

0041

UtahAmerican Energy, Inc.



COPY

7-11-09 incoming
Lila Canyon Project
P. O. Box 910
East Carbon, Utah 84501
Phone: (435) 888-4000
(435) 650-3157
Fax: (435) 888-4002

#3406
K

September 14, 2009

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

Re: UtahAmerican Energy, Inc. Horse Canyon Mine 09-007 C/007/013. Response to Deficiencies Phase III Bond Release Application Letter dated June 25, 2009

Dear Mr. Haddock,

Attached you will find three (3) copies of revision 09-007 which addresses the Phase III deficiencies identified in your June 25, 2009 letter.

Three copies of redline strike are also included.

C1 and C2 forms are included.

Should you have any questions please call.

Sincerely,

R. Jay Marshall
R. Jay Marshall
Chief Engineer/Project Manager

File in:

- Confidential
- Shelf
- Expandable

Refer to Record No. 0041 Date 09/14/2009
In C10070013, 2007, Incoming
For additional information

RECEIVED
SEP 16 2009
DIV. OF OIL, GAS & MINING

APPLICATION FOR PERMIT PROCESSING

Permit Change <input type="checkbox"/>	New Permit <input type="checkbox"/>	Renewal <input type="checkbox"/>	Transfer <input type="checkbox"/>	Exploration <input type="checkbox"/>	Bond Release <input type="checkbox"/>	Permit Number: ACT/007/013
Title of Proposal: 09-007 Phase III Final deficiency response						Mine: Horse Canyon
						Permittee: UtahAmerican Energy, Inc.

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

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

<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?

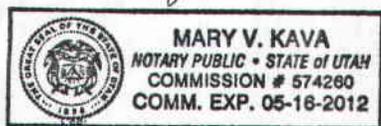
X Attach 3 complete copies of the application.

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.

R. Jay Marshall Chief Engineer 9/16/09
Signed - Name - Position - Date

Subscribed and sworn to before me this 10th day of September, 2009

Mary V. Kava
Notary Public
My Commission Expires May 16 2012
Attest: STATE OF Utah COUNTY OF Emery



Received by Oil, Gas & Mining

RECEIVED
SEP 16 2009

DIV. OF OIL, GAS & MINING

ASSIGNED TRACKING NUMBER

Marshall, Jay

From: Joe Helfrich [JOEHELFRICH@utah.gov]
Sent: Monday, August 24, 2009 7:14 AM
To: Pete Hess
Subject: Fwd: Re: Initial Responses to Biology Deficiencies / Horse Canyon Permit Area "A"

yes I have they looked good so I asked Matt to finalize and send the response in.....Joe

>>> Pete Hess 8/20/2009 4:23 PM >>>
Joe...

Its my understanding that you have received some initial responses to your deficiencies for the permit area "A" Phase III bond release application (from Matthew Serfustini @ EIS).
I know these are only an initial response, asking for your blessing, and not an official response.

Have you had a chance to review them and determine if they are adequate ?

Thank you.

APPENDIX III-1

**Phase III Bond Release Application
Horse Canyon Mine**

April 17, 2009

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Horse Canyon Mine**

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- III-1-3 Public Notice
- III-1-4 Plates III-2A through III-2G
- III-1-5 Horse Canyon Vegetation Survey 2003
- III-1-6 Horse Canyon Vegetation Survey 2004
- III-1-7 Horse Canyon Vegetation Survey 1996 JBR
- III-1-8 Reclamation Certification

**Appendix III-1
Phase III Bond Release Application
Horse Canyon Mine**

The purpose of this application is to request Phase III Bond Release for the Horse Canyon Mine including the Post Mine Land Use Change area with structures and buildings approved by the Division of Oil Gas and Mining (Division) on February 25, 2004. This application includes the lands included in the previous bond releases:

1. Phase I (51.56 acres) bond release for \$812,726 was approved by the Division on February 5, 1997.
2. Phase II (51.56 acres) bond release for \$191,672 was approved by the Division on April 11, 2002.

One area not included in this application is a small 0.49 acre area on the Road Junction Refuse Pile shown on Map III-2A. This area consists of an access road to the channel that sustained storm runoff damage, and the channel repair area. The damaged channel was repaired and the area seeded.

This application is for a total of 91.97 acres including the land donated to CEU, 6.5 acres designated for disturbance but never disturbed, the west bridge abutment left in place as required by Emery County. In addition, the Horse Canyon (Range Creek) public road is included in Phase III but will remain as required by Emery County. The Maps included with this application show the as-built contours after reclamation for the areas included in the Phase I and Phase II Bond Release applications. The area included in the CEU donation area where the postmining land use change was approved is also shown on the same maps with contours and with the facilities, and buildings shown and labeled. A list of these facilities and buildings can also be found in appendix X-4. The Emery County Horse Canyon (Range Creek) public road is also shown on the maps as dashed lines indicating the right-of-way lines.

Application Format

This application is formatted following Technical Directive Tech - 006, Requirements for Phased Bond Release, March 1, 2001.

This application will present the appropriate Technical Directive section headings in bolded italics followed by responses as follows:

5. Procedure
Prior to Bond Release Request

Permit reclamation changes and post mine land use changes:

All permit revisions have been approved by the Division and incorporated into the MRP.

A Post Mine Land Use Change (PMLU) for 16.18 acres not included in the Phase I and Phase II bond release areas was submitted and later approved by the Division on February 25, 2004 for a portion of the Horse Canyon Mine including buildings and areas donated to the College of Eastern Utah (CEU) under an Asset Assignment Agreement. The post mining land use change was added to the MRP as Appendix X-4 in Chapter X, Volume IV.

The Post Mine Land Use Change area can be seen on Exhibits A-1, A-2, A-3 and A-4 of the PMLU Change application (Appendix X-4, Volume IV of the MRP). The areas covered by this bond release application can be found on Plates III-2A thru III-2G attached to this application as Exhibit III-1-4 including the PMLU area and the areas covered by the approved Phases I and II bond releases. The base map for Plates III-2A through III-2F have been assembled by duplicating Plates III-1A through III-1F, Plate III-2G has been added to include small areas that extended off of Plates III-2A, and III-2B. Four (4) copies are include for insertion into the MRP document.

A copy of the Asset Assignment Agreement with CEU can be found in the Division files under the PLMU application, and as Exhibit III-1-1 of this application.

1. Certify Reclamation

As-build drawings (Plates III-1A thru III-1F) were submitted and approved as part of the Phase II bond release application; these plates have been incorporated into the MRP. Information adequate for Phase I and Phase II bond releases were previously submitted and accepted by the Division as evidenced by the approved Phase I and Phase II bond releases. The approved Post Mine Land Use Change referenced above modified the reclamation plan to leave the buildings, structures and areas as-is for use by the CEU. Therefore, that area, buildings and structures were not reclaimed.

Form C1 included with this application contains a notarized certification.

A statement certifying that applicable reclamation activities have been accomplished in accordance with requirements of the R645 rules is included as Appendix III-1-8.

2. Provide agreements for structures remaining for post mine land use.
Phase III Bond Release Area:

Exhibit III-1-1 to this application includes a signed copy of the Asset Assignment Agreement with the CEU for the post mine land use change area. The structures and areas not reclaimed, and left for post mine land use are shown on Maps III-2C, III-2D, III-2E, and III-2F in the area designated on the maps, "Post Mine Land Use Change Area Donated To CEU." The structures and areas are described in detail in Appendix III-1-1 of this submittal, and in the Post Mine Land Use Change previously approved by the UDOGM.

0.01 Acre Area For Emery County Road West Bridge Abutment and the Horse Canyon (Range Creek Road)

On October 4, 1995, a Special Warranty Deed and Dedication Agreement between Intermountain Power Agency, and Emery County was executed giving Emery County rights to the Horse Canyon (Range Creek) road for it's use(refer to Appendix I-6 in Chapter I, Volume I of the MRP). This agreement states that, "The road was established and used by the public to access public lands for recreational and ranching purposes prior to Grantor's improvement of the Road and use thereof for mining purposes." The road has been used by many landowners in Range Creek for decades to access their property, as well as property on the Tavaputs Plateau. Therefore, the Horse Canyon (Range Creek) road by prescriptive use has been a public road for decades. Prescriptive use is a legal precedent established by long-time public use, and has been upheld in many court cases nation-wide, and in Utah. On page X-16 of the approved MRP, it states:

The public road currently in existence through the permit area will be retained during and following the mining and reclamation periods. A road has been present in Horse Canyon through the mine area since at least 1899 and presumably has been used by the public. Maps illustrating the existence of this road have been provided as Plates X-1 and X-2 As shown on Plate X-1, the road parallels the course of the Horse Canyon Creek through Sections 3 through 6, 8, and 9 of T. 16 S., R. 14 E.. The road crosses from the south side to the north side of the creek bed in the northern portion of Section 8. The road apparently drops into the creek bed in the northern portion of Section 9 and then continues up the drainage. The road appears to become a trail in the northwest portion of Section 3. The trail continues up the South fork of Horse Canyon as illustrated on Plate X-2.

A copy of a letter from the Emery County Road Department, dated February 26, 1996 discussing the Horse Canyon (Range Creek) road is included in Appendix I-6. This letter specifically says that Emery County understands that "...the right-of-way includes all structures within the legal description of the property." Further, the letter states, "The structures within the right-of-way also include the bridge that spans Horse Canyon Creek within the mine area."

The Emery County road has been clearly marked and labeled on all maps included in this application. The road includes a 100 foot wide strip centered on the Horse Canyon (Range

Creek) road, with wider sections where there are drainage structures, and where the bridge crosses the creek. As can be seen on the maps, areas where mining activity disturbed land within the road were reclaimed and have been included in Phases I and II bond releases. The areas not included in Phase I and Phase II bond releases within the Emery County road are shown on the attached drawings III-2A through III-2G, and are included in this request for Phase III bond release. The Public Road was not included in the Phase I and Phase II bond release applications, and there was no bond amount designated for the Public Road. This application includes this road to clarify any misconception that may arise over the Public Road.

The current bridge is only one lane wide, and initially Emery County indicated the need to widen the bridge to two lanes. The Horse Canyon (Range Creek) road has been a public road for many decades, long before the SMCRA law came into being. Being a public road, it could not be reclaimed by UEI, or any of its predecessors. Private property owners in Range Creek and on the Tavaputs Plateau rely on the road for access to their properties. The Emery County Road Supervisor, Mr. Morris Sorensen has determined the west bridge abutment serves to stabilize the channel and road embankment and needs to be left. Further, Mr. Morris indicated that the east abutment could become unstable and should be removed. The east abutment was removed as required.

The approved postmining land use is Wildlife habitat for the major portion of the permit and surrounding areas. As stated in Chapter X of the MPR, on page X-4 Horse Canyon was historically used as a cattle trail, and on page X-16 it states that the road has existed since about 1899. This trail/road likely traversed up the canyon and over the mountain into Range Creek. Further documentation is discussed on page X-16. By necessity, use of the road by ranching requires access for domestic animals, and by ranchers and later when the road was established, their vehicles. Because of long established use, the trail, and then the road became public access to Range Creek and the Tavaputs Plateau. Even though this use may not have been fully discussed in the Horse Canyon Mine permits, it nevertheless existed and cannot be ignored. Court case precedence has been well established that common and long standing use of a trail, or road by the public must be maintained for the benefit of the public. Therefore, the Horse Canyon (Range Creek) road would have to be left operational after mining ceased. As stated on page X-16 of the approved MRP, "The public road currently in existence through the permit area will be retained during and following the mining and reclamation periods."

As can be seen on Plate II-1B of the approved MRP, the disturbed areas include areas used for mining operations and clearly exclude the original Horse Canyon (Range Creek) road. Therefore, the original road was not included in the Phase I, or Phase II Bond release applications. This application requests Phase III bond release for the areas shown on Maps III-2A through III-2G, as well as the entire Emery County road area.

A Post Mining Land Use Change (PMLU) application for 16.18 acres of the mining area was submitted to the UDOGM and approved for Residential/Recreational for the area including the Horse Canyon Mine buildings. The land and buildings were donated to the

Center for Mine Land Redevelopment, and the College of Eastern Utah for use as a science field camp. The Horse Canyon (Range Creek) Road is necessary access to the PMLU area.

In view of the above discussion, the Horse Canyon (Range Creek) road meets the post mining land use objectives. The west bridge abutment is a necessary part of the bridge structure, and therefore will remain after Phase III bond release.

6.5 Acre Borrow Area Disturbed and Not Reclaimed

Map III-2G shows the borrow pit area used to obtain soil materials for final reclamation. As can be seen on the map, the Western portion of the area was used as the borrow area, with the Eastern portion reserved for final reclamation of the buildings area. Since the buildings area was donated to the college of Eastern Utah, and a Land Use Change was approved by the UDOGM, the necessity for borrow from the Eastern area of the borrow pit was precluded. As can be seen by the contours of the Eastern area, no excavations, or removal of soils materials was done. In addition, mature vegetation including pinion and juniper trees in the area attest to the fact that the area has not been disturbed in the past several decades. A pre-law two-track road traverses this area, and it can be verified by the contours along this road that no disturbance has been done. Since the Eastern portion of the borrow area was never disturbed it will be removed from the disturbed area.

The Western portion of the borrow pit area was used for reclamation materials for the Horse Canyon Mine as discussed previously. This Western area was included in Phases I and II reclamation bond release, and is included in this Phase III bond release application. It is requested by this application to included both the Western and Eastern portions of the borrow pit for final Phase III bond release since all reclamation standards have been met for the Western portion, and the Eastern portion was never disturbed.

3. Address performance standards.

The land use change area and structures will be used by the CEU. The area has been donated in total including ownership of the property and therefore is removed from reclamation responsibility, although no bond reduction has been applied for. This Phase III bond release application includes the acreage, buildings and structures including the post mine land use change area as well as the areas reclaimed under the Phase I and Phase II bond releases. All pertinent requirements were addressed in the post mine land use change application.

Post Mining Landuse

The postmining landuse of Wildlife Habitat has been achieved by providing much better vegetation for foraging animals than exists in the undisturbed surrounding area. The attached vegetation reports verify that the vegetation reclamation standards have been met or exceeded.

The Horse Canyon Mine buildings and other areas were included in a postmining land use change to Wildlife and Residential/Recreational approved by the UDOGM, with the intent to be used by the CEU for a science field camp. Reclamation in the area provides a good environment for a science field camp by providing vegetation that will attract wildlife. In addition, the buildings and area will provide a base for science studies possibly including, vegetation, soils, geology, paleontology, archeology, and wildlife.

AOC Considerations

6.5 Acre area

As can be seen on Map III-2G, the contour lines in the 6.5 acre area not reclaimed or used for a borrow area for reclamation are quite irregular in nature, indicating that no excavation was conducted during reclamation of the Horse Canyon Mine. Two old pre-law roads criss-cross the area, and it can be seen by observing the contour lines that they have not been modified by borrow activities. In addition, mature vegetation and large mature trees in the area indicate that no disturbance has been done in this area for many decades. Since the area has not been disturbed, the existing contours are the original contours, and require no modification, this area was removed from the disturbed area.

0.01 Acre area

The east bridge abutment is included in the 0.01 acre area. The Horse Canyon Creek is a deeply incised canyon with very steep side walls in this area. This has likely been the case for this canyon for eons, and is typical of canyons in the general area. The bridge abutments do not alter the general shape of the canyon. Since the road is a public road, and the west abutment is necessary to stabilize the channel and road embankment, the road and west abutment supports post mining land use. The west abutment will be left in place as requested by Emery County officials. The east abutment was removed.

Underground Mine Openings

Page IV-15 of the approved MRP states: "There are twelve openings within the Horse Canyon permit area that are sealed. The seals used are suitable for temporary closure or permanent reclamation".

Page II-8 of the approved Horse Canyon MRP states: "In the third quarter of 1986 all portals were sealed with solid block walls to prevent unauthorized entry of the mine. The seals used are suitable for temporary closure or permanent reclamation."

A Minor Exploration Permit was approved by DOGM in January of 1992. This permit allowed for BXG, Inc. To breach the seals and explore the Horse Canyon mine. The exploration plan states: "This exploration is not being conducted by the owner or permit holder. Thus, no permit will be modified or revised."

BXG's Horse Canyon Exploration Project began in late August of 1992 with MSHA's approval of the Seal Breaching Plan and subsequent breaching of the Horse and Lila Canyon seals on August 26 and 27, 1992. Mine exploration began January 22, 1993, after MSHA approval of the mine Exploration Plan received on December 30, 1992. A resealing plan was submitted to MSHA on April 27, 1993 and approved May 14, 1993. The Lila and Horse Canyon seals breached in August, 1992 have been restored to original condition.

The BLM has approved a permanent closure for the old Lila fan portals. The closure obligation will be assigned to Part "B".

REQUEST FOR BOND RELEASE

I. A. Notarized signature

This application has been formatted as new Appendix III-1, Chapter III, Volume I of the MRP, and includes form C1 which includes a certification with notarization.

I. B. Notification letters

Exhibit III-1-2 includes copies of notification letters sent to the appropriate individuals and entities included in the following list:

ADJACENT PROPERTY OWNERS

Mr. Josiah K. Eardley
2433 So. Highway 10
Route 1, Box 119
Price, Utah 84501

Mr. Dave Stokes
Bronco Coal
340 South Carbon Ave. Suite 126
Price, Utah 84501

College Of Eastern Utah Foundation
451 East 400 North
Price, Utah 84501

GOVERNMENT AGENCIES

Mr. Bruce Andrews, Mayor
Sunnyside City
701 Market St.
Sunnyside, Utah 84539

Mr. Orlando LaFontaine, Mayor
East Carbon City
101 W. Geneva Dr.
East Carbon, Utah 84520

Mr. Drew Sitterud
Emery County Commission
95 East Main Street
Castle Dale, Utah 84112

Mr. Bill Krompel
Carbon County Commission
120 East Main St.
Price, Utah 84501

Department of Natural Resources
Division of Sovereign Lands & Forestry
1594 W. North Temple, Suite 3520
P.O. Box 145703
Salt Lake City, Utah 84114-5703

United States Department of The Interior
Bureau of Land Management
Mr. Mark Mackiewicz
125 South 600 West
Price, Utah 84501

Emery County Planning and Zoning Commission
PO Box 727
75 East Main St.
Castle Dale, Utah 84513

WATER & SEWER

Castle Valley Special Service District
86 South 100 East
Castle Dale, Utah 84513

I. C. NEWSPAPER ADVERTISEMENT

Exhibit III-1-3 includes a copy of the public notice required by R645-301-880-120. Proof of publication will be submitted following posting and receipt of signed affidavit of publication

I. D. PERMIT CONDITIONS

There are no outstanding permit conditions.

II. A. 1. Legal description of the permit area.

The permit area is shown on the Lila Point, and Cedar U.S. Geological Survey 7.5-minute Quadrangle maps. The areas covered in this Phase III Bond release application include 51.56 acres covered by the Phase I and Phase II bond releases as well as 6.5 acres at the borrow area which was partially disturbed during reclamation efforts in 1990 -1991 by removing some fill material for reclamation. This disturbance of the borrow area was reclaimed at that time and has not been disturbed since. In addition, 0.01 acres including the west bridge abutment was retained by Emery County for the bridge providing access to the Horse Canyon (Range Creek) County road. Also, 16.18 acres were donated to CEU, making a total of 74.26 acres included in this bond release application.

The complete permit legal description can be found in Chapter I, Volume 1 of the MRP. More specifically, the disturbed areas included in the reclamation bond are as follows:

Post Mining Land Use Change Area:

Township 16 South, Range 14 East, SLB&M

Section 3: Lots 3, 6, 11, 12

Section 4: NE4SE4, SE4SE4, NW4SE4, SW4SE4

Containing 16.18 acres.

Phase III Bond Release Areas:

Township 16 South, Range 14 East, Salt Lake Base & Meridian

Section 3

Lot 1, 2, 3, 5, 6, 7, 8, 9, 11, 12; N2SW4SW4, SW4SE4, NW4SW4, NE4SW4
N2SE4, SE4SE4

Section 4

SE4NE4, S2SW4, S2SE4NE4, Lot 9, SE4

Section 5

S2SE4SE4

Section 8

NE4NE4

Section 9

NW4NW4, NE4NW4, NW4NE4

Containing 58.08 acres of disturbed area.

II.A.2. Maps

All disturbed areas where reclamation has been completed are included in this Phase III Bond Release application. Those areas can be seen on Plates III-1A thru 1F, III-1A-1, III-B-1, III-1C-1, III-1D-1, and III-1G in Chapter III, Volume I of the MRP. The disturbed area boundary can also be seen on Plates II-1A and 1B in Chapter II, Volume I. Plates III-A thru III-1F have been revised to reflect the Phase III bond release request including the areas

donated to CEU included in the PMLU and the areas previously reclaimed under the Phase I and Phase II bond releases, and can be seen in Exhibit III-1-4 of this application.

The maps included with this application show the topography of the area including reclaimed area topographic lines. The Emery County public road has been added to clearly designate its location in relationship to areas reclaimed, and the area donated to the CEU. The donation area is clearly shown on Maps III-2C, III-D, and III-F.

II.A.3. Vegetation Sampling

Vegetation sampling was conducted in 2003 and 2004 for Phase III bond release evaluation. The sampling reports are included in this application as Exhibit III-1-5, Horse Canyon Vegetation Survey - 2003, and Exhibit III-1-6, Horse Canyon Mine Vegetation Survey - 2004. The Division was notified and consulted in this regard as stated in the 2003

sampling report included as Appendix III-1-5, Horse Canyon Vegetation Study - 2003. The vegetation meets the requirements of the standards as follows:

Summary of the 2003 study report:

A vegetation inventory was conducted on 6 revegetation sites on the Horse Canyon Mine property between June and August, 2003. Data were collected regarding percent cover, percent cover by species, and woody plant density at each site. Data were also collected from a reference site located on Bureau of Land Management property adjacent to mine property. Revegetation sites were compared to the reference area with respect to cover and woody plant density to determine similarity. All sites cover averages exceed the cover average for the reference site and should be judged to have satisfactorily exceeded minimum requirements with respect to cover. Woody plant density in all revegetated sites exceeded woody plant density in the reference area. Species diversity was also higher in all revegetated areas when compared to the reference area.

The site exceeds the requirements for Phase II bond release.

The following table summarizes the results from the 2003 vegetation study.

2003	Area						
	Ref	3	6	7	11,13,14	15,17	16
Vegetation Cover Average	32.83	86.13	89.07	77.33	72.53	77.33	66.27
Average Woody Plant Densities	659.2 1	1957.30	3891.36	5180.74	1771.41	2625.22	2883.67
# of Species with Greater Than 5% Cover	2	5	5	4	4	4	4

Summary of the 2004 study report:

A vegetation inventory was conducted on 6 revegetation sites on the Horse Canyon Mine property between June and August, 2003. Data were collected regarding percent cover, percent cover by species, and woody plant density at each site. Data were also collected from a reference site located on Bureau of Land Management property adjacent to mine property. Revegetation sites were compared to the reference area with respect to cover and woody plant density to determine similarity.

The following table summarizes the results from the 2004 vegetation study.

2004	Area						
	Ref	3	6	7	11,13,14	15,17	16
Vegetation Cover Average	43.20	88.53	85.33	83.73	80.93	70.80	74.13
Average Woody Plant Densities	1112.23	1794.67	3905.88	4817.7 4	1542.02	2247. 7	2572.94
# of Species with Greater Than 5% Cover	2	5	4	4	4	4	4

The larger percentages of vegetation cover in the revegetated sites provide evidence that the revegetated sites have as much or more vegetation than the reference area. Greater woody plant densities in the revegetated sites than in the reference area show that the requirements of woody plant densities have been met. All revegetated sites have a greater number of species with more than five percent cover than the reference area. Percent cover, woody density, and species diversity in the revegetated areas exceed those found in the reference area and the revegetated areas should be found to have equaled or surpassed the requirements for revegetation.

The vegetation cover for revegetation areas in 2003 and 2004 exceeds the cover of the reference area in both years. The commitment for vegetation cover reaching 90% of the reference area has been achieved.

Page 19 and 20 in the 2003 vegetation survey and pages 20-22 in the 2004 vegetation survey display similarity results according to requirements described in the MRP. Quantitative and qualitative survey and monitoring methods have been in accordance with the MRP. As described in each of the vegetation surveys, random sampling points were chosen for point intercept method to determine cover. Woody plant densities were determined by the belt-transect method described by the MRP. Sampling adequacy was maintained at a 90% confidence interval with the samples within 10% of the mean and compared to undisturbed communities. Woody plant density averages have exceeded 90% of the reference area and exceeded the 2,000 stems per acre requirement with a 90% confidence interval.

The Stem Density on the Revegetated Sites Must Meet the Goal of 2,000 Stems Per Acre:

Page VIII – 45 of the Horse Canyon Mine Reclamation Plan states that in order to meet success standards, the woody stem density must reach 2,000 stems per acre. The table below shows the woody stem densities results of the previous vegetation studies.

Woody Plant Density Averages

Year	Area						
	Ref	3	6	7	11,13,14	15,17	16
1996		2744	6181		4144	5248	5116
2003	659.21	1957.3	3891.36	5180.74	1771.41	2625.22	2883.67
2004	1112.23	1794.67	3905.88	4817.74	1542.02	2247.7	2572.94

Densities shown as Plants per Acre

In 1996, the average woody stem density for the revegetated areas (excluding area 7) was 4686.6 plants per acre. In 2003, the woody stem density averaged for revegetated areas was 3051.6 plants per acre. In 2004, woody stem density averaged 2813.5 plants per acre.

In each of these vegetation surveys, the revegetated area's average exceeded the required density of 2,000 stems per acre and reclamation for woody plants should be considered successful.

Slope Area Surveys Have No Woody Plant or Composition Data:

Surveys of five additional sloped areas were surveyed for the purposes of precipitation runoff estimates and erosion indication. These five areas were not surveyed for the purpose of documenting the Phase III vegetation survey requirement and therefore do not require woody plant density and species composition surveys.

Purple Plant Not Identified in Vegetation Survey:

The purple plant listed in Appendix 3: Diversity and Similarity Data of the 2003 vegetation survey is assumed to be *Euphorbia fendleri*, Small Fendler's sandmat. This was deduced by comparing the species list found in the Similarity section of the results (page 13) and the similarity list found in Appendix 3. Twelve species are listed in both lists, and all are analogous species names with the exception of *Euphorbia fendleri* (in the Similarity section of the results) and the "purple" (found in the appendix list). Fendler's sandmat is a web like low growing plant with spade to oval shaped leaves and the stems are maroon or purple-red colored.

Fifteen Transects Were Surveyed:

In 2004, the reference area was surveyed for cover using 15 samples instead of 16. Minimum sample size is calculated using the following formula found in Appendix A of DOGM's Vegetation Information Guidelines (1992).

$$N_{\min} = (t^2 s^2) / (dx)^2$$

t = the value from appropriate t-table (2-tail test for premine studies, 1-tail test for revegetation success studies)

s = the sample standard deviation

d = the desired change in the mean

x = the sample mean of the parameter in question

All parameters should be tested at the 90% confidence level with a 10% change in the mean (*d* = 0.1).

Regardless of sample size requirements determined from the formula below, the minimum sample size listed for each method must be achieved. The required minimum sample number is 15 samples for point cover method as described in the guidelines.

After sampling the required 15 transects in the reference area, cover was totaled, averaged and the standard deviation of the mean was calculated. The mean cover was 43.2 and the standard deviation was 9.99.

In determining minimum sample size a t-table value of 1.761 was originally chosen. This is the value taken from a double t-tail table at the 90% confidence interval with 14 degrees of freedom. The equation for minimum sample size becomes:

$$N_{\min} = ((1.761^2) * (9.99^2)) / ((.1) * (43.2))^2 = 16.6 \text{ samples}$$

Page VIII –45 of the Horse Canyon MRP states, “All the revegetated sites would be sampled individually as defined on the reclamation treatments maps and compared with the results of the undisturbed communities and for sample adequacy. The comparisons will use the one-tailed t-test.”

The Vegetation Information Guidelines also state “1-tail test for revegetation success studies.” The 2004 vegetation study can be considered a revegetation success study in which case a 1 tail number should be selected from the table. $t_{.90} = 1.345$

$$N_{\min} = ((1.345^2) * (9.99^2)) / ((.1) * (43.2))^2 = 9.7 \text{ samples}$$

The equation produces a minimum sample size of 10 transects. In this case the required minimum of 15 samples would be adequate to reach the 90% confidence interval for comparison of cover data.

Greasewood:

Sarcobatus vermiculatus, greasewood, was identified in the 2004 vegetation survey. It was only found at one point on one transect in the reference area 2004 survey. This would place the specie's population at less than one percent of the total vegetation cover

within the reference area. The 2004 survey resulted in greasewood cover of 0.14% in Area 6, 0.4% in Area 11/13/14, and 1.4% in Area 15/17. With a cover percentage this low, it is possible that the random transects of the 2003 survey did not cross one of these plants. However, a coverage of 2.1% was found in Area 15/17 during the 2003 survey.

Cheat Grass Included in Grass Cover Data:

In order to meet success standards of 90% vegetation of the undisturbed reference area, the required vegetation cover for each revegetated area should be greater than 24.90% in 2003 and greater than 38.88% in 2004. If the percentage of cheat grass cover is omitted from the total grass and vegetation cover percentages, the total vegetation cover of each area meets the required 90% cover of the reference area. The following tables shows cover percentages for the revegetated areas. The total cheat grass cover, grass cover and vegetation cover are included.

2003 Cover Data

Cover Type	Area						
	Ref	3	6	7	11,13,14	15,17	16
Cheat Grass %	2	4.1	27.1	22.1	15.7	19.1	6.5
Total Grass %	10.53	46.53	54.53	25.87	42.8	41.87	42.1 3
Total Vegetation %	32.83	86.13	89.07	77.33	72.53	77.33	66.2 7
Grass % w/out Cheat	8.53	42.43	27.43	3.77	27.1	22.77	35.6 3
Veg % w/out Cheat	30.83	82.03	61.97	55.23	56.83	58.23	59.7 7

2004 Cover Data

Cover Type	Area						
	Ref	3	6	7	11,13,14	15,17	16
Cheat Grass %	0.4	0.14	12.8	16.94	18.94	9.74	13.2
Total Grass %	15.6	33.73	44	25.47	50.13	33.6	42
Total Vegetation %	43.2	88.53	85.33	83.73	80.93	70.8	74.1 3
Grass % w/out Cheat	15.2	33.59	31.2	8.53	31.19	23.86	28.8
Veg % w/out Cheat	42.8	88.39	72.53	66.79	61.99	61.06	60.9 3

Weed Control:

On August 3, 2009, a biologist and a botanist from EIS, a consultant for UtahAmerican Energy, visited the revegetated areas with the purpose of determining if noxious weeds were present. The revegetated areas have grown with dense desirable vegetation. Common mullein, *Verbascum thapsus*, and cheat grass, *Bromus tectorum*, are the only invasive species of plants growing within the revegetated areas. Neither of these species are considered noxious by Emery County or the State of Utah. The vegetation in the bond release areas has developed into a dense community and the majority of noxious weeds cannot grow outside of recently disturbed areas.

Areas donated to the College of Eastern Utah did contain noxious weeds. The area surrounding the water tank had a sparse population of musk thistle. The disturbed area surrounding the powder magazine had less than ten individual Canadian thistle and hounds tongue plants. The buildings within the fenced area had giant ragweed and Canadian thistle. Curly cup gum weed, an invasive but not a noxious weed, was found near the buildings and alongside the county road.

Canadian thistle and halogeton can be found within 5 feet of the running surface of the county road for the entire length of the mine areas. Noxious weed populations were found in open areas of recent or continuous disturbance. Tamarisk is found throughout the canyon in the bottom of the drainage.

The areas on the side of the county road fall within the county's right-of-way and are maintained by the county. Lands donated to CEU are not part of any revegetated area and will remain after phase III bond release.

A weed control program implemented by UEI should not be required as no noxious weeds are present in the lands considered for phase III bond release. After the phase III release is granted UEI will not be required to be responsible for weed management in the revegetated areas.

Photographs taken August 3, 2009



Water tank and land donated to CEU – musk thistle found but not in dense population



Water tank and land donated to CEU – photograph shows no dense thistle growth



Powder magazine and land donated to CEU – Canadian thistle found but not in dense population



Bond release area east of portal area – no noxious weeds present



Land donated to CEU in portal area – no noxious weeds present



Land donated to CEU in portal area – no noxious weeds present



Bond release area south of portal area – no noxious weeds present



Bond release area across canyon from portal area – no noxious weeds present



Land donated to CEU and bond release area east of buildings – no noxious weeds present



Bond release area on hillside near buildings – no noxious weeds present



Bond release area north of bridge facing up canyon – no noxious weeds present

II.A.4. Reclamation treatments, areas and work accomplished

The following MRP Chapters address the information required:

Reclamation areas and plan	Chapter 3, Volume I
Postmining Topography	Chapter 3, Volume I
Drainage Control	Chapter 3, Volume I
Vegetation	Chapter VIII, Volume IV
Land Use	Chapter X, Volume IV

*** The Post Mine Land Use Change including the CEU donation area is included in Appendix X-4.

Roads

All roads were reclaimed except for the Horse Canyon (Range Creek) public road. All reclaimed roads are included on the maps in the areas designated "Phase III Reclaimed Areas." The roads were reclaimed according to the approved MRP. A short road will be needed to access the Road Junction Refuse Pile channel that sustained storm damage as shown on Map III-2A. This road will be opened up to access the channel for repairs and will be immediately reclaimed and seeded during the first available reclamation season according to the approved MRP.

II.A.5. Mining history and reclamation activities

The Horse Canyon Mine was initially opened by the Defense Plant Corporation in 1942 as a source for coal for the Geneva Steel Works in Orem, Utah. The mine was sold to U.S. Steel in 1946, who operated it until January 1984, when mining was permanently suspended. U.S. Steel submitted a mining and reclamation permit application in March, 1981. In October 1982, U.S. Steel informed the Division that it was temporarily suspending mining operations, and in January 1984 permanent suspension was announced.

In November 1984, Kaiser Steel Corporation purchased the mine property and submitted a reclamation bond in the amount of \$918,649, and indicated to the Division that it would maintain the operations in a temporary suspension status until further corporate decisions were made. In February 1987, Kaiser Coal, successor to Kaiser Steel filed a petition for bankruptcy under Chapter 11, Title 11, of the U.S. Bankruptcy Code. Intermountain Power Agency (IPS) acquired the mine and the permit was transferred to IPA in August 1990. IPA was issued a mining and reclamation plan on May 6, 1991, and a reclamation bond in the amount of \$1,950,000 was issued in the form of a letter of credit.

Reclamation work proceeded on 51.56 acres of the 74.26 acres in 1990 and 1991. Phase I bond release was granted on February 5, 1997 for \$812,276. Phase II bond release application was submitted on December 19, 1997.

UtahAmerican Energy, Inc. acquired the mine from IPA on December 21, 1998. Phase II bond release was granted on April 11, 2002.

II.A.6. Extended Responsibility

One area of extended responsibility period for the Horse Canyon Mine is shown on Map III-2A consisting of a short access road to the channel that sustained storm runoff damage, and the channel repair area. This area and road consist of 0.49 acres.

II.A.7. Remaining sediment control structures

There are no remaining sediment control structures that need to be removed.

II.A.8. Schedule and cost estimate for remaining reclamation

Phase II Bond release has been granted; this application is for Phase III bond release, completing the reclamation process, except for the 0.49 acre area on the Road Junction Refuse Pile where the channel will be repaired.

With the post mine land use change for the CEU donation, all un-reclaimed facilities and land have been removed from permit responsibility.

II.A.9. Summary of bond acreages, dates of bond releases

Date	Status	Amount	Acreages
11 Nov 84	Initial Kaiser Bond	\$ 918,649	74.26 Disturbed
6 May 91	IPA Bond	\$ 1,950,000	74.26 Disturbed
5 Feb 97	Phase I Bond Release (IPA)	\$ 812,726	74.26 - 51.56 = 22.7 Balance
15 Sept 98	Intital Horse Canyon Bond (UAE)	\$ 1,137,726	22.7 Disturbed Remaining
24 Jan 01	Adjustment at permit renewal by \$115,274	\$ 1,253,000	22.7 Disturbed Remaining
11 Apr 02	Phase II Bond Released \$191,672	\$ 1,061,328	22.7 Disturbed Remaining
25 Feb 04	Post Mine Land Use Change Approved including 16.18 acres	No Change	22.7 -16.18 = 6.52 Remaining
	Phase III Bond Release Application	\$1,053,328	91..48 = 91..48 Ph III
	Road Junction Refuse Pile Channel & Access Road (.49 Ac)	\$8,000	0.49 Remaining

^A Refer to Section II.A.1 on page 2 of this application for an explanation of the 6.5 acres.

WordPerfect Document Compare Summary

Original document: C:\Lila\Correspondance\2009\Submittals\09-007 Phase III final Responses\Bond Release Application Text 09-001.wpd

Revised document: @PFDesktop\MyComputer\C:\Lila\Correspondance\2009\Submittals\09-007 Phase III final Responses\Bond Release Application Text 09-007.wpd

Deletions are shown with the following attributes and color:

~~Strikeout~~, **Blue** RGB(0,0,255).

Deleted text is shown as full text.

Insertions are shown with the following attributes and color:

Double Underline, **Redline**, **Red** RGB(255,0,0).

The document was marked with 152 Deletions, 160 Insertions, 0 Moves.

2004	Area						
	Ref	3	6	7	11,13,14	15,17	16
Vegetation Cover Average	43.20	88.53	85.33	83.73	80.93	70.80	74.13
Average Woody Plant Densities	1112.23	1794.67	3905.88	4817.7 4	1542.02	2247. 7	2572.94
# of Species with Greater Than 5% Cover	2	5	4	4	4	4	4

The larger percentages of vegetation cover in the revegetated sites provide evidence that the revegetated sites have as much or more vegetation than the reference area. Greater woody plant densities in the revegetated sites than in the reference area show that the requirements of woody plant densities have been met. All revegetated sites have a greater number of species with more than five percent cover than the reference area. Percent cover, woody density, and species diversity in the revegetated areas exceed those found in the reference area and the revegetated areas should be found to have equaled or surpassed the requirements for revegetation.

~~Vegetation data that demonstrates that 80% of the woody vegetation in the revegetated areas has been in place for 60% of the liability period has not been recorded. The following table displays the woody~~

The vegetation cover for revegetation areas in 2003 and 2004 exceeds the cover of the reference area in both years. The commitment for vegetation cover reaching 90% of the reference area has been achieved.

Page 19 and 20 in the 2003 vegetation survey and pages 20-22 in the 2004 vegetation survey display similarity results according to requirements described in the MRP. Quantitative and qualitative survey and monitoring methods have been in accordance with the MRP. As described in each of the vegetation surveys, random sampling points were chosen for point intercept method to determine cover. Woody plant densities were determined by the belt-transect method described by the MRP. Sampling adequacy was maintained at a 90% confidence interval with the samples within 10% of the mean and compared to undisturbed communities. Woody plant density averages for years 1996, 2003, and 2004:

have exceeded 90% of the reference area and exceeded the 2,000 stems per acre

requirement with a 90% confidence interval.

The Stem Density on the Revegetated Sites Must Meet the Goal of 2,000 Stems Per Acre:

Page VIII – 45 of the Horse Canyon Mine Reclamation Plan states that in order to meet success standards, the woody stem density must reach 2,000 stems per acre. The table below shows the woody stem densities results of the previous vegetation studies.

Woody Plant Density Averages

Year	Area						
	Ref	3	6	7	11,13,14	15,17	16
1996		2744	6181		4144	5248	5116
2003	659.21	1957.3	3891.36	5180.74	1771.41	2625.22	2883.67
2004	1112.23	1794.67	3905.88	4817.74	1542.02	2247.7	2572.94

Densities shown as Plants per Acre

Dominant Woody Plant Species

YearArea

~~Ref36711,13,1415,17161996ARTR, ATGA, CHVIARTR, ATGA, CELAARTR, CHVIARTR, ATGAARTR, ATCAARTR, ATGA2003GUSA, JUOSARTR, ATGA, CHVIARTR, ATGA, CHVIARTR, ATGAARTR, ATGAARTR, ATGAARTR, ATGA2004GUSA, JUOSARTR, ATGA, CHNAARTR, ATGA, CHVIARTR, ATGAARTR, ATGAARTR, ATGAARTR, ATGA, CHNA, ATCOARTR – *Artemisia tridentata*~~
 ATGA – *Atriplex canescens*
 ATCO – *Atriplex confertifolia*
 CELA – *Ceratoides lanata*
 CHNA – *Chrysothamnus nauseosus*
 CHVI – *Chrysothamnus viscidiflorus*

The dominant species in each

In 1996, the average woody stem density for the revegetated area have been recorded with each vegetation survey. The dominant species in each area recorded in the 2003 and 2004 surveys are consistent with the areas (excluding area 7) was 4686.6 plants per acre. In 2003, the woody stem density averaged for revegetated areas was 3051.6 plants per acre. In 2004, woody stem density averaged 2813.5 plants per acre.

~~In each of these~~ vegetation survey results of 1996. This would lead to the conclusion that the majority of woody plants recorded in the 2003 and 2004 surveys have survived since 1996 and would demonstrate that the dominant species in each area have established themselves into a healthy and sustained population.

surveys, the revegetated area's average exceeded the required density of 2,000 stems per acre and reclamation for woody plants should be considered successful.

Slope Area Surveys Have No Woody Plant or Composition Data:

Surveys of five additional sloped areas were surveyed for the purposes of precipitation runoff estimates and erosion indication. These five areas were not surveyed for the purpose of documenting the Phase III vegetation survey requirement and therefore do not require woody plant density and species composition surveys.

Purple Plant Not Identified in Vegetation Survey:

The purple plant listed in Appendix 3: Diversity and Similarity Data of the 2003 vegetation survey is assumed to be *Euphorbia fendleri*, Small Fendler's sandmat. This was deduced by comparing the species list found in the Similarity section of the results (page 13) and the similarity list found in Appendix 3. Twelve species are listed in both lists, and all are analogous species names with the exception of *Euphorbia fendleri* (in the Similarity section of the results) and the "purple" (found in the appendix list). Fendler's sandmat is a web like low growing plant with spade to oval shaped leaves and the stems are maroon or purple-red colored.

Fifteen transects:

~~The logic for conducting 15 surveys instead of the recommended 16 was to "keep sampling consistent and avoid excessive disturbance to sites" so a minimum of 15 transects was selected.~~

**Greasewood:
Were Surveyed:**

In 2004, the reference area was surveyed for cover using 15 samples instead of 16.

Minimum sample size is calculated using the following formula found in Appendix A of DOGM's Vegetation Information Guidelines (1992).

$$N_{\min} = (t^2 s^2) / (dx)^2$$

t = the value from appropriate t-table (2-tail test for premine studies, 1-tail test for revegetation success studies)

s = the sample standard deviation

d = the desired change in the mean

x = the sample mean of the parameter in question

All parameters should be tested at the 90% confidence level with a 10% change in the mean (d = 0.1).

Regardless of sample size requirements determined from the formula below, the minimum sample size listed for each method must be achieved. The required minimum sample number is 15 samples for point cover method as described in the guidelines.

After sampling the required 15 transects in the reference area, cover was totaled, averaged and the standard deviation of the mean was calculated. The mean cover was 43.2 and the standard deviation was 9.99.

In determining minimum sample size a t-table value of 1.761 was originally chosen. This is the value taken from a double t-tail table at the 90% confidence interval with 14 degrees of freedom. The equation for minimum sample size becomes:

$$N_{\min} = ((1.761^2) * (9.99^2)) / ((.1) * (43.2))^2 = 16.6 \text{ samples}$$

Page VIII -45 of the Horse Canyon MRP states, "All the revegetated sites would be sampled individually as defined on the reclamation treatments maps and compared with the results of the undisturbed communities and for sample adequacy. The comparisons will use the one-tailed t-test."

The Vegetation Information Guidelines also state "1-tail test for revegetation success studies." The 2004 vegetation study can be considered a revegetation success study in which case a 1 tail number should be selected from the table. $t_{90} = 1.345$

$$N_{\min} = ((1.345^2) * (9.99^2)) / ((.1) * (43.2))^2 = 9.7 \text{ samples}$$

The equation produces a minimum sample size of 10 transects. In this case the required minimum of 15 samples would be adequate to reach the 90% confidence interval for comparison of cover data.

Greasewood:

Sarcobatus vermiculatus, greasewood, was identified in the 2004 vegetation survey. It was only found at one point on one transect in the reference area 2004 survey. This would place the specie's population at less than one percent of the total vegetation cover within the reference area. The 2004 survey resulted in greasewood cover of 0.14% in Area 6, 0.4% in Area 11/13/14, and 1.4% in Area 15/17. With a cover percentage this low, it is possible that the random transects of the 2003 survey did not cross one of these plants. However, a coverage of 2.1% was found in Area 15/17 during the 2003 survey.

Cheat Grass Included in Grass Cover Data:

In order to meet success standards of 90% vegetation of the undisturbed reference area, the required vegetation cover for each revegetated area should be greater than 24.90% in 2003 and greater than 38.88% in 2004. If the percentage of cheat grass cover is omitted from the total grass and vegetation cover percentages, the total vegetation cover of each area meets the required 90% cover of the reference area. The following tables shows cover percentages for the revegetated areas. The total cheat grass cover, grass cover and vegetation cover are included.

2003 Cover Data

Cover Type	Area						
	Ref	3	6	7	11,13,14	15,17	16
Cheat Grass %	2	4.1	27.1	22.1	15.7	19.1	6.5
Total Grass %	10.53	46.53	54.53	25.87	42.8	41.87	42.13
Total Vegetation %	32.83	86.13	89.07	77.33	72.53	77.33	66.27
Grass % w/out Cheat	8.53	42.43	27.43	3.77	27.1	22.77	35.63
Veg % w/out Cheat	30.83	82.03	61.97	55.23	56.83	58.23	59.77

2004 Cover Data

Cover Type	Area						
	Ref	3	6	7	11,13,14	15,17	16
Cheat Grass %	0.4	0.14	12.8	16.94	18.94	9.74	13.2
Total Grass %	15.6	33.73	44	25.47	50.13	33.6	42
Total Vegetation %	43.2	88.53	85.33	83.73	80.93	70.8	74.13
Grass % w/out Cheat	15.2	33.59	31.2	8.53	31.19	23.86	28.8
Veg % w/out Cheat	42.8	88.39	72.53	66.79	61.99	61.06	60.93

Weed Control:

On August 3, 2009, a biologist and a botanist from EIS, a consultant for UtahAmerican Energy, visited the revegetated areas with the purpose of determining if noxious weeds were present. The revegetated areas have grown with dense desirable vegetation. Common mullein, *Verbascum thapsus*, and cheat grass, *Bromus tectorum*, are the only invasive species of plants growing within the revegetated areas. Neither of these species are considered noxious by Emery County or the State of Utah. The vegetation in the bond release areas has developed into a dense community and the majority of noxious weeds cannot grow outside of recently disturbed areas.

Areas donated to the College of Eastern Utah did contain noxious weeds. The area surrounding the water tank had a sparse population of musk thistle. The disturbed area surrounding the powder magazine had less than ten individual Canadian thistle and hounds tongue plants. The buildings within the fenced area had giant ragweed and Canadian thistle. Curly cup gum weed, an invasive but not a noxious weed, was found near the buildings and alongside the county road.

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