

Incoming C 007 0013



UtahAmerican Energy, Inc.

March 3, 2006

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

Re: 06-009 Complete Permit Revisions, Horse Canyon Mine, Lila Canyon Part "B"

Dear Ms. Grubaugh-Littig,

Attached you will find five (5) copies of revisions to the MRP as discussed with Wayne Western. Three (3) redline strikeout copies have been included.

In addition, you will find one copy of a CD containing changes to the MRP application as discussed with Wayne Western. The appropriate PDF files are being submitted to update the electronic copy of the permit application.

C1 and C2 forms are being submitted.

Should you have any questions please call.

Sincerely,

R. Jay Marshall
Project Manager

RECEIVED

MAR 06 2006

DIV. OF OIL, GAS & MINING

APPLICATION FOR PERMIT PROCESSING

Permit Change
 New Permit
 Renewal
 Transfer
 Exploration
 Bond Release

Permit Number: ACT/007/013

Title of Proposal: 06-009 Additional Information Wayne Western

Mine: Horse Canyon Part "B"

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? _____ acres Disturbed Area? _____ acres <input type="checkbox"/> 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? |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | 15. Does application require or include soil removal, storage or placement? |
| <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 3 complete copies of the application.

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


 Signed - Name - Position - Date

Subscribed and sworn to before me this 3 day of MARCH, 2006


 Notary Public
 My Commission Expires: 7-6-06
 STATE OF UTAH
 COUNTY OF CARSON



Received by Oil, Gas & Mining

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MAR 06 2006

DIV. OF OIL, GAS & MINING

ASSIGNED TRACKING NUMBER

resources under surface waters is approximately 60 times the seam thickness for coal beds at least 6 feet thick or approximately 450 feet. In their review of the foregoing, Singh and Bhattacharya (1984) recommended that the same limiting safe strain values and cover thickness ratios be used for protecting groundwater resources over coal mines. Where extension strain is greater than this limiting value, it is likely that surface fissures and cracks may develop. As the strain value decreases below the limiting value, the potential for surface damage decreases.

Figure 1 in Appendix 7-3 shows a typical subsidence profile. As shown in Figure 1, the zones are: a caved zone that occurs in the 6 to 10 times the thickness of the coal seam, a fractured zone which occurs 10 to 30 times the thickness of the coal seam, and deformation zone which occurs 30 to 60 times the thickness of the coal seam, and finally, a soil zone which occurs on the ground surface. The cover thickness of 1,000 to over 2,000 feet, over most of the mine area is also much greater than the limiting thickness of 630 feet recommended by International Engineers Inc. (1979) (10.5' x 60).

The Lila Canyon mine will be a longwall operation. As projected, 15 longwall panels at various depths will be mined. The longwall panels are laid out with the gate roads running along the strike roughly north-south, which will result in the longwall shear cutting up and down the dip. The depth of cover over the longwall panels approaches but never gets less than 500 feet toward the southwest and increases to over 2500 feet in the northeast. Only three of the 13 planned longwall panels are under less than 1,000 feet of cover. The remaining 10 panels are under 1,000 plus feet of cover. Maximum subsidence is expected to be approximately 9.5 feet in the areas approaching 500 feet of cover and less than 3' in the deeper cover areas. Extension strain varies from 12.4×10^{-3} in the 500 foot cover areas to $.9 \times 10^{-3}$ in the 2,500 foot cover areas. Extension strain values of 5.0×10^{-3} and above occurs in areas of approximately 1000' of cover and less.

The A typical longwall panels in at the Lila Canyon Mine will have dimensions of approximately 950 feet wide and up to 7,000 feet long and 2,000 feet deep. Using the methods described in the National Coal Board's *Subsidence Engineers'*

Handbook, the S/m ratio for this geometry would be 0.38 where "S" is the maximum subsidence and "m" is the seam extraction thickness. For an average seam extraction thickness of 10.5 feet, the total subsidence would be 4.0 feet. However, as described above, the major impacts of this subsidence are due to extension strains and not total vertical subsidence. The prediction of average extension strain is accomplished with the use of the formula:

$$\underline{+E} = 0.75 S/h \text{ where } S=\text{subsidence, and } h=\text{depth of cover}$$

NOTE: The .75 factor is only an average. The factor changes with various w/h ratios. Figure 15 found in NCB's Subsidence Engineers Handbook takes into account the w/h ratio.

The solution of this equation for the Lila Canyon Mine configuration discussed above produces a predicted, average extension strain of 1.5×10^{-3} which is less than the limiting strain of 5×10^{-3} for protecting surface waters, groundwater sources, pasture, woodland, range or wildlife food and cover. Thus, it is unlikely that the gradual compression expected over much of the subsidence area will have any deleterious effects on the overlying renewable surface resources. ~~The cover thickness of 1,000 to over 2,000 feet, over most of the mine area is also much greater than the limiting thickness of 630 feet recommended by International Engineers Inc. (1979) ($10.5' \times 60$).~~

The table below shows the expected subsidence amount and expected extension strain for longwall panels at various mining depths. These calculations were done for a flat multiple seam mining. There are adjustments for single seam mining and for dipping seams. However, these adjustments are minor and are not expected to result in significant changes in values.-

- Modification of surface hydrology due to the general downward migration of surface water through vertical fractures.
- Modification of groundwater hydrology including connection of previously separated aquifers and reduction in flows of seeps and springs which rely upon tight aquitards for their flow.
- Emissions of methane originating from the coal seam through open fissures to the surface or at least the base of the surficial soil which has been known to have deleterious effects on woody plants.

Because these renewable resources exist with and adjacent to the permit area, a subsidence control plan is required. This plan is presented in Section 525.400.

A great deal of baseline data is available from many mining settings to develop subsidence damage criteria for surface structures (Bhattacharya et al. 1984). The formation of cracks and fissures are the general effects of subsidence and can have minor deleterious effects on groundwater resources without any fissuring to the surface. In the arid areas of Utah, impacts to and modification of the groundwater regime can be disruption of flow from natural seeps and springs which rely on the permeability contrast of interbedded sandstones and shale for their flows. These water resources are generally near surface occurrences and are essentially surface waters and subject to the same limiting damage criteria as surface water bodies. Subsidence damage to surface water bodies has been studied by a number of workers including Dunrud (1976), Wardell and Partners (1976), and U.S. Bureau of Mines (1977). The results of the Wardell and Partners studies of subsidence effects in a number of countries indicates that the limiting strain for the onset of minor impacts to surface waters is approximately 5×10^{-3} . The SME Mining Engineering Handbook also suggests a limiting extension strain value of 5×10^{-3} for pasture, woodland, range or wildlife food and cover.

Table 10.6.19 in the Mining Engineers Handbook suggests that the minimum safe cover required for total extraction of the coal

resources under surface waters is approximately 60 times the seam thickness for coal beds at least 6 feet thick or approximately 450 feet. In their review of the foregoing, Singh and Bhattacharya (1984) recommended that the same limiting safe strain values and cover thickness ratios be used for protecting groundwater resources over coal mines. Where extension strain is greater than this limiting value, it is likely that surface fissures and cracks may develop. As the strain value decreases below the limiting value, the potential for surface damage decreases.

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A typical longwall panel at the Lila Canyon Mine will have dimensions of approximately 950 feet wide and up to 7,000 feet long and 2,000 feet deep. Using the methods described in the National Coal Board's *Subsidence Engineers' Handbook*, the

S/m ratio for this geometry would be 0.38 where "S" is the maximum subsidence and "m" is the seam extraction thickness. For an average seam extraction thickness of 10.5 feet, the total subsidence would be 4.0 feet. However, as described above, the major impacts of this subsidence are due to extension strains and not total vertical subsidence. The prediction of average extension strain is accomplished with the use of the formula:

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The table below shows the expected subsidence amount and expected extension strain for longwall panels at various mining depths. These calculations were done for a flat multiple seam mining. There are adjustments for single seam mining and for dipping seams. However, these adjustments are minor and are not expected to result in significant changes in values.

**Maximum Subsidence
& Expected Extensive
Strain (NCB 1975)**

	Feet	Meters
Panel Width =	900	274
Seam Height =	10.5	3

Depth of Cover		Width to Depth (a)	Maximum Subsidence(S)		Factor NCB Fig. 15	Extension Strain (E)
<u>Feet</u>	<u>Meters</u>	<u>Ratio</u>	<u>Feet</u>	<u>Meters</u>	<u>Factor</u>	<u>x 10³</u>
500	152	0.9	9.5	2.9	.65	12.4
1000	305	0.75	7.9	2.4	.66	5.2
1100	335	0.71	7.5	2.3	.68	4.6
1200	366	0.68	7.1	2.2	.70	4.1
1300	396	0.65	6.8	2.1	.70	3.7
1400	427	0.59	6.2	1.9	.75	3.3
1500	457	0.54	5.7	1.7	.78	3.0
2000	610	0.38	4.0	1.2	.82	1.6
2500	762	0.28	2.9	0.9	.80	0.9

The most favored technique until recently has been the use of the empirical charts developed by the National Coal Board (NCB). The above calculations were obtained using the empirical charts developed by the National Coal Board (NCB). Comparisons, as stated in the SME handbook, of US subsidence data with NCB predictions highlight the following differences between coalfields in the US and UK: Most of the studies in the US are limited to the Eastern US coalfields with a very limited data base applicable to western conditions.

With the exception of Illinois, maximum subsidence factors observed in US coalfields are less than predicted by NCB.

The limit (draw angles in the US coalfields tend to be less than the 35 degree value generally accepted by NCB.

The points of inflection of the subsidence profiles over US coal mines are generally closer to the panel centerline compared to the NCB profile. This effect is dependent not only on the percentage of competent strata in the overburden but also on their locations relative to the ground surface and their thickness.

Surface strains and curvatures observed over US longwall panels have been shown to be significantly higher than NCB predictions, almost four times larger in many cases.

The pace at which subsidence occurs depends on many controls including the type and speed of coal extraction, the width, length and thickness of the coal removed, and the strength and thickness of the overburden. Observations of subsidence by Dunrud over the Geneva and Somerset Mines indicate that subsidence effects on the surface occurred within months after mining was completed, and the maximum subsidence was essentially completed within 2 years of the completion of retreat mining.

Dr. Roy Sidle found in his study of Burnout Creek that subsidence impacts to streams are temporary and self healing.

The Sidle Study is representative of the conditions found in the Lila area because:

- the lithology is very similar between the Book Cliffs and the Wasatch Plateau
- the cover thickness ranges from 600 - 800 feet which falls within the range expected at Lila, and
- the seam thickness of 8-10 feet is in the same range expected at Lila.

An Executive Summary of his study and published findings follows:

Title : Stream response to subsidence from underground coal mining in central Utah

2. Authors: Sidle-RC Kamil-I Sharma-A Yamashita-S

Short-term geomorphic and hydrologic effects of subsidence induced by longwall mining under Burnout Creek, Utah were evaluated. During the year after longwall mining, 0.3-1.5 m of subsidence was measured near impacted reaches of the mountain stream channel. The major channel changes that occurred in a 700-m reach of Burnout Creek that was subsided from 1992 to 1993 were: (1) extent glides; (2) increases in pool length, numbers and volumes;

(3) increases in median particle diameter of bed sediment in pools; and (4) some constriction in channel geometry. Most of the changes appeared short-lived, with channel recovery approaching pre-mining conditions by 1994. In a 300-m reach of the South Fork drainage that was subsided from 1993 to 1994, only channel constriction was observed, although any impacts on pool morphology may have been confounded by heavy grazing in the riparian reaches during the dry summer of 1994. Similar near-channel sedimentation and loss of pool volume between 1993 and 1994 were noted throughout Burnout Creek and in adjacent, unmined James Creek. Subsidence during the 3-year period had no effect on baseflows or near-channel landslides.

No major impacts of subsidence to the surface, caused by the underground mining methods proposed during the permit term are anticipated.

The coal seam is approximately 12.5 feet thick with only about 10.5 feet being extracted, and the depth of cover ranges from 0' to approximately 2,500'. The rocks overlaying the coal seam are sandstones and mudstones with some thin bands of coal. Due to the strength of the overburden, and depth of workings, even with full seam extraction, only minimal subsidence, if any, is anticipated.

Some surface expressions of tension cracks, fissures, or sink holes may be experienced but should be insignificant. The chances of subsidence-related damage to any perceived renewable resource is minimal.

All dirt roads above the mine are in areas in excess of 1,000 feet of cover or in areas where mining will not take place. The chance of subsidence negatively effecting these dirt roads is minimal. However, in the unlikely event that cracks, fissures or sink holes are observed as a result of subsidence, the road will remain accessible by regrading and filling in the cracks, fissures or sinkholes.

The unnamed ephemeral channel in the southwest corner of the permit area is located in an area where no

mining is planned or over the top of a bleeder system that will not be second mined. The chance of subsidence negatively effecting this ephemeral channel is minimal. However, in the unlikely event that cracks, fissures or sink holes are observed as a result of subsidence the channel will be regraded and the cracks, fissures or sinkholes will be filled in by hand methods due to its inaccessibility.

A small portion of Little Park Wash, which is ephemeral, has less than 1,000 feet of cover in the southwest corner of the permit area. The portion with less than 1,000 feet of cover runs diagonally across one longwall panel and then parallel to the bleeder system in the second longwall panel. In the unlikely event that cracks, fissures or sink holes are observed as a result of subsidence the channel will be regraded and cracks, fissures or sinkholes will be filled in. Since this stream channel is accessible and is traversable by 4 wheel drive, access for repairs would not be a problem. If any subsidence repairs cannot be fixed using hand methods, small earth moving equipment could be used.

DWR and BLM Wildlife Biologists, in consultation with the Division, have determined that any loss of snake dens to subsidence would be random and a minor impact to the population of snakes.

525.130

A survey was conducted within the proposed permit area and adjacent area and it was determined that limited renewable resource lands exist within the area surveyed. Limited areas were found which contribute to the long-range productivity of water supply or fiber products. No structures exist within the permit area in which subsidence, if it occurred, could cause material damage or diminution for reasonably foreseeable use. See Plates 5-5 and 5-3 for areas of potential subsidence. Identification and data for the State appropriated water supplies can be found in chapter 7 section 727.

All State Appropriated water rights within the maximum

limit of subsidence that could be affected, are either owned by the Operator or by the BLM. The BLM has been notified of the water rights survey by means of the submittal of the permit application.

According to Mark Page (State Water Rights), there is not a water conversation district associated with Lila Canyon Mine.

525.200. Protected Areas

525.210. Since there are no public buildings or other facilities such as churches, school or hospitals, and since there are no impoundments with a storage capacity of more than 20 acre-feet, this section does not apply.

525.220. Since R645-301-525.210 does not apply, this section does not apply.

525.230. Since there are no planned operations under urbanized areas, cities, towns, and communities, or adjacent to industrial or commercial buildings, major impoundments, or perennial streams this section does not apply.

525.240. A detailed plan of the underground workings, including maps and descriptions of significant features of the underground mine, including the size, configuration, and approximate location of pillars and entries, extraction ratios, measures taken to prevent or minimize subsidence and related damage, and areas of full extraction can be found in the R²P² on file with the BLM local and state offices.

525.300. Subsidence control.

525.310. Measures to prevent or minimize damage.

525.311 No attempt will be made to prevent subsidence in any area except where the escarpment near the outcrop is to be protected and to insure that subsidence remains within the permit area. The

use of continuous miners in a pillar section as well as longwall technology provides for planning subsidence in a predictable and controlled manner. Some surface expressions of tension cracks, fissures, or sink holes may be experienced but should be insignificant. The chances of subsidence related damage to any perceived renewable resource is minimal. The value and foreseeable use of the surface lands will not be affected by potential subsidence.

525.312 Since there are no buildings or occupied residential dwellings or structures within the Lila Canyon project area this section does not apply.

525.313 Room-and-pillar mining in addition to longwall methods will be used at the Lila Canyon Mine.

525.400. Since state-appropriated water supplies exist on the surface, 525.400 has been addressed.

525.410 Coal will be removed using a combination of continuous miner and long wall methods as described in sections 522 and 523. Sequence and timing for the development of underground workings are also discussed in sections 522 and 523.

525.420 Plate 5-5 shows the underground workings and depicts areas where first mining or partial mining will be utilized to protect the escarpment and raptor nests that may exist on the escarpment, and to insure that subsidence remains within the permit area. State-appropriated water rights are shown on Plates 5-3, 5-5 as well as Plate 7-1.

525.430 No major impacts of subsidence to the surface caused by the underground mining methods proposed during the permit term are anticipated.

The coal seam is approximately 12.5 feet thick with only about 10.5 feet being extracted, and the depth of cover ranges from 0' to approximately 2,300'. The rocks overlaying the coal seam are sandstones and mudstones with some thin bands of coal. Due to the

strength of the overburden and depth of workings, even with full seam extraction, only minimal subsidence if any is anticipated.

525.440

Aerial subsidence monitoring will be done annually while the significant subsidence is taking place. The subsidence monitoring will be initiated in an area prior to any 2nd mining being done within that area. Initially a 200 foot grid along with baseline photograph will be established prior to any 2nd mining. Approximately 12-16 control points will be needed to cover the total mining area. Six of these points will be located outside of the subsidence zone. The accuracy of this survey will be plus or minus 6" horizontally and vertically. From this data a map will be created that will show subsided areas. Once per year a follow up aerial will be performed to determine the extent and degree of active subsidence. Subsidence monitoring will continue for a minimum of 5 years after the mining ceases. If at the end of the 5 year period the annual subsidence in any of the 3 prior years measures more than 10 percent of the highest annual subsidence amount, subsidence monitoring will continue until there are 3 consecutive years where the annual subsidence amount is less than 10 percent of the highest annual subsidence amount. If for three years in a row the subsidence is measured to be less than 10% of the highest subsidence year, subsidence will be determined to be complete, and no additional monitoring for that area will be required.

A ground survey will be performed in conjunction with the quarterly water monitoring program. During the normal water monitoring program any cracks observed will be noted and reported to DOGM.

Two areas of the permit have stream reaches with less than 1,000 feet of cover over the coal seam. As discussed in Section 525.120, it is not envisioned that subsidence will negatively impact these areas. However, during and following mining near these areas, special attention will be paid to these areas during the ground surveys.

The ground survey will consist of walking and photographing the various areas of the surface over the mine where subsidence might occur. If evidence of subsidence is identified, the area of subsidence will be surveyed and the extent of the disruption identified. Depending on the extent and location of the damage, mitigation measures will be reviewed and implemented. Due to the fact that mitigation options change with time as new technology and measures are developed, better options may be implemented in the future. However, UEI provides a commitment that where subsidence damage affects uses of the surface, the land will be restored to a condition capable of maintaining the value and reasonable foreseeable uses which it was capable of supporting before the subsidence. The surface effects will be repairs as described in Section 525.500.

525.450 Subsidence control measures.

- 525.451.** No backstowing or backfilling of voids used as a subsidence control measure is planned at this time. Therefore, this section is not applicable.
- 525.452.** Support pillars as a subsidence control measure is not anticipated at this time. However, an area of partial mining where an unmined coal block will be left for subsidence control is shown on Plate 5-5. First mining indicates an area where a block of coal is roomed leaving pillars for support with no mining of the remaining pillars. Partial mining as shown on Plate 5-5 indicates an area where a block of coal has been isolated without the rooms being developed. Both first mining and partial mining will leave support that can be used to control subsidence. If the partially mined area shown on Plate 5-5 is ever roomed out, the area now defined as partially mined would become an area defined as being first mined.
- 525.453.** An outcrop barrier of coal will be left to protect the escarpments at the outcrop. As per the R2P2 only first mining will be allowed within 200'

of the outcrop. Mains, submains, and ventilation portals will be allowed within the outcrop.

- 525.454** No measures will be taken on the surface to prevent material damage or lessening of the value or reasonable foreseeable use of the surface.
- 525.460.** Anticipated effects of planned subsidence may include tension cracks, fissures, or sink holes. Areas of minimal ground lowering may be anticipated. The chances of subsidence-related damage to any perceived renewable resource is minimal.
- 525.470.** Since no urbanized areas, cities, towns, public buildings, facilities, churches, schools, or hospitals exist within the permit area this section does not apply.
- 525.480.** There are no plans to change or modify the mining plan to protect any springs or seeps. Springs with water rights will be monitored for flow and quality as described in Chapter 7 Section 731.211. UEI has committed to provide for mitigation of any lost water rights as per Chapter 7 Section 727.
- 525.490.** Other information specified by the Division as necessary to demonstrate that the operation will be conducted in accordance with R645-301-525.300 will be provided.
- 525.500.** Repair of damage.
- 525.510.** If effects of subsidence are confirmed, any material damage to the surface lands will be restored to the extent technologically and economically feasible. The land will be restored to a condition capable of maintaining the value and reasonable foreseeable uses which it was capable of supporting before the subsidence.
- 525.520.** Since no structures exist within or adjacent to the permit area which could be damaged by subsidence, should it occur, this section does not apply.
- 525.530.** The Little Park Road exists in the subsidence zone. In the unlikely event the road is damaged by subsidence,

UEI will repair the damage as per Section 525.120.

- 526.** A narrative explaining the construction, modification, use, maintenance and removal of the mine facilities follows. Additional information can be found in Appendix 5-4 and Chapter 8.

526.100 Mine Structures and Facilities.

526.110 The only existing structures are found in Horse Canyon (Part "A" of this permit) and are the remains of the United States Steel operation. Horse Canyon has received phase II bond release and the remaining structures have been left in place for future use. Only three existing structures, a 60" and a 48" CMP culverts located near the new proposed surface facilities, and the County road on top of Little Park, can be found within the Lila Canyon Permit. The existing culvert is shown on plate 5-1A. The existing road on Little Park can be found on Plate 5-1 as well as most other plates showing the surface area of the Lila Canyon Permit. Several vehicle ways will be used for water and subsidence monitoring. These ways branch off the Little Park Road and generally follow the ephemeral drainages. The ways are shown on Plate 5-1 as well as most other plates showing the surface area of the Lila Canyon Permit. More detail of the existing Little Park Road can be found in App. 5-4.

526.111 The location of the existing culverts is shown on Plate 5-1A.

526.112 Most of the existing 48" culvert is outside the permit boundary and is the Counties responsibility. UEI will grade the site so that during reclamation and operations surface flows will be directed away from the 48" culvert. The 60" culvert is in poor condition and will be replaced by the county. UEI will add on to the culvert during the operation and reclamation phase. The bottom 30' is the responsibility of the County, the upper portion is the responsibility of UEI.

- 526.113** It is believed that the existing culverts were installed with the road construction around 1940.
- 526.114** Since the existing culvert is going to be removed upon construction of the sediment pond this section does not apply.
- 526.115** Since the existing culvert is going to be removed upon construction of the sediment pond this section does not apply. The County road and the culvert within the disturbed area boundary will be modified or reconstructed by the County.
- 526.115.1.** Since the existing culvert is going to be removed upon construction of the sediment pond this section does not apply. See Appendix 5-4 for existing road details.
- 526.115.2.** Since the existing culvert is going to be removed upon construction of the sediment pond this section does not apply. See Appendix 5-4 for existing road details.
- 526.115.3.** Since the existing culvert is going to be removed upon construction of the sediment pond this section does not apply. See Appendix 5-4 for existing road details.
- 526.115.4.** Since the existing culvert is going to be removed upon construction of the sediment pond this section does not apply. See Appendix 5-4 for existing road details.
- 526.116** The only coal mining and reclamation operations that are planned within 100 feet of the County Road are office complex, sediment pond, topsoil pile, and security shack. The permit area adjacent to the county road will be fenced to protect the public from the sediment pond and other mine associated buildings. Other than

fencing no additional measures are planned after the construction phase. During construction measures to control traffic on the County Road will be taken to protect the public from construction related hazards.

526.116.1. A cooperative agreement with Emery County as stated in Appendix 1-4 requires a six foot chain link fence to be constructed adjacent to the Lila Canyon Road to provide safety to the general public in the proximity to the mine site and mine related structures and activities.

526.116.2. At the current time there are no plans to relocate any public road.

526.200 Utility Installation and Support Facilities.

526.210 All coal mining and reclamation operations will be conducted in a manner which minimizes damage, destruction, or disruption of services provided by oil, gas, and water wells, oil, gas, and coal-slurry pipelines, railroads, electric and telephone lines, and water and sewage lines which may pass over, under, or through the permit area, unless otherwise approved by the owner of those facilities and the Division. Since no existing services are found within the projected disturbed area, no negative impact to any service is anticipated.

A BLM and State Lands Utility Right-of-Way has been applied for to contain an access road, rail from the existing main line near highway 10, electric power, phone lines, and gas service. This ROW is not included within the MRP and will not fall under the R645 regulations.

526.220 The new support facilities are described in section 520 and in Appendix 5-4 and shown on plate 5-2 and will be operated in accordance with the mine reclamation plan. Plans and drawings for each support facility to be

constructed, used or maintained within the permit area are found in Appendix 5-4, Plates 5-7A, 5-7B, and 5-8.

526.221 The new facilities designs shown in Appendix 5-4 prevents or controls erosion and siltation, water pollution, and damage to public or private property, and:

526.222 The new facilities designs shown in Appendix 5-4 minimizes damage to fish, wildlife, and related environmental values; and minimizes additional contributions of suspended solids to stream flow or runoff outside the permit area to the extent possible by using the best technology currently available.

Islands of undisturbed areas within the permit area will be visually monitored for coal fines deposition. If monitoring reveals coal fine deposition, then water sprays on the area from which the fines are originating will be warranted as per August 27, 1999 Approval Order.

526.300 Water pollution control facilities consist of sedimentation control and properly designed sewage systems.

The sedimentation control is accomplished by containing all disturbed area runoff in a properly sized sedimentation pond. Complete designs are presented in Appendix 7-4 and on Plate 7-6.

The sewage system will consist of a septic tank and drainfield. The system is shown on Plate 5-2. Complete designs are presented in Appendix 5-4.

The drain field design and layout is shown on plate 5-2b and details are shown in Appendix 5-4.

526.400 Since Lila Canyon Mine is an underground operation this section does not apply.

527. Transportation Facilities.

- 527.100** All new roads within the disturbed area have been classified as primary except for the coal pile road which is used infrequently.
- 527.110** See Sections 527.120 and 527.130.
- 527.120** The Slope Access Road / Portal Access Road and the Mine Facilities Road / Truck Loadout Road will be used frequently for access for a period in excess of six months, and or will transport coal, they are classified as primary roads.
- 527.121** See 527.120 above.
- 527.122** See 527.120 above.
- 527.123** Since none of the new roads planned within the disturbed area will be retained for an approved postmining land use this section does not apply.
- 527.130** The Coal Pile Road is used infrequency and will be classified as ancillary.
- 527.200** A detailed design and description for each road, and conveyor to be constructed used, and maintained within the proposed permit area is included in Appendix 5-4. The roads are show on Plate 5-2.
- 527.210** The specifications for each road width, road gradient, road surface, road cut, fills, embankments culverts, drainage ditches and drainage structures are shown on Plate 5-2 and in Appendixes 5-4 and 7-4.
- 527.220** Since no alteration or relocation of natural drainage ways is anticipated this section is not applicable.
- 527.230** Roads shall be maintained in manner that allows them to meet their design standards throughout their use.
- 527.240** If any of the roads on the disturbed area is damaged by a catastrophic event, the road will be repaired as soon as practical after the damage has occurred.
- 527.250** Steep cut slopes or requests for alternative specifications

are not anticipated at this time therefore this section does not apply.

528. Handling and Disposal of Coal, Overburden, etc:

A narrative explaining the construction modifications, use, maintenance and removal of coal, overburden, excess spoil and coal mine waste.

528.100 Coal will be mined using continuous miners and longwall equipment. The coal will be transported from the face and deposited on the underground mine belts using shuttle cars or continuous haulage equipment. The coal will be transported by a series of conveyor belts from the section to the run of mine stockpile. The coal will be removed from the run of mine stockpile by a reclaim belt to an enclosed crusher. Once crushed the coal will be conveyed to a storage bin from which it will be loaded in to coal haul trucks for transportation to a unit train loadout.

528.200 Overburden: Lila Canyon is an underground operation and it is not anticipated that any material that overlays the coal seam, consolidated, or unconsolidated, other than topsoil, will be disturbed. Therefore, this section does not apply.

528.300 Spoil, coal processing waste, mine development waste, and noncoal waste removal, handling, storage, transportation, and disposal areas and structures are discussed below.

528.310 Excess Spoil: Since Lila Canyon is an underground operation it is not anticipated than any spoil will be generated. Therefore this section does not apply.

528.320 Coal Mine Waste: Coal processing waste and underground development waste brought to the surface, will be placed in disposal areas within the permit area which are approved by the Division for this purpose. Rock removed from the access slopes will be placed in the refuse pile area. Portions of this material, not containing coal, will be used as structural fill for the shop/warehouse. The areas for the rock slope material and for underground development waste are adjacent and adjoining and will be treated as one area or structure. The refuse pile is shown on Plate 5-2 and in Appendix 5-7.

528.321 Coal processing waste produced from the crusher will not be returned to any abandoned underground workings. Any and all of the coal processing waste from the crusher will be deposited in the refuse pile shown on plate 5-2 and in Appendix 5-7.

528.322 Refuse Piles. Each pile will meet the requirements of MSHA, 30 CFR 77.214 and 30 CFR 77.215, meet the design criteria of R645-301-210, R645-301-512.230, R645-301-513.400, R645-301-514.200, R645-301-515.200, R645-301-528.320, R645-301-536 through R645-301-536.200, R645-301-536.500, R645-301-536.900, R645-301-542.730, R645-301-553.250, R645-301-746.100, R645-301-746.200, and any other applicable requirements.

528.323 Burning and Burned Waste Utilization.

528.323.1. Coal mine waste fires will be extinguished by the person who conducts coal mining and reclamation operations, in accordance with a plan approved by the Division and MSHA. The plan will contain, at a minimum, provisions to ensure that only those persons authorized by the operator, and who have an understanding of the procedures to be used, will be involved in the extinguishing operations. The coal mine waste fire plan can be found in Appendix 5-3. MSHA approval is not required unless you have an actively burning fir. (Phone conversation with Billy Owens MSHA Denver 5/31/05)

528.323.2. No burning or burned coal mine waste will be removed from the permitted disposal area.

528.330 Noncoal Mine Waste.

528.331 Noncoal mine wastes including, but not limited to,

grease, lubricants, paints, flammable liquids, garbage, abandoned mining machinery, lumber and other combustible materials generated during mining activities will be placed and stored in a controlled manner in a designated portion of the permit area. The noncoal mine waste will be placed in dumpsters and emptied on a as needed basis. The designated noncoal waste area is shown on Plate 5-2.

- 528.332** It is anticipated that final disposal of noncoal mine wastes will be at the ECDC facility near East Carbon City. Concrete will be disposed of in a specified area, refer to Plate 5-6 for this location. The disposal site will be located under the reclaimed coal stockpile. This area will receive the maximum fill during reclamation. Placement of this fill around the concrete will help to eliminate runoff. This will ensure that leachate and drainage does not degrade surface or underground water. The noncoal mine waste will be placed in dumpsters and emptied on a as needed basis.
- 528.333** The noncoal mine waste will be disposed of at the ECDC facility near East Carbon City.
- 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.

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 approved for water monitoring.

529.200 For the purposes of Underground Coal Mining and Reclamation Activities:

529.210 Mine entries which are temporarily inactive, but have a further projected useful service under the approved permit application, will be protected by barricades or other covering devices, fenced, and posted with signs, to prevent access into the entry and to identify the hazardous nature of the opening. These devices will be periodically inspected and maintained in good operating condition by the person who conducts the activity.

529.220 Since no portals are projected to return underground

development waste, coal processing waste or water to the mine, this section does not apply. There is no current need to return any waste to the underground workings.

529.300 Section 529 does not apply to holes drilled and used for blasting.

529.400 No openings have been identified for use to return coal processing waste to underground workings. Therefore this section is not applicable.

530. Operational Design Criteria and Plans.

531. General plans for the sediment pond and refuse pile are found within this section.

532. Sediment control measures can be found in Chapter 7.

532.100 The smallest practicable area will be disturbed during the life of the project. Progressive backfilling, grading, and prompt revegetation of applicable will be completed as per R645-301-353.200.

532.200 Backfilled material will be stabilized to promote a reduction of the rate and volume of runoff in accordance with R645-301-537.200, R645-301-552 through R645-301-553.230, R645-301-553.260 through R645-301-553.420, R645-301-553.600, and R645-301-553.900.

533. Impoundments.

533.100 Since no impoundments meeting the criteria of 30 CFR 77.216(a) this section does not apply.

533.200 The only impoundment planed for this site is the sediment pond. The sediment pond is a temporary structure. A detailed design for the Sediment ponds can be found in Appendix 7-4, Section 3.1 and on Plate 7-6.

533.210 The sediment pond will be incised, except for the dam/road embankment. This embankment will be

reconstructed and compacted to at least 95%. A detailed design for the Sediment ponds can be found in Appendix 7-4, Section 3.1 and on Plate 7-6.

533.220 Where fill is to be placed, natural ground shall be removed 12" below the structure. A detailed design for the Sediment ponds can be found in Appendix 7-4, Section 3.1 and on Plate 7-6.

533.300 Rip-rap or other protection (culverts, concrete) will be placed at all inlets and outlets to prevent scouring. A detailed design for the Sediment ponds can be found in Appendix 7-4, Section 3.1. Also see Plate 7-6.

533.400 External slopes of the impoundment will be planted with an approved seed mix to help prevent erosion and promote stability. A detailed design for the Sediment ponds can be found in Appendix 7-4, Section 3.1. A detailed design for the Sediment ponds can be found in Appendix 7-4, Section 3.1 and on Plate 7-6.

533.500 This section does not apply, there are no vertical highwalls associated with this impoundment.

533.600 Since no impoundments are planned that meet the criteria of MSHA, 30 CFR 77.216(a) this section does not apply.

533.700 Design and construction requirements, as well as operation and maintenance requirements are detailed in Appendix 7-4, Section 3.1.

534. Roads. The designs for surface roads can be found in Appendix 5-4.

534.100 The roads have been designed, located, constructed and will be maintained to:

534.110 The roads have been designed, located, constructed and will be maintained to prevent or control damage to public or private property.

- 534.120** Nonacid or nontoxic-forming substances will be used in road surfacing.
- 534.130** The designs for the roads can be found in Appendix 5-4.
- 534.140** The reclamation plan for the roads can be found in section 542.600.
- 534.150** The roads have been designed to prevent or control erosion, siltation and air pollution.
- 534.200** Appropriate limits for grade, width, and surface materials have been used in the design of the roads.
- 534.300** Primary Roads. Primary roads will meet the requirements of R645-301-358, R645-301-527.100, R645-301-527.230, R645-301-534.100, R645-301-534.200, R645-301-542.600, R645-301-542.600, and R645-301-762, any necessary design criteria established by the Division, and the following requirements. Primary roads will:
- 534.310** The roads will be located insofar as practical, on the most stable available surfaces.
- 534.320** The roads will be surfaced with rock, crushed gravel, asphalt, or other material approved by the Division as being sufficiently durable for the anticipated volume of traffic and the weight and speed of vehicles using the road;
- 534.330** The roads will be routinely maintained to include repairs to the road surface, blading, filling potholes and adding replacement gravel or asphalt. It will also include revegetating, brush removal, and minor reconstruction of road segments as necessary.
- 534.340** Culverts if required will be designed, installed, and maintained to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road.
- 535. Spoil:** It is anticipated that no spoil will be produced at the Lila Canyon Mine

therefore this section is not applicable.

536. Coal Mine Waste: The proposed Lila Canyon Mine will produce 2 separate types of coal mine waste:

1. Normal coal processing waste or refuse and;
2. Underground development waste.

Disposal of each of the 2 types of coal mine waste will be the same and both type will be deposited in the refuse storage area shown on plate 5-2.

The rock slope material / underground development waste will be examined and tested as necessary to determine acid- or toxic-forming potential.

Coal Processing waste and any underground development waste containing too much coal to leave underground, will be disposed of in the refuse storage area as described further in this chapter and in Appendix 5-7.

It is not anticipated that any underground waste other than the rock slope material / underground development waste will be brought to the surface. Coal processing waste and underground development waste brought to the surface will be placed in a controlled manner and have a design certifications describe under R645-301-512 if appropriate.

536.100 The refuse pile has been designed using current prudent engineering practices and will meet design criteria established by the Division. See Appendix 5-7.

536.110 The refuse pile will be designed to attain a minimum long-term slope stability safety factor of 1.5. See Appendix 5-7.

536.120 The refuse pile will be constructed on natural ground once the topsoil has been removed according to section 230.232. There are no underground mine workings in the immediate area of the refuse pile. All mine workings are found at a higher elevation than the refuse pile.

- 536.200** Underground development waste brought to the surface and coal processing waste deposited in the refuse pile will be deposited according to the plan described in Appendix 5-7.
- 536.210** Refuse Pile construction described in Appendix 5-7, will ensure mass stability and prevent mass movement during and after construction;
- 536.220** Refuse Pile construction per the plan in Appendix 5-7 will not create a public hazard; and
- 536.230** Will prevent combustion.
- 536.300** Since no spoil fills will be generated this section does not apply.
- 536.400** Since there will not be any impounding structures constructed of coal mine waste this section does not apply.
- 536.500** As discussed in Section 536 and 536.300, it is proposed to dispose of the rock slope material / underground development waste within the refuse disposal area as structural fill as shown on Plate 5-2.
- 536.510** It is not anticipated that coal mine waste will be disposed of in any area off the permit area. Therefore this section does not apply.
- 536.520** It is not anticipated that coal mine waste will be disposed of in any area off the permit area. Therefore this section does not apply.
- 536.600** In areas where slope rock or coal processing waste is deposited, the topsoil will be removed and stored in the topsoil stockpile area until reclamation.
- 536.700** It is not anticipated that coal processing waste will be returned to abandoned underground workings therefore this section does not apply
- 536.800** Since no coal processing waste banks, dams, or embankments are planned for the Lila Canyon Mine therefore, this section does not apply.

536.900 Refuse Piles. (See Appendix 5-7) The refuse pile is designed to meet the requirements of R645-301-210, R645-301-512.230, R645-301-513.400, R645-301-514.200, R645-301-515.200, R645-301-528.322, R645-301-528.320, R645-301-536 through R645-301-536.200, R645-301-536.500, R645-301-536.900, R645-301-542.730, R645-301-553.250, R645-301-746.100 through R645-301-746.200, and the requirements of MSHA, 30 CFR 77.214 and 30 CFR 77.215.

537. Regraded Slopes.

537.100 Each application will contain a report of appropriate geotechnical analysis, where approval of the Division is required for alternative specifications or for steep cut slopes under R645-301-358, R645-301-512.250, R645-301-527.100, R645-301-527.230, R645-301-534.100, R645-301-534.200, R645-301-534.300, R645-301-542.600, R645-301-742.410, R645-301-742.420, R645-301-752.200, and R645-301-762.

540. Reclamation Plan. (See Appendix 5-8 for reclamation plan.)

541. General.

- 541.100.** The operator is committed to performing all reclamation as in accordance with R645 rules.
- 541.200.** N/A. The operator is not involved in surface mining activities.
- 541.300.** The operator is committed to the removal of all equipment facilities and structures upon cessation of mining activities.
- 541.400.** The operator will address all reclamation activities as referenced in Chapter 5 of this document.

542 Narratives, Maps and Plans.

- 542.100.** See Table 3-3 time table based on project reserves

markets and life of mine.

- 542.200.** The perimeter of the disturbed area contains approximately 42.6 surface acres within the disturbed area but only 25.3 acres will be disturbed leaving 17.3 acres of undisturbed islands within the disturbed area. The following R645 regulations will give detailed description and reclamation procedures to address these areas of disturbance. The reclamation plan for the sediment pond and drainage control structures can be found in Appendix 7-4.

Topsoil amounts can be found in Section 232.100 and are calculated from Plate 203. Concrete amounts can be calculated from the text in Section 520. Coal Mine Waste volumes can be found in Appendix 5-7. Volumes were calculated using a Cad system.

- 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.
- 542.720.** No excess spoil is anticipated at this time.
- 542.730.** All coal mine waste will be placed in the waste disposal area as shown on Plate 5-2 and reclaimed in accordance with R645 regulations.
- 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.

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 reclamation.

553. The operator will comply with all regulations applicable to underground mining activities relative to backfilling and grading as required by R645 regulations.

Some minor cut slopes along the reclaimed road may be left after reclamation due to the difficulty and inability to reclaim all material pushed over the side while making the road cut. See plate 5-7B-1 cross section 16+00 for details. UEI will make reasonable efforts to minimize the cut slopes being left.

553.100. Disturbed Areas. Disturbed areas will be backfilled and graded to:

553.110 The operator will obtain a post mining topography similar in form as what existed premining.

553.120 Since Lila Canyon is an underground operation, no spoil piles will be created. Minor highwalls may be created with the development of the rock slope portals. Upon completion of mining these entries will be seal as per Closure for Mine Openings Appendix 5-6 and all highwalls will be eliminated

during the reclamation phase of the operation. Plate 5-9 shows the proposed portal plan. During reclamation, suitable material will be placed against the portals. This material will be shaped to eliminate the highwall and to bring the slope back to the approximate original contour. A Cat model 216/226 or equivalent will be used to complete the final grading of the fan portal. After final grading the 216/226 will be airlifted out using a KMAX helicopter or equivalent.

553.130 All fill slope will have a static safety factor of 1.3 as shown in Appendix 5-5.

553.140 Erosion and water pollution will be minimized on site by the use of drainage control structures (burms, channels and silt fence) and the use of small depression, soil tackifiers, mulch and sediment pond design. No water is anticipated leaving the reclaimed site prior to adequate treatment in the form of retention and/or filtration that does not meet and/or exceed UPDES standards.

553.150 The post mining land use of wildlife and domestic grazing should be enhanced to some degree with the revegetation of a more desirable seed mix and a vegetative cover in excess of what was present premining.

553.200 Spoil and Waste.

553.210 All underground development waste brought to the surface and coal processing waste generated on the surface as a result of coal processing will be placed in the coal mine waste (refuse) disposal area and reclaimed in accordance with R645 regulations.

553.220 Since no spoil will be produced this section does not apply.

- 553.221** All vegetation and /or organic material will be removed prior to any coal mine waste being stored.
- 553.222** All useable topsoil or topsoil substitute will be removed from the structural fill and refuse areas prior to use. Table 2-1 shows estimates of salvageable soil by soil type based on current NRCS soil inventories. The location of the soil storage are shown on Plate 5-2. This material will be spread over the recontoured structural fill and refuse areas prior to seeding and mulching.
- 553.223** Since no spoil will be produced this section does not apply.
- 553.230** All recontoured areas will be compacted to minimize slippage. The area will then be over laid with topsoil and ripped. In addition the area will be "pock-marked" to minimize the potential for erosion as well as enhance revegetation establishment. It is not anticipated that soil will be disturbed in areas to steep for equipment to operate.
- 553.240** The refuse and structural fill areas will have slopes of less than 8% upon final recontouring and revegetated to enhance the post mining land use of grazing and wildlife habitat.
- 553.250** The refuse pile design is shown in appendix 5-7.
- 553.260** The operator will commit to all applicable R645 regulations relative to disposal of coal processing waste.
- 553.300** Any combustible materials or acid and toxic forming materials exposed used or produced during mining will be disposed of in the refuse disposal area and treated as refuse. This material will be covered by four feet of fill. Noncoal waste will be disposed of as described in Section 528.331.

553.400 Cut-and-fill terraces may be allowed by the Division

553.410 No cut and fill terraces will be required.

553.420 No terraces will be required for post mining land use.

553.500-540 and 553.600-553.650.500

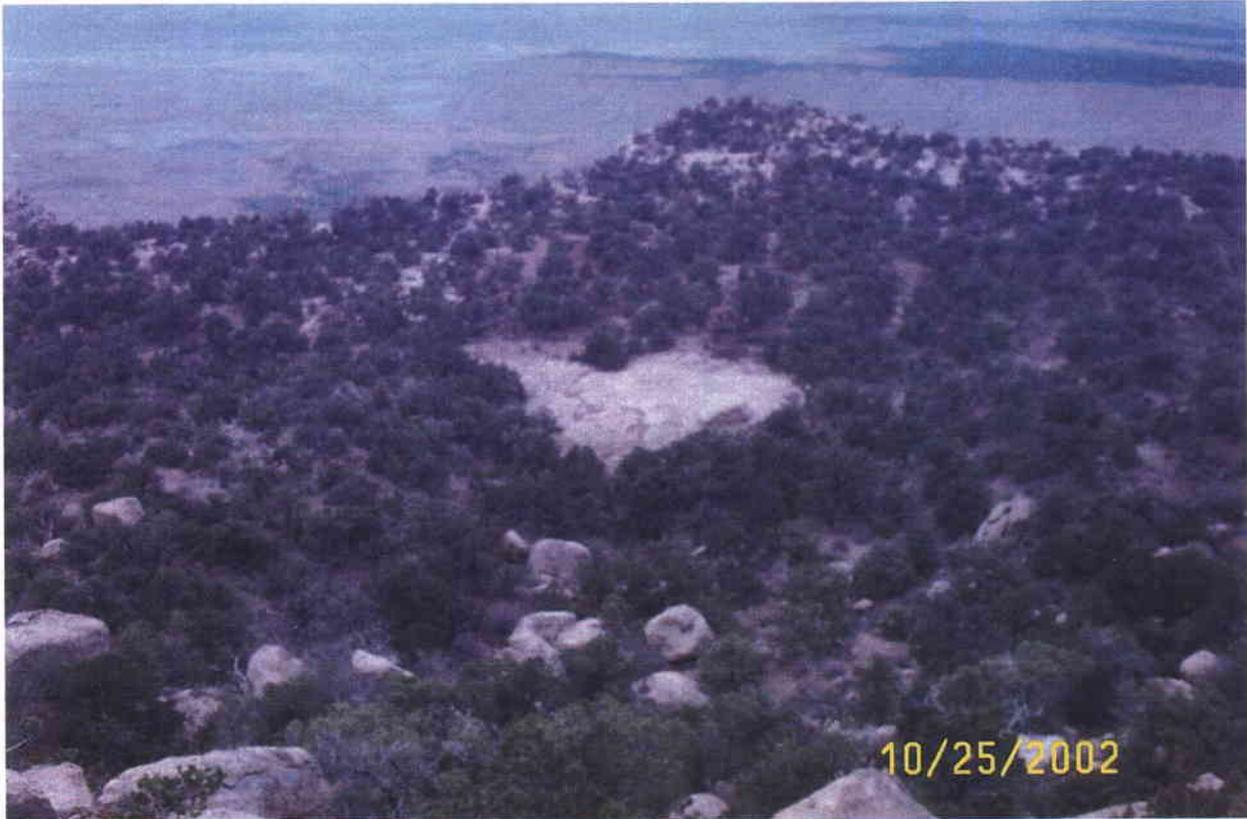
The only area that falls under these provisions are the reclaimed Horse Canyon mine which lies in the north west portion of the lease area and is addressed under approved MRP Act #0013 (Part "A").

553.700-553.900

This operation will only involve underground mining and as such the above referenced regulations do not apply.

560. Performance Standards. Coal mining and reclamation operations will be conducted in accordance with the approved permit and requirements of R645-301-510 through R645-301-553.

Figure 7-5



General location of area believed to be water right #91-4648. The area void of vegetation in the center of the photo is shown as a pond on the USGS Lila Point Quad map. No stock ponds found in the general area.