Cultural Resources (Confidential) Revised Plate 4-4 Area of Wilderness Character Revised Plate 5-1 Previously Mined Areas Revised Plate 5-2a IBC Area - Graben Breakout New Plate 5-3 (Confidential) Subsidence Control Map (Confidential) Revised Plate 5-3 Subsidence Control Map Revised Plate 5-4 Coal Ownership Revised Plate 5-5 Mine Map Revised Plate 6-1 Project Area Geologic Map Revised Plate 6-2 General Geology Revised Plate 6-3 Coal Thickness Isopachs Revised Plate 6-4 Cover and Structure Map Revised Plate 6-5 Coal Sections Revised Plate 7-1 Permit Area Hydrology Revised Plate 7-1A Permit Area Hydrology with Geologic Map Revised Plate 7-3 Water Rights Revised Plate 7-4 Water Monitoring Locations Revised</p>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Chapter 1 pages 2, 10, 15, 16, 17, 18
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Chapter 2 page 15
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Chapter 3 pages 5, 6, 8,
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Chapter 5 Lists of Appendixes, pages 21, 22
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Chapter 7 pages 4, 48
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Appendix 5-9

Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

Chapter 1

100. GENERAL CONTENTS.

110. Minimum Requirements

111. Intent

The information included within this chapter of the permit application is intended to satisfy the minimum requirements of R645-301-100. All relevant information on the ownership and control of persons who conduct coal mining and reclamation operations, the ownership and control of the property to be affected by the operation, the compliance status and history of those persons, and other important information is provided. The format for the permit application was used to facilitate expedient review and approval.

112. Identification of Interests.

112.100. The applicant, **UtahAmerican Energy, Inc.**, is a corporation organized and existing under the laws of Utah and qualified to do business in Utah.

112.200. The name, address, telephone number, and employer identification number of the applicant, resident agent, and person who will pay the abandoned mine land reclamation fee is as follows:

112.210. The Applicant **UtahAmerican Energy, Inc.**, will also be the operator.

UtahAmerican Energy, Inc.
P.O. Box 98610
PriceEast Carbon, Utah 8450184520

Employer Identification Number: 34-1874726

112.220. The resident agent of the applicant, UtahAmerican Energy, Inc., is:

Karin OdendahMadsen
UtahAmerican Energy, Inc.
P.O. Box 98610
PriceEast Carbon, Utah 8450184520

114. Right-of-Entry Information.

A Right-of-Way application and the subsequent Environmental Assessment (EA) has been submitted to the BLM. The EA was issued for public comment in the summer of 2000. A Finding of No Significant Impact (FONSI) and record of decision were issued in October 2000. An appeal was filed and a stay requested. The stay was not acted on and an uninhibited Right-of-Way could be issued in the spring of 2003. Appendix 1-6 contains BLM correspondence in regards to Right-of-Entry as provided by the pending Right-of-Way and its related use.

114.100. UtahAmerican Energy, Inc., currently holds 5,544.01 acres of federal coal contained in six federal leases, purchase in June 2000 from Intermountain Power Agency and assigned to UEI by the BLM. (See Table 1-1 and Plate 5-4). These leases are contained in the South Lease - North Block LMU filed May 1996. The leases as described in the North Block LMU are not under any pending litigation. **UtahAmerican Energy, Inc.,** bases its legal right to enter and conduct mining activities in the permit area pursuant to the language contained in the Federal Coal Lease, Part I Lease Rights Granted which reads as follows:

“That the lessor, in consideration of the rents and royalties to be paid and the covenants to be observed as hereinafter set forth, does hereby grant and lease to the lessee the exclusive right and privilege to mine and dispose of all the coal in, upon, or under the following described tracts of land, situated in the State of Utah.... together with the right to construct all such works, buildings, plants, structures and appliances as may be necessary and convenient for the mining and preparation of the coal for market, the manufacture of coke or other products of coal, the housing and welfare of employees, and subject to the conditions herein provided, to use so much of the surface as may reasonably be required in the exercise of the rights and privileges herein granted.”

The surface right-of-entry is in the form of BLM right-of-waysrights-of-way. See Appendix 1-1 for a BLM letter assigning right-of-way numbers.

- 141.** Maps have been presented in a consolidated format, to the extent possible, and include all the types of information that are set forth on U.S. Geological Survey of the 1:24,000 scale series. Maps of the permit area are to the scale of 1:6,000 or larger. Maps of the adjacent area will clearly show the lands and waters within those areas.
- 142.** Maps and plans submitted with the permit application distinguish among each of the phases during which coal mining and reclamation operations were or will be conducted at any place within the life of operations.

150. Completeness

This permit extension to the existing Horse Canyon Permit ACT/007-013 to conduct coal mining and reclamation operations is complete and includes the minimum information required under R645-301 and, if applicable, R645-302. Plates 1-1 and 1-2 show the permittee area and proposed disturbed area boundaries.

This permit extension is intended to add the Lila Canyon Mine as part "B" to the existing permit and to leave unchanged the current approved Horse Canyon Mine as part "A". The Horse Canyon Mine "PPart A" is for reclamation only.

**Legal Description of Horse Canyon
Parts "A" and "B"**

Lila Canyon Permit Area "A":

Beginning at the SW corner of the SE1/4 SE1/4 of Section 5, T16S, R14E, SLBM; and running thence North 660 feet; thence East 2640 feet; thence North 660 feet; thence East 1980 feet; thence North 660 feet; thence approximately N51°E 4689 feet, more or less; thence approximately N14°W 1325 feet, more or less; thence West 250 feet; thence approximately N22°W 1280 feet, more or less; thence approximately N65°E 580 feet, more or less; thence approximately N15°E 501 feet, more or less; thence approximately N80°W 80 feet, more or less; thence approximately N10°E 1700 feet, more or less; thence approximately S86°E 1050 feet, more or less; thence South 260 feet; thence approximately S87°E 587 feet, more or less; thence approximately S03°W 1950 feet, more or less; thence East 300 feet; thence approximately S20°E 2000 feet, more or less; thence approximately N68°E 100 feet, more or less; thence approximately S11°E 184 feet, more or less; thence approximately N70°E 2183 feet, more or less; thence approximately N20°W 1150 feet, more or less; thence approximately N70°E 760 feet, more or less; thence East 200 feet; thence approximately S20°E 2742 feet, more or less; thence approximately S60°W 260 feet, more or less; thence South 500 feet; thence West 1230 feet; thence South 320 feet; thence East 430 feet; thence South 320 feet; thence West 430 feet; thence approximately S22°E 1480 feet, more or less; thence East 1200 feet; thence approximately S45°E 670 feet, more or less; thence South 900 feet; thence approximately N89°W 2714 feet, more or less; thence approximately S24°E 2193 feet, more or less; thence approximately N68°E 1030 feet, more or less; thence approximately N22°W 725 feet more or less; thence approximately N68°E 450 feet, more or less; thence approximately S22°E 550 feet, more or less; thence approximately S63°W 240 feet, more or less; thence S22°E 600 feet, more or less; thence approximately S68°W 370 feet, more or less; thence approximately N50°W 150 feet, more or less; thence approximately S68°W 820 feet, more or less; thence approximately S22°E 1150 feet, more or less; thence approximately S89°E 350 feet, more or less; thence South 100 feet; thence East 450 feet; thence South 2600 feet; thence approximately S77°W 300 feet, more or less; thence approximately N17°W 2397 feet, more or less; thence approximately S68°W 2200 feet, more or less; thence approximately N22°W 260 feet, more or less; thence approximately S68°W 1980 feet, more or less; thence approximately S22°E 670 feet, more or less; thence approximately S12°W 637 feet, more or less; thence approximately N19°W 1379 feet, more or less; thence approximately N68°E 2250 feet, more or less; thence approximately N11°E 76 feet, more or less; thence approximately N22°W 5410 feet, more or less; thence West 2000 feet; thence South 520 feet; thence West 1350 feet; thence South 1320 feet; thence West 660 feet; thence South 1320 feet; thence West 5280 Feet; thence approximately N01°W 1320 feet, more or less, to the Point of Beginning.

Less the following portions thereof:

(a) Beginning at a point North 103 feet, more or less, of the SW corner of the SE1/4 NW1/4 of Section 3, T16S, R14E, SLBM; thence East 700 feet; thence North 800 feet; thence approximately

S18°E 1600 feet, more or less; thence approximately S52°W 300 feet, more or less; thence West 870 feet; thence approximately N21°W 277 feet, more or less; thence North 650 feet to the Point of Beginning.

(b) Beginning at a point South 774 feet, more or less, and East 495 feet, more or less, of the NW corner of the NW1/4 SE1/4 of Section 3, T16S, R14E, SLBM; thence approximately N20°W 2310 feet, more or less; thence East 300 feet; thence North 1113 feet; thence West 750 feet; thence approximately N22°W 660 feet, more or less; thence approximately N75°E 1460 feet, more or less; thence approximately S22°E 2080 feet, more or less; thence approximately S75°E 100 feet, more or less; thence approximately S22°E 2500 feet, more or less; thence West 1730 feet to the Point of Beginning.

(c) Beginning at a point North 230 feet, more or less, and West 550 feet, more or less, of the SE corner of NW1/4 SE1/4 of Section 3, T16S, R14E, SLBM; thence East 1400 feet; thence approximately S25°E 1981 feet, more or less; thence approximately S22°E 2720 feet, more or less; thence approximately S68°W 1650 feet, more or less; thence approximately N22°W 4800 feet, more or less; thence approximately N10°E 500 feet, more or less, to the Point of Beginning.

Emery County Road to be Excluded.

A strip of land, 100.0 feet wide, 50.00 feet on each side of the centerline of the Emery County roads within the above described permit boundary.

Lila Canyon Permit Area "B"

T16S R14E

<u>Section 10:</u>	<u>Portions of SE1/4</u>
<u>Section 11:</u>	<u>E1/2</u> <u>Portions of W1/2</u>
<u>Section 12:</u>	<u>All</u>
<u>Section 13:</u>	<u>All</u>
<u>Section 14:</u>	<u>All</u>
<u>Section 15:</u>	<u>Portions of E1/2</u> <u>Portions of SW1/4</u>
<u>Section 22:</u>	<u>NE1/4 NE1/4</u>
<u>Section 23:</u>	<u>N1/2</u> <u>SE1/4</u> <u>E1/2 SW1/4</u>
<u>Section 24:</u>	<u>All</u>
<u>Section 25:</u>	<u>N1/2</u>
<u>Section 26:</u>	<u>E1/2 NE1/4</u> <u>NW1/4NE1/4</u>

T16S R15E

Section 19: W1/2 SW1/4
SE1/4 SW1/4

Section 30: NW1/4
SW1/4 NE1/4

Chapter 2

232.720. No substitute soil materials will be needed.

233. Topsoil Substitutes and Supplements.

233.100. Soil inventories indicate that no substitute topsoil material will be necessary. Available soil material on the site is adequate for reclamation purposes. See Appendix 5-9 for Ventilation Breakout volume estimates and source fill information.

233.200 Preliminary inventories show that no topsoil borrow area is needed.

233.300. This section is addressed in 233.400.

233.310. This section is addressed in 233.400.

233.320. This section is addressed in 233.400.

233.330. This section is addressed in 233.400.

233.340. This section is addressed in 233.400.

233.400 Soil Inventories show that no topsoil or topsoil substitute borrow area will be needed. Adequate amounts of suitable soil for plant growth are present based on root distribution and soil characteristics.

234. Topsoil Storage.

234.100. It will not be possible to redistribute the topsoil immediately. Therefore, the topsoil will be stockpiled for the purpose of final reclamation of the mine site. The rock storage areas are shown on Plate 5-2.

Access to the ventilation break outs will be from inside the mine.

Chapter 3

sources or riparian areas in either the current permit area or the proposed addition, and according to verbal information from UEI's consultant, there are few, if any, willows or similar riparian-type vegetation associated with the seeps and springs in the proposed addition to the permit area. There may have been a few willows or shrubs, but there were no dense patches as would be required by southwestern willow flycatchers.

Lila Canyon Mine will have ~~below-ground~~above-ground electrical power lines. These lines ~~will be constructed to minimize potential hazards to all raptors new to the site,~~ all will be designed and constructed in accordance with the guidelines set forth in Environmental Criteria for Electric Transmission Systems or as approved by DOGM.

322.220.

The permit area for Lila Canyon Mine is located within the Price River Resource Area. Surface water in the adjacent areas drains into Grassy Trail Creek and Cottonwood Wash, both tributaries of the Price River. The environment around the 42.6 acre mine site is within the Upper Sonoran life zone. The dominate Vegetation communities within the proposed disturbed area are pinyon-juniper and grass-shrub. Community types surrounding the proposed disturbed area are primarily pinyon-juniper, mixed conifer, spruce-fir, grass, and sagebrush-grass.

The Upper Sonoran life zone can provide habitat for approximately one hundred and forty-two species of wildlife. Two separate reports by the Utah Division of Wildlife Resources (DWR) identify species having potential to inhabit the region. The species that is considered to be of high interest in the local area is the Pronghorn. Pronghorns are found as year-long residents within and adjacent to the permit area. These-

animals were transplanted to this site by the DWR in 1972 and are part of the Icelander Antelope Herd Unit II. Pronghorn prefer open sagebrush-desert and shrub-grassland habitats in areas of the Western United States. They are primarily browsers but are known to forage on grasses and forbs during spring and summer (FWS, 1978).

The pinyon-juniper woodlands, and interspersed sagebrush parks are winter range for mule deer. Many of the drier slopes are essentially juniper stands of scattered trees. The mule deer winter use is restricted to periods when snow is available or surface water is present during snow melt in the early spring, and the UDWR has rated this winter range as high priority.

Elk winter range is located at higher elevations than that of the disturbed area and is not a factor in the disturbed site.

Other wildlife in the pinyon-juniper woodlands are reptiles, passerine birds, lagomorphs, and small rodents.

The talus slopes in the canyon are home to rodents and reptiles. They are also used by chukars. Snake dens are unknown in the talus slopes.

The cliffs are generally north-facing and have potential as raptor nesting sites. Spring raptor inventories were initiated in the spring of 1998. The results of the annual raptor surveys are included in Appendix 3-5. Raptor Surveys will be completed in the Spring of every year the Mine is active. In the event of a cessation, Raptor Surveys will stop until mining continues.

~~The intermittent / ephemeral stream channels~~

The intermittent / ephemeral stream channels lacks riparian vegetation; thus many bird species of high federal interest would not utilize this area example southwestern will flycatcher. The lack of trees or large shrubs precludes the use of woodpeckers. The stream channels do not support fish or an established invertebrate fauna.

The UDWR has submitted general information to be included in the wildlife plans of previous permit applications. Their information covers all the biogeological areas found on the Tavaputs Plateau which includes the Upper Sonoran, Transition, Canadian, and Hudsonian life zones. As noted previously only the Upper Sonoran life zone is represented within the permit area.

This UDWR general information is included in this application because it provides an overall description of the wildlife and wildlife habitats in the general area. The information is also useful in providing habitat information for design of the reclamation of the disturbed area. Thus the past wildlife habitat conditions can be emulated by reclamation and wildlife accommodated as they return to the mine site area upon final reclamation. (See Appendix 3-6, abbreviated)

The DWR has submitted information over the years in commenting on the various wildlife plans submitted in prior permit applications.

The ranking of wildlife values on coal-producing lands in Utah are found in Table 3-2 and are in the following list. The four rankings are in effect until June 30, 2006. The new rankings will have only two categories as shown.

Current

- 1 = Crucial-critical habitat
- 2 = High priority habitat
- 3 = Substantial value habitat
- 4 = Seasonal - Limited

Chapter 5

List of Appendixes

Appendix 5-1 Inspection Form for Excess Spoil
Appendix 5-2 Inspection Form for Impoundments
Appendix 5-3 Coal Mine Waste Fire Extinguishing Plan
Appendix 5-4 New Facility Designs
Appendix 5-5 Slope Stability Analysis
Appendix 5-6 Mine Openings (Closures)
Appendix 5-7 Rock Slope Material (Refuse Pile)
Appendix 5-8 Reclamation Plan
Appendix 5-9 Graben Ventilation Breakouts

List of Plates

Plate 5-1	Previously Mined Areas
Plate 5-1A	Premining Contours
Plate 5-2	Surface Area Lila Canyon Mine (Official Disturbed Area Boundary Map)
Plate 5-3	Subsidence Control Map
Plate 5-3	CONFIDENTIAL Subsidence Control Map with Raptor Information
Plate 5-4	Coal Ownership
Plate 5-5	Mine Map
Plate 5-6	Post Mining Topography
Plate 5-7A-1	Mine Site Cross Sections
Plate 5-7A-2	Mine Site Cross Sections
Plate 5-7A-3	Mine Site Cross Sections
Plate 5-7A-4	Mine Site Cross Sections
Plate 5-7B-1	Mine Site Cross Sections
Plate 5-7B-2	Mine Site Cross Sections
Plate 5-7B-3	Mine Site Cross Sections
Plate 5-7C	Reclaimed Profile
Plate 5-8	Coal Handling Facilities
Plate 5-9	Portal Plan and Sections

waste banks or coal processing waste dams near or within the permit area.

- 521.130** Landowner and right of entry maps are included in the permit application. These maps and cross sections show the following:
- 521.131** Plate 4-1 shows the surface ownership and Plate 5-4 shows the coal ownership of land included in or contiguous to the permit area.
- 521.132** The applicant has the legal right to enter and begin coal mining and reclamation operations on all areas shown within the permit area. The permit area is shown on Plates 5-3 and 5-4 as well as others.
- 521.133** Coal mining or reclamation operations are planned within 100 feet of a public road. There are no plans to relocate public roads.
- 521.133.1** Emery County has given permission to conduct coal mining or reclamation operations within 100 feet of the county road. (See Appendix 1-4)
- 521.133.2** The current permit does not propose any relocation of public roads. Therefore, this section is not applicable.
- 521.140** See Appendix 5-9 for Ventilation Breakout information. Mine maps and permit area maps and or cross-sections will clearly indicate the following:
- 521.141** Plate 5-1 shows the permit boundary and Plate 5-2 shows the disturbed area boundary. Additional subareas that might require additional permits are addressed in Section 112.800 and 4-1B.
- 521.142** The underground workings are shown on Plate 5-5.
- 521.143** The proposed disposal site for placing the slope rock is shown on Plate 5-2 as well as other

appropriate plates.

- 521.150** Plates 6-2, 6-3, and 6-4, show surface contours that represent the existing land surface configuration of the proposed permit area. [See Appendix 5-9 for Ventilation Breakout information.](#)
- 521.151** The Plates show the surface contours for all areas to be disturbed as well as over the total permit area. The Plates showing the surface contours has been prepared by or under the supervision of a registered engineer.
- 521.152** No previously mined areas are included within Part "B". Therefore this section does not apply.
- 521.160** The maps, plates, and cross sections associated with this chapter clearly show:
- 521.161** Proposed buildings, utility corridors, and facilities are shown on Plate 5-2 as well as others.
- 521.162** Area of land affected according to the sequence of mining and reclamation is shown on the appropriate plates.
- 521.163** Land for which a performance bond will be posted is shown on the appropriate plate. Plate 5-2 as well as others show the area for which the performance bond will be posted. All disturbed areas within the permit boundary has been bonded.
- 521.164** Coal storage and loading areas are shown on Plate 5-2 and certified as required. Additional information can be found in Appendix 5-4.
- 521.165** Topsoil, and waste piles are shown on Plate 5-2 as well as others.
- 521.166** The waste disposal areas are shown for non-coal waste and underground mine waste on Plate 5-2.
- 521.167** No explosives are expected to be stored on site.

- 528.334** Notwithstanding any other provision to the R645 Rules, any noncoal mine waste defined as "hazardous" under 3001 of the Resource Conservation and Recovery Act (RCRA) (Pub. L. 94-580, as amended) and 40 CFR Part 261 will be handled in accordance with the requirements of Subtitle C of RCRA and any implementing regulations.
- 528.340** A description of the disposal methods for placing underground waste and excess spoil generated at surface areas according to R645-301-211, R645-301-212, R645-301-412.300, R645-301-512.210, R645-301-512.220, R645-301-514.100, R645-301-528.310, R645-301-535.100 through R645-301-535.130, R645-301-535.300 through R645-301-535.500, R645-536.300, R645-301-536.600, R645-301-542.720, R645-301-553.240, R645-301-745.100, R645-301-745.300, and R645-301-745.400 is covered in sections 535, and 536.
- 528.350** A description of measures to be employed to ensure that all debris, acid-forming and toxic-forming materials, and materials constituting a fire hazard are disposed of in accordance with R645-301-528.330, R645-301-537.200, R645-301-542.740, R645-301-553.100 through R645-301-553.600, R645-301-553.900, and R645-301-747 is included.
- 528.400** Dams, embankments and other impoundments.
See Section 700 and Appendix 7-4.

529. Management of Mine Openings:

The permit application includes a description of the measures to be used to seal or manage the openings within the proposed permit area. New slope or drift openings required to be sealed shall be sealed with solid, substantial, noncombustible material for a distance of at least 25 feet into such openings. The closure design for portals, slopes, and drifts, can be found in Appendix 5-6, [and Appendix 5-9](#).

- 529.100** Shafts or other exposed underground opening when no longer in use will be cased, lined, or otherwise managed as approved by the Division. All openings exposed by mining operations within the permit area will be permanently closed unless

- 542.300.** Included.
- 542.310.** Included. (See Plates 5-6 & 7-7)
- 542.320.** There will not be any surface facilities left post mining.
- 542.400.** Not applicable. No surface facilities will remain post bond liability period.
- 542.500.** A reclamation time table is included as Table 3-3.
- 542.600.** All roads within the disturbed area will be reclaimed immediately after they are no longer needed for mining and reclamation operations.
- 542.610.** The time table of reclamation activities will enable the roads to be removed concurrently with reclamation activities. So, no closures specific to traffic would be anticipated.
- 542.620.** All bridges and culverts will be removed concurrent with reclamation.
- 542.630.** All disturbed areas will be ripped and top soiled prior to revegetation activities in compliance with all applicable R645 regulations. (See Appendix 5-8)
- 542.640.** Road surfacing materials such as sand and gravel, which are not suitable for revegetation establishment will be buried on site and covered with a minimum of two feet of material that would support vegetation. Concrete will be disposed of in the designated area and covered with four feet of cover. Asphalt will be disposed of off site, either in a landfill or sent to a recycling facility.
- 542.700.** Final Abandonment of Mine Openings and Disposal Areas.
- 542.710.** Appendix 5-6 depicts a typical seal that will be constructed at all mine openings. [Appendix 5-9 describes work to be done at the Ventilation Breakouts.](#)

- 542.720.** No excess spoil is anticipated at this time.
- 542.730.** All underground development waste brought to the surface will be placed in the temporary rock pile and then blended back into the ROM product for sale. There will be no coal processing waste generated on the surface.
- 542.740.** Disposal of Noncoal Mine Wastes.
- 542.741.** All non coal waste will be temporarily stored on site in approved waste bins and commercially picked up and transported to an approved disposal site. Non Coal waste generated during reclamation (such as concrete structure, buried culverts, utility lines, septic systems etc.) will be buried in the refuse disposal area and covered with a minimum of four feet of fill.
- 542.742.** No noncoal waste will be stored on site or disposed of on site during the life of the mine.
- 542.800.** A detailed cost break down is included in Chapter 8. Appendix 8-1 relative to bonding.
- 550 Reclamation Design Criteria and Plans.** Each permit application will include site specific plans that incorporate the following design criteria for reclamation activities.
- 551.** All underground openings will be sealed as detailed in Appendix 5-6, [and Appendix 5-9.](#)
- 552.** Permanent Features.
- 552.100.** In course of reclamation, areas that have been recontoured and top soiled will be "pock-marked" creating small basins that will facilitate vegetation establishment as well as minimizing erosion.
- 552.200.** No permanent impoundments will be left post

Chapter 7

drilled and converted to a water monitoring hole by Kaiser in 1981. The details of these wells and piezometers are discussed in Section 724.100 of the application. The location of all these wells and piezometers is shown on Plate 7-1. No information on any other wells has been identified.

722.500 Contour Maps Contour Maps of the proposed disturbed area and mining areas are included as Plates 5-2A, ~~5-2B~~, 7-1 and 7-2 and Appendix 5-9. These maps use U.S.G.S. based contours and accurately represent the proposed permit and adjacent areas. Disturbed area maps present greater detail from low-level aerial photography, for greater detail, and are tied to relevant U.S.G.S. elevations to ensure correlation between the maps.

723. Sampling and Analysis

All water quality analyses performed to meet the requirements of R645-301-723 through R645-301-724.300, R645-301-724.500, R645-301-725 through R645-301-731, and R645-301-731.210 through R645-301-731.223 will be conducted according to the methodology in the current edition of "Standard Methods for the Examination of Water and Wastewater" or the methodology in 40 CFR Parts 136 and 434. Water quality sampling performed to meet the requirements of R645-301-723 through R645-301-724.300, R645-301-724.500, R645-301-725 through R645-301-731, and R645-301-731.210 through R645-301-731.223 will be conducted according to either methodology listed above when feasible. "Standard Methods for the Examination of Water and Wastewater" is a joint publication of the American Water Works Association, and the Water Pollution Control Federation and is available from the American Public Health Association, 1015 Fifteenth Street, NW, Washington, D.C. 20036.

724. Baseline Information

This section presents a description of the groundwater and surface water hydrology, geology, and climatology resources to assist in determining the baseline hydrologic conditions which exist in the permit and adjacent areas. This information provides a basis to determine if mining operations can be expected to have a significant impact on the hydrologic balance of the area.

724.100 Ground Water Information. This section presents a discussion of baseline groundwater conditions in the permit and adjacent areas. The data set consists of piezometer, spring and seep inventory data, mine discharge, and mine inflow information from the abandoned Horse Canyon Mine. Appendices 7-1 and 7-6 provide data through the 2002 sampling period. All of these data and other recent data are available in the DOGM electronic database. The data, provided in Appendices 7-1 and 7-6 and the DOGM

- (1) Water will be held in sumps as long as possible to promote settling;
- (2) Water will be sampled prior to discharge to ensure compliance with UPDES standards;
- (3) Prior to mining receiving channel morphology parameters and erosion impacts will be evaluated prior to discharging to any drainage and at least quarterly during pumping to determine what, if any, streamflow alteration is occurring;
- (4) If adverse impacts to the receiving stream are noted, steps will be taken, with Division input and approval, to minimize or eliminate those impacts.

(Also see Appendix 7-3)

728.334 Water Availability (see Appendix 7-3)

728.335 Other Characteristics (see Appendix 7-3)

728.340 Surface Mining Activity N/A - Underground Mine

728.400 Permit Revision To be reviewed by the Division.

729. Cumulative Hydrologic Impact Assessment (CHIA)

729.100 CHIA Assessment provided by Division.

729.200 Permit Revision To be reviewed by the Division.

730. Operation Plan

[See Appendix 5-9 for hydrology rules associated with the Graben Breakouts.](#)

731. General Requirements This will be an underground mine with approximately 42.6 acres of surface disturbance for mine site facilities and roads. Runoff from the disturbed minesite area is proposed to be controlled by a system of ditches and culverts which will convey all

Lila Canyon Mine

Appendix 5-9

Graben Breakout



APPENDIX 5-9
GRABEN BREAKOUT

Index

Description and Narrative

Attachments:

Figure 1	Representative Breakout Portals
Figure 2	Typical Portal Sections
Figure 3	Reclaimed Slope Stability Analysis
Attachment 1	Federal Coal Lease #SL-066490
Attachment 2	Latest Approved R2P2 Map
Attachment 3	2016 Raptor Survey Results (to be submitted upon completion)
Attachment 4	Cultural Resources Inventory Report

DESCRIPTION AND NARRATIVE

Introduction

Presently (June 2016), the ventilation system at the Lila Canyon Mine is a forced-air system, with a large fan blowing into the mine from an outcrop breakout (North Breakout) located above and slightly north of the main entry portals. The air then circulates throughout the mine to provide fresh air for the mine personnel underground. The air then exits the mine through another breakout portal (South Breakout) located above and slightly south of the main entry portals. This ventilation configuration is appropriate for the three (3) longwall panels (District 1) currently being mined north of the Entry Fault line (see Plate 5-5 of the approved MRP).

The mine is currently developing the first of several longwall panels south of the Entry Fault (see Plate 5-5). Once the longwall mining crews move to these new panels in the south, the ventilation system will no longer be suitable to provide adequate air flow for underground mine personnel. Therefore, the Lila Canyon Mine would like to mine to the coal outcrop just north of the Central Graben Fault (see Plate 5-5) with two (2) breakout portals that will be similar in form and function to the existing South Breakout portals. These new portals will be used to exhaust air that has traveled throughout the mine workings. This breakout will increase the efficiency and efficacy of the ventilation system within the mine as crews develop and mine the longwall panels south the Entry Fault (see Plate 5-5). The location of the breakout was selected due to the location and configuration of the longwall panels south of the Entry Fault (see Plate 5-5) in relation to the location of the existing blowing fan at the North Breakout. The canyon containing the breakout does not have an official name. The proposed breakout portals will be called the Graben Breakout.

The Graben Breakout will be located in Emery County, Utah in the Book Cliffs. The breakout will be located within the coal outcrop, approximately 1.8 miles south-southeast of the main entry portals of the mine. The nearest paved road, other than the haul road to the Lila Canyon Mine, is U.S. Highway 6 which is approximately 4.6 miles from the breakout site. A system of unpaved roads extends near the mouth the unnamed canyon and throughout the adjacent foothill area. Above the proposed breakout site is the Little Park Wash and unpaved roads and trails.

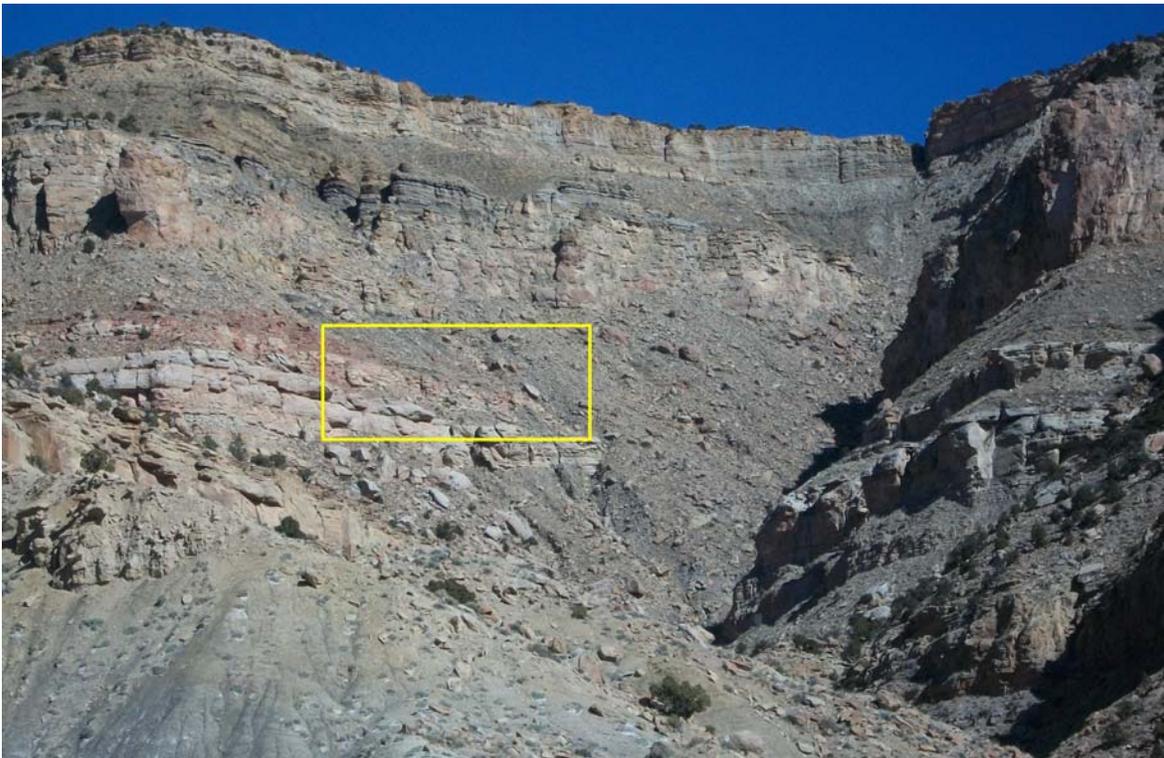
The Graben breakout itself will consist of two openings at the surface, accessed and installed completely from underground. A metal canopy will be constructed at each of the two openings, measuring approximately eighteen (18) feet wide by approximately eight (8) feet high, and extending approximately fifteen (15) feet out from the intersection of the top of the coal seam and the talus slope above the coal seam. The actual size of the canopies may vary due to the existence of burnt coal at the site and other unknown geologic conditions that may be encountered. All work to create and maintain these openings will be performed from the underground mine workings. The breakout will *not* require any new surface roads, pads or electrical lines. All access for maintenance and monitoring will be from the underground workings. The entire surface disturbance will be approximately 800 square feet (0.02 acres) total for both portals. The Graben Breakout will be very similar to the existing South Breakout in both form and function.

Chapter 1: Legal

The Graben Breakout site is located on land owned by the Bureau of Land Management (BLM) within the northwest quarter of the northeast quarter of Section 26, T.16S., R.14E., SLBM, as shown in the revised MRP drawings associated with the Incidental Boundary Change request submitted with this Appendix. UtahAmerican Energy has the right of entry for this breakout through the active Federal Coal Lease #SL-066490. The establishment and operation of the breakout are authorized by the BLM through an approved Resource Recovery and Protection Plan (R2P2). See Attachment 1 for a copy of the lease agreement. The area that includes the breakout site has been highlighted. See Attachment 2 for the latest approved R2P2 map showing the breakout.

Chapter 2: Soils

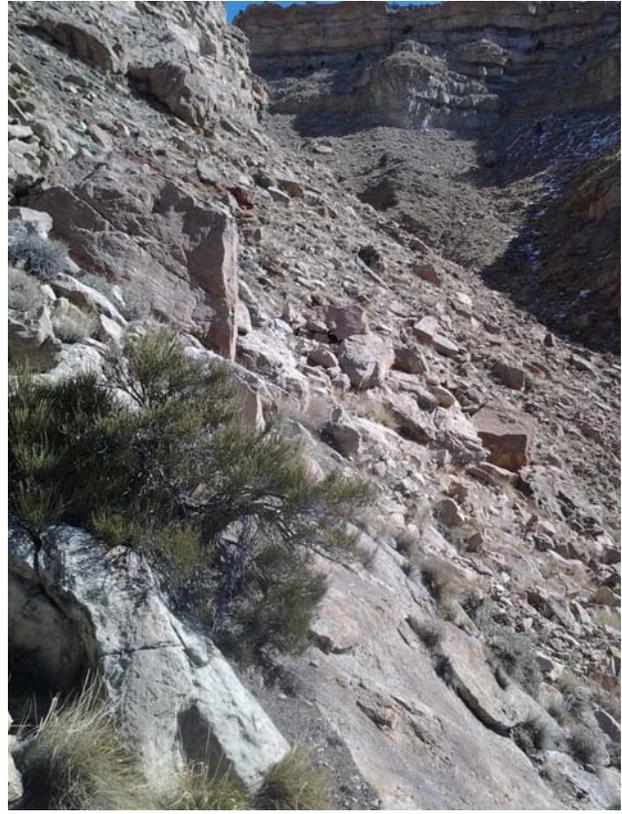
The soil in the area of the breakout is classified as RZH (Rock outcrop-Atchee-Rubbleland Complex) in the Soil Survey of the Emery Area, Utah by the Natural Resource Conservation Services. See Appendix 2-2 of the approved MRP for a description of this soil classification. The breakout area will be on a talus slope between the Sunnyside Sandstone and Grassy Sandstone. The existing slope of the area varies from approximately 65% and above.



Photograph 1: Looking east from the mouth of the unnamed canyon. The approximate area of the Graben Breakout is boxed in yellow.



Photograph 2: Looking north along the outcrop from the approximate breakout site.



Photograph 3: Looking south along the outcrop from the approximate breakout site.

As access to the ventilation breakouts will be from inside the mine, similarly to the existing South Breakouts, topsoil from the proposed ventilation breakout sites at the coal outcrop will not be salvaged in accordance with Sections 232.100 and 234.100 regarding ventilation breakouts of the approved MRP. As a result of the very limited ground disturbance and lack of access, topsoil cannot be reasonably salvaged. One hundred seventy five (175) cubic yards of subsoil will be salvaged and will be stored within the mine for future sealing and reclamation.

The location of the breakouts is not in an alluvial valley floor.

Chapter 3: Biology

The Graben Breakout will be located at an elevation of approximately 6200' above sea level on an existing talus slope. The area is a year-round habitat for Rocky Mountain Bighorn Sheep and Mule Deer. The dominant vegetative community in the area is Salt Desert Shale/Grass.

To date, no raptor nests have been reported in the proposed area of the Graben Breakout. See

Appendix 3-5 for previous raptor surveys. Subsequent surveys have not reported any nesting sites in the proposed area of the breakout.

The unnamed canyon area was surveyed in May 2016. The results of said survey will be provided when available as Attachment 3.

A physical barrier will be installed on the metal canopies, such as chain-link fencing, which will still allow air flow. This barrier is intended to prevent wildlife from entering the mine workings.

Due to the relatively small disturbance area, the Graben Breakout is not expected to impact any threatened, endangered or candidate species.

Due to the relatively small disturbance area, wildlife enhancement is not practical for this project.

Reclamation of the Graben Breakout will be according to and along with the approved reclamation timeline in section 341.000 of the approved MRP. Reclamation will begin as soon as possible, once mining operations cease or the breakout is no longer needed for ventilation. Reclamation of the breakout will be completed within one year of commencement.

On final reclamation, salvaged original subsoil will be pushed from underground into the portal opening to a depth of twenty-five feet (see Figure 2). Concrete block seals will then be constructed in each portal per Section 529.000 and Appendix 5-6 of the approved MRP. Crews will then smooth the subsoil at the mouth of the openings by hand from the surface to the approximate original contours (AOC), with a maximum slope of two horizontal units to one vertical unit. The appropriate seed mix will then be broadcast by hand from the surface at the rate specified in the approved MRP.

Chapter 4: Land Use/Air Quality

The Graben Breakout site is located in an unnamed canyon of the Book Cliffs, approximately 4.6 miles from U.S. Highway 6. The area is undeveloped and supports wildlife and livestock grazing, falling within the Cove Grazing Allotment.

The present land use supports wildlife and livestock grazing. No change in grazing activity is expected during the operation of the mine due to the relatively small size of the breakout. The present land use will not change upon reclamation.

A Cultural Resource Inventory was conducted by Montgomery Archaeological Consultants in March 2016. The inventory did not find any cultural resources. The full report is included in this Appendix as Attachment 4.

No public parks or historic places are within the proposed disturbed area.

No prime farmland is within the proposed disturbed area.

The Graben Breakout is covered under Lila Canyon Mine's existing Air Quality Permit (#DAQE-AN0121850002-08), which needs no modification for this project.

Chapter 5: Engineering

As depicted on Plate 5-2A of the approved MRP and Figure 1 of this Appendix, the Graben Breakout will consist of two (2) openings at the surface. Each portal canopy will measure approximately eighteen (18) feet wide by eight (8) feet high, and extend approximately fifteen (15) feet from the intersection of the talus slope and top of the coal seam. The actual size of the canopies may vary due to the existence of burnt coal at the site and other unknown geologic conditions that may be encountered during the mining process. An as-built drawing will be submitted once construction of the portals is complete.

The openings will be driven from the underground workings of the mine, thus requiring no new surface roads or pads. All electrical or other utility needs will be provided from the underground mine workings. The breakout will be used to exhaust air from the underground workings. One hundred seventy five (175) cubic yards of original salvaged subsoil from each portal will be stored within the mine to seal and reclaim the openings when sealing and reclamation is required.

Once driven, each of the openings will be protected by a metal canopy extending approximately fifteen (15) feet from the top of the coal seam intersection with the surface talus slope. This canopy will be installed to help stabilize the opening and prevent rocks and surface drainage from entering the surface openings. The canopies will be removed at reclamation.

An earthen berm will be constructed at the edge of the floor of the openings. The berm will be approximately thirty (30) inches high and extend from one side of the opening to the other. A silt fence will be installed on the outer toe of the berm. The berm will be seeded with the appropriate seed mix per the approved MRP to prevent erosion. This area will become an Alternate Sediment Control Area (ASCA). See Section 5.1 of Appendix 7-4.

Reclamation of the breakout has been described in the Chapter 3 data above.

The maximum slope of the reclaimed area will be two horizontal units to one vertical unit. This slope has a minimum factor of stability of 4.12 (see Figure 3).

Chapter 6: Geology

The Graben Breakout will be driven to the coal outcrop from within the Sunnyside Coal Seam, which is sandwiched between the Grassy Sandstone above and the Sunnyside Sandstone below.

Surface observations show that the projected location of the breakout is composed mostly of burnt coal. No other surface anomalies have been identified at this time.

The coal seam dips down from the outcrop, generally to the east, at an approximate 12% slope. Please see Figure 2 of this Appendix.

Chapter 7: Hydrology

Several seeps/springs are located in the general vicinity of the proposed breakout location, including L-16-G (Little Stinky Spring) and L-17-G (Big Stinky Spring). All of these seeps/springs are located below the coal seam and will not be affected by the Graben Breakout. L-16-G and L-17-G are currently regularly sampled, and have been regularly sampled for several years.

The closest water rights to the breakout site are 91-4649 and 91-2617 (see Plate 7-3 of the approved MRP). Both are reservoir/stream rights that are each located nearly one mile away from the breakout site. Therefore, existing water rights will not be affected by the Graben Breakout.

The Graben Breakout will be located at an approximate elevation of 6200', with the coal seam sloping down approximately 12% from the outcrop (See Figure 2). According to historic data, the groundwater level in the area is at approximately 5990'. Therefore, the water levels would need to rise over 200' in order for the mine to discharge any water from the proposed breakout. Thus, water discharge from the breakout will not be a factor.

The Graben Breakout will be an ASCA area and will meet the requirements of Section 742.000 and Appendix 7-4 of the approved MRP.

The area around the Graben Breakout site is an ephemeral drainage area. No major ephemeral drainage channels are located in the vicinity of the proposed breakout site. Due to the steep grade of the talus slope, drainage patterns will not be significantly affected by the portals. The anticipated construction of the metal canopy at each portal and the projected berm will keep most, if not all precipitation and related surface drainage from entering the mine. Also, between the dip of the coal seam and the portal construction, no water should discharge from the mine.

The portals will be reclaimed as noted in the Chapter 3 section above when the mine either closes or the portals are no longer needed for the ventilation of the underground mine workings.

Chapter 8: Bonding

All unit costs herein presented are taken from the format of the presently approved Lila Canyon Mine bonding calculations. Updated bonding data is included in the submittal for the breakout and the Incidental Boundary Change for the permit area to include the Graben Breakout proposed location.

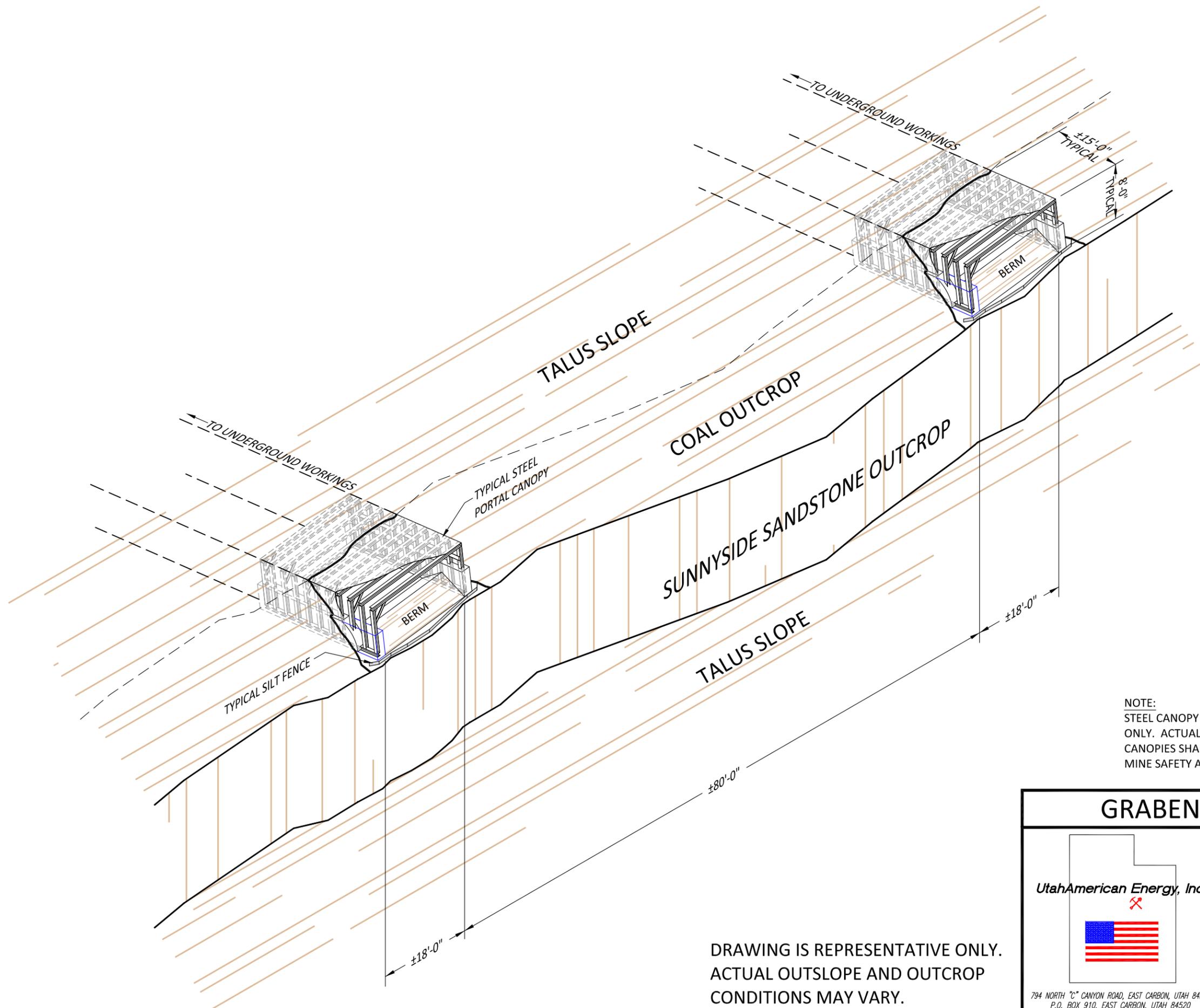
Lila Canyon Mine

Appendix 5-9

Figure 1

Representative Breakout Portals

G:\Current Drawings\MPR Maps\Lila Canyon\IBC Sect 26 Breakouts\Defickendes Task ID5081\Figure 1 -Portal Canopy.dwg, Layout1, 6/1/2016 10:43:01 AM, 1:1



NOTE:
STEEL CANOPY CONSTRUCTION IS REPRESENTATIVE ONLY. ACTUAL CONSTRUCTION MAY VARY. PORTAL CANOPIES SHALL MEET ALL REQUIREMENTS OF THE MINE SAFETY AND HEALTH ADMINISTRATION (MSHA).

DRAWING IS REPRESENTATIVE ONLY.
ACTUAL OUTSLOPE AND OUTCROP
CONDITIONS MAY VARY.

GRABEN BREAKOUT



794 NORTH "C" CANYON ROAD, EAST CARBON, UTAH 84520
P.O. BOX 910, EAST CARBON, UTAH 84520
PHONE: (435) 888-4000 FAX: (435) 888-4002

REPRESENTATIVE BREAKOUT PORTALS



23415 North Lila Canyon Road
Green River, Utah 84525

MSHA MINE ID # 42-02241

DRAWN BY	PJ	SCALE	NONE
APPROVED BY	DH	DATE	1 JUNE 2016
SHEET	FIGURE 1		

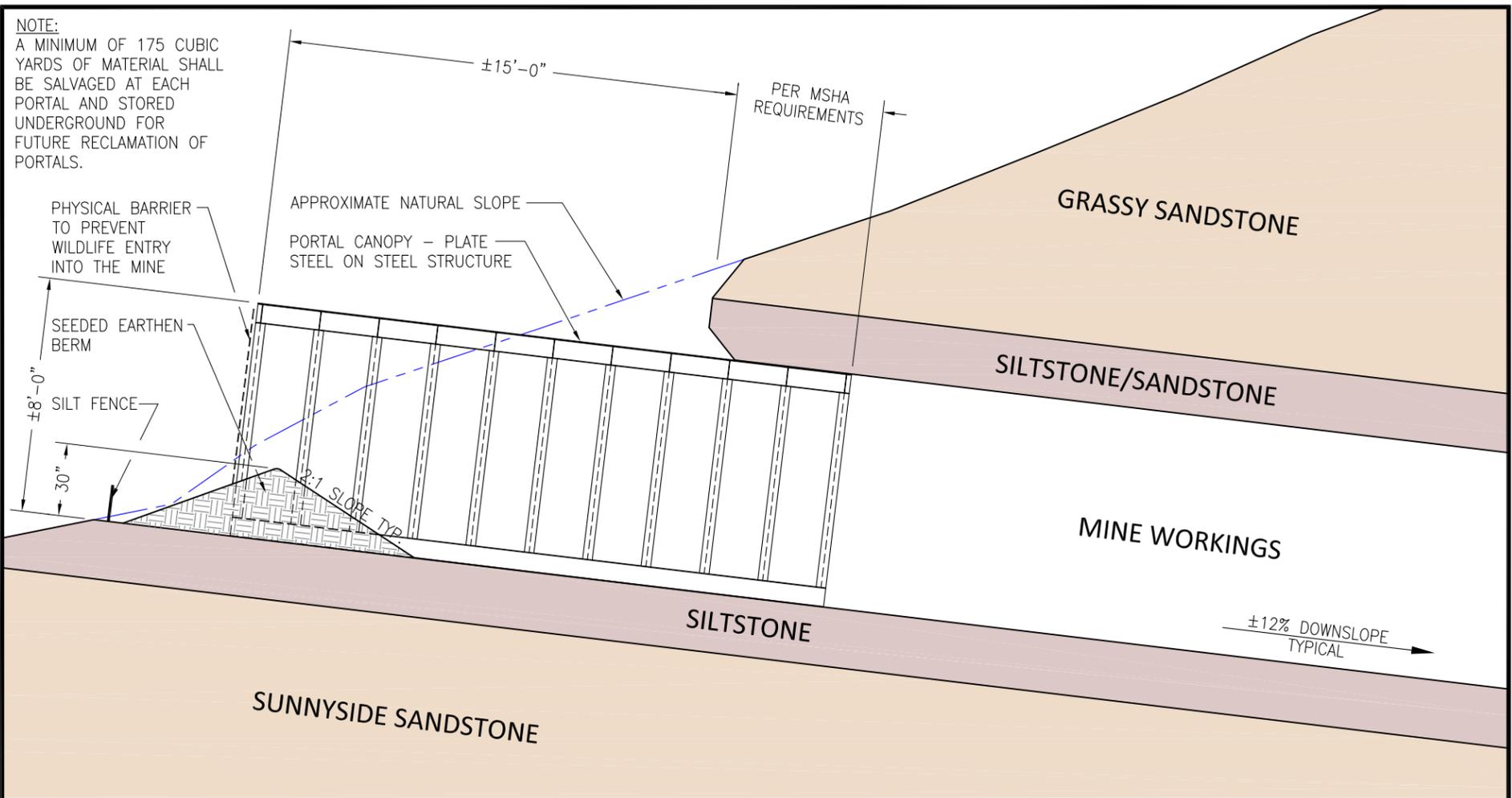
Lila Canyon Mine

Appendix 5-9

Figure 2

Typical Portal Sections

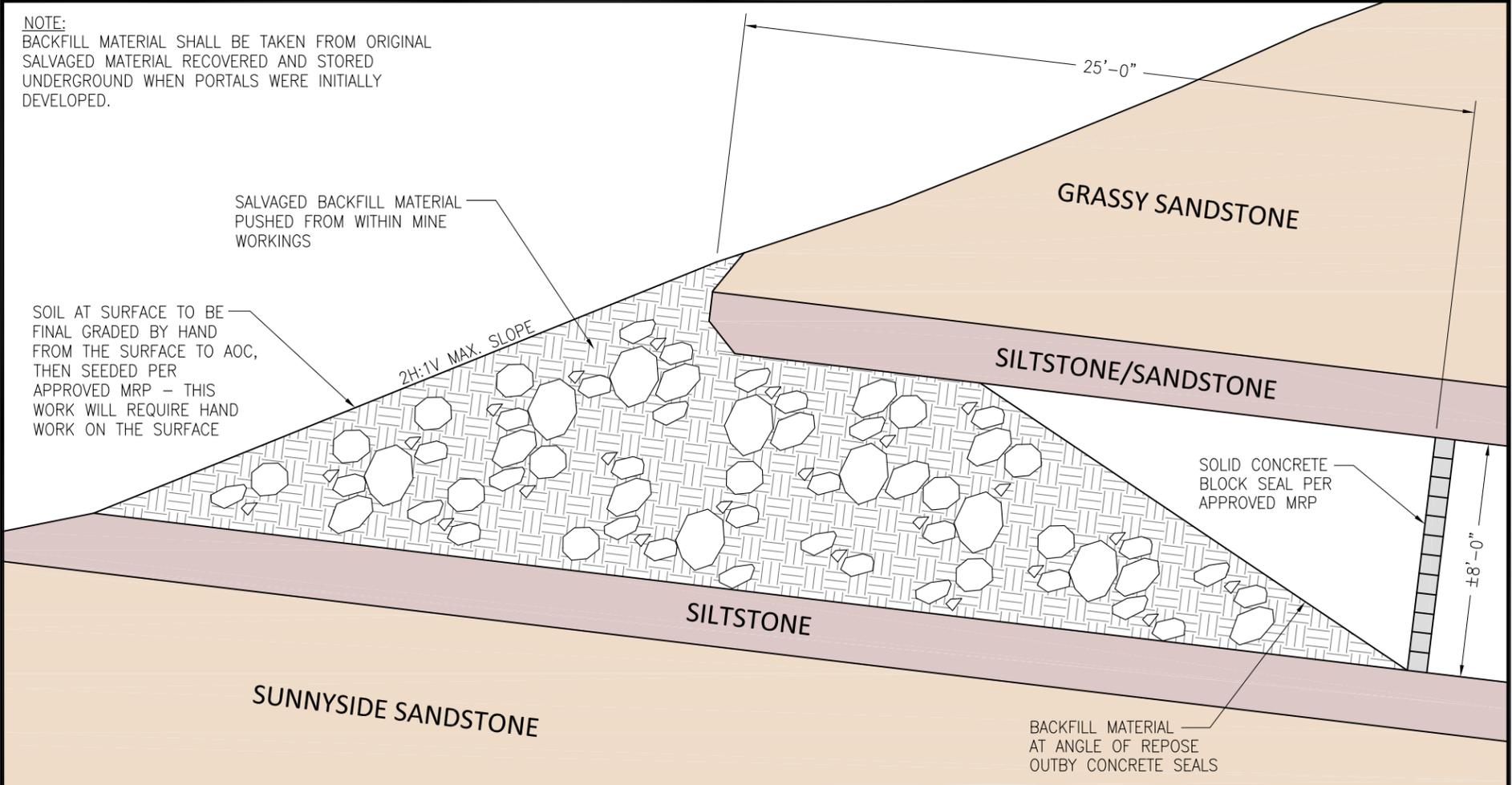
NOTE:
A MINIMUM OF 175 CUBIC YARDS OF MATERIAL SHALL BE SALVAGED AT EACH PORTAL AND STORED UNDERGROUND FOR FUTURE RECLAMATION OF PORTALS.



1 TYPICAL PORTAL SECTION DURING OPERATIONAL PHASE
FIG. 2

SCALE: NONE

NOTE:
BACKFILL MATERIAL SHALL BE TAKEN FROM ORIGINAL SALVAGED MATERIAL RECOVERED AND STORED UNDERGROUND WHEN PORTALS WERE INITIALLY DEVELOPED.



2 TYPICAL PORTAL SECTION AFTER RECLAMATION IS COMPLETE
FIG. 2

SCALE: NONE



NOTES:
1. EXISTING SLOPE SHOWN IS REPRESENTATIVE. ACTUAL SLOPES WILL BE SURVEYED AND EXISTING CONDITIONS PROVIDED WITH AS-BUILT DRAWINGS.
2. ALL UNDERGROUND MINING AND RECLAMATION SHALL MEET THE REQUIREMENTS OF THE MINE SAFETY AND HEALTH ADMINISTRATION (MSHA).
3. RECLAIM MATERIAL TO BE SANDY/ROCKY MATERIAL OF MIXED GRAIN SIZE WITH A MINIMUM ANGLE OF REPOSE OF 34° (LOWRIE, R.L., "2002 SME MINING REFERENCE HANDBOOK", UNITED STATES SOCIETY OF MINING AND METALLURGICAL EXPLORATION, PAGE 17). ACTUAL MAXIMUM SLOPE OF MATERIAL TO BE 2 HORIZONTAL UNITS TO 1 VERTICAL UNIT (26.57°). RECLAIMED SLOPE SHALL BE LESS THAN THE ANGLE OF REPOSE, THUS CREATING A STABLE SLOPE.

GRABEN BREAKOUT

UtahAmerican Energy, Inc.

794 NORTH "C" CANYON ROAD, EAST CARBON, UTAH 84520
P.O. BOX 910, EAST CARBON, UTAH 84520
PHONE: (435) 888-4000 FAX: (435) 888-4002

TYPICAL PORTAL SECTIONS	
LILA CANYON MINE	
23415 North Lila Canyon Road Green River, Utah 84525	
MSHA MINE ID # 42-02241	
DRAWN BY	PJ
APPROVED BY	DH
SCALE	NONE
DATE	1 JUNE 2016
SHEET	FIGURE 2

Lila Canyon Mine

Appendix 5-9

Figure 3

Reclaimed Slope
Stability Analysis

Graben Breakout (Worst Case Wet)									
Slice #	Hw	L	Volume	W=Vg	a°	Wsina	Wcosa	U=gLHw	Wcosa-U
	ft	ft	ft^3	lbs		lbs	lbs	lbs	lbs
1	0.44	2.00	0.88	102	0.00	0	102	28	74
2	0.88	2.00	1.76	204	1.90	7	204	57	147
3	1.60	2.00	3.20	371	6.38	41	369	103	266
4	2.17	2.00	4.34	503	10.90	95	494	140	355
5	2.58	2.00	5.16	599	15.49	160	577	166	411
6	2.82	2.00	5.64	654	20.80	232	612	182	430
7	2.88	2.00	5.76	668	25.02	283	605	185	420
8	2.73	2.00	5.46	633	30.05	317	548	176	372
9	2.37	2.00	4.74	550	35.37	318	448	153	296
10	1.74	2.80	4.87	565	43.49	389	410	157	253
S		20.8				1,842	4,370		3,024

Graben Breakout (Worst Case Dry)								
Slice #	Hw	L	Volume	W=Vg	a°	Wsina	Wcosa	U
	ft	ft	ft^3	lbs		lbs	lbs	
1	0.44	2.00	1	102	0.00	-	102	
2	0.88	2.00	2	204	1.90	6.77	204	
3	1.60	2.00	3	371	6.38	41	369	
4	2.17	2.00	4	503	10.90	95	494	
5	2.58	2.00	5	599	15.49	160	577	
6	2.82	2.00	6	654	20.80	232	612	
7	2.88	2.00	6	668	25.02	283	605	
8	2.73	2.00	5	633	30.05	317	548	
9	2.37	2.00	5	550	35.37	318	448	
10	1.74	2.80	5	565	43.49	389	410	
S		20.8				1,842	4,370	

density = 116.0 lbs/ft³
 Soil Cohesion = c = 300 lb/ft²
 Internal Friction angle = φ = 24

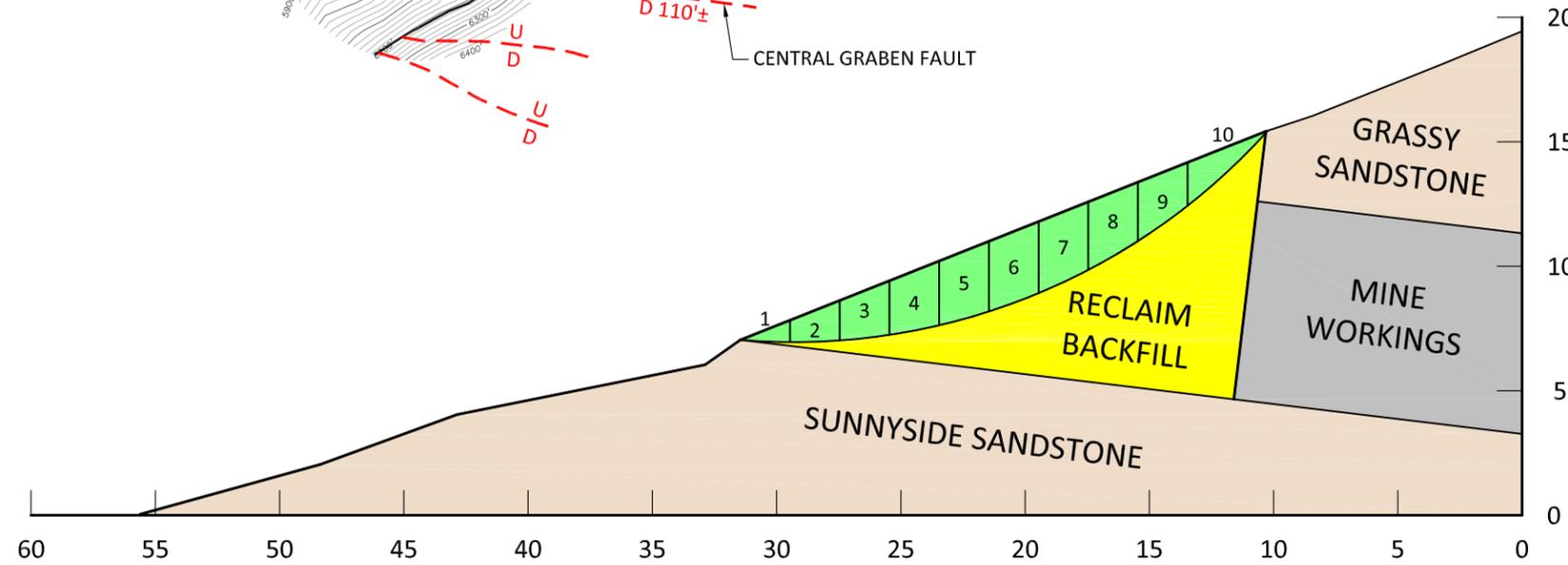
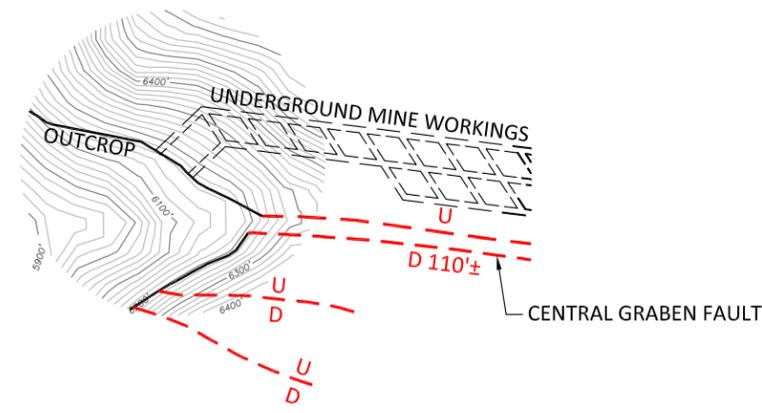
$$FS = \frac{c \sum L + (\sum W \cos \alpha - U) \tan \phi}{\sum w \sin \alpha}$$

FS = 4.12

density = 116.0 lbs/ft³
 Soil Cohesion = c = 220 lb/ft²
 Internal Friction angle = φ = 41

$$FS = \frac{c \sum L + (\sum W \cos \alpha) \tan \phi}{\sum w \sin \alpha}$$

FS = 4.55



References:
 Hustrulid, W. and Kuchta, M. 1995. Open Pit Mine Planning and Design. A.A. Balkema. Page 335



GRABEN BREAKOUT	
	RECLAIMED SLOPE STABILITY ANALYSIS LILA CANYON MINE 23415 North Lila Canyon Road Green River, Utah 84525 MSHA MINE ID # 42-02241
DRAWN BY: PJ APPROVED BY: DH SHEET:	SCALE: NONE DATE: 1 JUNE 2013 FIGURE 3
<small>794 NORTH "C" CANYON ROAD, EAST CARBON, UTAH 84520 P.O. BOX 910, EAST CARBON, UTAH 84520 PHONE: (435) 888-4000 FAX: (435) 888-4002</small>	

Lila Canyon Mine

Appendix 5-9

Attachment 1

Federal Coal Lease #SL-066490

(breakout included area is highlighted)



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155
<http://www.blm.gov>

IN REPLY REFER TO:
3432
UTSL-066490
(UT-9223)

JUN 10 2011

CERTIFIED MAIL- Return Receipt Requested

UtahAmerican Energy, Inc.
794 North "C" Canyon Road
P. O. Box 910
East Carbon, UT 84520

DECISION

Coal Lease
UTSL-066490

RECEIVED
JUN 15 2011
BLM
PRICE, UT

Coal Lease UTSL-066490 Modified
Extension of Coverage of Surety Bond Accepted

Enclosed is a copy of modified coal lease UTSL-066490 effective on June 1, 2011. The terms and conditions of the original lease are made consistent with the laws, regulations, and lease terms applicable at the time of this modification. The anniversary date of the coal lease remains December 31, 1947.

On June 9, 2011 a surety rider submitted by John P. Yediny, an Attorney-in-Fact for the Rockwood Casualty Insurance Company agreed to extend the coverage of the \$120,000 lease bond to the additional modified acreage. This rider is acceptable to extend that coverage and is accepted as of the date of filing.

Please note that rental in the amount of \$3.00 per acre, or fraction thereof, or a total of \$7,335 is due on the next anniversary date, beginning with December 31, 2011.

Kent Hoffman

Kent Hoffman
Deputy State Director
Lands and Minerals

Enclosures:
Modified Coal Lease (8 pp.)

cc: Price Field Office
Mr. John Baza, Director, UDOGM, Box 145801, Salt Lake City, Utah 84114-5801
ONNR, MRM, Solid Minerals Staff, Attn: Patrick Mulcahy, MS390B2, Box 25165, Denver,
CO 80225-0165
John P. Yediny, Rockwood Casualty Insurance Company, 654 Main Street, Rockwood, PA 15557

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Serial No. UTSL-066490

MODIFIED COAL LEASE

Date of Lease December 31, 1947

PART I.

THIS MODIFIED COAL LEASE is entered into on June 1, 2011, by and between the **UNITED STATES OF AMERICA**, hereinafter called the Lessor, through the Bureau of Land Management, and
UtahAmerican Energy, Inc.
794 North "C" Canyon Road
P. O. Box 910
East Carbon, UT 84520

hereinafter called Lessee.

This modified lease shall retain the effective date of December 31, 1947, of the original **COAL LEASE UTSL-066490**, and is effective for a period of 20 years from the date of issuance of the lease, dated December 31, 1947 and for so long thereafter as coal is produced in commercial quantities from the leased lands, subject to readjustment of lease terms next on October 26, 2015 and at the end of each 10 year lease period thereafter.

Sec. 1. This lease is issued pursuant and subject to the terms and provisions of the: (NOTE: Check the appropriate Act or Acts.)

XX Mineral Lands Leasing Act of 1920, as amended, 41 Stat. 437, 30 U.S.C. 181-287, hereinafter referred to as the Act;

 Mineral Leasing Act for Acquired Lands of 1947, 61 Stat. 913, 30 U.S.C. 351-359;

and to the regulations and formal orders of the Secretary of the Interior which are now or hereafter in force, when not inconsistent with the express and specific provisions herein.

Sec. 2. Lessee as the holder of Coal Lease UTSL-066490, issued effective December 31, 1947, were granted the exclusive right and privilege to drill for, mine, extract, remove or otherwise process and dispose of the coal deposits in, upon, or under the lands described below as Tract 1.

The Lessor in consideration of fair market value, rents and royalties to be paid, and the conditions and covenants to be observed as herein set forth, hereby grants and leases to Lessee the exclusive right and privilege to drill for, mine, extract, remove, or otherwise process and dispose of the coal deposits in, upon, or under the lands described below as Tract 2.

Tract 1:

T. 16 S., R. 14 E., SLM, Utah

Sec. 11, E $\frac{1}{2}$;

Sec. 12, W $\frac{1}{2}$;

Sec. 13, W $\frac{1}{2}$;

Sec. 14, W $\frac{1}{2}$, SW $\frac{1}{4}$;

Sec. 15, E $\frac{1}{2}$ SE $\frac{1}{4}$;

Sec. 22, NE $\frac{1}{4}$ NE $\frac{1}{4}$;

Sec. 23, N $\frac{1}{2}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$;

Sec. 24, NW $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$;

Sec. 26, N $\frac{1}{2}$ NE $\frac{1}{4}$

Tract 2:

T. 16 S., R. 14 E., SLM, Utah



containing 2,445.00 acres, more or less, together with the right to construct such works, buildings, plants, structures, equipment and appliances and the right to use such on-lease rights-of-way which may be necessary and convenient in the exercise of the rights and privileges granted, subject to the conditions herein provided.

lease in accordance with, inter alia, Section 39 of the Mineral Leasing Act, 30 U.S.C. 209.

Part II. TERMS AND CONDITIONS

Sec. 1.(a) RENTAL RATE - Lessee shall pay Lessor rental annually and in advance for each acre or fraction thereof during the continuance of the lease at the rate of \$3.00 per acre for each lease year.

(b) RENTAL CREDITS - Rental shall not be credited against either production or advance royalties for any year.

Sec. 2.(a) PRODUCTION ROYALTIES - The royalty shall be 8 percent of the value of the coal as set forth in the regulations. Royalties are due to Lessor the final day of the month succeeding the calendar month in which the royalty obligation accrues.

(b) ADVANCE ROYALTIES - Upon request by the Lessee, the authorized officer may accept, for a total of not more than 20* years, the payment of advance royalties in lieu of continued operation, consistent with the regulations. The advance royalty shall be based on a percent of the value of a minimum number of tons determined in the manner established by the advance royalty regulations in effect at the time the Lessee requests approval to pay advance royalties in lieu of continued operation.

* 20 years (Public Law 109-58)

Sec. 3. BONDS - Lessee shall maintain in the proper office a lease bond in the amount of \$120,000. The authorized officer may require an increase in this amount when additional coverage is determined appropriate.

Sec. 4. DILIGENCE - This lease has achieved diligent development, and is subject to the conditions of continued operation. Continued operation may be excused when operations under the lease are interrupted by strikes, the elements, or casualties not attributable to the Lessee. The Lessor, in the public interest, may suspend the condition of continued operation upon payment of advance royalties in accordance with the regulations in existence at the time of the suspension.

The Lessor reserves the power to assent to or order the suspension of the terms and conditions of this

Sec. 5. LOGICAL MINING UNIT (LMU) - Either upon approval by the Lessor of the Lessee's application or at the direction of the Lessor, this lease shall become an LMU or part of an LMU, subject to the provisions set forth in the regulations.

The stipulations established in an LMU approval in effect at the time of LMU approval or modification will supersede the relevant inconsistent terms of this lease so long as the lease remains committed to the LMU. If the LMU of which this lease is a part is dissolved, the lease shall then be subject to the lease terms which would have been applied if the lease had not been included in an LMU.

~~This lease was placed in the Soldier Creek LMU effective March 1, 1996.~~

Sec. 6. DOCUMENTS, EVIDENCE AND INSPECTION - At such times and in such form as Lessor may prescribe, Lessee shall furnish detailed statements showing the amounts and quality of all products removed and sold from the lease, the proceeds therefrom, and the amount used for production purposes or unavoidably lost.

Lessee shall keep open at all reasonable times for the inspection of any duly authorized officer of Lessor, the leased premises and all surface and underground improvements, works, machinery, ore stockpiles, equipment, and all books, accounts, maps, and records relative to operations, surveys, or investigations on or under the leased lands.

Lessee shall allow Lessor access to and copying of documents reasonably necessary to verify Lessee compliance with terms and conditions of the lease.

While this lease remains in effect, information obtained under this section shall be closed to inspection by the public in accordance with the Freedom of Information Action (5 U.S.C. 552).

Sec. 7. DAMAGES TO PROPERTY AND CONDUCT OF OPERATIONS - Lessee shall comply at its own expense with all reasonable orders of the Secretary, respecting diligent operations, prevention of waste, and protection of other resources.

Lessee shall not conduct exploration operations, other than casual use, without an approved exploration plan. All exploration plans prior to the commencement of mining operations within an approved mining permit

area shall be submitted to the authorized officer.

Lessee shall carry on all operations in accordance with approved methods and practices as provided in the operating regulations, having due regard for the prevention of injury to life, health, or property, and prevention of waste, damage or degradation any land, air, water, cultural, biological, visual, and other resources, including mineral deposits and formations of mineral deposits not leased hereunder, and to other land uses or users. Lessee shall take measures deemed necessary by Lessor to accomplish the intent of this lease term. Such measures may include, but not limited to, modification to proposed siting or design of facilities, timing of operations, and specifications of interim and final reclamation procedures. Lessor reserves to itself the right to lease, sell, or otherwise dispose of the surface or other mineral deposits in the lands and the right to continue existing uses and to authorize future uses upon or in the leased lands, including issuing leases for mineral deposits not covered hereunder and approving easements or rights-of-way. Lessor shall condition such uses to prevent unnecessary or unreasonable interference with rights of Lessee as may be consistent with concepts of multiple use and multiple mineral development.

Sec. 8 PROTECTION OF DIVERSE INTERESTS, AND EQUAL OPPORTUNITY - Lessee shall: pay when due all taxes legally assessed and levied under the laws of the State or the United States; accord all employees complete freedom of purchase; pay all wages at least twice each month in lawful money of the United States; maintain a safe working environment in accordance with standard industry practices; restrict the workday to not more than 8 hours in any one day for underground workers, except in emergencies; and take measures necessary to protect the health and safety of the public. No person under the age of 16 years shall be employed in any mine below the surface. To the extent that laws of the State in which the lands are situated are more restrictive than the provisions in this paragraph, then the State laws apply.

Lessee will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended, and the rules, regulations, and relevant

orders of the Secretary of Labor. Neither Lessee nor Lessee's subcontractors shall maintain segregated facilities.

Sec. 9.(a) TRANSFERS
(Check the appropriate space)

- This lease may be transferred in whole or in part to any person, association or corporation qualified to hold such lease interest.
- This lease may be transferred in whole or in part to another public body, or to a person who will mine the coal on behalf of, and for the use of, the public body or to a person who for the limited purpose of creating a security interest in favor of a lender agrees to be obligated to mine the coal on behalf of the public body.
- This lease may only be transferred in whole or in part to another small business qualified under 13 CFR 121.

Transfers of record title, working or royalty interest must be approved in accordance with the regulations.

(b) **RELINQUISHMENTS** - The Lessee may relinquish in writing at any time all rights under this lease or any portion thereof as provided in the regulations. Upon Lessor's acceptance of the relinquishment, Lessee shall be relieved of all future obligations under the lease or the relinquished portion thereof, whichever is applicable.

Sec. 10. DELIVERY OF PREMISES, REMOVAL OF MACHINERY, EQUIPMENT, ETC. - At such times as all portions of this lease are returned to Lessor, Lessee shall deliver up to Lessor the land leased, underground timbering, and such other supports and structures necessary for the preservation of the mine workings on the leased premises or deposits and place all workings in condition for suspension or abandonment. Within 180 days thereof, Lessee shall remove from the premises all other structures, machinery, equipment, tools, and materials that it elects to or as required by the authorized officer. Any such structures, machinery, equipment, tools, and materials remaining on the leased lands beyond 180 days, or approved extension thereof, shall become the property of the Lessor, but Lessee shall either remove any or all such property or shall continue to be liable for the cost of removal and disposal in the amount actually incurred by the Lessor. If the surface is owned by third parties, Lessor shall waive the requirement for removal, provided the third parties do not object to such waiver. Lessee shall, prior to the termination of bond liability or at any other time when

required and in accordance with all applicable laws and regulations, reclaim all lands the surface of which has been disturbed, dispose of all debris or solid waste, repair the offsite and onsite damage caused by Lessee's activity or activities incidental thereto, and reclaim access roads or trails.

Sec. 11. PROCEEDINGS IN CASE OF DEFAULT - If Lessee fails to comply with applicable laws, existing regulations, or the terms, conditions and stipulations of this lease, and the noncompliance continues for 30 days after written notice thereof, this lease shall be subject to cancellation by the Lessor only by judicial proceedings. This provision shall not be construed to prevent the exercise by Lessor of any other legal and equitable remedy, including waiver of the default. Any such remedy or waiver shall not prevent later cancellation for the same default occurring at any other time.

Sec. 12. HEIRS AND SUCCESSORS - IN-INTEREST - Each obligation of this lease shall extend to and be binding upon, and every benefit hereof shall inure to, the heirs, executors, administrators, successors, or assigns of the respective parties hereto.

Sec. 13. INDEMNIFICATION - Lessee shall indemnify and hold harmless the United States from any and all claims arising out of the Lessee's activities and operations under this lease.

Sec. 14. SPECIAL STATUTES - This lease is subject to the Federal Water Pollution Control Act (33 U.S.C. 1151 - 1175); the Clean Air Act (42 U.S.C. 1857 et seq.), and to all other applicable laws pertaining to exploration activities, mining operations and reclamation, including the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.)

Sec. 15. SPECIAL STIPULATIONS -

SEE ATTACHED STIPULATIONS

Utah American Energy, Inc.
Company or Lessee Name

David W. Hlibo
(Signature of Lessee)

President
(Title)

05/31/11
(Date)

The United States of America

BY Kent Hoffman

[Signature]
(Signing Officer)

Deputy State Director - Lands & Mineral
(Title)

JUN 10 2011
(Date)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**SPECIAL STIPULATIONS FOR UTSL-066490
MODIFIED COAL LEASE**

1. In accordance with Sec. 523(b) of the "Surface Mining Control and Reclamation Act of 1977," surface mining and reclamation operations conducted on this lease are to conform with the requirements of this act and are subject to compliance with Office of Surface Mining regulations, or as applicable the Utah program approved under the cooperative agreement in accordance with sec. 523(c). The United States Government does not warrant that the entire tract will be susceptible to mining.

2. Before undertaking activities that may disturb the surface of previously undisturbed leased lands, the lessee may be required to conduct a cultural resource inventory of the areas to be disturbed. These studies shall be conducted by qualified professional cultural resource specialists, and a report prepared itemizing the findings. A plan will then be submitted making recommendations for the protection of, or measures to be taken to mitigate impacts for identified cultural resources.

If cultural resources of significant scientific interest are discovered during operations under this lease, the lessee prior to disturbance shall, immediately bring them to the attention of the Authorized Officer.

The cost of conducting the inventory, preparing reports, and carrying out mitigating measures shall be borne by the lessee.

3. If there is reason to believe that Threatened or Endangered (T&E) species of plants or animals, or migratory bird species of high Federal interest occur in the area, the Lessee shall be required to conduct an intensive field inventory of the area to be disturbed and/or impacted. The inventory shall be conducted by a qualified specialist and a report of findings will be prepared. A plan will be prepared making recommendations for the protection of these species or action necessary to mitigate the disturbance.

The cost of conducting the inventory, preparing reports, and carrying out mitigating measures shall be borne by the lessee.

4. Before undertaking activities that may disturb the surface of previously undisturbed leased lands, the lessee may be required to conduct a paleontological appraisal of the areas to be disturbed. The appraisal shall be conducted by a qualified paleontologist and a report prepared itemizing the findings.

A plan will then be submitted making recommendations for the protection of, or measures to be taken to mitigate impacts for identified paleontological resources.

If paleontological remains (fossils) of significant scientific interest are discovered during operations under this lease, the lessee shall immediately bring them to the attention of the authorized officer who shall evaluate, or have evaluated such discoveries and, within 5 working days, shall notify the lessee what action shall be taken with respect to such discoveries. Paleontological remains of significant scientific interest do not include leaves, ferns, or dinosaur tracks commonly encountered during underground mining.

The cost of conducting the inventory, preparing reports, and carrying out necessary protective mitigating measure shall be borne by the lessee. The cost of salvage of paleontological remains (fossils) shall be borne by the United States.

5. The Lessee shall be required to perform a study to secure adequate baseline data to quantify the existing surface resources on and adjacent to the lease area. Existing data may be used if such data are adequate for the intended purposes. The study shall be adequate to locate, quantify, and demonstrate the interrelationship of the geology, topography, surface and ground water hydrology, vegetation and wildlife. Baseline data will be established so that future programs of observation can be incorporated at regular intervals for comparison.

6. Powerlines used in conjunction with the mining of coal from this lease shall be constructed so as to provide adequate protection for raptors and other large birds. When feasible, powerlines will be located at least 100 yards from public roads.

7. The lessee shall provide for the suppression and control of fugitive dust on haul roads and at coal-handling and storage

facilities on the lease area. The migration of road surfacing and subsurface materials into streams and water courses shall be prevented.

8. The lessee shall be required to establish a monitoring system to locate, measure, and quantify the progressive and final effects of underground mining activities on the topographic surface, underground and surface hydrology and vegetation. The monitoring system shall utilize techniques which will provide a continuing record of change over time and an analytical method for location and measurement of a number of points over the lease area. The monitoring shall incorporate and be an extension of the baseline data. The monitoring system shall be adequate to locate and quantify, and demonstrate the inter-relationship of the geology, topography, surface hydrology, vegetation and wildlife.

9. Except at locations specifically approved by the Authorized Officer, underground mining operations shall be conducted in such a manner so as to prevent surface subsidence that would: (1) cause the creation of hazardous conditions such as potential escarpment failure and landslides, (2) cause damage to existing surface structures, and (3) damage or alter the flow of perennial streams. The lessee shall provide specific measures for the protection of escarpments, and determine corrective measures to assure that hazardous conditions are not created.

10. In order to avoid surface disturbance on steep canyon slopes and to preclude the need for surface access, all surface breakouts for ventilation tunnels shall be constructed from inside the mine, except at specifically approved locations.

11. Support facilities, structures, equipment, and similar developments will be removed from the lease area within 2 years after the final termination of use of such facilities. This provision shall apply unless the requirement of Section 10 of the lease form is applicable. Disturbed areas and those areas previously occupied by such facilities will be stabilized and rehabilitated, drainages reestablished, and the areas returned to an authorized post mining land use.

12. The Lessee at the conclusion of the mining operation, or at other times as surface disturbance related to mining may occur, will replace all damaged, disturbed, or displaced corner monuments (section corners, quarter corners, etc.) their accessories and appendages (witness trees, bearing trees, etc.), or restore them to their original condition and location, or at other locations that meet the requirements of the rectangular surveying system. This work shall be conducted at the expense of the Lessee, by BLM to the standards and guidelines found in the Manual of Surveying Instructions, U.S. Department of Interior.

13. Notwithstanding the approval of a Resource Recovery and Protection Plan (R2P2) by the BLM, lessor reserves the right to seek damages against the operator/lessee in the event (i) the operator/lessee fails to achieve maximum economic recovery [as defined at 43 CFR §3480.0-5(21)] of the recoverable coal reserves or (ii) the operator/lessee is determined to have caused a wasting of recoverable coal reserves. Damages shall be measured on the basis of the royalty that would have been payable on the wasted or un-recovered coal.

The parties recognize that under an approved R2P2, conditions may require a modification by the operator/lessee of that plan. In the event a coal bed or portion thereof is not to be mined or is rendered unminable by the operation, the operator shall submit appropriate justification to obtain approval by the AO to leave such reserves unmined. Upon approval by the AO, such coal beds or portions thereof shall not be subject to damages as described above. Further, nothing in this section shall prevent the operator/lessee from exercising its right to relinquish all or a portion of the lease as authorized by statute and regulation.

In the event the AO determines that the R2P2 modification will not attain MER resulting from changed conditions, the AO will give proper notice to the operator/lessee as required under applicable regulations. The AO will order a new R2P2 modification if necessary, identifying additional reserves to be mined in order to attain MER. Upon a final administrative or judicial ruling upholding such an ordered modification, any reserves left un-mined (wasted) under that plan will be subject to damages as described in the first paragraph under this section.

Subject to the right to appeal hereinafter set forth, payment of the value of the royalty on such un-mined recoverable coal reserves shall become due and payable upon determination by the AO that the coal reserves have been rendered un-minable or at such time that the lessee has demonstrated an unwillingness to extract the coal.

The BLM may enforce this provision either by issuing a written decision requiring payment of the MMS demand for such royalties, or by issuing a notice of non-compliance. A decision or notice of non-compliance issued by the lessor that payment is due under this stipulation is appealable as allowed by law.

14. **WASTE CERTIFICATION:** The lessee shall provide upon abandonment and/or sealing off a mined area and prior to lease termination/relinquishment, certification to the lessor that, based upon a complete search of all the operator's records for the mine and upon their knowledge of past operations, there has been no **hazardous substances** per (40 CFR 302.4) or **used oil** as per Utah State Management Rule R-315-15, deposited within the lease, either on the surface or underground, or that all remedial action necessary has been taken to protect human health and the environment with respect to any such substances remaining on the property. The back-up documentation to be provided shall be described by the lessor prior to the first certification and shall include all documentation applicable to the Emergency Planning and Community Right-to-know Act (EPCRA, Public Law 99-499), Title III of the Superfund Amendments and Reauthorization Act of 1986 or equivalent.

15. **ABANDONMENT OF EQUIPMENT:** The lessee/operator is responsible for compliance with reporting regarding toxic and hazardous material and substances under Federal Law and all associated amendments and regulations for the handling such materials on the land surface and in underground mine workings.

The lessee/operator must remove mine equipment and materials not needed for continued operations, roof support and mine safety from underground workings prior to abandonment of mine sections. Exceptions can be approved by the Authorized Officer (BLM) in consultation with the surface management agency. Creation of a situation that would prevent removal of such material and by retreat or abandonment of mine sections without prior authorization would be considered noncompliance with lease terms and conditions and subject to appropriate penalties under the lease.

16. **UNDERGROUND INSPECTION:** All safe and accessible areas shall be inspected prior to being sealed. The lessee shall notify the Authorized Officer in writing 30 days prior to the sealing of any areas in the mine and state the reason for closure. Prior to seals being put into place, the lessee shall inspect the area and document any equipment/machinery, hazardous substances, and used oil that is to be left underground.

The purpose of this inspection will be: (1) to provide documentation for compliance with 42 U.S.C. 9620 section 120(h) and State Management Rule R-315-15, and to assure that certification will be meaningful at the time of lease relinquishment, (2) to document the inspection with a mine map showing location of equipment/machinery (model, type of fluid, amount remaining, batteries etc.) that is proposed to be left underground. In addition, these items will be photographed at the lessee's expense and shall be submitted to the Authorized Officer as part of the certification. The abandonment of any equipment/machinery shall be on a case by case basis and shall not be accomplished unless the Authorized Officer has granted a written approval.

17. **GOB VENT BOREHOLES.** The Lessee shall submit a gob vent borehole plan for approval by the AO as part of an R2P2 for all gob vent boreholes. The plugging portion of the plan must meet 43 CFR 3484.1(a)(3) as a minimum. If variations to the approved plugging procedures are necessary, they shall also be approved by the AO in writing prior to implementation of the procedures.

18. The holder of this lease shall be required to conduct appropriate surveys for Mexican Spotted owls on the lease tract areas with 40 percent or greater slope, cliff habitat areas, riparian habitats, and mixed conifer forest habitats, prior to surface disturbing activities and or development with a potential to interrupt springs. Inventory work will be conducted by parties approved and permitted for such survey work by the Authorized Officer of the BLM and conducted following current protocols established by the USFWS.

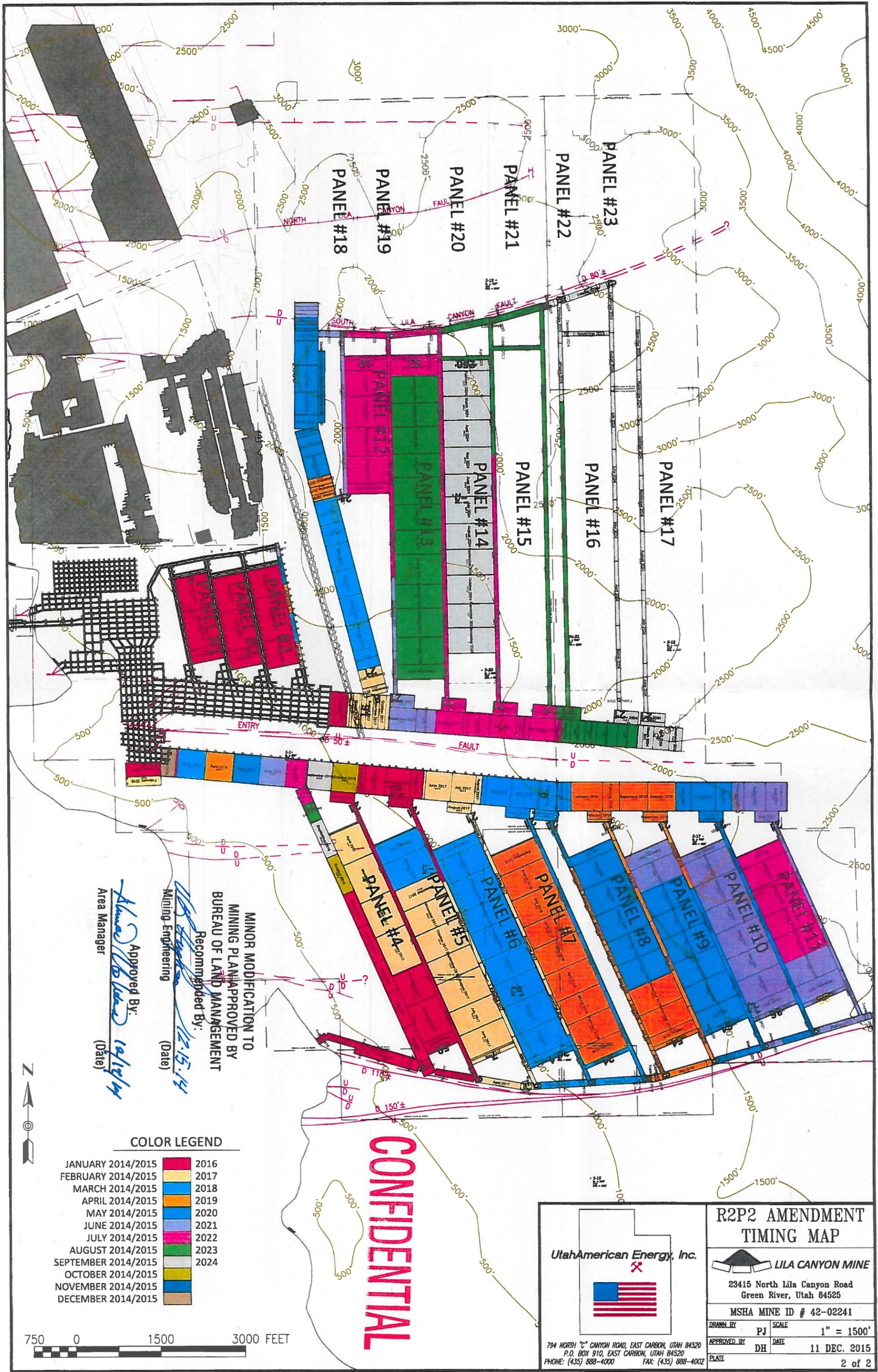
19. **FAIR MARKET VALUE BONUS:** Due to the uncertainty of the amount of recoverable coal reserves in this modification, the lessee will pay the fair market value (FMV) bonus payment for the coal resources mined in the area of Federal coal lease modification (UTSL-066490) Tract 2, at the rate of \$0.37 per ton for the actual tonnage mined, adjusted annually using the U. S. Bureau of Labor Statistics CPI West Urban Energy Index; or if that index is not available the BLM authorized officer will chose a comparable index to be used. Payment of FMV at the specified rate and tonnage mined will be on the schedule required for payment of production royalties to the Office of Natural Resources Revenue (ONRR). The lessee will clearly indicate which portion of the payment is for royalty and what is for the lease bonus payment.

Lila Canyon Mine

Appendix 5-9

Attachment 2

Latest approved BLM R2P2 Map



MINOR MODIFICATION TO
 MINING PLAN APPROVED BY
 BUREAU OF LAND MANAGEMENT
 Recommended By: *[Signature]*
 Mining Engineering (Date) 12-15-14
 Approved By: *[Signature]*
 Area Manager (Date) 12/19/14

COLOR LEGEND

JANUARY 2014/2015	2016
FEBRUARY 2014/2015	2017
MARCH 2014/2015	2018
APRIL 2014/2015	2019
MAY 2014/2015	2020
JUNE 2014/2015	2021
JULY 2014/2015	2022
AUGUST 2014/2015	2023
SEPTEMBER 2014/2015	2024
OCTOBER 2014/2015	
NOVEMBER 2014/2015	
DECEMBER 2014/2015	



CONFIDENTIAL

UtahAmerican Energy, Inc.

 794 NORTH "C" CANYON ROAD, EAST CARBON, UTAH 84520
 P.O. BOX 910, EAST CARBON, UTAH 84520
 PHONE: (435) 888-4000 FAX: (435) 888-4002

**R2P2 AMENDMENT
 TIMING MAP**

LILA CANYON MINE
 23415 North Lila Canyon Road
 Green River, Utah 84525
 MSHA MINE ID # 42-02241
 DRAWN BY PJ SCALE 1" = 1500'
 APPROVED BY DH DATE 11 DEC. 2015
 PLATE 2 of 2

L:\Drawings\2015 Budget\Lila Canyon\Working\10148 Actual.dwg, Layout2, 12/11/2014 1:57:00 PM

Lila Canyon Mine

Appendix 5-9

Attachment 3

2016 Raptor Survey Results

(to be submitted upon completion)

Lila Canyon Mine

Appendix 5-9

Attachment 4

Cultural Resources Inventory Report

CULTURAL RESOURCE INVENTORY OF
UTAHAMERICAN ENERGY, INC.'S PROPOSED
LILA CANYON MINE BREAKOUT
(T16S, R14E, SECTION 26)
EMERY COUNTY, UTAH

CULTURAL RESOURCE INVENTORY OF
UTAHAMERICAN ENERGY, INC.'S PROPOSED
LILA CANYON MINE BREAKOUT
(T16S, R14E, SECTION 26)
EMERY COUNTY, UTAH

By:

Patricia Stavish

Prepared For:

Bureau of Land Management
Price Field Office
and
Utah Division of Oil, Gas, and Mining

Prepared Under Contract With:

UtahAmerican Energy, Inc.
794 North 'C' Canyon Road
P.O. Box 910
East Carbon, Utah 84520

Prepared By:

Montgomery Archaeological Consultants, Inc.
P.O. Box 219
Moab, Utah 84532

MOAC Report No. 16-010

March 16, 2016

United States Department of Interior (FLPMA)
Permit No. 16-UT-60122

State of Utah Antiquities Project (Survey)
Permit No. U-16-MQ-0154b

INTRODUCTION

A cultural resource inventory was conducted by Montgomery Archaeological Consultants, Inc. (MOAC) in 2016 for UtahAmerican Energy, Inc.'s proposed Lila Canyon Mine breakout location. The project area is located on the Book Cliffs, south of Lila Canyon and north of Woodside, Emery County, Utah. The inventory was implemented at the request of Mr. James Newman, UtahAmerican Energy, Price, Utah. Land status is public land administered by the Bureau of Land Management (BLM), Price Field Office.

The objective of the inventory was to locate, document, and evaluate any cultural resources within the project area in order to attain compliance with a number of federal and state mandates, including the National Historic Preservation Act of 1966 (as amended), the National Environmental Policy Act of 1969, the Archaeological and Historic Preservation Act of 1974, the Archaeological Resources Protection Act of 1979, the American Indian Religious Freedom Act of 1978, and the Utah State Antiquities Act of 1973 (amended 1990).

The fieldwork was performed by Patricia Stavish (Principal Investigator) on March 11, 2016 under the auspices of US Department of the Interior (FLPMA) Permit No. 16-UT-60122 and State of Utah Antiquities Project (Survey) No. U-16-MQ-0154b issued to Montgomery Archaeological Consultants, Moab, Utah.

Prior to the inventory, a file search for previous projects and documented cultural resources was completed by Adam Thomas consulting the Utah Division of State History's Preservation Pro on March 4, 2016. This consultation indicated that no previous inventories have been completed within or near the current project area and no previous archaeological sites occur within or near the current project area.

DESCRIPTION OF PROJECT AREA

The project area is situated along the Book Cliffs, south of Lila Canyon, Emery County, Utah. The legal description of the proposed breakout location is Township 16 South, Range 14 East, Section 26 (Figure 1). A total of 3.5 acres was inventoried for cultural resources on public land administered by the BLM (Price Field Office).

Environmental Setting

The project area lies on the Colorado Plateau, within the Book Cliffs-Roan Plateau physiographic subdivision (Stokes 1986). It lies along the Book Cliffs, a nearly continuous escarpment separating the Tavaputs Plateau from the Mancos Shale Lowland. The geology of the Book Cliffs is dominated mainly by marine Cretaceous sandstone, while the Roan Cliffs are carved from Paleocene and Eocene river and flood plain deposits. The project extends along the steep slope of a small canyon along the upper elevations of the Book Cliffs. Elevation ranges between 6200 and 6400 ft asl. Vegetation is sparse and includes ephedra, shadscale, dropseed grass, sagebrush, and occasional pinyon and juniper. Modern impacts to the project area include erosion and underground mining.

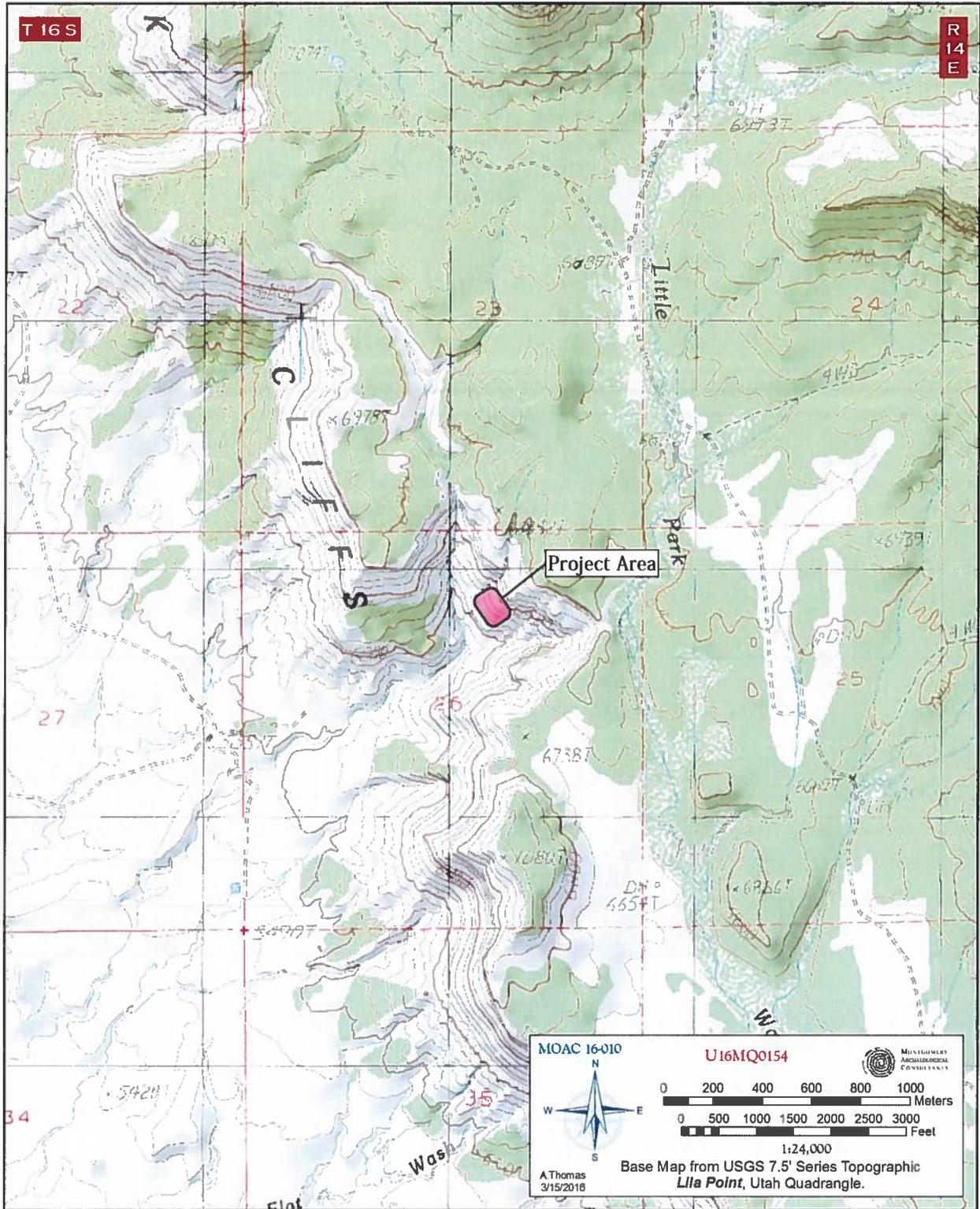


Figure 1. Inventory Area of UtahAmerican Energy's Lila Canyon Mine Breakout Location, Emery County, Utah.

SURVEY METHODOLOGY

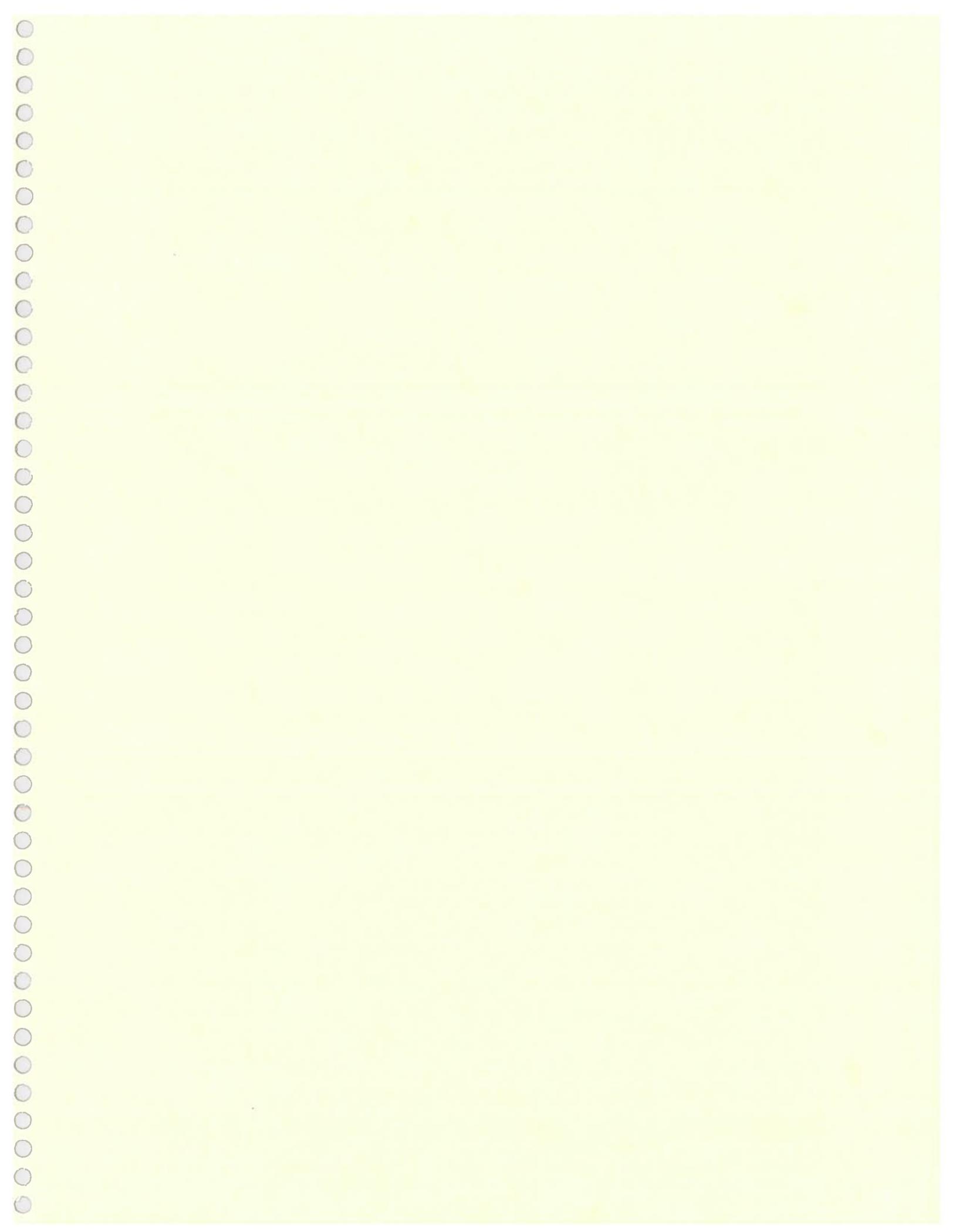
An intensive pedestrian survey, which is considered 100% coverage, was performed for this project. The proposed breakout location was buffered by 100 ft in all directions resulting in an area measuring 200 ft by 400 ft (3.54 acres). This area was inspected for cultural resources by the archaeologist walking transects spaced no more than 10 m (33 ft) apart where possible. The easternmost portion of the buffered area could not be physically accessed due to a cliff face, however a visual inspection of the area indicated that no rock art or structures were present on the cliff face. Ground visibility was considered good.

INVENTORY RESULTS

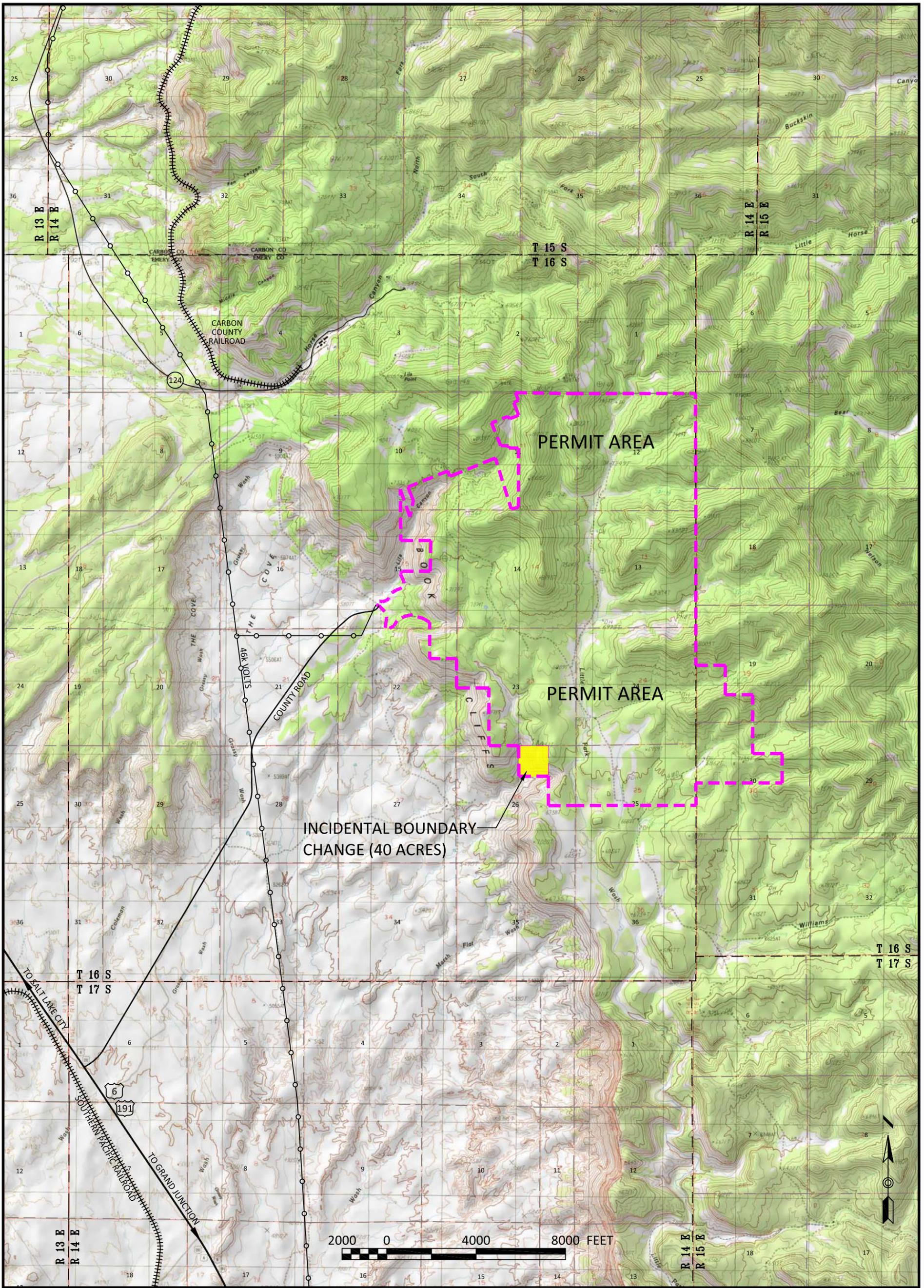
The cultural resource inventory of UtahAmerican Energy Inc.'s Lila Canyon Mine breakout location resulted in no cultural resources. Based on the findings, a recommendation of "no historic properties affected" is proposed for this undertaking pursuant to Section 106 of 36 CFR 800.

REFERENCES CITED

- Stokes, W. L.
1986 *Geology of Utah*. Utah Museum of Natural History and Utah Geological and Mineral Survey, Salt Lake City.



K:\Lila\2016\16-001 Ventilation Breakout and Removal of Part A and B References\Drawings\Plate 1-1 Permit Area Map Task 5081.dwg, Plate 1-1, 6/1/2016 12:02:42 PM, 1:1



PERMIT AREA

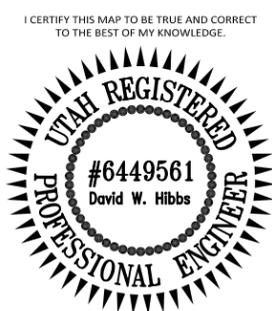
PERMIT AREA

INCIDENTAL BOUNDARY CHANGE (40 ACRES)

LEGEND: TOTAL PERMIT AREA: 6,023 ACRES

- PERMIT AREA :
- INCIDENTAL BOUNDARY CHANGE AREA : (40 ACRES)

NOTE: Plate 1-1 is the official permit boundary map and it will be used to clarify any questions about the permit boundaries.



REVISIONS	
DATE	BY
12/13/2000	BJ
10/02/2002	RJM
02/08/2016	PJJ
06/01/2016	PJJ

PERMIT AREA MAP

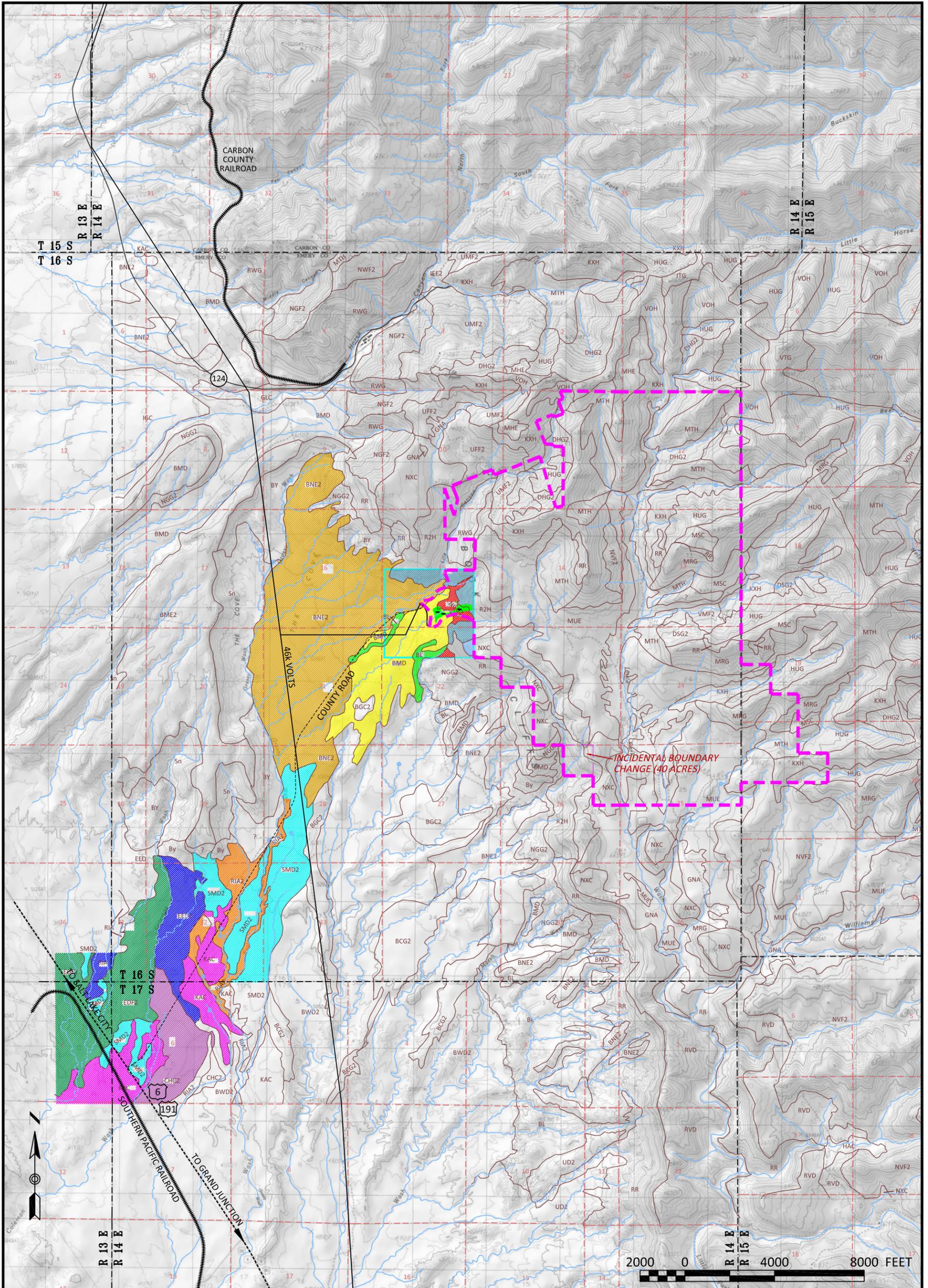
LILA CANYON MINE

23415 North Lila Canyon Road
Green River, Utah 84525

DOGM PERMIT# C0070013

DESIGN BY:	SCALE: 1" = 4,000'
	ORIGINAL DATE: SEPT. 2000

PLATE 1-1



LEGEND: PERMIT AREA : Disturbed Area
 Area of Undisturbed within Disturbed Area

SOILS WITHIN THE DISTURBED SURFACE FACILITIES:

- RR Senchert loam, 3–15% slopes
- NGG2 Gerst–Strych–Badland Complex, 30–70% slopes
- NXC Travessilla sandy loam, 1–8% slopes
- R2H Travessilla family–Rock outcrop complex
- BMD Strych very stony fine sandy loam, 3–30% slopes
- BL Persao–Chipeta Badland, 3–20% slopes
- BNE2 Strych, very bouldery fine sandy loam, 3–20% slopes



REVISIONS

DATE	BY
JAN. 2008	RJM
DEC. 2010	RJM
02/08/2016	PJJ
06/01/2016	PJJ

SOILS MAP

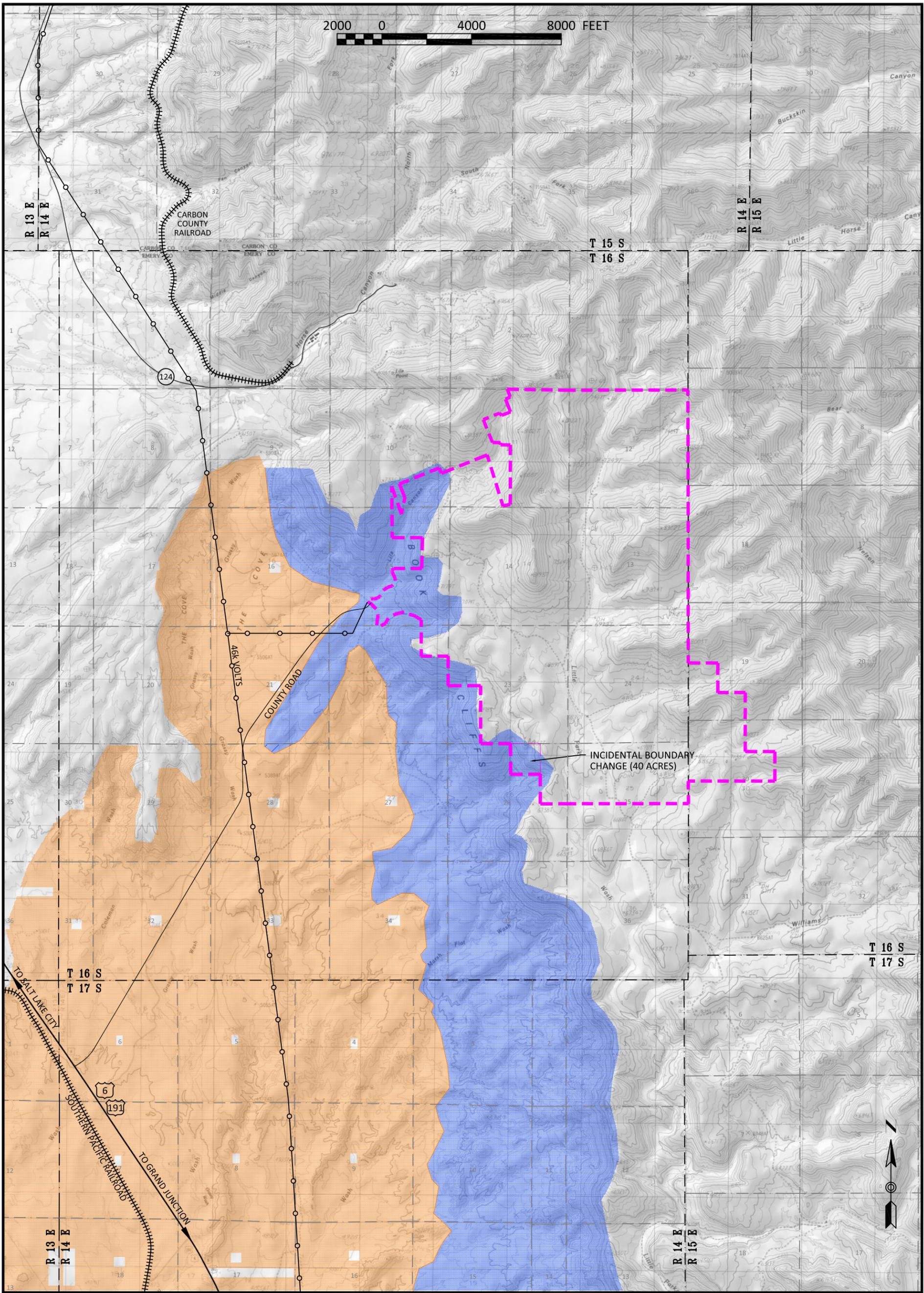
LILA CANYON MINE
 23415 North Lila Canyon Road
 Green River, Utah 84525

DOG M PERMIT# C0070013

DESIGN BY: EIS
 SCALE: 1" = 4,000'
 ORIGINAL DATE: MAY 1998

PLATE 2-1

2000 0 4000 8000 FEET



T 15 S
T 16 S

R 14 E
R 15 E

R 13 E
R 14 E

T 16 S
T 17 S

R 14 E
R 15 E

T 16 S
T 17 S

LEGEND:

- Rocky Mountain Big Horn Sheep Habitat
- Pronghorn Antelope Yearlong Habitat
- Permit Line

2000 0 4000 8000 FEET



REVISIONS

DATE	BY
11 NOV. 1999	RJM
29 AUG. 2000	BJ
14 DEC. 2000	BJ
SEPT. 2002	RJM
APR. 2003	RJM
FEB. 8, 2016	PJJ
JUNE 1, 2016	PJJ

**WILDLIFE HABITAT:
BIG HORN SHEEP /
PRONGHORN ANTELOPE**

LILA CANYON MINE
23415 North Lila Canyon Road
Green River, Utah 84525

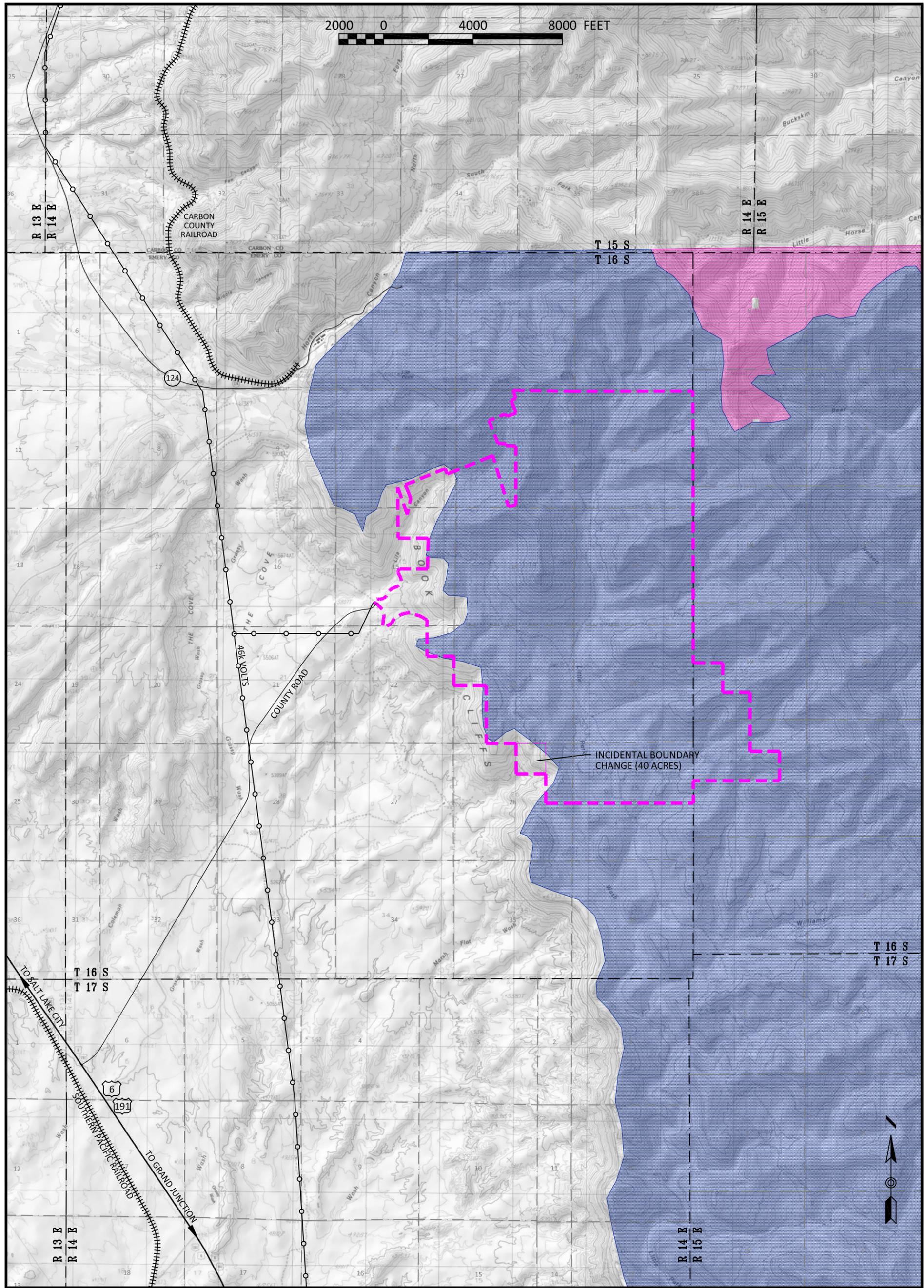
DOG M PERMIT# C0070013

DESIGN BY: EIS

SCALE: 1" = 4,000'
ORIGINAL DATE: SEPT. 2000

PLATE 3-1B

2000 0 4000 8000 FEET



INCIDENTAL BOUNDARY CHANGE (40 ACRES)

LEGEND:

-  Elk Winter Habitat
-  Elk Summer Habitat
-  Permit Line

2000 0 4000 8000 FEET



REVISIONS	
DATE	BY
11 NOV. 1999	RJM
29 AUG. 2000	BJ
14 DEC. 2000	BJ
SEPT. 2002	RJM
APR. 2003	RJM
FEB. 8, 2016	PJJ
JUNE 1, 2016	PJJ

WILDLIFE HABITAT:
ELK



LILA CANYON MINE
23415 North Lila Canyon Road
Green River, Utah 84525

DOG M PERMIT# C0070013

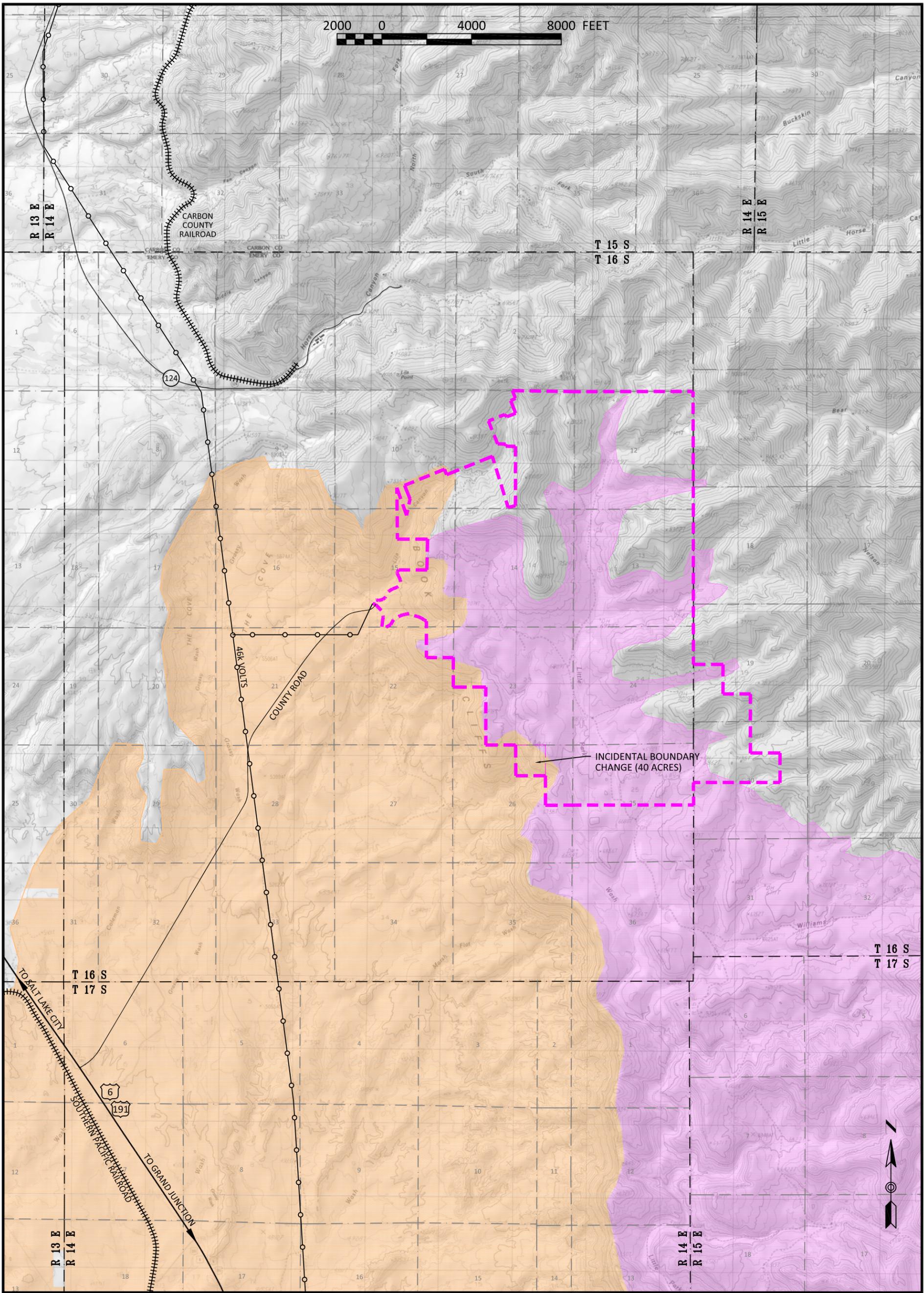
DESIGN BY:  EIS

SCALE: 1" = 4,000'
ORIGINAL DATE: SEPT. 2000

PLATE 3-1C

K:\Lila\2016\16-001 Ventilation Breakout and Removal of Part A and B References\Deliverables Task 5081\Drawings\Plate 3-1 Wildlife Habitat Confidential Task 5081.dwg, 3-1C ELK, 6/1/2016 12:16:52 PM, 1:1

2000 0 4000 8000 FEET



INCIDENTAL BOUNDARY CHANGE (40 ACRES)

K:\Lila\2016\16-001 Ventilation Breakout and Removal of Part A and B References\Drawings\Plate 3-1 Wildlife Habitat Confidential Task 5081.dwg, 3-1D DEER, 6/1/2016 12:19:12 PM, 1:1

LEGEND:

- Mule Deer Critical Habitat
- Mule Deer Yearlong Habitat
- Permit Line

2000 0 4000 8000 FEET



REVISIONS

DATE	BY
11 NOV. 1999	RJM
29 AUG. 2000	BJ
14 DEC. 2000	BJ
SEPT. 2002	RJM
APR. 2003	RJM
FEB. 8, 2016	PJJ
JUNE 1, 2016	PJJ

**WILDLIFE HABITAT
MULE DEER**

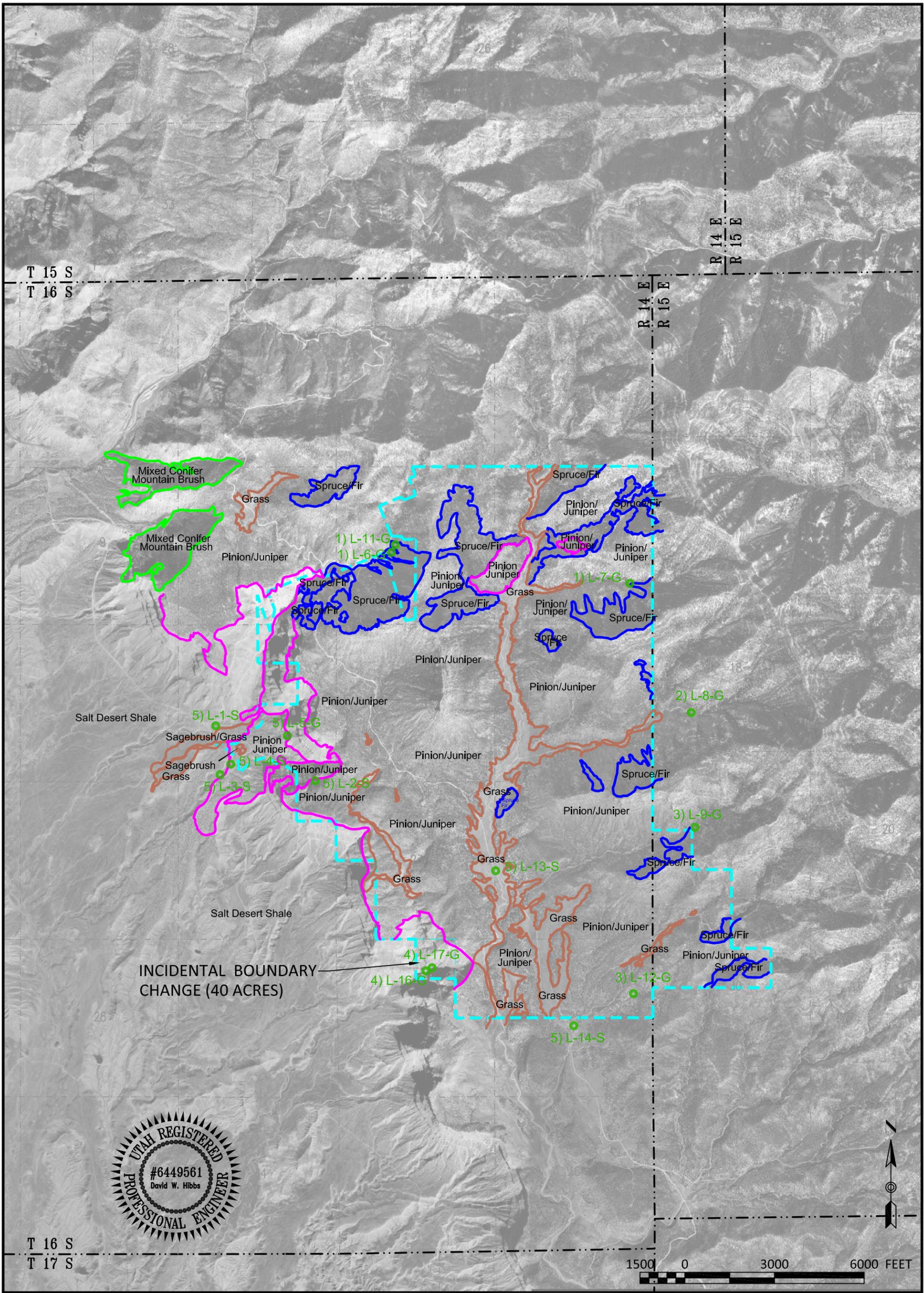
LILA CANYON MINE
 23415 North Lila Canyon Road
 Green River, Utah 84525

DOG M PERMIT# C0070013

DESIGN BY: **EIS** SCALE: 1" = 4,000'
 ORIGINAL DATE: SEPT. 2000

PLATE 3-1D

K:\Lila\2016\16-001 Ventilation Breakout and Removal of Part A and B References\Drawings\Plate 3-2 Vegetation Map Task 5081.dwg, Plate 3-2, 6/17/2016 12:22:46 PM, 1:1



INCIDENTAL BOUNDARY CHANGE (40 ACRES)



LEGEND:

- Salt Desert Shale / Grass ———
- Pinion/Juniper ———
- Spruce/Fir ———
- Mountain Brush ———
- Permit Boundary - - - - -
- Spring Vegetation Key and Water Monitoring Location ● 2) L-15-G

Spring Vegetation Key
(See Appendix 7-8 for Additional Details)

- 1) Habitat overstory is Douglas Fir-Mountain Brush association.
- 2) Habitat is predominantly Pinyon-Juniper and sagebrush grass associations.
- 3) Wet meadow habitat with an overstory of Pinyon-Juniper and sagebrush grass associations.
- 4) Habitat is a mix of grasses and salt desert shrub habitat and invasive tamarisk.
- 5) Habitat is a sagebrush with Pinyon-Juniper overstory.

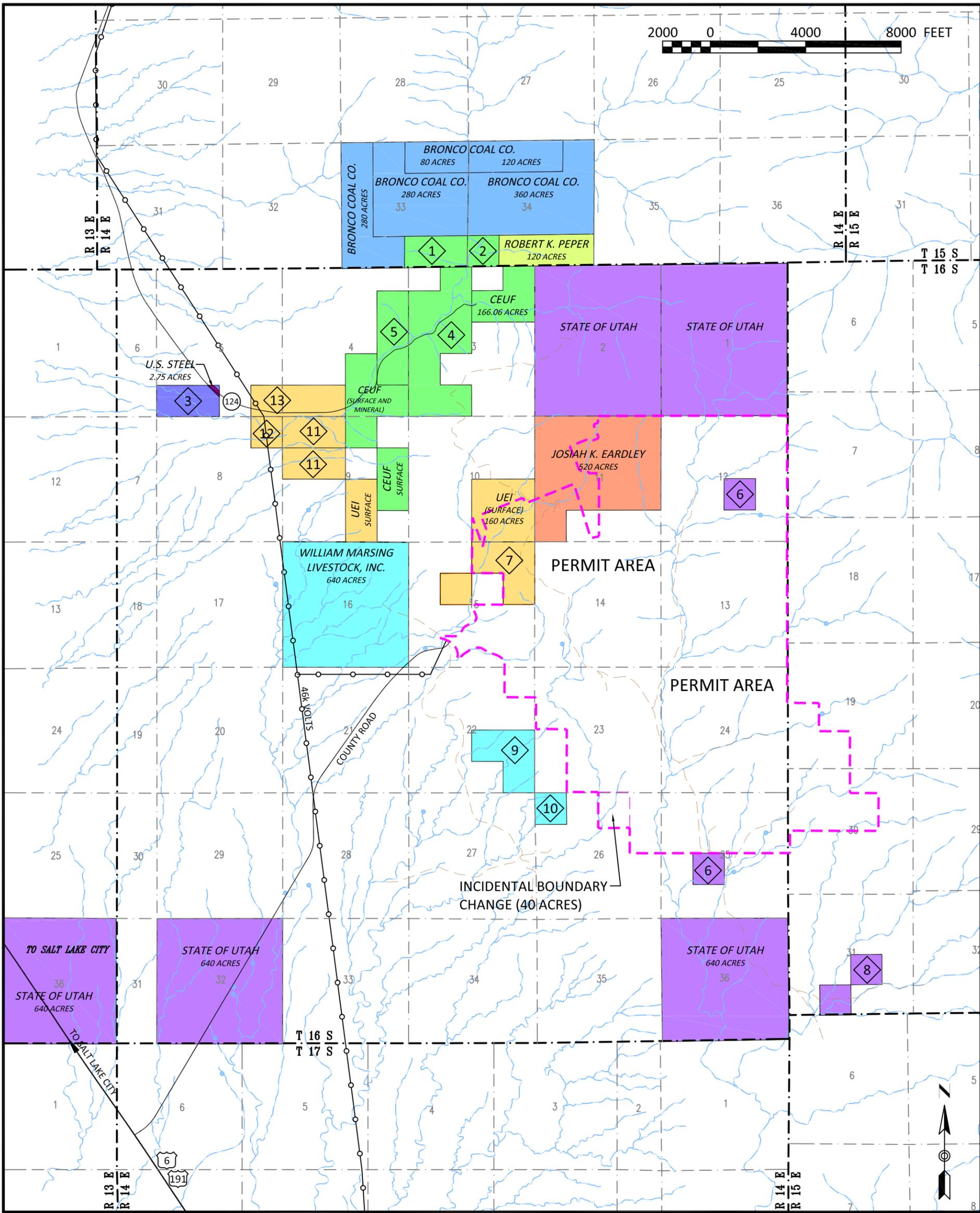
REVISIONS

DATE	BY
02/08/2016	PJJ
06/01/2016	PJJ

VEGETATION MAP


LILA CANYON MINE
 23415 North Lila Canyon Road
 Green River, Utah 84525
 DOGM PERMIT# C0070013
 DESIGN BY:  **EIS** SCALE: 1" = 4,000'
 ORIGINAL DATE: OCT. 2002
PLATE 3-2

2000 0 4000 8000 FEET



KEYED PROPERTY NOTES

- | | | | |
|----------------------------------------------|----------------------------------------------|-------------------------------------------------|---------------------------------------------|
| 1 CEUF (SURFACE AND MINERAL)
80 ACRES | 5 CEUF (SURFACE AND MINERAL)
114.82 ACRES | 9 WILLIAM MARSING LIVESTOCK, INC.
120 ACRES | 13 UEI (SURFACE AND MINERAL)
35.41 ACRES |
| 2 CEUF (SURFACE AND MINERAL)
40 ACRES | 6 STATE OF UTAH
40 ACRES | 10 WILLIAM MARSING LIVESTOCK, INC.
400 ACRES | |
| 3 EMERY COUNTY
77.25 ACRES | 7 UEI (SURFACE)
160 ACRES | 11 UEI (SURFACE AND MINERAL)
80 ACRES | |
| 4 CEUF (SURFACE AND MINERAL)
231.85 ACRES | 8 STATE OF UTAH
80 ACRES | 12 UEI (SURFACE AND MINERAL)
40 ACRES | |

LEGEND:

ALL LANDS OWNED BY BUREAU OF LAND MANAGEMENT UNLESS NOTED OTHERWISE.

- | | |
|-----------------------------------|----------------------------|
| PERMIT AREA : | UtahAmerican Energy, Inc. |
| Emery County | W. Marsing Livestock, Inc. |
| Brent M. Davies (Bronco Coal Co.) | Robert K. Peper |
| Josiah K. Eardley | U.S. Steel |
| CEUF | State of Utah |



REVISIONS	
DATE	BY
AUG. 2000	BJ
DEC. 2000	BJ
SEPT. 2002	RJM
AUG. 2003	RJM
DEC. 2005	RJM
FEB. 8, 2016	PJJ
JUNE 1, 2016	PJJ

SURFACE OWNERSHIP

LILA CANYON MINE

23415 North Lila Canyon Road
Green River, Utah 84525

DOGM PERMIT# C0070013

DESIGN BY: EIS

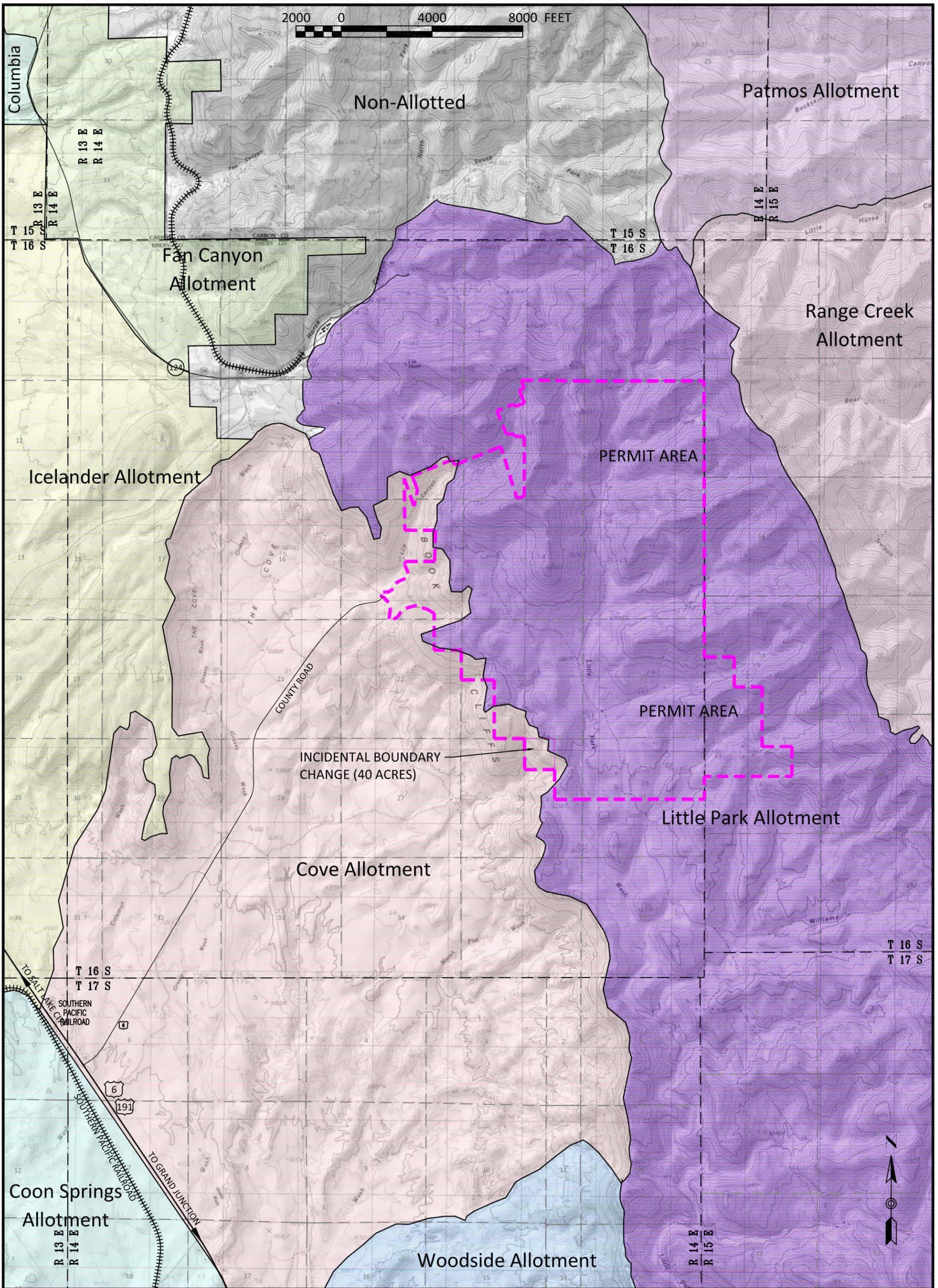
SCALE: 1" = 4,000'

ORIGINAL DATE: JULY 1999

PLATE 4-1

K:\Lila\2016\16-001 Ventilation Breakout and Removal of Part A and B References\Deliverables\Task 5081\Drawings\Plate 4-1 Surface Ownership\Task 5081.dwg, Plate #=1, 6/11/2016 1:24:40 PM, 1:1

2000 0 4000 8000 FEET



LEGEND:

GRAZING ALLOTMENTS:

- Columbia Allotment
- Coon Springs Allotment
- Cove Allotment
- Fan Canyon Allotment
- Icelander Allotment
- Little Park Allotment
- Non-Allotted
- Patmos Allotment
- Range Creek Allotment
- Woodside Allotment

PERMIT AREA : - - - - -



REVISIONS

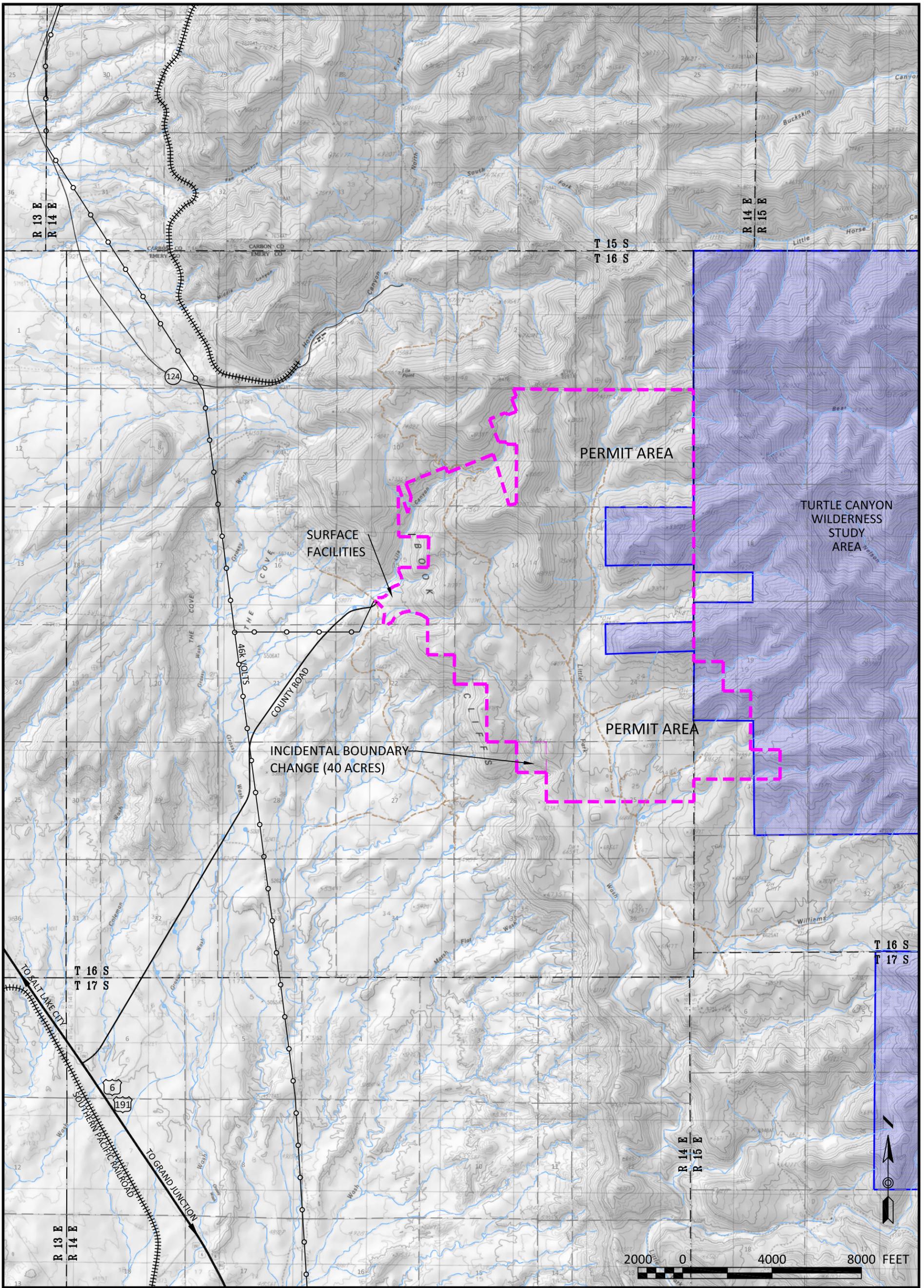
DATE	BY
AUG. 29, 2000	BJ
DEC. 14, 2000	BJ
SEPT. 19, 2002	RJM
FEB. 8, 2016	PJJ
JUNE 1, 2016	PJJ

GRAZING ALLOTMENTS

LILA CANYON MINE
 23415 North Lila Canyon Road
 Green River, Utah 84525
 DOGM PERMIT# C0070013
 DESIGN BY: **EIS** SCALE: 1" = 4,000'
 ORIGINAL DATE: APRIL 1998
PLATE 4-2

K:\Lila\2016\16-001 Ventilation Breakout and Removal of Part A and B References\Deliverables Task 5081\Drawings\Plate 4-2 Grazing Allotments Task 5081.dwg, Plate 4-2, 6/1/2016 1:27:38 PM, 1:1

K:\Lila\2016\16-001 Ventilation Breakout and Removal of Part A and B References\Drawings\Plate 4-4 Wilderness Character Task 5081.dwg, Plate 4-4, 6/1/2016 1:34:51 PM, 1:1



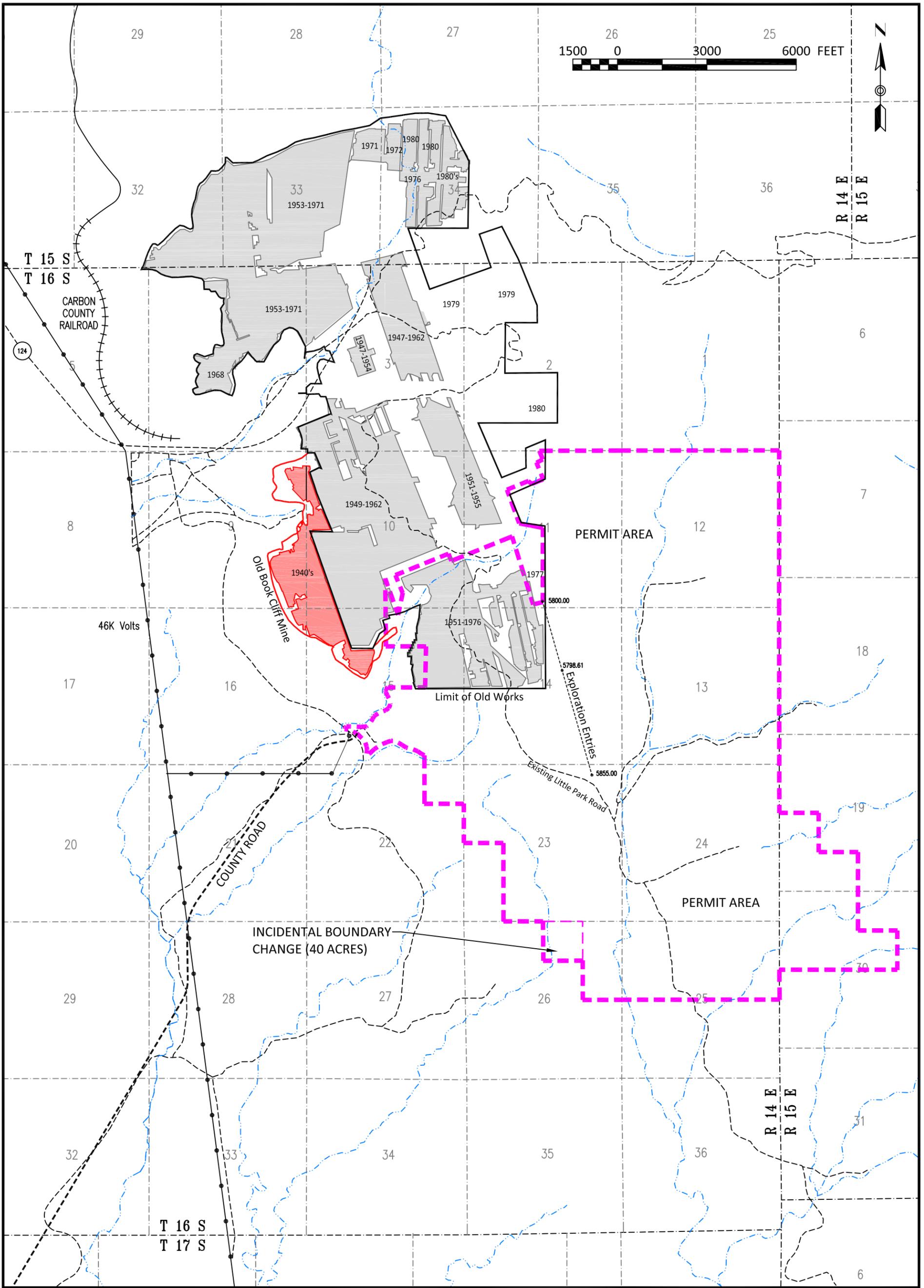
LEGEND:

- TURTLE CANYON WSA :
- PERMIT AREA :
- EPHEMERAL STREAM :



REVISIONS	
DATE	BY
12/2000	BJ
09/2002	RJM
02/08/2016	PJJ
06/01/2016	PJJ

AREA OF WILDERNESS CHARACTER	
LILA CANYON MINE	
23415 North Lila Canyon Road Green River, Utah 84525	
DOGM PERMIT# C0070013	
DESIGN BY:	SCALE: 1" = 4,000'
EIS	ORIGINAL DATE: SEPT. 2000
PLATE 4-4	



K:\Lila\2016\16-001 Ventilation Breakout and Removal of Part A and B References\Deliverables Task 5081\Drawings\Plate 5-1 Previously Mined Areas Task 5081.dwg, Plate 5-1, 6/1/2016 1:37:35 PM, 1:1

LEGEND:

- PERMIT AREA : - - - - -
- EXISTING ROADS : - - - - -
- LIMIT OF OLD WORKS : —————
- BOOK CLIFFS COAL COMPANY : —————
- EXPLORATION ENTRIES : - - - - -
- EPHEMERAL STREAMS : ~~~~~



REVISIONS	
DATE	BY
8/29/2000	BJ
12/14/2000	BJ
09/20/2002	RJM
12/29/2004	RJM
02/08/2016	PJJ
06/01/2016	PJJ

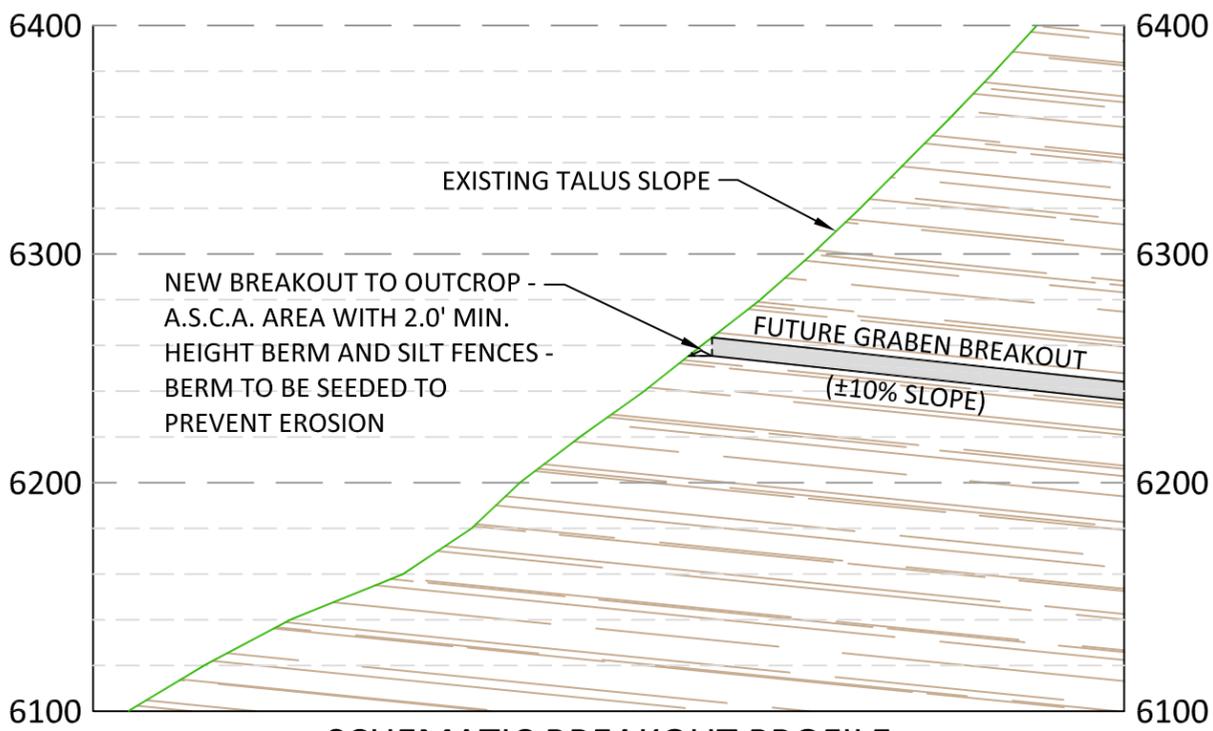
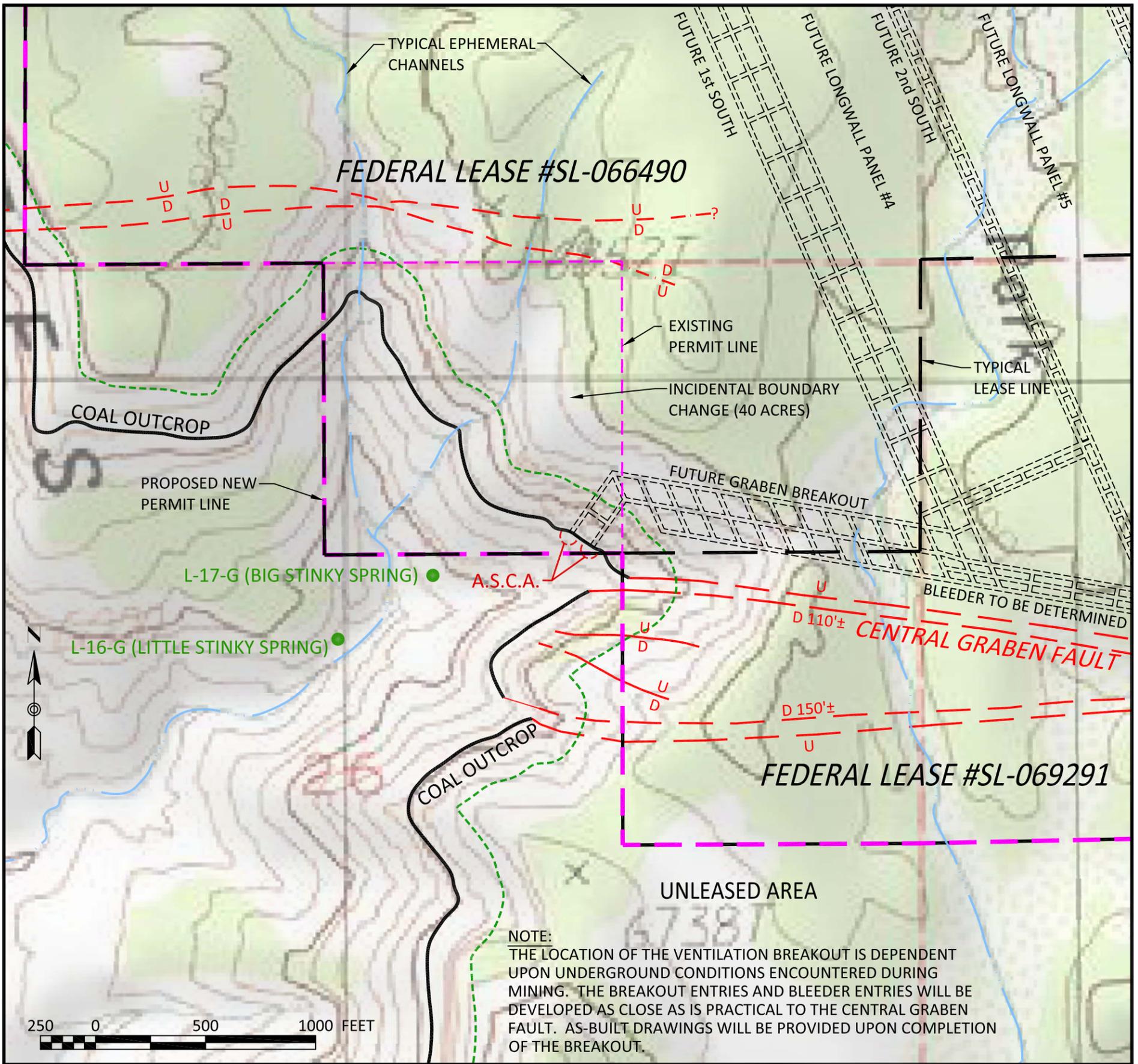
PREVIOUSLY MINED AREAS

LILA CANYON MINE
 23415 North Lila Canyon Road
 Green River, Utah 84525

DOG M PERMIT# C0070013

DESIGN BY:	SCALE:
EIS	1" = 3,000'
	ORIGINAL DATE:
	MAY 1998

PLATE 5-1



LEGEND:

- PERMIT AREA :
- EPHEMERAL CHANNEL :
- COAL OUTCROP :
- FAULTS :
- 200' OUTCROP BARRIER :
- SPRING LOCATION :
- TYPICAL FUTURE MINING : (UNDERGROUND)

NOTE:
SEE APPENDIX 5-9 FOR
GRABEN BREAKOUT
DETAILS.

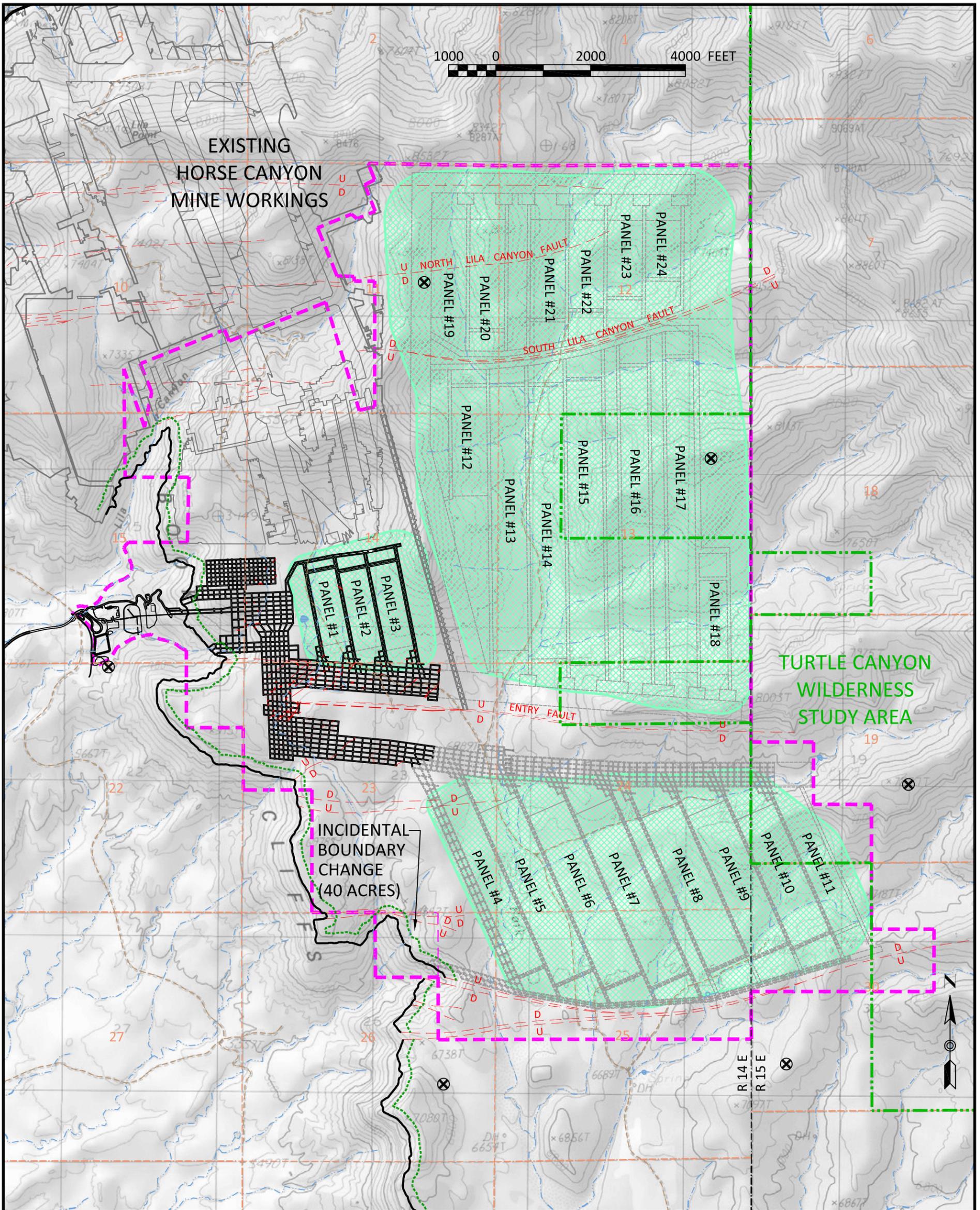


REVISIONS

DATE	BY
06/01/2016	PJJ

IBC AREA - GRABEN BREAKOUT

LILA CANYON MINE
23415 North Lila Canyon Road
Green River, Utah 84525
DOGM PERMIT# C0070013
DESIGN BY: UEI SCALE: AS SHOWN
ORIGINAL DATE: 8 FEB. 2016
PLATE 5-2a



NOTES:

1. Mine projections are subject to change depending on conditions encountered in the underground mine workings.
2. Actual mine works are shown as of January 31, 2016.
3. Any mine projections depicted in the fringe areas beyond the existing permit area are speculative and based on future reserve acquisitions.
4. No mining will be conducted in these areas unless those reserves are acquired in the future and permitted according to federal, state, and local permitting requirements.
5. UtahAmerican Energy, Inc. acknowledges that permission to mine within the permit boundary does not imply permission to mine beyond the permit boundary.
6. Longwall panels will be reconfigured as needed to prevent unauthorized subsidence beyond the permit area if extended reserves are not acquired in the future.
7. Additional control points may be added as mining advances.

LEGEND:

- PERMIT AREA :
- EPHEMERAL CHANNEL :
- PAVED ROAD :
- UNPAVED ROAD :
- COAL OUTCROP :
- FAULTS :
- WILDERNESS STUDY AREA :
- OUTCROP BARRIER :
- MAXIMUM EXTENT OF SUBSIDENCE: (USING 21.5° DRAW ANGLE) :

PROPOSED SUBSIDENCE POINT :

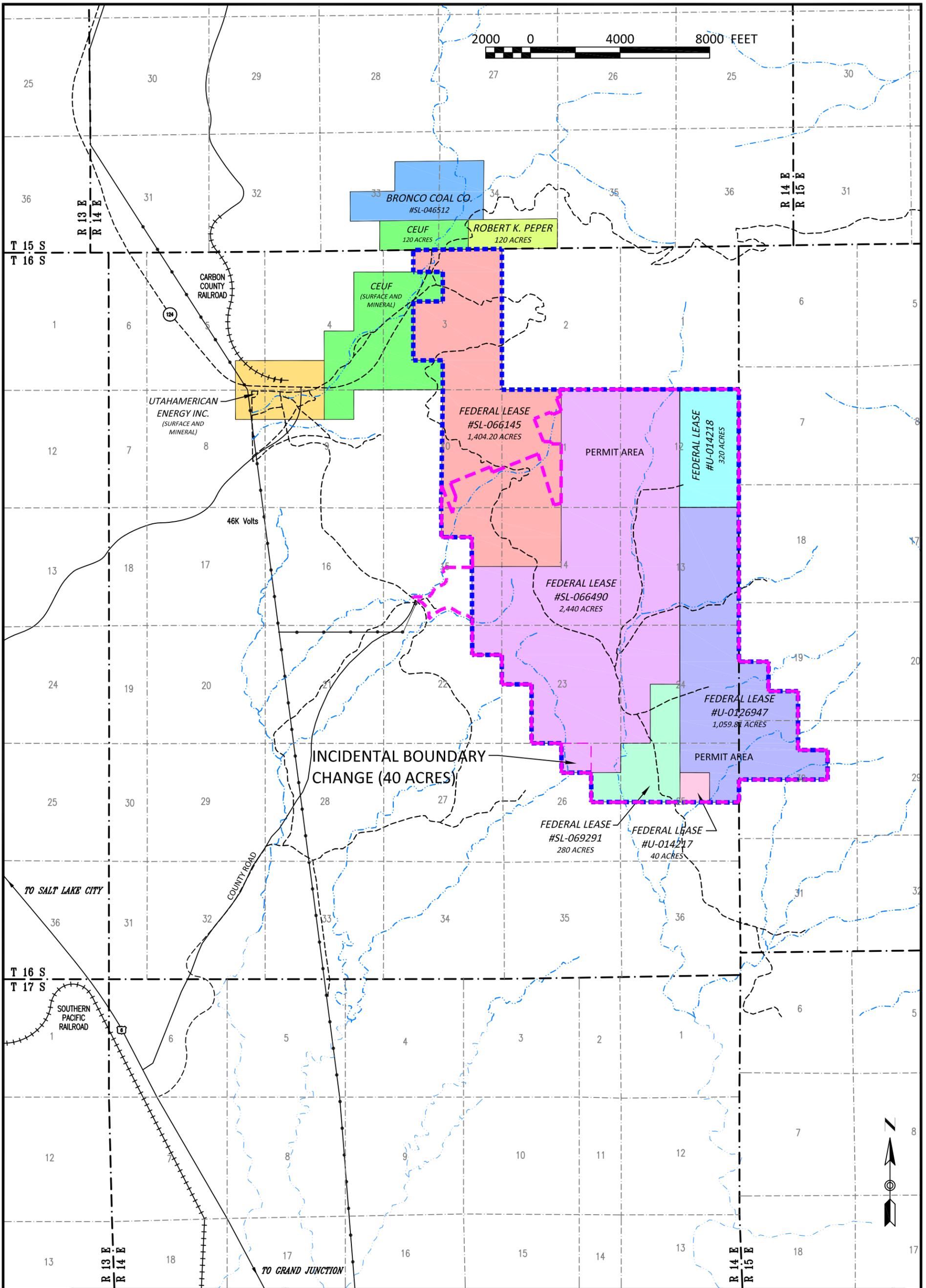


REVISIONS

DATE	BY	DATE	BY
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AUG. 29, 2000	BJ	FEB. 8, 2016	PJJ
JAN. 09, 2001	BJ	JUNE 1, 2016	PJJ
MAR. 21, 2001	BJ		
SEPT. 20, 2002	RJM		
AUG. 19, 2003	RJM		
DEC. 20, 2004	RJM		
JANUARY 2005	RJM		

SUBSIDENCE CONTROL MAP

LILA CANYON MINE
 23415 North Lila Canyon Road
 Green River, Utah 84525
 DOGM PERMIT# C0070013
 DESIGN BY: UEI
 SCALE: 1" = 2,000'
 ORIGINAL DATE: NOV. 1999
PLATE 5-3



LEGEND:

PERMIT AREA :		LMU #UTU-73516:	
LEASE SL-066490		LEASE SL-066145	
LEASE U-014218		LEASE U-014217	
LEASE U-0126947		LEASE SL-069291	
LEASE SL-046512		ROBERT K PEPER	
CEUF		UtahAmerican Energy	



REVISIONS	
DATE	BY
8/29/2000	BJ
12/13/2000	BJ
09/20/2002	RJM
09/08/2003	RJM
12/01/2005	RJM
02/08/2016	PJJ
06/01/2016	PJJ

COAL OWNERSHIP

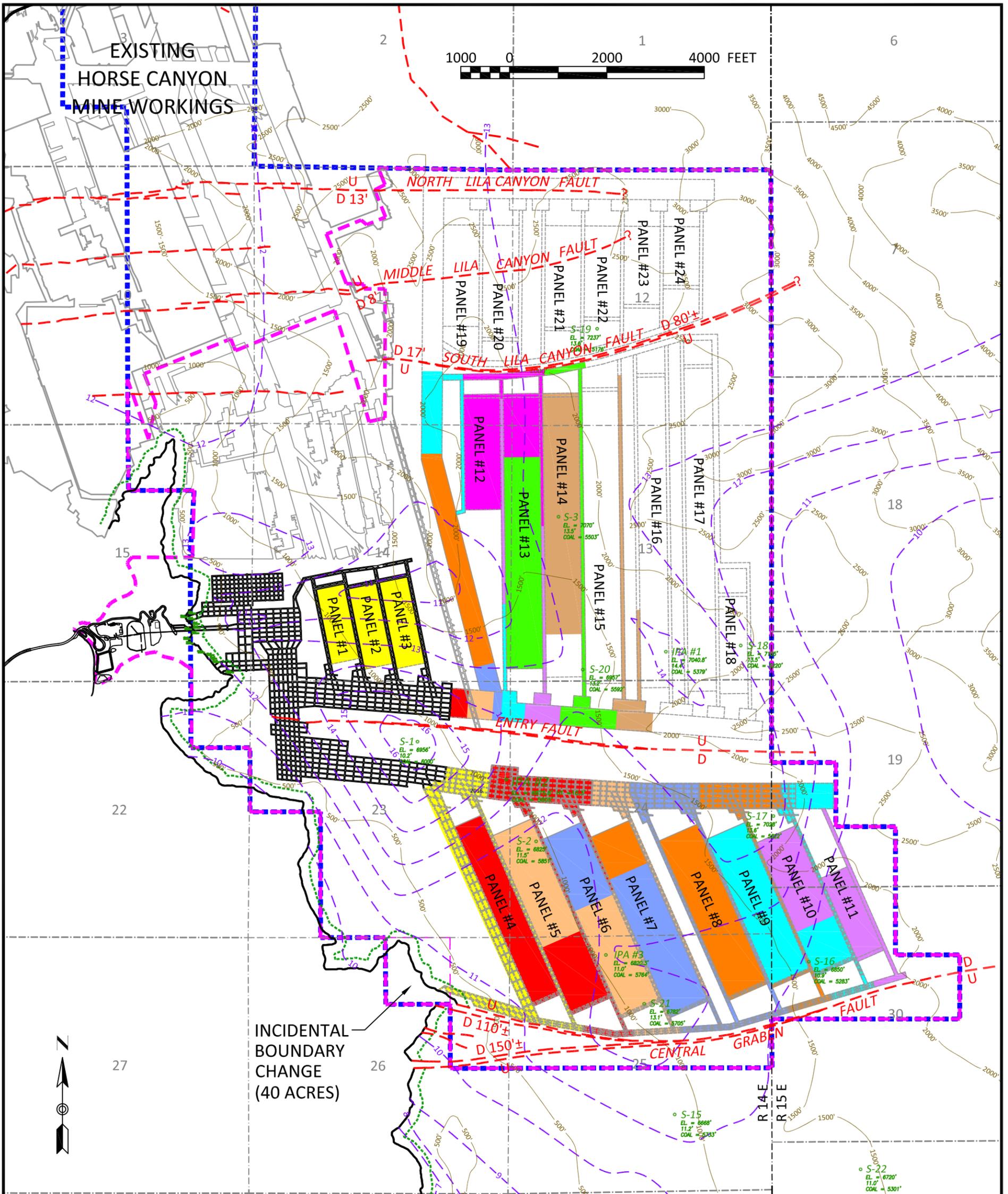
LILA CANYON MINE
23415 North Lila Canyon Road
Green River, Utah 84525

DOGDM PERMIT# C0070013

DESIGN BY: EIS

SCALE: 1" = 4,000'
ORIGINAL DATE: MARCH 1998

PLATE 5-4



NOTES:

1. Mine projections are subject to change depending on conditions encountered in the underground mine workings.
2. Actual mine works are shown as of January 31, 2016.
3. Any mine projections depicted in the fringe areas beyond the existing permit area are speculative and based on future reserve acquisitions.
4. No mining will be conducted in these areas unless those reserves are acquired in the future and permitted according to federal, state, and local permitting requirements.
5. UtahAmerican Energy, Inc. acknowledges that permission to mine within the permit boundary does not imply permission to mine beyond the permit boundary.
6. Longwall panels will be reconfigured as needed to prevent unauthorized subsidence beyond the permit area if extended reserves are not acquired in the future.
7. Additional control points may be added as mining advances.



LEGEND:

- PERMIT AREA :
- COAL OUTCROP :
- FAULTS :
- OUTCROP BARRIER :
- SEAM THICKNESS ISOPACHS : (IN FEET)
- COVER (500' INTERVALS) :
- LMU #UTU-73516 :
- EXISTING MINE WORKINGS:

PROJECTED MINING:

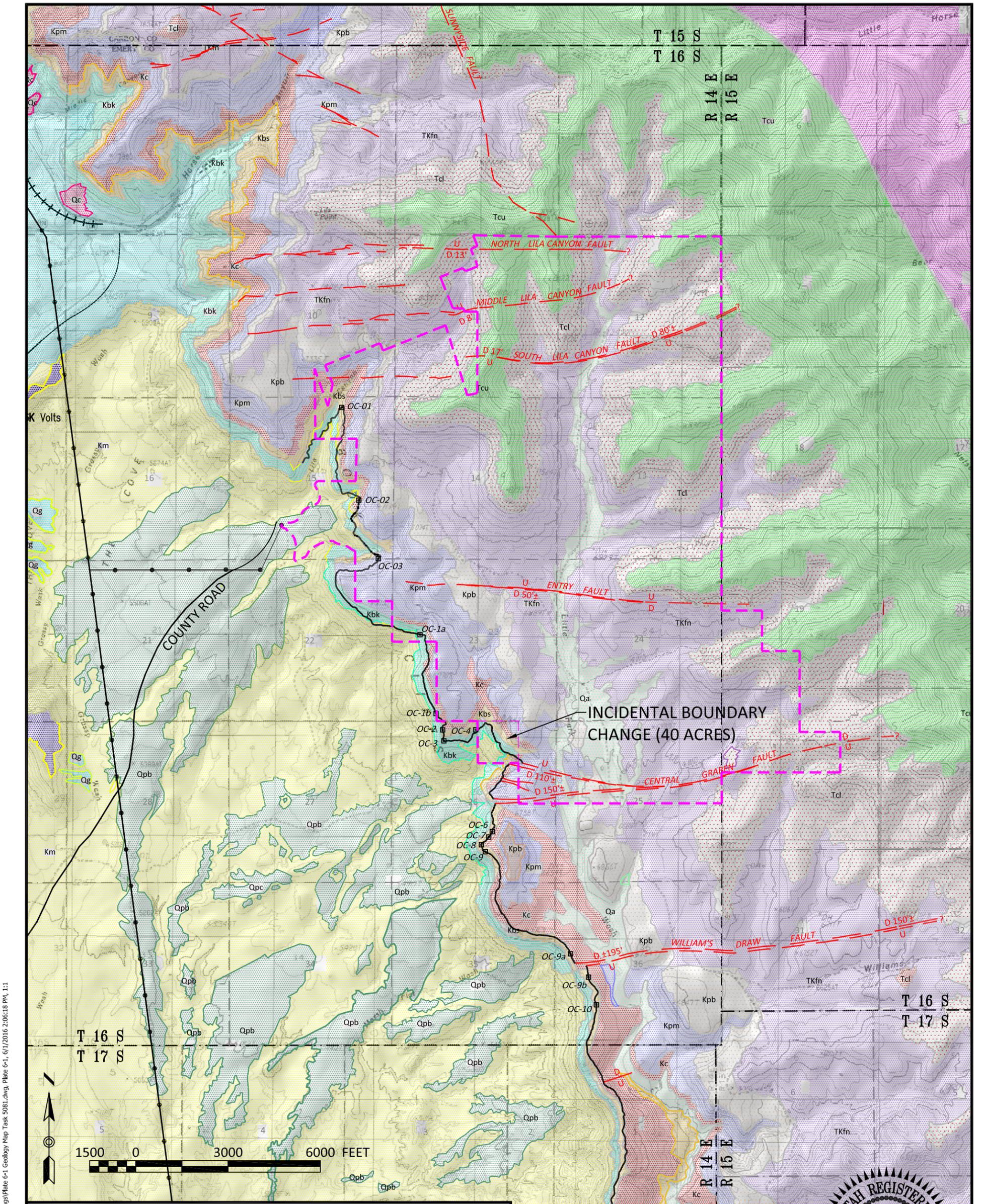
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024
- 2025

REVISIONS

DATE	BY	DATE	BY
APR. 23, 1998	RJM	JUNE 1, 2016	PJJ
AUG. 28, 2000	BJ		
DEC. 14, 2000	BJ		
SEPT. 20, 2002	RJM		
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DEC. 29, 2004	RJM		
JAN. 14, 2005	RJM		
FEB. 8, 2016	PJJ		

MINE MAP

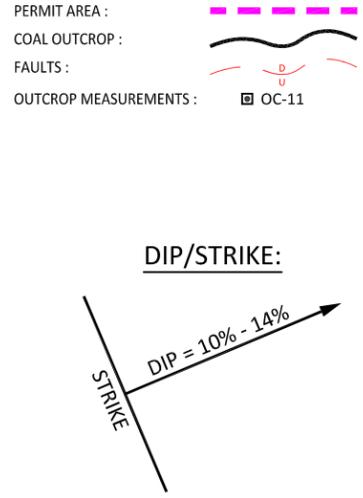
LILA CANYON MINE
23415 North Lila Canyon Road
Green River, Utah 84525
DOGM PERMIT# C0070013
DESIGN BY: UEI
SCALE: 1" = 2,000'
ORIGINAL DATE: JAN.. 1999
PLATE 5-5



K:\Lila\2016\16-001 Ventilation Breakout and Removal of Part A and B References\Deliverables\Task 5081\Drawings\Plate 6-1 Geology Map Task 5081.dwg, Plate 6-1, 6/17/2016 2:06:18 PM, 1:1

LEGEND:

- | | | |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------|
| YOUNGER SURFICIAL DEPOSITS:
Stream alluvium | COLTON FORMATION:
Lower member | PERMIT AREA :
COAL OUTCROP : |
| YOUNGER SURFICIAL DEPOSITS:
Gravel thin deposits | FLAGSTAFF LIMESTONE AND
NORTH HORN FORMATION: | FAULTS : |
| OLDER SURFICIAL DEPOSITS:
Colluvium & slopewash deposits | PRICE RIVER FORMATION:
Bluecastle sandstone member | OUTCROP MEASUREMENTS : |
| OLDER SURFICIAL DEPOSITS:
Alluvium fan deposits | PRICE RIVER FORMATION:
Mudstone member | OC-11 |
| PEDIMENT DEPOSITS:
Unit A | CASTLEGATE SANDSTONE OF
MESAVERDE GROUP: | |
| PEDIMENT DEPOSITS:
Unit B | Upper mudstone member of
Sunnyside member | |
| PEDIMENT DEPOSITS:
Unit C | BLACKHAWK FORMATION OF
MESAVERDE GROUP:
Upper mudstone member of
Kenilworth member | |
| COLTON FORMATION:
Undivided | MANCOS SHALE:
Main body | |
| COLTON FORMATION:
Upper member | | |



REVISIONS			
DATE	BY	DATE	BY
06/01/2016	PJJ	11/20/99	BJ
		08/29/2000	BJ
		12/14/2000	BJ
		09/20/2002	RJM
		11/20/2006	TJS
		01/12/2007	RJM
		02/01/2007	RJM
		02/08/2016	PJJ

**PROJECT AREA
GEOLOGIC MAP**

LILA CANYON MINE

23415 North Lila Canyon Road
Green River, Utah 84525

DOG M PERMIT# C0070013

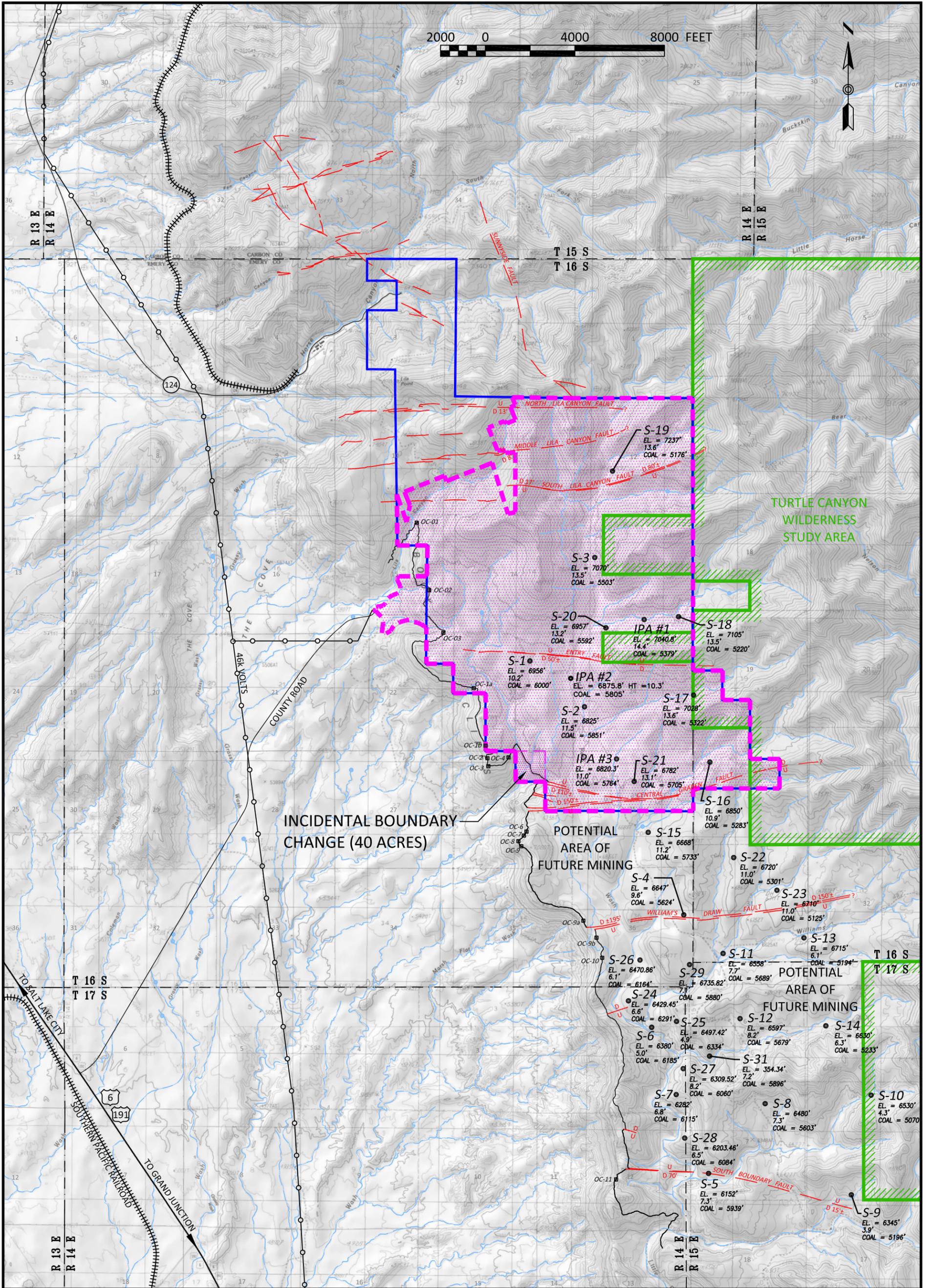
DESIGN BY: EIS

SCALE: 1" = 3,000'

ORIGINAL DATE: MARCH 1998

PLATE 6-1

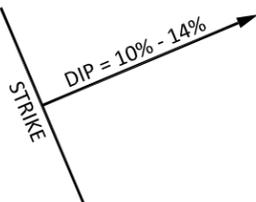
2000 0 4000 8000 FEET



LEGEND:

- PERMIT AREA :
- COAL OUTCROP :
- FAULTS :
- OUTCROP MEASUREMENTS : OC-11
- LMU AREA :
- WILDERNESS STUDY AREA :
- DRILL HOLES : S-28
- EPHEMERAL STREAMS :

DIP/STRIKE:



REVISIONS

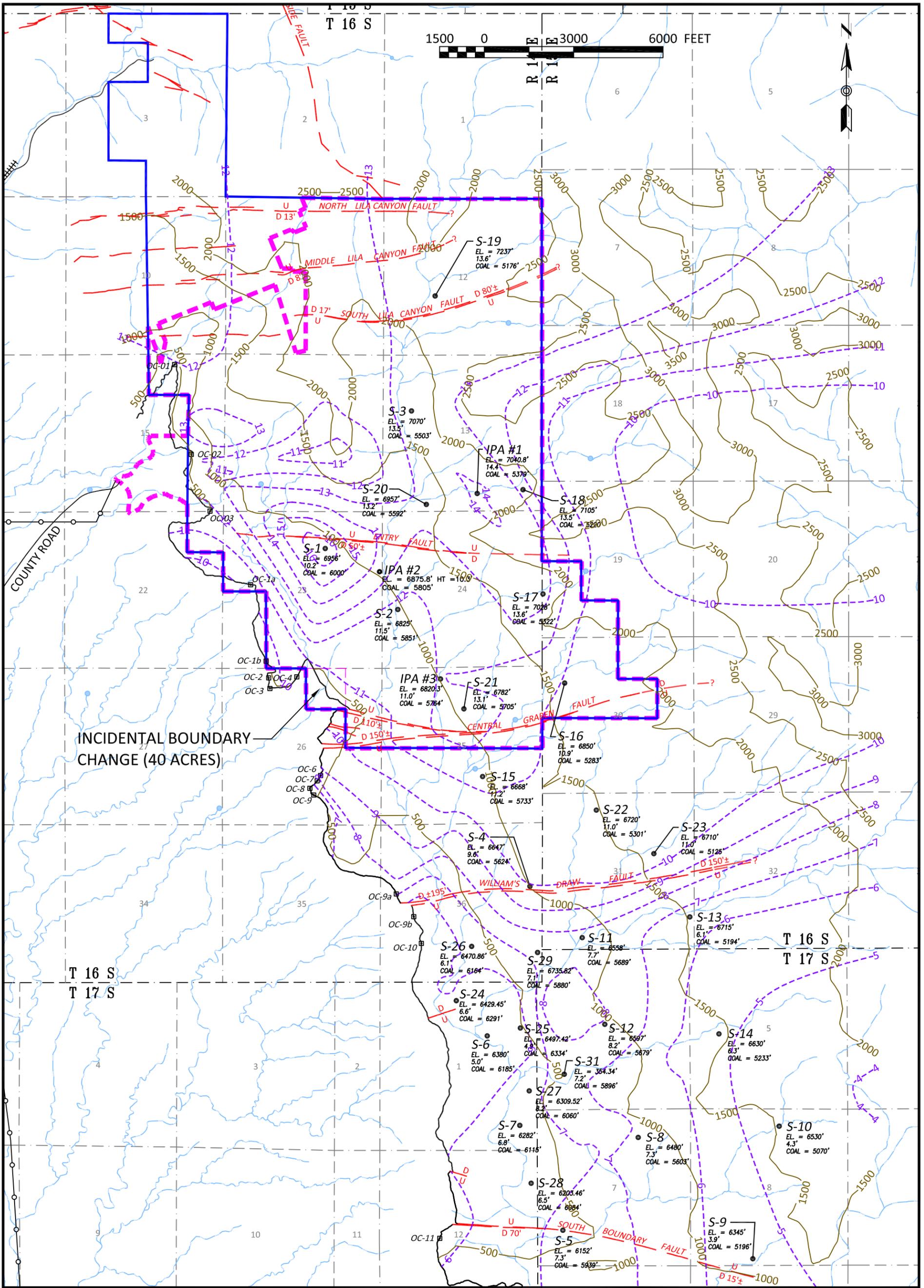
DATE	BY
11/20/1999	BJ
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12/14/2000	BJ
APR. 19, 2002	RJM
SEPT. 20, 2002	RJM
DEC. 14, 2004	RJM
FEB. 8, 2016	PJJ
JUNE 1, 2016	PJJ

GENERAL GEOLOGY

LILA CANYON MINE
 23415 North Lila Canyon Road
 Green River, Utah 84525
 DOGM PERMIT# C0070013
 DESIGN BY: BLACKHAWK ENG.
 SCALE: 1" = 4,000'
 ORIGINAL DATE: JAN. 1998

PLATE 6-2

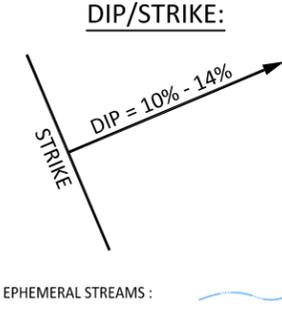
K:\Lila\2016\16-401 Ventilation Breakout and Removal of Part A and B References\Drawings\Plate 6-2 General Geology Task 5081.dwg, Plate 6-2, 6/1/2016 2:10:03 PM, 1:1



INCIDENTAL BOUNDARY CHANGE (40 ACRES)

LEGEND:

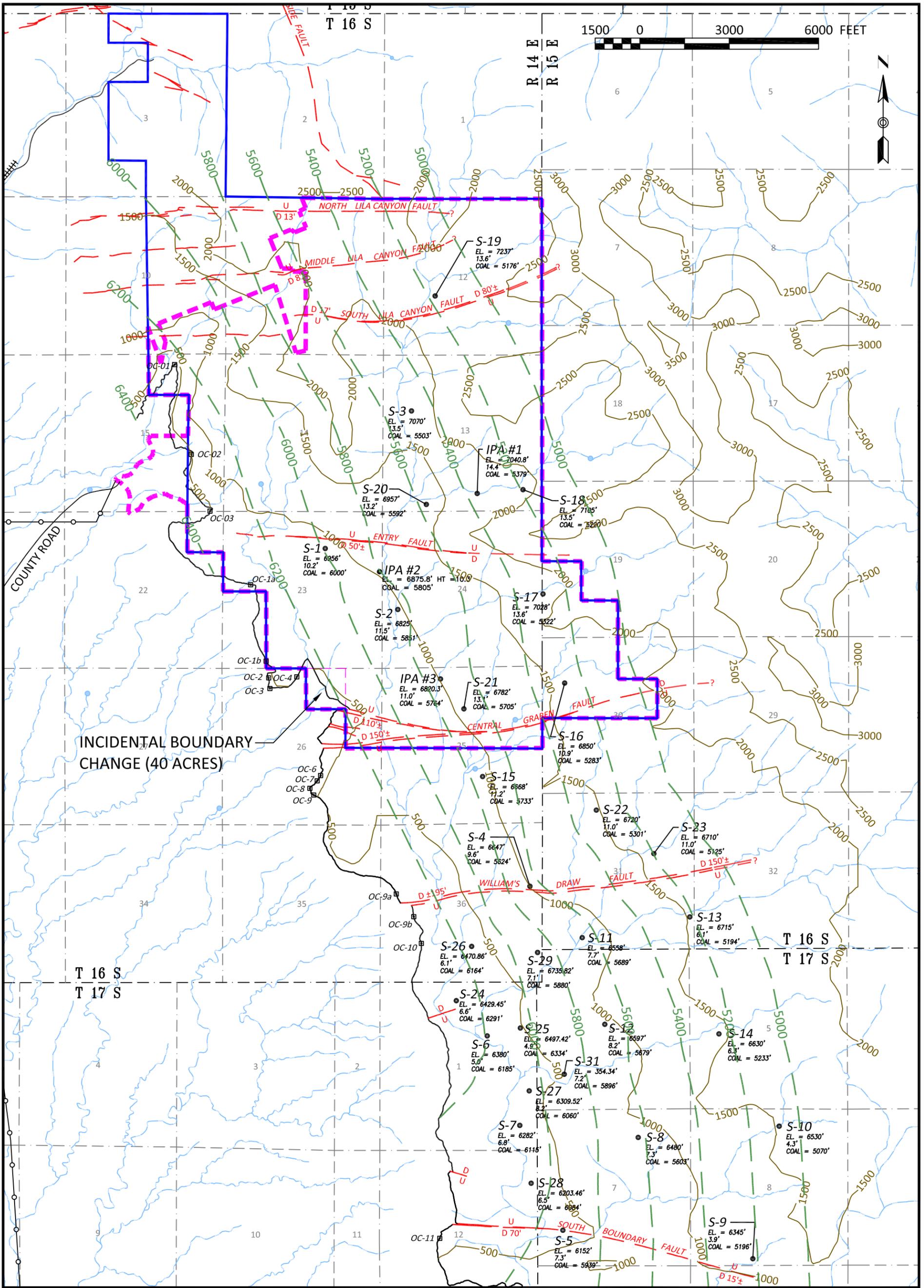
- PERMIT AREA :
- COAL OUTCROP :
- FAULTS :
- OUTCROP MEASUREMENTS :
- LMU AREA :
- DRILL HOLES :
- SEAM THICKNESS ISOPACHS :
- (IN FEET)
- COVER (500' INTERVALS) :



REVISIONS	
DATE	BY
8/29/2000	BJ
12/14/2000	BJ
APR. 19, 2002	RJM
SEPT. 30, 2002	RJM
FEB. 8, 2016	PJJ
JUNE 1, 2016	PJJ

COAL THICKNESS ISOPACHS	
LILA CANYON MINE	
23415 North Lila Canyon Road Green River, Utah 84525	
DOGM PERMIT# C0070013	
DESIGN BY:	SCALE: 1" = 3,000'
BLACKHAWK ENG.	ORIGINAL DATE: JAN. 1998
PLATE 6-3	

K:\Lila\2016\16-001 Ventilation Breakout and Removal of Part A and B References\Drawings\Plate 6-3 Coal Isopachs\Task 5081.dwg, Plate 6-3, 6/1/2016 2:12:34 PM, 1:1

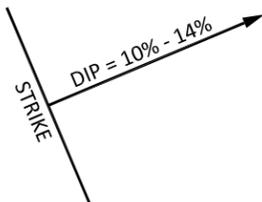


INCIDENTAL BOUNDARY
CHANGE (40 ACRES)

LEGEND:

- PERMIT AREA :
- COAL OUTCROP :
- FAULTS :
- OUTCROP MEASUREMENTS :
- LMU AREA :
- DRILL HOLES :
- STRUCTURE LINES :
- COVER (500' INTERVALS) :
- EPHEMERAL STREAMS :

DIP/STRIKE:

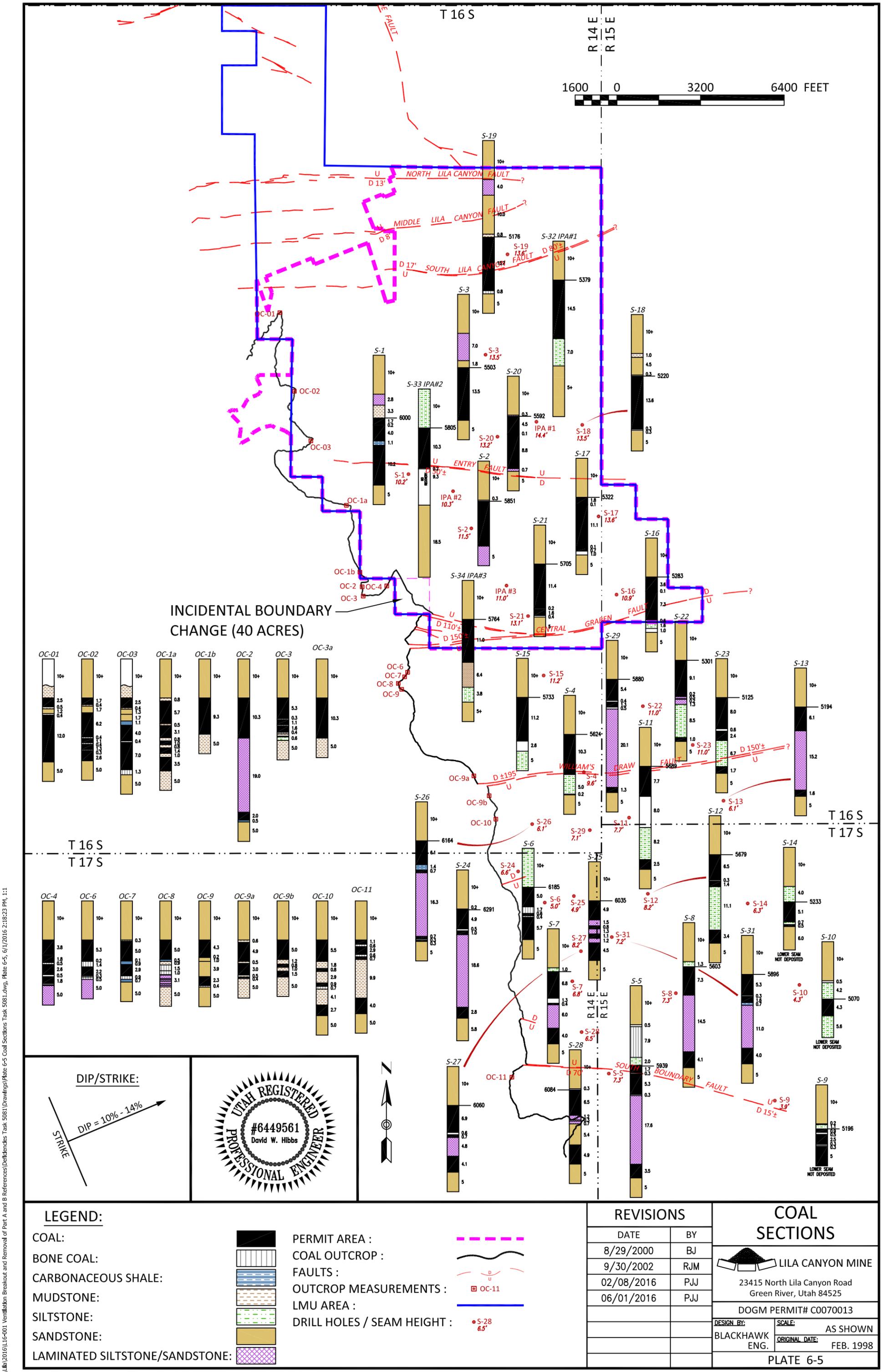


REVISIONS

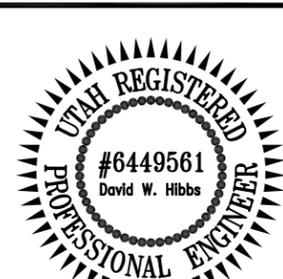
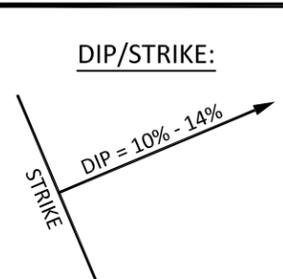
DATE	BY
8/29/2000	BJ
12/14/2000	BJ
APR. 19, 2002	RJM
SEPT. 30, 2002	RJM
FEB. 8, 2016	PJJ
JUNE 1, 2016	PJJ

COVER AND STRUCTURE MAP

LILA CANYON MINE
 23415 North Lila Canyon Road
 Green River, Utah 84525
 DOGM PERMIT# C0070013
 DESIGN BY: BLACKHAWK ENG.
 SCALE: 1" = 3,000'
 ORIGINAL DATE: JAN. 1998
 PLATE 6-4



K:\Lila\2016\16-001 Ventilation Breakout and Removal of Part A and B References\Drawings\Plate 6-5 Coal Sections Task 5081.dwg, Plate 6-5, 6/11/2016 2:18:23 PM, 1:1



LEGEND:

- COAL:
- BONE COAL:
- CARBONACEOUS SHALE:
- MUDSTONE:
- SILTSTONE:
- SANDSTONE:
- LAMINATED SILTSTONE/SANDSTONE:
- PERMIT AREA:
- COAL OUTCROP:
- FAULTS:
- OUTCROP MEASUREMENTS:
- LMU AREA:
- DRILL HOLES / SEAM HEIGHT:

REVISIONS	
DATE	BY
8/29/2000	BJ
9/30/2002	RJM
02/08/2016	PJJ
06/01/2016	PJJ

COAL SECTIONS

LILA CANYON MINE

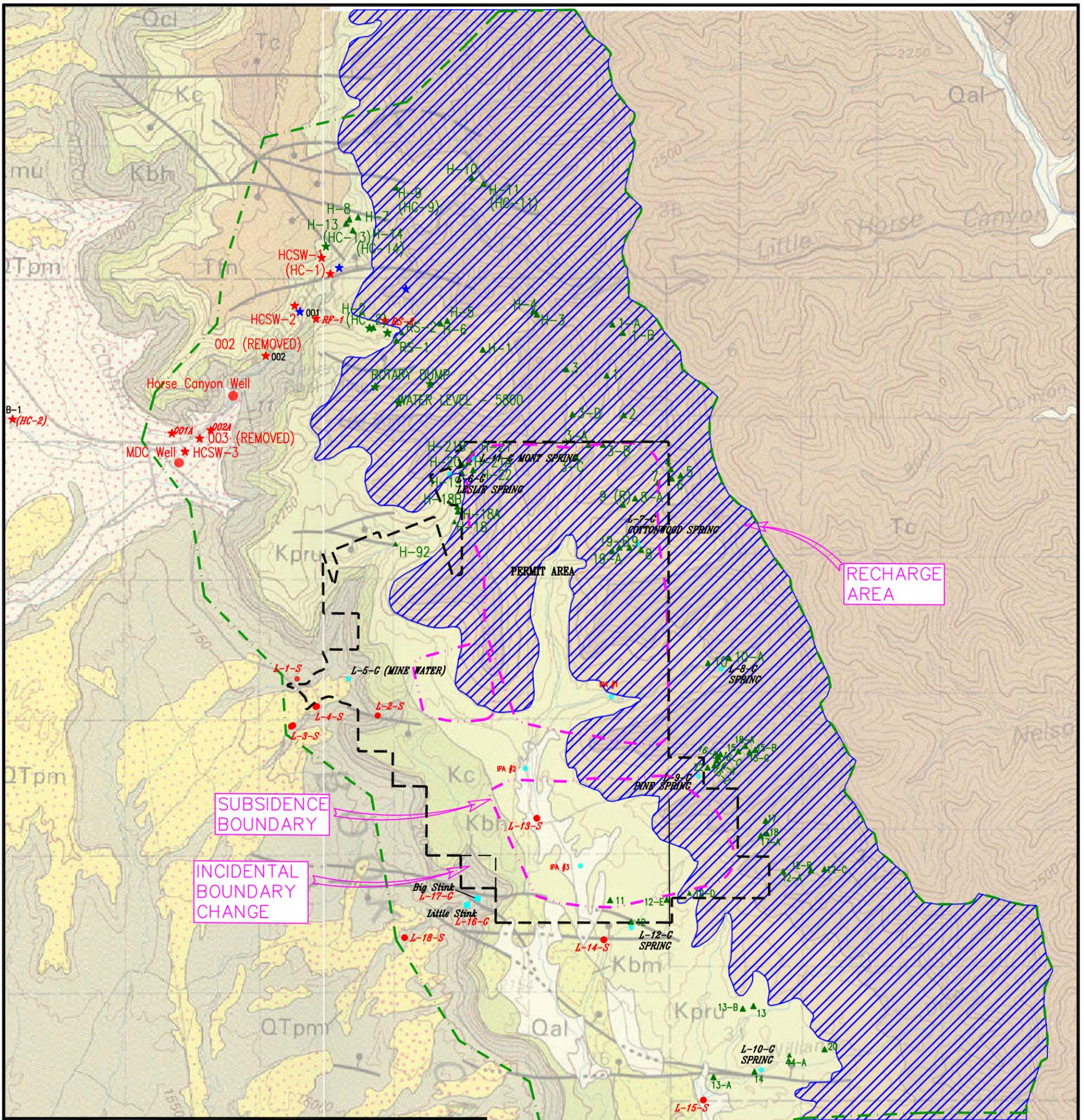
23415 North Lila Canyon Road
Green River, Utah 84525

DOG M PERMIT# C0070013

DESIGN BY: BLACKHAWK ENG.
SCALE: AS SHOWN
ORIGINAL DATE: FEB. 1998

PLATE 6-5

K:\Lila\2016\16-001 Ventilation Breakout and Removal of Part A and B References\Deliverables Task 5081\Drawings\Plate 7-1a Permitt Hydrology Task 5081.dwg, Plate 7-1a, 6/1/2016 2:25:05 PM, 1:1



LEGEND

Qal	Alluvium	Kmeu	Upper sandstone unit
Qcl	Colluvium	Kmem	Middle shale unit
Qf	Alluvial fan deposit	Kmel	Lower sandstone unit
Qcf	Coalesced alluvial fan deposit	Kmbg	Blue Gate Member
Qsw	Slope wash	Kmbg	Garley Canyon Sandstone Member
QTpm	Pediment mantle	Kmf	Ferron Sandstone Member
Qt	Terrace deposit	Kmt	Tununk Member
Tg	Green River Formation	Kmu	Upper part of Mancos Shale, undivided
Tc	Colton Formation	Kmf	Ferron Sandstone Member
Tw	Wasatch Formation	Kmt	Tununk Member
Tfn	Flagstaff Member of Green River Formation and North Horn Formation	Jm	Morrison Formation
Kt	Tuscher Formation	Jmbb	Brushy Basin Member
Kfn	Farrer and Neslen Formations	Jms	Salt Wash Sandstone Member
Kmbb	Buck Tongue of Mancos Shale	Je	Summerville Formation
Kpru	Upper Part of Price River Formation	Jcu	Curtis Formation
Kbm	Bluecastle Sandstone Member	Je	Entrada Sandstone
Kc	Castlegate Sandstone	Jc	Carmel Formation
Kbh	Blackhawk Formation and Star	Jbn	Navajo Sandstone
Kmub	Upper part of Blue Gate Member	tk	Kayenta Formation
Kme	Emery Sandstone Member		

WATER MONITORING OLD/CURRENT

- ★ Horse Canyon Monitoring
- ★ Underground Horse Canyon Monitoring
- ▲ Baseline Springs
- Lila Canyon Ground Water Monitoring
- Lila Canyon Surface Monitoring
- ▨ Major Recharge Area
- EarthFax S&S Limits



REVISIONS

DATE	BY
01/2006	
07/2006	
02/08/2016	PJJ
06/01/2016	PJJ

PERMIT AREA HYDROLOGY WITH GEOLOGIC MAP

LILA CANYON MINE

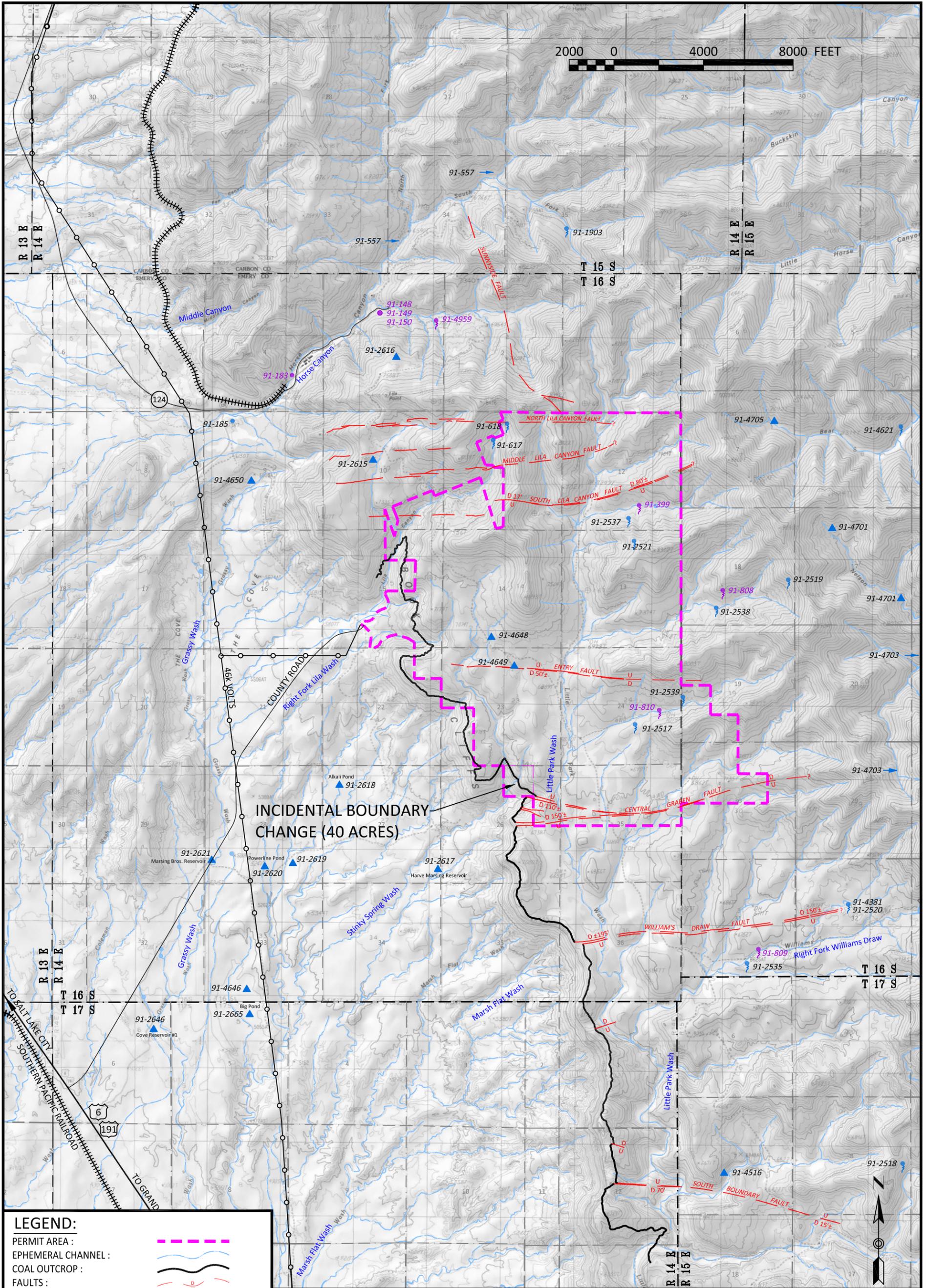
23415 North Lila Canyon Road
Green River, Utah 84525

DOG M PERMIT# C0070013

DESIGN BY: SCALE: 1" = 4,000'
ORIGINAL DATE: NOV. 2002

PLATE 7-1A

2000 0 4000 8000 FEET



INCIDENTAL BOUNDARY
CHANGE (40 ACRES)

LEGEND:

- PERMIT AREA :
 - EPHEMERAL CHANNEL :
 - COAL OUTCROP :
 - FAULTS :
 - NON-UTAHAMERICAN WATER RIGHT : 91-557
 - UTAHAMERICAN WATER RIGHT : 91-810
 - RESERVOIR / STREAM :
 - SPRING SOURCE :
 - REACH OF CREEK :
 - UNDERGROUND SOURCE :
- NOTE: SOME FAULT LINES NOT SHOWN FOR CLARITY.



REVISIONS

DATE	BY	DATE	BY
NOVEMBER 1999	BHE	FEBRUARY 2016	PJJ
AUGUST 2000	BHE	JUNE 1, 2016	PJJ
DECEMBER 2000	BJ		
SEPTEMBER 2002	RJM		
NOVEMBER 2003	RJM		
JANUARY 2005	RJM		
NOVEMBER 2006	TJS		
NOVEMBER 2006	RJM		

WATER RIGHTS

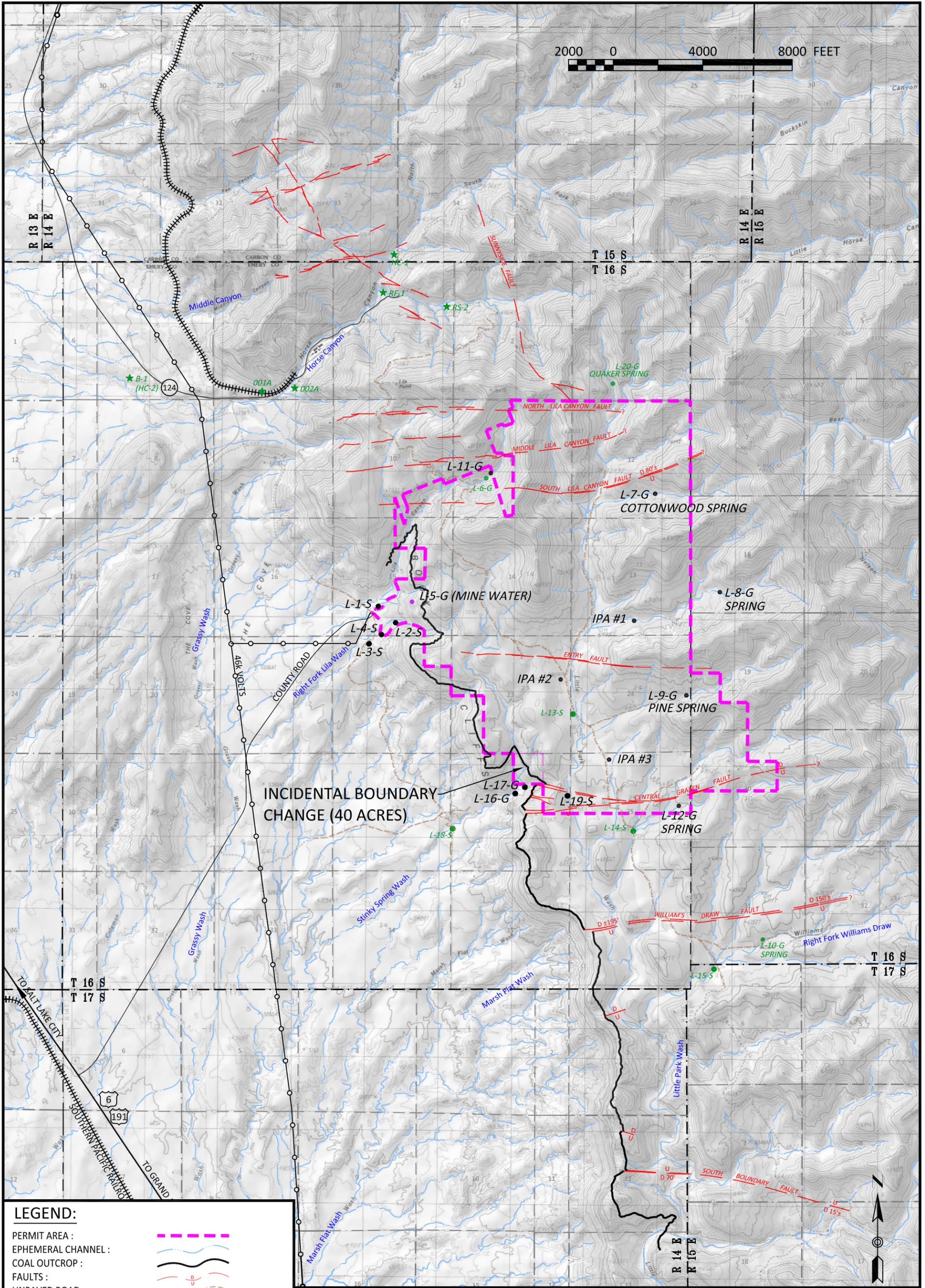
LILA CANYON MINE

23415 North Lila Canyon Road
Green River, Utah 84525

DOGM PERMIT# C0070013

DESIGN BY: BLACKHAWK ENG.	SCALE: ORIGINAL DATE: 1" = 4,000' MAY 1998
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PLATE 7-3



INCIDENTAL BOUNDARY CHANGE (40 ACRES)

LEGEND:

PERMIT AREA :

EPHEMERAL CHANNEL :

COAL OUTCROP :

FAULTS :

UNPAVED ROAD :

	ACTIVE	SUSPENDED
HORSE CANYON MONITORING :	★	★
LILA CANYON SURFACE MONITORING :	●	●
LILA CANYON GROUNDWATER MONITORING :	●	●
LILA CANYON CREST GAUGE MONITORING :	■	■
LILA CANYON SEEP LOCATIONS :	▲	▲
LILA CANYON RAIN GAUGE :	▼	▼

NOTE: SOME FAULT LINES NOT SHOWN FOR CLARITY.



REVISIONS			
DATE	BY	DATE	BY
JULY 1999	WJ	JUNE 2011	TJS
NOVEMBER 1999	BHE	FEB. 8, 2016	PJJ
MARCH 2000	BHE	JUNE 1, 2016	PJJ
AUGUST 2000	BJ		
DECEMBER 2000	BJ		
JULY 2001	BJ		
SEPTEMBER 2002	RJM		
NOVEMBER 2006	TJS		

WATER MONITORING LOCATIONS

LILA CANYON MINE

23415 North Lila Canyon Road
Green River, Utah 84525

DOG M PERMIT# C0070013

DESIGN BY: BLACKHAWK ENG.	SCALE: 1" = 4,000'
ORIGINAL DATE: MAY 1998	

PLATE 7-4