CHAPTER 1
INTRODUCTION
TABLE OF CONTENTS

Section                      Page
1.1 Introduction            1-1

LIST OF PLATES

PLATE 1-1       PERMIT AND DISTURBED AREA
CHAPTER 1
INTRODUCTION

The Wasatch Plateau area of Carbon County, Utah, contains seams of high quality bituminous coal with a long history of coal mining activities. The Horizon No. 1 Mine is located in Consumers Canyon approximately 14 miles northwest of Price, Utah.

The surface facilities, diversions, culverts, and the sedimentation pond will be installed in compliance with Utah Division of Oil, Gas and Mining (UDOGM) regulations.

The permit area (Plate 1-1) is characterized by steep, narrow canyons containing conspicuous sandstone cliffs. Intermittent and perennial streams occupy the drainages. The complex geological and geomorphological conditions have produced a variety of site specific soils that support a variety of vegetation communities. The area supports a variety of wildlife.

A distinction of an underground mine is its minimal effect on the ecosystems. The relatively small scale of surface disturbance when operated with proper drainage and sedimentation controls, causes negligible impact to the prevailing hydrologic balance of the area. Subsidence, a potential problem with any underground mining, will be monitored as mining progresses. The temporary loss of wildlife habitat due to the construction of surface facilities is negligible in light of the available nearby habitat. Upon cessation of mining and portal scaling, the reestablishment of final topography and drainage will proceed. Revegetation of disturbed areas will replace native habitat and restore the land to accommodate proposed post-mining land use(s).

Lodestar Energy Inc. has assigned ownership of this permit application to Hidden Splendor Resources, Inc. All references in the text, tables, figures, plates, public documents, and consultant reports will hereafter apply to Hidden Splendor Resources Inc., and Horizon Mine No. 1.
INTRODUCTION
Legal and Financial
Operation and Reclamation Plan
Land Status, Land Use and Post-Mining Land Use
Cultural and Paleontological Resources
Geology
Hydrology
Soil Resources
Vegetation Resources
Fish and Wildlife Resources
Climatology and Air Quality
CHAPTER 2
LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>MINIMUM REQUIREMENTS FOR LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION</td>
</tr>
<tr>
<td>111</td>
<td>Introduction</td>
</tr>
<tr>
<td>112</td>
<td>Identification of Interests</td>
</tr>
<tr>
<td>112.100</td>
<td>Business Entity</td>
</tr>
<tr>
<td>112.200</td>
<td>Applicant and Operator</td>
</tr>
<tr>
<td>112.300</td>
<td>Officers of the Applicant</td>
</tr>
<tr>
<td>112.400</td>
<td>Coal Mining and Reclamation Operation Owned or Controlled</td>
</tr>
<tr>
<td>112.500</td>
<td>Legal or Equitable Owner of the Surface and Mineral Properties</td>
</tr>
<tr>
<td>112.600</td>
<td>Owners of Record of Property Contiguous to Proposed Permit Area</td>
</tr>
<tr>
<td>112.700</td>
<td>MSHA Numbers</td>
</tr>
<tr>
<td>112.800</td>
<td>Interest in Contiguous Lands</td>
</tr>
<tr>
<td>112.900</td>
<td>Certification of Submitted Information</td>
</tr>
<tr>
<td>113</td>
<td>Violation Information</td>
</tr>
<tr>
<td>114</td>
<td>Right-of-Entry Information</td>
</tr>
<tr>
<td>115</td>
<td>Status of Unsuitability Claims</td>
</tr>
<tr>
<td>116</td>
<td>Permit Term</td>
</tr>
<tr>
<td>117</td>
<td>Insurance, Proof of Publication, and Facilities and Structures Used in Common</td>
</tr>
<tr>
<td>118</td>
<td>Filing Fee</td>
</tr>
<tr>
<td>120</td>
<td>PERMIT APPLICATION FORMAT AND CONTENTS</td>
</tr>
<tr>
<td>130</td>
<td>REPORTING OF TECHNICAL DATA</td>
</tr>
<tr>
<td>140</td>
<td>MAPS AND PLANS</td>
</tr>
<tr>
<td>150</td>
<td>COMPLETENESS</td>
</tr>
</tbody>
</table>
LIST OF APPENDICES

Appendix

2-1 LEASE DOCUMENTS
2-2 INSURANCE AND NEWSPAPER ACKNOWLEDGMENTS
2-3 RIGHT-OF-WAY APPLICATION AND BEAVER CREEK LEASE
2-4 ENTITY REFERENCE FILE
2-5 ENVIRONMENTAL ASSESSMENT
2-6 UPDES PERMIT
Licenses and permits needed to conduct a coal mining operation are listed below.

**LICENCES & PERMITS - HORIZON MINE**

<table>
<thead>
<tr>
<th>PERMIT</th>
<th>ISSUING AUTHORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>C/007/020</td>
<td>Division of Oil, Gas, &amp; Mining</td>
</tr>
<tr>
<td></td>
<td>1594 West North Temple, Suite 1210</td>
</tr>
<tr>
<td></td>
<td>P.O. Box 145801</td>
</tr>
<tr>
<td></td>
<td>Salt Lake City, Utah 84114-5801</td>
</tr>
<tr>
<td>Construction &amp; Air Quality</td>
<td>Division of Air Quality</td>
</tr>
<tr>
<td>DAQE-700-00</td>
<td>288 No. 1640 West</td>
</tr>
<tr>
<td></td>
<td>P.O. Box 16690</td>
</tr>
<tr>
<td></td>
<td>Salt Lake City, Utah 84116-0690</td>
</tr>
<tr>
<td>Construction, Sedimentation Pond and</td>
<td>Division of Water Pollution Control</td>
</tr>
<tr>
<td>Drainage System</td>
<td>288 No. 1460 West</td>
</tr>
<tr>
<td></td>
<td>P.O. Box 16690</td>
</tr>
<tr>
<td></td>
<td>Salt Lake City, Utah 84116-0690</td>
</tr>
<tr>
<td>Water Rights (leased)</td>
<td>Division of Water Rights</td>
</tr>
<tr>
<td></td>
<td>453 S. Carbon Avenue</td>
</tr>
<tr>
<td></td>
<td>Price, Utah 84501</td>
</tr>
<tr>
<td>Construction Sewer Facilities</td>
<td>Southeastern Utah Health District</td>
</tr>
<tr>
<td></td>
<td>6 East Main Street</td>
</tr>
<tr>
<td></td>
<td>Price, Utah 84501</td>
</tr>
<tr>
<td>Carbon County Planning &amp; Zoning</td>
<td>Carbon County Courthouse</td>
</tr>
<tr>
<td></td>
<td>Price, Utah 84501</td>
</tr>
<tr>
<td>UPDES (UTG040019)</td>
<td>State of Utah</td>
</tr>
<tr>
<td></td>
<td>Department of Environmental Quality</td>
</tr>
<tr>
<td></td>
<td>Water Quality Division</td>
</tr>
<tr>
<td></td>
<td>288 No. 1460 West</td>
</tr>
<tr>
<td></td>
<td>Salt Lake City, Utah 84114-4870</td>
</tr>
<tr>
<td>MSHA (see Section 112.700)</td>
<td>U.S. Department of Labor</td>
</tr>
<tr>
<td></td>
<td>Mine Safety and Health Administration</td>
</tr>
<tr>
<td></td>
<td>P.O. Box 25367</td>
</tr>
<tr>
<td></td>
<td>Denver, Colorado 80225</td>
</tr>
</tbody>
</table>
CHAPTER 2

LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

110 MINIMUM REQUIREMENTS FOR LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

111 Introduction

The Wasatch Plateau area of Carbon County, Utah, contains seams of high quality bituminous coal with a long history of coal mining activities. The Horizon Mine is located in Consumers Canyon approximately 14 miles northwest of Price, Utah.

The surface facilities, diversions, culverts and the sedimentation pond were installed in compliance with Utah Division of Oil, Gas and Mining (UDOGM) regulations.

The permit area (Plate 1-1) is characterized by steep, narrow canyons containing conspicuous sandstone cliffs. Intermittent and perennial streams occupy the drainages. The complex geological and geomorphological conditions have produced a variety of site specific soils that support a variety of vegetation communities.

A distinction of an underground mine is its minimal effect on the ecosystems. The relatively small scale of surface disturbance when operated with proper drainage and sedimentation controls, causes negligible impact to the prevailing hydrologic balance of the area. Subsidence, a potential problem with any underground mining, will be monitored as mining progresses. The temporary loss of wildlife habitat due to the construction of surface facilities is negligible in light of the available nearby habitat. Upon cessation of mining and portal sealing, the reestablishment of final topography and drainage will proceed. Revegetation of disturbed areas will replace native habitat and restore the land to accommodate proposed post-mining land use(s).

The information contained in this section is intended to fulfill the requirements of R645-301-100 and to ensure that all relevant information on the ownership and control of the mining activities is supplied to the regulatory agency(s).

112 Identification of Interests

112.100 Business Entity

Hidden Splendor Resources, Inc. is incorporated under the laws of the State of Nevada and is in good standing and has legal corporate existence.
112.200 Assignment of Permit Applicant and Mine Operator

The permit applicant and mine operator is:

Hidden Splendor Resources, Inc.
57 West 200 South, Suite 400
Salt Lake City, Utah 84101
Telephone: (801) 521-3292
Employer I.D. No. 88-0315046

Applicant's Resident Agent:

The resident agent who will accept service of process is:

Alexander H. Walker, III
57 West 200 South, Suite 400
Salt Lake City, Utah 84101
(801) 521-3292

The abandoned mine land reclamation fee will be paid by:

Mike Tomlin – Controller*
3266 South 125 West
Price, Utah 84501
Telephone: (435) 636-0820

*This person will cause the physical check for this payment to be written and sent. He is not personally liable for the payment.

112.300 Officers of the Applicant – Hidden Splendor Resources, Inc.

Listed on Page 2-2A

Officers of America West Resources

Listed on Page 2-2A

Directors of America West Resources

Listed on Page 2-2A

112.340 Statement Regarding Columbia Exploration Well Permit – X/007/0044

America West Resources, Inc. entered into a Coal Mining Lease and Option to purchase agreement with C&P Coal Associates on or about July 2, 2008. Under the terms of that Agreement, America West leased the coal property commonly known as the Columbia Coal Mine located in Carbon County, Utah. With that lease came the right to utilize well Permit X/007/0044. The operation of the Horizon Mine is not related to the Columbia Mine or permits related to that mine other than the owner and operator of the Horizon Mine, Hidden Splendor Resources, Inc., is a wholly-owned subsidiary of America West Resources, Inc.
### Hidden Splendor
Officer and Director Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Start Date</th>
<th>End Date</th>
<th>SNN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cecil Ann Walker</td>
<td>President &amp; Director</td>
<td>Prior to Permit</td>
<td></td>
<td>2400</td>
</tr>
<tr>
<td>Alexander Walker III</td>
<td>Vice President &amp; Director</td>
<td>Prior to Permit</td>
<td></td>
<td>0223</td>
</tr>
<tr>
<td>Alexander Walker III</td>
<td>President, Secretary &amp; Director</td>
<td>22-Feb-08</td>
<td>Present</td>
<td>0223</td>
</tr>
<tr>
<td>Amanda Cardulli</td>
<td>Treasurer &amp; Director</td>
<td>Prior to Permit</td>
<td></td>
<td>0223</td>
</tr>
</tbody>
</table>

### STATE OF UTAH
COUNTY OF CARBON

On the 30th day of June, 2006, personally appeared before me, Alexander H. Walker III, the Secretary of Hidden Splendor Resources, Inc. and the signor of the forgoing, who duly acknowledged to me that he signed the same.

[Signature]

### America West Resources, Inc.
Officer and Director Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Start Date</th>
<th>End Date</th>
<th>SNN</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>John E. Durbin</td>
<td>Chief Financial Officer</td>
<td>Jan-09</td>
<td>Present</td>
<td>6419</td>
<td>433-636-0820</td>
</tr>
<tr>
<td>George Jarkesy</td>
<td>Director</td>
<td>Dec-07</td>
<td>Present</td>
<td>2353</td>
<td>433-636-0820</td>
</tr>
<tr>
<td>Brian Rodriguez</td>
<td>Chief Financial Officer</td>
<td>Dec-07</td>
<td>Jan-09</td>
<td>1193</td>
<td>433-636-0820</td>
</tr>
<tr>
<td>Brian Rodriguez</td>
<td>Director</td>
<td>Dec-07</td>
<td>Present</td>
<td>7873</td>
<td>433-615-0820</td>
</tr>
<tr>
<td>Dan R. Baker</td>
<td>President, CEO</td>
<td>Aug-07</td>
<td>Jul-08</td>
<td>7873</td>
<td>433-636-0820</td>
</tr>
<tr>
<td>Dan R. Baker</td>
<td>Director</td>
<td>Aug-07</td>
<td>Jul-08</td>
<td>7873</td>
<td>433-636-0820</td>
</tr>
<tr>
<td>Alexander Walker III</td>
<td>President, CEO</td>
<td>Aug-07</td>
<td>Jul-08</td>
<td>0223</td>
<td>433-615-0820</td>
</tr>
<tr>
<td>Alexander Walker III</td>
<td>Director</td>
<td>Aug-07</td>
<td>Present</td>
<td>0223</td>
<td>433-615-0820</td>
</tr>
<tr>
<td>Alexander Walker III</td>
<td>Board Chair/Secretary</td>
<td>Jul-08</td>
<td>Present</td>
<td>0223</td>
<td>433-636-0820</td>
</tr>
</tbody>
</table>

### Abandon Mine Fee Payment

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Telephone Number</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mike Tomlin</td>
<td>3360 South 125 West</td>
<td>435-636-0820</td>
<td>Controller</td>
</tr>
</tbody>
</table>

* This person will cause the physical check for this payment to be written and sent. He is not personally liable for the payment.

### America West Resources, Inc.
Information

Federal Identification Number: 84-11282136
Telephone Number: 425-636-0820

INCORPORATED
SEP 09 2009
Div. of Oil, Gas & Mining
112.400 Coal Mining and Reclamation Operation Owned or Controlled

Hidden Splendor Resources, Inc., a Nevada Corporation, owns and operates the Horizon Mine. Hidden Splendor Resources, Inc. is a wholly-owned subsidiary of America West Resources, Inc., a Nevada Corporation. That is, America West owns 100% of the issued and outstanding shares of Hidden Splendor. America West Resources, Inc. is a public corporation. Its shares are traded on the Over the Counter Bulletin Board under the symbol AWSR, and its shares are owned by hundreds of different shareholders.

America West Resources, Inc. Information on Page 2-2A

112.500 Legal or Equitable Owner of the Surface and Mineral Properties

The legal and equitable owners of the surface and mineral properties to be directly affected by this mining operation during the duration of the permit period are:

Hidden Splendor Resources
50 West Liberty Street, Suite 880
Reno, NV 89501

United States of America
Bureau of Land Management
2370 South 2300 West
West Valley City, Utah 84084

Steve and Pete (Jr.) Stamatakis
1111 South 450 West
Price, Utah 84501

Roy M. and Tessie K. Farley
5240 So. Highland Drive
Salt Lake City, Utah 84117

Arthur J. Anderson, Et al
4190 Fortuna Way
Salt Lake City, Utah 84117

J. Mark & James Jacobs
734 South Cherry Drive
Orem, Utah 84057

Surface and coal ownership are shown on Plates 4-2 and 4-3.
112.600 Owners of Record of Property Contiguous to Proposed Permit Area

Owners of Surface Properties

1. U P & L  
P.O. Box 899  
Salt Lake City, Utah 84110

2. Hidden Splendor Resources  
50 West Liberty Street, Suite 880  
Reno, NV 89501

3. J. Mark & James Jacobs  
734 S. Cherry Drive  
Orem, Utah 84057

4. Agnes and Eldred E. Peirce, Jr.  
3432 South 500 East  
Price, Utah 84501

5. Steve and Pete (Jr.) Stamatakis  
1111 South 450 West  
Price, Utah 84501

6. United States of America  
Bureau of Land Management  
2370 South 2300 West  
West Valley City, Utah 84084

7. Robert and Linda N. Jewkes  
Wellington, Utah 84542

8. Utah Division of Wildlife Resources  
455 West Railroad Avenue  
Price, Utah 84501

9. Carbon County  
Courthouse Building  
Price, Utah 84501

10. Arthur J. Anderson, Et al  
4190 Fortuna Way  
Salt Lake City, Utah 84117

11. L. & E. Brown Family, LC  
65 East 400 South  
Orem, Utah 84058
112.700 MSHA Numbers

The MSHA numbers issued April 20, 1995 by the Department of Labor to Horizon Mining, LLC have been transferred to Hidden Splendor Resources, Inc. as follows:

- Horizon Mine MSHA Number 42-02074
- Horizon No. 2 Mine MSHA Number 42-02075 (not opening at present time)

112.800 Interest in Contiguous Lands

Hidden Splendor currently owns the Federal Coal Lease UTU-74804 (by assignment from Lodestar Energy, Inc. ("Lodestar") filed with BLM for approval) which is contiguous to the current permit area, and has fee coal interests in SE1/4 SE1/4, E1/2 SW1/4 SE1/4 Section 17; and fee coal and surface interests in S1/2 NW1/4 SW1/4, W1/2 SW1/4 SE1/4 Section 17 and NE1/4 NW1/4, NW1/4 NE1/4 Section 20, Township 13 South, Range 8 East, SLM but has no interest, options or pending bids on other contiguous lands.

112.900 Certification of Submitted Information

Information submitted to the Division is certified as required by the UDOGM regulations.

113 Violation information

Neither America West Resources, Hidden Splendor nor any subsidiary, affiliate, member or manager, or persons controlled by or under common control with the applicant has had a federal or state mining permit suspended or revoked in the last five years; nor forfeited a mining bond or similar security deposited in lieu of bond.

There have been no violations in connection with permit C/007/020 for the Horizon Mine.

114 Right of Entry information

Under date of March 24, 2003, Lodestar by its Chapter 11 Trustee, pursuant to an Order dated March 18, 2003 by the U.S. Bankruptcy Court for the Eastern District of Kentucky, Lexington Division, assigned Hidden Splendor all right, title and interest in the Horizon Mine. The assignment was made subject to Division approval of the transfer of Mine Permit No. C/007/020. Concurrently, Lodestar, by its Trustee, also executed and delivered a Designation of Operator to Hidden Splendor covering the period prior to DOGM's approval of the permit transfer.

Hidden Splendor bases its right to enter and undertake coal mining on: (1) the Assignment from Lodestar by its Chapter 11 Trustee, pursuant to March 18, 2003 Order (Appendix 2-1); (2) the Designation of Operator executed by Lodestar (Appendix 2-1); and (3) the Federal coal lease UTU-74804 (Appendix 2-3). Horizon Mine was issued a Right-of-Way SL063011 through BLM lands in 1996 to facilitate mining.

The following is a description of the permit boundary for the Horizon Mine including the Hidden Splendor lease and a part of the Beaver Creek Tract coal lease UTU-74804 which was acquired on September 1, 1998.

Township 13 South, Range 8 East, SLM

Section 6: NW1/4SE1/4, SE1/4SW1/4, SW1/4SE1/4, SE1/4SE1/4.

Section 7: NW1/4, NE1/4, SE1/4, E1/2SW1/4, NW1/4SW1/4.

Section 8: S1/2NW1/4, NW1/4NW1/4, SW1/4NE1/4, SW1/4, W1/2SE1/4.

Section 17: NW1/4, W1/2NE1/4, NE1/4SW1/4, N1/2SE1/4SW1/4, N1/2NW1/4SW1/4, NW1/4SE1/4, N1/2SW1/4SE1/4.

Section 18: NE1/4NE1/4.

Containing 1,577 acres more or less consisting of 305 acres more or less of Fee coal (Hidden Splendor Resources) and 1,272 acres more or less of Federal leased coal.

The reclamation bond calculations include reclamation of 9.15 acres. The disturbed area is located within:

Township 13 South, Range 8 East, SLM

Section 17: Portion NW1/4NW1/4SE1/4 Portion NE1/4NE1/4SW1/4
Portion NW1/4NE1/4SW1/4 Portion SE1/4NE1/4SW1/4
Portion SW1/4NE1/4SW1/4

115 Status of Unsuitability Claims

The permit area is not within an area or under study as an area designated as unsuitable for mining under R645-103-400, nor has any petitions been filed with the UDOGM under R645-103-420 that could affect the proposed permit area (see Plate 1-1). No surface operations or facilities are located within 300 feet of an occupied dwelling or within 100 feet of a cemetery. A public road right-of-way passes through the permit area and provides access to public property. Coal haulage activities will occur within 100 feet of the public road right-of-way where the permit area road joins a public county road. Multiple letters were received from Carbon County during 1996 concerning the use of the county road(s) by the Horizon Mine, these letters are included in Appendix 3-1 and discussed in Chapter 3.

116 Permit Term

The Horizon Mine is proposed for a 5 year term under the Permanent Regulatory Program for 5
years. Chapter 3 discusses the extent of underground mining activities to be conducted over the 5 year permit term.

117 Insurance, Proof of Publication, and Facilities and Structures Used in Common

A copy of the Certificate of Insurance issued to Hidden Splendor Resources, Inc., is on file with the Division. Subsequent insurance renewal documents will be submitted to the Division and included in Appendix 2-2.

Notice of the permit transfer application was published in the Sun Advocate, Price, Utah on April 8, 2003. Proof of publication was submitted to the Division pursuant to R645-303-322 and a copy is included in Appendix 2-2.

118 Filing Fee

A copy of this permit application is on file with the Utah Division of Oil, Gas and Mining (UDOGM), P.O. Box 145801, Salt Lake City, Utah 84114-5801. A copy of the filing fee receipt is located in Appendix 2-2.

120 PERMIT APPLICATION FORMAT AND CONTENTS

This permit application will comply with R645-301-120.

130 REPORTING OF TECHNICAL DATA

All technical data submitted in the permit application will be accompanied by the name or organization responsible for the collection and analysis of data, dates of collection and descriptions of methodology used. Technical analyzes will be planned by or under the direction of a qualified professional in the subject to be analyzed.

140 MAPS AND PLANS

The maps and plans in the Mining and Reclamation Plan will correspond with the requirements in R645-301-140.

150 COMPLETENESS

Hidden Splendor believes the information in this permit application to be complete and correct.
Appendix 2-1
Lease Documents

Insert
March 18, 2003 Bankruptcy Court Order
Assignment of Permit
Assignment of Mining Leases, Water Leases, etc.
Assignment of Federal Lease UTU-74804
March 24, 2003 Designation of Operator
Hidden Splendor letter to be DO until permit transfer
April 16, 2003 BLM Transfer of Interest and Recognition of Name Change
APPENDIX 2-1
LEASE DOCUMENTS
IN THE UNITED STATES BANKRUPTCY COURT
FOR THE EASTERN DISTRICT OF KENTUCKY
(LEXINGTON DIVISION)

IN RE:
LODESTAR ENERGY, INC.
LODESTAR HOLDINGS, INC.
INDUSTRIAL FUELS MINERALS CO.
DEBTORS.

CHAPTER 11 PROCEEDING
CASE NOS. 01-50969,
01-50972 and 03-70015

Jointly Administered Under
Case No. 01-50969

Judge Joseph M. Scott, Jr.

ORDER PURSUANT TO §§ 105(A), 363, 365, 503 AND 507 OF THE BANKRUPTCY
CODE AUTHORIZING (A) SALE TO HIDDEN SPLendor Resources, LTD. OF
CERTAIN OF DEBTORS' PROPERTY FREE AND CLEAR OF ALL LIENS, CLAIMS
AND ENCUMBRANCES AND (B) ASSUMPTION AND ASSIGNMENT OF CERTAIN
UNEXPIRED REAL ESTATE LEASES AND EXECUTORY CONTRACTS

This matter came before this Court at a hearing (the "Sale Hearing") on January 31, 2003,
to consider approval of the sale of a portion of Lodestar Energy, Inc.'s, and Lodestar Holdings,
Inc.'s (collectively the "Debtors") property at auction (the "Auction") held on January 30, 2003,
to Hidden Splendor Resources, Ltd. ("Hidden Splendor") in accordance with the procedures set
forth in the (a) ORDER PURSUANT TO SECTIONS 105(A), 363, 365, 503 AND 507 OF THE
BANKRUPTCY CODE (I) AUTHORIZING AND SCHEDULING A PUBLIC AUCTION AND SALE OF
SUBSTANTIALLY ALL OF THE DEBTORS' PROPERTY FREE AND CLEAR OF ALL LIENS, CLAIMS
AND ENCUMBRANCES; (II) APPROVING PROCEDURES FOR THE SUBMISSION OF BIDS; (III)

INCORPORATED
APR 2 2004
DIV OF OIL GAS & MINING
approving cure amount procedures for assumed and assigned unexpired leases and executory contracts; (iv) scheduling a hearing to consider approval of the asset sale; and (v) approving the form and manner of notice of the auction and sale procedures pursuant to rule 2002 of the federal rules of bankruptcy procedure (doc. no. 1678), dated December 24, 2002 (the “sale order”) and (b) amended notice of auction, bidding procedures, assumption and assignment of executory contracts, unexpired leases, licenses and permits, and hearing for an order authorizing the sale of the debtors’ assets (doc. no. 1756) (“notice of bidding procedure”). the court, being fully advised of the relevant facts and having heard the arguments of counsel at the sale hearing, and after due deliberation and sufficient cause appearing therefor:

this court hereby finds that:

a. the court has jurisdiction over the matter pursuant to 28 u.s.c. §§ 157 and 1334.

b. notice of the sale hearing was adequate and sufficient under the circumstances and complied in all respects with the applicable provisions of the sale order, the notice of bidding procedures, the bankruptcy code, the bankruptcy rules and the local bankruptcy rules.

c. on january 23, 2003, hidden splendor submitted a good faith, bona fide offer (the “hidden splendor offer”) to purchase the property identified in numbered paragraph 1 below (the “horizon mine property”). the hidden splendor offer, as modified by hidden splendor’s stipulation to the debtor’s counsel dated january 29, 2003, was deemed by the debtors to qualify as an initial accepted offer (as defined in the notice of bidding procedures).

d. on january 23, 2003, hidden splendor filed an objection (doc. no. 1788) (the “hidden splendor objection”) in the form of a letter to the court, to the cure amount listed in
Exhibit A to the Debtors' NOTICE OF CURE CLAIMS PROCEDURE AND AMOUNT OF CURE CLAIMS FOR ASSUMPTION AND ASSIGNMENT OF EXECUTORY CONTRACTS, UNEXPIRED LEASES, LICENSES AND PERMITS IN CONJUNCTION WITH SALE OF DEBTORS' ASSETS for that certain Mining Lease (the "Mining Lease"), dated February 1, 1995, by and between Hidden Splendor, Owner, and Horizon Coal Corporation, Lessee, as amended by Amendment dated June 30, 1997 and Second Amendment dated November 1, 1998, which Mining Lease was subsequently assigned in 1999 to Lodestar Energy, Inc.

E. Hidden Splendor has made its own independent inspection of the Horizon Mine Property, any liabilities of the Debtors that will be assumed by Hidden Splendor in connection with its purchase thereof and all such other matters relating to or affecting the Horizon Mine Property as Hidden Splendor has deemed necessary and appropriate. Hidden Splendor has acknowledged that in proceeding with its purchase of the Horizon Mine Property and the assumption of all of the Debtors' rights, duties and obligations relating thereto, it has done so solely upon its independent inspection and investigation of the Horizon Mine Property.

F. In accordance with the sale procedures set forth in the Notice of Bidding Procedures (the "Sale Procedures"), Hidden Splendor has provided the Debtors with an Initial Deposit (as defined in the Notice of Bidding Procedures), equal to $10,000.00, corresponding to ten percent (10%) of its Initial Accepted Offer.

G. The Debtors determined at the Auction, which was conducted in accordance with the Sale Procedures, that the Hidden Splendor Offer was the highest and best offer and the Final Accepted Offer (as defined in the Notice of Bidding Procedures) for the Horizon Mine Property.
H. On January 31, 2003, the United States Trustee filed his Notice of Appointment of Chapter 11 Trustee, whereby Mr. William Bishop was appointed as the Chapter 11 Trustee (the "Trustee") in the Cases under section 1104 of the Bankruptcy Code.

I. Thereafter, an objection was made by Blue Ridge Services, LLC ("Blue Ridge") to the sale of certain equipment to Hidden Splendor. The matter was settled by the parties, with the settlement terms incorporated in that certain Order Approving Stipulation and Authorizing Sale to Blue Ridge of Certain of Debtors' Utah Properties ("Blue Ridge Order"), and also incorporated herein as set forth below. The Blue Ridge Objection was withdrawn. No other objections were made to the sale of the Horizon Mine Property to Hidden Splendor.

NOW, THEREFORE, IT IS ORDERED THAT:

1. The sale of the Horizon Mine Property (the "Sale"), at the Purchase Price (as defined in the Notice of Bidding Procedures) of $100,000.00, free and clear of all liens, claims and encumbrances (collectively, the "Liens"), pursuant to sections 365(f) and (m) of title 11 of the United States Code is hereby approved, contingent upon the closing of such sale (the "Closing") no later than 11 days after the date of the entry of this Order. The Closing may occur after 11 days after the entry of this Order upon the mutual consent of Hidden Splendor and the Trustee. For purposes of this Order, the Horizon Mine Property shall consist of:

   A. The Mining Lease, which includes all right, title and interest of Hidden Splendor in the following described lands situated in Carbon County, State of Utah:

   Township 13 South, Range 8 East, SLM

   Section 8:       SE\%SW\%
   Section 16:      W\%SE\%
   Section 17:      NW\%NE\%, W\%SE\%,
                    SE\%SE\%, S\%NW\%,
                    N\%SW\%, SE\%SW\%,
                    excluding a 66 foot right-of-
way within the E\(\frac{1}{2}\)SW\(\frac{1}{4}\)
referred to as the "Realigned
Parcel" and more particularly
described in Exhibit A to
Attachment I of the Lease

Section 20: NE\(\frac{1}{4}\)NW\(\frac{1}{4}\), NW\(\frac{1}{4}\)NE\(\frac{1}{4}\),
SE\(\frac{1}{4}\)NE\(\frac{1}{4}\)
Section 21: NW\(\frac{1}{4}\)NE\(\frac{1}{4}\)
Including a 66 foot wide roadway
containing approximately 1.31 acres
referred to as the "Vacated Parcel" and
more particularly described in Exhibit B to
Attachment I of the Lease

(containing in total 640.00 acres, more or less)

together with all dumps, plants, fixtures,
improvements, rights and privileges, in
anywise belonging.

B. United States Department of the Interior Bureau of Land Management Coal Lease
UTU-74804 (the "BLM Lease"), issued to Horizon Mining, LLC under date of September 1,
1998, pertaining to the following described lands:

Township 13 South, Range 8 East, SLM

Section 6: SE\(\frac{1}{4}\)SW\(\frac{1}{4}\), S\(\frac{1}{4}\)SE\(\frac{1}{4}\),
NW\(\frac{1}{4}\)SE\(\frac{1}{4}\)
Section 7: Lots 1-3, E\(\frac{1}{2}\), E\(\frac{1}{4}\)W\(\frac{1}{4}\)
Section 8: SW\(\frac{1}{4}\)NE\(\frac{1}{4}\), NW\(\frac{1}{4}\)NW\(\frac{1}{4}\),
S\(\frac{1}{4}\)NW\(\frac{1}{4}\), N\(\frac{1}{4}\)SW\(\frac{1}{4}\),
SW\(\frac{1}{4}\)SW\(\frac{1}{4}\), W\(\frac{1}{4}\)SE\(\frac{1}{4}\)
Section 17: N\(\frac{1}{4}\)NW\(\frac{1}{4}\), SW\(\frac{1}{4}\)NE\(\frac{1}{4}\)
Section 18: NE\(\frac{1}{4}\)NE\(\frac{1}{4}\)

C. Water Lease Agreement (the "Water Lease") between Florence A. Sweet and
Horizon Coal Corporation, dated May 1, 1993, pertaining to certain described water rights.

D. Water Right Lease and Sale Agreement (the "Water Right Lease") between
Mountain Coal Company and E. E. Peirce, dated April 7, 1993, assigned to Horizon Coal
Corporation under date of June 12, 1996, pertaining to certain described water rights.
E. Grant of Easement (the "Easement") dated January 3, 2001, by Steve Stamatakis
and Pete Stamatakis to Lodestar Energy, Inc., covering certain described lands.

F. All of the Debtors' interest in any and all cash bonds, accounts receivable,
inventory, machinery and equipment, general intangibles, contracts and leases, furniture, fixtures
and real property, permits, easements and any and all other property located on the Horizon Mine
premises as of the date of this Order, and specifically including those items identified as owned
or leased by Lodestar Energy, Inc. on the November 2002 Daley-Hodkin Appraisal Corporation
Horizon Mine Asset List ("List"), including the following items that are not presently located on
the Horizon Mine premises but are hereby deemed Horizon Mine Property and expressly subject
to this Order:

(a) Located at Oak Leaf Trucking in Loma, Colorado:
   1 Underground Roof Bolter Ingersoll/Rand TD2-43-5-AE
      Dual Mast, Electric
      w/ accessories
   1 Forklift Truck with accessories Caterpillar
   1 1991 Feeder Breaker

(b) Located at D&D Equipment & Supply in Helper, Utah:
   1 1977 Wheel Loader Caterpillar 980B
      w/ attachments

(c) Loaned to Genwall Resources Inc. in Huntington, Utah:
   1 Hydraulic Core Drill Hagby ONRAM 100
      w/ Hydraulic Power Pack.
Specifically excluded from this sale and Order are the following equipment on the List:

(a) the uninstalled belt conveyor which was located at Mountain States (including belting and rollers);

(b) 3 Ford pickup trucks.

2. Specifically excluded from the Horizon Mine Property and the Additional Utah Properties under the Blue Ridge Order are the following six pieces of equipment (the "Disputed Assets"), which Disputed Assets shall remain the property of the Debtors and the Debtors' estates to be dealt with as follows:

   One (1) Allis-Chalmers vibrator
   One (1) Jeffrey crusher
   Fletcher roof support cores, serial numbers 92900, 92901, 92902 and 92903

A. Consistent with the terms of the Blue Ridge Order, entered concurrently herewith and relative to the Disputed Assets, Blue Ridge, as agent for the Trustee, and without fee or commission other than the distribution provided below, shall sell the Disputed Assets, provided, however, no such sales shall occur until after the Court has entered the Blue Ridge Order and the Trustee has executed and delivered to Blue Ridge the Bill of Sale and Quit Claim Deed (both defined in the Blue Ridge Order) as required by paragraph 10 of the Blue Ridge Order, and that the Trustee shall review and approve all such sale(s) and execute the necessary documents to complete such sale(s).

B. All proceeds of all sales of the Disputed Assets shall be remitted to and made payable to the Trustee. All sales of the Disputed Assets shall be pursuant to arms length, good faith negotiations, and all sales shall be to parties that are not affiliated with the Trustee, the Debtors, Hidden Splendor or Blue Ridge.

C. All proceeds received by the Trustee from the sales of Disputed Assets shall be remitted by the Trustee, as follows: 50% to Blue Ridge and 50% to Hidden Splendor, provided,
however, that if the sale to Hidden Splendor pursuant to the Hidden Splendor Offer at the January 30, 2003, auction does not close by April 30, 2003, then all Proceeds shall be remitted to Blue Ridge and further provided, however, that the Proceeds from the sales of the Disputed Assets and the transfer of such Proceeds to Blue Ridge and Hidden Splendor, as provided above, shall not be subject to any prior liens, claims or encumbrances.

3. Contingent upon the Closing of the Sale of the Horizon Mine Property to Hidden Splendor and the application of the Cure Amount (as defined below) to the Purchase Price, the Hidden Splendor Objection is hereby withdrawn in its entirety.

4. To effectuate the sale to Hidden Splendor, the Trustee is hereby authorized, pursuant to section 365(b) of the Bankruptcy Code, to assume all leases and other executory contracts pertaining to the Horizon Mine Property and to assign them to Hidden Splendor.

5. Any and all Liens shall attach to the net proceeds received by the Trustee from the sale of the Horizon Mine Property with the same force and effect they now have, subject to further order of the Court, and any parties in interest holding any such liens are hereby directed to execute appropriate documentation releasing and terminating the same and to deliver such documentation to Hidden Splendor or its counsel.

6. The Trustee is hereby authorized and ordered to execute documents conveying the Horizon Mine Property to Hidden Splendor on the Closing date by Bill of Sale pursuant to the terms of the Sale Procedures, the Notice of Bidding Procedures and the Sale Order and to execute any and all other documents that may be required to complete transfer of the Horizon Mine Property, as described herein, to Hidden Splendor, including those documents necessary to satisfy approval requirements of regulatory agencies, without further order of this court.
7. The amount necessary to cure all defaults under the Mining Lease (the “Cure Amount”) is $11,368.31, which amount shall be credited at Closing toward the Purchase Price, as described in paragraph 8, below.

8. The Initial Deposit for the Horizon Mine Property shall also constitute the Final Deposit (as defined in the Notice of Bidding Procedures), which Final Deposit has been paid timely by Hidden Splendor, in accordance with the Sale Procedures.

9. At the Closing, Hidden Splendor shall deliver to the Trustee an amount of immediately available funds equal to the Purchase Price less the Cure Amount and Final Deposit.

10. The sale of the Horizon Mine Property to Hidden Splendor is AS IS, WHERE IS and WITH ALL FAULTS, and without any representations or warranties whatsoever of the Debtors, the Trustee, their agents or representatives, express or implied, of any kind, nature or description, including, without limitation, any warranty of merchantability or fitness for a particular purpose or any express or implied warranty as to the nature, quality, value or condition of any portion of the Horizon Mine Property.


BY THE COURT:

HON. JOSEPH M. SCOTT, JR., JUDGE
UNITED STATES BANKRUPTCY COURT

INCORPORATED
APR 02 2004
DIV OF OIL GAS & MINING
TENDERED BY:

Sam P. Burchett, Esq.
200 West Vine St., Suite 400
Lexington, KY 40507-1620
Telephone: (859) 226-2100
Facsimile: (859) 226-2105
Email: spburchett@aol.com
Local Counsel for Hidden Splendor Resources Ltd.

Pursuant to Local Rule 9022-1(c), Sam P. Burchett shall cause a copy of this Order to be served on each of the parties designated to receive this order pursuant to Local Rule 9022-1(a) and shall file with the Court a certificate of service of the Order upon such parties within ten (10) days hereof.

APPROVED AS TO FORM:

GREENBAUM, DOLL & MCDONALD

By
Bruce F. Cryder
Gregory R. Schaal
Counsel to the Trustee

L. Edwin Paulson,
Local Counsel for Blue Ridge Services, LLC

(aw)1671/07/plead/sale order
ASSIGNMENT OF PERMIT
(Number C/007/020)

LODESTAR ENERGY, INC., a Delaware corporation ("Assignor"), by William D. Bishop, in his capacity as Chapter 11 Trustee of Lodestar Energy, Inc. and Lodestar Holdings, Inc., the debtors In re Lodestar Energy, Inc., Case Nos. 01-50969 and 01-50972 jointly administered under Case No. 01-50969 pending in the United States Bankruptcy Court for the Eastern District of Kentucky, Lexington Division, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, hereby assigns and transfers to HIDDEN SPLENDOR RESOURCES, LTD., a Nevada corporation, whose address is 50 West Liberty Street, Suite 880, Reno, Nevada 89501 ("Assignee"), that certain Permit No. C/007/020 dated October 11, 2001 issued to Assignor by the State of Utah Division of Oil, Gas and Mining for the Horizon No. 1 Mine to conduct coal mining and reclamation operations on lands situated in Carbon County, Utah described in the Permit, in accordance with the March 18, 2003, ORDER ISSUED BY THE COURT PURSUANT TO SECTIONS 105(A), 363, 365, 503, AND 507 OF THE BANKRUPTCY CODE AUTHORIZING SALE TO HIDDEN SPLENDOR RESOURCES, LTD. OF CERTAIN DEBTORS' PROPERTY FREE AND CLEAR OF ALL LIENS, CLAIMS AND ENCUMBRANCES.

DATED this ___ day of ___ , 2003.

William D. Bishop, in his capacity as Chapter 11 Trustee of Lodestar Energy, Inc. and Lodestar Holdings, Inc.

STATE OF Kentucky )
COUNTY OF Fayette )

The foregoing instrument was acknowledged before me this ___ day of ___ , 2003, by William D. Bishop, Chapter 11 Trustee of Lodestar Energy, Inc. and Lodestar Holdings, Inc.

My Commission Expires:

[Signature]

Notary Public State of [Signature]
Residing at [Signature]

INcorporated
APR 02 2004
DIV OF OIL GAS & MINING

Document #2
ASSIGNMENT

LODESTAR ENERGY, INC., a Delaware corporation ("Assignor"), by William D. Bishop, in his capacity as Chapter 11 Trustee of Lodestar Energy, Inc. and Lodestar Holdings, Inc., the debtors In re Lodestar Energy, Inc., Case Nos. 01-50969 and 01-50972 jointly administered under Case No. 01-50969 pending in the United States Bankruptcy Court for the Eastern District of Kentucky, Lexington Division, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, hereby assigns and transfers to HIDDEN SPLENDOR RESOURCES, LTD., a Nevada corporation ("Assignee"), 50 West Liberty Street, Suite 880, Reno, Nevada 89501, all of Assignor's right, title and interest, in and to the Mining Lease, water rights and leases, easements and other Horizon Mine property described in Exhibit A attached hereto and made a part hereof for all purposes, free and clear of all liens, claims and encumbrances in accordance with the March 18, 2003, ORDER ISSUED BY THE COURT PURSUANT TO SECTIONS 105(A), 363, 365, 503, AND 507 OF THE BANKRUPTCY CODE AUTHORIZING SALE TO HIDDEN SPLENDOR RESOURCES, LTD. OF CERTAIN DEBTORS' PROPERTY FREE AND CLEAR OF ALL LIENS, CLAIMS AND ENCUMBRANCES.

IN WITNESS WHEREOF, the undersigned has executed this Assignment as of this 24 day of March, 2003.

William D. Bishop, in his capacity as Chapter 11 Trustee of Lodestar Energy, Inc. and Lodestar Holdings, Inc.

STATE OF Kentucky

COUNTY OF Fayette

The foregoing instrument was acknowledged before me this 24th day of March, 2003, by William D. Bishop, Chapter 11 Trustee of Lodestar Energy, Inc. and Lodestar Holdings, Inc.

My Commission Expires: 7-23-05

[Signature]

Notary Public
Residing at:

[Signature]
EXHIBIT A

Attached to and made a part of Assignment from Lodestar Energy, Inc., by William D. Bishop, Chapter 11 Trustee, to Hidden Splendor Resources, Ltd. dated March 24, 2003.

(1) Mining Lease dated February 1, 1995 by and between Hidden Splendor Resources, Ltd., a Nevada corporation, Owner, and Horizon Coal Corporation ("Horizon"), Lessee (Memorandum of Mining Lease recorded February 28, 1995 in Book 354, Page 699, records of Carbon County, Utah), as amended by Amendment of Mining Lease dated June 30, 1997 by and between Hidden Splendor Resources, Ltd., as Owner, and Horizon Coal Corporation, as Lessee, and as further amended by Second Amendment of Mining Lease effective November 1, 1998 between Hidden Splendor Resources, Ltd., as Owner, and Horizon Mining, LLC, a Utah limited liability corporation ("Lessee"), covering the following described lands situated in Carbon County, State of Utah:

Township 13 South, Range 8 East, SLM

Section 8: SE¼SW¼
Section 16: W½SE¼
Section 17: NW¼NE¼, W½SE¼,
SE¼SE¼, S½NW¼,
N½SW¼, SE¼SW¼,
excluding a 66 foot right-of-way within the E½SW¼ referred to as the
"Realigned Parcel" and
more particularly described in Exhibit A to Attachment I of the Lease

Section 20: NE¼NW¼, NW¼NE¼,
SE¼NE¼

Section 21: NW¼NE¼
Including a 66 foot wide roadway containing approximately 1.31 acres referred to as the "Vacated Parcel" and
more particularly described in Exhibit B to Attachment I of the Lease

(containing in total 640.00 acres, more or less)
together with all dumps, plants, fixtures, improvements, rights and privileges, in anywise belonging;


(3) Water Rights Lease and Sale Agreement between Mountain Coal Company and E. E. Peirce dated April 7, 1993 covering Water User’s Claim #91-4956 and the right to use a facility known as Sweet’s Canyon Pond in SW¼SW¼ Section 17, Township 13 South, Range 8 East, SLM, Carbon County, Utah (assigned to Horizon Coal Corporation June 18, 1996) and assigned to Lodestar Energy, Inc. under Deed and Assignment dated July 14, 1999 recorded July 16, 1999 in Book 439 at Page 85, records of Carbon County, Utah.

(4) Grant of Easement from Steve Stamatakis and Pete Stamatakis to Lodestar Energy, Inc. dated January 3, 2001 affecting the following real property in Carbon County, Utah:

<table>
<thead>
<tr>
<th>Township 13 South, Range 8 East, SLM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 4: W¼, W¼NE¼, NW¼SE¼</td>
</tr>
<tr>
<td>Section 5: NW¼, W¼SE¼, SW¼SE¼,</td>
</tr>
<tr>
<td>SE¼SW¼</td>
</tr>
<tr>
<td>Section 6: NE¼, SE¼, SW¼,</td>
</tr>
<tr>
<td>SE¼NW¼</td>
</tr>
<tr>
<td>Section 7: NW¼, SE¼, SE¼NE¼,</td>
</tr>
<tr>
<td>SE¼SW¼, N¼SW¼</td>
</tr>
<tr>
<td>Section 8: N¼S¼, S¼NW¼,</td>
</tr>
<tr>
<td>NE¼NW¼, NE¼</td>
</tr>
<tr>
<td>Section 9: NW¼</td>
</tr>
<tr>
<td>Section 18: N¼NW¼, NE¼NE¼</td>
</tr>
</tbody>
</table>

(5) Any and all cash bonds, accounts receivable, books, records, coal inventory, machinery, general intangibles, contracts and leases, buildings, fixtures and improvements on the land and any other easements, rights-of-way and related facilities.
roads, and all other rights, privileges and uses belonging to the Horizon Mine and connected in any manner to the Horizon Mine land, leases, water and water rights owned or held by Assignor.

(6) The exclusive right to use the name "Horizon" and "Horizon Mine" so far as Lodestar Energy, Inc. has the power to assign such exclusive right.
ASSIGNMENT

LODESTAR ENERGY, INC., a Delaware corporation ("Assignor"), by William D. Bishop, in his capacity as Chapter 11 Trustee of Lodestar Energy, Inc. and Lodestar Holdings, Inc., the debtors In re Lodestar Energy, Inc., Case Nos. 01-50969 and 01-50972 jointly administered under Case No. 01-50969 pending in the United States Bankruptcy Court for the Eastern District of Kentucky, Lexington Division, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, hereby assigns and transfers to HIDDEN SPLENDOR RESOURCES, LTD., a Nevada corporation ("Assignee"), 50 West Liberty Street, Suite 880, Rcn, Nevada 89501, all of Assignor's right, title and interest, in and to the following:

United States Department of the Interior Bureau of Land Management Coal Lease UTU-74804 dated effective September 1, 1998 covering the following described lands situated in Carbon County, State of Utah:

Township 13 South, Range 8 East, SLM

Section 6: SE\(\frac{3}{4}\)SW\(\frac{1}{4}\), S\(\frac{1}{4}\)SE\(\frac{1}{4}\), NW\(\frac{1}{4}\)SE\(\frac{1}{4}\)
Section 7: Lots 1-3, E\(\frac{1}{4}\), E\(\frac{1}{4}\)W\(\frac{1}{4}\)
Section 8: SW\(\frac{1}{4}\)NE\(\frac{1}{4}\), NW\(\frac{1}{4}\)NW\(\frac{1}{4}\), S\(\frac{1}{2}\)NW\(\frac{1}{4}\), N\(\frac{1}{4}\)SW\(\frac{1}{4}\), SW\(\frac{1}{4}\)SW\(\frac{1}{4}\), W\(\frac{1}{4}\)SE\(\frac{1}{4}\)
Section 17: N\(\frac{1}{2}\)NW\(\frac{1}{4}\), SW\(\frac{1}{4}\)NE\(\frac{1}{4}\)
Section 18: NE\(\frac{1}{4}\)NE\(\frac{1}{4}\)

containing 1,288.49 acres, more or less;

and the balance of the cash bond (BLM Bond No. UT1214) deposited by Assignor on March 29, 2001 with the Utah State Office of the Bureau of Land Management, Department of the Interior, to cover one (1) year's rental plus two (2) remaining annual installments on the lease bid for UTU-74804;

free and clear of all liens, claims and encumbrances in accordance with the March 18, 2003, ORDER ISSUED BY THE COURT PURSUANT TO SECTIONS 105(A), 363, 365, 503, AND 507 OF THE BANKRUPTCY CODE AUTHORIZING SALE TO
HIDDEN SPLENDOR RESOURCES, LTD. OF CERTAIN DEBTORS' PROPERTY FREE AND CLEAR OF ALL LIENS, CLAIMS AND ENCUMBRANCES.

DATED this 4th day of March, 2003.

William D. Bishop, in his capacity as Chapter 11 Trustee of Lodestar Energy, Inc. and Lodestar Holdings, Inc.

STATE OF Kentucky

COUNTY OF Fayette

The foregoing instrument was acknowledged before me this 4th day of March, 2003, by William D. Bishop, Chapter 11 Trustee of Lodestar Energy, Inc. and Lodestar Holdings, Inc.

My Commission Expires:

7-23-05

Carol A. Baggs
Notary Public
Residing at: Jessamine Co.

INcorporated
APR 02 2004
DIV OF OIL GAS MINING
DESIGNATION OF OPERATOR

LODESTAR ENERGY, INC., a Delaware corporation ("Assignor"), holder of Mining Permit Number C/007/020 for the Horizon No. 1 Mine ("Permit") on the records of the Utah Division of Oil, Gas and Mining ("DOGM"), by William D. Bishop, in his capacity as Chapter 11 Trustee of Lodestar Energy, Inc. and Lodestar Holdings, Inc. ("Assignor") the debtors In re Lodestar Energy, Inc., Case Nos. 01-50969 and 01-50972 jointly administered under Case No. 01-50969 pending in the United States Bankruptcy Court for the Eastern District of Kentucky, Lexington Division, hereby designates Hidden Splendor Resources, Ltd., a Nevada Corporation qualified to do business in the State of Utah, whose address is 50 West Liberty Street, Suite 880, Reno, Nevada, 89501, as its operator and local agent, with full authority to act in its behalf in complying with the terms of the Permit and regulations applicable thereto and on whom DOGM may serve written or oral instructions, with copies to the undersigned, in securing compliance with the applicable regulations with respect to the lands subject to the Permit.

It is understood that this Designation of Operator does not relieve the Assignor of responsibility for compliance with the terms of the Permit and the applicable regulations. It is also understood that this Designation of Operator does not constitute an assignment of any interest in the lands.

In case of default on the part of the designated operator, the Assignor will promptly comply with all applicable regulations and orders of DOGM.

The Assignor agrees promptly to notify DOGM of any change in the Designated Operator.

LODESTAR ENERGY, INC.

Date: March 24, 2003

By: William D. Bishop, in his capacity as Chapter 11 Trustee of Lodestar Energy, Inc. and Lodestar Holdings, Inc.
March 24, 2003

Lodestar Energy, Inc.
76 William D. Bishop, Chapter 11 Trustee
Quintana Coal Company, Suite 235
2525 Harrodsburg Road
Lexington, KY 40504

Re: Designation of Operator, Horizon No. 1 Mine
Carbon County, Utah

Included among the closing documents are an Assignment of Permit (No. C/007/020) to Hidden Splendor Resources, Ltd. ("Hidden Splendor") and a Designation of Operator for Mining Permit No. C/007/020, both of which are being executed by the Trustee in his capacity as Chapter 11 Trustee for Lodestar Energy, Inc. and Lodestar Holdings, Inc.

Per your request, Hidden Splendor hereby agrees that during the period prior to the Utah Division of Oil, Gas and Mining ("DOGM") approval of transfer of Permit No. C/007/020 to Hidden Splendor, in which Hidden Splendor shall have assumed possession and orderly supervision of the area of the mining permit under the Designation of Operator, Hidden Splendor agrees to indemnify and hold Lodestar Energy, Inc. and the Trustee harmless and defend them against any and all claims, demands, suits, costs, judgments, damages, losses, fines, liabilities and costs arising or related to the operations or conduct of Hidden Splendor occurring during such period until the approval of the transfer of Permit No. C/007/020 has been delivered by DOGM to Hidden Splendor and the Trustee.

Signed:
Cecil Ann Walker
President

INCORPORATED
APR 02 2004
DIV OF OIL GAS & MINING
United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155
www.ut.blm.gov

IN REPLY REFER TO:
3453
UTU-74804
(UT-924)

NOTICE

Hidden Splendor Resources, Inc.: Coal Lease
57 West 200 South, #400: UTU-74804
Salt Lake City, Utah 84101:

Transfer of Lease Interest By Operation of Law
Name Change Recognized
Amended Notice

On April 1, 2003, an order of the court regarding bankruptcy proceedings jointly administered under Case No. 01-50969 (Chapter 11) (Lodestar Energy, Inc., Lodestar Holdings, Inc., and Industrial Fuels Minerals Co., Debtors) was filed in this office. By this instrument, filed March 18, 2003, in the United States Bankruptcy Court for the Eastern District of Kentucky, Lexington Division, Hidden Splendor Resources, Ltd. received 100 percent of the interest in Federal coal lease UTU-74804.

The transfer of interest is recognized effective March 18, 2003. Acceptable evidence has been submitted to this office that Hidden Splendor Resources, Ltd. has changed its name to Hidden Splendor Resources, Inc. The name change is hereby recognized effective the date of this notice.

The assignment, executed by William D. Bishop, in his capacity as Chapter 11 Trustee of Lodestar Energy, Inc. and Lodestar Holdings, Inc., is unnecessary. The court order conveyed the interest in the lease to Hidden Splendor.

The principal on BLM Bond No. UT1214 will be changed to Hidden Splendor Resources, Inc. However, the bond amount is now down to $4,000. We require a minimum lease bond of $5,000. Please submit the additional $1,000 as soon as possible. Production on the lease will require a further increase in the bond to cover three months royalty.

The principal on BLM Bond No. UT1240, which is a $10,000 cash bond on a water monitoring well on the lease, will also be changed to Hidden Splendor Resources, Inc., in accordance with the court order (Page 6, Paragraph F).
United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155
www.ut.blm.gov

IN REPLY REFER TO:
3453
UTU-74804
(UT-924)

NOTICE

Hidden Splendor Resources, Inc.
57 West 200 South, #400
Salt Lake City, Utah 84101

Coal Lease INCORPORATED
UTU-74804

Transfer of Lease Interest By Operation of Law

Name Change Recognized

On April 1, 2003, an order of the court regarding bankruptcy proceedings jointly administered under Case No. 01-50969 (Chapter 11) (Lodestar Energy, Inc., Lodestar Holdings, Inc., and Industrial Fuels Minerals Co., Debtors) was filed in this office. By this instrument, filed March 18, 2003, in the United States Bankruptcy Court for the Eastern District of Kentucky, Lexington Division, Hidden Splendor Resources, Ltd. received 100 percent of the interest in Federal coal lease UTU-74804.

The transfer of interest is recognized effective March 18, 2003. Acceptable evidence has been submitted to this office that Hidden Splendor Resources, Ltd. has changed its name to Hidden Splendor Resources, Inc. The name change is hereby recognized effective the date of this notice.

The assignment, executed by William D. Bishop, in his capacity as Chapter 11 Trustee of Lodestar Energy, Inc. and Lodestar Holdings, Inc., is unnecessary. The court order conveyed the interest in the lease to Hidden Splendor.

The principal on BLM Bond No. UT1214 will be changed to Hidden Splendor Resources, Inc. However, the bond amount is now down to $4,000. We require a minimum lease bond of $5,000. Please submit the additional $1,000 as soon as possible. Production on the lease will require a further increase in the bond to cover three months royalty.

In researching this lease, it was discovered that Lodestar holds an additional $10,000 bond (BLM Bond No. UT1240) on a water monitoring well located on the lease. It appears that this was not covered by the court order. This bond will remain as is until an acceptable replacement bond is submitted to this office.
Federal coal lease UTU-74804 was issued effective September 1, 1998. At time of issuance it contained an estimated minable reserve of 6.3 million tons. 63,000 tons must be mined by September 1, 2008, in order to achieve diligent development required by the terms and conditions of the lease (copy enclosed).

There are no more bonus bid payments due on this lease. Rental of $3,867 is due by the first of September each year.

We approved a Category I royalty rate reduction, for this lease, effective December 1, 1999. The royalty rate was reduced to 5 percent for production up to 900,000 tons of coal from the first three extraction panels, or a period of five years from the effective date, whichever occurs first. The reduction is subject to an annual submission of a certified statement that the conditions that justified the granting of the reduction continue to exist.

A re-certification statement was received in this office on November 14, 2002. Approval of the re-certification will not occur until the lease bond is increased to the minimum of $5,000.

/s/ Robert Lopez

Robert Lopez
Chief, Branch of
Minerals Adjudication

Enclosures:
1. Bond Form 3404-1 (1p double sided)
2. Copy of Lease (7 pp)

cc: Pruitt, Gushee & Bachtell, Attn: Oliver W. Gushee, Jr., Ste. 1850 Beneficial Life Tower
Salt Lake City, Utah 84111-1495 (w/encl.)
Price Coal Office (Attn: Steve Falk)
MMS, MRM, Solid Minerals Staff, Attn: Patrick Mulcahy, MS390B2, Box 25165, Denver, CO 80225-0165
MMS, Attn: Cherry Mallard, MS 3030, Box 25165, Denver, CO 80225-0165
Lodestar Energy, Inc., 251 Tollage Creek, Pikeville, KY 41501
Lodestar Energy, Inc., HC 35 Box 370, Helper, UT 84526
Accounts (Attn: Dave Mascarenas)
APPENDIX 2-2

INSURANCE AND NEWSPAPER ACKNOWLEDGMENTS
AFFIDAVIT OF PUBLICATION

STATE OF UTAH

ss.

County of Carbon,)

I, Ken Larson, on oath, say that I am the Publisher of the Sun Advocate, a twice-weekly newspaper of general circulation, published at Price, State a true copy of which is hereto attached, was published in the full issue of such newspaper for 4 (Four) consecutive issues, and the first publication was on the 27th of July, 2004, and that the last publication of such notice was in the issue of such newspaper dated the 17th day of August, 2004.

Ken G Larson - Publisher

Subscribed and sworn to before me this 17th day of August, 2004.

Linda Hayn

Notary Public My commission expires January 10, 2007 Residing at Price, Utah

Publication fee, $ 465.92

NOTICE OF COMPLETE APPLICATION EXPANSION OF PERMIT BOUNDARY
HIDDEN SPLENDOR RESOURCES, INC.
HORIZON MINE
C/007/020

Hidden Splendor Resources, Inc. (HSR), a Nevada Corporation, has submitted to the Utah Division of Oil, Gas and Mining, a complete application for adding the remaining Federal Coal Lease, U74804, (approximately 866 acres), to the existing mining and reclamation permitted area. The address of the applicant is: Hidden Splendor Resources, Inc., 57 West 200 South, Suite 400, Salt Lake City, Utah 84101.

Hidden Splendor Resources, Inc., operates the Horizon Mine located approximately nine (9) miles west of U.S. Highway 6, on the Consumers Road within the south half of Section 17, Township 13 South, Range 8 East, SLBM. The currently approved Horizon Mine mining permit number is C/007/020. The permit area is located on the Standardville and Jump Creek, USGS 7.5 minute quadrangle maps. The description of the permit area is as follows:

Township 13 South, Range 8 East, SLBM

Section 6: NW1/4SE1/4, SE1/4SW1/4, SW1/4SE1/4, SE1/4SE1/4.
Section 7: NW1/4, NE1/4, SE1/4, E1/2SW1/4, NW1/4SW1/4.
Section 8: S1/2NW1/4, NW1/4NE1/4, SW1/4, W1/2SE1/4.
Section 17: NW1/4, W1/2NE1/4, NE1/4SW1/4, N1/2SE1/4SW1/4, N1/2NW1/4SW1/4, NW1/4SE1/4, N1/2SW1/4SE1/4, NE1/4SE1/4.
Section 18: CE1/4NE1/4.

Containing 1,577 acres more less consisting of 305 acres more or less of Fee coal (Hidden Splendor Resources, Inc.) and 1,272 acres more or less of Federal leased coal.

A copy of the permit will be available for inspection at the Utah Division of Oil Gas and Mining, 1594 West North Temple, Suite 1210, Salt Lake City, Utah and the Carbon County Courthouse, 120 East Main Street, Price, Utah. Written comments or request for an informal conference regarding this application must be submitted within 30 days of the last publication date of this notice, to the Utah Division of Oil, Gas and Mining, Attention Coal Regulatory Program, 1594 West North Temple, Suite 1210, Salt Lake City, Utah, 84114-5801.

Published in the Sun Advocate July 27, August 3, 10 and 17, 2004.

INCORPORATED

JUL 1 2005

DIV OF OIL GAS & MINING
AFFIDAVIT OF PUBLICATION

STATE OF UTAH)

County of Carbon,)

I, Ken Larson, on oath, say that I am the Publisher of the Sun Advocate, a twice-weekly newspaper of general circulation, published at Price, State a true copy of which is hereto attached, was published in the full issue of such newspaper for (One) consecutive issues, and that the first publication was on the 8th day of April, 2003, and that the last publication of such notice was in the issue of such newspaper dated the 8th day of April, 2003.

Ken G Larson
Ken G Larson - Publisher

Subscribed and sworn to before me this 8th day of April 2003.

Linda Thayn
Notary Public My commission expires January 10, 2007 Residing at Price, Utah

Publication fee, $177.76
APPENDIX 2-3
RIGHT-OF-WAY APPLICATION AND BEAVER CREEK LEASE
In Reply Refer To:
3425
UTU-74804
(UT-932)

CERTIFIED MAIL--Return Receipt Requested

DEcision

Horizon Mining, LLC : Coal Lease
C/o Denise A. Dragoo, Esq. : UTU-74804
Van Cott, Bagley, Cornwall & McCarthy :
P.O. Box 45340 :
Salt Lake City, Utah 84145-0340 :

Lease Issued
Bond Accepted

Pursuant to the lease by application sale held May 14, 1998, the bid of Horizon Mining, LLC for the Beaver Creek Tract, assigned serial no. UTU-74804, was determined to be the acceptable high bid. Satisfactory evidence of the qualifications and holdings of Horizon Mining, LLC has been submitted; therefore, coal lease UTU-74804 is hereby issued effective September 1, 1998.

A surety bond of $257,000 was filed in this office August 21, 1998. The name of the surety is Frontier Insurance Company, and the surety bond no. is 125429. The bond is hereby accepted, as of the date of filing.

Robert Lopez
Group Leader,
Minerals Adjudication Group

Enclosure
Coal Lease UTU-74804

Cc: Horizon Mining, LLC (w/encl)
P.O. Box 599
Helper, Utah 84526
PART I. LEASE RIGHTS GRANTED

This lease, entered into by and between the UNITED STATES OF AMERICA, hereinafter called lessor, through the Bureau of Land Management, and (Name and Address)

Horizon Mining, LLC
P.O. Box 599
Helper, Utah 84526

hereinafter called lessee, is effective for a period of 20 years and for so long thereafter as coal is produced in commercial quantities from the leased lands, subject to readjustment of lease terms at the end of the 20th lease year and each 10-year period thereafter.

Sec. 1. This lease is issued pursuant and subject to the terms and provisions of the:


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

Sec. 2. Lessor, in consideration of any bonuses, rents, and royalties to be paid, and the conditions and covenants to be observed as herein set forth, hereby grants and leases to lessee the exclusive right and privilege to drill for, mine, extract, remove, or otherwise process and dispose of the coal deposits in, upon, or under the following described lands:

T. 13 S., R. 8 E., LM, UT
Sec. 6, SSW, S2SE, NWSE;
Sec. 7, lots 1-3, E2, E2W2;
Sec. 8, SWNE, NWNW, S2NW,
N2SW, SNSW, WSE;
Sec. 17, N2NW, SWNE;
Sec. 18, NENE.

containing 1,288.49 acres, more or less, together with the right to construct such works, buildings, plants, structures, equipment and appliances and the right to use such on-lease rights-of-way which may be necessary and convenient in the exercise of the rights and privileges granted, subject to the conditions herein provided.

PART II. TERMS AND CONDITIONS

Sec. 1. (a) RENTAL RATE - Lessee shall pay lessor rental annually and in advance for each acre or fraction thereof during the continuance of the lease at the rate of $3.00/acre for each lease year.
(b) RENTAL CREDITS - Rental shall not be credited against either production or advance royalties for any year.

Sec. 2. (a) PRODUCTION ROYALTIES - The royalty shall be 8 percent of the value of the coal as set forth in the regulations. Royalties are due to lessor the final day of the month succeeding the calendar month in which the royalty obligation accrues.
(b) ADVANCE ROYALTIES - Upon request by the lessee, the authorized officer may accept, for a total of not more than 10 years, the payment of advance royalties in lieu of continued operation, consistent with the regulations. The advance royalty shall be based on a percent of the value of a minimum number of tons determined in the manner specified by the advance royalty regulations in effect at the time the lessee requests approval to pay advance royalties in lieu of continued operation.

Sec. 3. BONDS - Lessee shall maintain in the proper office a lease bond in the amount of $257,000. The authorized officer may require an increase in this amount when additional coverage is determined appropriate.

Sec. 4. DILIGENCE - This lease is subject to the conditions of diligent development and continued operation, except that these conditions are excused when operations under the lease are interrupted by strikes, the elements, or casualties not attributable to the lessee. The lessee, in the public interest, may suspend the condition of continued operation upon payment of advance royalties in accordance with the regulations in existence at the time of the suspension. Lessee's failure to produce coal in commercial quantities at the end of 10 years shall terminate the lease. Lessee shall submit an operation and reclamation plan pursuant to Section 7 of the Act not later than 3 years after lease issuance.

The lessor reserves the power to assent to or order the suspension of the terms and conditions of this lease in accordance with, inter alia, Section 39 of the Mineral Leasing Act, 30 U.S.C. 209.

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

The stipulations established in an LMU approval in effect at the time of LMU approval will supersede the relevant inconsistent terms of this lease so long as the lease remains committed to the LMU. If the LMU of which this lease is a part is dissolved, the lease shall then be subject to the lease terms which would have been applied if the lease had not been included in an LMU.
This coal lease is subject to termination if the lessee is determined at the time of issuance to be in noncompliance with Section 2(a)(2)(A) of the Mineral Leasing Act.
INCORPORATED
EFFECTIVE:

OCT 13 1999

UTAH DIVISION OIL, GAS AND MINING

SEE ATTACHED STIPULATIONS

THE UNITED STATES OF AMERICA

Horizon Mining, LLC
Company or Lessee Name

(Signature of Lessee)

Manager
>Title

7-25-98
>Date

By

Robert J. Timpson
Group Leader
Minerals Adjudication Group

(Title)

AUG 25 1998
<Date>

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

This form does not constitute an information collection as defined by 44 U.S.C. 3502 and therefore does not require OMB approval.
BLM STIPULATIONS

The following stipulations made part of this lease may be waived or amended with the mutual consent of the lessor and lessee.

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

2. The permitting of any mining operations on the lease will be subject to the possible designation of any portion of the lease as unsuitable for some or all kinds of surface mining under the regulations of the Department under the Surface Mining Control and Reclamation Act of 1977 (SMCRA) in effect at the time of action on the mine plan permit.

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

If significant cultural resources are discovered during operations under this lease, the lessee shall immediately bring them to the attention of the authorized officer who shall evaluate or have evaluated such discoveries and, within 5 working days, shall notify the lessee what action shall be taken with respect to such discoveries.

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

4. Before undertaking activities that may disturb the surface of previously undisturbed leased lands, the lessee may be required to conduct a paleontological appraisal of the areas to be disturbed. The appraisal shall be conducted by qualified paleontologists and a report prepared itemizing the findings. A plan will then be submitted making recommendations for the protection of, or measures to be taken to mitigate impacts for identified paleontological resources.

If paleontological remains (fossils) of significant scientific interest are discovered during operations under this lease, the lessee shall immediately bring them to the attention of the authorized officer who shall evaluate or have evaluated such discoveries brought to his attention and, within 5 working days, shall notify the lessee what action shall be taken with respect to such discoveries. Paleontological remains of significant scientific interest do not include leaves, ferns, or dinosaur tracks commonly encountered during underground mining operations.
The cost of conducting the inventory, preparing reports, and carrying out necessary protective mitigating measures shall be borne by the lessee. The cost of salvage of paleontological remains (fossils) shall be borne by the United States.

5. If there is reason to believe that threatened or endangered (T&E) species of plants or animals, or migratory species of high Federal interest occur in the area, the lessee shall be required to conduct an intensive field inventory of the area to be disturbed and/or impacted. A listing of migratory birds of high Federal interest in Federal coal producing regions is published by the Fish and Wildlife Service, Migratory Bird Management Office, Washington, D.C. The inventory shall be conducted by qualified specialist and a report of findings will be prepared. A plan will be prepared making recommendations for the protection of these species or action necessary to mitigate the disturbance.

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

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

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

8. The lessee shall provide for the suppression and control of fugitive dust on haul roads and at coal handling and storage facilities on the lease area. The migration of road surfacing and subsurface materials into streams and water courses shall be prevented.

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

10. Except at specifically approved locations, underground mining operations shall be conducted in such a manner so as to prevent surface subsidence that would: 1) cause the creation of hazardous conditions such as potential escarpment failure and landslides, 2) cause damage to existing surface structures, or 3) damage or alter the flow of perennial streams.
11. In order to avoid surface disturbance on steep canyon slopes and to satisfy the need for surface access, all surface breakouts for ventilation tunnels shall be constructed from inside the mine, except at specifically approved locations.

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

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

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

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

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

The BLM may enforce this provision either by issuing a written decision requiring payment of the MMS demand for such royalties, or by issuing a notice of non-compliance. A decision or notice of non-compliance issued by the lessor that payment is due under this stipulation is appealable as allowed by law.
14. WASTE CERTIFICATION: The lessee shall provide on a yearly basis and prior to lease relinquishment, certification to the lessor that, based upon a complete search of all the operator's records for the mine and upon their knowledge of past operations, there has been no hazardous substances per (40 CFR 302.4) or used oil as per Utah State Management Rule R-315-15, deposited within the lease, either on the surface or underground, or that all remedial action necessary has been taken to protect human health and the environment with respect to any such substances remaining on the property. The back-up documentation to be provided shall be described by the lessor prior to the first certification and shall include all documentation applicable to the Emergency Planning and Community Right-to-know Act (EPCRA, Public Law 99-499), Title III of the Superfund Amendments and Reauthorization Act of 1986 or equivalent.

15. UNDERGROUND INSPECTION: All safe and accessible areas shall be inspected prior to being sealed. The lessee shall notify the Authorized Officer in writing 30 days prior to the sealing of any areas in the mine and state the reason for closure. Prior to seals being put in place, the lessee shall inspect the area and document any equipment/machinery, hazardous substances, and used oil that is to be left underground. The Authorized Officer may participate in this inspection. The purpose of this inspection will be: (1) to provide documentation for compliance with 42 U.S.C. 9620 section 120(h) and State Management Rule R-315-15, and to assure that certification will be meaningful at the time of lease relinquishment, (2) to document the inspection with a mine map showing location of equipment/machinery (model, type of fluid, amount remaining, batteries etc.) that is proposed to be left underground. In addition, these items will be photographed at the lessee's expense and shall be submitted to the Authorized Officer as part of the certification. The abandonment of any equipment/machinery shall be on a case by case basis and shall not be accomplished unless the Authorized Officer has granted a written approval.
Certification of Authority

This confirms and John "Kit" Pappas has been duly authorized by Hidden Splendor Resources, Inc. to sign documents on behalf of the Company in connection with the Company's reporting obligations and permit modifications with the Utah Department of Natural Resources, Division of Oil, Gas and Mining.

Dated October 1, 2008.

[Signature]
Alexander H. Walker III
President/Secretary
Hidden Splendor Resources, Inc.
IN REPLY REFER TO:
3432
UTU-74804
(UT-923)

CERTIFIED MAIL- Return Receipt Requested

DECISION

Hidden Splendor Resources, Inc.
57 West 200 South, Suite 400
Salt Lake City, UT 84101

Coal Lease
UTU-74804

Coal Lease UTU-74804 Modified
Extension of Coverage of Personal Bond Accepted

Enclosed is a copy of modified coal lease UTU-74804 effective on March 5, 2009. The terms and conditions of the original lease are made consistent with the laws, regulations, and lease terms applicable at the time of this modification. The anniversary date of the coal lease remains September 1, 1998.

On February 2, 2009 a letter submitted by the surety, ACSTAR Insurance Company agreed to extend the coverage of their $136,000 surety bond to the additional modified acreage. This letter is acceptable to extend that coverage and is accepted as of the date of filing.

Please note that rental in the amount of $3.00 per acre, or fraction thereof, or a total of $6,627.00, is due on the next anniversary date, beginning September 1, 2009.

Enclosures:
Modified Coal Lease (8 pp.)

cc: Price Coal Office
Ms. John Baza, Director, Utah Division of Oil, Gas and Mining, P.O. Box 145801,
Salt Lake City, Utah 84114-5801
MMS, Solid Minerals Staff, MS 390B2, Box 25165, Denver, CO 80225

J. D. McKenzie
Chief, Branch of
Solid Minerals

INCORPORATED
SEP 09 2009
Div. of Oil, Gas & Mining
This modified lease shall retain the effective date of September 1, 1998, of the original Coal Lease UTU-74804, and is effective for a period of 20 years therefrom, and for so long thereafter as coal is produced in commercial quantities from the leased lands, subject to readjustment of lease terms at the end of the 20th lease year (September 1, 2018), and each 10-year period thereafter.

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


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

Sec. 2. Lessees as the holders of Coal Lease UTU-74804, issued effective September 1, 1998, was granted the exclusive right and privilege to drill for, mine, extract, remove or otherwise process and dispose of the coal deposits in, upon, or under the lands described below as Tract 1.

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

Tract 1:
T. 13 S., R. 8 E., SLM, Utah
Sec. 6, SE%SW%, NW%SE%4, S%SE%4;
Sec. 7, Lots 1-3, E%4, E%W%4;
Sec. 8, SW%NE%4, NW%NW%4, S%NW%4, N%SW%4, SW%SW%4, W%SE%4;
Sec. 17, N%NW%4, SW%NE%4;
Sec. 18, NE%NE%4.

Tract 2:
T. 13 S., R 7 E., SLM, Utah
Sec. 1, S%4;
T. 13 S., R. 8 E., SLM, Utah
Sec. 5, SW%NE%4, N%SE%NE%4, SW%SE%NE%4, S%NW%4, SW% NW%4, NW%NE%SE%4, W%SE%4;
Sec. 8, N%NE%4, SE%NE%4, NE%NW%4, NE%SE%4.

containing 2,208.49 acres, more or less,

together with the right to construct such works, buildings, plants, structures, equipment and appliances and the right to use such on-lease rights-of-way which may be necessary and convenient in the exercise of the rights and privileges granted, subject to the conditions herein provided.
Part II. TERMS AND CONDITIONS

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

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

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

(b) ADVANCE ROYALTIES - Upon request by the Lessee, the authorized officer may accept, for a total of not more than 10 years, the payment of advance royalties in lieu of continued operation, consistent with the regulations. The advance royalty shall be based on a percent of the value of a minimum number of tons determined in the manner established by the advance royalty regulations in effect at the time the Lessee requests approval to pay advance royalties in lieu of continued operation.

Sec. 3. BONDS - Lessee shall maintain in the proper office a lease bond in the amount of $136,000.00. The authorized officer may require an increase in this amount when additional coverage is determined appropriate.

Sec. 4. DILIGENCE - This lease is subject to the conditions of diligent development and continued operation. Continued operation may be excused when operations under the lease are interrupted by strikes, the elements, or casualties not attributable to the Lessee. The Lessor, in the public interest, may suspend the condition of continued operation upon payment of advance royalties in accordance with the regulations in existence at the time of the suspension. Lessees' failure to produce coal in commercial quantities at the end of ten years from the original date of this lease shall terminate the lease.

The Lessor reserves the power to assent to or order the suspension of the terms and conditions of this lease in accordance with, inter alia, Section 39 of the Mineral Leasing Act, 30 U.S.C. 209.

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

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

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

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

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

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

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

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

Lessee shall carry on all operations in accordance with approved methods and practices as provided in the lease.

INTEGRATED MINING INCORPORATED

SEP 09 2009

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

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

Lessee will comply with all provisions of Executive
Order No. 11246 of September 24, 1965, as
amended, and the rules, regulations, and relevant
orders of the Secretary of Labor. Neither Lessee nor
Lessee's subcontractors shall maintain segregated
facilities.

Sec. 9. (a) TRANSFERS

(No box checked)

This lease may be transferred in whole or in
part to any person, association or corporation qualified to hold such lease interest.

Sec. 10. DELIVERY OF PREMISES, REMOVAL OF
MACHINERY, EQUIPMENT, ETC. - At such times as
all portions of this lease are returned to Lessor,
Lessee shall deliver up to Lessor the land leased,
underground timbering, and such other supports and
structures necessary for the preservation of the mine
workings and the right to reclaim the leased premises or deposits and
place all workings in condition for suspension or
abandonment. Within 180 days thereof, Lessee shall
remove from the premises all other structures,
machinery, equipment, tools, and materials remaining on the leased lands beyond 180
days, or approved extension thereof, shall become
the property of the Lessor, but Lessee shall either
remove any or all such property or shall continue to
be liable for the cost of removal and disposal in the
amount actually incurred by the Lessor. If the surface
is owned by third parties, Lessor shall waive the
requirement for removal, provided the third parties do
not object to such waiver. Lessee shall, prior to the
termination of bond liability or at any other time when
required and in accordance with all applicable laws
and regulations, reclaim all lands the surface of which
has been disturbed, dispose of all debris or solid
waste, repair the offsite and onsite damage caused
by Lessee's activity or activities incidental thereto, and
reclaim access roads or trails.

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

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

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

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

Sec. 15. SPECIAL STIPULATIONS - SEE ATTACHED STIPULATIONS INCORPORATED SEp 09 2009 Div. of Oil, Gas & Mining
Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.
SPECIAL STIPULATIONS FOR UTU-74804
MODIFIED COAL LEASE

The following stipulations made part of this lease may be waived or amended with the mutual consent of the lessor and lessee.

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

2. The permitting of any mining operations on the lease will be subject to the possible designation of any portion of the lease as unsuitable for some or all kinds of surface mining under the regulations of the Department under the Surface Mining Control and Reclamation Act of 1977 (SMCRA) in effect at the time of the action on the mine plan permit.

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

If cultural resources or paleontological remains (fossils) of significant scientific interest are discovered during operations under this lease, the lessee prior to disturbance shall, immediately bring them to the attention of the Authorized Officer. Paleontological remains of significant scientific interest do not include leaves, ferns, or dinosaur tracks commonly encountered during underground mining operations.

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

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

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

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

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

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

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

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

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

8. The lessee shall provide for the suppression and control of fugitive dust on haul roads and at coal-handling and storage facilities on the lease area. The migration of road surfacing and subsurface materials into streams and water courses shall be prevented.

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

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

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

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

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

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

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

In the event the AO determines that the R2P2 modification will not attain MER resulting from changed conditions, the AO will give proper notice to the operator/lessee as required under applicable regulations. The AO will order a new R2P2 modification if necessary, identifying additional reserves to be mined in order to attain MER. Upon a final administrative or judicial ruling holding such an ordered modification, any reserves left un-mined (wasted) under that plan will be subject to damages as described in the first paragraph under this section.
Subject to the right to appeal hereinafter set forth, payment of the value of the royalty on such un-mined recoverable coal reserves shall become due and payable upon determination by the AO that the coal reserves have been rendered un-minable or at such time that the lessee has demonstrated an unwillingness to extract the coal.

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

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

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

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

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

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

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

19. FAIR MARKET VALUE BONUS: Due to the uncertainty of the amount of recoverable coal reserves in this modification, the lessee will pay the fair market value (FMV) bonus payment for the coal resources mined in the area of Federal coal lease modification (U74804) at the rate of $0.093 per ton for the actual tonnage mined, adjusted annually using the U. S. Bureau of Labor Statistics CPI West Urban Energy Index; or if that index is not available an index that is mutually agreed to by the lessee and the authorized officer will be used. Payment of FMV at the specified rate and tonnage mined will be on the schedule required for payment of production royalties to the Minerals Management Service (MMS). The lessee will clearly indicate which portion of the payment is for royalty and what is for the lease bonus payment.

INCORPORATED
SEP 09 2009
Div. of Oil, Gas & Mining
Appendix 2-4
Entity Reference File

Insert
Statement of Qualifications submitted to BLM and
Updated Horizon Mine Permit Violation History

Remove
All Lodestar Energy Corporate Structure
Mine Entities and Violation History

INCORPORATED
APR 02 2004
DIV OF OIL GAS & MINING
STATEMENT OF QUALIFICATIONS
OF
HIDDEN SPLENDOR RESOURCES, INC.

In compliance with 43 CFR 3472.2-2, it is hereby stated:

(1) That HIDDEN SPLENDOR RESOURCES, INC. (the "Corporation"), is incorporated under the laws of the State of Nevada.

(2) That the Corporation is authorized to hold coal leases.

(3) That the names of officers authorized to act on behalf of the Corporation are:

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cecil Ann Walker</td>
<td>50 West Liberty, #880</td>
<td>President</td>
</tr>
<tr>
<td></td>
<td>Reno, NV 89501</td>
<td></td>
</tr>
<tr>
<td>Alexander H. Walker, III</td>
<td>57 West 200 South, #400</td>
<td>Vice President</td>
</tr>
<tr>
<td></td>
<td>Salt Lake City, UT 84101</td>
<td></td>
</tr>
<tr>
<td>Alexander H. Walker, Jr.</td>
<td>50 West Liberty, #880</td>
<td>Secretary</td>
</tr>
<tr>
<td></td>
<td>Reno, NV 89501</td>
<td></td>
</tr>
<tr>
<td>Amanda W. Cardinalli</td>
<td>50 West Liberty, #880</td>
<td>Treasurer</td>
</tr>
<tr>
<td></td>
<td>Reno, NV 89501</td>
<td></td>
</tr>
</tbody>
</table>

(4) That, as of this date, the percentage of common stock of said Corporation, which is the only class of stock, owned and controlled by or on behalf of persons whom the Corporation knows to be or who the Corporation has reason to believe are aliens or who have addresses outside the United States, is as follows:

Less than ten percent (10%) of the outstanding common stock, which is the voting stock of the Corporation.

(5) That more than ten percent (10%) of the Corporation’s outstanding common stock as shown by the books of the Corporation or is known to be or believed to be owned by or controlled by each of the following:

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Citizenship</th>
<th>Federal Coal Acreage Holdings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reno, NV 89501</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(6) That neither the Corporation nor any stockholder identified under paragraph (5) above nor any affiliate of the corporation hold an interest in any federal coal permits and/or leases (other than the acreage in UTU-74804, when the Assignment is approved).

It is hereby certified that the statements made herein are true, complete and correct to the best of the undersigned’s knowledge and belief and that the officer executing this Statement has full authority to execute instruments of this nature.

Executed this ___ day of ___ , 2003.

HIDDEN SPLENDOR RESOURCES, INC.

By: ____________________________
Cecil Ann Walker, President
Chapter 2, Legal and Financial
Hidden Splendor Resources

APPENDIX 2-5
ENVIRONMENTAL ASSESSMENT

INCORPORATED
APR 0 2 2004
DIV OF OIL GAS & MINING
Licenses and permits needed to conduct a coal mining operation are listed below.

**LICENSES & PERMITS - HORIZON MINE**

<table>
<thead>
<tr>
<th>PERMIT</th>
<th>ISSUING AUTHORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>C/007/020</td>
<td>Division of Oil, Gas, &amp; Mining 1594 West North Temple, Suite 1210 P.O. Box 145801</td>
</tr>
<tr>
<td></td>
<td>Salt Lake City, Utah 84114-5801</td>
</tr>
<tr>
<td>Construction &amp; Air Quality</td>
<td>Division of Air Quality 150 No. 1950 West P.O. Box 144820</td>
</tr>
<tr>
<td>DAQE-700-00</td>
<td>Salt Lake City, Utah 84114-4820</td>
</tr>
<tr>
<td>Construction, Sedimentation Pond</td>
<td>Division of Water Pollution Control 288 No. 1460 West P.O. Box 16690</td>
</tr>
<tr>
<td>and Drainage System</td>
<td>Salt Lake City, Utah 84116-0690</td>
</tr>
<tr>
<td>Water Rights (leased)</td>
<td>Division of Water Rights 453 S. Carbon Avenue Price, Utah 84501</td>
</tr>
<tr>
<td>Construction Sewer Facilities</td>
<td>Southeastern Utah Health District 6 East Main Street Price, Utah 84501</td>
</tr>
<tr>
<td>Carbon County Planning &amp; Zoning</td>
<td>Carbon County Courthouse Price, Utah 84501</td>
</tr>
<tr>
<td>UPDES (UTG040019)</td>
<td>State of Utah Department of Environmental Quality Water Quality Division 288 No. 1460 West Salt Lake City, Utah 84114-4870</td>
</tr>
<tr>
<td>MSHA (see Section 112.700)</td>
<td>U.S. Department of Labor Mine Safety and Health Administration P.O. Box 25367 Denver, Colorado 80225</td>
</tr>
</tbody>
</table>

**INCORPORATED**

**APR 2 2004**

**DIV OF OIL GAS & MINING**
APPENDIX 2-6
UPDES PERMIT
April 24, 2003

CERTIFIED MAIL
(Return Receipt Requested)

Mr. Alexander H. Walker, III
Hidden Splendor Resources, Inc.
Horizon Mine
57 West 200 South, Suite 400
Salt Lake City, UT 84101

Dear Mr. Walker, III:

Subject: UPDES General Coal Mining Permit No. UTG040019, Hidden Splendor Resources, Inc. - Horizon Mine

Enclosed is your copy of the signed general permit. Coverage becomes effective on May 1, 2003 and all the requirements and conditions of the permit are in effect at that time. Preprinted discharge Monitoring Report forms (EPA Form 3320-1), for self-monitoring and reporting requirements as specified in the permit, will be sent to you as soon as possible.

As the agency charged with the administration of issuing UPDES Permits, we are continuously looking for ways to improve our quality of service to you. In an effort to improve the State UPDES permitting process we are asking for your input. Since our customer permittee base is limited, your input is important. Please take a few moments to complete the enclosed questionnaire. The results will be used to improve our quality and responsiveness to our permittees and give us feedback on customer satisfaction. We will address the issues you have identified on an ongoing basis.

A fee schedule was included in the Utah Department of Environmental Quality budget appropriation request at the direction of the Legislature and in accordance with Utah code annotated 19-1-201. The fee schedule, as approved by the Legislature, includes a charge for the issuance of a UPDES permit. Please remit $1,800.00 within 30 days of receipt of this letter to:

Department of Environmental Quality
Division of Water Quality
ATTN: Stacy Carroll
P.O. Box 144870
Salt Lake City, Utah 84114-4870

INTEGRATED
April 23, 2003

CERTIFIED MAIL
(Return Receipt Requested)

Hidden Splendor Resources, Inc.
Alexander H. Walker, III
57 West 200 South, Suite 400
Salt Lake City, UT 84101

Subject: Transfer of UPDES Permit #UTG040019, Horizon Mine

Dear Mr. Walker:

This correspondence is to acknowledge your April 16th 2003 letter and the completed Statement of Acceptance form informing this office that you are the new owner of a facility that is under the purview of the Utah Pollutant Discharge Elimination System (UPDES). The UPDES permit and our permit files have been changed accordingly. All of the requirements and conditions of the permit are in full force and effect. You should receive a copy of the general permit within 30 days.

If you should have any questions regarding this matter, please call Chris Imbrogno at (801) 538-6628 or myself at (801) 538-6779.

Sincerely,

[Signature]
Gayle Smith, P.E., Manager
Permits and Compliance Section

Cl:ci

cc: Linda Himmelbauer, U.S. EPA Region VIII
STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH

AUTHORIZATION TO DISCHARGE UNDER THE

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM
(UPDES)

GENERAL PERMIT FOR COAL MINING

In compliance with provisions of the Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated ("UCA") 1953, as amended (the "Act"),

Hidden Splender Resources, Inc. – Horizon Mine

as identified in the application No. UTG040019 is authorized to discharge from all outfall(s) to receiving waters named:

Jewkes Creek

in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions as set forth herein.

This permit shall become effective on May 1, 2003.

This permit and the authorization to discharge shall expire at midnight, April 30, 2008.

Signed this 28th day of April, 2003.

Don A. Ostler
Executive Secretary
Utah Water Quality Board
TABLE OF CONTENTS

Cover Sheet--Issuance and Expiration Dates

I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
   A. Criteria for Inclusion in the General Permit for Coal Mining .................................................. 3
   B. Notice of Intent for General Permit for Coal Mining ................................................................. 3
   C. Description of Discharge Point(s) .............................................................................................. 4
   D. Narrative Standard ..................................................................................................................... 4
   E. Specific Limitations and Self-monitoring Requirements .......................................................... 4
   F. Storm Water Requirements ........................................................................................................ 5
II. MONITORING, RECORDING AND REPORTING REQUIREMENTS
   A. Representative Sampling ........................................................................................................... 17
   B. Monitoring Procedures .......................................................................................................... 17
   C. Penalties for Tampering ......................................................................................................... 17
   D. Reporting of Monitoring Results ............................................................................................ 17
   E. Compliance Schedules ........................................................................................................... 17
   F. Additional Monitoring by the Permittee .................................................................................. 17
   G. Records Contents .................................................................................................................... 17
   H. Retention of Records .............................................................................................................. 18
   I. Twenty-four Hour Notice of Noncompliance Reporting ........................................................... 18
   J. Other Noncompliance Reporting ............................................................................................ 19
   K. Inspection and Entry ............................................................................................................... 19
III. COMPLIANCE RESPONSIBILITIES
   A. Duty to Comply ....................................................................................................................... 20
   B. Penalties for Violations of Permit Conditions ......................................................................... 20
   C. Need to Halt or Reduce Activity not a Defense ...................................................................... 20
   D. Duty to Mitigate ..................................................................................................................... 20
   E. Proper Operation and Maintenance .......................................................................................... 20
   F. Removed Substances ............................................................................................................. 20
   G. Bypass of Treatment Facilities .............................................................................................. 20
   H. Upset Conditions ................................................................................................................... 22
   I. Toxic Pollutants ........................................................................................................................ 22
   J. Changes in Discharge of Toxic Substances ........................................................................... 22
   K. Industrial Pretreatment ........................................................................................................... 23
IV. GENERAL REQUIREMENTS .................................................................................................... 24
   A. Planned Changes ..................................................................................................................... 24
   B. Anticipated Noncompliance .................................................................................................... 24
   C. Permit Actions ......................................................................................................................... 24
   D. Duty to Reapply ...................................................................................................................... 24
   E. Duty to Provide Information ................................................................................................... 24
   F. Other Information ................................................................................................................... 24
   G. Signatory Requirements ......................................................................................................... 24
   H. Penalties for Falsification of Reports ....................................................................................... 25
   I. Availability of Reports ............................................................................................................ 25
   J. Oil and Hazardous Substance Liability .................................................................................. 25
   K. Property Rights ...................................................................................................................... 25
   L. Severability .............................................................................................................................. 25
   M. Transfers ................................................................................................................................ 25
   N. State Laws .............................................................................................................................. 25
   O. Water Quality-Reopener Provision ......................................................................................... 26
   P. Toxicity Limitation-Reopener Provision .................................................................................. 26
V. GLOSSARY OF TERMS
   A. Definitions .............................................................................................................................. 27
I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Criteria for Inclusion in the General Permit for Coal Mining

This General permit shall apply only to the discharge of treated wastewater from:

Coal mining operations either new or existing in Utah which include or will include in part, or in whole, alkaline mine water drainage, storm water runoff from coal preparation plant associated areas, active mining areas, and post mining areas until the performance bond is released. The total dissolved solids (TDS) is limited to a concentration of 500 mg/L at all discharge points or one ton per day as a sum from all mine water or decant operations.

B. Notice of Intent for a General Permit for Coal Mining

Any facility which desires coverage under this general permit for coal mining and meets the requirements of Part I.A. can be issued general permit coverage by submitting a notice of intent (NOI) to the Division of Water Quality.

The NOI shall include:

1. A completed Environmental Protection Agency Application (EPA Form 3510-1) or equivalent information.
2. Location and identification number (such as 001, 002, etc.) of each existing discharge and/or proposed discharge point(s). This includes the latitude and longitude to the nearest 15 seconds and the name of the receiving water(s).
3. A description of the source of the wastewater for each discharge point.
4. A description of the treatment given or proposed for the wastewater at each discharge point and if necessary a justification of why no treatment is required.
5. Flow characteristics for each discharge point such as whether flow is or will be continuous or intermittent and indicate projected and/or actual average and maximum flows in gpd.
6. Data for each discharge point for the following parameters:
   a. Biochemical demand (BOD₅).
   b. Chemical oxygen demand (COD).
   c. Total organic carbon (TOC).
   d. Total suspended solids (TSS).
   e. Flow.
   f. Ammonia (as N).
   g. Oil and grease.
   h. Temperature.
   i. pH.
   j. Total dissolved solids (TDS).
   k. Total iron and metals, cyanide, phenols located in Table III UAC R317-8-3.12.
   l. For discharge(s) of mine water or mine water and mine water mixed with surface runoff one acute whole efficiency toxicity test using two species and full dilution series (five dilutions plus a control). Sediment pond discharges which have only surface runoff do not require WET tests.
   m. Date and time of sampling for each parameter.
PART I
Permit No. UTG040000

n. Date and time of analysis for each parameter.
o. Utah certified laboratory which has completed the analysis for each parameter.

For each discharge point the presence or absence of any toxic and/or priority pollutants as listed Table II. UAC R317-8-3.13.

C. Description of Discharge Point(s).

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit is a violation of the Act and may be subject to penalties under the Act. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the Act.

<table>
<thead>
<tr>
<th>Outfall Number</th>
<th>Location of Discharge Point(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Sediment Pond discharge to Jewkes Creek to North Fork of Gordon Creek to Price River. Latitude 39°41'37, Longitude 111°02'58&quot;.</td>
</tr>
<tr>
<td>002</td>
<td>Mine discharge to pipe to Jewkes Creek to North Fork of Gordon. Latitude 39°41'39&quot;, Longitude 111°02'56&quot;.</td>
</tr>
</tbody>
</table>

D. Narrative Standard.

It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum or other nuisances such as color, odor or taste, or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by bioassay or other tests performed in accordance with standard procedures.

E. Specific Limitations and Self-monitoring Requirements.

1. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall(s) 001, 002. Such discharges shall be limited and monitored by the permittee as specified below:

<table>
<thead>
<tr>
<th>Effluent Characteristics</th>
<th>Discharge Limitations a/</th>
<th>Monitoring Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average 30-Day</td>
<td>Daily 7-Day</td>
</tr>
<tr>
<td>Flow, MGD</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Oil &amp; Grease, mg/L</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Total Iron, mg/L</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Total Suspended Solids, mg/L</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>Total Dissolved Solids, mg/L</td>
<td>500 d/</td>
<td>N/A</td>
</tr>
</tbody>
</table>

The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units in any sample and shall be monitored monthly by a grab sample.

There shall be no visible sheen or floating solids or visible foam in other than trace amounts.

There shall be no discharge of sanitary wastes or process water from coal preparation plants.
PART I

Pennit No. UTG040000

N.A. - Not Applicable.

a/ See Definitions, Part I.A for definition of terms.

b/ For intermittent discharge, the duration of the discharge shall be reported.

c/ If a visual sheen for oil and grease is observed then a grab sample must be taken immediately and the results shall not exceed 10 mg/L.

d/ If each outfall cannot achieve a 30-day average of 500 mg/L, then the permittee is limited to one ton (2000 lbs) per day as a sum from all outfalls.

e/ These samples may also be a composite sample

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): in the final effluent before mixing with the receiving water.

3. Any discharge or increase in the volume of a discharge caused by precipitation within any 24 hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) at outfall(s) 001 may comply with the following limitations instead of the otherwise applicable limitations for TSS and pH in Part I.E.1:

<table>
<thead>
<tr>
<th>Effluent Characteristics</th>
<th>Daily Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Settleable Solids</td>
<td>0.5 ml/L</td>
</tr>
<tr>
<td>pH</td>
<td>6.5 to 9.0 S.U.</td>
</tr>
</tbody>
</table>

In addition to the monitoring requirements specified under Part I.E.1 all effluent samples collected during storm water discharge events shall also be analyzed for settleable solids. Such analyses shall be conducted monthly by grab samples.

4. Any discharge or increase in the volume of a discharge caused by precipitation within any 24 hour period greater than the 10-year, 24 hour precipitation event (or snowmelt of equivalent volume) at outfall(s) 001 may comply with the following limitations instead of the otherwise applicable limitations:

The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units. However as stated in Part I.E.3, all effluent samples collected during storm-water discharge events shall be analyzed for settleable solids and parameters identified under Part I.E.1.

5. The operator shall have the burden of proof that the discharge or increase in discharge was caused by the applicable precipitation event described in Parts I.E.3 and 4. The alternate limitations in Parts I.E.3 and 4 shall not apply to treatment systems that treat underground mine water only.

F. Storm Water Requirements. It has been determined that Horizon Mine has a regulated storm water discharge as per UAC R317-8-3.9., therefore, the following permit conditions governing storm water discharges apply.

1. Coverage of This Section.

a. Discharges Covered Under This Section. The requirements listed under this section shall
apply to storm water discharges from Horizon Mine, subject to effluent limitations listed in Part I.E. of this permit.

1) Site Coverage. Storm water discharges from the following portions of Horizon Mine may be eligible for this permit: haul roads (nonpublic roads on which coal or coal refuse is conveyed), access roads (nonpublic roads providing light vehicular traffic within the facility property and to public roadways), railroad spurs, sidings, and internal haulage lines (rail lines used for hauling coal within the facility property and to offsite commercial railroad lines or loading areas), conveyor belts, chutes, and aerial tramway haulage areas (areas under and around coal or refuse conveyor areas, including transfer stations), equipment storage and maintenance yards, coal handling buildings and structures, and inactive coal mines and related areas (abandoned and other inactive mines, refuse disposal sites and other mining-related areas on private lands).

2. Prohibition of Non-storm Water Discharges.
   a. The following non-storm water discharges may be authorized by this permit provided the non-storm water component of the discharge is in compliance with this section; fire fighting activities; fire hydrant flushings; potable water sources including waterline flushings; drinking fountain water; irrigation drainage, lawn watering; routine external building washdown water where detergents or other compounds have not been used in the process; pavement washwaters where spills or leaks of toxic or hazardous materials (including oils and fuels) have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated compressor condensate; uncontaminated springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.

3. Storm Water Pollution Prevention Plan Requirements. Most of the active coal mining-related areas, described in paragraph 1. above, are subject to sediment and erosion control regulations of the U.S. Office of Surface Mining (OSM) that enforces the Surface Mining Control and Reclamation Act (SMCRA). OSM has granted authority to the Utah Division of Oil Gas and Mining (DOGM) to implement SMCRA through State SMCRA regulations. All SMCRA requirements regarding control of erosion, siltation and other pollutants resulting from storm water runoff, including road dust resulting from erosion, shall be primary requirements of the pollution prevention plan and shall be included in the contents of the plan directly, or by reference. Where determined to be appropriate for protection of water quality, additional sedimentation and erosion controls may be warranted.
   a. Contents of Plan. The plan shall include at a minimum, the following items:
      1) Pollution Prevention Team. Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water pollution prevention team that are responsible for developing the storm water pollution prevention plan and assisting the facility manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.
      2) Description of Potential Pollutant Sources. Each plan shall provide a description of potential sources that may reasonably be expected to add significant amounts
of pollutants to storm water discharges or that may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials that may potentially be significant pollutant sources. Each plan shall include, at a minimum:

a) **Deadlines for Plan Preparation and Compliance**
   Horizon Mine shall prepare and implement a plan in compliance with the provisions of this section within 270 days of the effective date of this permit.

b) **Keeping Plans Current**
   Horizon Mine shall amend the plan whenever there is a change in design, construction, operation, or maintenance, that has a significant effect on the potential for the discharge of pollutants to the waters of the State or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified by the plan, or in otherwise achieving the general objectives of controlling pollutants in storm water discharges associated with the activities at the mine.

c) **Drainage.**
   (1) A site map, such as a drainage map required for SMCRA permit applications, that indicate drainage areas and storm water outfalls. These shall include but not be limited to the following:

   (a) Drainage direction and discharge points from all applicable mining-related areas described in paragraph 1.a.(1). (Site Coverage) above, including culvert and sump discharges from roads and rail beds and also from equipment and maintenance areas subject to storm runoff of fuel, lubricants and other potentially harmful liquids.

   (b) Location of each existing erosion and sedimentation control structure or other control measures for reducing pollutants in storm water runoff.

   (c) Receiving streams or other surface water bodies.

   (d) Locations exposed to precipitation that contain acidic spoil, refuse or unreclaimed disturbed areas.

   (e) Locations where major spills or leaks of toxic or hazardous pollutants have occurred.

   (f) Locations where liquid storage tanks containing potential pollutants, such as caustics, hydraulic fluids and lubricants, are exposed to precipitation.

   (g) Locations where fueling stations, vehicle and equipment maintenance areas are exposed to precipitation.
PART I
Permit No. UTG040000

(h) Locations of outfalls and the types of discharges contained in the drainage areas of the outfalls.

(2) For each area of the facility that generates storm water discharges associated with the mining-related activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow, and an identification of the types of pollutants that are likely to be present in storm water discharges associated with the activity. Factors to consider include the toxicity of the pollutant; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified.

d) Inventory of Exposed Materials. An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, stored or disposed in a manner to allow exposure to storm water runoff and location of onsite storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff; a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.

e) Spills and Leaks. A list of significant spills and leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility beginning 3 years prior to the effective date of this permit. Such list shall be updated as appropriate during the term of the permit.

f) Sampling Data. A summary of any existing discharge sampling data describing pollutants in storm water discharges from the portions of Horizon Mine covered by this permit, including a summary of any sampling data collected during the term of this permit.

g) Risk Identification and Summary of Potential Pollutant Sources. A narrative description of the potential pollutant sources from the following activities: truck traffic on haul roads and resulting generation of sediment subject to runoff and dust generation; fuel or other liquid storage; pressure lines containing slurry, hydraulic fluid or other potential harmful liquids; and loading or temporary storage of acidic refuse or spoil. Specific potential pollutants shall be identified where known.

3) Measures and Controls. Horizon Mine shall develop a description of storm water management controls appropriate for the facility and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at Horizon Mine. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls.
a) **Good Housekeeping.** Good housekeeping requires the maintenance of areas that may contribute pollutants to storm water discharges in a clean, orderly manner. These are practices that would minimize the generation of pollutants at the source or before it would be necessary to employ sediment ponds or other control measures at the discharge outlets. Where applicable, such measures or other equivalent measures would include the following: sweepers and covered storage to minimize dust generation and storm runoff; conservation of vegetation where possible to minimize erosion; watering of haul roads to minimize dust generation; collection, removal, and proper disposal of waste oils and other fluids resulting from vehicle and equipment maintenance; or other equivalent measures.

b) **Preventive Maintenance.** A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems. Where applicable, such measures would include the following: removal and proper disposal of settled solids in catch basins to allow sufficient retention capacity; periodic replacement of siltation control measures subject to deterioration such as straw bales; inspections of storage tanks and pressure lines for fuels, lubricants, hydraulic fluid or slurry to prevent leaks due to deterioration or faulty connections; or other equivalent measures.

c) **Spill Prevention and Response Procedures.** Areas where potential spills that can contribute pollutants to storm water discharges can occur, and their accompanying drainage points shall be identified clearly in the storm water pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures for cleaning up spills shall be identified in the plan and made available to the appropriate personnel. The necessary equipment to implement a clean up shall be available to personnel.

d) **Inspections.** In addition to or as part of the comprehensive site evaluation required under paragraph 3.a.(4) of this section, qualified facility personnel shall be identified to inspect designated areas of the facility at appropriate intervals specified in the plan. The following shall be included in the plan:

- (1) **Active Mining-Related Areas and Those Inactive Areas Under SMCRA Bond Authority.** The plan shall require quarterly inspections by the facility personnel for areas of the facility covered by pollution prevention plan requirements. This inspection interval corresponds with the quarterly inspections for the entire facility required to be provided by SMCRA authority inspectors for all mining-related areas under SMCRA authority, including sediment and erosion control measures. Inspections by the facility representative may be done at the same time as the mandatory inspections performed by SMCRA inspectors.
Records of inspections of the SMCRA authority facility representative shall be maintained.

(2) **Inactive Mining-Related Areas Not Under SMCRA Bond.** The plan shall require annual inspections by the facility representative except in situations referred to in paragraph 3.a.(4)(d) below.

(3) **Inspection Records.** The plan shall require that inspection records of the facility representative and those of the SMCRA authority inspector shall be maintained. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections.

e) **Employee Training.** Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. The pollution prevention plan shall identify periodic dates for such training.

f) **Record keeping and Internal Reporting Procedures.** A description of incidents (such as spills, or other discharges) along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.

g) **Non-storm Water Discharges.**

(1) **Certification.** The plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges such as drainage from underground portions of inactive mines or floor drains from maintenance or coal handling buildings. The certification shall include the identification of potential significant sources of non-storm water discharges at the site, a description of the results of any test and/or evaluation, a description of the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with Part IV.G.4. of this permit.

(2) **Exceptions.** Except for flows from fire fighting activities, authorized sources of non-storm water listed in Part I.F.2.a. that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.
PART I

Failure to Certify. If Horizon Mine is unable to provide the certification required (testing or other evaluation for non-storm water discharges), the Executive Secretary must be notified within 180 days after the effective date of this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water discharges; the results of such test or other relevant observations; potential sources of non-storm water to the storm discharge lines; and why adequate tests for such storm discharge lines were not feasible. Non-storm water discharges to waters of the State that are not authorized by a UPDES permit are unlawful, and must be terminated.

Sediment and Erosion Control. The plan shall identify areas that, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion and reduce sediment concentrations in storm water discharges. As indicated in paragraph I.F.3. above, SMCRA requirements regarding sediment and erosion control measures are primary requirements of the pollution prevention plan for mining-related areas subject to SMCRA authority. The following sediment and erosion control measures or other equivalent measures, should be included in the plan where reasonable and appropriate for all areas subject to storm water runoff:

1) Stabilization Measures. Interim and permanent stabilization measures to minimize erosion and lessen amount of structural sediment control measures needed, including: mature vegetation preservation; temporary seeding; permanent seeding and planting; temporary mulching, matting, and netting; sod stabilization; vegetative buffer strips; temporary chemical mulch, soil binders; and soil palliatives; nonacidic road surfacing material; and protective trees.

2) Structural Measures. Structural measures to lessen erosion and reduce sediment discharges, including: silt fences; earth dikes; straw dikes; gradient terraces; drainage swales; sediment traps; pipe slope drains; porous rock check dams; sedimentation ponds; riprap channel protection; capping of contaminated sources; and physical/chemical treatment of storm water.

Management of Flow. The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (other than those as sediment and erosion control measures listed above) used to manage storm water runoff in a manner that reduces pollutants in storm water runoff from the site. The plan shall provide that the measures, which the permittee determines to be reasonable and appropriate, shall be implemented and maintained. Appropriate measures may include: discharge diversions; drainage/storm water conveyances; runoff dispersion; sediment control and collection; vegetation/soil stabilization; capping of contaminated sources; treatment; or other equivalent measures.
4) Comprehensive Site Compliance Evaluation. Qualified personnel shall conduct site compliance evaluations at intervals specified in the plan, but in no case less than once a year. Such evaluations shall provide:

a) Areas contributing to a storm water discharge associated with coal mining-related areas shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. These areas include haul and access roads; railroad spurs, sidings, and internal haulage lines; conveyor belts, chutes and aerial tramways; equipment storage and maintenance yards; coal handling buildings and structures; and inactive mines and related areas. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures, as indicated in paragraphs 3.a.(3)(h) and 3.a.(3)(i) above and where identified in the plan, shall be observed to ensure that they are operating correctly. A visual evaluation of any equipment needed to implement the plan, such as spill response equipment, shall be made.

b) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan, in accordance with paragraph 3.a.(2) of this section, and pollution prevention measures and controls identified in the plan, in accordance with paragraph 3.a.(3) of this section, shall be revised as appropriate within 2 weeks of such evaluation and shall provide for implementation of any changes to the plan in a timely manner. For inactive mines, such revisions may be extended to a maximum of 12 weeks after the evaluation.

c) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with paragraph 3.a.(4)(b) above shall be made and retained as part of the storm water pollution prevention plan for at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with Part IV.G.4. (Signatory Requirements) of this permit.

d) Where compliance evaluation schedules overlap with inspections required under 3.a.(3)(d), the compliance evaluation may be conducted in place of one such inspection. Where annual site compliance evaluations are shown in the plan to be impractical for inactive mining sites due to the remote location and inaccessibility of the site, site inspections required under this part shall be conducted at appropriate intervals specified in the plan, but, in no case less than once in 3 years.

4. Numeric Effluent Limitations. There are no additional numeric effluent limitations beyond those described in Part I.E. of this permit.
5. **Monitoring and Reporting Requirements.**

a. **Benchmark Analytical Monitoring Requirements.** Horizon Mine must monitor their storm water discharges associated with industrial activity at least quarterly (4 times per year) during years 2 and 4 of the permit cycle except as provided in paragraphs 5.a.(3) (Sampling Waiver), 5.a.(4) (Representative Discharge), and 5.a.(5) (Alternative Certification). Horizon Mine is required to monitor their storm water discharges for the pollutants of concern listed in Table E. below. Reports must be made in accordance with 5.b. (Reporting). In addition to the parameters listed in Table E. below, Horizon Mine measurements or estimates (in inches) of the storm event that generated the sampled runoff; the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; and an estimate of the total volume (in gallons) of the discharge sampled.

The results of benchmark monitoring are primarily for Horizon Mine’s use to determine the overall effectiveness of the SWPPP in controlling the discharge of pollutants to receiving waters. Benchmark values are not viewed as permit limitations. An exceedance of a benchmark value does not, in and of itself, constitute a violation of this permit. While exceedance of a benchmark value does not automatically indicate a violation of a water quality standard has occurred, it does signal that modifications to the SWPPP or more specific pollution prevention controls may be necessary.

<table>
<thead>
<tr>
<th>Pollutants of Concern</th>
<th>Cut-Off Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Recoverable Aluminum</td>
<td>0.75 mg/L</td>
</tr>
<tr>
<td>Total Recoverable Iron</td>
<td>1.0 mg/L</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>100 mg/L</td>
</tr>
</tbody>
</table>

1) **Monitoring Periods.** Horizon Mine shall monitor samples collected during the sampling periods of: January through March, April through June, July through September, and October through December during the second and fourth years of this permit cycle.

2) **Sample Type.** A minimum of one grab sample shall be taken. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. The required 72-hour storm event interval is waived where the preceding measurable storm event did not result in a measurable discharge from the facility. The required 72-hour storm event interval may also be waived where Horizon Mine documents that less than a 72-hour interval is representative for local storm events during the season when sampling is being conducted. The grab sample shall be taken during the first 30 minutes of the discharge. If the collection of a grab sample during the first 30 minutes is impracticable, a grab sample can be taken during the first hour of the discharge. and the discharger shall submit with the monitoring report a description of why a grab sample during the first 30 minutes was impracticable. If storm water discharges associated with industrial activity commingle with process or nonprocess water, then where practicable permittees must attempt to sample the storm water discharge before it mixes with the non-storm water discharge.
3) **Sampling Waiver.**

a) **Adverse Conditions.** If Horizon Mine is unable to collect samples within a specified sampling period due to adverse climatic conditions, thus a substitute sample shall be collected from a separate qualifying event in the next monitoring period and the data submitted along with the data for the routine sample in that period. Adverse weather conditions that may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricanes, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

b) **Low Concentration Waiver.** When the average concentration for a pollutant calculated from all monitoring data collected from an outfall during the second year monitoring is less than the corresponding value for that pollutant listed in Table E. under the column Monitoring Cut-Off Concentration, Horizon Mine may waive monitoring and reporting requirements for the fourth year monitoring period. Horizon Mine must submit to the Executive Secretary, in lieu of the monitoring data, a certification that there has not been a significant change in industrial activity or the pollution prevention measures in area of the facility that drains to the outfall for which sampling was waived.

c) **Inactive and Unstaffed Site.** If Horizon Mine is unable to conduct quarterly chemical storm water sampling at an inactive and unstaffed site, the operator of the facility may exercise a waiver of the monitoring requirements as long as the facility remains inactive and unstaffed. Horizon Mine must submit to the Executive Secretary, in lieu of monitoring data, a certification statement on the Storm Water Discharge Monitoring Report (SWDMR) stating that the site is inactive and unstaffed so that collecting a sample during a qualifying event is not possible.

4) **Representative Discharge.** If the facility has two or more outfalls that, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by the outfall, discharge substantially identical effluents, Horizon Mine may test the effluent of one of such outfalls and report that the quantitative data also applies to the substantially identical outfall(s) provided that Horizon Mine includes in the storm water pollution prevention plan a description of the location of the outfalls and explains in detail why the outfalls are expected to discharge substantially identical effluents. In addition, for each outfall that Horizon Mine believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the drainage area (e.g., low (under 40 percent), medium (40 to 65 percent), or high (above 65 percent)) shall be provided in the plan. Horizon Mine shall include the description of the location of the outfalls, explanation of why outfalls are expected to discharge substantially identical effluents, and estimate of the size of the drainage area and runoff coefficient with the SWDMR.

5) **Alternative Certification.** Horizon Mine is not subject to the monitoring
PART I
Permit No. UTG040000

requirements of this section provided that certification is made for a given outfall or on a pollutant-by-pollutant basis in lieu of monitoring reports required under paragraph b. below, under penalty of law, signed in accordance with Part IV.G.4. (Signatory Requirements). The Certification shall state that material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, industrial machinery or operations, or significant materials from past industrial activity that are located in areas of the facility within the drainage area of the outfall are not presently exposed to storm water and are not expected to be exposed to storm water for the certification period. Such certification must be retained in the storm water pollution prevention plan, and submitted to DWQ in accordance with Part II.D. of this permit. In the case of certifying that a pollutant is not present, Horizon Mine must submit the certification along with the monitoring reports required under paragraph b. below. If Horizon Mine cannot certify for an entire period, they must submit the date exposure was eliminated and any monitoring required up until that date. This certification option is not applicable to compliance monitoring requirements associated with effluent limitations.

b. Reporting. Horizon Mine shall submit monitoring results for each outfall associated with industrial activity [or a certification in accordance with Sections (3), (4), or (5) above] obtained during the second year reporting period, on Storm Water Discharge Monitoring Report (SWDMR) form(s) postmarked no later than the 31st day of the following March. Monitoring results [or a certification in accordance with Sections (3), (4), or (5) above] obtained during the fourth year reporting period shall be submitted on SWDMR form(s) postmarked no later than the 31st day of the following March. For each outfall, one signed SWDMR form must be submitted to the Executive Secretary per storm event sampled. Signed copies of SWDMRs, or said certifications, shall be submitted to the Executive Secretary at the address listed in Part II.D. of the permit.

c. Visual Examination of Storm Water Quality. Horizon Mine shall perform and document a visual examination of a representative storm water discharge at the following frequencies: quarterly for active areas under SMCRA bond located in areas with average annual precipitation over 20 inches; semi-annually for inactive areas under SMCRA bond, and active areas under SMCRA bond located in areas with average annual precipitation of 20 inches or less; visual examinations are not required at inactive areas not under SMCRA bond.

1) Visual Monitoring Periods. Examinations shall be conducted in each of the following periods for the purposes of visually inspecting storm water runoff or snow melt: Quarterly-January through March; April through June; July through September; and October through December. Semi-annually—January through June and July through December.

2) Sample and Data Collection. Examinations shall be made of samples collected within the first 60 minutes (or as soon thereafter as practical, but not to exceed two hours) of when the runoff or snowmelt begins discharging. The examinations shall document observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution. The examination must be conducted in a well-lit area. No analytical tests are required to be performed on the samples. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Where
practicable, the same individual will carry out the collection and examination of discharges for the life of the permit.

3) **Visual Storm Water Discharge Examination Reports.** Visual examination reports must be maintained onsite in the pollution prevention plan. The report shall include the examination date and time, examination personnel, the nature of the discharge (i.e., runoff or snow melt), visual quality of the storm water discharge (including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution), and probable sources of any observed storm water contamination.
MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under Part I shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Sludge samples shall be collected at a location representative of the quality of sludge immediately prior to the use-disposal practice.

B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under Utah Administrative Code ("UAC") R317-2-10, unless other test procedures have been specified in this permit.

C. Penalties for Tampering. The Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

D. Reporting of Monitoring Results. Monitoring results obtained during the previous month shall be summarized for each month and reported monthly on a Discharge Monitoring Report Form (EPA No. 3320-1), post-marked no later than the 28th day of the month following the completed reporting period. The first report is due on June 28, 2003. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of Signatory Requirements (see Part IV.G), and submitted to the Director. Division of Water Quality:

original to: Department of Environmental Quality
Division of Water Quality
288 North 1460 West
PO Box 144870
Salt Lake City, Utah 84114-4870

E. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.

F. Additional Monitoring by the Permittee. If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under UAC R317-2-10 or as otherwise specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.

G. Records Contents. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The individual(s) who performed the sampling or measurements;
3. The date(s) and time(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

INTEGRATED
JUL 01 2005
DIV OF OIL, GAS & MINING
H. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the Executive Secretary at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location.

I. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance which may seriously endanger health or environment as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 538-6146, or 24 hour answering service (801) 536-4123.

2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4123 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:

   a. Any noncompliance which may endanger health or the environment;
   
   b. Any unanticipated bypass which exceeds any effluent limitation in the permit (See Part III.G, Bypass of Treatment Facilities.);
   
   c. Any upset which exceeds any effluent limitation in the permit (See Part III.H, Upset Conditions.); or,
   
   d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit.

3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;
   
   b. The period of noncompliance, including exact dates and times;
   
   c. The estimated time noncompliance is expected to continue if it has not been corrected; and
   
   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

   e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.

4. The Executive Secretary may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 538-6146.

5. Reports shall be submitted to the addresses in Part II.D, Reporting of Monitoring Results.
J. **Other Noncompliance Reporting.** Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part II.D* are submitted. The reports shall contain the information listed in *Part II.1.3.*

K. **Inspection and Entry.** The permittee shall allow the Executive Secretary, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. **Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;**

2. **Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;**

3. **Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,**

4. **Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.**

---

*INTEGRATED*

*JUL 8 1 2005*

*DIV OF OIL GAS & MINING*
III. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Executive Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions. The Act provides that any person who violates a permit condition implementing provisions of the Act is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions of the Act is subject to a fine not exceeding $25,000 per day of violation; Any person convicted under UCA 19-5-115(2) a second time shall be punished by a fine not exceeding $50,000 per day. Except as provided at Part III.G, Bypass of Treatment Facilities and Part III.H, Upset Conditions, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Removed Substances. Collected screening, grit, solids, sludges, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.

G. Bypass of Treatment Facilities.

1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to 2. and 3. of this section.

2. Prohibition of Bypass.

   a. Bypass is prohibited, and the Executive Secretary may taken enforcement action against a permittee for bypass, unless:

      (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;
(2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and

(3) The permittee submitted notices as required under section G.3.

b. The executive Secretary may approve an anticipated bypass, after considering its adverse effects, if the Executive Secretary determines that it will meet the three conditions listed in sections G.2a. (1), (2) and (3).

3. Notice.

a. Anticipated bypass. Except as provided above in section G.2. and below in section G.3.b, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Executive Secretary:

(1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages:

(2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Executive Secretary in advance of any changes to the bypass schedule;

(3) Description of specific measures to be taken to minimize environmental and public health impacts;

(4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;

(5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and

(6) Any additional information requested by the Executive Secretary.

b. Emergency Bypass. Where ninety days advance notice is not possible, the permittee must notify the Executive Secretary, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Executive Secretary the information in section G.3.a.(1) through (6i) to the extent practicable.

c. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass to the Executive Secretary as required under Part II.I., Twenty Four Hour Reporting. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.
H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph 2. of this section are met. Executive Secretary's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that the permittee can identify the cause(s) of the upset;
   
   b. The permitted facility was at the time being properly operated;
   
   c. The permittee submitted notice of the upset as required under Part II.I, Twenty-four Hour Notice of Noncompliance Reporting; and,
   
   d. The permittee complied with any remedial measures required under Part III.D, Duty to Mitigate.

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

I. Toxic Pollutants. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of The Water Quality Act of 1987 for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

J. Changes in Discharge of Toxic Substances. Notification shall be provided to the Executive Secretary as soon as the permittee knows of, or has reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   a. One hundred micrograms per liter (100 ug/L);
   
   b. Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
   
   c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with UAC R317-8-3.4(7) or (10); or,
   
   d. The level established by the Executive Secretary in accordance with UAC R317-8-4.2(6).

2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   INCORPORATED

   JUL 01 2005

   DIV OF OIL GAS & MINING
a. Five hundred micrograms per liter (500 ug/L);

b. One milligram per liter (1 mg/L) for antimony;

c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with UAC R317-8-3.4(9); or,

d. The level established by the Executive Secretary in accordance with UAC R317-8-4.2(6).

K. Industrial Pretreatment. Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of The Water Quality Act of 1987, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at 40 CFR 403, the State Pretreatment Requirements at UAC R317-8-8, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters.

In addition, in accordance with 40 CFR 403.12(p)(1), the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under 40 CFR 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).
V. GENERAL REQUIREMENTS

A. Planned Changes. The permittee shall give notice to the Executive Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Executive Secretary of any planned changes at least 30 days prior to their implementation.

B. Anticipated Noncompliance. The permittee shall give advance notice to the Executive Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit.

E. Duty to Provide Information. The permittee shall furnish to the Executive Secretary, within a reasonable time, any information which the Executive Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Executive Secretary, upon request, copies of records required to be kept by this permit.

F. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Executive Secretary, it shall promptly submit such facts or information.

G. Signatory Requirements. All applications, reports or information submitted to the Executive Secretary shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Executive Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Executive Secretary, and,

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a position.
PART IV
Permit No. UTG040000

3. Changes to authorization. If an authorization under paragraph IV.G.2 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph IV.G.2 must be submitted to the Executive Secretary prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. Penalties for Falsification of Reports. The Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than $10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.

I. Availability of Reports. Except for data determined to be confidential under UAC R317-8-3.2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Executive Secretary. As required by the Act, permit applications, permits and effluent data shall not be considered confidential.

J. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the Act.

K. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

L. Severability. The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

M. Transfers. This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Executive Secretary at least 20 days in advance of the proposed transfer date;
2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,

3. The Executive Secretary does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.

N. **State Laws.** Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by UCA 19-5-117.

O. **Water Quality-Reopener Provision.** This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.

2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.

3. A revision to the current Water Quality Management Plan is approved and adopted which calls for different effluent limitations than contained in this permit.

P. **Toxicity Limitation-Reopener Provision.** This permit may be reopened and modified (following proper administrative procedures) to include whole effluent toxicity (WET) testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.
V. GLOSSARY OF TERMS

A. Definitions

1. The "30-day (and monthly) average" is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

2. The "7-day (and weekly) average" is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains the Saturday.

3. "Daily Maximum" ("Daily Max.") is the maximum value allowable in any single sample or instantaneous measurement.

4. "Composite samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the composite sample period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:
   a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;
   b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;
   c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,
   d. Continuous collection of sample, with sample collection rate proportional to flow rate.

5. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

6. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

7. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

8. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
9. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

10. "Executive Secretary" means Executive Secretary of the Utah Water Quality Board.

11. "EPA" means the United States Environmental Protection Agency.

12. "Act" means the "Utah Water Quality Act".

13. "Best Management Practices" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

14. "Coal pile runoff" means the rainfall runoff from or through any coal storage pile.


16. "Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharges. This term does not include return flows from irrigated agriculture or agriculture storm water runoff.

17. "Significant spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (see 40CFR 110.10 and 40 CFR 117.21) or Section 102 of the CERCLA (see 40 CFR 302.4).

18. "Storm water" means storm water runoff, snow melt runoff, and surface runoff and drainage.

19. "Waste pile" means any noncontainerized accumulation of solid, nonflowing waste that is used for treatment or storage.

20. "10-year, 24-hour precipitation event" means the maximum 24-hour precipitation event with a probable reoccurrence interval of once in 10 years. This information is available in Weather Bureau Technical Paper no. 40, May 1961 and NOAA Atlas 2, 1973 for the 11 Western States, and may be obtained from the National Climatic center of the Environmental Data Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

21. The term "coal preparation plant" means a facility where coal is crushed, screened, sized and cleaned, dried, or otherwise prepared and loaded for transit to a consuming facility.

22. The term "coal preparation plant associated areas" means the coal preparation plant yards, immediate access roads, coal refuse piles, and coal storage piles and facilities.
CHAPTER 3
OPERATION AND RECLAMATION PLAN
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Scope</td>
<td>3-1</td>
</tr>
<tr>
<td>3.2 Surface Facilities Construction Plans</td>
<td>3-1</td>
</tr>
<tr>
<td>3.2.1 Site Selection and Preparation</td>
<td>3-2</td>
</tr>
<tr>
<td>3.2.2 Mine Portals</td>
<td>3-2</td>
</tr>
<tr>
<td>3.2.3 Surface Buildings and Structures</td>
<td>3-3</td>
</tr>
<tr>
<td>3.2.3.1 Plans and Engineering Designs</td>
<td>3-5</td>
</tr>
<tr>
<td>3.2.3.2 Utility Installation and Support Facilities</td>
<td>3-5</td>
</tr>
<tr>
<td>3.2.3.3 Road Classification</td>
<td>3-6</td>
</tr>
<tr>
<td>3.2.3.4 Description of Transportation Facilities</td>
<td>3-6</td>
</tr>
<tr>
<td>3.2.3.5 Refuse Piles</td>
<td>3-7</td>
</tr>
<tr>
<td>3.2.3.6 Coal Mine Waste</td>
<td>3-7</td>
</tr>
<tr>
<td>3.2.3.7 Management of Mine Openings</td>
<td>3-9</td>
</tr>
<tr>
<td>3.2.3.8 Mine Structures and Facilities</td>
<td>3-9</td>
</tr>
<tr>
<td>3.2.4 Coal Handling</td>
<td>3-10</td>
</tr>
<tr>
<td>3.2.5 Power System</td>
<td>3-10</td>
</tr>
<tr>
<td>3.2.6 Water Supply</td>
<td>3-11</td>
</tr>
<tr>
<td>3.2.7 Sewage System</td>
<td>3-11</td>
</tr>
<tr>
<td>3.2.8 Water Diversion Structures</td>
<td>3-11</td>
</tr>
<tr>
<td>3.2.9 Sedimentation Control Structures and Water Treatment Facilities</td>
<td>3-11</td>
</tr>
<tr>
<td>3.2.10 Transportation, Roads, Parking Area, Railroad Spurs</td>
<td>3-11</td>
</tr>
<tr>
<td>3.2.11 Total Area for Surface Disturbance During Permit Term</td>
<td>3-11</td>
</tr>
<tr>
<td>3.2.12 Additional Areas for Surface Disturbances for Life of Mine</td>
<td>3-11</td>
</tr>
<tr>
<td>3.2.13 Detailed Construction Schedule</td>
<td>3-12</td>
</tr>
<tr>
<td>3.3 Operation Plan</td>
<td>3-12</td>
</tr>
<tr>
<td>3.3.1 Mining Plans</td>
<td>3-12</td>
</tr>
<tr>
<td>3.3.1.1 Orientation and Multiple Seam Considerations</td>
<td>3-13</td>
</tr>
<tr>
<td>3.3.1.2 Portals, Shafts, and Slopes</td>
<td>3-13</td>
</tr>
<tr>
<td>3.3.1.3 Mining Methods, Room and Pillar, Longwall</td>
<td>3-14</td>
</tr>
<tr>
<td>3.3.1.4 Projected Mine Development, Mains, Submains, Panels, Etc.</td>
<td>3-14</td>
</tr>
<tr>
<td>3.3.1.5 Retreat Mining</td>
<td>3-14</td>
</tr>
<tr>
<td>3.3.1.6 Roof Control, Ventilation, Water Systems, Dust Suppression, Dewatering, Electrical</td>
<td>3-14</td>
</tr>
<tr>
<td>3.3.2 Barrier Pillars</td>
<td>3-14</td>
</tr>
</tbody>
</table>
3.3.2.1 Protection of Oil and Gas Wells .................................................. 3-14

TABLE OF CONTENTS (Continued)

Section ........................................................................................................ Page
3.3.2.2 Protection of Surface Structures and Streams .................................. 3-14
3.3.2.3 Property Boundaries ...................................................................... 3-15
3.3.2.4 Outcrop Protection ........................................................................ 3-15
3.3.2.5 Other ......................................................................................... 3-15
3.3.2.6 Underground Development Waste .............................................. 3-15
3.3.2.7 Return of Coal Processing Waste to Underground ..................... 3-14

3.3.3 Conservation of Coal Resources ....................................................... 3-15
3.3.3.1 Projected Maximum Recovery .................................................... 3-16
3.3.3.2 Justification for Non-Recovery ................................................... 3-16
3.3.3.3 Access for Future Reserves ......................................................... 3-16

3.3.4 Equipment Selection ......................................................................... 3-16

3.3.5 Mine Safety, Fire Protection, and Security ....................................... 3-17
3.3.5.1 Signs ....................................................................................... 3-17
3.3.5.2 Fences and Gates ....................................................................... 3-18
3.3.5.3 Fire Protection .......................................................................... 3-18
3.3.5.4 Explosives ................................................................................ 3-22
3.3.5.5 Management of Mine Openings ................................................. 3-22

3.3.6 Operations Schedule ......................................................................... 3-23
3.3.6.1 Annual Production Per Year for Permit Term .............................. 3-23
3.3.6.2 Operations Schedule - Day - Shifts .......................................... 3-23
3.3.6.4 Temporary Cessation ................................................................ 3-23

3.3.7 Mine Permit Area ............................................................................. 3-23
3.3.7.1 Acreage and Delineation of Mine Permit Area .......................... 3-23
3.3.7.2 Projected Mining by Year .......................................................... 3-23

3.3.8 Mine Plan Area .................................................................................. 3-23

3.4 Environmental Protection ...................................................................... 3-23

3.4.1 Preservation of Land Use ................................................................... 3-23
3.4.1.1 Projected Impacts of Mining on Current and
Chapter 3, Operation and Reclamation Plan
Hidden Splendor Resources, Inc. - Horizon Mine

Future Land-Use ........................................... 3-23
3.4.1.2 Control Measures to Mitigate Impacts ............ 3-24

TABLE OF CONTENTS (Continued)

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4.2 Protection of Human Values ........................................ 3-24</td>
<td></td>
</tr>
<tr>
<td>3.4.2.1 Projected Impacts of Mining on Human Values ..................... 3-24</td>
<td></td>
</tr>
<tr>
<td>3.4.3 Protection of Hydrologic Balance .................................... 3-24</td>
<td></td>
</tr>
<tr>
<td>3.4.3.1 Projected Impact of Mining on Hydrologic Balance ............... 3-24</td>
<td></td>
</tr>
<tr>
<td>3.4.3.2 Control Measures to Mitigate Impacts and Monitoring Procedures</td>
<td>3-25</td>
</tr>
<tr>
<td>3.4.4 Preservation of Soil Resources and Projected Impacts of Mining on Soil Resources</td>
<td>3-25</td>
</tr>
<tr>
<td>3.4.4.1 Control Measures to Mitigate Impact to Soil Resources .......... 3-25</td>
<td></td>
</tr>
<tr>
<td>3.4.5 Protection of Vegetative Resources .................................. 3-25</td>
<td></td>
</tr>
<tr>
<td>3.4.5.1 Projected Impact of Mining on Vegetative Resources ............ 3-25</td>
<td></td>
</tr>
<tr>
<td>3.4.5.2 Mitigation Measures to be Employed to Reduce Impacts on Vegetative Resources</td>
<td>3-26</td>
</tr>
<tr>
<td>3.4.5.3 Monitoring Procedures - Reference Areas and Revegetation ...... 3-26</td>
<td></td>
</tr>
<tr>
<td>3.4.6 Protection of Fish and Wildlife ...................................... 3-26</td>
<td></td>
</tr>
<tr>
<td>3.4.6.1 Potential Impacts on Fish and Wildlife ......................... 3-26</td>
<td></td>
</tr>
<tr>
<td>3.4.6.2 Mitigation and Management Plans ................................. 3-26</td>
<td></td>
</tr>
<tr>
<td>3.4.6.3 Fish and Wildlife Monitoring ..................................... 3-26</td>
<td></td>
</tr>
<tr>
<td>3.4.7 Protection of Air Quality ........................................... 3-26</td>
<td></td>
</tr>
<tr>
<td>3.4.8 Subsidence Control and Monitoring Plan ............................ 3-26</td>
<td></td>
</tr>
<tr>
<td>3.4.8.1 Structures ..................................................... 3-26</td>
<td></td>
</tr>
<tr>
<td>3.4.8.2 Renewable Resources ............................................. 3-26</td>
<td></td>
</tr>
<tr>
<td>3.4.8.3 Geologic Hazards ................................................. 3-27</td>
<td></td>
</tr>
<tr>
<td>3.4.8.4 Subsidence .................................................... 3-27</td>
<td></td>
</tr>
<tr>
<td>3.4.8.5 Subsidence Control and Monitoring Plan .......................... 3-29</td>
<td></td>
</tr>
</tbody>
</table>
3.5 Reclamation Plan .......................................................... 3-32
  3.5.1 Contemporaneous and Interim Reclamation ...................... 3-32
  3.5.2 Soil Removal and Storage ........................................ 3-36
  3.5.3 Final Abandonment .................................................. 3-36

Section

  3.5.3.1 Sealing of Mine Openings .................................... 3-37
  3.5.3.2 Removal of Surface Structures ............................... 3-37
  3.5.3.3 Disposition of Dams, Ponds, and Diversions ............... 3-41

  3.5.4 Backfilling and Grading Plans .................................. 3-41
  3.5.4.1 Removal or Reduction of Highwalls ......................... 3-43
  3.5.4.2 Recontouring ................................................... 3-43
  3.5.4.3 Fencing and Erosion Control ................................ 3-44
  3.5.4.4 Soil Redistribution and Stabilization ..................... 3-44

  3.5.5 Revegetation Plan .................................................. 3-44
  3.5.5.1 Soil Preparation ............................................... 3-44
  3.5.5.2 Seeding .......................................................... 3-44
  3.5.5.3 Mulching .......................................................... 3-52
  3.5.5.4 Reclamation Management ...................................... 3-52
  3.5.5.5 Revegetation Monitoring ..................................... 3-52
  3.5.5.6 Establishment of Wildlife Habitat .......................... 3-52

  3.5.6 Reclamation Monitoring ......................................... 3-53

  3.5.7 Schedule of Reclamation for Horizon Mine ...................... 3-53
  3.5.7.1 Timetable For Completion of Major Reclamation Processes ... 3-53

  3.5.8 Cost Estimate for Final Reclamation ........................... 3-53

  3.6 References ............................................................ 3-53

LIST OF TABLES

  TABLE 3-1 Cut and Fill Calculations (Reclamation Phase) .......... 3-34
  TABLE 3-2 Reclamation Seed Mix #1 .................................. 3-46
  TABLE 3-3 Reclamation Seed Mix #2 ................................... 3-47
  TABLE 3-4 Reclamation Timetable ...................................... 3-33
Chapter 3, Operation and Reclamation Plan
Hidden Splendor Resources, Inc. - Horizon Mine

LIST OF FIGURES

FIGURE 3-3 MINE IDENTIFICATION SIGN ........................................ 3-20
FIGURE 3-4 IDENTIFICATION SIGNS .............................................. 3-21
FIGURE 3-5 SUBSIDENCE/SEAM THICKNESS RATIOS (FROM DUNRUD, 1980) ... 3-31
FIGURE 3-6 TYPICAL PORTAL SEALING ........................................ 3-38
FIGURE 3-7 TYPICAL PORTAL BLOCK SEAL ................................. 3-39

LIST OF PLATES

PLATE 3-1 SURFACE FACILITIES
PLATE 3-2 PREMINING AND OPERATIONAL CROSS SECTIONS
PLATE 3-3 FIVE YEAR MINE PLAN
PLATE 3-4 ACCESS AND HAULAGE ROAD DESIGN
PLATE 3-4A ANCILLARY ROAD TYPICAL SECTION
PLATE 3-5 SUBSIDENCE MONITORING PLAN
PLATE 3-6 PREMINING TOPOGRAPHY
PLATE 3-7 RECLAMATION TOPOGRAPHY
PLATE 3-7A POST MINING AND OPERATIONAL CROSS SECTIONS
PLATE 3-7B TOPSOIL STORAGE AREA CROSS-SECTIONAL VOLUME
PLATE 3-8 SWEETS CANYON POND UTILITIES
PLATE 3-9 OLD WORKINGS CASTLEGATE A SEAM
PLATE 3-10 OLD WORKINGS HIAWATHA SEAM

LIST OF APPENDICES

APPENDIX 3-1 ROAD AND HAULAGE LETTERS
APPENDIX 3-2 PILLAR EXTRACTION
APPENDIX 3-3 STATIC SAFETY FACTOR CALCULATIONS
APPENDIX 3-4 ROCK STRENGTH ANALYSES
APPENDIX 3-5 WATER RIGHTS
APPENDIX 3-6 UPDES PERMIT
APPENDIX 3-7 RECLAMATION BOND ESTIMATE
APPENDIX 3-8 LOCATIONS OF BURIED COAL WASTE
APPENDIX 3-9 UC-3 CULVERT EXTENSION
APPENDIX 3-10 ASTM COAL CLASSIFICATIONS
APPENDIX 3-11 BLM APPROVAL OF R2P2
CHAPTER 3
OPERATION AND RECLAMATION PLAN

3.1 Scope

This chapter outlines the scope of operation and reclamation for the Horizon Mine. The proposed coal mining and reclamation activities will be conducted in compliance with the operation and reclamation plans.

3.2 Surface Facilities Construction Plans

The Horizon surface facilities will be located in Jewkes Creek Canyon and Portal Canyon (see Plates 1-1 and 3-1).

Cross Sections and Maps

Previously Mined Areas. Plates 3-9 and 3-10 show the location and extent of known workings of active, inactive, or abandoned underground workings, including openings to the surface, within the permit and adjacent areas. Also areas within these mines that have been second mined. No previously surface-mined areas are known to exist within the permit area.

An extensive search of map repositories has been conducted, including the Price and Salt Lake City, Utah, offices of the Bureau of Land Management, the Utah Division of Oil, Gas & Mining, the Office of Surface Mining Map Repository and the Utah Geological Survey. Hidden Splendor Resources, Inc., believes that all old workings in the vicinity of the current operation have been located and are currently mapped.

Hidden Splendor has provided with this amendment twenty (20) maps and drawings of the old works in the area. These maps and drawings were used to prepare Plates 3-9 and 3-10 and have been loaned to UDOGM so that they can be scanned into the old works data base.

The general area in the vicinity of the Horizon Mine has long been used for coal mining. Four underground operations were formerly located on or within a short distance of the permit area. These mines were the Consumers, Sweets, National, and Beaver Creek Mines. Sweets, National, and Consumers were active from the late 1920s to the early 1950s and are presently closed. The Beaver Creek Mine was opened in 1969 and operated originally under the name of the Gordon Creek No. 3 Mine. The mine was purchased by General Exploration Co. in 1973 and then again by Beaver Creek Coal Company in January 1980. Much of the area to be occupied by the surface facilities has been disturbed by previous mining operations, with most of the major disturbances in this area occurring prior to 1950.

Existing Surface and Subsurface Facilities and Features. Other than the surface facilities directly associated with the Horizon Mine, no buildings are located in and within 1000 feet of the permit area. Furthermore, no major electric transmission lines, pipelines, or agricultural drainage tile fields exist within, passing through, or passing over the permit area.
Prior to construction of the Horizon Mine surface facilities, a public road, and some old concrete foundations existed within the current disturbed area. However, no intact buildings were present within the current disturbed area.

Landowner, Right-of-Entry, and Public Interest. Plates 4-1 and 4-2 of Chapter 4 show the boundaries of lands and the names of present owners of record of surface lands and subsurface coal, respectively, included in or contiguous to the permit area. Horizon has a legal right to enter and conduct coal mining operations on all of the lands within the permit area, as noted in Chapter 2 of this M&RP and the Appendices 2-1 and 2-3.

A buffer zone of one hundred feet is planned along the Beaver Creek where no subsidence is planned. A line delineating the angle of draw from subsidence is shown on Plate 3-3. No subsidence causing mining methods will be practiced in the area between the angle of draw line and the Beaver Creek. This protection will be accomplished by developing pillar centers on no less than seventy foot centers (70 foot by 70 foot undeveloped pillar projections) by driving twenty foot wide entries a fifty foot square pillar will remain. This calculates to an extraction ratio of approximately fifty percent by area. The remaining support coal should never be less than 48%.

If support pillars have been developed on larger than seventy foot centers, secondary extraction (i.e. slabbing) may be practiced. In all instances the coal pillar remaining will be at least fifty percent of the developed centers. There will not be any coal pillars in the 100 foot buffer zone and the area delineated by the angle of draw line and the Beaver Creek.

Land Surface Configuration. Surface contours of undisturbed areas adjacent to disturbed areas associated with the mine are shown on Plate 3-1. As previously stated, surface disturbances associated with mining have been in existence in the area since the mid-1920s. As a result, pre-mining topographic maps do not exist. However, the surface contours in undisturbed areas shown on Plate 3-1 are considered generally indicative of original land slopes in the vicinity of the mine.

A map showing topographic conditions prior to disturbance by Horizon is provided as Plate 3-6.

Certification. Where required by the regulations, cross sections and maps in this permit application have been prepared by or under the direction of, and certified by, qualified registered professional engineers or land surveyors. As appropriate, these persons were assisted by experts in the fields of hydrology, geology, biology, etc.

Previously Mined Areas. A certified map showing the location of previously mined areas within the permit and adjacent areas is provided as Plates 3-9 and 3-10.

3.2.1 Site Selection and Preparation

Roads and pads that will be constructed in support of the mine will be constructed with a cut and fill technique. Topsoil resources will be conserved as outlined in Chapter 8. The surface facilities will be on privately owned surface.

3.2.2 Mine Portals
Chapter 3, Operation and Reclamation Plan
Hidden Splendor Resources, Inc. - Horizon Mine
July 2005

See Section 3.3.1.2 for mine portal descriptions. Portal locations are noted on Plate 3-1.

3.2.3 Surface Buildings and Structures

Locations of proposed surface buildings and structures are shown on Plate 3-1. Upon termination of mining operations, all structures will be removed and the area reclaimed as outlined in Section 3.5.

Surface Facilities. Plate 3-1 shows the locations of the following surface facilities:

- Buildings, utility corridors, and facilities to be used, including:
  - Water Tank - one metal tank on concrete pad,
  - Fueling Station - metal tank and containment structure with fueling equipment,
  - Storage Building - portable building, to be used above ground or underground,
  - Transformer - portable, to be used above ground or underground,
  - Portals - see Section 3.3.1.2,
  - Conveyor - see subsequent portions of this Section,
  - Fan - metal structure containing a fan,
  - Substation (2) - metal structure sitting on gravel and concrete pad,
  - Roads - see Section 3.2.3.300,
  - Sedimentation Pond - see Chapter 7,
  - Temporary Office Trailer - mobile trailer,
  - Temporary Bath House Trailer - mobile trailer,
  - Parking Areas - soil pads,
  - Storage Areas - soil pads,
  - Crusher and Screen - metal structure on concrete pad/footings,
  - Emergency Escapeway - corrugated metal,
  - Dumpster(s) - metal, contractor owned,
  - The area of disturbance at the mine mouth,
  - Coal storage and loading facilities, and
  - The explosive storage and handling facility, which includes approved explosive magazine(s).

Drainage facilities are shown on Plate 7-4, including the site sedimentation pond, culverts, and ditches.

Cross sections of the surface facilities are provided on Plate 3-2. The disturbed area shown on Plate 3-1 is the same as the land area for which a performance bond or other guarantee has been posted.

Transportation Facilities. Roads that have been constructed, used, or maintained by Horizon in the permit area for the mining and reclamation operations are shown on Plate 3-1. No rail systems or overland conveyor systems (other than the material-handling conveyors in the mine yard) will
be associated with the permit area. Drainage structures associated with the roads are discussed in Chapter 7 of this M&RP. Typical cross sections of the primary roads are provided on Plate 3-4.

Two material handling conveyors exist on the surface at the mine site. As noted on Plate 3-1, the mine belt will transport coal from the mine to the stacker belt which will convey the coal to the coal stockpile/coal storage area, from which the coal will be loaded into trucks for off-site transport. These conveyors will be of sufficient size to handle the production levels coming from the mine and the anticipated truck loading rates. The first belt on the surface transports the coal to the crushing and screening plant, then the coal dumps on the stacker conveyor, which transports the coal to the stockpile.

The ash analyzer determines the potential quantity of ash content in coal passing through the conveyor. The analyzer relays a signal to a computerized conveyor system. The conveyor system includes two coal drop chutes, either allowing coal to be dropped in one or two stockpile locations within the disturbed area boundary. The location of the drops and analyzer are shown on Plate 3-1.

**Surface Facilities.** Underground development waste which is generated at the Horizon Mine will be disposed of underground within the Horizon Mine prior to bringing the waste to the surface.

If it becomes necessary to bring underground development waste to the surface, a permanent stockpile will be permitted.

A map of the existing topography prior to disturbance by Horizon is provided as Plate 3-6. No areas of pre-Horizon disturbance shown on Plate 3-6 are subject to the requirements of R645-200 through R645-203.

The location of the sedimentation pond is noted on Plate 3-1. No water treatment facilities will exist at the site other than the sedimentation pond.

The following facilities or activities will not exist or occur within the permit area:

- Coal preparation plant,
- Coal cleaning,
- Coal processing waste banks, dams, or embankments,
- Disposal of non-coal (non-waste rock) waste other than durable rock-type construction materials such as cinder block, and
- Air pollution control facilities.

Hence, certified maps or cross sections of these facilities are not provided in this plan. The durable rock-type construction materials will be disposed of in underground workings within the Horizon Mine without bringing this waste to the surface or at a permitted off-site solid-waste landfill.
Surface Configurations. Certified maps and cross sections showing the proposed final (post-reclamation) surface configuration of the Horizon disturbed area are provided on Plates 3-7 and 3-7A, respectively.

3.2.3.1 Plans and Engineering Designs

All plans and engineering designs presented in this M&RP were prepared by or under the direction of and certified by a qualified registered professional engineer.

Excess Spoil. No excess spoil (R645-100-200) will be generated from the permit area.

Durable Rock Fills. No durable rock fills will exist in the permit area.

Coal Mine Waste. No coal mine waste disposal facilities will exist on the surface in the permit area.

Impoundments. The only impoundment to be constructed for the mining and reclamation operation will consist of the sedimentation pond (see Plate 3-1 and Chapter 7). This impoundment has been designed under the direction of a professional engineer using current, prudent, engineering practices. These designs were certified by a qualified registered professional engineer.

Primary Roads. The design and construction of the primary roads associated with the mine have been certified by a professional engineer as meeting the requirements of R645-301-534.200 and R645-301-742.420 (see Plate 3-4).

Variance From Approximate Original Contour. No variance from the approximate original contour requirements of the regulations is being requested in this M&RP.

3.2.3.2 Utility Installation and Support Facilities

Utility Installations. All coal mining and reclamation operations will be conducted to minimize damage, destruction, or disruption of services provided by electric lines, telephone transmission stations, water lines, and sewer lines which pass over, under, or through the permit area. Areas where these utilities will be located are within non-subsidence zones. No other utility installations exist in the permit area. All utility installations associated with the Horizon Mine will be removed following mining in accordance with the reclamation plan discussed in Section 3.5 of this M&RP.

Support Facilities. Support facilities at the Horizon Mine will be operated in accordance with the permit issued for the mine. Support facilities will be located, maintained, and used in a manner that:

- Prevents or controls erosion and siltation, water pollution, and damage to public or private property;
- To the extent possible, using the best technology currently available, minimizes damage to fish, wildlife, and related environmental values; and
Support Facilities. Support facilities at the Horizon Mine will be operated in accordance with the permit issued for the mine. Support facilities will be located, maintained, and used in a manner that:

- Prevents or controls erosion and siltation, water pollution, and damage to public or private property;
- To the extent possible, using the best technology currently available, 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.

All support facilities will be removed following mining in accordance with the reclamation plan discussed in Section 3.5 of this M&RP.

Water Pollution Control Facilities. Water pollution control facilities at the Horizon Mine consist of the sedimentation pond and the appurtenant structures associated with the sedimentation pond. All water pollution control facilities will be removed following mining in accordance with the reclamation plan discussed in Section 3.5 of this M&RP. The sedimentation pond and appurtenant structures were constructed as discussed in Chapter 7.

3.2.3.3 Road Classification

Primary roads within the disturbed area include the lower haul road loop and the upper pad road. The upper pad (approach) road and parking area have been paved. See Plates 3-1 and 3-4.
No ancillary roads exist within the disturbed area. The locations of these roads are shown on Plates 3-1 and 3-4. Typical cross sections representing these roads are shown on Plate 3-4.

The unimproved dirt roads outside of the disturbed area but within the permit area will not be classified. They may be used by Horizon for access to the lease area surfaces for the collection of monitoring data (environmental and subsidence data) as well as other uses deemed appropriate by Horizon and as allowed by the associated landowner.

3.2.3.4 Description of Transportation Facilities

No surface conveyors (other than those in the mine yard immediately adjacent to the portals) or rail systems will be constructed, used, or maintained within the permit area. A description of the conveyor systems that will be used in the mine yard is provided in this M&RP.

Road Specifications. Cross sections of roads that will be used or maintained by Horizon are provided on Plate 3-4. This plate provides information regarding road widths, gradients, surfaces, etc. Information regarding road drainage structures is presented in Chapter 7.

The road which will access the mine is the Beaver Creek county road that extends from Consumers Road to the town of Clear Creek. Letters from Carbon County regarding the use of both Beaver Creek Road and Consumers Road are provided in Appendix 3-1. As indicated in this appendix,
of installation of culverts beneath the pad areas along both creeks. Additional information regarding the design of these culverts is presented in Chapter 7 of this M&RP.

Installation of these culverts provided several advantages, including: allowing coal haulage trucks to efficiently enter and leave the surface facilities area, protecting the streams from coal fines and sediment which may be generated on the adjacent disturbed areas, providing space for equipment and material storage, and providing a location for snow to be stacked away from the operations area during winter months. Snow is to be stored in sites that will drain directly to the sedimentation pond.

Carbon County upgraded Beaver Creek County Road during a time that was coincident with the construction of the Horizon Mine surface facilities. The county deemed this upgrade necessary to accommodate not only the anticipated traffic at the mine, but also the logging and ranching operations up the canyon that were not associated with mining. To accommodate this upgrade, the County realigned the lower reach of Jewkes Creek, between the mine and Consumers Road. This alteration of Jewkes Creek was implemented by Carbon County, Hidden Splendor Resources and was not the responsibility of Horizon.

**Road Maintenance.** Beaver Creek Road which accesses the disturbed area is owned and will be maintained by Carbon County. In the event of a catastrophic event that causes damage to Beaver Creek Road or Consumers Road, Horizon will cooperate with the County to promote rapid repair of the affected road as soon as practical following the catastrophic damage. For all primary roads within the permit area that are not owned by the county, Horizon will itself repair the road (or cause it to be repaired) as soon as practical following the catastrophic damage.

The roads within the surface-facilities area will be maintained by Horizon as necessary to permit access to the respective facilities. The remaining roads in the permit area are unimproved dirt roads. Horizon will cooperate with and assist the respective land or right-of-way owners in the maintenance of these roads as required to permit access for environmental monitoring and subsidence surveying.

### 3.2.3.5 Refuse Piles

No refuse piles will exist in the permit area.

### 3.2.3.6 Coal Mine Waste

Coal mine waste resulting from mining activities at the Horizon Mine will be handled as outlined in this section and previously in this M&RP.

**Waste Emplacement.** Underground Development Waste (UNDW) will be disposed of in underground workings.

**Excess Spoil Fills.** No excess spoil (R645-100-200) fills will exist in the permit area.

**Impounding Structures Constructed of Coal Mine Waste.** No impounding structures will be constructed of coal mine waste in the permit area.
Chapter 3, Operation and Reclamation Plan
Hidden Splendor Resources, Inc. - Horizon Mine

Disposal of Coal Mine Waste in Special Areas. As indicated previously, coal mine underground development waste generated at the Horizon Mine will be disposed of in underground workings within the permit area. MSHA inspectors have verified the storage of underground development waste meet safety requirements per 30 CFR 75.304, 305, 329, 330, 400, and 1711 and will inspect future storage. The source of this material will be UNDW resulting from partings and splits in the coal seam. As indicated in Chapter 6, neither acid- nor toxic-forming materials are present in the overburden, underburden, or coal (i.e., the material that will comprise the UNDW that will be generated from the Horizon Mine).

The UNDW which will be stowed underground will be backfilled into dead-end panels primarily near the outer extent of the area to be mined. Backfilling will occur prior to second mining to ensure that adequate roof support exists in the area. No influence on the active mining operation is anticipated from the backfilling process.

The underground development waste to be disposed of underground will be transported to the backfill area by mine haulage equipment and will be in an unsaturated condition. Hence, underground retaining walls to prevent seepage of the material into the mine workings will not be necessary.

After second mining, the roof will collapse, causing the UNDW rock in the mine to compact. Because the UNDW will be emplaced primarily in dead-end panels near the outer extent of the area to be mined, the surface effect of the backfilling operation will be to reduce the surface expression of subsidence in an area where subsidence will already be minimal. Hence, subsidence over the permit area in general will still occur uniformly.

As noted previously, the UNDW will be emplaced in an unsaturated condition using mine haulage equipment. Hydraulic transport media will not be used to emplace the material. As a result, the UNDW will not require dewatering, construction of barriers to retain water underground which might drain from the waste, or treatment of water from the waste which might be discharge to surface streams. Hence, no impacts on the hydrologic regime are anticipated due to disposal of the underground development waste in the underground workings.

Underground Development Waste. No underground development waste will be disposed of on the surface in the permit area.

Coal Processing Waste. No coal processing waste will be generated within the permit area.

Coal Processing Waste Banks, Dams, and Embankments. No coal processing waste banks, dams, or embankments will exist within the permit area.

Refuse Piles. No coal mine waste will be disposed of on the surface in the permit area.

Sediment Pond and Ditch Clean-out Material. Materials removed during the cleaning of both the surface ditches and the sediment pond will be placed in the areas designated on Plate 3-1 or disposed of at a State-approved solid waste disposal area. The materials associated with the clean-out should be clean and not degrade surface or underground water. Collectively the designated areas will store approximately 260 cubic yards. If the need arises, the clean-out
material will be sampled and tested according to R645-301-233 and if found acceptable will be used as substitute topsoil or fill material.

The material stockpile behind the substation will contain 150 cubic yards and the stockpile behind the fan will contain 110 cubic yards. The stockpiles will have 2:1 slopes and the material in the stockpiles will be seeded in the Fall of 2000.

The material will be routinely compacted and a berm will be constructed around the perimeter of the pile to retain the soil within the storage area. Operation of the storage site will be conducted in accordance with all Utah and Federal Regulations.

The Sediment Pond has been designed and certified and the pond will be cleaned out as discussed in Chapter 7.

3.2.3.7 Management of Mine Openings

Locations of the Hiawatha seam portals are shown on Plate 3-1. One of these openings serves as primary pathway for ingress and egress of personnel and machinery, and as a beltway for removal of coal from the mine, and the other three are used for mine ventilation.

Each underground mine opening will be protected from deterioration through the installation of steel sets and timbers. Concrete and liner plate steel may also be used.

Any portals which become temporarily inactive in the permit area, but have a further projected useful service, will be protected through the installation of a lockable chain-link gate to prevent unauthorized entry. Warning signs will be posted to identify the hazardous nature of the opening. These protection and warning devices will be periodically inspected and maintained in good operating condition during the period of temporary inactivity.

3.2.3.8 Mine Structures and Facilities

Pre-Existing Structures. No intact buildings existed within the current disturbed area at the mine surface at the time construction was begun on the Horizon Mine.

As indicated on Plate 3-1, the Beaver Creek county road extending from Consumers Road to the town of Clear Creek (i.e., Beaver Creek Road) runs along the west edge of the disturbed area. Those operations to be conducted within 100 feet of this public road include construction and operation of the sedimentation pond, storage and loading of coal for off-site transport, and storage of materials, snow, or equipment. The owners of the land adjacent to the disturbed area is Hidden Splendor Resources (see Figure 4-1). The interests of the public and the landowners will be protected by:

- Complying with the requirements of the surface land lease.
- Conducting the mining and reclamation operations in compliance with the permit issued by the State of Utah.
Chapter 3, Operation and Reclamation Plan
Hidden Splendor Resources, Inc. - Horizon Mine
July 2005

- Maintaining a berm along the west edge of the sedimentation pond to minimize the potential for inadvertent entry into the pond.

Mine-Related Structures. Generally, all mine surface facilities are located within or in close proximity to the associated operations areas. Future building construction will generally involve grading and preparation of foundation areas, excavation and installation of foundations, building erection, interior and exterior finish work, and connection of utilities. Storage areas will generally be open graded, providing outside storage for large supplies. Both building sites and storage areas will be graded to ensure effective drainage to disturbed-area ditches and culverts as noted on Plate 7-5. Operation and maintenance of support structures and facilities at the Horizon Mine will involve regular grading of facility areas, together with inspection, cleaning, and repairs as required.

General refuse that is generated on site will be stored in a dumpster(s) to be situated at a convenient location within the disturbed area. This waste will consist predominantly of old brattice cloth, ventilation tubing, broken timbers, wire, broken machinery parts, paper, cardboard, and miscellaneous garbage. This non-hazardous, non-toxic, non-coal, non-waste rock refuse will be disposed of periodically through Carbon County at a state-approved landfill.

During site construction, operation, and reclamation activities, any spilled petroleum products such as grease, hydraulic fluid, fuel, oil, joint coating, or other pollutants will be removed immediately with the associated contaminated soil and disposed of at a state-approved facility that is permitted to receive such waste. Adequate spill collection materials (including absorbents to stop or contain contaminants that may enter a stream) will be readily available at the site during these activities to contain any such spills.

During construction and other activities at the site, wet concrete will not be allowed to enter or come into contact with stream flows. Any water at the site which is contaminated with wet concrete or other contaminants will not be discharged into stream channels. Concrete trucks and other equipment used in the mixing and placement of concrete will be washed in areas well away from stream channels.

3.2.4 Coal Handling

Coal will be brought out of the mine by conveyor. The coal stream passes under an ash analyzer to determine the potential quantity of ash content of the mined coal. The surface conveyor system consists of two (2) drop points. Point #1 is manual and Point #2 is controlled by a computerized signal from the ash analyzer. The coal flow can be dropped at Points 1 or 2 within the disturbed area boundary. The coal discharged into the stockpile will be blended by the use of a front-end loader by bucket loads or by the stacking belt into the trucks. The location of the drops and the ash analyzer are shown on Plate 3-1.

3.2.5 Power System

The power obtained from Utah Power and Light Company will reach Portal Canyon substation by way of a transmission line which runs along County Road 290 then along Jewkes Canyon on the
east side to the substation. The location of the power line and substation are shown on Plate 3-1. See Chapter 10 for a discussion of raptor safe power lines.

3.2.6 Water Supply

Water for non-culinary use will be stored in a tank/pond within the disturbed area.

3.2.7 Sewage System

Chemical toilets will be used during initial development, construction, and operation of the mine. A service contract will be entered for maintenance of the chemical toilets and disposal of waste therefrom. Additional sewage facilities required for normal operation of the mine (after development) will be designed in accordance with UDH regulations. Plans for sewage facilities will be submitted for review and approval by UDH prior to construction of said facilities. It is anticipated that sewage facilities will consist of a collection system and holding tank.

3.2.8 Water Diversion Structures

Diversions will be installed to direct disturbed-area runoff to sediment-control structures and/or facilities. Runoff from undisturbed areas will be diverted away from the disturbed areas to the extent practical. Detailed discussions of the design of diversion structures are provided in Chapter 7.

3.2.9 Sedimentation Control Structures and Water Treatment Facilities

All runoff from the disturbed area is directed into the sedimentation pond located directly below the area of disturbance. The pond has been designed to contain runoff resulting from the 10-year, 24-hour precipitation event. The pond spillway has been designed to safely pass the peak flow resulting from a 25-year, 6-hour precipitation event.

The location of the pond is shown on Plate 3-1. Design, construction, maintenance and operation of the pond are discussed in detail in Section 7.2.3.2.

3.2.10 Transportation

Coal will be transported from the mine via a conveyor and discharged onto the coal storage area. Coal handling is discussed in Section 3.2.4. Transportation to and from the mine site (coal, personnel, and materials) is discussed in Sections 3.2.3.300 and 3.2.3.400.

3.2.11 Total Area for Surface Disturbance During Permit Term

See Section 2.117 for the acreage of the proposed surface-disturbance.

3.2.12 Additional Areas for Surface Disturbance for Life of Mine

There are no plans to disturb any additional surface area for the life of the operation beyond that to be initially disturbed.
3.2.13 Detailed Construction Schedule

Much of the area to be included in the surface facilities has been previously disturbed. Construction of the surface facilities is planned to begin when the permit is approved. Details for construction of the sediment pond are found in Chapter 7. A detailed reclamation schedule is presented in Section 3.5.

3.3 Operation Plan

In the Horizon Mine coal will be extracted using continuous miners, loaded into shuttle cars, and hauled to an underground feeder breaker. The feeder breaker will reduce the coal to an appropriate size, after which the coal will be fed onto a conveyor to be carried to the storage pile. Coal will be loaded from the storage pile onto coal trucks.

Details of the groundwater monitoring program are presented in Chapter 7.

The coal from the Horizon Mine will be sold on a run-of-mine basis, not washed. Coal of differing degrees of quality will be shipped to the coal terminal and blended to be sold. Coal to be sold by Horizon will comply with the definition in R645-100 of the State of Utah Coal Mining Rules "combustible carbonaceous rock, classified as anthracite, bituminous, subbituminous, or lignite by ASTM Standard D388-95. Appendix 3-10 includes a table with ASTM classifications and their corresponding characteristics.

Underground development waste and coal mine waste are discussed in Section 3.2.3. No impacts on the hydrologic regime are anticipated due to disposal of the underground development waste in the underground workings.

No underground development waste will be brought to the surface or will haulage occur from the Horizon Mine until the specific on or off-site facility has been approved by the Division to accept the underground development waste from the Horizon Mine.

3.3.1 Mining Plans

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

Mining plans for the term of the proposed permit are shown on Plate 3-3. This map and Plates 3-9 and 3-10 show the location and extent of known, existing, adjacent workings as well as projections for mining within the Horizon Mine. Cross-sections, drill hole elevations, coal seam and overburden stratigraphy, and other geologic data are addressed in Chapter 6. A mine workings map will be kept current from the time of opening. These updated maps will be supplied to the Division yearly or when requested.

Horizon plans to mine coal from coal lands that are a combination of fee simple and federal coal leases. Horizon controls the fee simple land under a mining lease with Hidden Splendor Resources, Ltd. Two actions have been filed with the U.S. Department of Interior, Bureau of Land Management (BLM) to secure mining rights on federal coal lands within Horizon's projected mine plan. The first action, a BLM right-of-way will enable Horizon to commence operations.
approximately 1 year of reserves. The second action, an Application for Coal Lease will enable Horizon to lease coal reserves that will serve for years of mining.

**Right-of-Way Application, UPU-73227, Bureau of Land Management**

On June 16, 1995 Horizon filed a Right-of-Way application with the BLM. The right-of-way would allow underground access to the segmented fee simple land parcels controlled by Horizon. The BLM was prepared to issue the Right-of-Way on January 22, 1996 when Horizon asked the BLM to hold approval pending an amendment. The amendment filed on January 30, 1996 states "the results of the exploration program conducted by Horizon in the Fall of 1995 under Federal Coal Exploration License UPU-74111 have condemned the economic feasibility of mining the Castlegate seam. However, the exploration confirmed that the Hiawatha coal seam development is a feasible project. The original proposed course of the underground workings portrayed in the application applied to development of the Castlegate seam. The revised application reflects a course for the right-of-way suitable for mining the Hiawatha seam". The lands for the right-of-way are included within the permit boundary of this Mine Permit Application. The BLM issue the Right-of-Way in April of 1996 Appendix 2-3).

**Coal Lease Application UPU-74804, Bureau of Land Management**

On August 16, 1995, Horizon Coal Corporation filed a Coal Lease Application at the Utah State Office of the Bureau of Land Management. The application for coal lands containing 1,288.49 acres was approved on September 1, 1998. The Beaver Creek Tract coal lease UTU-74804 is included in Appendix 2-1. The data presented in the Environmental Assessment submitted to the Bureau of Land Management is included as Appendix 2-6.

Horizon was issued a Right-of-Way through BLM lands in 1996 to facilitate mining coal from fee lands. The Right-of-Way was incorporated into the Beaver Creek Tract coal lease UTU-74804 on September 1, 1998. Horizon stipulates that it will mine only fee coal and federal coal within the approved right-of-way lease as included in the legal description in Chapter 2. Horizon projects mining on the lands during the term of this Mine Permit Application.

### 3.3.1.1 Orientation and Multiple Seam Considerations

Seam separation in the area ranges from approximately 150 feet to 230 feet. With this distance and land structure indicated by drill logs, it is considered neither necessary nor feasible to columnize these workings.

### 3.3.1.2 Portals, Shafts, and Slopes

There will be four portals in the Hiawatha seam. The return portal (existing rock slope) will be rehabilitated and expanded for use as the primary return. A second and third portal will be faced up and new rock slopes (300 feet long) will be driven to the Hiawatha seam. These two new slopes will serve as the belt/material slope and the fan portal respectively. The fourth portal is a rehabilitated slope used as a third escapeway. The secondary escapeway is located at the Castlegate A Seam horizon but connects to the Hiawatha Seam by a steeply inclined rock slope. The locations of the portals can be seen on Plate 3-1.
Chapter 3, Operation and Reclamation Plan  
Hidden Splendor Resources, Inc. - Horizon Mine  
July 2005

3.3.1.3 Mining Methods, Room and Pillar, Longwall

All mining will be done with a continuous miner/shuttle car haulage. In second-mining, a standard room-and-pillar method will be used to maximize coal recovery. Recovery within a room-and-pillar panel is estimated to be about 89.8 percent. Longwall mining is not planned. Pillar extraction plans are found in Appendix 3-2.

3.3.1.4 Projected Mine Development, Mains, Sub-Mains, Panels, Etc.

All entries, mains, and panels, will consist of a multiple system on various centers. Room and pillar panels will be driven off the mains. Additional rooms will be driven to widen the panels during retreat mining. Barrier pillars will be left to separate panels and mains. The mains will be pulled upon final retreat of the mining operation. Safety factors for roof conditions using uniaxial compression data are presented in Appendix 3-3.

3.3.1.5 Retreat Mining

Room and pillars are laid out so that pillar cuts can be extracted with a full cut of a continuous miner using radio remote control. The pillar is extracted with successive cuts by the continuous miner. Timber and/or mobile roof supports will be installed to support the roof and provide roof breaker control. It is estimated that mining will provide a recovery rate of 93 percent.

3.3.1.6 Roof Control, Ventilation, Water Systems, Dust Suppression, Dewatering, Electrical

An approval of the Roof Control, Ventilation, and Dust Control Plans will be obtained from the appropriate regulatory agency.

An assessment of groundwater conditions within the Mine can be found in Chapter 7. Dewatering plans will be developed should it become necessary.

3.3.2 Barrier Pillars

Protective barrier pillars will be utilized where necessary, normally ranging from 100 feet to 300 feet in width, depending on the depth of cover and the purpose of the barrier. Barrier pillars will be left on either side of the main entries. Barrier pillars in the mains will be extracted on final retreat.

3.3.2.1 Protection of Oil and Gas Wells

There are no oil or gas wells in this area.

3.3.2.2 Protection of Surface Structures and Streams

No surface structures exist within the zone of potential subsidence.

No stream buffer zones will be maintained beneath Beaver Creek and the North Fork of Gordon Creek should mining proceed beneath either creek. See Chapter 7, Section 7.3.2 for further information.
3.3.2.3 Property Boundaries

A protective barrier pillar with a width of approximately 80 to 100 feet will be left at all property boundaries.

3.3.2.4 Outcrop Protection

A protective barrier pillar with a width of approximately 100 feet will be left when advancing toward or along an outcrop.

3.3.2.5 Other

At any time a landslide occurs which may have an adverse effect on public property, health, safety, or the environment, the Division will be notified by the fastest available means. Horizon commits to complying with remedial measures required by the Division.

As part of the operations plan, a facilities pad will be constructed from available on-site materials. On-site materials include the embankment located at the mouth of Portal Canyon. Test pits indicate that some of the material contained in the embankment is comprised of coal and coal mine waste. It is estimated that 2500 CY of coal and coal mine waste may be contained in the embankment. This material will be removed from the embankment, placed in the facilities pad area, and covered with at least four feet of appropriate backfill material. To accomplish this task, the pad area will first be stripped of vegetation and topsoil as described in Section 8.7. The appropriate cuts of overburden will be made to achieve the rough grade. The coal and coal mine waste will then be placed in the fill areas and covered with four feet of backfill.

A potential storage volume of approximately 2740 for the coal and coal mine waste was calculated from the cross-sections illustrated on Plates 3-1 and 3-2. Appendix 3-8 contains a plate showing approximate locations of buried coal mine waste.

The Portal Canyon facilities pad will be built with 4 feet of acceptable backfill covering any coal or coal mine waste materials. No coal or coal mine waste will be used as fill in the areas planned for the reclamation stream channels in Portal or Jewkes Canyon.

3.3.2.6 Underground Development Waste

See Section 3.3.

3.3.2.7 Return of Coal Processing Waste to Underground

There is no plan to return coal processing waste to the underground.

3.3.3 Conservation of Coal Resource

The maximum quantity of coal will be extracted that is consistent with safe operation of the mine and the mining methods to be employed. Engineering, production, and supervision of mining activities will be geared toward this end. If plans for resource recovery or abandonment (including
Chapter 3, Operation and Reclamation Plan
Hidden Splendor Resources, Inc. - Horizon Mine

portal sealing) change in the future, the U.S. Bureau of Land Management and the Division will be properly informed.

3.3.3.1 Projected Maximum Recovery

Coal reserves within the permit area are summarized below. Recoverable reserves were estimated using a recovery rate of 82 percent of the mineable reserve base.

<table>
<thead>
<tr>
<th>Area</th>
<th>Hiawatha Seam (million tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Original Permit Boundary</td>
<td>1.03</td>
</tr>
<tr>
<td>2000 Revised Permit Boundary</td>
<td>3.90</td>
</tr>
<tr>
<td>Remaining Coal Lease</td>
<td></td>
</tr>
<tr>
<td>UTU-74804</td>
<td>8.45</td>
</tr>
<tr>
<td>Total</td>
<td>13.38</td>
</tr>
</tbody>
</table>

3.3.3.2 Justification for Non-recovery

All coal that can economically and safely be recovered will be recovered. Barrier pillars and buffer zones will be left only where required to protect surface resources, provide safe mining conditions, and as required by law or regulation.

3.3.3.3 Access for Future Reserves

Access to additional reserves will depend upon the results of exploration activities and obtaining leases. However, it is currently anticipated that the mine workings contemplated by this plan will provide access to reserves in Sections 6, 7, 8, and 18, T13S R8E.

3.3.4 Equipment Selection

Major equipment to be used underground will include the following:

2 - Continuous Miner
3 - Roof Bolter RD1-43
6 - Shuttle Cars
2 - Feeder Breaker
3 - Scoop
1 - Compressor
2 - Rock Dusters
5 - Conveyor Drives & Tail Pieces
Chapter 3, Operation and Reclamation Plan
Hidden Splendor Resources, Inc. - Horizon Mine

3 - Drop Chutes
1 - Dust Wagon
1 - Power Center
3 - Transformers
2 - Pumps
1 - Substation

Major equipment to be used on the surface will include the following:
1 - Ash Analyzer
1 - Grader
1 - Loader
1 - Material Tractor
1 - Welder
3 - Flatbed Material Trailers
1 - Screen
1 - Crusher

Reclamation bond estimates for the above mentioned screen and crusher can be found in Appendix 3-7, specifically page A 3-7 (15).

3.3.5 Mine Safety, Fire Protection, and Security Mine Safety

The mine will be operated in accordance with Mine Safety and Health Administration (MSHA) and applicable State of Utah regulations. Safety training will be taught and policies implemented for a safe operation.

Fire Protection

All surface and underground equipment will be provided with MSHA-required fire protection. In addition, belt drives will be equipped with deluge systems for fire protection. Water lines will also be equipped with outlets and fire hoses at regular intervals. Should a mine waste fire occur, it will be extinguished using water, extinguishers, rock dust, foam, or by sealing off the fire. Mine personnel will be trained in the use of fire-fighting techniques.

There will be no open burning on the surface. All garbage will be contained in dumpsters and hauled to the Carbon County Landfill. If flammable waste materials (oil, etc.) are generated, these will be disposed of in accordance with regulations promulgated by the Utah Division of Solid and Hazardous Waste. Disposal methods and locations will be determined based on the characteristics of the flammable waste.

Impoundment Hazards

Impoundment hazards will be reported promptly to the Division and the emergency procedures formulated for public protection and remedial action.

Security

Mine portals will be signed and covered by locked gates when the mine is in cessation.

3.3.5.1 Signs
Specifications

All signs will be of a standard design that can be seen and read easily. They will be made of a durable material (treated/painted wood or metal) and supported by metal or wooden posts.

Identification Signs

Mine identification signs will be placed at the entrance to the mine yard. Signs will show the mine name, company name, business address, telephone number, ID Number, and Permit Number. These signs will be maintained until bond release following reclamation. Typical mine identification signs are presented as Figures 3-3 and 3-4.

Disturbed Area Perimeter and Buffer Zone Markers

Disturbed area perimeter markers will be steel fence posts. The posts will carry signs at selected points, with the designation "Disturbed Area Perimeter Marker" (see Figure 3-4).

Blasting Signs

When preparing to blast, "Blasting" signs will be placed along the edge of any blasting area that comes within 100 feet of any public road right-of-way, and at the point where any other road provides access to the blasting area. In addition a sign which states "Warning, Explosives in Use" which describes the audible blast warning, all clear signs and markings associated with the blasting area will be placed at the entrance(s) to the permit area from public roads or highways.

Topsoil Markers

Topsoil will be stored on the mine site at the location noted on Plate 3-1. Topsoil storage piles and topsoil layered on interim reclamation slopes will be marked with signs as shown on Figure 3-4 as "topsoil storage areas".

3.3.5.2 Fences and Gates

Mine portals will be signed and covered by locked gates when the mine is in cessation.

3.3.5.3 Fire Protection

Facilities

All facilities will be equipped with fire extinguishers. Water outlets and fire hoses will be available at specific locations.

Coal Stockpiles

The coal stockpile will be temporary and will be loaded out at frequent intervals, thus reducing the potential for spontaneous combustion.

Coal Seam
No open burning will be allowed at the mine. All coal outcrops resulting from mining will be covered with incombustible material upon cessation of operations, as discussed in Section 3.5.
HORIZON MINE
HIDDEN SPLENDOR RESOURCES
P.O. BOX 32
HEIPER, UT 84526
(435) 472-1313
PERMIT NO.

FIGURE 3-3. MINE IDENTIFICATION SIGN.
FIGURE 3-4. IDENTIFICATION SIGNS.
3.3.5.4 Explosives

Any explosives utilized in underground operations will be used in compliance with applicable State and Federal laws. Explosives will be handled and used only by persons trained, examined, and certified as required by 30 CFR 850 and the Utah State Industrial Commission. Explosives will be stored in a facility designed for their containment and safety.

Mining and reclamation activities at the Mine may require the use of blasting or explosives on the surface during construction or destruction of the surface facilities. Horizon will comply with all local, State, and Federal laws in the use of explosives at times when blasting is required at the Mine. A certified blaster will direct all blasting operations with the help of at least one other person who has been trained (R645-301-524.140). Blasting records will be maintained per R645-301-524.700 and kept on file at the Mine for the required period of time.

A preblasting design/survey will be submitted to UDOGM when blasting activities meet the following criteria:

- Blast requires the use of more than five pounds of blasting agent or explosive,
- Residents, dwellings or structures exist within a ½ mile radius of the area of potential blasting and owners of structures request a preblasting survey.

A schedule of blasting will be made in instances when the UDOGM regulations and conditions at the Mine require a schedule.

All explosives containers used at the mine will be constructed to meet or exceed the requirements of the Mine Safety and Health Administration. The locked surface storage containers (one for caps and one for powder) will be placed in a location that will ensure the protection of the environment and personnel (see Plate 3-1).

All underground blasting activities at the Mine will be conducted under the direction of a MSHA certified blaster.

3.3.5.5 Management of Mine Openings

Four portals will serve the Hiawatha seam. Two portals exist from previous mining. Two additional rock slopes will be driven to open the new mine. For each of these portals the faceup will be secured and canopies will be installed to meet MSHA standards.

During operation of the Horizon Mine, access to all mine openings are controlled by the operator during working and nonworking hours.

Permanent sealing of underground openings is discussed in Section 3.5.3.1.
3.3.6 Operations Schedule

3.3.6.1 Annual Production Per Year for Permit Term

Coal will be produced from the mine at an anticipated rate of approximately 700,000 tons per year. The production could increase to 1.5 million tons per year when federal coal leases are secured and if the market and mining conditions are favorable.

3.3.6.2 Operations Schedule - Days - Shifts

Production will occur in two production shifts per day and a small crew will perform maintenance work and other non-production jobs on the off production shift.

3.3.6.4 Temporary Cessation

If operations are to be temporarily ceased for more than 30 days, Horizon will submit to the Division a notice of intention to cease or abandon the operations. In accordance with R645-301-529.210, each mine entry that has further projected useful service 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 by Horizon.

3.3.7 Mine Permit Area

3.3.7.1 Acreage and Delineation of Mine Permit Area

See Chapter 2 for the total acreage contained within the mine permit boundary.

3.3.7.2 Projected Mining by Year

The projected mining by year is shown on Plate 3-3.

3.3.8 Mine Plan Area

Horizon plans to mine within the mine permit boundary as shown on Plate 1-1. Plans for mining beyond the permit term will be developed as additional information is acquired. No new areas will be mined until appropriate permits have been obtained from their corresponding regulatory agencies.

3.4 Environmental Protection

3.4.1 Preservation of Land Use

Upon completion of mining operations, final reclamation work will commence. Reclamation efforts will be directed to recreating the pre-mining land use. This will be achieved by use of acceptable seed mixtures. Refer to Chapter 4 for pre-mining land use information.

3.4.1.1 Projected Impacts of Mining on Current and Future Land-Use
Current and future land uses are discussed in Sections 4.4 and 4.5.

### 3.4.1.2 Control Measures to Mitigate Impacts

Full pillar extraction will not occur beneath the raptor nests indicated on Plate 10-1. Based on the boundaries of the present surface disturbance, no public parks or historic sites will be impacted by mining operations. A further discussion of Cultural Resources may be found in Chapter 5.

### 3.4.2 Protection of Human Values

#### 3.4.2.1 Projected Impacts of Mining on Human Values

As discussed in Chapter 5, no historical sites listed on the National Register of Historical Places are known to exist within the proposed disturbed areas. In addition, no known archaeological sites exist within the proposed disturbed area.

### 3.4.3 Protection of Hydrologic Balance

Horizon will employ various control measures to protect the hydrologic balance of the permit area and sedimentation controls will be provided for all disturbed areas.

Water rights on file with the Utah Division of Water Rights and located in the vicinity of the permit area are noted in Appendix 3-5. Should Horizon's mining activities cause an adverse impact on the area's water supply, the applicant intends to mitigate the effects (see Sections 3.4.8.2 and 7.1.6).

Diversions will be established to direct flow from disturbed areas to the sedimentation pond. If water is encountered during mining operations, this water will be used for underground operations when possible. An UPDES permit has been obtained for the mine (see Appendix 3-6). If the quantity of underground water encountered by mining exceeds the amount required for mining operations, discharges of water from underground workings will be monitored to ensure that effluent limitations are met.

#### 3.4.3.1 Projected Impacts of Mining on Hydrologic Balance

The probable impacts of mining on surface or groundwater resources in the area are discussed in Chapter 7. Runoff- and sediment-control facilities within the disturbed area will preclude significant impacts to surface water in the area. Groundwater investigation and monitoring activities associated with the Hiawatha seam and its adjacent strata will continue, thus allowing a determination of the potential groundwater impacts of mining in the Hiawatha seam. A subsidence monitoring program (see Section 3.4.8) will provide a basis for determining possible impacts due to subsidence.
3.4.3.2 Control Measures to Mitigate Impacts and Monitoring Procedures

Horizon will maintain sedimentation control structures to prevent impacts to the surface waters in Jewkes Creek and the North Fork of Gordon Creek. In the event that the quantity of groundwater encountered during mining is in excess of underground requirements, the water will be settled first in underground sumps and then discharged to the surface. Any such discharges will be monitored in accordance with the UPDES permit.

Surface and groundwater monitoring programs have been or will be implemented to assess the impacts of mining operations at the Mine on hydrologic resources in the area. Details of these monitoring programs are presented in Chapter 7.

3.4.4 Preservation of Soil Resources and Projected Impacts of Mining on Soil Resources

Soil resource information for the mine area is presented in Chapter 8. Soil surveys were performed in the area in May 1980 and in January 1990. Naturally-occurring and presently-disturbed soils were delineated. The purposes of the surveys were to identify soils and their stripping depths for salvaging suitable natural soil prior to additional disturbance and to determine the amount of topsoil available for final reclamation.

Most of the existing disturbance at the mine occurred prior to enactment of P.L. 95-87 or the Utah Interim Program that set forth regulations for salvaging topsoil (i.e., pre-1950's disturbance). However, some topsoil exists along the shoulders of cut areas where it was not disturbed during previous construction activities.

During construction of surface facilities, available topsoil resources will be segregated and stockpiled as indicated in Chapter 8. In addition, presently-disturbed soils will be carefully handled to salvage as much soil as possible for potential future use as substitute topsoil materials.

3.4.4.1 Control Measures to Mitigate Impacts to Soil Resources

Surface disturbances will be limited to the disturbed area boundary noted on Plate 1-1. Topsoil that is stockpiled for future reclamation efforts will be vegetated with an interim cover to reduce erosion of the stockpile. All areas disturbed during mining activities will be reclaimed in accordance with the approved reclamation plan (see Section 3.5).

3.4.5 Protection of Vegetative Resources

3.4.5.1 Projected Impact of Mining on Vegetative Resources

Previous mining activities have resulted in alteration of natural vegetation at the site area. The majority of this area has been disturbed previously by mining operations.
3.4.5.2 Mitigation Measures to be Employed to Reduce Impacts on Vegetative Resources

All mining activities will be conducted within the proposed disturbed area. Traffic will be confined to established roadways and pads. Upon completion of mining, all areas which are disturbed by Horizon will be reclaimed as described in Section 3.5.3.

3.4.5.3 Monitoring Procedures - Reference Areas and Revegetation

Sections 3.5.5, 3.5.6 and 9.8 discuss the monitoring procedures and revegetation to be undertaken during mining and reclamation operations.

3.4.6 Protection of Fish and Wildlife

3.4.6.1 Potential Impacts on Fish and Wildlife

Potential impacts on fish and wildlife are discussed in Section 10.4.

3.4.6.2 Mitigation and Management Plans

Refer to Section 10.5 for mitigation and management plans.

3.4.6.3 Fish and Wildlife Monitoring

Monitoring is discussed in Section 10.5.

3.4.7 Protection of Air Quality

Air quality information for the area is presented in Chapter 11.

3.4.8 Subsidence Control and Monitoring Plan

3.4.8.1 Structures

A search of the site files at the Utah Division of State History turned up no recorded sites in, or near, the project area. Since the identified sites are abandoned homestead cabins or mining camp dwellings and are not recorded as warranting preservation efforts, no special mining techniques are deemed necessary for their protection. The archaeologic survey is described in detail under Chapter 5 of this plan. In addition, Hidden Splendor Resources, Inc. Engineering personnel have had water monitoring responsibilities for this area since 1999, (approximately 6 years). Numerous (at least 3 times per year) visits the area during the last six years for sampling, surveying and seep/spring monitoring have revealed that no structures exist within the potential subsidence zone.

3.4.8.2 Renewable Resources

Hydrologic and vegetative renewable resources exist within the permit area. One perennial stream, Beaver Creek, and various springs are known to exist above the area to be mined.
on past experience and monitoring results from this area, it is not expected that mining will affect
any surface hydrologic resource through subsidence.

A depression of the groundwater table is expected around the active mine workings. A rebound
of this water table will occur after active mining ceases and pumping activities have also ceased.
This is witnessed in the water level in the Blue Blaze mine prior to the start of the Horizon Mine.
Should a substantial inflow of groundwater occur, mitigation measures may include: attempts to
seal off the inflow, increased monitoring efforts, lining of the stream bed through the affected area
if it is determined to be surface water, and replacement of lost water if the groundwater does not
rebound. Replacement of water lost due to mining is addressed in 7.1.6.

An extended mitigation plan will be enacted should a measurable impact occur to surface water
due to mining activity. The mitigation plan will be correlated with Water Rights and UDOGM.

The vegetation resource above the mining area consists of rangeland for stock and wildlife grazing
and a limited timber resource. If subsidence should occur, the effects would be minimal, possibly
resulting in some fractures or slight depressions. Thus, the effect upon vegetation resource would
also be minimal. Should impacts to vegetation occur due to subsidence, mitigation measures may
include: filling of fractures, regrading of broken areas, replanting degraded areas, and intensified
monitoring.

3.4.8.3 Geologic Hazards

Geologic hazards in the mine area exist in the form of steep slopes and numerous inactive normal
faults. Roof conditions will typically worsen in these areas due to fracturing and slickensides;
however, no surface movement or new effects have been noted to date from mining through fault
zones in this area.

Movement could result in rock falls from exposed outcrops; however, no evidence of such falls or
movement has been noted in this area from past mining. There are no potential landslide or slump
areas known to exist that were caused by previous mining activities in the area.

3.4.8.4 Subsidence

Mining Sequence and Planned Subsidence. The mine plan for the Horizon Mine is presented
on Plate 3-3. No surface disturbances are currently anticipated within the permit area beyond that
presented in this M&RP (i.e., within the disturbed-area boundary noted on Plate 3-1). Planned-
subsidence mining methods will be used in all of the underground mine workings shown on Plate
3-3. Plate 3-3 includes two projected angle of draw boundary lines, a 35 degree line and a 22.5
degree line. The 35 degree line is considered the maximum possible subsidence area and the 22.5
degree line is the predicted subsidence given that the geology of this area is very similar to the
surrounding mines that have experienced a 20 degree angle of draw.

Subsidence Protection. Beaver Creek is a perennial stream. Subsidence protection is planned
for this stream by orienting the panels perpendicular to the stream and using full extraction pillaring.
As noted in Section 3.3.2.2, Section 7.3.2, and Appendix 7-13, and on Plate 3-3, the overburden
thickness under Beaver Creek varies from 960 feet (SW corner) to 1080 feet (NE corner).
coal thickness averages 7 feet. For this reason, Hidden Splendor Resources believes that no damage will occur to Beaver Creek with the mining method that is planned. Orienting the panels perpendicular to Beaver Creek is proposed based on the experience gained from the Skyline Mine Subsidence Study (Appendix 7-13). Skyline oriented five longwall panels perpendicular to Burnout Creek and ended up having very little to no effect on the stream. Hidden Splendor is planning full extraction pillaring with mobile roof supports which will achieve similar extraction ratios to longwall panels. Because the panels are placed close to each other, any subsidence that does occur will be uniform along the axis of the stream.

Roads within the planned subsidence zone are unimproved dirt roads and trails and may subside due to mining activities. If damage occurs to these roads as a result of subsidence, Hidden Splendor will repair the damage as soon as practical depending on access due to seasonal closures (winter) or weather conditions (rain, mud). Subsidence can normally be expected to occur over areas where second mining (pillaring - removal of greater than 50% of the coal) has taken place. Maximum potential subsidence from pillar extraction in the Mine (the Hiawatha seam) has been estimated from Figure 3-5 using the following criteria:

Panel Width = 600 ft  
Average Depth = 800 ft  
Width/Depth Ratio = 0.75  
Seam Thickness = 7.0 ft

Using these data, subsidence due to pillar extraction in the Hiawatha seam could reach 2.33 feet directly over a pillared panel. Again, past experience in this area suggests that subsidence would be of a lesser magnitude.

The following observations and conclusions regarding subsidence have been made from past mining activities in the vicinity of the proposed mine and examination of old mine maps in the area. The observations were taken from the original Horizon Mine Permit submittal dated June 1999:

(1) Pillaring in the upper (Castlegate "A") seam has previously occurred beneath Beaver Creek (Plate 3-9). Specifically, the northernmost west panel was pillared beneath Beaver Creek by Swisher Coal Company in January 1978 in an area where the overburden thickness was about 650 feet. In addition, in September 1981, Beaver Creek Coal Company pillared the "A" Panel area beneath Beaver Creek in an area with an overburden thickness of approximately 425 feet. Neither of these areas show any measurable effect on Beaver Creek.

(2) The Gordon Creek No. 2 Mine overlies areas pillared up to 40 years ago in the lower seam (Sweet's Mine) with no noticeable subsidence effects. The Consumers No. 3 Mine also pillared areas in the permit area which show no noticeable subsidence effects.

(3) The overburden in the permit area above the Castlegate "A" seam (with a thickness of 600 to 800 feet) contains massive sandstone units which are unlikely to allow caving effects to reach the surface. In addition, the seams are separated by over 150 feet of similar interburden with no noticeable effects from past pillaring.
(4) Subsidence, should it occur, is not likely to affect the Beaver Creek flow due to the numerous beds of swelling shales within the overburden and interburden. Fractures within these sedimentary deposits have a strong tendency to heal due to the swelling of the shales and sandy shales contained therein.

Refer to Sections 3.4.8.2 and 7.1.6 for a discussion of water resource mitigation measures.

3.4.8.5 Subsidence Control and Monitoring Plan

The subsidence monitoring network will consist of permanent survey monuments located outside of the anticipated area of subsidence and a series of monitoring stations within the potential subsidence zone. New or additional stations will be installed above the projected pillar panels underlying Beaver Creek. (Plate 3-3). The monitoring stations are located so at least one is subsided each year that mining occurs and will be installed with steel re-bar/rod with aluminum caps or other permanent metal or steel structures set so that weather, frost heave, or livestock will not disturb them. The locations are approximate in that they may be moved in the field if the panel moves underground.

Additionally, four (4) monuments will be placed along Beaver Creek and at Water Monitoring Locations SP-4 and SP-9. The locations of the monuments can be found on Plate 3-3, Mine Plan (By Year) With Seam Height And Overburden & Subsidence Monitoring Points. The locations of Springs SP-4 and SP-9 can be found on Plate 7-1, Water Monitoring Location.

Multiple readings will be taken where necessary to ensure accuracy. Monitoring of the subsidence stations noted on Plate 3-3 will be performed annually and for a period of two years following final cessation of mining operations. Reports of monitoring will be sent to the UDOGM on a yearly basis.

A land (pedestrian) survey will be conducted over each panel in conjunction with the annual surveys.

As shown on Plate 3-3, two “angle of draw” lines have been calculated. One for 35 degrees and one for 22.5 degrees. Both lines were calculated based on the depth of cover in the particular mining area.

The 35 degree angle is considered a maximum in the United States and is recommended by C. Richard Dunrud, P.E. as a maximum in the Western Coal Fields (Dunrud, 1976). The 22.5 degree angle is considered more likely in this area as the nearby Beaver Creek Mines used a 20 degree angle (Guy, 1985) and other mines in the Wasatch and Bookcliffs Coal Basins use values from 20 degrees to 25 degrees.

To establish an actual “angle of draw” value, Hidden Splendor commits to locating a “Draw Line” on the surface over one of the first panels mined and pillared, (2nd Left off 2nd Left off 3rd West Mains). This “Draw Line” will be placed over the panel, perpendicular to the mining direction and will extend far enough on either side of the panel to include the potential 35 degree angle of draw. This “Draw Line” will consist of surveyed points approximately every 50 feet along its length and will be installed before pillaring. After pillaring is complete in the panel, the line will be surveyed a second time to provide a “before” and “after” profile to the surface. These profiles can then be compared to each other to determine the actual angle of draw for this overburden.
Additionally, two new water monitoring sites will be established along Beaver Creek located between current sites SS-7 and SS-8 for stream flow measurements prior to any retreat mining beneath Beaver Creek. These locations will be determined by Hidden Splendor Resources, Inc. in conjunction with DOGM. HSR will increase stream flow monitoring for Beaver Creek to a weekly basis one month prior to retreat mining beneath Beaver Creek (weather conditions permitting). The weekly flow monitoring will continue until one month after retreat mining has been completed, at which time monitoring will then be reduced to monthly for an additional six months, after which monitoring will return to the normal operational schedule (quarterly). This increased monitoring frequency will include sites SS-7, SS-8, SS-12 and the two newly established sites. HSR will submit the weekly flow monitoring data to the Division via e-mail during the increased monitoring period. Discharge measurements will be submitted to the water database quarterly.

HSR will provide all information related to subsidence to the Division on a yearly basis in the Annual Report. This information will include, but not necessarily be limited to:

Updated yearly raw subsidence data (Easting, Northing, Elevations) of each subsidence monitoring station (whether considered active or inactive by HSR), baseline subsidence data for each subsidence monitoring station, photographs and coordinates (Easting, Northing, Elevations) of any cracks, fractures, slumps, or other subsidence related abnormalities that are encountered during subsidence surveys.

In the event that any negative effects or impacts from subsidence are discovered, HSR in cooperation with UDOGM and DWR will develop a plan to minimize and correct any negative subsidence caused impacts.
FIGURE 3-5 SUBSIDENCE/SEAM THICKNESS RATIOS (From Dunrud, 1980)
Chapter 3, Operation and Reclamation Plan
Hidden Splendor Resources, Inc. - Horizon Mine

3.5 Reclamation Plan

3.5.1 Contemporaneous and Interim Reclamation

Disturbed areas when no longer needed, will be backfilled, graded, retopsoiled, and revegetated. Seeding, fertilizing, and mulching will be performed as soon as practical following redistribution of topsoil. Seed Mix #2 presented in Table 3-3 will be planted, and erosion-control matting will be installed in specific areas as described in Section 3.5.5.3. Reclamation techniques are described below. Areas that will not be redisturbed will be classified as contemporaneously reclaimed. Seed Mix #1 will be used in areas requiring soil stabilization during the operational period of mining. These areas will likely be redisturbed either during the operation or reclamation of the mine site. The areas that will be redisturbed during operation or final reclamation contouring will be classified as interim reclamation. Areas where interim reclamation contacts a steep bank dropping to a diversion ditch will be protected by attempting to control the loss of topsoil by installing a mulch mat a minimum of one foot above and below the grade break.

During October 1997, the areas designated on Plate A within Appendix 8-1 are scheduled for stabilization seeding using Seed Mix No. 1. Refer to Section 8.8 for additional information.

Underground Coal Mining and Reclamation Activities. All surface equipment, structures, or other facilities not required for continued underground mining activities and monitoring, unless approved by the Division as suitable for the post-mining land use or environmental monitoring, will be removed and the affected lands reclaimed following permanent cessation of mining operations.

Reclamation Timetable. A timetable for the completion of each major step in the reclamation plan is presented in Table 3-4.

Plan for Backfilling, Soil Stabilization, Compacting, and Grading. The regrading plan for the Horizon Mine was designed to meet the objectives of balancing cut and fill quantities and maintaining a geotechnically and erosionally stable base. The primary features of this plan are:

- Removal of the pad upon which surface activities will be constructed at the mine, thereby creating a slope which will adequately drain while minimizing long-term erosion concerns;
- Backfilling to remove portal entrances (highwalls) within the objectives noted above (cut and fill balance, site stability, and erosion control);
- Construction of stable channels across regraded areas;
- Placement of topsoil;
- Revegetation and mulching of the topsoiled site; and
- Removal of the sedimentation pond (together with accompanying regrading, topsoiling, revegetation, and mulching of the sedimentation pond area) and implementation of interim sediment-control measures.
The estimated cut quantity for the Horizon facility is approximately 11,752.91 cubic yards with an estimated fill of 10,238.74 cubic yards (see Table 3-1). Regrading activities will continue until the final surface configuration defined by Plates 3-7 and 3-7A is approximated. Details regarding topsoil placement and revegetation following regrading are provided in Chapters 3 and 8, respectively.3-3

### TABLE 3-4

Reclamation Timetable

<table>
<thead>
<tr>
<th>Task</th>
<th>Months from Start of Reclamation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHASE I</td>
<td></td>
</tr>
<tr>
<td>Seed/Plant Ordering*</td>
<td></td>
</tr>
<tr>
<td>Portal Sealing</td>
<td></td>
</tr>
<tr>
<td>Demolition - Structure Removal</td>
<td></td>
</tr>
<tr>
<td>Rough and Final Grading</td>
<td></td>
</tr>
<tr>
<td>Construction of Reclamation</td>
<td></td>
</tr>
<tr>
<td>Channels and Installation of Sediment Controls</td>
<td></td>
</tr>
<tr>
<td>Soil Testing/Order Amendments</td>
<td></td>
</tr>
<tr>
<td>Topsoil Distribution</td>
<td></td>
</tr>
<tr>
<td>Seeding &amp; Mulching</td>
<td></td>
</tr>
<tr>
<td>Vegetation/Water Monitoring</td>
<td>10 years after seeding or until bond release</td>
</tr>
<tr>
<td>PHASE II - To Follow Phase I Bond Release</td>
<td></td>
</tr>
<tr>
<td>Seed/Plant/Amendment Ordering*</td>
<td></td>
</tr>
<tr>
<td>Grading (Disturbed Area Access Road)</td>
<td></td>
</tr>
<tr>
<td>Topsoil Distribution</td>
<td></td>
</tr>
<tr>
<td>Seeding &amp; Mulching</td>
<td></td>
</tr>
<tr>
<td>Reclamation Monitoring</td>
<td></td>
</tr>
</tbody>
</table>

* Seed and plants will be ordered one year prior to their proposed planting time.
### TABLE 3-1

**RECLAMATION CUT AND FILL CALCULATIONS**

Using present surface contours from Plate 3-7 in conjunction with revised reclamation contours through AutoCad 2000 and SurvCadd 2000

- **Area in Cut:** 186,023.6 sq ft, 4.271 acres
- **Area in Fill:** 189,050.1 sq ft, 4.340 acres
- **Total inclusion area:** 8.611 acres
- **Cut to Fill ratio:** 1.15
- **Average Cut Depth:** 1.71 ft
- **Average Fill Depth:** 1.46 ft
- **Cut volume:** 11,752.91 cubic yards
- **Fill volume:** 10,238.74 cubic yards
Chapter 3, Operation and Reclamation Plan
Hidden Splendor Resources, Inc. - Horizon Mine

July 2005

Backfilling and Compaction. As indicated previously in this M&RP, the surface at the Horizon Mine was originally disturbed between the 1920s and the 1950s by previous mining operations. These prior operators made no effort to salvage any topsoil or other soil material for subsequent site reclamation. Therefore, restoration to a contour that approximates pre-mining conditions is neither practical nor required by the regulations. However, it is the intent of Horizon to restore the area to a topography that is compatible with the post-mining land use, using materials that are available at the site.

All vegetation, organic matter, and debris will be cleared from areas to receive fill. The cut material from site regrading will be placed as fill and graded to facilitate drainage from the mine site and contributing side areas. All fill placed during recontouring of the site will be compacted to at least 85 percent of maximum Proctor density (ASTM D698). Compaction will be accomplished using repeated passes of rubber-tired equipment, rollers, and other appropriate equipment.

Side hill embankments, where the width is too narrow to allow access by compaction equipment, will be initially constructed by spreading the soil with a dozer, but only to a width necessary to allow compaction equipment access. After this is achieved, the fill will be placed in lifts and compacted to at least 85 percent of maximum Proctor density.

Care will be taken to ensure that fill materials are not frozen during placement or compaction. Any areas that are damaged by freezing will be reconditioned, reshaped, and recompressed to at least 85 percent of maximum Proctor density. All fill placement and compaction activities will be overseen by an experienced engineer.

In general, grading and backfilling operations will proceed from the upstream end of the surface facilities to the downstream end, thus allowing the sedimentation pond to remain effective for as long as possible.

Construction of Reclamation Channels. Reclamation channels will be constructed at the locations shown on Plate 3-7. These channels will be constructed to capture runoff from undisturbed areas and convey this runoff to and through Portal Canyon and Jewkes Creek. Details regarding the design and construction of these channels are provided in Chapter 7 of this M&RP.

As noted on Plate 3-7, slopes adjacent to the reclaimed streams are generally much shallower than the natural slopes upstream from the disturbed area (where natural slopes on the hillsides adjacent to the streams are typically 1.5H:1V or steeper). Hence, access to the streams by wildlife and livestock under post-mining conditions should not be hindered within the reclaimed area.

Sedimentation Pond Removal and Interim Sediment Control. Prior to the start of reclamation activities, temporary silt fences will be emplaced in Jewkes Creek perpendicular to the flow direction. A minimum of four such silt fences will be installed in the creek downstream from the bypass culvert (UC-1) outlet but within the disturbed area prior to removal of the culvert. The silt fences will be located in an area convenient for maintenance and cleanout. The silt fences will be removed when reclamation construction activities are completed. During reclamation, the silt fences will be periodically inspected and accumulated sediment will be removed from behind the silt fences when required to minimize downstream impacts.

The sedimentation pond will be retained for as long as practical during reclamation. Once backfilling and grading operations proceed to the location of the pond, it will be removed. Because the pond is designed primarily as an excavated structure, removal of the pond will consist primarily...
of backfilling. This removal will be accomplished using backhoes, loaders, dozers, and other appropriate earthmoving equipment.

As soon as regrading of an area no longer allows that area to drain to the sedimentation pond, silt fences will be installed along the base of the slopes adjacent to the associated stream to control erosion on an interim basis prior to revegetation success. These silt fences will be installed using a supportive backing and burying the toe of the filter fabric.

On a temporary basis, straw-bale dikes may also be installed as necessary to control localized erosion prior to the establishment of revegetation efforts. If installed, locations of the straw-bale dikes will be selected to reduce sediment contributions to runoff based on field observations. Straw-bale dikes will be installed by keying the bales into the ground.

Roads. All roads within the disturbed area will be reclaimed immediately after they are no longer needed for mining and reclamation operations. These roads will be graded and/or backfilled as indicated above. Topsoil will be applied to the regraded surfaces and the area will be revegetated as discussed in Chapters 3 and 8, respectively.

3.5.2 Soil Removal and Storage

Soil surveys conducted at the mine site have distinguished disturbed lands from undisturbed soil mapping units (see Chapter 8, Plate 8-1). Areas mapped as disturbed land are areas where the soils, vegetation, or both were affected by previous mining operations. Disturbance of the roads and pads occurred prior to regulatory requirements to salvage topsoil from those areas.

All topsoil/growth medium to be generated during future disturbances will be stockpiled. The stockpiles will be contoured, fertilized, vegetated with Seed Mix #1 outlined in Section 3.5.5.2, and mulched as outlined in Section 3.5.5.3. Markers will be placed indicating that the piles contain topsoil. Berms and/or strawbales will be placed around the stockpile to minimize off-pile transport of sediment.

Areas of interim reclamation that will be redisturbed for final reclamation contouring will have the depth topsoil that was placed on those areas removed and placed back on the topsoil stockpile for redistribution onto the newly contoured area. A qualified person will be present during the removal of the topsoil in these areas. See Plate 3-7 for areas where interim reclamation will be redisturbed and areas where re-contouring is complete an interim vegetation has been established.

Refer to Section 8.8 for the methods being used in the removal and redistribution of soils.

3.5.3 Final Abandonment

Upon permanent cessation of operations, permanent reclamation will be performed. All surface equipment, structures and facilities (other than sedimentation control) associated with the operation will be removed during reclamation of the affected area.
Chapter 3, Operation and Reclamation Plan  
Hidden Splendor Resources, Inc. - Horizon Mine  
July 2005

3.5.3.1 Sealing of Mine Openings

Abandonment of Openings. When no longer needed for mining operations, all portals will be sealed and backfilled by collapsing the concrete canopies over each portal. Prior to the sealing of the mine openings, all combustible materials will be removed from the portal area. All structures that would interfere with sealing of the mine openings will also be removed. The permanent closures will be constructed to prevent access to mine workings by people, livestock, and wildlife. Potential surface drainage will also be kept from entering the sealed entries.

All mine openings will be sealed at least 20 feet inside the mine opening. Prior to installation of the seal, all loose material will be removed from the roof, floor, and rib of the mine within the seal area. The seal will then be constructed using solid concrete blocks with nominal dimensions of 8 inches high, 8 inches wide, and 16 inches long. Mortar will consist of one part cement, three parts sand, and no more than 7 gallons of water per sack of cement.

In the bottom course, each block will be laid with its long axis parallel to the rib. The long axis in succeeding higher courses will be perpendicular to the long axis of the blocks in the preceding course. The seal will be recessed at least 8 inches deep into each rib and 8 inches deep into the floor. No recess will be made into the roof.

The seals will have a thickness of approximately 16 inches. Following seal construction, the entries will be backfilled from the seal to the outside surface with soil that is sloped at the surface to match the final slope at the entry.

Casing and Sealing of Underground Openings. Each underground opening to the mine will be sealed and backfilled when no longer needed for monitoring or other use approved by the Division upon a finding of no adverse environmental or health and safety effects. This closure method has been designed to prevent access to the mine workings by people, livestock, fish and wildlife, and machinery. The closures have also been designed to keep water from flowing from the mine workings to prevent acid or other toxic drainage from entering ground and surface waters.

Monitoring wells associated with the Horizon Mine will be sealed when no longer needed for monitoring groundwater. Sealing of these wells will occur in accordance with the requirements of the Utah Division of Water Rights (R555-4-12).

Details of the seals are shown on Figures 3-6 and 3-7.

3.5.3.2 Removal of Surface Structures

Following sealing of the portals, all surface structures and facilities associated with the mining operation will be removed. The schedule and cost of removal is detailed in Section 3.5.6 and 3.5.7, respectively.

Building Demolition. Prior to significant regrading activities at the Horizon facility, existing buildings, retaining walls, utilities, coal-handling facilities, and other above-ground structures will be removed from the area. To the extent possible, these structures and facilities will be salvaged. Nonhazardous and nonflammable materials, such as concrete and steel, may be used as backfill.
FIGURE 3-7 TYPICAL PORTAL BLOCK SEAL
FIGURE 3-7 TYPICAL PORTAL BLOCK SEAL
in areas such as the sediment pond, portal entrances (slopes), and cut slopes. If thus disposed of, these materials will be incorporated into the backfill under at least 4 feet of soil cover in a manner that will not create voids within the backfill or reduce the effective compaction necessary for backfilling. If foundations will not interfere with regrading activities, they will be left in place for on-site burial under at least 4 feet of soil cover.

During the site regrading, if any of the toxic coal waste that is buried in the mine pad fill is uncovered, the material will be properly placed in the fill areas of the recontouring outside drainage flows so it can be covered beneath four feet of non-toxic fill material and erosion of the drainage over time will not contact these areas. The locations will be mapped at the time of placement and submitted to the Division.

Non-coal wastes found during reclamation, such as garbage, lumber, and other combustible materials generated during previous mining activities, will be segregated and stored in a controlled manner in a temporary storage area in appropriate containers.

Final disposal of all such waste will be in the backfill (as indicated above) or at a State-approved solid waste disposal facility, as appropriate. Notwithstanding any other provision of the R645 Rules, any non-coal mine waste defined as "hazardous" will be handled in accordance with the requirements of Subtitle C of RCRA and any implementing agency.

Mining equipment too large for a container will be placed in a designated temporary storage area as determined at the time of reclamation activities. Final decisions regarding salvage or disposal of structures and equipment will be made just prior to reclamation following an assessment of the salvageability of the structures and equipment.

3.5.3.3 Disposition of Dams, Ponds, and Diversions

Diversions that are not planned for permanent use following reclamation will be removed during the backfilling and regrading operations. The area will be recontoured to drain to the final reclamation channel (Section 7.2.3.2, Reclamation Hydrology Design).

Sediment control following removal of the sedimentation pond will be provided as outlined in Sections 3.5.4.3 and 7.2.3.2.

3.5.4 Backfilling and Grading Plans

Approximate Original Contour. The area of the Horizon surface facilities was disturbed by previous mining activities. No pre-mining topographic maps of the area are known to exist. The reclamation plan has been designed to backfill and grade the site to achieve the assumed approximate original contour (i.e., to blend into the surrounding topography) and eliminate highwalls associated with the Horizon Mine.

Elimination of Highwalls, Spoil Piles, and Depressions. The backfilling and grading plan has been designed to eliminate highwalls at the site that were associated with the Horizon Mine. The access to the coal seam is by three slopes from the surface to the coal seam some 46 feet below the ground elevation of the top of the slopes. The return slope uses the old Blue Blaze No. 1 Mine
Chapter 3, Operation and Reclamation Plan
Hidden Splendor Resources, Inc. - Horizon Mine    July 2005

Slope. A 50 foot concrete portal cover was constructed from the mouth of the old slope and was backfilled to eliminate any exposed highwall. The old slope was then widened to accommodate modern mining equipment. The belt slope was excavated a length of 95 feet to solid overburden where the slope could be driven down to the seam. A 95 foot concrete portal cover was constructed for the belt slope. The intake slope was excavated a length of 125 feet to solid overburden. A 125 foot concrete portal cover was constructed for the intake slope. The excavated portions of the portal covers have been covered to eliminate any highwall faces. No highwalls exist on the current disturbed area. The portal accesses to the seam are constructed for easy demolition and use of the material as backfill. No spoil piles exist. With the exception of the small depressions to retain moisture, minimize erosion and to assist in revegetation, no depressions will remain at the site following reclamation. Refer to Plate 3-7 and Figure 3-6.

Slope Stability. According to R645-301-553.130, reclamation slopes shall not exceed the angle of repose and shall have a minimum long-term static safety factor of greater than 1.3. The angle of repose of any soil is a function of the soil gradation, moisture content, plasticity, and degree of compaction of the soil. It is expected that the reclamation fill will be fairly dry and will be placed without the benefit of significant compaction or moisture conditioning. See Appendix 3-3. Based on information provided in Chapter 8 of this M&RP, soils at the Horizon site consist of low-plasticity, cohesive materials with a wide assortment of grain sizes. The angle of repose in such soil is dependent not only on interparticle friction, but also on cohesion, which is dependent on the density, moisture content, and compaction moisture content of the soil. In general, as long as they do not become saturated or are not fissured, cohesive soils have a greater angle of repose than non-cohesive soils and can maintain vertical or near-vertical slopes under certain conditions. The angle of repose of a loose sand generally varies between 30 and 35 degrees (Holtz and Kovacs, 1981). Therefore, presumably, the angle of repose of a slightly cohesive granular soil will be greater than 30 to 35 degrees. For the purpose of this site, the angle of repose will be assigned a value of 35 degrees, which corresponds to a slope of about 1.5 horizontal to 1 vertical (1.5H:1V).

Backfilled and regraded slopes have been designed to not exceed the angle of repose. Design calculations indicate that the minimum safety factor of emplaced soil, at a slope of 1.5H:1V, is 1.4 under saturated conditions and 1.9 under unsaturated conditions. The static safety factor will increase with decreasing slope. The slopes have thus been designed to prevent slides.

Erosion and Water Pollution. Temporary sediment-control measures will be implemented during and following backfilling and regrading. During redistribution of the topsoil, silt fences will be established at the bottom of fill slopes and along the top bank of the reclamation channel to control possible erosion from newly graded and seeded areas. As vegetation becomes established on the reclaimed surfaces, erosion potentials will be further minimized. By minimizing erosion, water pollution will also be precluded. Additional water-quality concerns do not exist at the site (see Chapter 7).

In order to blend with natural slopes, soil may be replaced during reclamation at slopes of up to 1.5H:1V. The steepness of these slopes will be reduced at their base, providing a concave slope. As noted above, these slopes will be geotechnically stable. Dozers will be used during placement of the topsoil or substitute topsoil on these steep slopes, taking care to achieve a reasonably uniform thickness of the final soil cover.
Post-Mining Land Use. The disturbed area will be backfilled and regraded in a manner that supports the approved post-mining land use.

Exposed Coal Seams. No coal seams are currently exposed in the disturbed area. Should any coal seams be exposed during the recontouring phase of reclamation, the coal outcrops exposed will be covered with a minimum of 4 feet of nontoxic and noncombustible materials during final backfilling and grading. This cover material may consist of material removed during grading of the site, subsoil, and/or topsoil.

Acid- and Toxic-Forming Materials. Buried waste materials from mining operations that used Portal Canyon are shown on Plate 3-7.

Combustible Materials. All combustible materials that are exposed, used, or produced during mining will be disposed of off site.

Cut-and-Fill Terraces. No cut-and-fill terraces occurring from or used by the Horizon operation will be retained at the site following final grading activities.

Highwalls From Previously Mined Areas. Several highwalls exist outside the disturbed area that are the result of previous mining operations. The reclamation plan has been designed to eliminate the faceup area made by Horizon Mine within the disturbed area. The anticipated post-mining contours indicate that the available materials are sufficient to eliminate the face up highwall within the disturbed-area boundary during reclamation.

The schedule for backfilling and grading is detailed in Section 3.5.7.1.

3.5.4.1 Removal or Reduction of Highwalls

No exposed highwalls exit on the current disturbed area. Final reclamation cross sections and contours of the portal accesses show that no new highwall features will be created after the collapse of the portal covers. See Figure 3-6 and Plate 3-7 and refer to Section 3.5.4.

3.5.4.2 Recontouring

All surface reclaimed areas will be protected and stabilized to effectively control erosion. Final grading, preparation of overburden, and placement of topsoil will be done along the contour to minimize subsequent erosion and instability. Rills and gullies which form in areas that have been regraded and topsoiled and either disrupt the approved post-mining land use or the reestablishment of the vegetative cover, or, cause or contribute to a violation of water quality standards for receiving streams, shall be filled, regraded, or otherwise stabilized; topsoil shall be replaced; and the areas shall be reseeded or replanted. This will be accomplished using the best technology currently available.
3.5.4.3 Fencing and Erosion Control

The sedimentation pond will be retained as discussed in Section 7.2.3.2. Fencing will be placed as required to protect revegetation efforts from livestock grazing. This fencing will be removed prior to requesting final bond release. Refer to Section 3.5.4 for additional information on erosion control.

3.5.4.4 Soil Redistribution and Stabilization

When final reclamation begins, the disturbed areas to be reclaimed will be loosened by ripping to allow easier backfilling and grading operations. During redistribution of soils, care will be taken to prevent excessive compaction.

Soils disturbed during mining, including but not limited to fill material, will be placed within the disturbed area boundary. Refer to Section 8.8 for further information concerning plans for soil redistribution.

3.5.5 Revegetation Plan

The revegetation plan has been designed to assure that all disturbed lands will be returned to productive self-perpetuating plant communities once the mining operation has been completed. The plan calls for temporary revegetation of disturbed areas where possible during the mining operation as well as permanent reclamation of all areas once mining has ceased.

The goal of the plan is to create diverse plant communities which are at least as productive and in comparable amounts to plant cover existing on the site prior to this mining operation.

3.5.5.1 Soil Preparation

After backfilling, grading, recontouring, scarifying, and the redistribution of topsoil, the seed bed will be prepared using the best technology currently available. Prior to seeding, composite soil samples as will be collected and analyzed as discussed in Section 8.9. Based on the results of these analyses, fertilizer will be applied at the time of seeding.

3.5.5.2 Seeding

Areas which have been disturbed during mining operations will be reseeded with either Seed Mix #1 (Table 3-2) or with Seed Mix #2 (Table 3-3), as outlined below. These mixes are composed primarily of native species which either occur on the site or would be expected to grow on the site, especially on reclaimed areas. The mixes have been designed to include species which will provide sufficient cover to prevent soil erosion, and should contain sufficient species diversity to produce a stable self-perpetuating plant community. All seeds will comply with applicable state and federal seed laws.

Temporary Seed Mix
Chapter 3, Operation and Reclamation Plan  
Hidden Splendor Resources, Inc. - Horizon Mine  
July 2005

On those sites where revegetation is needed during the operating years, a temporary seed mix will be used. This mix (Table 3-2) is composed primarily of native species and is designed for quick establishment and erosion control. Only one introduced grass species (pubescent wheatgrass - Agropyron trichophorum), is included in the mix. It has been included since it is known to do well on dry sites, and will assist in controlling soil erosion. Cicer milkvetch (Astragalus ciscer) has been included because of its ability to fix nitrogen. No shrubs or forbs are included in the temporary mix, since these areas will be re-disturbed prior to final reclamation. At the actual time of planting, the mix may be altered depending on availability of the listed species and under the approval of the Division prior to substitution.

Permanent Seed Mix

The permanent revegetation mix is composed of a mixture of native grasses, forbs, shrubs and trees (Table 3-3). The grasses, forbs, and some of the shrubs will be planted as seeds. The remaining shrubs and trees will be planted as containerized stock. A variety of species are included in the mix in order to obtain a higher level of diversity on the revegetated surfaces. This will increase habitat diversity as variations in the microenvironments of the reclaimed surface will enhance or inhibit the germination and development of the various species.

The permanent seed mix reflects the composition of the original communities which occurred on the site. It is included because of its ability to fix nitrogen. Approval will be obtained from the Division prior to using any substitution in seed mixtures and on the number of containerized shrubs needed per acre.

The riparian seeding mix is included in Table 3-3.

Seeding Methods

Reclaimed areas will be seeded by broadcasting. Seeds when broadcast will be raked to ensure proper seed/soil contact. See Tables 3-2 and 3-3 for the seeding rates. If the first seeding does not establish, the area will be reseeded. Reclaimed areas will be seeded in the fall. Since the majority of the species in the mix are cool season grasses, fall is a better time to plant. The containerized stock will be planted in late fall or early spring, attempting to avoid undesirable conditions such as overly wet, overly dry, or frozen soils. Should the planting window close prior to completion of seeding, a sterile, quick growing ground cover will be planted to control erosion during the winter months. The final reclamation seed mixture will be planted during the following year. Small depressions will be left in areas where containerized stock is planted to accumulate water during wet periods.

In the riparian disturbed area (see Section 9.4.1.2) the containerized or cuttings of willow stock will be planted in clumps along the banks of Jewkes Creek. Other containerized shrubs and sedges will be planted in clumps within the riparian area. The seed mix (Table 3-3, Riparian Reclamation Seeding Mix) will be planted using the methods described above.
<table>
<thead>
<tr>
<th>Species</th>
<th>Pounds of PLS per acre</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PERENNIAL GRASSES</strong></td>
<td></td>
</tr>
<tr>
<td>Streambank Wheatgrass (Agropyron riparium)</td>
<td>8.0</td>
</tr>
<tr>
<td>Bluebunch Wheatgrass (Agropyron spicatum)</td>
<td>4.0</td>
</tr>
<tr>
<td>Slender Wheatgrass (Agropyron trachycaulum)</td>
<td>8.0</td>
</tr>
<tr>
<td>Pubescent Wheatgrass (Agropyron trichophorum)</td>
<td>6.0</td>
</tr>
<tr>
<td>Indian Ricegrass (Oryzopsis hymenoides)</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>FORBES</strong></td>
<td></td>
</tr>
<tr>
<td>Cicer Milkvetch (Astragalus cicer)</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>34.0</td>
</tr>
</tbody>
</table>
### TABLE 3-3

Reclamation Seeding Mix #2

<table>
<thead>
<tr>
<th>Species</th>
<th>Pounds of PLS Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHRUBS</strong></td>
<td></td>
</tr>
<tr>
<td>Serviceberry Amelanchier utahensis</td>
<td>4.0</td>
</tr>
<tr>
<td>Big Sagebrush (Vasey) Artemisia tridentata</td>
<td>0.4</td>
</tr>
<tr>
<td>Mtn. Mahogany Cercocarpus ledifolius</td>
<td>4.0</td>
</tr>
<tr>
<td>Wyoming Big Sagebrush (Gordon Creek Var.)</td>
<td>1.0</td>
</tr>
<tr>
<td>Artemisia tridentata wyomingensis</td>
<td></td>
</tr>
<tr>
<td><strong>FORBS</strong></td>
<td></td>
</tr>
<tr>
<td>Yarrow Achillea millifolium</td>
<td>0.2</td>
</tr>
<tr>
<td>Pacific Aster Aster chilensis</td>
<td>0.4</td>
</tr>
<tr>
<td>Northern Sweetvetch Hedysarum boreale</td>
<td>3.0</td>
</tr>
<tr>
<td>Lewis Flax Linum lewisi</td>
<td>2.0</td>
</tr>
<tr>
<td>Palmer's Penstemon Penstemon palmeri</td>
<td>1.0</td>
</tr>
</tbody>
</table>
## TABLE 3-3 (Continued)

### Reclamation Seeding Mix #2

<table>
<thead>
<tr>
<th>Species</th>
<th>Pounds of PLS Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GRASSES</strong></td>
<td></td>
</tr>
<tr>
<td>Gt. Basin Wildrye</td>
<td>6.0</td>
</tr>
<tr>
<td>Elymus cinereus</td>
<td></td>
</tr>
<tr>
<td>Thickspike Wheatgrass</td>
<td>4.0</td>
</tr>
<tr>
<td>Elymus lanceolatus</td>
<td></td>
</tr>
<tr>
<td>Western Wheatgrass</td>
<td>6.0</td>
</tr>
<tr>
<td>Elymus smithii</td>
<td></td>
</tr>
<tr>
<td>Bluebunch Wheatgrass</td>
<td>6.0</td>
</tr>
<tr>
<td>Elymus spicatus</td>
<td></td>
</tr>
<tr>
<td>Indian Ricegrass</td>
<td>4.0</td>
</tr>
<tr>
<td>Stipa hymenoides</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>42.0</td>
</tr>
<tr>
<td><strong>CONTAINERIZED STOCK</strong></td>
<td><strong>PLANTS/ACRE</strong></td>
</tr>
<tr>
<td>Oak Brush</td>
<td>400</td>
</tr>
<tr>
<td>Quercus gambelii</td>
<td></td>
</tr>
<tr>
<td>Aspen</td>
<td>300</td>
</tr>
<tr>
<td>Populus tremuloides</td>
<td></td>
</tr>
<tr>
<td>White Fir</td>
<td>200</td>
</tr>
<tr>
<td>Abies concolor</td>
<td></td>
</tr>
<tr>
<td>Big-tooth Maple</td>
<td>400</td>
</tr>
<tr>
<td>Acer grandidentatum</td>
<td></td>
</tr>
<tr>
<td>Serviceberry</td>
<td>300</td>
</tr>
<tr>
<td>Amelanchier alnifolia</td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 3-3 (Continued)

#### Reclamation Seeding Mix #2

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>PLANT/ACRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain Mahogany</td>
<td>400</td>
</tr>
<tr>
<td>Cercocarpus montanus</td>
<td></td>
</tr>
<tr>
<td>Oregon Grape</td>
<td>500</td>
</tr>
<tr>
<td>Mahonia repens</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>2,500</td>
</tr>
</tbody>
</table>

#### Riparian Reclamation Seeding Mix

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>PLANT/ACRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHRUBS</strong></td>
<td>CONTAINERIZED/ROOT CUTTING STOCK</td>
</tr>
<tr>
<td>Snowberry</td>
<td>300</td>
</tr>
<tr>
<td>Symphoricarpos oreophilus</td>
<td></td>
</tr>
<tr>
<td>Wood Rose</td>
<td>300</td>
</tr>
<tr>
<td>Rosa woodsii</td>
<td></td>
</tr>
<tr>
<td>Willow</td>
<td>1,100</td>
</tr>
<tr>
<td>Salix</td>
<td></td>
</tr>
<tr>
<td>Water Birch</td>
<td>300</td>
</tr>
<tr>
<td>Betula occidentalis</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>2,000</td>
</tr>
</tbody>
</table>
### TABLE 3-3 (Continued)

**Riparian Reclamation Seeding Mix**

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>POUNDS OF PLS PER ACRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FORBS</strong></td>
<td></td>
</tr>
<tr>
<td>Yarrow</td>
<td>1.0</td>
</tr>
<tr>
<td>Achillea millifolium</td>
<td></td>
</tr>
<tr>
<td>Pacific Aster</td>
<td>1.0</td>
</tr>
<tr>
<td>Aster chilensis</td>
<td></td>
</tr>
<tr>
<td>Prairie Sage</td>
<td>1.0</td>
</tr>
<tr>
<td>Artemisia ludoviciana</td>
<td></td>
</tr>
<tr>
<td>Marsh Indian Paintbrush</td>
<td>1.0</td>
</tr>
<tr>
<td>Castelleja exilis</td>
<td></td>
</tr>
<tr>
<td>Wild Geranium</td>
<td>1.0</td>
</tr>
<tr>
<td>Geranium viscosissimum</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>5.0</td>
</tr>
<tr>
<td><strong>GRASSES</strong></td>
<td></td>
</tr>
<tr>
<td>Blue Wildrye</td>
<td>8.0</td>
</tr>
<tr>
<td>Elymus glaucus</td>
<td></td>
</tr>
<tr>
<td>Kentucky Bluegrass</td>
<td>4.0</td>
</tr>
<tr>
<td>Poa pratensis</td>
<td></td>
</tr>
<tr>
<td>Gt. Basin Wildrye</td>
<td>6.0</td>
</tr>
<tr>
<td>Elymus cinereus</td>
<td></td>
</tr>
<tr>
<td>Idaho Fescue</td>
<td>4.0</td>
</tr>
<tr>
<td>Festica idahoensis</td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 3-3 (Continued)

**Riparian Reclamation Seeding Mix**

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>POUNDS OF PLS PER ACRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Wheatgrass</td>
<td>6.0</td>
</tr>
<tr>
<td>Elymus smithii</td>
<td></td>
</tr>
<tr>
<td>Bluebunch Wheatgrass</td>
<td>6.0</td>
</tr>
<tr>
<td>Elymus spicatus</td>
<td></td>
</tr>
<tr>
<td>Indian Ricegrass</td>
<td>6.0</td>
</tr>
<tr>
<td>Stipa hymenoides</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>40.0</strong></td>
</tr>
</tbody>
</table>
| **CONTAINERIZED/ROOT CUTTING STOCK** | **PLANT/ACRE** |  >>>>
| Nebraska Sedge                | 200                    |
| Carex nevrascensis            |                        |
| Beaked Sedge                  | 200                    |
| Carex rostrata                |                        |
| **TOTAL**                     | **400**                |

Locations where containerized stock will be planted:

- Oakbrush
- Aspen
- White Fir
- Big-tooth Maple
- Serviceberry
- Mountain Mahogany
- Oregon Grape
- Willow
- South & East Slopes
- North Slopes & Canyon Bottoms
- North Slopes
- North Slopes & Canyon Bottoms
- South Slopes
- Ridge tops & South Facing Slopes
- North, East, West Slopes & Canyon Bottom
- Along Creek Banks
3.5.5.3 Mulching

During reclamation mulch will be applied to all newly reseeded areas in order to provide a more equitable environment for seed germination and initial growth. A mulch will be applied at a rate of 2000 pounds per acre. Once applied, the mulch will be incorporated while the surface is being roughened before seeding. Erosion control matting will be placed on all slopes 2 1/2H:1V or steeper.

At the time of reclamation the most beneficial type of mulch to be used will be determined by Horizon and UDOGM, for bonding purposes the price will be assumed to be that for alfalfa.

3.5.5.4 Reclamation Management

The reclaimed and revegetated areas will be closely monitored to determine if any maintenance is necessary (refer to Sections 3.5 and 9.8 for a description of the monitoring program). Problems which may require management include severe erosion, excessive weeds, bare patches of failed planting, and damage by wildlife. Rills and gullies which form in areas that have been regraded and topsoiled and which either disrupt the approved post-mining land use or the reestablishment of the vegetative cover, or, cause or contribute to a violation of water quality standards for receiving streams, shall be filled, regraded, or otherwise stabilized; topsoil replaced; and the areas shall be reseeded or replanted. If weeds occur, a weed control plan will be proposed to UDOGM and implemented upon approval. No weed control will be attempted during the first growing season. It is likely that weed species will form a conspicuous part of the vegetation on the reclaimed areas during the first year but will be replaced by revegetative species thereafter.

3.5.5.5 Revegetation Monitoring

Revegetated areas will be monitored in accordance with Section 9.8 of this permit application.

3.5.5.6 Establishment of Wildlife Habitat

Reclamation is particularly important as a means of controlling erosion and restoring disturbed areas to a productive state. To assist in meeting these desirable ends, the following aspects have been incorporated into the reclamation plan: (1) planting a diverse mixture of native grasses, forbs, and (where appropriate) woody species, (2) using seedling stock rather than relying solely on seeds for trees or shrubs, and (3) planting vegetation to create an edge effect by clumping selected shrub or tree species.

Section 10.5 provides a detailed discussion of the reclamation, mitigation and management plans for terrestrial habitats and wildlife.

Enhancement of the area for wildlife will be accomplished by the installation of rock piles for smaller mammals, the improved revegetation of the area, and planting of Salix cuttings per acre along the creek banks within the disturbed area. Rock piles will be scattered along the perimeter of Jewkes Creek, and through Portal Canyon. Containerized shrub stock will be planted near the rock piles to provide additional cover and as a food source. The appropriate regulatory agencies (i.e.,
3.5.6 Reclamation Monitoring

The standards for success in the previously disturbed areas of the site are outlined in section R645-301-356.250 of the regulations. The applicant intends to return the previously disturbed areas to stable plant communities capable of withstanding the intended post-mining land use and controlling erosion (see Section 9.8).

3.5.7 Schedule of Reclamation for Horizon Mine

3.5.7.1 Timetable for Completion of Major Reclamation Processes

The approximate schedule of reclamation activities is outlined in Table 3-4. The graphical schedule has been extended by approximately 10 percent beyond the numerical estimates presented below to account for unanticipated delays. Reclamation is proposed to be initiated within 90 days (weather permitting) of final abandonment of the mining operation. Each listing is for an 8-hour work day.

The Phase I reclamation tasks are therefore proposed to be completed within 24 weeks following the start of reclamation activities, assuming adequate weather conditions. Eight weeks are planned for the completion of Phase II reclamation tasks.

Due to the size and topography of the mine site, the concept of completing reclamation activities in Portal Canyon prior to starting reclamation activities in Jewkes Canyon is not feasible. Potential problems include having to move topsoil twice and not having the fill in Jewkes Canyon to reclaim slopes in Portal Canyon. Horizon commits to begin reclamation activities in Portal Canyon and to leave the sediment pond and UC-1 located in Jewkes Canyon in place as long as possible. Prior to the removal of the sediment pond during reclamation, UDOG hydrologist will be notified and given the opportunity to inspect and endorse the removal. The timetable and sequence for removal of sediment control structures will depend upon the season of the year and precipitation.

3.5.8 Cost Estimate for Final Reclamation

The estimated cost to reclaim the Horizon Mine surface facilities is provided in Appendix 3-7.

The reclamation costs were evaluated to determine if the 100-foot culvert extension planned for 1997 (Appendix 3-9) would be covered by the estimated amount.

3.6 References


APPENDIX 3-1

ROAD AND HAULAGE LETTERS
William Roger Skaggs
P.O. Box 784
Price, Utah 84501

Dear Mr. Skaggs,

This is in response to your request concerning the impact your company would have in hauling coal down the Gordon Creek Road. It is our opinion that the impact would not be too severe, and your company hauling coal on that road would be permissible.

There is one problem, however. Beaver Creek Coal has been maintaining that road for the last few years and there would have to be an agreement between Beaver Creek Coal and Carbon County as to the upkeep of the road. If you need more information, please call me.

Very truly yours,

BOARD OF CARBON COUNTY COMMISSIONERS,

Emma R. Kuykendall
County Commissioner

Figure 3-1. 1989 Road Letter.
Wednesday, August 15, 1990

Mr. William Roger Skaggs
P.O. Box 784
Price, Utah
84501

RE: February 1989 Letter on Gordon Creek Road

Dear Mr. Skaggs:

Since my previous letter to you, Carbon County has turned the maintenance of all coal haul roads over to the Carbon County Road Special Service District. This District maintains these roads with royalties paid by the coal mines on Federally leased coal. I believe this will relieve you of substantial burdens associated with the use of this road.

We wish you success in your endeavors of opening this mine because we need the employment very much. I feel there will be no problems in coming to a mutual agreement on the usage of this road at such time as your mine is ready to open.

Sincerely,

Emma R. Kuykendall
Carbon County Commissioner

Figure 3-1a. 1990 Road Letter.
May 5, 1992

Mr. William Roger Skaggs
P.O. Box 784
Price, UT 84501

RE: Blue Blaze Coal Mine

Dear Mr. Skaggs:

Approval to use the Gordon Creek Road to haul Blue Blaze coal by truck is hereby granted.

Per Utah coal mining regulation R645-103-234.400, the interests of the public and affected landowners will be protected from the proposed coal mining and reclamation operation.

Sincerely,

Emma R. Kuykendall
Commission Chairman
Carbon County

Figure 3-1b. 1992 Road Letter.
Chapter 3, Operation and Reclamation Plan
Horizon Coal Corporation

AFFIDAVIT OF PUBLICATION

STATE OF UTAH)
County of Carbon,)  

I, Dan Stockburger, on oath, say that I am the Publisher of the Sun Advocate, a twice-weekly newspaper of general circulation, published at Price, State and County aforesaid, and that a certain notice, a true copy of which is hereto attached, was published in the full issue of such newspaper for........... consecutive issues, and that the first publication was on the

24th day of September, 1991

and that the last publication of such notice was in the issue of such newspaper dated the

1st day of October, 1991

Subscribed and sworn to before me this

1st day of October, 1991

[Signature]

Notary Public

My Commission expires January 10, 1995
Residing at Price, Utah
Publication fee, $22.80

NOTICE OF PUBLIC MEETING

Blue Blaze Coal Company announces that a public meeting, in accordance with Utah Coal Mining Regulation R314-103-133, is scheduled for 3:00 pm, October 9, 1991, at the Carbon County Court House. This meeting is to address public issues relating to the road usage for the mining operations. This project will require the upgrade of the County Road 290 (070060) for 1,020 ft. It is located within 100 ft. of the proposed surface facilities.

Anyone interested in attending this meeting should contact the Division of Oil, Gas and Mining at Triad Center, Suite 350 Salt Lake City, Utah before 3:00 pm, October 7, 1991. If no meeting requests are received before this time the meeting will be cancelled.

Published in the Sun Advocate September 24 and October 1, 1991.

FIGURE 3-1C. PUBLIC HEARING LETTER.
August 31, 1995

Horizon Coal Corporation
c/o Vicky Bailey
7324 So. Union Park Ave - Suite 100
Midvale, Utah 84047

Dear Ms. Bailey:

We are in receipt of your letter requesting our service in hauling refuse and trash from the mine surface facilities in Consumers Canyon.

City Sanitation is very willing and able to furnish this service for your company. Please contact us when you are in need of our service at (801) 637-3785.

Thank you for considering our company.

Cordially,

Jasline Williams
CEO

FIGURE 3-2. WASTE HAULAGE LETTER.
STATE OF UTAH

ss.

County of Carbon,

I, Kevin Ashby, on oath, say that I am the Publisher of the Sun Advocate, a twice-weekly newspaper of general circulation, published at Price, State and County aforesaid, and that a certain notice, a true copy of which is hereto attached, was published in the full issue of such newspaper for 4 (Four) consecutive issues, and that the first publication was on the 3rd day of October, 1995 and that the last publication of such notice was in the issue of such newspaper dated the 24th day of October, 1995.

Kevin Ashby - Publisher

Subscribed and sworn to before me this 24th day of October, 1995.

Linda Thayn - Notary Public

My commission expires January 10, 1999 Residing at Price, Utah

Publication fee, $179.20

NOTICE OF PERMIT APPLICATION

Horizon Coal Corporation, P.O. Box 2560, Wise Virginia 24273 has filed with the Utah Department of Natural Resources, Division of Oil, Gas and Mining (DOGM) a complete Permit Application Package (PAP) for conducting underground mining. The Utah Division of Oil, Gas and Mining has determined the PAP to be administratively complete. Approval of the application by DOGM would allow underground mining to proceed at the proposed Horizon Mine located 14 miles west from Price, Utah in the Gordon Creek-Consumers Canyon area. The permit area lies within the USGS Jump Creek, Utah 7.5 minute quadrangle. The permit area includes lands in the following:

T.13S, R.8E., SLM, Utah, Sec. 8, SE1/4SW1/4, Sec 17, NW1/4NE1/4, W1/2 SE1/4, SE1/4 SE1/4, S1/2NW1/4, N1/2 SW1/4, SE1/4 SW1/4. Containing 400 acres, more or less.

The permit area includes a Federal Coal Right-of-Way (application pending) described as follows:

T.13S, R.8E., SLM, Utah, Section 8, SW1/4SW1/4SE1/4, Section 17, NE1/4SW1/4NE1/4, SE1/4SW1/4NE1/4, NE1/4NE1/4NW1/4. Containing 40 acres, more or less.

A copy of the PAP is available for public inspection at the Carbon County Court House, Price, Utah and at the Division of Oil, Gas and Mining Office located at 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah. Written comments or requests for informal conferences on the application must be submitted, within 30 days of the last date of publication, to: The State Department of Natural Resources, Division of Oil, Gas and Mining, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203.

Horizon Coal Corporation would appreciate copies of any comments be sent to their office as well as to the Division of Oil, Gas and Mining. Published in the Sun Advocate October 3, 10, 17 and 24, 1995.
May 13, 1996

Earthfax  
7324 South Union Park Ave.  
Midvale, Utah  84047  

Attn: Vicky Bailey  

Dear Ms. Bailey,  

Thank-you for your interest in the coal industry of Carbon County. We wish you and your company the greatest good fortune in your venture.  

In reference to the access road into your proposed mine site. This is a Carbon County owned road and is currently maintained by the Carbon County Road department. As it pertains to the development of your mine project Carbon County would agree to allow the use of this road and continue to maintain it to help with the operation of your facility.  

Again we welcome your company and the economical benefits associated with the re-opening of the historical mine in our county. If we can be of help in any other way please let us know.  

Regards,  

Neil Breinholt, Chairman  
Carbon County Commission
AUGUST 12, 1996

Horizon Coal Corporation
P.O. Box 2560
Wise, VA 24273
Attention: Mr. Brad Bourquin
Ms. Vicki Bailey

RE: Horizon Coal Corporation
Waterline Pipeline Right-of-way Request
County Road Use and Requirements

Carbon County has reviewed your requests for usages on the Consumers Road as it accesses your property and project. The following are acknowledgements to your requests per the attached letter.

Water pipeline right-of-way.
The proposed water line may be placed in the county roadway as shown on the plat. The pipeline will run laterally along the county roadway and will also cross the county roadway at the junction of County Road 290 and the Consumers Road. The fees for this will be $25.00 for a road opening permit and $0.25 per linear feet of pipeline. It is then the responsibility of Horizon Coal to place the pipeline and to replace the road to its original or better condition and to maintain that road opening to the original or better condition. It is also the responsibility of Horizon Coal Corporation and/or the construction company assigned to do the work to notify the Carbon County Road Department prior to the start-up of the work and to allow Carbon County access for inspections.

County Road Realignment Horizon Coal is granted permission to realign the Consumers Road to facilitate construction of the Horizon No. 1 Mine surface improvements. It is the responsibility of Horizon Coal to construct all said realignments and it is further the responsibility of Horizon Coal to maintain these changes and improvements as long as the operation continues and beyond that as the reclamation and closures of the operations.
may occur. It will also be necessary to identify by a written legal description the new road alignment. This written legal description must then be deeded to the county to ascertain that no “breaks” in the continuous ownership of the roadway occur. Also, the county will need to vacate ownership the the previous road alignment and Horizon will need to provide a written legal description of the section of road to be vacated. If the new property is to be acquired from a public entity, (BLM, Forest Service) notification of this acquisition should be obtained. However, it is our understanding that the property that will be used for the road realignment falls under the lease now acquired from Hidden Splendor by Horizon Coal.

Beyond these requirements it is the request of Carbon County that a dust suppression substance be applied to the county road at the expense of Horizon Coal. This dust control compound is recommended to be Magnesium Oxide and is to be reapplied at intervals as needed for dust control, also at the expense of Horizon Coal.

Again, it is important that you contact Carbon County as these changes proceed. The Commissioner for the Road Department is Bill Krompel at 801-636-3226. Carbon County welcomes your efforts and wishes you success. Please let us know if we can be of further help.

Regards,

William D. Krompel
Commissioner Bill Krompel
Carbon County

CC: Vicki Bailey, EarthFax
    Ray Hansen, Carbon County Road Dept.
    Dave Levanger, County Bldg. Inspector
    Brad Bourquin, Horizon Coal
August 15, 1996

Horizon Coal Corporation
P.O. Box 2560
Wise, VA. 24273

Attention: Mr. Brad Bourquin
Ms. Vicki Bailey

Dear Ms. Bailey,

Thank-you for your interest and efforts in the coal industry of Carbon County. We wish you and your company the greatest good fortune in your venture.

In reference to the access roads into your proposed mine sites, County Road 290 and Consumers Road. These are Carbon County owned roads and are currently maintained by the Carbon County Road Department. As it pertains to the development of your project Carbon County would agree to allow use of the roads mentioned herein, and continue to maintain them. Carbon County would require Horizon Coal Corporation to apply, at their expense, a dust suppression control substance. Carbon County recommends the use of Magnesium Chloride to be applied at intervals as needed for dust control.

Again, we welcome your companies efforts and pledges our continued support.

Regards,

William D. Krompel

Bill Krompel,
Carbon County Commissioner

100 YEARS OF COURAGE
MIKE MILOVICH, NEIL BREINHOLT, WILLIAM KROMPEL – COMMISSIONERS
120 EAST MAIN • PRICE, UTAH • 84501 • 801-637-4700
August 15, 1996

Horizon Coal Corporation
P.O. Box 2560
Wise, VA 24273

Attention: Brad Bourguin

Dear Brad,

Please let this letter serve as a formal acknowledgement of the position of Horizon Coal Mine #1 on Consumers Road as we have discussed in prior communication. This road is now and has historically been a county owned and maintained road and will continue to be so. The advent of your mine opening will not and cannot effectively limit the access of the public on this road. As described in the plat you have provided to county you have a separate access road from our county road to enter your property, and this will remain your private access. Carbon County would just like to make it clear that we cannot allow anyone to limit public access to this road for any reason.

We do not foresee any problems concerning your project. We are certain you can make the necessary arrangements to proceed with your project as planned without major problems that could cause disagreements on the roadway. Please send us a written acknowledgement of your receipt of this letter and your general acceptance and understanding of the content.

Thank-you,

Bill Krompel, Commissioner

CC: Dave Levanger, Bldg. Inspector
    Mike Milovich, Commissioner
    Neil Breinholt, Commissioner
August 14, 1996

Mr. Richard Gilliam, President
Horizon Coal Corporation
P.O. Box 2560
Wise, VA 24273

Re: Hidden Splendor Resources, Ltd.
County Road Realignment

Dear Mr. Gilliam:

Hidden Splendor Resources, Ltd. is the land owner of the lands where the new Horizon No. Mine is to be built. Hidden Splendor Resources, Ltd. will cooperate fully to complete right-of-way land swaps with Carbon County so that the Consumers Road (a county road) can be realigned. We understand that such a realignment is appropriate for good design of the mines' surface facilities and maintaining a good public road.

Sincerely,

Hidden Splendor Resources, Ltd.

Alexander H. Walker, Jr.
Vice President

AHW/mao

copy:
Oliver Gushee Jr., Pruitt, Gushee and Bachtell, SLC, UT
Vicky Bailey, EarthFax Engineering, Midvale, UT
Brad Bourquin, Horizon Coal Corporation, Lakewood, CO
This permit is for the construction of water, gas, sewer, pole lines or other facilities upon roadways in Carbon County. It is issued with the understanding that the holder will be responsible for the proper restoration of all highway and sidewalk surfaces, and for ditches, to the same efficiency as before disturbed without loss to the beneficiaries, and that before roadways or sidewalks are disturbed to perform the work covered by this permit, that holder will make proper provisions for protecting the public with necessary barricades, lights and with all other appurtenances necessary to safeguard the lives and property of the users of such roadway, sidewalk and other facilities.

It is further understood and agreed that the holder of this permit is responsible for any liability or personal injury involved through neglect. Holder agrees to execute an indemnity agreement running to Carbon County, indemnifying the County against all claims, demands, costs, damages, attorneys fees or other expenses of any kind occasioned by such neglect. Holder shall, in addition, restore all properties of the County to their original condition in a manner satisfactory to Carbon County. Such restoration shall take place within seventy-two (72) hours from the time of commencement of excavations parallel to traveled lanes and over 300 square feet in area shall commence within ten (10) days from the commencement of excavation and be completed within fifteen (15) days from the commencement of the excavation. All restoration work shall be guaranteed by any such bond requirements as the County shall, from time to time, establish by ordinance. If the holder does not restore properties to their original condition within the time indicated herein, it is agreed that Carbon County shall make the necessary restoration at holders expense shall be deemed to include interest at the current rate until paid in full.

STREET SURFACING MUST BE CUT, LEAVING WELL DEFINED EDGES, RATHER THAN GOUGED WITH A BACKHOE OR OTHER SIMILAR EQUIPMENT. BEFORE HOLDER BEGINS TO DIG, HE MUST CALL ALL PUBLIC UTILITY COMPANIES FOR INFORMATION PERTAINING TO THE LOCATION OF COMPANY LINES.

ALL EXCAVATION UNDER THIS PERMIT MUST BE IN ACCORDANCE WITH THE APPLICABLE ORDINANCES AND LAWS OF CARBON COUNTY AND OF THE STATE OF UTAH, AND IS REQUIRED TO CONFORM WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES – FEDERAL HIGHWAY ADMINISTRATION, 1978.

<table>
<thead>
<tr>
<th>Holder of Permit</th>
<th>Address</th>
<th>Phone</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizon Coal Corporation</td>
<td>P.O. Box 2560</td>
<td>Denver</td>
<td>303-89-4242</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Person for Whom Work is Done</th>
<th>Address</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>This Permit Limited to the Following Area</th>
<th>Size of Proposed Excavation</th>
</tr>
</thead>
<tbody>
<tr>
<td>then up the Burnet to a point known as the Horizon Terra Road</td>
<td>1650 feet by 3000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PERMIT VALID FOR</th>
<th>(Because of conditions beyond control of permit holders, written extension of time may be granted by Carbon County)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 DAYS FROM ISSUE</td>
<td>11/25/50</td>
</tr>
</tbody>
</table>

Signature of Permit Holder: 

VE. BAILEY

Inspector: 

[Signature]

CASH: 

# 6567

- Telephone
- Sewer
- Water
- Storm Drain
- Electric
- Gas
- Misc.
- Cable T.V.

PLEASE!

Call Before You Dig
For Location Of Underground Utilities
1-800-662-4111
Blue Stakes

Permit No.: 523

By: [Signature]
APPENDIX 3-2

PILLAR EXTRACTION
Chapter 3, Operation and Reclamation Plan
Horizon Coal Corporation

608 LINE

All entries bolted on development
5 foot centers.

Legend
- Breaker row, 4' center
- Turn post, 4' center
- Cut for which breaker row is set
- Cutting sequence
- Final pushout props, 4' center
- No. of cut after which stum may be reduced
- Cut for which turn row is set

Notes:
1. Normal sequence represented. Unusual conditions (water, adverse roof, pillar size, etc.) may dictate a change in the sequence.
2. Cut No. 1 and 2, 21 ft max. Bolted on 5-ft centers before next cut is made. Stumps, feeders, and/or blocks may be mined as much as possible to induce caving. The roadway to the final pushout shall not exceed 16 ft. Cuts may be 30 ft when remote control is used.

Figure 3-2a. Pillar Extraction
Chapter 3, Operation and Reclamation Plan
Horizon Coal Corporation

NOTE:
This is the normal pillar sequence. Unusual conditions such as water, adverse roof or pillar size may dictate a change in the sequence to protect miners. A pillar row may be started from the return side provided a complete row is pulled in the same direction. Stumps, fenders or blocks may be mined as much as possible to induce caving.

Figure 3-2b Pillar Sequence.
NOTE:
No person shall proceed in by the last full row of permanent supports except to set temporary supports and then only 5' feet.

NOTE:
Breaker row 3 TYP for first of each "Back to Back" cut - second cut left open. This is the normal pillar sequence. Unusual conditions such as water, adverse roof, or pillar size may dictate a change to protect miners.

Scale: 1"=20'

Figure 3-2c. Four-Way Pillar Split.
Chapter 3, Operation and Reclamation Plan
Horizon Coal Corporation

Figure 3-2d. Pillar Sequence, Four-Way, Right to Left.

NOTE:
Normal pillar sequence represented. Unusual conditions may indicate a change in the sequence. A pillar row may be started from the intake side provided a complete row is pulled from the same direction.

LEGEND

③ Cutting Sequence

Solid Coal

No Scale
APPENDIX 3-3
STATIC SAFETY FACTOR CALCULATIONS
Reclaimed Slope Stability Analysis

A slope stability analysis was performed with the assistance of Wayne Western of the DOGM and David Miller of Lodestar Energy. Two slopes were selected from the reclaimed contour slopes. Slope J-J' was selected because it will be the longest reclaimed slope and Slope S-S' was selected because it would be the steepest reclaimed slope.

The cut/fill slopes were evaluated on site and the conservative determination for the material consisting of sandstones and shales, along with a minor proportion of clayey soils. These areas would have a Rock Mass Bulk Density of 115 lb/cu. ft., a Friction Angle of 37 degrees and a Soil Cohesion of 3.5 psi. The natural material that the cut/fill slopes would rest against consists of sandstone and siltstones. This material would have a Rock Mass Bulk Density of 144 lb/cu. ft., a Friction Angle of 45 degrees and a Soil Cohesion of 1000 psi.

The slope stability calculation were performed on a program made available by the Division through the assistance of Wayne Western. The results of the analysis showed the J-J' slope to have a safety factor of 1.87 and the S-S' slope to have a safety factor of 1.5.

The slope stability profiles for the two slopes are attached.
MINE BENCH CONSTRUCTION
ROAD ENGAGEMENT
and
SEDIMENTATION POND
Static Safety Factors
Mine Bench Construction (See Section 3.3.1.2)

The mine bench construction will be accomplished using cut-and-fill methods with conventional heavy equipment. The design of the excavation and access road, balances cut-and-fill so that no waste rock disposal is required.

A thorough investigation of geologic conditions and rock properties present at the proposed exploration site was performed. Rock compressive strengths were determined using point load testing (Table 1). Table 1a lists the major and minor jointing trends in the area. Figure 1 shows a lithologic section with descriptions and highwall design. This cross section was compiled as a composit from geologic logs of drill holes.

Based on an analysis of jointing and of rotational shear, a highwall slope of 1V:33H (72 degree dip) will be used. Highwall faces at the site dip to the north, northeast, east, southeast, south, and southwest. The highwall face must be of less slope than the jointing present in order to avoid planar or wedge slope failure. The shallowest dipping joints of concern strike N50°W and dip 75° degrees SW. The proposed highwall angle of 72 degrees will eliminate the possibility of planar or wedge type failure.

A rotational shear analysis using the Hoek method was performed. Compressive strengths in Table 1 range from 20,600 PSI for a light sandstone, to 290 PSI for dark soft shale. Based on the relative proportions of rock units, a conservative average value of 5000 PSI was used.
TYPICAL CROSS SECTION
MINE BENCH HIGHWALL
WITH GEOLOGIC COLUMN
SCALE 1"-10"

LIGHT SANDSTONE
SILTSTONE
DARK SHALE
LIGHT SANDSTONE
SILTSTONE
DARK SANDSTONE
SILTSTONE
DARK CLAYSTONE
LIGHT SANDSTONE
SILTSTONE
DARK SANDSTONE
DARK CLAYSTONE
LIGHT SANDSTONE
COAL
DARK SOFT SHALE
DARK SHALE
SHALY SANDSTONE
DARK SOFT SHALE
SHALY SANDSTONE
DARK SOFT SHALE
VERY SHALY SANDSTONE
SHALY SANDSTONE
DARK SHALE
SANDY SHALE
COAL
DARK SOFT SHALE
SHALY SANDSTONE
LIGHT SANDSTONE
DARK SHALE
LIGHT SANDSTONE
Table 1

Point Land Compressive Strengths - Rock Units at Portal Site
in psi

<table>
<thead>
<tr>
<th>Light Sandstone</th>
<th>Shaley Sandstone</th>
<th>Siltstone</th>
<th>Sandy Shale</th>
<th>Dark Soft Shale</th>
<th>Coal</th>
</tr>
</thead>
<tbody>
<tr>
<td>14,000</td>
<td>6400</td>
<td>5300</td>
<td>6330</td>
<td>930</td>
<td>1200</td>
</tr>
<tr>
<td>15,700</td>
<td>3500</td>
<td>5400</td>
<td></td>
<td>2300</td>
<td>1700</td>
</tr>
<tr>
<td>20,600</td>
<td>6900</td>
<td>8200</td>
<td></td>
<td>970</td>
<td>1500</td>
</tr>
<tr>
<td>6,400</td>
<td>13200</td>
<td>9600</td>
<td></td>
<td>3600</td>
<td>1200</td>
</tr>
<tr>
<td>9,500</td>
<td>11100</td>
<td>11000</td>
<td></td>
<td>860</td>
<td>1500</td>
</tr>
<tr>
<td>7,300</td>
<td>8220 avg.</td>
<td>15700</td>
<td></td>
<td>1000</td>
<td>1700</td>
</tr>
<tr>
<td>7,300</td>
<td>6000</td>
<td>15400</td>
<td></td>
<td>400</td>
<td>1200</td>
</tr>
<tr>
<td>6,000</td>
<td>3400</td>
<td>3400</td>
<td></td>
<td>5800</td>
<td>700</td>
</tr>
<tr>
<td>11,100</td>
<td>10700</td>
<td>10700</td>
<td></td>
<td>1900</td>
<td>1500</td>
</tr>
<tr>
<td>9,700</td>
<td></td>
<td></td>
<td></td>
<td>6700</td>
<td>1530 avg.</td>
</tr>
<tr>
<td>3,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10,700</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10,200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10,350 avg.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9540 avg.
### Table 1a

**JOINT MEASUREMENTS**

<table>
<thead>
<tr>
<th>Location</th>
<th>Strike</th>
<th>Dip</th>
<th>Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top of Road/Mine Bench</td>
<td>N-S</td>
<td>70°W</td>
<td>Major Joints 3-5'</td>
</tr>
<tr>
<td></td>
<td>N50°W</td>
<td>75°SW</td>
<td>Major Joints 5'</td>
</tr>
<tr>
<td>First Bend</td>
<td>N-S</td>
<td>80°W</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N60°W</td>
<td>80°SW</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N-15E</td>
<td>80SW</td>
<td>Closely Spaced</td>
</tr>
<tr>
<td>Second Bend</td>
<td>N-S</td>
<td>80W</td>
<td>5'+</td>
</tr>
<tr>
<td></td>
<td>N60°W</td>
<td>75SW</td>
<td>5+</td>
</tr>
<tr>
<td>Bottom of Road</td>
<td>N10E</td>
<td>80E</td>
<td>5'-10'</td>
</tr>
<tr>
<td></td>
<td>N80E</td>
<td>V</td>
<td>3'+</td>
</tr>
</tbody>
</table>
Intact rock shear strength or cohesion can be related to compressive strength by:

\[ C = \frac{C_0 \tan (45 - \theta')}{2} \]

\[ C = \text{intact rock shear strength or cohesion} \]

\[ C_0 = \text{intact rock compressive strength} \]

\[ \theta' = \text{internal friction angle}. \]

Using a typical internal friction angle of 45 degrees for Wasatch Plateau sandstones, siltstones, and claystones, and 5000 PSI for compressive strength, an intact rock shear strength or cohesion of approximately 1000 PSI was calculated.

The relationship of fracture intensity and cohesion has been developed by Stimpson and Ross-Brown ("Estimating the Cohesive Strength of Randomly Jointed Rock Masses". Mining Engineering, Vol. 31, No. 2, pp. 182-188.). Using a conservative figure of 4 joints per meter yields a .065 factor relating \( C \) and \( C_0 \) (rock mass cohesion). With a 1000 psi intact rock mass cohesion calculates at 65 psi.

An accepted value (slightly conservative) for rock mass sliding friction angle in western sedimentary deposits of 31 degrees was used in the analysis. Also, a typical value of 155 lbs./cu. ft. for rock mass bulk density was used.

In summary, the following parameters were used with the Hoek slope chart (Hoek, E., and J.W. Bray, 1981, Rock Slope Engineering, Revised Third Edition, IMM, London).

- Maximum Slope Height = 100'
- Slope Angle = 72 degrees
- Rock Mass Cohesion = 65 psi
- Rock Mass Friction Angle = 31 degrees
- Rock Mass Bulk Density = 155 lb./cu. ft
Results show that the 72 degree angle highwall has a static safety factor of 2.94 for dry conditions, and 2.62 for saturated conditions. This is well within the 1.3 safety factor guideline. From a rotational shear standpoint, highwall angles approaching 90 degrees for dry, and 85 degrees for saturated would be acceptable while still maintaining a safety factor of 1.3.

The mine bench embankment will be constructed primarily at a slope of 1V:1.5H, except that a 1V:1.35H slope will be used if the fill material has a minimum of 85 percent rock. The fill will be placed in maximum 36 inch thick lifts, and shall be distributed and mechanically compacted. Compaction will be maintained at 95% of original as determined by a Modified Proctor Analysis ASTM D-1557, AASHO T-180.

The final bench configuration will provide drainage to the disturbed drainage ditch D-1.
Access Road (See Section 3.2.10)

The access road will be designed as an primary road. The road will be maintained at 20 ft. wide. The actual distance may vary slightly due to road drainage, maintenance and grading. The road to the mine openings will be 20 ft. and allow sufficient distance for placement of the conveyor belt along the edge of the road. The road will not exceed a 6% vertical grade.

The access road highwalls are designed using two criteria for stability - jointing and rotational shear. The highwall face angle must be less than the jointing present to avoid slippage along the joint planes. Refering to Table 1a, the minimum joint dip present along the road from the first bend to the bottom is 75 degrees. The proposed highwall angles of 71.5 degrees (1v:.33H) and 40 degrees (1v:1.2H) eliminate the possibility of failure due to slipping.

The rotational shear analysis for highwall stability with a cut slope of 1v:.33H has been performed in the previous section. The majority of the access road highwall will be cut at the lesser 40 degree slope to better match the topography and allow for removal of loose soil material.

The Hoek method was used in performing the rotational shear analysis. Based on the relative proportion of rock units along the access road highwall (15% shale, 38% sandstone, 38% shaley sandstone, and 9% misc.,) a conservative average compressive strength of 5000 psi will be used. See Table 1. As before for the mine bench highwall, using a conservative joint spacing of 4 joints per meter, the rock mass cohesion calculates out at 65 psi. A rock mass sliding friction angle of 31 degrees and a bulk density of 155 lb./cu. ft. were also used (See preceding section for Mine Bench Construction).
Summarizing the parameters for input:

Maximum Slope Ht. = 100'
Slope Angle = 40 degrees
Rock Mass Cohesion = 65 psi
Rock Mass Sliding Friction Angle = 31 degrees
Rock Mass Bulk Density = 155 lb./cu.ft.

Using the circular failure charts (Figures 1a and 1b) results in a safety factor of 4.01 for saturated ground conditions.

When a road embankment is placed on slopes exceeding 1V:3H, the existing ground will be plowed or stepped. Embankment material will be placed in maximum 36 inch lifts, and shall be compacted as described for the mine bench. The embankment slope will not exceed 1V:1.5H unless the material contains a minimum of 85% rock, in which case the embankment slope may be increased to 1V:1.35H.

A rotational shear analysis using the Hoek method was performed to determine embankment stability. The maximum embankment height approaches 50' along the lower portion of the access road. Typical values for cohesion in the expected fill material consisting of excavation sandstones and shale, along with a minor proportion of clayey soils, is 3.5 psi. A conservative 30 degree friction angle for this material will also be used. Compaction tests of the materials that will be used for fill indicate a range of density values from 100 lb./cu.ft. to 130 lb./cu.ft. An average 115 lb./cu.ft. bulk density will be used.

Summarizing the parameters for input:

H = Embankment Height = 50'
Slope angle (1V:1.6H) = 32 degrees
C = Soil Cohesion = 3.5 psi
\( \phi \) = Friction Angle = 30 degrees
Y = Rock Mass Bulk Density = 115 lb./cu.ft.
F = Static Safety Factor = 1.92 Dry
\( \text{Dry} \) = 1.37 Saturated
Using the Circular Failure Charts (Figure 1a & 1b), results indicate a safety factor of 1.92 for dry conditions and 1.37 for saturated conditions. This meets the acceptable safety factor requirement. A monitoring program and proposed mitigation measures to detect excessive movement along the access road highwall, along with proposed mitigation measures, is described in detail under the Geologic Hazards Section, 3.4.8.3.

The road surface shall be sloped outward toward the disturbed drainage ditches. This will direct any sediment towards the sedimentation pond.

The road cuts will be revegetated with a temporary seed mix. Listed in Section 3.

**Sedimentation Pond** (See Section 7.2.3.2)

**Static Embankment Safety Factor:**

\[
\begin{align*}
H &= \text{Embankment Height} = 11' \\
S &= \text{Slope Angle (1V:2H)} = 26.56 \text{ degrees} \\
c &= \text{Soil Cohesion} = 3.5 \text{ psi} \\
O &= \text{Friction Angle} = 30 \text{ degrees} \\
Y &= \text{Rock Mass Bulk Density} = 115 \text{ lbs./cu.ft.} \\
F &= \text{Static Safety Factor} = 4.81 \text{ Dry} \\
&= 4.44 \text{ Saturated}
\end{align*}
\]

Using the circular failure charts (Figure 1a & 1b), results in a static safety factor of 4.81 for dry conditions and 4.44 for saturated conditions is well within the 1.5 safety factor required.
Figure 1a
(DRY CONDITIONS)

CIRCULAR FAILURE CHART NUMBER 1
Figure 1b

(SATURATED CONDITIONS)

CIRCULAR FAILURE CHART NUMBER 5
Reclaimed Slope Stability Analysis

A slope stability analysis was performed with the assistance of Wayne Western of the DOGM and David Miller of Lodestar Energy. Two slopes were selected from the reclaimed contour slopes. Slope J-J' was selected because it will be the longest reclaimed slope and Slope S-S' was selected because it would be the steepest reclaimed slope.

The cut/fill slopes were evaluated on site and the conservative determination for the material consisting of sandstones and shales, along with a minor proportion of clayey soils. These areas would have a Rock Mass Bulk Density of 115 lb/cu. ft., a Friction Angle of 37 degrees and a Soil Cohesion of 3.5 psi. The natural material that the cut/fill slopes would rest against consists of sandstone and siltstones. This material would have a Rock Mass Bulk Density of 144 lb/cu. ft., a Friction Angle of 45 degrees and a Soil Cohesion of 1000 psi.

The slope stability calculation were performed on a program made available by the Division through the assistance of Wayne Western. The results of the analysis showed the J-J' slope to have a safety factor of 1.87 and the S-S' slope to have a safety factor of 1.5.

The slope stability profiles for the two slopes are attached.
APPENDIX 3-4
ROCK STRENGTH ANALYSES
UNIAXIAL COMPRESSION DATA
<table>
<thead>
<tr>
<th>SAMPLE</th>
<th>DEPTH INTERVAL</th>
<th>CORE LENGTH</th>
<th>DESCRIPTION</th>
<th>COMPR. STRENGTH</th>
<th>YOUNG'S MODULUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCO-10</td>
<td>43.00 to 45.30</td>
<td>1.25 to 3.05</td>
<td>SHALE</td>
<td>15227</td>
<td>1.3374</td>
</tr>
<tr>
<td>CCO-11</td>
<td>16.20 to 18.30</td>
<td>1.04 to 3.78</td>
<td>SHALE SANDSTONE</td>
<td>11414</td>
<td>2.4760</td>
</tr>
<tr>
<td>CCO-12</td>
<td>10.00 to 12.20</td>
<td>1.06 to 3.73</td>
<td>SHALE SANDSTONE</td>
<td>15711</td>
<td>4.0160</td>
</tr>
<tr>
<td>CCO-13</td>
<td>15.40 to 16.40</td>
<td>1.05 to 3.67</td>
<td>SHALE SANDSTONE</td>
<td>15711</td>
<td>2.3140</td>
</tr>
<tr>
<td>CCO-11A</td>
<td>28.40 to 29.60</td>
<td>1.05 to 3.71</td>
<td>SHALE</td>
<td>16471</td>
<td>1.7500</td>
</tr>
<tr>
<td>CCO-11B</td>
<td>26.40 to 27.60</td>
<td>1.05 to 3.71</td>
<td>SHALE</td>
<td>16471</td>
<td>1.1977</td>
</tr>
<tr>
<td>CCO-13</td>
<td>164.00 to 166.00</td>
<td>2.27 to 5.21</td>
<td>SANDSTONE INTERBEDDED WITH SHALE (S1)</td>
<td>5830</td>
<td>1.0771</td>
</tr>
<tr>
<td>CCO-4</td>
<td>166.00 to 168.00</td>
<td>2.10 to 4.71</td>
<td>SANDSTONE INTERBEDDED WITH SHALE (S1)</td>
<td>5060</td>
<td>1.9159</td>
</tr>
<tr>
<td>CCO-5</td>
<td>169.00 to 170.00</td>
<td>2.12 to 4.71</td>
<td>SANDSTONE INTERBEDDED WITH SHALE (S1)</td>
<td>10606</td>
<td>1.7011</td>
</tr>
<tr>
<td>CCO-6</td>
<td>141.00 to 142.00</td>
<td>2.60 to 4.93</td>
<td>SANDSTONE, SHALE (274)</td>
<td>11247</td>
<td>1.5076</td>
</tr>
<tr>
<td>CCO-7</td>
<td>122.00 to 122.50</td>
<td>1.05 to 3.80</td>
<td>SANDSTONE INTERBEDDED WITH SHALE</td>
<td>1795</td>
<td>1.2841</td>
</tr>
<tr>
<td>CCO-7</td>
<td>125.10 to 125.10</td>
<td>1.46 to 3.74</td>
<td>SANDSTONE INTERBEDDED WITH SHALE</td>
<td>1795</td>
<td>1.2841</td>
</tr>
</tbody>
</table>
FACTOR OF SAFETY

CALCULATIONS
No. 22 Section

Roof Rock Strength Calculations

Criteria: Coal

- H = Coal Height = 8.5'
- A = Minimum Pillar (C-C) = 40'
- L = Entry Width or X-cut Width = 20' = 240"
- \( E_p \) = Young's Modulus = 0.5 \( \times \) 10^6

Regular Pattern

Rock

Fine-Grained Sandy Shale

- \( q \) = Uniform Load on Beam = 4.2 psi,
  where: \( \gamma \) = density = 100 lbs/ft^3
  \( d \) = Depth of Beam = 6' (Roof Bolted to 6')

- \( E_s \) = Young's Modulus = 1.5 \( \times \) 10^6
- \( v \) = Poisson Ratio = 0.2
- \( C \) = Axial Compressive Strength = 10,900 psi
- \( S \) = Stress from Overburden

\[
1.1 \text{ psi} \times \text{depth} = 1.1 \times 550' = 605 \text{ psi}
\]

NOTE: Stress and Safety Factor calculated for intersections.
Calculations:

1. $M_N = \text{Maximum Negative Moment} = \\
   - \frac{1}{12} q L^2 = \frac{1}{12} \times 4.2 \times 240^2 = -20,160 \text{ in. lb./in.} \hspace{1cm} \text{(Used; Maximum)}

   $M_F = \text{Maximum Positive Moment} = \\
   \frac{1}{24} q L^2 = \frac{1}{24} \times 4.2 \times 240^2 = 10,080 \text{ in. lb./in.} \hspace{1cm} \text{(Not Used)}

2. $C = \text{Pillar Factor} = \\
   \frac{3}{4} \left(1 - \nu^2\right) \frac{E_D}{E_S} \frac{A^4}{Hd^3} \\
   = \frac{3}{4} \left(1 - .2^2\right) \frac{0.5}{1.5} \frac{(40 \times 12)^4}{(8.5 \times 12)(6 \times 12)^3} = 334.64

3. Factor I = 1 for Negative Moment, Regular Pattern. \text{(From Fig. 13-70)}

4. \[ \frac{L}{P} = \text{Room Span} = 20 = 0.5 \hspace{1cm} \frac{A}{P} = \text{Pillar Span} = 40 \]

   * Factor II = 1 for Negative Moment, Regular Pattern \text{(From Fig. 13-71)}

5. \[ \frac{\text{x-cut Span}}{\text{Room Span}} = 20 = 1 \]

   * Factor III = 1 \text{(From Fig. 13-72)}

6. $\sigma = \text{Maximum Beam Stress} = \frac{6M_N}{d^2}$

   \[ = \frac{6(-20,160)}{(6 \times 12)^2} = 23.3 \text{ psi} \]

7. $F.S. = \text{Factor of Safety} = \frac{\text{Compressive Strength}}{\text{Total Stress}}$

   \[ F.S. = \frac{C}{\sigma} = \frac{10,900}{23.3} = 17.36 \]

* Taken from: "S.M.E. Mining Engineering Handbook," Volume 1, Sec. 13.7.5 \text{(p. 13-87 to 13-89)}
$C_p = \text{Pillar Strength}$

$C = \text{Compressive Strength of 1 to 1 Width to Height Coal Sample}$

$W = \text{Width of Pillar}$

$H = \text{Height of Pillar}$

$R = \text{Recovery Factor}$

$A_1 = \text{Area of Entry}$

$A_2 = \text{Total Area}$

$S = \text{Vertical Stress}$

$F.S. = \text{Factor of Safety}$

\[
PILLAR\ STRENGTH
\]

\[
C_p = C \left[ .776 + .222 \left( \frac{W}{H} \right) \right]
\]

\[
C_p = 3200 \left[ .776 + .222 \left( \frac{20/8.5}{1} \right) \right]
\]

$C_p = 4161 \text{ psi}$

\[
RECOVERY\ FACTOR
\]

$R = \frac{A_1}{A_2}$

\[
R = \frac{1800}{2800}
\]

$R = .64$

\[
VERTICAL\ STRESS
\]

$S = 1.11 \text{ (overburden)}$

$S = 1.11(550) = 610 \text{ psi}$

\[
SAFETY\ FACTOR
\]

$F.S. = \frac{C_p (1-R)}{S}$

$= \frac{4161(1-.64)}{610}$

$= 2.4$
Chapter 3, Operation and Reclamation Plan
Hidden Splendor Resources, Inc. - Horizon Mine

APPENDIX 3-5
WATER RIGHTS
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, APR 12, 1995, 12:18 PM
PLOT SHOWS LOCATION OF 28 POINTS OF DIVERSION

PLOT OF ALL QUARTER(S) IN SECTION 4 TOWNSHIP 13S RANGE 8E SL BASE AND MERIDIAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FEET
<table>
<thead>
<tr>
<th>MAP</th>
<th>WATER RIGHT</th>
<th>QUANTITY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POINT OF DIVERSION DESCRIPTION</th>
<th>U A P S U P R N P E E U G T E N P R E R R W P D</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 91 1957</td>
<td>.0000</td>
<td>.00 Jump Creek</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>0 91 1958</td>
<td>.0000</td>
<td>.00 Jump Creek</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>0 91 1959</td>
<td>.0000</td>
<td>.00 Jump Creek</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>0 91 1464</td>
<td>.0000</td>
<td>.00 Beaver Creek</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>0 91 1465</td>
<td>.0000</td>
<td>.00 Beaver Creek</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>0 91 1466</td>
<td>.0000</td>
<td>.00 Beaver Creek</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>0 91 1450</td>
<td>.0020</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>0 91 1474</td>
<td>.0020</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>0 91 312</td>
<td>.0000</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>0 91 1951</td>
<td>.2500</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>0 91 1952</td>
<td>.2500</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>0 91 1953</td>
<td>.2500</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>1 91 1911</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>1 91 1912</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>1 91 1913</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>2 91 1447</td>
<td>.2200</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
</tr>
<tr>
<td>MAP</td>
<td>WATER CHAR</td>
<td>QUANTITY</td>
<td>SOURCE DESCRIPTION or WELL INFO</td>
<td>POINT OF DIVERSION DESCRIPTION</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>------------</td>
<td>----------</td>
<td>---------------------------------</td>
<td>-------------------------------</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 1448</td>
<td>.2200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 1449</td>
<td>.2200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>91 1973</td>
<td>.0220</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>General Delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>91 1435</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>91 1456</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>91 1457</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>91 1452</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>91 1453</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>91 1454</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>91 1444</td>
<td>.2200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>91 1445</td>
<td>.2200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>91 1446</td>
<td>.2200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
</tr>
</tbody>
</table>

Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle

Priority Date: 00/00/1902

Salt Lake City UT 84108
PLOT OF ALL QUARTER(S) IN SECTION 5 TOWNSHIP 13S RANGE 8E SL BASE AND MERIDIAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FEET
<table>
<thead>
<tr>
<th>MAP</th>
<th>WATER</th>
<th>QUANTITY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POINT OF DIVERSION DESCRIPTION</th>
<th>N PEE U G T E</th>
<th>U A P T S U P R</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 91 1461</td>
<td>.0110</td>
<td>Unnamed Spring</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>0 91 1462</td>
<td>.0110</td>
<td>Unnamed Spring</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>0 91 1463</td>
<td>.0110</td>
<td>Unnamed Spring</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>0 91 1957</td>
<td>.0000</td>
<td>Jump Creek</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>0 91 1958</td>
<td>.0000</td>
<td>Jump Creek</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>0 91 1959</td>
<td>.0000</td>
<td>Jump Creek</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>0 91 1954</td>
<td>.0000</td>
<td>Unnamed Stream</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>0 91 1955</td>
<td>.0000</td>
<td>Unnamed Stream</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>0 91 1956</td>
<td>.0000</td>
<td>Unnamed Stream</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>1 91 1908</td>
<td>.0110</td>
<td>Unnamed Spring</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>1 91 1909</td>
<td>.0110</td>
<td>Unnamed Spring</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>1 91 1910</td>
<td>.0110</td>
<td>Unnamed Spring</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>2 91 1458</td>
<td>.0110</td>
<td>Unnamed Spring</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1902 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>2 91 1459</td>
<td>.0110</td>
<td>Unnamed Spring</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1902 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>3 91 1905</td>
<td>.0110</td>
<td>Unnamed Spring</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>3 91 1906</td>
<td>.0110</td>
<td>Unnamed Spring</td>
<td>WATER USE(S): Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84108</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>MAP</td>
<td>WATER USE(S):</td>
<td>QUANTITY</td>
<td>SOURCE DESCRIPTION or WELL INFO</td>
<td>POINT OF DIVERSION DESCRIPTION</td>
<td>PRIORITY DATE</td>
<td>DATE:</td>
</tr>
<tr>
<td>-------</td>
<td>----------------</td>
<td>----------</td>
<td>-----------------------------------</td>
<td>---------------------------------</td>
<td>--------------</td>
<td>-------</td>
</tr>
<tr>
<td>3</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>.0220</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td>X X X</td>
<td></td>
</tr>
</tbody>
</table>
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, APR 12, 1995, 12:19 PM
PLOT SHOWS LOCATION OF 24 POINTS OF DIVERSION

PLOT OF ALL QUARTER(S) IN SECTION 6 TOWNSHIP 13S RANGE 8E SL BASE AND MERIDIAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FEET
<table>
<thead>
<tr>
<th>MAP WATER CHAR</th>
<th>WATER USE(S):</th>
<th>QUANTITY CFS</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POINT OF DIVERSION DESCRIPTION</th>
<th>UAPTSUPR</th>
<th>NPEEUGTE</th>
<th>ENCHG</th>
<th>NR</th>
<th>CNTN</th>
<th>RNG</th>
<th>BIM</th>
<th>N</th>
<th>P</th>
<th>R</th>
<th>R</th>
<th>R</th>
<th>WP</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 91 1914</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 91 1915</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 91 1916</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 91 1430</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 91 1431</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 91 1429</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 91 1430</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 91 1431</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 91 1429</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 1426</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 1426</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 1427</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 1427</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 1428</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 1428</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1980</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 91 1438</td>
<td>.0220</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td>00/00/1902</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAP</td>
<td>WATER</td>
<td>QUANTITY</td>
<td>SOURCE DESCRIPTION or WELL INFO</td>
<td>POINT OF DIVERSION DESCRIPTION</td>
<td>UAPTSUPR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>-------</td>
<td>----------</td>
<td>---------------------------------</td>
<td>--------------------------------</td>
<td>----------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 91 1439</td>
<td>.0220</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 91 1440</td>
<td>.0220</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 91 1435</td>
<td>.0220</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 91 1436</td>
<td>.0220</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 91 1437</td>
<td>.0220</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 91 1432</td>
<td>.0000</td>
<td>.00 Burnt Canyon Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 91 1433</td>
<td>.0000</td>
<td>.00 Burnt Canyon Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 91 1434</td>
<td>.0000</td>
<td>.00 Burnt Canyon Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Priority Date:** 00/00/1902

Salt Lake City, UT 84108

00/00/1860

Salt Lake City, UT 84108

00/00/1860

Salt Lake City, UT 84108

00/00/1860

Salt Lake City, UT 84108

00/00/1860

Salt Lake City, UT 84108

00/00/1860

Salt Lake City, UT 84108
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, APR 12, 1995, 12:19 PM
PLOT SHOWS LOCATION OF 12 POINTS OF DIVERSION

PLOT OF ALL QUARTER(S) IN SECTION 7 TOWNSHIP 13S RANGE 8E SL BASE AND MERIDIAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FEET
<table>
<thead>
<tr>
<th>MAP</th>
<th>WATER</th>
<th>QUANTITY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POINT OF DIVERSION DESCRIPTION</th>
<th>UAPTSUPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 91 1401</td>
<td>.2500</td>
<td>.00 Sand Gulch Spring</td>
<td>Anderson, Clarence (Estate)</td>
<td>General Delivery</td>
<td>X X X</td>
</tr>
<tr>
<td>1 91 1926</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Price UT 84501</td>
</tr>
<tr>
<td>1 91 1927</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84018</td>
</tr>
<tr>
<td>1 91 1928</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84018</td>
</tr>
<tr>
<td>2 91 1929</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84018</td>
</tr>
<tr>
<td>2 91 1930</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84018</td>
</tr>
<tr>
<td>2 91 1931</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84018</td>
</tr>
<tr>
<td>3 91 1932</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84018</td>
</tr>
<tr>
<td>3 91 1933</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84018</td>
</tr>
<tr>
<td>3 91 1934</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860 Salt Lake City UT 84018</td>
</tr>
<tr>
<td>4 91 4034</td>
<td>.1250</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1869 Salt Lake City UT 84018</td>
</tr>
<tr>
<td>4 91 4035</td>
<td>.1250</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1869 Salt Lake City UT 84018</td>
</tr>
</tbody>
</table>
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, APR 12, 1995, 12:19 PM
PLOT SHOWS LOCATION OF 20 POINTS OF DIVERSION

PLOT OF ALL QUARTER(S) IN SECTION 8 TOWNSHIP 13S RANGE 8E SL BASE AND MERIDIAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FEET
<table>
<thead>
<tr>
<th>CHAR</th>
<th>RIGHT</th>
<th>MAP WATER</th>
<th>QUANTITY</th>
<th>SOURCE</th>
<th>DESCRIPTION</th>
<th>WATER USE(S):</th>
<th>PRIORITY DATE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>91 1470</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1869</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1471</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1869</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1472</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1869</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1467</td>
<td>0.0130</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1468</td>
<td>0.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1469</td>
<td>0.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>91 1467</td>
<td>0.0130</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>91 1468</td>
<td>0.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>91 1469</td>
<td>0.0000</td>
<td>.00 Unnamed Stream</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 1402</td>
<td>0.0200</td>
<td>.00 Unnamed Spring</td>
<td>Anderson, Clarence (Estate) General Delivery</td>
<td></td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>Price UT 84501</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>91 1945</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>91 1946</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>91 1947</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>91 1941</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>91 1943</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>91 1944</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>Salt Lake City UT 84108</td>
<td></td>
</tr>
<tr>
<td>MAP</td>
<td>WATER</td>
<td>QUANTITY</td>
<td>SOURCE DESCRIPTION or WELL INFO</td>
<td>POINT OF DIVERSION DESCRIPTION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>--------</td>
<td>----------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>91</td>
<td>1464</td>
<td>.0000 Beaver Creek</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>91</td>
<td>1465</td>
<td>.0000 Beaver Creek</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>91</td>
<td>1466</td>
<td>.0000 Beaver Creek</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>91</td>
<td>488</td>
<td>.0110 Unnamed Spring</td>
<td>PRIORITY DATE: 00/00/1902</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Marakis, John</td>
<td>Price UT 84501</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, APR 12, 1995, 12:20 PM
PLOT SHOWS LOCATION OF 6 POINTS OF DIVERSION

PLOT OF ALL QUARTER(S) IN SECTION 9 TOWNSHIP 13S RANGE BE SL BASE AND MERIDIAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FEET

NORTH

-----------------------------------------------------------------------------------------
<table>
<thead>
<tr>
<th>WATER USE(S):</th>
<th>MAP CHAR 40</th>
<th>WATER USE(S):</th>
<th>MAP CHAR 40</th>
<th>WATER USE(S):</th>
<th>MAP CHAR 40</th>
<th>WATER USE(S):</th>
<th>MAP CHAR 40</th>
<th>WATER USE(S):</th>
<th>MAP CHAR 40</th>
<th>WATER USE(S):</th>
<th>MAP CHAR 40</th>
<th>WATER USE(S):</th>
<th>MAP CHAR 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
</tr>
<tr>
<td>0 91 1949</td>
<td>0 91 1950</td>
<td>0 91 1954</td>
<td>0 91 1955</td>
<td>0 91 1956</td>
<td>0 91 1948</td>
<td>0 91 1949</td>
<td>0 91 1950</td>
<td>0 91 1954</td>
<td>0 91 1955</td>
<td>0 91 1956</td>
<td>0 91 1948</td>
<td>0 91 1949</td>
<td></td>
</tr>
<tr>
<td>.0110</td>
<td>.0110</td>
<td>.0110</td>
<td>.0000</td>
<td>.0000</td>
<td>.0000</td>
<td>.0000</td>
<td>.0000</td>
<td>.0000</td>
<td>.0000</td>
<td>.0000</td>
<td>.0000</td>
<td>.0000</td>
<td></td>
</tr>
<tr>
<td>.00 Unnamed Spring</td>
<td>.00 Unnamed Spring</td>
<td>.00 Unnamed Spring</td>
<td>.00 Unnamed Stream</td>
<td>.00 Unnamed Stream</td>
<td>.00 Unnamed Stream</td>
<td>.00 Unnamed Spring</td>
<td>.00 Unnamed Spring</td>
<td>.00 Unnamed Stream</td>
<td>.00 Unnamed Stream</td>
<td>.00 Unnamed Stream</td>
<td>.00 Unnamed Stream</td>
<td>.00 Unnamed Stream</td>
<td></td>
</tr>
<tr>
<td>PRIORITY DATE: 00/00/1860</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td>PRIORITY DATE: 00/00/1860</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salt Lake City UT 84108</td>
<td>Salt Lake City UT 84108</td>
<td>Salt Lake City UT 84108</td>
<td>Salt Lake City UT 84108</td>
<td>Salt Lake City UT 84108</td>
<td>Salt Lake City UT 84108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X X X</td>
<td>X X X</td>
<td>X X X</td>
<td>X X X</td>
<td>X X X</td>
<td>X X X</td>
<td>X X X</td>
<td>X X X</td>
<td>X X X</td>
<td>X X X</td>
<td>X X X</td>
<td>X X X</td>
<td>X X X</td>
<td></td>
</tr>
</tbody>
</table>
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, APR 12, 1995, 12:20 PM
PLOT SHOWS LOCATION OF 1 POINTS OF DIVERSION

PLOT OF ALL QUARTER(S) IN SECTION 16 TOWNSHIP 13S RANGE 8E SL BASE AND MERIDIAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FEET
<table>
<thead>
<tr>
<th>MAP</th>
<th>WATER CHAR</th>
<th>RIGHT</th>
<th>QNTTY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POINT OF DIVERSION DESCRIPTION</th>
<th>UAPTSUPR MPEEUGTE MPRRWWPD</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>91 1675</td>
<td>0.000</td>
<td>Coal Canyon Creek</td>
<td>PRIORITY DATE: 00/00/1869</td>
<td>UT</td>
<td></td>
</tr>
</tbody>
</table>

WATER USE(S):
- Marakis, John (Estate)
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, APR 12, 1995, 12:20 PM
PLOT SHOWS LOCATION OF 5 POINTS OF DIVERSION

PLOT OF ALL QUARTER(S) IN SECTION 17 TOWNSHIP 13S RANGE 8E SL BASE AND MERIDIAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FEET

NORTH

1 0
<table>
<thead>
<tr>
<th>MAP CHAR</th>
<th>WATER CHAR</th>
<th>RIGHT CFS AND/OR AC-FT</th>
<th>QUANTITY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POINT OF DIVERSION DESCRIPTION</th>
<th>UAPT S UPR N PEE U G T E N P R R R W P D</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>91</td>
<td>487</td>
<td>0.00</td>
<td>Spring Stream</td>
<td></td>
<td>X X X</td>
</tr>
<tr>
<td>0</td>
<td>91</td>
<td>487</td>
<td>0.00</td>
<td>Spring Stream</td>
<td></td>
<td>X X X</td>
</tr>
<tr>
<td>0</td>
<td>91</td>
<td>3681</td>
<td>0.0110</td>
<td>Unnamed Spring</td>
<td></td>
<td>X X X</td>
</tr>
<tr>
<td>1</td>
<td>91</td>
<td>3688</td>
<td>0.00</td>
<td>Gordon Creek</td>
<td></td>
<td>X X X</td>
</tr>
<tr>
<td>1</td>
<td>91</td>
<td>3688</td>
<td>0.00</td>
<td>Gordon Creek</td>
<td></td>
<td>X X X</td>
</tr>
</tbody>
</table>

WATER USE(S): PRIORITY: DATE: 00/00/1869
Marakis, John 165 East 1st South Price UT 84501

Marakis, John 165 East 1st South Price UT 84501

Marakis, John (Estate) Price UT

Peirce, Jr. E.E. Route #1 Price UT 84501

Peirce, Jr. E.E. Route #1 Price UT 84501
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, APR 12, 1995, 12:20 PM
PLOT SHOWS LOCATION OF 11 POINTS OF DIVERSION

PLOT OF ALL QUARTER(S) IN SECTION 18 TOWNSHIP 13S RANGE 6E SL BASE AND MERIDIAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FEET

NORTH

0

1

2

3

4

5

6
<table>
<thead>
<tr>
<th>MAP</th>
<th>WATER CHAR</th>
<th>QUANTITY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POINT OF DIVERSION DESCRIPTION</th>
<th>UAPTSUPR NPEEUGTE WPRRUPD</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>91 779</td>
<td>2.0000</td>
<td>.00 Beaver Creek &amp; North Fork Gord</td>
<td>200 E 1320 NW 18 13S BE SL X X</td>
<td>X X X</td>
</tr>
<tr>
<td>1</td>
<td>91 3672</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Salt Lake City UT 84116</td>
<td>PRIORITY DATE: 00/00/1893</td>
</tr>
<tr>
<td>2</td>
<td>91 330</td>
<td>.5570</td>
<td>.00 UGW-Tunnel</td>
<td>S 970 W 1580 NE 18 13S BE SL X X</td>
<td>PRIORITY DATE: 00/00/1869</td>
</tr>
<tr>
<td>3</td>
<td>91 3671</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>1750 Orchard Drive</td>
<td>PRIORITY DATE: 00/00/1902</td>
</tr>
<tr>
<td>4</td>
<td>91 1935</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1893</td>
</tr>
<tr>
<td>5</td>
<td>91 1936</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1893</td>
</tr>
<tr>
<td>6</td>
<td>91 1937</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1893</td>
</tr>
<tr>
<td>7</td>
<td>91 3670</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1893</td>
</tr>
<tr>
<td>8</td>
<td>91 1938</td>
<td>.2500</td>
<td>.00 Unnamed Spring</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1893</td>
</tr>
<tr>
<td>9</td>
<td>91 1939</td>
<td>.2500</td>
<td>.00 Unnamed Spring</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1893</td>
</tr>
<tr>
<td>10</td>
<td>91 1940</td>
<td>.2500</td>
<td>.00 Unnamed Spring</td>
<td>2651 Hiawatha Circle</td>
<td>PRIORITY DATE: 00/00/1893</td>
</tr>
</tbody>
</table>
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, APR 12, 1995, 12:21 PM
PLOT SHOWS LOCATION OF 5 POINTS OF DIVERSION

PLOT OF ALL QUARTER(S) IN SECTION 19 TOWNSHIP 13S RANGE 8E SL BASE AND MERIDIAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FEET

NORTH

0 1 2 3
<table>
<thead>
<tr>
<th>MAP CHAR</th>
<th>WATER CHAR</th>
<th>WATER USE(S):</th>
<th>QUANTITY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POINT OF DIVERSION DESCRIPTION</th>
<th>PRIORITY DATE</th>
<th>UAPTSUPR</th>
<th>NPEEGUTEPNRWRDP</th>
<th>UAPTSUPR</th>
<th>NPEEGUTEPNRWRDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 91 3669</td>
<td>.0110</td>
<td>Unnamed Spring</td>
<td>0.00</td>
<td>Marakis, Helen</td>
<td>165 East 1st South</td>
<td>Price</td>
<td>UT 84501</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 91 1473</td>
<td>.0000</td>
<td>North Fork Gordon Creek</td>
<td>0.00</td>
<td>Pierce, E. E. Jr.</td>
<td>General Delivery</td>
<td>Wellington</td>
<td>UT 84542</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 353</td>
<td>.0150</td>
<td>Unnamed Spring</td>
<td>0.00</td>
<td>Sweet, Florence A.</td>
<td>1750 Orchard Drive</td>
<td>Salt Lake City</td>
<td>UT 84106</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 94</td>
<td>.1500</td>
<td>Unnamed Spring</td>
<td>0.00</td>
<td>Sweet, Florence</td>
<td>1750 Orchard Drive</td>
<td>Salt Lake City</td>
<td>UT 84106</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 91 1473</td>
<td>.0000</td>
<td>North Fork Gordon Creek</td>
<td>0.00</td>
<td>Pierce, E. E. Jr.</td>
<td>General Delivery</td>
<td>Wellington</td>
<td>UT 84542</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, APR 12, 1995, 12:21 PM
PLOT SHOWS LOCATION OF 10 POINTS OF DIVERSION

PLOT OF ALL QUARTER(S) IN SECTION 20 TOWNSHIP 13S RANGE 8E SL BASE AND MERIDIAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FEET

NORTH

1 0

4 2 3

5
<table>
<thead>
<tr>
<th>MAP</th>
<th>WATER</th>
<th>QUANTITY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POINT OF DIVERSION DESCRIPTION</th>
<th>UAPTSUPR</th>
<th>MPEEUGTE</th>
<th>X X X</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>91 3686</td>
<td>.0000</td>
<td>Gordon Creek</td>
<td>USA Bureau of Land Management</td>
<td>P.O. Box 45155</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 3686</td>
<td>.0000</td>
<td>Gordon Creek</td>
<td>USA Bureau of Land Management</td>
<td>P.O. Box 45155</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>91 348</td>
<td>.0000</td>
<td>Gordon Creek</td>
<td>Frandsen, Pete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>91 348</td>
<td>.0000</td>
<td>Gordon Creek</td>
<td>Frandsen, Pete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 3682</td>
<td>.0000</td>
<td>Gordon Creek</td>
<td>R. L. Bird Company</td>
<td>2069 Yale Avenue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 3682</td>
<td>.0000</td>
<td>Gordon Creek</td>
<td>R. L. Bird Company</td>
<td>2069 Yale Avenue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>91 2697</td>
<td>.0000</td>
<td>Gordon Creek</td>
<td>Marakis, John (Estate)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>91 2697</td>
<td>.0000</td>
<td>Gordon Creek</td>
<td>Marakis, John (Estate)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>91 4095</td>
<td>.0110</td>
<td>Unnamed Spring</td>
<td>Jacob, Calvin K.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>91 4096</td>
<td>.0110</td>
<td>Unnamed Spring</td>
<td>Jacob, Calvin K.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WATER USE(S): PRIORITY DATE: 00/00/1869

Marakis, John (Estate) UT 84062

Jacob, Calvin K. UT 84062
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, APR 12, 1995, 12:21 PM
PLOT SHOWS LOCATION OF 14 POINTS OF DIVERSION

PLOT OF ALL QUARTER(S) IN SECTION 21 TOWNSHIP 13S RANGE 8E SL BASE AND MERIDIAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FEET

NORTH

..............................................................

0

3  2  1

5  4

6

7

..............................................................
<table>
<thead>
<tr>
<th>MAP</th>
<th>WATER CHAR</th>
<th>RIGHT</th>
<th>QUANTITY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POINT OF DIVERSION DESCRIPTION</th>
<th>UAPTSUPR</th>
<th>NPEEUGTE</th>
<th>NP</th>
<th>PR</th>
<th>RR</th>
<th>WP</th>
<th>PD</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>91 4099</td>
<td>0.0110</td>
<td></td>
<td>Unnamed Spring</td>
<td>Marakis, Helen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>1</td>
<td>91 1676</td>
<td>0.0110</td>
<td></td>
<td>Unnamed Spring</td>
<td>Marakis, John (Estate)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>1</td>
<td>91 1675</td>
<td>0.0000</td>
<td></td>
<td>Coal Canyon Creek</td>
<td>Marakis, John (Estate)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>91 3687</td>
<td>0.0000</td>
<td></td>
<td>Coal Canyon Creek</td>
<td>Stockwatering</td>
<td>Jacob, Calvin K.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>91 3687</td>
<td>0.0000</td>
<td></td>
<td>Coal Canyon Creek</td>
<td>Stockwatering</td>
<td>Jacob, Calvin K.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>91 3683</td>
<td>0.0000</td>
<td></td>
<td>Gordon Creek</td>
<td>Stockwatering</td>
<td>Oman, Milton A.</td>
<td>717 Continental Bank</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>91 3683</td>
<td>0.0000</td>
<td></td>
<td>Gordon Creek</td>
<td>Stockwatering</td>
<td>Oman, Milton A.</td>
<td>717 Continental Bank</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>91 398</td>
<td>0.0000</td>
<td></td>
<td>Coal Canyon Creek</td>
<td>Stockwatering</td>
<td>State of Utah Division of Wildlife Resou 1596 West North Temple</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>91 257</td>
<td>0.0000</td>
<td></td>
<td>Gordon Creek</td>
<td>Stockwatering</td>
<td>State of Utah Division of Wildlife Resou 1596 West North Temple</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>91 3681</td>
<td>0.0000</td>
<td></td>
<td>Gordon Creek</td>
<td>Stockwatering</td>
<td>Jacob, Calvin K.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>91 3681</td>
<td>0.0000</td>
<td></td>
<td>Gordon Creek</td>
<td>Stockwatering</td>
<td>Jacob, Calvin K.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>91 777</td>
<td>1.5000</td>
<td></td>
<td>North Fork Gordon Creek</td>
<td>Stockwatering</td>
<td>State of Utah Division of Wildlife Resou 1596 West North Temple</td>
<td>N 950 E</td>
<td>60 S 4 21 13S 8E SL</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>91 778</td>
<td>1.5000</td>
<td></td>
<td>North Fork Gordon Creek</td>
<td>Stockwatering</td>
<td>State of Utah Division of Wildlife Resou 1596 West North Temple</td>
<td>N 950 E</td>
<td>60 S 4 21 13S 8E SL</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>91 398</td>
<td>0.0000</td>
<td></td>
<td>Coal Canyon Creek</td>
<td>Stockwatering</td>
<td>State of Utah Division of Wildlife Resou 1596 West North Temple</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
MEMORANDUM OF WATER LEASE AGREEMENT

FLORENCE A. SWEET ("Lessor") and HORIZON COAL CORPORATION, a Virginia corporation ("Lessee") have entered into a Water Lease Agreement dated May 1, 1995, by the terms of which the parties agree as follows:

1. **LEASE.**

   Lessor leased and does hereby lease to Lessee the water and water rights described in Exhibit A attached hereto and made a part for all purposes.

2. **TERM OF LEASE.**

   The Lease is for a five (5) year primary term, unless extended or sooner terminated as provided in said Lease.

3. **SUCCESSORS AND ASSIGNS.**

   Each and every clause, condition, covenant and agreement of the said Lease shall inure to the benefit of and be binding upon the parties hereto, their heirs, administrators, executors, successors and assigns.

4. **REFERENCE TO MINING LEASE.**

   The said Lease, dated as of May 1, 1995, contains terms and provisions other than those herein stated. An executed copy of said Lease which sets forth the precise terms thereof, is in the possession of the Lessor's Attorney-in-fact who may be contacted at 1750 Orchard Drive, Salt Lake City, Utah 84106, and an executed copy is in the possession of Lessee, who may be contacted at P.O. Box 2560, Wise, Virginia 24293.

   IN WITNESS WHEREOF, LESSOR and LESSEE have executed this Memorandum of Water Lease Agreement as of the 1st Day of May, 1995.

   **LESSOR:**

   FLORENCE A. SWEET

   By: Richard A. Sweet
   Attorney-in-fact

   **LESSEE:**

   HORIZON COAL CORPORATION

   By: [Signature]
   Title: [Title]
STATE OF UTAH

COUNTY OF SALT LAKE

The foregoing Memorandum of Water Lease Agreement was acknowledged before me this ___ day of ____, 1995 by RICHARD A. SWEET, as Attorney-in-fact for FLORENCE A. SWEET.

My Commission Expires: 8/9/96

Residing at: Salt Lake County

STATE OF

COUNTY OF

The foregoing Memorandum of Water Lease Agreement was acknowledged before me this 5th day of June, 1995, by Richard Gilliam, the President of HORIZON COAL CORPORATION.

My Commission Expires: June 30, 1998

Residing at: Wise County, Va.
EXHIBIT A

Attached to and made a part of Memorandum of Water Lease Agreement between Florence A. Sweet and Horizon Coal Corporation dated as of May 1, 1995

**WATER RIGHTS**
(Carbon County, Utah)

<table>
<thead>
<tr>
<th>Water Rights Number</th>
<th>Source</th>
<th>Quantity of Water and Point of Diversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>91-94</td>
<td>Unnamed Spring</td>
<td>0.15 cfs from a point which bears South 760 feet and West 725 feet from the Northeast corner of Section 19, T13S, R8E, SLM (9/1 to 5/1-annual period of use)</td>
</tr>
<tr>
<td>91-353</td>
<td>Unnamed Spring</td>
<td>0.015 cfs from a point which bears South 760 feet West 725 feet from the Northeast corner of Section 19, T13S, R8E, SLM, (5/1 to 9/1-annual period of use)</td>
</tr>
<tr>
<td>91-330</td>
<td>Underground Water Tunnel</td>
<td>0.557 cfs from a point which bears South 970 feet West 1580 feet from the Northeast corner of Section 18, T13S, R8E, SLM (1/1 to 12/31-annual period of use)</td>
</tr>
</tbody>
</table>
APPLICATION FOR PERMANENT CHANGE OF WATER

STATE OF UTAH

For the purpose of obtaining permission to make a permanent change of water in the State of Utah, application is hereby made to the State Engineer. Based upon the following showing of facts, submitted in accordance with the requirements of Section 73-3-3, Utah Code Annotated 1953, as amended.

*WATER RIGHT NO. 91-94 *APPLICATION NO. A

Changes are proposed in (check those applicable)

x point of diversion. x place of use. x nature of use. x period of use.

1. OWNER INFORMATION

Name: Florence A. Sweet

Address: 1750 Orchard Drive

City: Salt Lake City

State: Utah

Zip Code: 84106

*Interest: __% *

2. *PRIORITY OF CHANGE: September 15, 1925 *FILING DATE: ____________________________

*Is this change amendatory? (Yes/No): No

3. RIGHT EVIDENCED BY: Water Right Number 91-94 (A9822), Cert. No. 1994

Prior Approved Change Applications for this right: a1137, Cert. No. 1994.; a1160, Cert. No. a25

************************************************************** HERETOFORE **************************************************************

4. QUANTITY OF WATER: 0.15 cfs and/or __ ac-ft.

5. SOURCE: Unnamed Spring

6. COUNTY: Carbon

7. POINT(S) OF DIVERSION: South 760 Ft., West 725 Ft., from the NE Corner, Section 19, Township 13 South, Range 8 East, SLB&M

Description of Diverting Works: 2 inch pipeline, 1670 feet long.

8. POINT(S) OF REDIVERSION

The water will be redverted from ______________________________ at a point:

Description of Rediverting Works:

9. POINT(S) OF RETURN

The amount of water consumed is 0.15 cfs or __ ac-ft

The amount of water returned is __________ cfs or __ ac-ft

The water will be returned to the natural stream/source at a point(s):

*These items are to be completed by Division of Water Rights
10. NATURE AND PERIOD OF USE
Irrigation: From__________ to ______
Stockwatering: From__________ to ______
Domestic: From__________ to ______
Municipal: From__________ to ______
Mining: From__________ to ______
Power: From__________ to ______
Other: From 9/1 to 5/1

11. PURPOSE AND EXTENT OF USE
Irrigation: ______ acres. Sole supply of ______ acres.
Stockwatering (number and kind): _______________________
Domestic: ______ Families and/or ______ Persons.
Municipal (name): _______________________
Mining: ______ Mining District in the ______ Mine.
Ores mined: _______________________
Power: Plant name: _______________________
Type: ______ Capacity: ______ kw.
Other (describe): Industrial: Uses associated with the operation of the Sweet Coal Mine.

12. PLACE OF USE
Legal description of place of use by 40 acre tract(s): _______________________

13. STORAGE
Reservoir Name: _______________________
Storage Period: from ______ to ______
Capacity: ______ ac-ft. Inundated Area: ______ acres
Height of dam: ______ feet.
Legal description of inundated area by 40 acre tract: _______________________

14. QUANTITY OF WATER: 0.15 cfs and/or ______ ac-ft.

15. SOURCE: Gordon Creek
Balance of the water will be abandoned: ______ or will be used as heretofore: ______ x

16. COUNTY: Carbon

17. POINT(S) OF DIVERSION: North 293 Fl., East 1290 Fl., from the SW Corner, Section 17, Township 13 South, Range 8 East, SLB&M.

Description of Diverting Works: Water will be diverted by a diversion gate into an existing ditch.
COMMON DESCRIPTION:

18. POINT(S) OF REDIVERSION
The water will be rediverted from ______ at a point: ______

Description of Rediverting Works: _______________________

19. POINT(S) OF RETURN
The amount of water consumed is ______ 0.15 cfs or ______ ac-ft
The amount of water returned is ______ cfs or ______ ac-ft
The water will be returned to the natural stream/source at a point(s): _______________________

THE FOLLOWING CHANGES ARE PROPOSED

********************
20. NATURE AND PERIOD OF USE
Irrigation: From________ to________
Stockwatering: From________ to________
Domestic: From _______ to _______ 12/31
Municipal: From _______ to _______ 12/31
Mining: From _______ to _______ 12/31
Power: From _______ to _______ 12/31
Other: From _______ to _______ 12/31

21. PURPOSE AND EXTENT OF USE
Irrigation: _______ acres. Sole supply of _______ acres.
Stockwatering (number and kind):
Domestic: _______ Families and/or _______ Persons.
Municipal (name):
Mining: _______ Mining District in the Horizon Mine.
Ores mined: Coal
Power: Plant name: _______ Type: _______ Capacity: _______ kw.
Other (describe): Industrial: Uses associated with the operation of the Horizon Coal Mine.

22. PLACE OF USE
Legal description of place of use by 40 acre tract(s): Sections 7, 8, 17 and 18, Township 13 South, Range 8 East, SL&M.

23. STORAGE
Reservoir Name: Sweet's Canyon Pond Storage Period: from 1/1 to 12/31
Capacity: 2.0 ac-ft. Inundated Area: 0.44 acres
Height of dam: 8.0 feet.
Legal description of inundated area by 40 acre tract: SW\(1/4\)SW\(1/4\), Section 17, Township 13 South, Range 8 East, SLB&M.

24. EXPLANATORY
The following is set forth to define more clearly the full purpose of this application. Include any supplemental water rights used for the same purpose. (Use additional pages of same size if necessary): The water under this change application will be used in mining operations at the Horizon Mine located in Sections 7, 8, 17 and 18, Township 13 South, Range 8 East, SLB&M. Applicant will not use more water under this change application than it has historically had a right to use. Domestic use will be in showers, restrooms, etc.

The undersigned hereby acknowledges that even though he/she/they may have been assisted in the preparation of the above-numbered application through the courtesy of the employees of the Division of Water Rights, all responsibility for the accuracy of the information contained herein, at the time of filing, rests with the applicant(s).

Signature of Applicant(s)
Richard A. Sweet
General Personal Representative of the Estate of Florence A. Sweet, Deceased
APPLICATION FOR PERMANENT CHANGE OF WATER

STATE OF UTAH

For the purpose of obtaining permission to make a permanent change of water in the State of Utah, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of Section 73-3-3 Utah Code Annotated 1953, as amended.

<table>
<thead>
<tr>
<th>WATER RIGHT NO. 91-330</th>
<th>APPLICATION NO. A</th>
</tr>
</thead>
</table>

Changes are proposed in (check those applicable)

- [ ] point of diversion.  
- [ ] place of use.  
- [ ] nature of use.  
- [ ] period of use.

1. **OWNER INFORMATION**

   **Name:** Florence A. Sweet  
   **Address:** 1750 Orchard Drive  
   **City:** Salt Lake City  
   **State:** Utah  
   **Zip Code:** 84106

2. **PRIORITY OF CHANGE:** March 17, 1936  
   **FILING DATE:**

   *Is this change amendatory? (Yes/No): No*

3. **RIGHT EVIDENCED BY:** Water Right Number 91-330 (U18850)

   Prior Approved Change Applications for this right:

   ✦✦✦✦✦✦✦✦✦✦ HERETOFORE ✦✦✦✦✦✦✦✦✦✦

4. **QUANTITY OF WATER:** 0.557 cfs and/or __ ac-ft.

5. **SOURCE:** UGW-Tunnel

6. **COUNTY:** Carbon

7. **POINT(S) OF DIVERSION:** South 970 Ft., West 1580 Ft., from the NE Corner, Section 18, Township 13 South, Range 8 East, SLB&M

   Description of Diverting Works:

8. **POINT(S) OF REDIVERSION**

   The water will be rediverted from _____________________ at a point:

   _____________________

   Description of Rediverting Works:

9. **POINT(S) OF RETURN**

   The amount of water consumed is __________ ac-ft
   The amount of water returned is __________ ac-ft
   The water will be returned to the natural stream/source at a point(s):

   _____________________

*These items are to be completed by Division of Water Rights*
10. NATURE AND PERIOD OF USE
Irrigation: From _______ to _______
Stockwatering: From _______ to _______
Domestic: From _______ to _______
Municipal: From _______ to _______
Mining: From _______ to _______
Power: From _______ to _______
Other: From 1/1 to 12/31

11. PURPOSE AND EXTENT OF USE
Irrigation: _______ acres. Sole supply of _______ acres.
Stockwatering (number and kind):
Domestic: _______ Families and/or _______ Persons.
Municipal (name):
Mining: _______ Mining District in the _______ Mine.
Ores mined:
Power: Plant name: _______ Type: _______ Capacity: _______ kw.
Other (describe): _______

12. PLACE OF USE
Legal description of place of use by 40 acre tract(s):

13. STORAGE
Reservoir Name: _______ Storage Period: from _______ to _______
Capacity: _______ ac-ft. Inundated Area: _______ acres
Height of dam: _______ feet.
Legal description of inundated area by 40 acre tract:

***************THE FOLLOWING CHANGES ARE PROPOSED***************

14. QUANTITY OF WATER: 0.557 cfs and/or _______ ac-ft.
15. SOURCE: UGW-Tunnel
Balance of the water will be abandoned: _______ or will be used as heretofore: _______ x
16. COUNTY: Carbon
17. POINT(S) OF DIVERSION: North 2248 Ft., East 2151 Ft., from the SW Corner, Section 17, Township 13 South, Range 8 East, SLB&M. This point changes with mine development and is the lowest point of the mine workings.
Description of Diverting Works: Water will be collected in the mine and pumped by 4" pipe to holding sump.
*COMMON DESCRIPTION:

18. POINT(S) OF REDIVERSION
The water will be redverted from _______ at a point:

Description of Rediverting Works:

19. POINT(S) OF RETURN
The amount of water consumed is _______ cfs or _______ ac-ft
The amount of water returned is _______ cfs or _______ ac-ft
The water will be returned to the natural stream/source at a point(s):
20. NATURE AND PERIOD OF USE

- Irrigation: From _________ to _________
- Stockwatering: From _________ to _________
- Domestic: From 1/1 to 12/31
- Municipal: From _________ to _________
- Mining: From 1/1 to 12/31
- Power: From _________ to _________
- Other: From 1/1 to 12/31

21. PURPOSE AND EXTENT OF USE

- Irrigation: _________ acres. Sole supply of _________ acres.
- Stockwatering (number and kind): ________________________________
- Domestic: Families and/or _________ Persons.
- Municipal (name): ________________________________
- Mining: _________ Mining District in the _________ Mine.
- Ores mined: Coal
- Power: Plant name: _________ Type: _________ Capacity: _________ kw.
- Other (describe): Industrial; Uses associated with the operation of the Horizon Coal Mine.

22. PLACE OF USE

Legal description of place of use by 40 acre tract(s): Sections 7, 8, 17 and 18, Township 13 South, Range 8 East, SLM.

23. STORAGE

Reservoir Name: __________________________ Storage Period: from _________ to _________
Capacity: _________ ac-ft. Inundated Area: _________ acres
Height of dam: _________ feet.
Legal description of inundated area by 40 acre tract: __________________________

24. EXPLANATORY

The following is set forth to define more clearly the full purpose of this application. Include any supplemental water rights used for the same purpose. (Use additional pages of same size if necessary): Applicant seeks to change the point of diversion and the place of use for this water for use in its mining operations at the Horizon Mine located in Sections 7, 8, 17 and 18, Township 13 South, Range 8 East, SLM. Domestic use will be for showers, restrooms, etc.

The undersigned hereby acknowledges that even though he/she/they may have been assisted in the preparation of the above-numbered application through the courtesy of the employees of the Division of Water Rights, all responsibility for the accuracy of the information contained herein, at the time of filing, rests with the applicant(s).

Signature of Applicant(s)
Richard A. Sweet
General Personal Representative of the Estate of Florence A. Sweet, Deceased
APPLICATION FOR PERMANENT CHANGE OF WATER

STATE OF UTAH

For the purpose of obtaining permission to make a permanent change of water in the State of Utah, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of Section 73-3-3 Utah Code Annotated 1953, as amended.

*WATER RIGHT NO. 91-353 *APPLICATION NO. A

Changes are proposed in (check those applicable)

__x__ point of diversion. __x__ place of use. __x__ nature of use. __x__ period of use.

1. OWNER INFORMATION

Name: Florence A. Sweet
Interest: ____%
Address: 1750 Orchard Drive
City: Salt Lake City State: Utah Zip Code: 84106

2. *PRIORITY OF CHANGE: 1874 (Morse Decree 1st Class) *FILING DATE:

*Is this change amendatory? (Yes/No): No

3. RIGHT EVIDENCED BY: Water Right Number 91-353, Cert. No. a24

Prior Approved Change Applications for this right: a1159

H之前 HERETOFORE

4. QUANTITY OF WATER: 0.015 cfs and/or ___ ac-ft.

5. SOURCE: Unnamed Spring

6. COUNTY: Carbon

7. POINT(S) OF DIVERSION: South 760 Ft., West 725 Ft., from the NE Corner, Section 19, Township 13 South, Range 8 East, SLB&M

Description of Diverting Works: 2 inch pipeline, 1670 feet long.

8. POINT(S) OF REDIVERSION

The water will be redverted from ________________ at a point: ________________

Description of Rediverting Works: ________________

9. POINT(S) OF RETURN

The amount of water consumed is 0.015 cfs or ___ ac-ft

The amount of water returned is ___ cfs or ___ ac-ft

The water will be returned to the natural stream/source at a point(s): ________________

*These items are to be completed by Division of Water Rights
10. NATURE AND PERIOD OF USE
   - Irrigation: From ______ to ______
   - Stockwatering: From ______ to ______
   - Domestic: From ______ to ______
   - Municipal: From ______ to ______
   - Mining: From ______ to ______
   - Power: From ______ to ______
   - Other: From 5/1 to 9/1

11. PURPOSE AND EXTENT OF USE
   - Irrigation: ______ acres. Sole supply of ______ acres.
   - Stockwatering (number and kind): ________________
   - Domestic: ______ Families and/or ______ Persons.
   - Municipal (name): ________________
   - Mining: ______ Mining District in the ______ Mine.
     Ores mined: ____________________________
   - Power: Plant name: ______ Type: ______ Capacity: ______ kw.
   - Other (describe): Industrial: Uses associated with the operation of the Sweet Coal Mine.

12. PLACE OF USE
   - Legal description of place of use by 40 acre tract(s): ____________________________

13. STORAGE
   - Reservoir Name: ____________________________
   - Storage Period: from ______ to ______
   - Capacity: ______ ac-ft. Inundated Area: ______ acres
   - Height of dam: ______ feet.
   - Legal description of inundated area by 40 acre tract: ____________________________

THE FOLLOWING CHANGES ARE PROPOSED

14. QUANTITY OF WATER: 0.015 cfs and/or ______ ac-ft.
15. SOURCE: Gordon Creek
   - Balance of the water will be abandoned: ______ or will be used as heretofore: ______
16. COUNTY: Carbon
17. POINT(S) OF DIVERSION: North 293 ft., East 1250 ft., from the SW Corner, Section 17, Township, 13 South, Range 8 East, SLB&M.
   - Description of Diverting Works: Water will be diverted by a diversion gate into an existing ditch.
   - COMMON DESCRIPTION:

18. POINT(S) OF REDIVERSION
   - The water will be rediverted from ______ at a point: ____________________________
   - Description of Rediverting Works: ____________________________

19. POINT(S) OF RETURN
   - The amount of water consumed is 0.015 cfs or ______ ac-ft
   - The amount of water returned is ______ cfs or ______ ac-ft
   - The water will be returned to the natural stream/source at a point(s): ____________________________
20. NATURE AND PERIOD OF USE

<table>
<thead>
<tr>
<th>Purpose</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stockwatering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Municipal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mining</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

21. PURPOSE AND EXTENT OF USE

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Acres</th>
<th>Sole supply of</th>
<th>Stockwatering (number and kind):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Municipal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mining</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

22. PLACE OF USE

Legal description of place of use by 40 acre tract(s): Sections 7, 8, 17 and 18, Township 13 South, Range 8 East, SLM.

23. STORAGE

Reservoir Name: Sweet's Canyon Pond

Storage Period: from 1/1 to 12/31

Capacity: 2.0 ac-ft.

Inundated Area: 0.44 acres

Height of dam: 8.0 feet

Legal description of inundated area by 40 acre tract: SW¼SW¼, Section 17, Township 13 South, Range 8 East, SLB&M.

24. EXPLANATORY

The following is set forth to define more clearly the full purpose of this application. Include any supplemental water rights used for the same purpose. (Use additional pages of same size if necessary): The water under this change application will be used in mining operations at the Horizon Mine located in Sections 7, 8, 17 and 18, Township 13 South, Range 8 East, SLB&M. Applicant will not use more water under this change application than it has historically had a right to use. Domestic use will be in showers, restrooms, etc.

The undersigned hereby acknowledges that even though he/she/they may have been assisted in the preparation of the above-numbered application through the courtesy of the employees of the Division of Water Rights, all responsibility for the accuracy of the information contained herein, at the time of filing, rests with the applicant(s).

Signature of Applicant(s)
Richard A. Sweet
General Personal Representative of the Estate
of Florence A. Sweet, Deceased
# WATER RIGHT PRIORITY AND PERIOD OF USE

<table>
<thead>
<tr>
<th>WATER RIGHT OWNERSHIP</th>
<th>WATER RIGHT NO.</th>
<th>PRIORITY</th>
<th>PERIOD OF USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DWR</td>
<td>91 257</td>
<td>1869</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td></td>
<td>91 398</td>
<td>1869</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td></td>
<td>91 777</td>
<td>1874</td>
<td>3/1 - 10/15 (I) 1/1 -12/31 (S)</td>
</tr>
<tr>
<td></td>
<td>91 778</td>
<td>1876</td>
<td>3/1 - 10/15 (I) 1/1 -12/31 (S)</td>
</tr>
<tr>
<td></td>
<td>91 779</td>
<td>1893</td>
<td>3/1 - 10/15</td>
</tr>
<tr>
<td>JACOB</td>
<td>91 3681</td>
<td>1869</td>
<td>3/1 - 11/30</td>
</tr>
<tr>
<td></td>
<td>91 3687</td>
<td>1869</td>
<td>3/1 - 11/30</td>
</tr>
<tr>
<td></td>
<td>91 4095</td>
<td>1869</td>
<td>5/1 - 11/30</td>
</tr>
<tr>
<td></td>
<td>91 4096</td>
<td>1869</td>
<td>5/1 - 11/30</td>
</tr>
<tr>
<td>R. L. BIRD</td>
<td>91 3682</td>
<td>1869</td>
<td>3/1 - 11/1</td>
</tr>
<tr>
<td>BLM</td>
<td>91 3686</td>
<td>1869</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td>FRANDSEN</td>
<td>91 348</td>
<td>1869</td>
<td>5/1 - 10/31</td>
</tr>
<tr>
<td>J. MARAKIS</td>
<td>91 487</td>
<td>1869</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td></td>
<td>91 488</td>
<td>1902</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td></td>
<td>91 1675</td>
<td>1869</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td></td>
<td>91 1676</td>
<td>1869</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td></td>
<td>91 2697</td>
<td>1869</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td></td>
<td>91 3881</td>
<td>1869</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td>H. MARAKIS</td>
<td>91 3669</td>
<td>1902</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td></td>
<td>91 3670</td>
<td>1902</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td></td>
<td>91 3671</td>
<td>1902</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td></td>
<td>91 3672</td>
<td>1869</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td></td>
<td>91 4099</td>
<td>1869</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td>OMAN</td>
<td>91 3683</td>
<td>1869</td>
<td>3/1 - 11/1</td>
</tr>
<tr>
<td>SWEET</td>
<td>91 94</td>
<td>1925</td>
<td>9/1 - 5/1</td>
</tr>
<tr>
<td></td>
<td>91 330</td>
<td>1936</td>
<td>1/1 - 12/31</td>
</tr>
<tr>
<td></td>
<td>91 353</td>
<td>1874</td>
<td>5/1 - 9/1</td>
</tr>
<tr>
<td>PIERCE</td>
<td>91 1473</td>
<td>1869</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 3688</td>
<td>1869</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td>ANDERSON</td>
<td>91 1401</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1402</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td>PAPPAS</td>
<td>91 1973</td>
<td>1902</td>
<td>5/1 - 10/31</td>
</tr>
</tbody>
</table>

(I) Used for Irrigation  
(S) Used for Stock Watering
# Water Right Priority and Period of Use

<table>
<thead>
<tr>
<th>Water Right Owner</th>
<th>Water Right Number</th>
<th>Priority</th>
<th>Period of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>JEWKES</td>
<td>91 1426</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1427</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1428</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1429</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1430</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1431</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1432</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1433</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1434</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1435</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1436</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1437</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1438</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1439</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1440</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1441</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1442</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1443</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1444</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1445</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1446</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1447</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1448</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1449</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1450</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1452</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1453</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1454</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1455</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1456</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1457</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1458</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1459</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
</tbody>
</table>
## WATER RIGHT PRIORITY AND PERIOD OF USE

<table>
<thead>
<tr>
<th>WATER RIGHT OWNER</th>
<th>WATER RIGHT NUMBER</th>
<th>PRIORITY</th>
<th>PERIOD OF USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>JEWKES</td>
<td>91 1460</td>
<td>1902</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1461</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1462</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1463</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1464</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1465</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1466</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1467</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1468</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1469</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1470</td>
<td>1869</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1471</td>
<td>1869</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1472</td>
<td>1869</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1474</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 312</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
</tbody>
</table>
WATER RIGHT PRIORITY AND PERIOD OF USE

<table>
<thead>
<tr>
<th>WATER RIGHT OWNER</th>
<th>WATER RIGHT NUMBER</th>
<th>PRIORITY</th>
<th>PERIOD OF USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>JEWKES</td>
<td>91 1905</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1906</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1907</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1908</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1909</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1910</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1911</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1912</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1913</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1914</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1915</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1916</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1926</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1927</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1928</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1929</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1930</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1931</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1932</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1933</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1934</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1935</td>
<td>1869</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1936</td>
<td>1869</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1937</td>
<td>1869</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1938</td>
<td>1869</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1939</td>
<td>1869</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1940</td>
<td>1869</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1941</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1943</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1944</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1945</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1946</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1947</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1948</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1949</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td>WATER RIGHT OWNER</td>
<td>WATER RIGHT NUMBER</td>
<td>PRIORITY</td>
<td>PERIOD OF USE</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------</td>
<td>----------</td>
<td>---------------</td>
</tr>
<tr>
<td>JEWKES</td>
<td>91 1950</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1951</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1953</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1954</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1955</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1956</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1957</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1958</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 1959</td>
<td>1860</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 4034</td>
<td>1869</td>
<td>5/1 - 11/1</td>
</tr>
<tr>
<td></td>
<td>91 4035</td>
<td>1869</td>
<td>5/1 - 11/1</td>
</tr>
</tbody>
</table>
QUIT CLAIM DEED

<table>
<thead>
<tr>
<th>Effective Date:</th>
<th>County and State where Real Property is Located:</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 12, 1993</td>
<td>Carbon County, Utah</td>
</tr>
</tbody>
</table>

**GRANTOR (Name, Mailing Address and Zip Code):**
Orlin Ross Fausett
1189 West 290 North
Price, Utah 84501

**GRANTEE (Name, Mailing Address and Zip Code):**
E.E. Pierce and Billy Troy Kennick
Joint Tenants
819 North 900 East
Price, Utah 84501

**Subject Real Property (Address or Location):**
SWaSE's Sec. 10, T14S, R9E, SLB&M

**Subject Real Property (Legal Description):**

One acre-foot of water from Gordon Creek evidenced by Water User's Claim Number 91-750, Horse Decree 1st Class having an 1874 priority, in the office of the State Engineer.
1. **Conveyance.** For valuable consideration, Grantor quit claims to Grantee all right, title, and interest of Grantor in Subject Real Property together with all rights and privileges appurtenant or to become appurtenant to Subject Real Property on the effective date subject to all taxes, liens, encumbrances and other claims against the Subject Real Property, if any, as is, where is.

2. **Other Provisions:**

   None

---

<table>
<thead>
<tr>
<th>State of: Utah</th>
<th>Signature of Notary Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>County of: Carbon</td>
<td>Orlin Ross Fausett</td>
</tr>
<tr>
<td>Date of this Acknowledgement:</td>
<td>12 Jul 1993</td>
</tr>
</tbody>
</table>

**Acknowledgment of Grantor.** On this date, before me, a Notary Public, personally appeared:

<table>
<thead>
<tr>
<th>State of: Utah</th>
<th>Signature of Notary Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>County of: Carbon</td>
<td>Mary Jean Killian</td>
</tr>
<tr>
<td>Date of this Acknowledgement:</td>
<td>12 Jul 1993</td>
</tr>
</tbody>
</table>

**Acknowledgment of Witnesses.** On this date, before me, a Notary Public, personally appeared:

<table>
<thead>
<tr>
<th>State of: Utah</th>
<th>Signature of Notary Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>County of: Carbon</td>
<td>Mary Jean Killian</td>
</tr>
<tr>
<td>Date of this Acknowledgement:</td>
<td>12 Jul 1993</td>
</tr>
</tbody>
</table>
C'U.T. NO.

NAME: E.B. Peirce and Billy Troy Kenwick
OWNER MISC: Joint Tenants
ADDR: 819 North 900 East
CITY: Price
STATE: UT ZIP: 84501

INTEREST: 1.0 ACRES

LAND OWNED BY APPLICANT?

DATES, ETC. 

FILING: / / [RECID BY: ]
ADV BEGIN: / / [PRIORITY: 00/00/1976]
ADV END: / / [ADV EXAM: ]
A/R DESIG: [APPROP: ]
REG ENG: [MEMO DEC: ]
PROOF DUE: / / [PROOF EXT: ]
PROV LHR: / / [STATE: ]
[PROOF OUIZ: ]
[PROOF OUIZ: ]

PD Book No. Type of Right: D.E.C
Status: Source of Info: OSRIK
Map: Date Verified: / / Initials:

LOCATION OF WATER RIGHT

FLOW: 0.001 cfs AND 1.0 acre-feet
SOURCE: Gordon Creek
COUNTY: Carbon

POINT OF DIVERSION -- SURFACE:
(1) N 970 ft R 860 ft from SW cor, Sec 10, T 14S, R 9S, SLDM

FLOW BY WATER USES

FLOW IN CFS
QUANTITY IN ACRE-FEET
WATER USES
IRRIGATED 0.000
STOCK 0.000
DOMESTIC 0.000
AGRICULTURAL 0.000

This Right was Segregated from 91-750, with Approval Date: / /
under which Proof is to be Submitted.

This Right as originally filed:

0.001 AND 1.0 0.3500

--END OF DATA--
| NAME: E.E. Peirce and Billy Troy Kannick | 0.001 AND 1.0 | 0.2500 |
| FILED: 02/15/1994 STATUS: APPROVED |

Joint Tenants.

---

<table>
<thead>
<tr>
<th>CFS</th>
<th>ACRE-FEET</th>
<th>IRRIGATED</th>
<th>STOCK</th>
<th>DOMESTIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.049</td>
<td>11.03</td>
<td>2.7500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WRNUM 91-750 currently has:

END OF DATA
ASSIGNMENT

This Assignment is made and entered into by and between MOUNTAIN COAL COMPANY, a Delaware corporation ("MCC"), and HORIZON COAL CORPORATION, a Virginia corporation ("Horizon").

RECITALS

1. By Water Rights Lease and Sale Agreement between MCC and E.E. Peirce, dated April 7, 1993 ("Agreement"), copy of which is attached hereto as Exhibit A and made a part hereof for all purposes, MCC acquired certain rights and interests related to the "Sweet's Canyon Pond."

2. MCC has agreed to assign the said Agreement and also other rights held by MCC for use by Horizon in connection with operations at the Horizon Mines in Carbon County, Utah on the terms and conditions hereinafter set forth.

ARTICLE I

FOR AND IN CONSIDERATION of the sum of Ten Dollars ($10.00) and other valuable consideration paid by Horizon to MCC, receipt whereof is hereby acknowledged, and for and in consideration of Horizon's covenants and agreements hereinafter set forth, MCC does hereby:

1. Assign, transfer and convey to Horizon all of its right, title and interest in and to the Agreement which includes but is not limited to the following:

   (a) The right to use that certain facility known as Sweet's Canyon Pond situated in the SW¼SW¼ of Section 17, Township 13 South, Range 8 East, SLM, Carbon County, Utah; and

   (b) The lease ("Lease") of one (1) acre-foot of water in the Gordon Creek area (Water User's Claim #91-4956, formerly part of Water User's Claim #91-750 as described in Quitclaim Deed from Orlin Ross Fausett, Grantor, to E.E. Peirce, et al., Grantees, dated July 12, 1993, recorded in Book 331, Page 627, records of Carbon County, Utah), to supplement the water supply to the Sweet's Canyon Pond, if necessary;

EXCEPTING AND RESERVING to MCC, however, the right to take water from Sweet's Canyon Pond sufficient to continue and complete reclaiming certain disturbed lands described in and subject to all terms and conditions of the said Agreement in a quantity not exceeding one (1) acre foot per year.

2. Assign all of its right, title and interest in and to its Application For a Dam Not Requiring Submission of Formal Plans under Section 73-5A-202 ("Dam Application") filed
with the Utah State Engineer under date of June 16, 1994, copy of which is attached hereto as Exhibit B.

3. MCC represents that, to the best of its knowledge:

(a) MCC has complied with all terms of the Agreement, the Lease and the Dam Application, all of which are in good standing as of the date of this Assignment.

(b) MCC is in compliance with all laws, rules and regulations of the State of Utah and its regulatory agencies having jurisdiction in connection with its use of Sweet’s Canyon Pond and water rights related thereto.

(c) MCC has full right and authority to execute and deliver this Assignment.

(d) MCC hereby agrees to cooperate fully and to sign any additional documentation required for Horizon to exercise the rights hereby assigned relative to Sweet’s Canyon Pond, the Lease and the Dam Application.

ARTICLE II

In consideration of said Assignment, Horizon covenants and agrees:

1. To maintain the Agreement, Sweet’s Canyon Pond and the Lease in accordance with all terms and conditions of the contracts relating to same described above.

2. To maintain rights granted under the Dam Application in accordance with rules and regulations of the Utah State Engineer, and to comply with all other applicable laws, rules and regulations of the State of Utah and its regulatory agencies having jurisdiction in connection with Horizon’s use of Sweet’s Canyon Pond and water rights related thereto.

3. Upon conclusion of its Horizon Mines operations in the area and cessation of Horizon’s use of Sweet’s Canyon Pond and the water covered by the Lease, Horizon will proceed with any required reclamation necessary or appropriate to intended post-mining use of Sweet’s Canyon Pond as a private fish pond.

4. Horizon agrees to indemnify and hold MCC harmless from any liability arising out of Horizon’s use of Sweet’s Canyon Pond and exercise of the rights acquired under the Agreement and Dam Application.

ARTICLE III

The parties mutually covenant and agree:

1. All notices shall be given to the parties hereto in writing, effective upon receipt, and shall be mailed, postage prepaid, to the parties at the following addresses which may be changed from time to time:
Horizon Coal Corporation  
P.O. Box 2560  
Wise, VA 24293  
Attention: Richard Gilliam, President

Mountain Coal Company  
P.O. Box 591  
Somerset, CO 81434  
Attention: Eugene DiClaudio, President

2. Each and every clause, condition, covenant and agreement of this Assignment shall inure to the benefit of and be binding upon the parties hereto, their successors and assigns.

3. This Assignment shall be effective upon execution of the Ratification and Consent by the successors in interest to E.E. Peirce as set out below.

DATED this 12th day of June, 1996.

MOUNTAIN COAL COMPANY

By: [Signature]
Eugene DiClaudio, President

HORIZON COAL CORPORATION

By: [Signature]
Richard Gilliam, President

RATIFICATION AND CONSENT

For and in consideration of the sum of One Thousand Eight Hundred and no/100 Dollars ($1,800) paid by Horizon and other valuable consideration, the receipt of which is hereby acknowledged, the undersigned, as successors in interest to E.E. Peirce, deceased, hereby: (a) ratify and adopt the described Agreement on the Sweet's Canyon Pond to the same extent and in the same manner and for the same purposes and effects as though we, the undersigned, had originally executed the described Agreement; (b) confirm the same as being valid and subsisting as of this date; (c) consent to the above Assignment by MCC to Horizon; and (d) further, to effectuate the purposes hereof, the undersigned do hereby lease unto said Horizon, its assigns and successors in interest, the Sweet's Canyon Pond and the right to make use of the same and the described water right in connection with the Horizon Mines operations.
under the terms, provisions and covenants contained and set forth in said Agreement and the Assignment.

Horizon agrees:

(a) to pay to the undersigned the sum of One Thousand Eight Hundred Dollars ($1,800) annually on or before each anniversary of the effective date of this Ratification and Consent; and

(b) to continue to provide a quantity of power from Horizon’s power station (formerly owned by MCC) to Agnes Peirce’s trailer located near the premises necessary for housekeeping purposes;

subject to the terms and provisions of the Agreement, the Assignment and this Ratification and Consent so long as Horizon requires the rights thereunder for its Horizon Mines operations. Upon thirty (30) days notice, Horizon may terminate its use to the pond and its obligation to furnish power under this Ratification and Consent at any time, except liability on account of any obligation assumed by Horizon under the Agreement and under the Assignment or incurred and owing at the time of such termination, including, specifically, its reclamation obligations.

EXECUTED and effective this 18th day of June, 1996.

Agnes K. Peirce

Address: 3432 So 500 E

Billy Troy Kennick

Address: 6638 South 5420 West

West Jordan, UT 84084
STATE OF __________________ ss.
COUNTY OF __________________

The foregoing Assignment was acknowledged before me this _____ day of 

1996 by ______________________, the 

______________________________
of MOUNTAIN COAL COMPANY.

______________________________ NOTARY PUBLIC
My Commission Expires: ___________

STATE OF Virginia ss.
COUNTY OF Wise

The foregoing Assignment was acknowledged before me this 18TH day of 

June, 1996 by Richard Gilliam, the 

President of HORIZON COAL CORPORATION.

Kaylene R. Addington

NOTARY PUBLIC
My Commission Expires: ___________

STATE OF UTAH ss.
COUNTY OF Carbon

The foregoing instrument was acknowledged before me this 19TH day of 

June, 1996 by Agnes K. Peirce.

Ellie Jones

NOTARY PUBLIC
My Commission Expires: ___________

STATE OF UTAH ss.
COUNTY OF Salt Lake

The foregoing instrument was acknowledged before me this 18TH day of 

June, 1996 by Billy Troy Kennick.

Cheryl A. Cook

NOTARY PUBLIC
My Commission Expires: ___________
WATER RIGHTS LEASE
AND
SALE AGREEMENT

THIS AGREEMENT is entered into as of 7th day of April, 1993 between MOUNTAIN COAL COMPANY, a Delaware corporation, ("MCC"), P.O. Box 591, Somerset, Colorado 81434 and E.E. PEIRCE ("Peirce") Utah.

RECITALS

MCC is in the process of reclaiming certain disturbed lands related to the Gordon Creek Nos. 2/7/8 Mines in Carbon County, Utah and in relation to those mines is responsible for the "Sweet's Canyon Pond" which is proposed to be left as a permanent topographical feature. MCC would be responsible for the pond for approximately ten years after the reclamation work is complete and thereafter until MCC's reclamation bond posted for the Gordon Creek Nos. 2/7/8 Mines with the Utah Division of Oil, Gas and Minerals ("DOGM") is released. Thereafter the pond would revert to Peirce.

During the period for which MCC would be responsible for the pond, MCC would be required to provide water to supplement the pond losses due to evaporation. A State Water Engineer has estimated that at least one acre foot of water be allocated to the pond for this purpose.

Peirce proposes to purchase two acres of ground in the lower Gordon Creek area, which land has one acre foot of water associated with it.

MCC desires that Peirce lease the one acre foot of water to MCC with complete usage right of that water for a period of at least ten years and until the MCC reclamation bond is released by DOGM.

In exchange Peirce desires assignment of five (5) shares of MCC's Price River water rights.
LEASE and SALE AGREEMENT

IN CONSIDERATION of the mutual benefits to be derived, the parties agree as follows:

1. Peirce shall acquire and lease to MCC one acre foot of water in the lower Gordon Creek area which can be used to supplement the Sweet's Canyon Pond. The lease shall be paid up for a period of ten years and for so long thereafter as necessary until MCC's reclamation bond for the Gordon Creek No. 2/7/8 Mines is fully released by the DOGM. The lease shall be in the form attached as Exhibit A.

2. In full payment for this lease, MCC shall assign to Peirce five (5) shares of MCC's Price River water rights. The assignment of the Price River water rights shall be in the form of Exhibit B.

3. The parties shall execute such further documents and take such further actions as may be necessary or appropriate to complete the lease and the sale under this agreement.

4. Closing is expected to be complete by April 9, 1993. Either party may terminate this agreement if closing is not completed by that date due to reasons beyond the control of the terminating party.

EXECUTED as of the date first stated above.

MOUNTAIN COAL COMPANY

By: E.E. Peirce

E.E. PEIRCE

STATE OF UTAH )
COUNTY OF CARBON ) ss

On the 7th day of April, 1993 personally appeared before me, E. E. PEIRCE, one of the signers of the foregoing instrument who duly acknowledged to me that he executed the same.

Ann B. O'Brien
Carbon County Recorder
APPLICATION FOR A DAM NOT REQUIRING SUBMISSION OF FORMAL PLANS UNDER SECTION 73-5A-202

STATE OF UTAH

The following application is submitted pursuant to Section 73-5a-204 for a dam meeting the exclusion under Section 73-5a-202(1) (dams under 20 acre-feet not constituting a threat to human life) or the waiver under Section 73-5a-202(3) (dams over 20 acre-feet not constituting a threat to human life or property not held by the owner of the dam).

1. APPLICANT INFORMATION
   Name(s): MOUNTAIN COAL COMPANY
   Address: P.O. Box 591
   City: SOMERSET
   State: CO
   Zip Code: 84334

2. PURPOSE OF DAM
   Stock Pond
   Irrigation
   Sedimentation
   Other (describe)
   Stock Pond - Regulating Res.
   Debris Basin
   Tailings Pond
   Sweet's Canyon Pond - WATER TRUCK FILL
   Flood Control
   Recreation

3. LOCATION OF DAM
   County: CARBON
   Quarter/Quarter (i.e. NESW), SWSW Section 17
   Township: 13 South
   Range: 8 East
   Base & Meridian SULCM

4. PROPOSED DAM
   Dam Height (vertical distance) 8.0 feet
   Crest Length (length of top of dam) 440 feet
   Crest Width (width of top of dam) 4.0 feet
   Upstream slope, 1 vertical on 2 horizontal
   Downstream slope, 1 vertical on 2 horizontal
   Water surface area at spillway crest 0.44 acres
   Reservoir capacity at spillway crest 2,000 ac-ft.
   Type of dam (i.e. earthfill, concrete, etc.) EARTHFILL - APPROXIMATELY 42% OF POND IS INCISED

5. PROPOSED OUTLET (N/A)
   Inside diameter inches Length feet
   Type of pipe (i.e. concrete, steel, etc.)
   Type of gate or valve
   Location of gate (upstream, downstream, center, etc.)

6. PROPOSED SPILLWAY
   Crest Length (width of bottom of spillway) 8.0 feet
   Depth (from bottom of spillway to top of dam) 3.0 feet
   Type (i.e. earth channel, pipe, etc.) RIP-RAPPED EARTH CHANNEL
   Control (i.e. gates, flashboards, etc.) OPEN CHANNEL SPILLWAY

7. WATER RIGHTS
   Describe (see instructions) WATER RIGHT OWNED BY E.E. PEACOE AND BILL KENNICK RIGHTS LEASED TO MOUNTAIN COAL COMPANY DURING CONSTRUCTION AND LIABILITY PERIOD.
8. COMMENTS

Sweet's Canyon Pond. Previously used for water truck fill-up, will be left as a permanent pond for use as a private fish pond.

9. PLANS

Attach plans sketches or diagrams to clarify the information given on this application.

The undersigned acknowledge they have read the instructions included with this application, and are aware no construction is to begin until this application has been approved by the Utah State Engineer.

Date: 6/16/94
Signature of Applicant

Water Rights In Order

By: ___________________________ Date: ___________________________

Area Engineer’s Hazard Rating

Reviewed by Dam Safety

Comments: ___________________________ Date: ___________________________

Date of Approval: ___________________________ Robert L. Morgan, P.E.

State Engineer
FAX TRANSMITTAL COVER SHEET

DATE: February 3, 1997
TIME: 2:00 p.m.

TO:
Name: Vickey Bailey
Address: Earthfax Engineering

Fax No. 801-561-1861

FROM:
Name: Mark Page
Location: Price Office
Fax No. 801-637-7937

TOTAL NUMBER OF PAGES (including cover sheet) 16

COMMENTS: The Memorandum Decisions indicate any conditions of approval, and the approval letters indicate the Proof Due date.
In the Matter of Change Application )
Number 91-353 (a19687) )

Change Application Number 91-353 (a19687) in the name of Florence A. Sweet was filed on February 2, 1996 in behalf of Horizon Coal Corporation to change the point of diversions, place, nature and period of use of 0.015 cfs of water. Heretofore, the water has been diverted from an unnamed spring located at a point South 760 feet and West 725 feet from the NE Corner of Section 19, T13S, R8E, SLB&M, and used for industrial uses associated with the operation of the Sweet Coal Mine from May 1 to September 1 of each year.

Hereafter, it is proposed to divert 0.015 cfs of water from Gordon Creek at a point located North 293 feet and East 1290 feet from the SW Corner of Section 17, T13S, R8E, SLB&M, to be used for the domestic purposes of 20 persons, coal mining use in the Carbon Mining District at the Horizon Mine, and industrial uses associated with the operation of the Horizon Coal Mine in Section 7; Section 17; and Section 18, T13S, R8E, SLB&M. The water will be stored in Sweet’s Canyon Pond, which has a capacity of 2.0 acre-feet, a dam height of 8.0 feet, and inundates 0.44 acre of land in the SW%SW of Section 17, T13S, R8E, SLB&M.

The application was advertised in The Sun Advocate from April 11, 1996, to April 18, 1996, and was protested by the Division of Wildlife Resources and the Gordon Creek Water Users. A hearing was held on July 1, 1996, in Price, Utah. The applicant was represented by Horizon’s legal counsel, John Flitton. Richard White of Earthfax Engineering was also present to discuss Horizon’s proposal. The Division of Wildlife Resources was represented by Lorin Sperry and Ben Morris. Mr. Ray Prettyman, Marty Prettyman and Steven Giacoletto represented the Gordon Creek Water Users.

In support of the application, Mr. Flitton indicated that this change application was filed in behalf of Horizon Coal Corporation for use at the mine which they are presently permitting. A Water Lease Agreement has been signed which allows Horizon to use the subject water right. This change application requests the right to divert the spring into Gordon Creek and redvert it downstream into Sweet’s Canyon Pond where it would be used as previously stated. However, because of concerns raised by the water users and the State Engineer’s office, the decision has been made to pipe the spring directly to the pond, thus alleviating the necessity to separate the flow of Gordon Creek from the spring flow. Horizon has a signed agreement with the owners of the Sweet’s Canyon Pond for the use of that facility. Measuring devices will be installed to assist in the regulation of the water diverted from the spring. If the flow of the spring exceeds the water right, the excess flow will be diverted into Gordon Creek and made available to the other water users. It is understood that the period of use of this particular water right will remain May 1 to September 1 of each year, not for year-round use as indicated in the change application. The hereafter point of diversion will also remain at the spring, which is properly described in the heretofore portion of this application under paragraph #7. Water Right Number 91-353 has a priority of 1874, which is equal in priority with the other water rights in the area including those of the protestants.

Mr. Sperry, representing the Division of Wildlife Resources, indicated that this
MEMORANDUM DECISION
CHANGE APPLICATION NUMBER
91-353 (a19687)

change application was protested to bring to the attention of Horizon that the division holds water rights on the North Fork of Gordon Creek with a priority of 1874. Their water is diverted downstream of the Sweet's Canyon Pond approximately 1.6 miles and used for irrigation purposes between March 1 and October 15 on the wildlife management area at Coal City. Any development that would interfere with these vested rights should be denied. Mr. Morris from the Division of Wildlife Resources indicated that if Horizon is going to pipe the water directly from the spring to Sweet's Canyon Pond, they would not be as concerned as they were with the original proposal. However, regardless of the development proposal, he too, is concerned that their rights not be impacted.

Ray Prettyman, speaking in behalf of the Gordon Creek Water Users, indicated that they are concerned about the source of water for the spring. They feel it could be coming directly from the creek. If this is the case, neither the applicant nor Horizon should be allowed to divert this water. The development and use of water by Horizon may interfere with their primary rights on Gordon Creek which are used for irrigation purposes between March 1 and November 30 of each year. The flow of water available from the spring under this right may not provide for the needs of Horizon. Most years the water supply in Gordon Creek is insufficient to meet the needs of the users. There are times during the irrigation season when the upper and lower users voluntarily take turns using the water because of the diminished flows. During those times when the delivery of water is less than 100%, Horizon's flow should be reduced proportionately. If Horizon is granted use of the water, they must provide adequate measuring devices to insure that they divert only the flow of water available under their various rights.

After reviewing the information in the application and the testimonies given at the hearing, it is the opinion of the State Engineer that this change application can be approved without jeopardizing prior rights in the area, particularly those of the protestants if certain conditions are met. Horizon's plan for the development and use of the spring should not interfere with the right of the protestants. However the applicant is put on notice that the replacement of the original spring box must be at the same elevation be identical in size, and not involve additional development. The flow measuring device(s) that must be installed between the spring and the Sweet's Canyon Pond must be approved by the State Engineer prior to installation.

It is, therefore, ORDERED and Change Application Number 91-353 (a19687) is hereby APPROVED subject to all prior rights and according to the conditions of the current appropriation policy for the Colorado River Drainage, adopted March 7, 1990, and the following conditions:

1) The redevelopment of the spring will include the installation of another collection box. It must be set at the same elevation as the existing one, and no collection system over and above that present when the existing box is removed can be added.

2) The flow measuring device(s) that must be installed between the spring and Sweet's Canyon Pond must be approved by the State Engineer prior to installation. The State Engineer or his representatives must have access to the device(s) at all reasonable
times. and the diversion records must be provided upon request. The delivery of this right will be administered by the Price River Water Commissioner.

3) The period of use for this right will remain May 1 to September one of each year, and the point of diversion will remain at the spring as stated in paragraph #7 of the application.

This Decision is subject to the provisions of Rule R655-6-17 of the Division of Water Rights and to Sections 63-46b-13 and 73-3-14 of the Utah Code Annotated, 1953, which provide for filing either a Request for Reconsideration with the State Engineer or an appeal with the appropriate District Court. A Request for Reconsideration must be filed with the State Engineer within 20 days of the date of this Decision. However, a Request for Reconsideration is not a prerequisite to filing a court appeal. A court appeal must be filed within 30 days after the date of this Decision, or if a Request for Reconsideration has been filed, within 30 days after the date the Request for Reconsideration is denied. A Request for Reconsideration is considered denied when no action is taken 20 days after the Request is filed.

Dated this 20th day of November, 1996

Robert L. Morgan, P.E., State Engineer

Mailed a copy of the foregoing Memorandum Decision this 20th day of November, 1996. to:

Florence A. Sweet
1750 Orchard Drive
Salt Lake City, UT 84106

Horizon Coal Corporation
Attn: Bradley J. Bourquin
1131 South Dover Street
Lakewood, Colorado 80232

Pruitt, Gushee and Bechtel
Attn: John Flitton
1850 Beneficial Life Tower
Salt Lake City, Utah 84111

Department of Natural Resources
Division of Wildlife Resources
Attn: Lorin Sperry
1594 West North Temple Suite 2110
Box 146301
Salt Lake City, UT 84114-6301
MEMORANDUM DECISION
CHANGE APPLICATION NUMBER
91-353 (a19687)

PAGE -4-
Gordon Creek Water Users
c/o Ray Prettyman
3217 West Gordon Creek Road
Price, UT 84501

Price River Distribution System
Attn: Robert Davis, Commissioner
P.O. Box 108
Price, UT 84501

BY: Eileen Tooke, Secretary
November 30, 1996

Florence A. Sweet 91-353
1750 Orchard Drive
Salt Lake City, UT 84106

Dear Applicant:

RE: APPROVED CHANGE APPLICATION
NUMBER 91-353 (a19687)

Enclosed is a copy of approved Change Application No. 91-353 (a19687). This is your authority to proceed with the actual construction work which under Section 73-3-10 and 73-3-12, Utah Code Annotated, 1953, as amended, must be diligently prosecuted to completion. The water must be put to beneficial use and proof of beneficial use be made to the State Engineer on or before February 28, 2000; otherwise, the application will be lapsed.

Proof of beneficial use is evidence to the State Engineer that the water has been placed to its full intended beneficial use. By law, it must be prepared by a registered engineer or land surveyor, who will certify to the location and the uses for the water. Your proof of change will become the basis for the extent of your water right.

Failure on your part to comply with the requirements of the statutes may result in forfeiture of this application. It is the applicant's obligation to maintain a current address with this office. Please notify this office immediately of any change.

Your contact with this office, should you need it, is with the Price Regional Office. The telephone number is (801)637-1303.

Sincerely,

Robert L. Morgan, P.E.
State Engineer

Encl.: Copy of Approved Change Application
Memorandum Decision
BEFORE THE STATE ENGINEER OF THE STATE OF UTAH

IN THE MATTER OF CHANGE APPLICATION

NUMBER 91-94 (a19772)

MEMORANDUM DECISION

RECEIVED

NOV 21 1996

WATER RIGHTS

PRICE

Change Application Number 91-94 (a19772) in the name of Florence A. Sweet was filed on February 2, 1996, in behalf of Horizon Coal Corporation to change the point of diversion, and place, nature and period of use of 0.15 cfs of water. Heretofore, the water has been diverted from an unnamed spring located at a point South 760 feet and West 725 feet from the NE Corner of Section 19, T13S, R8E, SLB&M, and used for industrial uses associated with the operation of the Sweet Coal Mine from September 1 to May 1 of each year.

Hereafter, it is proposed to divert 0.15 cfs of water from Gordon Creek at a point located North 293 feet and East 1290 feet from the SW Corner of Section 17, T13S, R8E, SLB&M, to be used for the domestic purposes of 20 persons, coal mining use in the Carbon Mining District at the Horizon Mine, and industrial uses associated with the operation of the Horizon Coal Mine in Section 7: Section 8: Section 17: and Section 18, T13S, R8E, SLB&M. The water will be stored in Sweet's Canyon Pond, which has a capacity of 2.0 acre-feet, a dam height of 8.0 feet, and inundates 0.44 acre of land in the SW4/4 of Section 17, T13S, R8E, SLB&M.

The application was advertised in The Sun Advocate from April 11, 1996, to April 18, 1996, and was protested by the Division of Wildlife Resources, and the Gordon Creek Water Users. A hearing was held on July 1, 1996 in Price, Utah. The applicants were represented by Horizon's legal counsel, John Flitton. Richard White of Earthfax Engineering was also present to discuss Horizon's proposal. The Division of Wildlife Resources was represented by Lorin Sperry and Ben Morris. Ray Prettyman, Marty Prettyman and Steven Giaconetto represented the Gordon Creek Water Users.

In support of the application, Mr. Flitton indicated that this change application was filed in behalf of Horizon Coal Company for use at the mine which they are presently permitting. A Water Lease Agreement has been signed which allows Horizon use of the subject water right. This change application requests the right to divert the spring into Gordon Creek and redivert it downstream into Sweet's Canyon Pond where it would be used as previously stated. However, because of concerns raised by the water users and the State Engineer's office, the decision has been made to pipe the spring directly to Sweet's Canyon Pond, thus alleviating the necessity to separate the flow of Gordon Creek from the spring flow. Horizon has a signed agreement with the owners of the Sweet's Canyon Pond for the use of that facility. Measuring devices will be installed to assist in the regulation of the water diverted from the spring. If the flow of the spring exceeds the water right, the excess flow will be diverted into Gordon Creek and made available to the other water users. It is understood that the period of use of this particular water right will remain September one to May one of each year, not for year-round use as indicated in the change application. The hereafter point of diversion will also remain at the spring, which is properly described in the heretofore portion of this application under paragraph #7. This water right is for the non-irrigation or winter period. This should alleviate the concern of interference with the protestant's prior rights.

Mr. Sperry, representing the Division of Wildlife Resources, indicated that this
MEMORANDUM DECISION
CHANGE APPLICATION NUMBER
91-94 (a19772)
PAGE -2-

change application was protested to bring to the attention of Horizon that the diversion holds prior water rights on the North Fork of Gordon Creek with a priority of 1874. Their water is diverted downstream of the Sweet's Canyon Pond approximately 1.6 miles, and used for irrigation purposes between March one and October 15 on the wildlife management area at Coal City. The right to develop or use water that would interfere with their vested rights should be denied. Mr. Morris from the Division of Wildlife Resources indicated that if Horizon is going to pipe the water directly from the spring to Sweet's Canyon Pond, they would not be as concerned as they were with the original proposal. However, regardless of the development proposal, he too, is concerned that their rights not be impacted.

Ray Prettyman, speaking in behalf of the Gordon Creek Water Users, indicated that they are concerned about the source of water for the spring. They feel it could be coming directly from the creek. If this is the case, neither the applicants nor Horizon should be allowed to divert this water. The development and use of water by Horizon may interfere with their primary rights on Gordon Creek which are used for irrigation purposes between March 1 and November 30 of each year. The flow of water available from the spring under this right may not provide for the needs of Horizon. Most years the water supply in Gordon Creek is insufficient to meet the needs of the users. There are times during the irrigation season when the upper and lower users voluntarily take turns using the water because of the diminished flows. Because the priority of this right is junior to their rights on Gordon Creek, until the irrigation season is concluded, no water should be delivered under this water right. If Horizon is granted use of the water, they must provide adequate measuring devices to insure that they divert only the flow of water authorized under their various rights.

After reviewing the information in the application and the testimonies given at the hearing, it is the opinion of the State Engineer that this change application can be approved without jeopardizing prior rights in the area, particularly those of the protestants if certain conditions are met. Horizon’s plan for the development and use of the spring should not interfere with the rights of the protestants. However the applicants are put on notice that the replacement of the original spring box must be at the same elevation be identical in size, and not involve additional development. The flow measuring device(s) that must be installed between the spring and Sweet's Canyon Pond must be approved by the State Engineer prior to installation.

It is, therefore, ORDERED and Change Application Number 91-94 (a19772) is hereby APPROVED subject to all prior rights and according to the conditions of the current appropriation policy for the Colorado River Drainage, adopted March 7, 1990, and the following conditions:

1) The redevelopment of the spring will include the installation of another collection box. It must be set at the same elevation as the existing one and no collection system over and above that present when the existing box is removed can be added.

2) The flow measuring device(s) that must be installed between the spring and Sweet’s Canyon Pond must be approved by the State Engineer prior to installation. The State Engineer or his
representatives must have access to the device(s) at all reasonable times, and the diversion records must be provided upon request. The delivery of this right will be administered by the Price River Water Commissioner.

3) The period of use for this right will remain from September 1 to May 1 of each year, and the point of diversion will remain at the spring as stated in paragraph #7 of the application.

This Decision is subject to the provisions of Rule R655-6-17 of the Division of Water Rights and to Sections 63-46b-13 and 73-3-14 of the Utah Code Annotated, 1953, which provide for filing either a Request for Reconsideration with the State Engineer or an appeal with the appropriate District Court. A Request for Reconsideration must be filed with the State Engineer within 20 days of the date of this Decision. However, a Request for Reconsideration is not a prerequisite to filing a court appeal. A court appeal must be filed within 30 days after the date of this Decision, or if a Request for Reconsideration has been filed, within 30 days after the date the Request for Reconsideration is denied. A Request for Reconsideration is considered denied when no action is taken 20 days after the Request is filed.

Dated this 20th day of November, 1996


Robert L. Morgan, P.E., State Engineer

RLM:MPP:et

Mailed a copy of the foregoing Memorandum Decision this 20th day of November, 1996, to:

Florence A. Sweet
1750 Orchard Drive
Salt Lake City, UT 84106

Horizon Coal Corporation
Attn: Bradley J. Bourquin
1131 South Dover Street
Lakewood, Colorado 80232

Pruitt, Gushee and Bechtel
Attn: John Flitton
1850 Beneficial Life Tower
Salt Lake City, Utah 84111

Department of Natural Resources
Division of Wildlife Resources
Attn: Lorin Sperry
1594 West North Temple Suite 2110
Salt Lake City, UT 84114-6301
MEMORANDUM DECISION
CHANGE APPLICATION NUMBER
91-94 (a19772)
PAGE 4

Gordon Creek Water Users
c/o Ray Prettyman
3217 West Gordon Creek Road
Price, UT 84501

Price River Distribution System
Attn: Robert Davis, Commissioner
P.O. Box 108
Price, UT 84501

BY: Eileen Tooke, Secretary
Florence A. Sweet 91-94
1750 Orchard Drive
Salt Lake City, UT 84106

Dear Applicant:  

RE: APPROVED CHANGE APPLICATION  
NUMBER 91-94 (a19772)

Enclosed is a copy of approved Change Application No. 91-94 (a19772). This is your authority to proceed with the actual construction work which under Section 73-3-10 and 73-3-12, Utah Code Annotated, 1953, as amended, must be diligently prosecuted to completion. The water must be put to beneficial use and proof of beneficial use be made to the State Engineer on or before February 28, 2000; otherwise, the application will be lapsed.

Proof of beneficial use is evidence to the State Engineer that the water has been placed to its full intended beneficial use. By law, it must be prepared by a registered engineer or land surveyor, who will certify to the location and the uses for the water. Your proof of change will become the basis for the extent of your water right.

Failure on your part to comply with the requirements of the statutes may result in forfeiture of this application. It is the applicant's obligation to maintain a current address with this office. Please notify this office immediately of any change.

Your contact with this office, should you need it, is with the Price Regional Office. The telephone number is (801) 637-1303.

Sincerely,

Robert L. Morgan, P.E.
State Engineer

Encl.: Copy of Approved Change Application Memorandum Decision
Change Application Number 91-330 (a19773) in the name of the Florence A. Sweet was filed on February 2, 1996 in behalf of Horizon Coal Corporation, to change the point of diversion and place, nature, and period of use of 0.557 cfs of water. Heretofore, the water has been diverted from an underground tunnel at a point located South 970 feet and West 1580 feet from the NE Corner of Section 18, T13S, R8E, SLB&M, and used for industrial purposes for coal mining operations at the Sweet's Coal Mine.

Hereafter, it is proposed to divert 0.557 cfs of water from an underground tunnel at a point located North 2248 feet and East 2151 feet from the SW Corner of Section 17, T13S, R8E, SLB&M, to be used for the domestic purposes of 20 persons, coal mining uses in the Carbon Mining District at the Horizon Mine, and industrial uses associated with the operation of the Horizon Coal Mine in Section 7; Section 8; Section 17; and Section 18, T13S, R8E, SLB&M. The water will be stored in Sweet's Canyon Pond having a capacity of 2 acre-feet, a dam 8 feet high, and a surface area inundating 0.44 acre in the SW 1/4 SW 1/4 of said Section 17.

The application was advertised in The Sun Advocate from April 11, 1996, to April 18, 1996, and was protested by the Division of Wildlife Resources and the Gordon Creek Water Users.

A hearing was held on July 1, 1996 in Price, Utah. The applicant was represented by Horizon's legal counsel, John Flitton. Richard White of Earthfax Engineering was also present to discuss some of the technical aspects of Horizon's proposal. The Division of Wildlife Resources was represented by Lorin Sperry and Ben Morris. Ray Prettyman, Marty Prettyman, and Steven Giacoletto represented the Gordon Creek Water Users.

In support of the application, Mr. Flitton indicated that this change application was filed in behalf of Horizon Coal Corporation for use at the mine which they are presently permitting. A Water Lease Agreement has been signed which allows Horizon use of the subject water right. The change application requests the right to divert water from sumps in the Horizon Mine to the portal to support surface and underground mining operations. The water in the Horizon Mine is from the same strata that produced water in the Sweet's Mine. As a result, any effect created by pumping and using water in the Horizon Mine should not be any different than that experienced during the Sweet's mining operation. Mr. Flitton assured the protesters that measuring devices will be installed to verify that no more water is used than the right would allow. If any excess water is brought to the surface, it will be discharged into the North Fork of Gordon Creek for use by the protesters and other water users.

Mr. Richard White of Earthfax Engineering presented information to clarify the geology of the area and the sequence of water-bearing formations that will be encountered in the mining process. He indicated that water will be encountered in the Blackhawk Formation, and the Star Point Sandstone. The Hiawatha coal seam is the source of coal that is to be mined, and it occurs in the Spring Canyon tongue of the Blackhawk Formation. Because faulting in the area is minor, with
MEMORANDUM DECISION
CHANGE APPLICATION NUMBER
91-330 (a19773)

25 feet or less of displacement, the formations are basically contiguous and hydrologically connected. The faulting trends generally northeast to southwest, and the direction of flow is to the east-southeast toward the North Fork of Gordon Creek. As a result, the water that will be pumped from the Horizon Mine is from the same formation as the water that was encountered and pumped from the Sweet's Mine. The sump in the Horizon Mine is located approximately 1000 feet down gradient from the sump in the Sweet's Mine. The water surface in the area of the mine is located approximately 450 feet below the land surface. The Star Point Sandstone overlays the Mancos Shale formation, which serves as a barrier to any significant downward migration of water in the Star Point Sandstone. As a result, springs and seeps may exist along this contact when it is intersected by erosional features. In his professional opinion, Mr. White believes that Horizon's use of this water will not significantly affect the volume of water that is available to the protesters in Gordon Creek.

Mr. Sperry and Mr. Morris, representing the Division of Wildlife Resources, indicated that they protested this change application to bring to the attention of Horizon that they hold primary water rights on the North Fork of Gordon Creek. Their water is diverted downstream of the Sweet's Canyon Pond approximately 1.6 miles, and used on the wildlife management area at Coal City. If the development of this right will intercept or interfere with the flow of water into Gordon Creek, they request that this application be denied.

Mr. Ray Prettyman, speaking in behalf of the Gordon Creek Water Users, indicated that they too are concerned about the use of this source of water. They feel that the water in the mine is the same water that is found in the creek. If this is the case, Horizon should not be allowed to divert water under this right. Most years the water supply in Gordon Creek is insufficient to meet the needs of the users. There are times during the irrigation season when the upper and lower users voluntarily take turns using the water because of the diminished flows. Because the priority of this right is junior to their rights on Gordon Creek, they feel that any development or use of water under this right should not be allowed if it will further aggravate this situation. If Horizon is granted use of the water, they must provide adequate measuring devices to insure that they divert only the flow of water that they are entitled to use.

Both of the protesters requested additional information concerning the projected water use of the proposed Horizon Mine, and further clarification of where the Star Point/Mancos Shale interface may occur along Gordon Creek. Mr. White was asked to provide this additional information as soon as possible after the hearing. On August 12, 1996, a copy of Mr. White's findings were received from Mr. Flitton. A copy was mailed to all parties involved. Mr. White concluded that from information in Horizon's mine plan, approximately 9.1 acre-feet of water will be consumed for in-mine uses and 6.8 acre-feet for surface uses for a total of 15.9 acre-feet of water per year.

Regarding the discharge of water from the contact of the Star Point Sandstone and the Mancos Shale formation, it would appear to be in the immediate area of the Division of Wildlife Resources diversion and splitter with the lower users located in Section 21, T13S, R8E, SLB&M. In discussing the occurrence of springs and seeps along Gordon Creek, the lower users were not aware of any significant flows entering the creek between the splitter and their diversion several miles
MEMORANDUM DECISION
CHANGE APPLICATION NUMBER
91-330 (a19773)
PAGE 3

downstream.

As a result, it is questionable whether there is any significant contribution from the formations to Gordon Creek that would increase the flow of Gordon Creek between Sweet's Pond which is upstream of the Division of Wildlife Resources diversion, and the lower diversion on Gordon Creek, which is used by the Gordon Creek water users.

After reviewing the information in the application, testimonies given at the hearing, and the additional information provided by Mr. White, it is the opinion of the State Engineer that this change application can be approved without jeopardizing prior rights in the area, particularly those of the protestants. It is believed that Horizon's plan for the use of the water that is developed in the mine will not interfere with the rights of the protestants. The projected uses are well within the limit of the right.

It is, therefore, ORDERED and Application Number 91-330 (a19773) is hereby APPROVED subject to all prior rights and according to the conditions of the current appropriation policy for the Colorado River Drainage, adopted March 7, 1990, and the following condition:

Flow measuring device must be installed at the appropriate locations to account for the water that is used by Horizon under this right. The State Engineer or his representatives must have access to the device at all reasonable times, and the diversion records must be provided upon request. The delivery of this right will be administered by the Price River Water Commissioner.

This Decision is subject to the provisions of Rule R655-6-17 of the Division of Water Rights and to Sections 63-46b-13 and 73-3-14 of the Utah Code Annotated, 1953, which provide for filing either a Request for Reconsideration with the State Engineer or an appeal with the appropriate District Court. A Request for Reconsideration must be filed with the State Engineer within 20 days of the date of this Decision. However, a Request for Reconsideration is not a prerequisite to filing a court appeal. A court appeal must be filed within 30 days after the date of this Decision, or if a Request for Reconsideration has been filed, within 30 days after the date the Request for Reconsideration is denied. A Request for Reconsideration is considered denied when no action is taken 20 days after the Request is filed.

Dated this 20th day of November, 1996

[Signature]

Robert L. Morgan, P.E., State Engineer

Mailed a copy of the foregoing Memorandum Decision this 20th day of November, 1996, to:

Florence A. Sweet
1750 Orchard Drive
Salt Lake City, UT 84106
MEMORANDUM DECISION
CHANGE APPLICATION NUMBER
91-330 (a19773)
PAGE -4-

Horizon Coal Corporation
Attn: Bradley J. Bourquin
1131 South Dover Street
Lakewood, Colorado 80232

Pruitt, Gushee and Bechtel
Attn: John Flitton
1850 Beneficial Life Tower
Salt Lake City, Utah 84111

Department of Natural Resources
Division of Wildlife Resources
Attn: Lorin Sperry
1594 West North Temple Suite 2110
Salt Lake City, UT 84114-6301

Gordon Creek Water Users
c/o Ray Prettyman
3217 West Gordon Creek Road
Price, UT 84501

Price River Distribution System
Attn: Robert Davis, Commissioner
P.O. Box 108
Price, UT 84501

Water Use Coordinator
Division of Water Rights

BY: Eileen Tooke, Secretary
November 20, 1996

Florence A. Sweet 91-330
1750 Orchard Drive
Salt Lake City, UT 84106

Dear Applicant:

RE: APPROVED CHANGE APPLICATION
NUMBER 91-330 (a19773)

Enclosed is a copy of approved Change Application No. 91-330 (a19773). This is your authority to proceed with the actual construction work which under Section 73-3-10 and 73-3-12, Utah Code Annotated, 1953, as amended, must be diligently prosecuted to completion. The water must be put to beneficial use and proof of beneficial use must be made to the State Engineer on or before February 28, 2000; otherwise, the application will be lapsed.

Proof of beneficial use is evidence to the State Engineer that the water has been placed to its full intended beneficial use. By law, it must be prepared by a registered engineer or land surveyor, who will certify to the location and the uses for the water. Your proof of change will become the basis for the extent of your water right.

Failure on your part to comply with the requirements of the statutes may result in forfeiture of this application. It is the applicant's obligation to maintain a current address with this office. Please notify this office immediately of any change.

Also enclosed are two post cards. You must give the Driller (Start) Card to the licensed driller with whom you contract to construct the well(s). The other card is the Applicant Card which is your responsibility to sign and return to this office immediately after final completion of the well. CAUTION: There may be local health department requirements for the actual siting of your well. Please check with the proper local authority before construction begins.

Your contact with this office, should you need it, is with the Price Regional Office. The telephone number is (801) 637-1383.

Sincerely,

Robert L. Morgan, P.E.
State Engineer

Encl.: Copy of Approved Change Application
Memorandum Decision
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, FEB
PLOT SHOWS LOCATION OF 28 POINTS OF DIV

PLOT OF ALL QUARTER(S) IN SECTION 4 TOWNSHIP 13S RAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FE
### Points of Diversion

**UTAH DIVISION OF WATER RIGHTS**  
NWPLAT  
POINT OF DIVERSION LOCATION PRO

<table>
<thead>
<tr>
<th>MAP</th>
<th>WATER USE(S)</th>
<th>QUANTITY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POINT</th>
<th>MAP CHAR</th>
<th>WATER QUANTITY</th>
<th>AC-FT DIAMETER</th>
<th>DEPTH</th>
<th>YEAR</th>
<th>LOG</th>
<th>NORTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Jump Creek</td>
<td>0.0000</td>
<td>.00 Jump Creek</td>
<td></td>
<td>91 1957</td>
<td>0.0000</td>
<td>.00 Jump Creek</td>
<td>2651 Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Jump Creek</td>
<td>0.0000</td>
<td>.00 Jump Creek</td>
<td></td>
<td>91 1958</td>
<td>0.0000</td>
<td>.00 Jump Creek</td>
<td>2651 Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Jump Creek</td>
<td>0.0000</td>
<td>.00 Jump Creek</td>
<td></td>
<td>91 1959</td>
<td>0.0000</td>
<td>.00 Jump Creek</td>
<td>2651 Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Beaver Creek</td>
<td>0.0000</td>
<td>.00 Beaver Creek</td>
<td></td>
<td>91 1464</td>
<td>0.0000</td>
<td>.00 Beaver Creek</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Beaver Creek</td>
<td>0.0000</td>
<td>.00 Beaver Creek</td>
<td></td>
<td>91 1465</td>
<td>0.0000</td>
<td>.00 Beaver Creek</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Beaver Creek</td>
<td>0.0000</td>
<td>.00 Beaver Creek</td>
<td></td>
<td>91 1466</td>
<td>0.0000</td>
<td>.00 Beaver Creek</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Unnamed Spring</td>
<td>0.0200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>91 1450</td>
<td>0.0020</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Unnamed Spring</td>
<td>0.0200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>91 1474</td>
<td>0.0020</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Unnamed Spring</td>
<td>0.0200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>91 312</td>
<td>0.0020</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Unnamed Spring</td>
<td>0.2500</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>91 1951</td>
<td>0.2500</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Unnamed Spring</td>
<td>0.2500</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>91 1952</td>
<td>0.2500</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Unnamed Spring</td>
<td>0.2500</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>91 1953</td>
<td>0.2500</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Unnamed Spring</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>91 1911</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Value</td>
<td>Notes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
<td>-------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1912</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1913</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1447</td>
<td>.2200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1448</td>
<td>.2200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1449</td>
<td>.2200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1973</td>
<td>.0220</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1455</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1456</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1457</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1452</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1453</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1454</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1444</td>
<td>.2200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1445</td>
<td>.2200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 1446</td>
<td>.2200</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
UTAH DIVISION OF WATER RIGHTS

WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, FEB

PLOT SHOWS LOCATION OF 21 POINTS OF DIV

PLOT OF ALL QUARTER(S) IN SECTION 5 TOWNSHIP 13S RAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FE
<table>
<thead>
<tr>
<th>MAP</th>
<th>WATER CHAR</th>
<th>RIGHT</th>
<th>CFS</th>
<th>QUANTITY AND/OR</th>
<th>AC-FT</th>
<th>SOURCE DESCRIPTION or WELL INFO POIN</th>
<th>DIAMETER</th>
<th>DEPTH</th>
<th>YEAR</th>
<th>LOG</th>
<th>NORTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>91 1461</td>
<td>.0110</td>
<td></td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1462</td>
<td>.0110</td>
<td></td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>Stamatakis, Pete JR.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1463</td>
<td>.0110</td>
<td></td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1957</td>
<td>.0000</td>
<td></td>
<td>.00 Jump Creek</td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1958</td>
<td>.0000</td>
<td></td>
<td>.00 Jump Creek</td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1959</td>
<td>.0000</td>
<td></td>
<td>.00 Jump Creek</td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>2651 Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1954</td>
<td>.0000</td>
<td></td>
<td>.00 Unnamed Stream</td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1955</td>
<td>.0000</td>
<td></td>
<td>.00 Unnamed Stream</td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 North</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1956</td>
<td>.0000</td>
<td></td>
<td>.00 Unnamed Stream</td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>91 1908</td>
<td>.0110</td>
<td></td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>91 1909</td>
<td>.0110</td>
<td></td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>91 1910</td>
<td>.0110</td>
<td></td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 1458</td>
<td>.0110</td>
<td></td>
<td>.00 Unnamed Spring</td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Use (S)</td>
<td>Rate (gpm)</td>
<td>Description</td>
<td>Address</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
<td>------------</td>
<td>------------------------------</td>
<td>------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1989</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td></td>
<td>.0220</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td></td>
<td>.0220</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td></td>
<td>.0220</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAP</td>
<td>WATER CHAR</td>
<td>RIGHT</td>
<td>CFS</td>
<td>QUANTITY AND/OR AC-FT</td>
<td>SOURCE DESCRIPTION or WELL INFO</td>
<td>POINT INFO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>------------</td>
<td>-------</td>
<td>-----</td>
<td>-----------------------</td>
<td>--------------------------------</td>
<td>------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 1401</td>
<td></td>
<td>.2500</td>
<td>.00 Sand Gulch Spring</td>
<td>General Delivery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S): DOMESTIC STOCKWATERING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Anderson, Clarence (Estate)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>91 1926</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>91 1927</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>91 1928</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 1929</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 1930</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 1931</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stamatakis, Pete Jr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>91 1932</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>91 1933</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>91 1934</td>
<td></td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>91 4034</td>
<td></td>
<td>.1250</td>
<td>.00 Unnamed Spring</td>
<td>N 325</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S): DOMESTIC STOCKWATERING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>91 4035</td>
<td></td>
<td>.1250</td>
<td>.00 Unnamed Spring</td>
<td>N 325</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S): DOMESTIC STOCKWATERING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N.</td>
<td>Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, FEB
PLOT SHOWS LOCATION OF 20 POINTS OF DIV

PLOT OF ALL QUARTER(S) IN SECTION 8 TOWNSHIP 13S RAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FE
<table>
<thead>
<tr>
<th>MAP</th>
<th>WATER USE(S)</th>
<th>QUANTITY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POIN.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Water</td>
<td>0.0110</td>
<td>Unnamed Spring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stamatakis,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pete Jr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Water</td>
<td>0.0110</td>
<td>Unnamed Spring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stamatakis,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pete Jr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Water</td>
<td>0.0110</td>
<td>Unnamed Spring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stamatakis,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pete Jr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Water</td>
<td>0.0130</td>
<td>Unnamed Stream</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stamatakis,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pete Jr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Water</td>
<td>0.0000</td>
<td>Unnamed Stream</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stamatakis,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pete Jr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Water</td>
<td>0.0000</td>
<td>Unnamed Stream</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stamatakis,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pete Jr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Water</td>
<td>0.0130</td>
<td>Unnamed Stream</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stamatakis,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pete Jr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Water</td>
<td>0.0000</td>
<td>Unnamed Stream</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stamatakis,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pete Jr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Water</td>
<td>0.0000</td>
<td>Unnamed Stream</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stamatakis,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pete Jr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Water</td>
<td>0.2000</td>
<td>Unnamed Spring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anderson,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clarence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Estate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Water</td>
<td>0.0110</td>
<td>Unnamed Spring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stamatakis,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pete Jr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Water</td>
<td>0.0110</td>
<td>Unnamed Spring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stamatakis,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pete Jr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Water</td>
<td>0.0110</td>
<td>Unnamed Spring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stamatakis,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pete Jr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Rate</td>
<td>Water Use(S)</td>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------</td>
<td>--------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>91 1941</td>
<td>0.0110</td>
<td>Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
</tr>
<tr>
<td>91 1943</td>
<td>0.0110</td>
<td>Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
</tr>
<tr>
<td>91 1944</td>
<td>0.0110</td>
<td>Unnamed Spring</td>
<td>1111 South 450 West</td>
<td></td>
</tr>
<tr>
<td>91 1464</td>
<td>0.0000</td>
<td>Beaver Creek</td>
<td>1111 South 450 West</td>
<td></td>
</tr>
<tr>
<td>91 1465</td>
<td>0.0000</td>
<td>Beaver Creek</td>
<td>1111 South 450 West</td>
<td></td>
</tr>
<tr>
<td>91 1466</td>
<td>0.0000</td>
<td>Beaver Creek</td>
<td>1111 South 450 West</td>
<td></td>
</tr>
<tr>
<td>488</td>
<td>0.0110</td>
<td>Unnamed Spring</td>
<td>165 East 1st South</td>
<td></td>
</tr>
</tbody>
</table>
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, FEB
PLOT SHOWS LOCATION OF 6 POINTS OF DIV

PLOT OF ALL QUARTER(S) IN SECTION 9 TOWNSHIP 13S RAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FE

NORTH

*******************************************************************************
*******************************************************************************

2/9/00 4:28 PM
<table>
<thead>
<tr>
<th>MAP CHAR</th>
<th>WATER CHAR</th>
<th>CFS</th>
<th>QUANTITY AND/OR AC-FT</th>
<th>SOURCE DESCRIPTION or WELL INFO POINT LOG NORTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>91 1948</td>
<td>WATER USE(S): Stamatakis, Pete Jr.</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>91 1949</td>
<td>WATER USE(S): Stamatakis, Pete Jr.</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>91 1950</td>
<td>WATER USE(S): Stamatakis, Pete Jr.</td>
<td>0.0110</td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>91 1954</td>
<td>WATER USE(S): Stamatakis, Pete Jr.</td>
<td>0.0000</td>
<td>.00 Unnamed Stream</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>91 1955</td>
<td>WATER USE(S): Stamatakis, Pete Jr.</td>
<td>0.0000</td>
<td>.00 Unnamed Stream</td>
<td>1111 South 450 North</td>
</tr>
<tr>
<td>91 1956</td>
<td>WATER USE(S): Stamatakis, Pete Jr.</td>
<td>0.0000</td>
<td>.00 Unnamed Stream</td>
<td>1111 South 450 West</td>
</tr>
</tbody>
</table>
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, FEB
PLOT SHOWS LOCATION OF 1 POINTS OF DIV

PLOT OF ALL QUARTER(S) IN SECTION 16 TOWNSHIP 13S RAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FE
<table>
<thead>
<tr>
<th>MAP CHAR</th>
<th>WATER PLAT</th>
<th>QUANTITY CFS</th>
<th>AND/OR AC-FT</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POIN T LOCATION PRO</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 91 1675</td>
<td>0.0000</td>
<td>.00 Coal Canyon Creek</td>
<td>Marakis, John (Estate)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WATER USE(S):**

Marakis, John (Estate)
Points of Diversion

UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, FEB
PLOT SHOWS LOCATION OF 7 POINTS OF DIV

PLOT OF ALL QUARTER(S) IN SECTION 17 TOWNSHIP 13S RAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FE
<table>
<thead>
<tr>
<th>MAP CHAR</th>
<th>WATER CHAR</th>
<th>RIGHT</th>
<th>CFS</th>
<th>AND/OR AC-FT</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>91 487</td>
<td>.0000</td>
<td>.00</td>
<td>Spring Stream</td>
<td>165 East 1st South</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td>Marakis, John</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 487</td>
<td>.0000</td>
<td>.00</td>
<td>Spring Stream</td>
<td>165 East 1st South</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td>Marakis, John</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>91 3881</td>
<td>.0110</td>
<td>.00</td>
<td>Unnamed Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td>Marakis, John (Estate)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>a19773</td>
<td>.5570</td>
<td>.00</td>
<td>Underground Tunnel</td>
<td>N 2248</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td>DOMESTIC MINING OTHER</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sweet, Florence A.</td>
<td></td>
<td></td>
<td></td>
<td>1750 Orchard Drive</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>a21487</td>
<td>.5570</td>
<td>.00</td>
<td>Mine Tunnel &amp; Unnamed Springs</td>
<td>N 2248</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td>DOMESTIC MINING OTHER</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sweet Family Partnership</td>
<td></td>
<td></td>
<td></td>
<td>1750 Orchard Drive</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 3688</td>
<td>.0000</td>
<td>.00</td>
<td>Gordon Creek</td>
<td>Route #1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td>STOCKWATERING Peirce, E.E. (Jr.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 3688</td>
<td>.0000</td>
<td>.00</td>
<td>Gordon Creek</td>
<td>Route #1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td>STOCKWATERING Peirce, E.E. (Jr.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Utah Division of Water Rights
Water Right Listing

Water Right a19773

***CHANGE#: a19773 has been PRINTED!!
(WARNING: Water Rights makes NO claims as to the accuracy of this data.) RUN DATE: 02/21/2000 Page 1

CHANGE: a19773

WATER RIGHT: 91-330  CERT. NO.: 
AMENDATORY? No

RIGHT EVIDENCED BY: 91-330 (UL1850)

CHANGES: Point of Diversion [X], Place of Use [X], Nature of Use [X], Reservoir Storage [ ].

NAME: Sweet, Florence A.

ADD: 1750 Orchard Drive

CITY: Salt Lake City  STATE: UT  ZIP: 84106  INTEREST: 100%

FILING: 02/02/1996  PRIORITY: 03/17/1936  ADV BEGAN: 04/11/1996  ADV ENDED: 04/18/1996  NEWSPAPER: Sun Advocate


Status: APP  Date Verified: 03/01/1996  Initials: MJK

FLOW: 0.557 cfs  SOURCE: Underground Tunnel  COUNTY: Carbon

Applicant seeks to change the point of diversion and the place of use for this water for use in its mining operations.
at the Horizon Mine located in Sections 7, 8, 17 and 18, T13S, R8E, SLBM.
Domestic use will be for showers, restrooms, etc.

POINT(S) OF DIVERSION ----->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ---->

I POINT(S) OF DIVERSION ----->
SUPPLEMENTAL to Other Water Rights: No

IDOM: 20 Persons
USED 01/01 - 12/31

MIN: District: Carbon
USED 01/01 - 12/31

Name: Horizon

Ores: Coal

OTH: INDUSTRIAL: Coal mining operation
USED 01/01 - 12/31

OTH: INDUSTRIAL: Uses associated with
the operation of the Horizon Coal Mine

PROTESTANTS

Change#: a19773 cont.**
(WARNING: Water Rights makes NO claims as to the accuracy of this data.)

NAME: Department of Natural Resources
C/O: Division of Wildlife Resources
ADDR: 1594 West North Temple Suite 2110 Box 146301
CITY: Salt Lake City
STATE: UT
ZIPCODE: 84114-6301

NAME: Gordon Creek Water Users
C/O: c/o Ray Prettyman
ADDR: 3217 West Gordon Creek Road
CITY: Price
STATE: UT
ZIPCODE: 84501

END OF DATA

END OF DATA
Utah Division of Water Rights
Water Right Listing

Water Right a21487

***CHANGE: a21487 has been PRINTED!!
(WARNING: Water Rights makes NO claims as to the accuracy of this data.)
RUN DATE: 02/21/2000

CHANGE: a21487
WATER RIGHT: 91-330 CERT. NO.: AMENDATORY? No

RIGHT EVIDENCED BY: 91-330 (UI1850)
CHANGES: Point of Diversion [X], Place of Use [ ], Nature of Use [ ], Reservoir Storage [ ].

NAME: Sweet Family Partnership
OWNER MISC:

ADDR: 1750 Orchard Drive
CITY: Salt Lake City STATE: UT ZIP: 84106 INTEREST: 100%

NEWSPAPER: Sun Advocate
PROTEST ENDED: 10/08/1997 PROTESTED: (No) APPEL/REJ: (Approved) APPEL/REJ: 12/12/1997
PROOF DUE: 02/28/2000 EXTENSION: 02/18/1999
Status: APP Date Verified: 08/27/1997 Initials: MJK

FLOW: 0.557 cfs R/W: See HERETOFORE
SOURCE: Underground Mine Tunnel
COUNTY: Carbon

|POINT(S) OF DIVERSION --->

CHANGED AS FOLLOWS:

FLOW: 0.557 cfs
SOURCE: Mine Tunnel & Unnamed Springs (3)
COUNTY: Carbon
COM DESC: 11 miles West of Price
Point Surface:

1. S 1308 ft W 595 ft from NE cor, Sec 18, T 13S, R 8E, SLBM
   Diverting Works:
   Source:

2. S 1350 ft W 410 ft from NE cor, Sec 18, T 13S, R 8E, SLBM
   Diverting Works:
   Source:

3. S 1430 ft W 488 ft from NE cor, Sec 18, T 13S, R 8E, SLBM
   Diverting Works:
   Source:

Point Underground:

1. N 2248 ft E 2151 ft from SW cor, Sec 17, T 13S, R 8E, SLBM
   Diameter: ins. Depth: to ft.

COMMENT:

PLACE OF USE ------->

SAME AS HERETOFORE

---NW4--   --NE4--   --SW4--   --SE4--

IN N S S I I N S S I I N S S I I N S S I I

Sec 7 T 13S R 8E SLBM
Sec 8 T 13S R 8E SLBM
Sec 17 T 13S R 8E SLBM
Sec 18 T 13S R 8E SLM

NATURE OF USE

SAME AS HERETOFORE

PLACE OF USE

SAME AS HERETOFORE

SUPPLEMENTAL to Other Water Rights: No

DOM: 20 Persons
USED 01/01 - 12/31

MIN: District: Carbon County
USED 01/01 - 12/31
Name: Horizon
Ores: Coal
| OTH: INDUSTRIAL: Uses associated with the operation of the Horizon Coal Mine |
| Change#: a21487 cont.** (WARNING: Water Rights makes NO claims as to the accuracy of this data.) |

RUN DATE: 02/21/2000
Page 2

SEGREGATION HISTORY

This Change was Segregated from a19773, WRNUM: 91-330, Approval Date: 11/20/1996 under which Proof is to be submitted.

This Change as originally filed:

<table>
<thead>
<tr>
<th>FLOW IN</th>
<th>QUANTITY IN WATER USES</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFS</td>
<td>ACRE-FEET</td>
</tr>
<tr>
<td>ACREAGE</td>
<td>(ELUS)</td>
</tr>
</tbody>
</table>

END OF DATA
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, FEB
PLOT SHOWS LOCATION OF 15 POINTS OF DIV

PLOT OF ALL QUARTER(S) IN SECTION 18 TOWNSHIP 13S RAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FE
<table>
<thead>
<tr>
<th>MAP CHAR</th>
<th>WATER RIGHT</th>
<th>CFS</th>
<th>QUANTITY</th>
<th>DIAMETER</th>
<th>DEPTH</th>
<th>YEAR</th>
<th>LOG NORTH</th>
<th>NORTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>91 779</td>
<td>2.0000</td>
<td>0.00</td>
<td>Beaver Creek &amp; North Fork Gord</td>
<td>S</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S): IRRIGATION</td>
<td>State of Utah Division of Wildlife Resou 1594 West North Temple, Ste 21</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>91 3672</td>
<td>.0110</td>
<td>0.00</td>
<td>Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td>Jacob, James C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Jacob, J. Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 330</td>
<td>.5570</td>
<td>0.00</td>
<td>UGW-Tunnel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S): OTHER</td>
<td>Sweet Family Partnership</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sweet, Florence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1750 Orchard Drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1850 Beneficial Life Tower</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>a21487</td>
<td>.5570</td>
<td>0.00</td>
<td>Mine Tunnel &amp; Unnamed Springs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S): DOMESTIC MINING OTHER</td>
<td>Sweet Family Partnership</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1750 Orchard Drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>a21487</td>
<td>.5570</td>
<td>0.00</td>
<td>Mine Tunnel &amp; Unnamed Springs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S): DOMESTIC MINING OTHER</td>
<td>Sweet Family Partnership</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1750 Orchard Drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>a21487</td>
<td>.5570</td>
<td>0.00</td>
<td>Mine Tunnel &amp; Unnamed Springs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S): DOMESTIC MINING OTHER</td>
<td>Sweet Family Partnership</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1750 Orchard Drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>a21487</td>
<td>.0110</td>
<td>0.00</td>
<td>Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td>Jacob, James C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Jacob, J. Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>91 1935</td>
<td>.0110</td>
<td>0.00</td>
<td>Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2651 Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>91 1936</td>
<td>.0110</td>
<td>0.00</td>
<td>Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2651 Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>91 1937</td>
<td>.0110</td>
<td>0.00</td>
<td>Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td>Jewkes, Robert F. and Linda N.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2651 Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>91 5004</td>
<td>.0270</td>
<td>0.00</td>
<td>Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S): STOCKWATERING</td>
<td>Jacob, J. Mark and James C. Jacob</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>914 East 300 North</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>91 3670</td>
<td>.0110</td>
<td>0.00</td>
<td>Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WATER USE(S):</td>
<td>Jacob, James C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>914 East 300 North</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Address</td>
<td>Year</td>
<td>Use</td>
<td>Water Use (s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------</td>
<td>------</td>
<td>--------------</td>
<td>------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jacob, J. Mark</td>
<td>914 East 300 North</td>
<td>1938</td>
<td>.2500</td>
<td>Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1939</td>
<td>.2500</td>
<td>Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N. 261 Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1940</td>
<td>.2500</td>
<td>Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Jewkes, Robert F. and Linda N. 2651 Hiawatha Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Points of Diversion

UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, FEB
PLOT SHOWS LOCATION OF 5 POINTS OF DIV

PLOT OF ALL QUARTER(S) IN SECTION 19 TOWNSHIP 13S RAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FE
<table>
<thead>
<tr>
<th>MAP CHAR</th>
<th>WATER RIGHT</th>
<th>CFS</th>
<th>AND/OR AC-FT</th>
<th>QUANTITY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POIN DIAMETER</th>
<th>DEPTH</th>
<th>YEAR</th>
<th>LOG</th>
<th>NORTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>91 3669</td>
<td>.0110</td>
<td>.00</td>
<td>Unnamed Spring</td>
<td>WATER USE(S): Jacob, James C. Jacob, J. Mark</td>
<td>914 East 300 North</td>
<td>914 East 300 North</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>91 1473</td>
<td>.0000</td>
<td>.00</td>
<td>North Fork Gordon Creek</td>
<td>WATER USE(S): STOCKWATERING Pierce, E. E. Jr.</td>
<td>General Delivery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 353</td>
<td>.0150</td>
<td>.00</td>
<td>Unnamed Spring</td>
<td>WATER USE(S): OTHER Sweet Family Partnership Sweet, Florence</td>
<td>1750 Orchard Drive</td>
<td>1850 Beneficial Life Tower</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>91 94</td>
<td>.1500</td>
<td>.00</td>
<td>Unnamed Spring</td>
<td>WATER USE(S): OTHER Sweet Family Partnership Sweet, Florence</td>
<td>1750 Orchard Drive</td>
<td>1850 Beneficial Life Tower</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>91 1473</td>
<td>.0000</td>
<td>.00</td>
<td>North Fork Gordon Creek</td>
<td>WATER USE(S): STOCKWATERING Pierce, E. E. Jr.</td>
<td>General Delivery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Points of Diversion

UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, FEB
PLOT SHOWS LOCATION OF 10 POINTS OF DIV
PLOT OF ALL QUARTER(S) IN SECTION 20 TOWNSHIP 13S RAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FE
<table>
<thead>
<tr>
<th>MAP CHAR</th>
<th>WATER RIGHT</th>
<th>CFS</th>
<th>AND/OR AC-FT</th>
<th>SOURCE DESCRIPTION or WELL INFO POIN</th>
<th>POIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 91 3686</td>
<td>.0000</td>
<td>.00 Gordon Creek</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATER USE(S):</td>
<td></td>
<td>USA Bureau of Land Management (Price File 125 South 600 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 91 3686</td>
<td>.0000</td>
<td>.00 Gordon Creek</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATER USE(S):</td>
<td></td>
<td>USA Bureau of Land Management (Price File 125 South 600 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 91 348</td>
<td>.0000</td>
<td>.00 Gordon Creek</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATER USE(S): STOCKWATERING</td>
<td></td>
<td>Frandsen, Pete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 91 348</td>
<td>.0000</td>
<td>.00 Gordon Creek</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATER USE(S): STOCKWATERING</td>
<td></td>
<td>Frandsen, Pete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 3682</td>
<td>.0000</td>
<td>.00 Gordon Creek</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATER USE(S): STOCKWATERING</td>
<td></td>
<td>R. L. Bird Company</td>
<td>2069 Yale Avenue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 3682</td>
<td>.0000</td>
<td>.00 Gordon Creek</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATER USE(S): STOCKWATERING</td>
<td></td>
<td>R. L. Bird Company</td>
<td>2069 Yale Avenue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 91 2697</td>
<td>.0000</td>
<td>.00 Gordon Creek</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATER USE(S):</td>
<td></td>
<td>Marakis, John (Estate)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 91 2697</td>
<td>.0000</td>
<td>.00 Gordon Creek</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATER USE(S):</td>
<td></td>
<td>Marakis, John (Estate)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 91 4095</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATER USE(S): STOCKWATERING</td>
<td></td>
<td>Jacob, James C.</td>
<td>914 East 300 North</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jacob, J. Mark</td>
<td>914 East 300 North</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 91 4096</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATER USE(S): STOCKWATERING</td>
<td></td>
<td>Jacob, James C.</td>
<td>914 East 300 North</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jacob, J. Mark</td>
<td>914 East 300 North</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, FEB
PLOT SHOWS LOCATION OF 16 POINTS OF DIV

PLOT OF ALL QUARTER(S) IN SECTION 21 TOWNSHIP 13S RAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FE
## UTAH DIVISION OF WATER RIGHTS

### NWPLAT POINT OF DIVERSION LOCATION PRO

<table>
<thead>
<tr>
<th>MAP CHAR</th>
<th>WATER RIGHT</th>
<th>QUANTITY AND/OR AC-FT</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POIN</th>
<th>DIAMETER</th>
<th>DEPTH</th>
<th>YEAR</th>
<th>LOG</th>
<th>NORTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 91 4099</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>WATER USE(S): STOCKWATERING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jacob, James C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jacob, J. Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 91 1676</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Marakas, John (Estate)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 91 1675</td>
<td>.0000</td>
<td>.00 Coal Canyon Creek</td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Marakas, John (Estate)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 3687</td>
<td>.0000</td>
<td>.00 Coal Canyon Creek</td>
<td>WATER USE(S): STOCKWATERING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jacob, James C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jacob, J. Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 3687</td>
<td>.0000</td>
<td>.00 Coal Canyon Creek</td>
<td>WATER USE(S): STOCKWATERING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jacob, James C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jacob, J. Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 91 3683</td>
<td>.0000</td>
<td>.00 Gordon Creek</td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oman, Milton A.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 91 3683</td>
<td>.0000</td>
<td>.00 Gordon Creek</td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oman, Milton A.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 91 398</td>
<td>.0000</td>
<td>.00 Coal Canyon Creek</td>
<td>WATER USE(S): STOCKWATERING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>State of Utah Division of Wildlife Resou 1594 West North Temple, Ste 21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 91 257</td>
<td>.0000</td>
<td>.00 Gordon Creek</td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>State of Utah Division of Wildlife Resou 1594 West North Temple, Ste 21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 91 3681</td>
<td>.0000</td>
<td>.00 Gordon Creek</td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jacob, James C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jacob, J. Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 91 3681</td>
<td>.0000</td>
<td>.00 Gordon Creek</td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jacob, James C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jacob, J. Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 91 777</td>
<td>1.5000</td>
<td>346.40 North Fork Gordon Creek</td>
<td>WATER USE(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jacob, James C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jacob, J. Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record</td>
<td>Water Use (s)</td>
<td>Description</td>
<td>Rate</td>
<td>Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>---------------</td>
<td>-------------</td>
<td>------</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Stockwatering</td>
<td>North Fork Gordon Creek N 950</td>
<td>.1500</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Irrigation</td>
<td>North Fork Gordon Creek N 950</td>
<td>.0000</td>
<td>29.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Irrigation</td>
<td>Beaver Creek &amp; North Fork Gordon N 950</td>
<td>2.0000</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Stockwatering</td>
<td>Coal Canyon Creek</td>
<td>.0000</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, FEB
PLOT SHOWS LOCATION OF 1 POINTS OF DIV

PLOT OF ALL QUARTER(S) IN SECTION 1 TOWNSHIP 13S RAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FE

NORTH

*******************************************************************************

2/9/00 4:40 PM
<table>
<thead>
<tr>
<th>MAP WATER CHAR RIGHT</th>
<th>QUANTITY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POIN DIAMETER</th>
<th>DEPTH</th>
<th>YEAR LOG NORTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 91 1413</td>
<td>.0000</td>
<td>Left Hand Fork of Jump Creek</td>
<td></td>
<td>.00</td>
<td></td>
</tr>
</tbody>
</table>

WATER USE(S): DOMESTIC STOCKWATERING
Helper State Bank
General Delivery
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, FEB
PLOT SHOWS LOCATION OF 4 POINTS OF DIV

PLOT OF ALL QUARTER(S) IN SECTION 12 TOWNSHIP 13S RAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FE
<table>
<thead>
<tr>
<th>MAP WATER CHAR RIGHT</th>
<th>QUANTITY</th>
<th>SOURCE DESCRIPTION or WELL INFO</th>
<th>POIN DIAMETER</th>
<th>DEPTH</th>
<th>YEAR</th>
<th>LOG</th>
<th>NORTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 91 1414</td>
<td>.0000</td>
<td>.00 Shingle Fork of Beaver Creek</td>
<td>Helper State Bank</td>
<td>General Delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>WATER USE(S): STOCKWATERING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 91 1414</td>
<td>.0000</td>
<td>.00 Shingle Fork of Beaver Creek</td>
<td>Helper State Bank</td>
<td>General Delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>WATER USE(S): STOCKWATERING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 1407</td>
<td>.0000</td>
<td>.00 Beaver Creek</td>
<td>Helper State Bank</td>
<td>General Delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>WATER USE(S): STOCKWATERING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 91 1405</td>
<td>.0000</td>
<td>.00 Spring Stream</td>
<td>Helper State Bank</td>
<td>General Delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>WATER USE(S): DOMESTIC STOCKWATERING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAP CHAR</td>
<td>WATER RIGHT</td>
<td>QUANTITY</td>
<td>SOURCE DESCRIPTION</td>
<td>WELL INFO POINT OF DIVERSION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>----------</td>
<td>--------------------</td>
<td>-------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 91 1914</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 91 1915</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 91 1916</td>
<td>.0110</td>
<td>.00 Unnamed Spring</td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 91 1430</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 91 1431</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 91 1429</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 91 1430</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 91 1431</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 91 1429</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 1426</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 1426</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 1427</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 91 1427</td>
<td>.0000</td>
<td>.00 Unnamed Stream</td>
<td>Stamatakis, Pete Jr.</td>
<td>1111 South 450 West</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED WED, FEB
PLOT SHOWS LOCATION OF 24 POINTS OF DIV
PLOT OF ALL QUARTER(S) IN SECTION 6 TOWNSHIP 13S RAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 1000 FE

NORTH

0

1

2

3

4

*******************************************************************************
0 1 2 3 4
*******************************************************************************

2/9/00 4:25 PM
<table>
<thead>
<tr>
<th>ID</th>
<th>Date</th>
<th>Use</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>91 1428</td>
<td>.0000</td>
<td>WATER USE(S):</td>
<td>Stamatakis, Pete Jr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.00 Unnamed Stream</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>2</td>
<td>91 1428</td>
<td>.0000</td>
<td>WATER USE(S):</td>
<td>Stamatakis, Pete Jr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.00 Unnamed Stream</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>3</td>
<td>91 1438</td>
<td>.0220</td>
<td>WATER USE(S):</td>
<td>Stamatakis, Pete Jr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>3</td>
<td>91 1439</td>
<td>.0220</td>
<td>WATER USE(S):</td>
<td>Stamatakis, Pete Jr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>3</td>
<td>91 1440</td>
<td>.0220</td>
<td>WATER USE(S):</td>
<td>Stamatakis, Pete Jr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>4</td>
<td>91 1435</td>
<td>.0220</td>
<td>WATER USE(S):</td>
<td>Stamatakis, Pete Jr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>4</td>
<td>91 1436</td>
<td>.0220</td>
<td>WATER USE(S):</td>
<td>Stamatakis, Pete Jr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>4</td>
<td>91 1437</td>
<td>.0220</td>
<td>WATER USE(S):</td>
<td>Stamatakis, Pete Jr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.00 Unnamed Spring</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>4</td>
<td>91 1432</td>
<td>.0000</td>
<td>WATER USE(S):</td>
<td>Stamatakis, Pete Jr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.00 Burnt Canyon Stream</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>4</td>
<td>91 1433</td>
<td>.0000</td>
<td>WATER USE(S):</td>
<td>Stamatakis, Pete Jr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.00 Burnt Canyon Stream</td>
<td>1111 South 450 West</td>
</tr>
<tr>
<td>4</td>
<td>91 1434</td>
<td>.0000</td>
<td>WATER USE(S):</td>
<td>Stamatakis, Pete Jr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.00 Burnt Canyon Stream</td>
<td>1111 South 450 West</td>
</tr>
</tbody>
</table>
DEED AND ASSIGNMENT

HORIZON MINING, LLC, a Utah limited liability company, having an address of HC35, Box 370, Helper, Utah 84526 ("Grantor"), for $10.00 (TEN DOLLARS) and other good and valuable consideration, hereby assigns, transfers, conveys and warrants against all claiming by, through, or under it to LODESTAR ENERGY, INC., a Delaware corporation, having an address of 333 West Vine Street, Suite 1700, Lexington, Kentucky 40507 ("Grantee"), its successors and assigns, the Federal Coal Leases, Hidden Splendor Lease, Property Rights and Water Rights, located in Carbon County, Utah, and described in Exhibit A attached hereto, along with such tracts of land and real property, coal, coal reserves, coal inventory, oil, gas and other minerals located in, on or under the land, water rights, buildings, fixtures and improvements on the land and any other easements, rights of way and related facilities, roads, haulways, leases, subleases, rents, issues, profits, income, tenements, hereditaments, possessory rights, claims, including mining claims, privileges and appurtenances belonging to, used, or enjoyed with such land, and all of the water and water rights, including all of the rights, privileges, easements and appurtenances belonging to and connected in any manner with the water and water rights owned or held by Grantor (collectively the "Property").

This conveyance is subject to the terms of the Asset Purchase Agreement between the parties dated July 19, 1999. The representations and warranties contained in such Agreement relating to the Property are incorporated herein by this reference.

This Deed and Assignment does not supersede or waive any contractual remedy between Grantor and Grantee. Such remedies are in addition to and are not merged into this instrument.

Grantor shall, in addition to this instrument, execute such additional instruments or documents as necessary to complete the assignment, transfer and conveyance of the property in accordance with applicable federal, state and local laws or regulations.

This Deed and Assignment is intended to and does convey any right, title or interest Grantor may hereafter acquire in the Property.

The undersigned Grantor hereby acknowledges and affirms to the below named notary public that (1) he appeared before such notary public, holds the position or title set forth below and, on behalf of Grantor, by proper authority, either executed the foregoing document before such notary public or acknowledged to such notary public that the undersigned Grantor executed the foregoing document, and that (2) the foregoing document was the act of such limited liability company for the purpose stated in it.
DATED this 14th day of July, 1999.

GRANTOR:

HORIZON MINING, LLC

BY

STATE OF Utah
COUNTY OF Salt Lake

On this 14th day of July, 1999, personally appeared before me personally known to me or proved to me on the basis of satisfactory evidence, and who, being by me duly sworn, did say that he is the

President

of Horizon Mining, LLC, and that said document was signed by him in behalf of said limited liability company by authority of members and said

President

acknowledged to me that said limited liability company executed the same.

Julie A. McKenzie
NOTARY PUBLIC
Residing at: Davis County

My Commission Expires
May 25, 2001
STATE OF UTAH
PROPERTY RIGHTS


WATER RIGHTS

1. Water Rights Lease and Sale Agreement between Mountain Coal Company and E.E. Pierce dated April 7, 1993, assigned to Horizon Coal Corporation, June 18, 1996, assignment ratified and consented to by Agnes K. Pierce and Billy Troy Kennick on June 18, 1996.

2. Water Lease Agreement and Memorandum of Water Lease Agreement between Florence A. Sweet and Horizon Coal Corporation dated May 1, 1995. Subject to application for permanent change of water, filed by Richard A. Sweet, approved by Utah State Engineer, to add springs as points of diversion to provide water for Horizon Mine, approximately .557 cfs total from mine tunnel and three springs (approved November 20, 1995).
Chapter 3, Operation and Reclamation Plan
Hidden Splendor Resources, Inc. - Horizon Mine

APPENDIX 3-6

UPDES PERMIT
April 24, 2003

CERTIFIED MAIL
(Return Receipt Requested)

Mr. Alexander H. Walker, III
Hidden Splendor Resources, Inc.
Horizon Mine
57 West 200 South, Suite 400
Salt Lake City, UT 84101

Dear Mr. Walker, III:

Subject: UPDES General Coal Mining Permit No. UTG040019, Hidden Splendor Resources, Inc. - Horizon Mine

Enclosed is your copy of the signed general permit. Coverage becomes effective on May 1, 2003 and all the requirements and conditions of the permit are in effect at that time. Preprinted discharge Monitoring Report forms (EPA Form 3320-1), for self-monitoring and reporting requirements as specified in the permit, will be sent to you as soon as possible.

As the agency charged with the administration of issuing UPDES Permits, we are continuously looking for ways to improve our quality of service to you. In an effort to improve the State UPDES permitting process we are asking for your input. Since our customer permittee base is limited, your input is important. Please take a few moments to complete the enclosed questionnaire. The results will be used to improve our quality and responsiveness to our permittees and give us feedback on customer satisfaction. We will address the issues you have identified on an ongoing basis.

A fee schedule was included in the Utah Department of Environmental Quality budget appropriation request at the direction of the Legislature and in accordance with Utah code annotated 19-1-201. The fee schedule, as approved by the Legislature, includes a charge for the issuance of a UPDES permit. Please remit $1,800.00 within 30 days of receipt of this letter to:

Department of Environmental Quality
Division of Water Quality
ATTN: Stacy Carroll
P.O. Box 144870
Salt Lake City, Utah 84114-4870
April 23, 2003

CERTIFIED MAIL
(Return Receipt Requested)

Hidden Splendor Resources, Inc.
Alexander H. Walker, III
57 West 200 South, Suite 400
Salt Lake City, UT 84101

Subject: Transfer of UPDES Permit #UTG040019, Horizon Mine

Dear Mr. Walker:

This correspondence is to acknowledge your April 16th 2003 letter and the completed Statement of Acceptance form informing this office that you are the new owner of a facility that is under the purview of the Utah Pollutant Discharge Elimination System (UPDES). The UPDES permit and our permit files have been changed accordingly. All of the requirements and conditions of the permit are in full force and effect. You should receive a copy of the general permit within 30 days.

If you should have any questions regarding this matter, please call Chris Imbrogno at (801) 538-6628 or myself at (801) 538-6779.

Sincerely,

Gayle Smith, P.E., Manager
Permits and Compliance Section

CI:ci

cc: Linda Himmelbauer, U.S. EPA Region VIII
STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH

AUTHORIZATION TO DISCHARGE UNDER THE
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM
(UPDES)

GENERAL PERMIT FOR COAL MINING

In compliance with provisions of the Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated ("UCA") 1953, as amended (the "Act"),

Hidden Splender Resources, Inc. – Horizon Mine

as identified in the application No. UTG040019 is authorized to discharge from all outfall(s) to receiving waters named:

Jewkes Creek

in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions as set forth herein.

This permit shall become effective on May 1, 2003.

This permit and the authorization to discharge shall expire at midnight, April 30, 2008.

Signed this 28th day of April, 2003.

Don A. Ostler

Executive Secretary

Utah Water Quality Board

INCORPORATED

APR 0 2 2004

DIV OF OIL GAS & MINING
TABLE OF CONTENTS

Cover Sheet--Issuance and Expiration Dates

I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
   A. Criteria for Inclusion in the General Permit for Coal Mining
   B. Notice of Intent for General Permit for Coal Mining
   C. Description of Discharge Point(s)
   D. Narrative Standard
   E. Specific Limitations and Self-monitoring Requirements
   F. Storm Water Requirements

II. MONITORING, RECORDING AND REPORTING REQUIREMENTS
   A. Representative Sampling
   B. Monitoring Procedures
   C. Penalties for Tampering
   D. Reporting of Monitoring Results
   E. Compliance Schedules
   F. Additional Monitoring by the Permittee
   G. Records Contents
   H. Retention of Records
   I. Twenty-four Hour Notice of Noncompliance Reporting
   J. Other Noncompliance Reporting
   K. Inspection and Entry

III. COMPLIANCE RESPONSIBILITIES
   A. Duty to Comply
   B. Penalties for Violations of Permit Conditions
   C. Need to Halt or Reduce Activity not a Defense
   D. Duty to Mitigate
   E. Proper Operation and Maintenance
   F. Removed Substances
   G. Bypass of Treatment Facilities
   H. Upset Conditions
   I. Toxic Pollutants
   J. Changes in Discharge of Toxic Substances
   K. Industrial Pretreatment

IV. GENERAL REQUIREMENTS
   A. Planned Changes
   B. Anticipated Noncompliance
   C. Permit Actions
   D. Duty to Reapply
   E. Duty to Provide Information
   F. Other Information
   G. Signatory Requirements
   H. Penalties for Falsification of Reports
   I. Availability of Reports
   J. Oil and Hazardous Substance Liability
   K. Property Rights
   L. Severability
   M. Transfers
   N. State Laws
   O. Water Quality-Reopener Provision
   P. Toxicity Limitation-Reopener Provision

V. GLOSSARY OF TERMS
   A. Definitions
Part I

Effluent Limitations and Monitoring Requirements

A. Criteria for Inclusion in the General Permit for Coal Mining

This General permit shall apply only to the discharge of treated wastewater from:

Coal mining operations either new or existing in Utah which include or will include in part, or in whole, alkaline mine water drainage, storm water runoff from coal preparation plant associated areas, active mining areas, and post mining areas until the performance bond is released. The total dissolved solids (TDS) is limited to a concentration of 500 mg/L at all discharge points or one ton per day as a sum from all mine water or decant operations.

B. Notice of Intent for a General Permit for Coal Mining

Any facility which desires coverage under this general permit for coal mining and meets the requirements of Part I.A. can be issued general permit coverage by submitting a notice of intent ( NOI) to the Division of Water Quality.

The NOI shall include:

1. A completed Environmental Protection Agency Application (EPA Form 3510-1) or equivalent information.

2. Location and identification number (such as 001, 002, etc.) of each existing discharge and/or proposed discharge point(s). This includes the latitude and longitude to the nearest 15 seconds and the name of the receiving water(s).

3. A description of the source of the wastewater for each discharge point.

4. A description of the treatment given or proposed for the wastewater at each discharge point and if necessary a justification of why no treatment is required.

5. Flow characteristics for each discharge point such as whether flow is or will be continuous or intermittent and indicate projected and/or actual average and maximum flows in gpd.

6. Data for each discharge point for the following parameters:

   a. Biochemical demand (BOD).
   b. Chemical oxygen demand (COD).
   c. Total organic carbon (TOC).
   d. Total suspended solids (TSS).
   e. Flow.
   f. Ammonia (as N).
   g. Oil and grease.
   h. Temperature.
   i. pH.
   j. Total dissolved solids (TDS).
   k. Total iron and metals, cyanide, phenols located in Table III UAC R317-8-3.12.
   l. For discharge(s) of mine water or mine water and mine water mixed with surface runoff one acute whole efficiency toxicity test using two species and full dilution series (five dilutions plus a control). Sediment pond discharges which have only surface runoff do not require WET tests.
   m. Date and time of sampling for each parameter.
n. Date and time of analysis for each parameter.
o. Utah certified laboratory which has completed the analysis for each parameter.

For each discharge point the presence or absence of any toxic and/or priority pollutants as listed Table II, UAC R317-8-3.13.

C. Description of Discharge Point(s).

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit is a violation of the Act and may be subject to penalties under the Act. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the Act.

<table>
<thead>
<tr>
<th>Outfall Number</th>
<th>Location of Discharge Point(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Sediment Pond discharge to Jewkes Creek to North Fork of Gordon Creek to Price River. Latitude 39°41'37&quot;, Longitude 111°02'58&quot;.</td>
</tr>
<tr>
<td>002</td>
<td>Mine discharge to pipe to Jewkes Creek to North Fork of Gordon. Latitude 39°41'39&quot;, Longitude 111°02'56&quot;.</td>
</tr>
</tbody>
</table>

D. Narrative Standard.

It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum or other nuisances such as color, odor or taste, or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by bioassay or other tests performed in accordance with standard procedures.

E. Specific Limitations and Self-monitoring Requirements.

1. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall(s) 001, 002. Such discharges shall be limited and monitored by the permittee as specified below:

<table>
<thead>
<tr>
<th>Effluent Characteristics</th>
<th>Discharge Limitations a/</th>
<th>Monitoring Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average</td>
<td>Daily</td>
</tr>
<tr>
<td>Flow, MGD</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Oil &amp; Grease, mg/L</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Total Iron, mg/L</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Total Suspended Solids, mg/L</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>Total Dissolved Solids, mg/L</td>
<td>500 d/</td>
<td>N/A</td>
</tr>
</tbody>
</table>

The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units in any sample and shall be monitored monthly by a grab sample.

There shall be no visible sheen or floating solids or visible foam in other than trace amounts.

There shall be no discharge of sanitary wastes or process water from coal preparation plants.
See Definitions, Part I.A for definition of terms.

For intermittent discharge, the duration of the discharge shall be reported.

If a visual sheen for oil and grease is observed then a grab sample must be taken immediately and the results shall not exceed 10 mg/L.

If each outfall cannot achieve a 30-day average of 500 mg/L, then the permittee is limited to one ton (2000 lbs) per day as a sum from all outfalls.

These samples may also be a composite sample

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): in the final effluent before mixing with the receiving water.

Any discharge or increase in the volume of a discharge caused by precipitation within any 24 hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) at outfall(s) 001 may comply with the following limitations instead of the otherwise applicable limitations for TSS and pH in Part I.E.1:

<table>
<thead>
<tr>
<th>Effluent Characteristics</th>
<th>Daily Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Settleable Solids</td>
<td>0.5 ml/L</td>
</tr>
<tr>
<td>pH</td>
<td>6.5 to 9.0 S.U.</td>
</tr>
</tbody>
</table>

In addition to the monitoring requirements specified under Part I.E.1 all effluent samples collected during storm water discharge events shall also be analyzed for settleable solids. Such analyses shall be conducted monthly by grab samples.

Any discharge or increase in the volume of a discharge caused by precipitation within any 24 hour period greater than the 10-year, 24 hour precipitation event (or snowmelt of equivalent volume) at outfall(s) 001 may comply with the following limitations instead of the otherwise applicable limitations:

The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units. However as stated in Part I.E.3, all effluent samples collected during storm-water discharge events shall be analyzed for settleable solids and parameters identified under Part I.E.1.

The operator shall have the burden of proof that the discharge or increase in discharge was caused by the applicable precipitation event described in Parts I.E.3 and 4. The alternate limitations in Parts I.E.3 and 4 shall not apply to treatment systems that treat underground mine water only.

Storm Water Requirements. It has been determined that Horizon Mine has a regulated storm water discharge as per UAC R317-8-3.9., therefore, the following permit conditions governing storm water discharges apply.

1. Coverage of This Section.

a. Discharges Covered Under This Section. The requirements listed under this section shall
apply to storm water discharges from Horizon Mine, subject to effluent limitations listed in Part I.E. of this permit.

1) **Site Coverage.** Storm water discharges from the following portions of Horizon Mine may be eligible for this permit: haul roads (nonpublic roads on which coal or coal refuse is conveyed), access roads (nonpublic roads providing light vehicular traffic within the facility property and to public roadways), railroad spurs, sidings, and internal haulage lines (rail lines used for hauling coal within the facility property and to offsite commercial railroad lines or loading areas), conveyor belts, chutes, and aerial tramway haulage areas (areas under and around coal or refuse conveyor areas, including transfer stations), equipment storage and maintenance yards, coal handling buildings and structures, and inactive coal mines and related areas (abandoned and other inactive mines, refuse disposal sites and other mining-related areas on private lands).

2. **Prohibition of Non-storm Water Discharges.**
   a. The following non-storm water discharges may be authorized by this permit provided the non-storm water component of the discharge is in compliance with this section; fire fighting activities; fire hydrant flushings; potable water sources including waterline flushings; drinking fountain water; irrigation drainage; lawn watering; routine external building washdown water where detergents or other compounds have not been used in the process; pavement washwaters where spills or leaks of toxic or hazardous materials (including oils and fuels) have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated compressor condensate; uncontaminated springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.

3. **Storm Water Pollution Prevention Plan Requirements.** Most of the active coal mining-related areas, described in paragraph 1. above, are subject to sediment and erosion control regulations of the U.S. Office of Surface Mining (OSM) that enforces the Surface Mining Control and Reclamation Act (SMCRA). OSM has granted authority to the Utah Division of Oil, Gas and Mining (DOGM) to implement SMCRA through State SMCRA regulations. All SMCRA requirements regarding control of erosion, siltation and other pollutants resulting from storm water runoff, including road dust resulting from erosion, shall be primary requirements of the pollution prevention plan and shall be included in the contents of the plan directly, or by reference. Where determined to be appropriate for protection of water quality, additional sedimentation and erosion controls may be warranted.

   a. **Contents of Plan.** The plan shall include at a minimum, the following items:

   1) **Pollution Prevention Team.** Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team that are responsible for developing the storm water pollution prevention plan and assisting the facility manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.

   2) **Description of Potential Pollutant Sources.** Each plan shall provide a description of potential sources that may reasonably be expected to add significant amounts...
of pollutants to storm water discharges or that may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials that may potentially be significant pollutant sources. Each plan shall include, at a minimum:

a) **Deadlines for Plan Preparation and Compliance**
   Horizon Mine shall prepare and implement a plan in compliance with the provisions of this section within 270 days of the effective date of this permit.

b) **Keeping Plans Current**
   Horizon Mine shall amend the plan whenever there is a change in design, construction, operation, or maintenance, that has a significant effect on the potential for the discharge of pollutants to the waters of the State or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified by the plan, or in otherwise achieving the general objectives of controlling pollutants in storm water discharges associated with the activities at the mine.

c) **Drainage.**

   (1) A site map, such as a drainage map required for SMCRA permit applications, that indicate drainage areas and storm water outfalls. These shall include but not be limited to the following:

   (a) Drainage direction and discharge points from all applicable mining-related areas described in paragraph 1.a(1). (Site Coverage) above, including culvert and sump discharges from roads and rail beds and also from equipment and maintenance areas subject to storm runoff of fuel, lubricants and other potentially harmful liquids.

   (b) Location of each existing erosion and sedimentation control structure or other control measures for reducing pollutants in storm water runoff.

   (c) Receiving streams or other surface water bodies.

   (d) Locations exposed to precipitation that contain acidic spoil, refuse or unreclaimed disturbed areas.

   (e) Locations where major spills or leaks of toxic or hazardous pollutants have occurred.

   (f) Locations where liquid storage tanks containing potential pollutants, such as caustics, hydraulic fluids and lubricants, are exposed to precipitation.

   (g) Locations where fueling stations, vehicle and equipment maintenance areas are exposed to precipitation.
PART I
Permit No. UTG040000

(h) Locations of outfalls and the types of discharges contained in the drainage areas of the outfalls.

(2) For each area of the facility that generates storm water discharges associated with the mining-related activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow, and an identification of the types of pollutants that are likely to be present in storm water discharges associated with the activity. Factors to consider include the toxicity of the pollutant; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified.

d) Inventory of Exposed Materials. An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water method and location of onsite storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.

e) Spills and Leaks. A list of significant spills and leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility beginning 3 years prior to the effective date of this permit. Such list shall be updated as appropriate during the term of the permit.

f) Sampling Data. A summary of any existing discharge sampling data describing pollutants in storm water discharges from the portions of Horizon Mine covered by this permit, including a summary of any sampling data collected during the term of this permit.

g) Risk Identification and Summary of Potential Pollutant Sources. A narrative description of the potential pollutant sources from the following activities: truck traffic on haul roads and resulting generation of sediment subject to runoff and dust generation; fuel or other liquid storage; pressure lines containing slurry, hydraulic fluid or other potential harmful liquids; and loading or temporary storage of acidic refuse or spoil. Specific potential pollutants shall be identified where known.

3) Measures and Controls. Horizon Mine shall develop a description of storm water management controls appropriate for the facility and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at Horizon Mine. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls.
a) **Good Housekeeping.** Good housekeeping requires the maintenance of areas that may contribute pollutants to storm water discharges in a clean, orderly manner. These are practices that would minimize the generation of pollutants at the source or before it would be necessary to employ sediment ponds or other control measures at the discharge outlets. Where applicable, such measures or other equivalent measures would include the following: sweepers and covered storage to minimize dust generation and storm runoff; conservation of vegetation where possible to minimize erosion; watering of haul roads to minimize dust generation; collection, removal, and proper disposal of waste oils and other fluids resulting from vehicle and equipment maintenance; or other equivalent measures.

b) **Preventive Maintenance.** A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems. Where applicable, such measures would include the following: removal and proper disposal of settled solids in catch basins to allow sufficient retention capacity; periodic replacement of siltation control measures subject to deterioration such as straw bales; inspections of storage tanks and pressure lines for fuels, lubricants, hydraulic fluid or slurry to prevent leaks due to deterioration or faulty connections; or other equivalent measures.

c) **Spill Prevention and Response Procedures.** Areas where potential spills that can contribute pollutants to storm water discharges can occur, and their accompanying drainage points shall be identified clearly in the storm water pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures for cleaning up spills shall be identified in the plan and made available to the appropriate personnel. The necessary equipment to implement a clean up shall be available to personnel.

d) **Inspections.** In addition to or as part of the comprehensive site evaluation required under paragraph 3.a.(4) of this section, qualified facility personnel shall be identified to inspect designated areas of the facility at appropriate intervals specified in the plan. The following shall be included in the plan:

(1) **Active Mining-Related Areas and Those Inactive Areas Under SMCRA Bond Authority.** The plan shall require quarterly inspections by the facility personnel for areas of the facility covered by pollution prevention plan requirements. This inspection interval corresponds with the quarterly inspections for the entire facility required to be provided by SMCRA authority inspectors for all mining-related areas under SMCRA authority, including sediment and erosion control measures. Inspections by the facility representative may be done at the same time as the mandatory inspections performed by SMCRA inspectors.
Records of inspections of the SMCRA authority facility representative shall be maintained.

(2) **Inactive Mining-Related Areas Not Under SMCRA Bond.** The plan shall require annual inspections by the facility representative except in situations referred to in paragraph 3.a.(4)(d) below.

(3) **Inspection Records.** The plan shall require that inspection records of the facility representative and those of the SMCRA authority inspector shall be maintained. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections.

e) **Employee Training.** Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. The pollution prevention plan shall identify periodic dates for such training.

f) **Record keeping and Internal Reporting Procedures.** A description of incidents (such as spills, or other discharges) along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.

g) **Non-storm Water Discharges.**

(1) **Certification.** The plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges such as drainage from underground portions of inactive mines or floor drains from maintenance or coal handling buildings. The certification shall include the identification of potential significant sources of non-storm water discharges at the site, a description of the results of any test and/or evaluation, a description of the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with Part IV.G.4. of this permit.

(2) **Exceptions.** Except for flows from fire fighting activities, authorized sources of non-storm water listed in Part I.F.2.a. that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.
PART I

Incorporated

P.O. Box 1234
Div. of Mining & Energy

(3) Failure to Certify. If Horizon Mine is unable to provide the certification required (testing or other evaluation for non-storm water discharges), the Executive Secretary must be notified within 180 days after the effective date of this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water discharges; the results of such test or other relevant observations; potential sources of non-storm water to the storm discharge lines; and why adequate tests for such storm discharge lines were not feasible. Non-storm water discharges to waters of the State that are not authorized by a UPDES permit are unlawful, and must be terminated.

h) Sediment and Erosion Control. The plan shall identify areas that, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion and reduce sediment concentrations in storm water discharges. As indicated in paragraph I.F.3. above, SMCRA requirements regarding sediment and erosion control measures are primary requirements of the pollution prevention plan for mining-related areas subject to SMCRA authority. The following sediment and erosion control measures or other equivalent measures, should be included in the plan where reasonable and appropriate for all areas subject to storm water runoff:

(1) Stabilization Measures. Interim and permanent stabilization measures to minimize erosion and lessen amount of structural sediment control measures needed, including: mature vegetation preservation; temporary seeding; permanent seeding and planting; temporary mulching, matting, and netting; sod stabilization; vegetative buffer strips; temporary chemical mulch, soil binders; and soil palliatives; nonacidic road surfacing material; and protective trees.

(2) Structural Measures. Structural measures to lessen erosion and reduce sediment discharges, including: silt fences; earth dikes; straw dikes; gradient terraces; drainage swales; sediment traps; pipe slope drains; porous rock check dams; sedimentation ponds; riprap channel protection; capping of contaminated sources; and physical/chemical treatment of storm water.

Management of Flow. The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (other than those as sediment and erosion control measures listed above) used to manage storm water runoff in a manner that reduces pollutants in storm water runoff from the site. The plan shall provide that the measures, which the permittee determines to be reasonable and appropriate, shall be implemented and maintained. Appropriate measures may include: discharge diversions; drainage/storm water conveyances; runoff dispersion; sediment control and collection; vegetation/soil stabilization; capping of contaminated sources; treatment; or other equivalent measures.
4) Comprehensive Site Compliance Evaluation. Qualified personnel shall conduct site compliance evaluations at intervals specified in the plan, but in no case less than once a year. Such evaluations shall provide:

a) Areas contributing to a storm water discharge associated with coal mining-related areas shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. These areas include haul and access roads; railroad spurs, sidings, and internal haulage lines; conveyor belts, chutes and aerial tramways; equipment storage and maintenance yards; coal handling buildings and structures; and inactive mines and related areas. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures, as indicated in paragraphs 3.a.(3)(h) and 3.a.(3)(i) above and where identified in the plan, shall be observed to ensure that they are operating correctly. A visual evaluation of any equipment needed to implement the plan, such as spill response equipment, shall be made.

b) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan, in accordance with paragraph 3.a.(2) of this section, and pollution prevention measures and controls identified in the plan, in accordance with paragraph 3.a.(3) of this section, shall be revised as appropriate within 2 weeks of such evaluation and shall provide for implementation of any changes to the plan in a timely manner. For inactive mines, such revisions may be extended to a maximum of 12 weeks after the evaluation.

c) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with paragraph 3.a.(4)(b) above shall be made and retained as part of the storm water pollution prevention plan for at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with Part IV.G.4. (Signatory Requirements) of this permit.

d) Where compliance evaluation schedules overlap with inspections required under 3.a.(3)(d), the compliance evaluation may be conducted in place of one such inspection. Where annual site compliance evaluations are shown in the plan to be impractical for inactive mining sites due to the remote location and inaccessibility of the site, site inspections required under this part shall be conducted at appropriate intervals specified in the plan, but, in no case less than once in 3 years.

4. Numeric Effluent Limitations. There are no additional numeric effluent limitations beyond those described in Part I.E. of this permit.
5. Monitoring and Reporting Requirements.

a. **Benchmark Analytical Monitoring Requirements.** Horizon Mine must monitor their storm water discharges associated with industrial activity at least quarterly (4 times per year) during years 2 and 4 of the permit cycle except as provided in paragraphs 5.a.(3) (Sampling Waiver), 5.a.(4) (Representative Discharge), and 5.a.(5) (Alternative Certification). Horizon Mine is required to monitor their storm water discharges for the pollutants of concern listed in Table E. below. Reports must be made in accordance with 5.b. (Reporting). In addition to the parameters listed in Table E. below, Horizon Mine measurements or estimates (in inches) of the storm event that generated the sampled runoff; the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; and an estimate of the total volume (in gallons) of the discharge sampled.

The results of benchmark monitoring are primarily for Horizon Mine’s use to determine the overall effectiveness of the SWPPP in controlling the discharge of pollutants to receiving waters. Benchmark values are not viewed as permit limitations. An exceedance of a benchmark value does not, in and of itself, constitute a violation of this permit. While exceedance of a benchmark value does not automatically indicate a violation of a water quality standard has occurred, it does signal that modifications to the SWPPP or more specific pollution prevention controls may be necessary.

<table>
<thead>
<tr>
<th>Pollutants of Concern</th>
<th>Cut-Off Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Recoverable Aluminum</td>
<td>0.75 mg/L</td>
</tr>
<tr>
<td>Total Recoverable Iron</td>
<td>1.0 mg/L</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>100 mg/L</td>
</tr>
</tbody>
</table>

1) **Monitoring Periods.** Horizon Mine shall monitor samples collected during the sampling periods of: January through March, April through June, July through September, and October through December during the second and fourth years of this permit cycle.

2) **Sample Type.** A minimum of one grab sample shall be taken. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. The required 72-hour storm event interval is waived where the preceding measurable storm event did not result in a measurable discharge from the facility. The required 72-hour storm event interval may also be waived where Horizon Mine documents that less than a 72-hour interval is representative for local storm events during the season when sampling is being conducted. The grab sample shall be taken during the first 30 minutes of the discharge. If the collection of a grab sample during the first 30 minutes is impracticable, a grab sample can be taken during the first hour of the discharge, and the discharger shall submit with the monitoring report a description of why a grab sample during the first 30 minutes was impracticable. If storm water discharges associated with industrial activity commingle with process or nonprocess water, then where practicable permittees must attempt to sample the storm water discharge before it mixes with the non-storm water discharge.
PART I
Permit No. UTG040000

3) Sampling Waiver.

a) **Adverse Conditions.** If Horizon Mine is unable to collect samples within a specified sampling period due to adverse climatic conditions, thus a substitute sample shall be collected from a separate qualifying event in the next monitoring period and the data submitted along with the data for the routine sample in that period. Adverse weather conditions that may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricanes, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

b) **Low Concentration Waiver.** When the average concentration for a pollutant calculated from all monitoring data collected from an outfall during the second year monitoring is less than the corresponding value for that pollutant listed in Table E. under the column Monitoring Cut-Off Concentration, Horizon Mine may waive monitoring and reporting requirements for the fourth year monitoring period. Horizon Mine must submit to the Executive Secretary, in lieu of the monitoring data, a certification that there has not been a significant change in industrial activity or the pollution prevention measures in area of the facility that drains to the outfall for which sampling was waived.

c) **Inactive and Unstaffed Site.** If Horizon Mine is unable to conduct quarterly chemical storm water sampling at an inactive and unstaffed site, the operator of the facility may exercise a waiver of the monitoring requirements as long as the facility remains inactive and unstaffed. Horizon Mine must submit to the Executive Secretary, in lieu of monitoring data, a certification statement on the Storm Water Discharge Monitoring Report (SWDMR) stating that the site is inactive and unstaffed so that collecting a sample during a qualifying event is not possible.

4) **Representative Discharge.** If the facility has two or more outfalls that, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by the outfall, discharge substantially identical effluents, Horizon Mine may test the effluent of one of such outfalls and report that the quantitative data also applies to the substantially identical outfall(s) provided that Horizon Mine includes in the storm water pollution prevention plan a description of the location of the outfalls and explains in detail why the outfalls are expected to discharge substantially identical effluents. In addition, for each outfall that Horizon Mine believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the drainage area [e.g., low (under 40 percent), medium (40 to 65 percent), or high (above 65 percent)] shall be provided in the plan. Horizon Mine shall include the description of the location of the outfalls, explanation of why outfalls are expected to discharge substantially identical effluents, and estimate of the size of the drainage area and runoff coefficient with the SWDMR.

5) **Alternative Certification.** Horizon Mine is not subject to the monitoring
PART I
Permit No. UTG040000

requirements of this section provided that certification is made for a given outfall or on a pollutant-by-pollutant basis in lieu of monitoring reports required under paragraph b. below, under penalty of law, signed in accordance with Part IV.G.4. (Signatory Requirements). The Certification shall state that material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, industrial machinery or operations, or significant materials from past industrial activity that are located in areas of the facility within the drainage area of the outfall are not presently exposed to storm water and are not expected to be exposed to storm water for the certification period. Such certification must be retained in the storm water pollution prevention plan, and submitted to DWQ in accordance with Part II.D. of this permit. In the case of certifying that a pollutant is not present, Horizon Mine must submit the certification along with the monitoring reports required under paragraph b. below. If Horizon Mine cannot certify for an entire period, they must submit the date exposure was eliminated and any monitoring required up until that date. This certification option is not applicable to compliance monitoring requirements associated with effluent limitations.

b. Reporting. Horizon Mine shall submit monitoring results for each outfall associated with industrial activity [or a certification in accordance with Sections (3), (4), or (5) above] obtained during the second year reporting period, on Storm Water Discharge Monitoring Report (SWDMR) form(s) postmarked no later than the 31st day of the following March. Monitoring results [or a certification in accordance with Sections (3), (4), or (5) above] obtained during the fourth year reporting period shall be submitted on SWDMR form(s) postmarked no later than the 31st day of the following March. For each outfall, one signed SWDMR form must be submitted to the Executive Secretary per storm event sampled. Signed copies of SWDMRs, or said certifications, shall be submitted to the Executive Secretary at the address listed in Part II.D. of the permit.

c. Visual Examination of Storm Water Quality. Horizon Mine shall perform and document a visual examination of a representative storm water discharge at the following frequencies: quarterly for active areas under SMCRA bond located in areas with average annual precipitation over 20 inches; semi-annually for inactive areas under SMCRA bond, and active areas under SMCRA bond located in areas with average annual precipitation of 20 inches or less; visual examinations are not required at inactive areas not under SMCRA bond.

1) Visual Monitoring Periods. Examinations shall be conducted in each of the following periods for the purposes of visually inspecting storm water runoff or snow melt: Quarterly-January through March; April through June; July through September; and October through December. Semi-annually—January through June and July through December.

2) Sample and Data Collection. Examinations shall be made of samples collected within the first 60 minutes (or as soon thereafter as practical, but not to exceed two hours) of when the runoff or snowmelt begins discharging. The examinations shall document observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution. The examination must be conducted in a well-lit area. No analytical tests are required to be performed on the samples. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Where
H. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the Executive Secretary at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location.

I. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance which may seriously endanger health or environment as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 538-6146, or 24 hour answering service (801) 536-4123.

2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4123 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:
   a. Any noncompliance which may endanger health or the environment;
   b. Any unanticipated bypass which exceeds any effluent limitation in the permit (See Part III.G, Bypass of Treatment Facilities.);
   c. Any upset which exceeds any effluent limitation in the permit (See Part III.H, Upset Conditions.); or,
   d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit.

3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
   a. A description of the noncompliance and its cause;
   b. The period of noncompliance, including exact dates and times;
   c. The estimated time noncompliance is expected to continue if it has not been corrected; and,
   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
   e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.

4. The Executive Secretary may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 538-6146.

5. Reports shall be submitted to the addresses in Part II.D. Reporting of Monitoring Results.
J. **Other Noncompliance Reporting.** Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part II.D* are submitted. The reports shall contain the information listed in *Part II.I.3*.

K. **Inspection and Entry.** The permittee shall allow the Executive Secretary, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location.
III. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Executive Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions. The Act provides that any person who violates a permit condition implementing provisions of the Act is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions of the Act is subject to a fine not exceeding $25,000 per day of violation; Any person convicted under UCA 19-5-115(2) a second time shall be punished by a fine not exceeding $50,000 per day. Except as provided at Part III.G, Bypass of Treatment Facilities and Part III.H, Upset Conditions, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Removed Substances. Collected screening, grit, solids, sludges, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.

G. Bypass of Treatment Facilities.

1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to 2. and 3. of this section.

2. Prohibition of Bypass.

   a. Bypass is prohibited, and the Executive Secretary may taken enforcement action against a permittee for bypass, unless:

   (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;
There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and

The permittee submitted notices as required under section G.3.

b. The Executive Secretary may approve an anticipated bypass, after considering its adverse effects, if the Executive Secretary determines that it will meet the three conditions listed in sections G.2a. (1), (2) and (3).

3. Notice.

a. Anticipated bypass. Except as provided above in section G.2 and below in section G.3b, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Executive Secretary:

(1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages;

(2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Executive Secretary in advance of any changes to the bypass schedule;

(3) Description of specific measures to be taken to minimize environmental and public health impacts;

(4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;

(5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and

(6) Any additional information requested by the Executive Secretary.

b. Emergency Bypass. Where ninety days advance notice is not possible, the permittee must notify the Executive Secretary, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Executive Secretary the information in section G.3a.(1) through (6i) to the extent practicable.

c. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass to the Executive Secretary as required under Part II.1., Twenty Four Hour Reporting. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.
H. **Upset Conditions.**

1. **Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph 2. of this section are met. Executive Secretary's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.

2. **Conditions necessary for a demonstration of upset.** A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that the permittee can identify the cause(s) of the upset;

   b. The permitted facility was at the time being properly operated;

   c. The permittee submitted notice of the upset as required under Part II.I, Twenty-four Hour Notice of Noncompliance Reporting; and,

   d. The permittee complied with any remedial measures required under Part III.D, Duty to Mitigate.

3. **Burden of proof.** In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

I. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of The Water Quality Act of 1987 for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

J. **Changes in Discharge of Toxic Substances.** Notification shall be provided to the Executive Secretary as soon as the permittee knows of, or has reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   a. One hundred micrograms per liter (100 ug/L);

   b. Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

   c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with UAC R317-8.3.4(7) or (10); or,

   d. The level established by the Executive Secretary in accordance with UAC R317-8.4.2(6).

2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   a. One hundred micrograms per liter (100 ug/L);

   b. Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

   c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with UAC R317-8.3.4(7) or (10); or,
PART III
Permit No. UTG040000

a. Five hundred micrograms per liter (500 ug/L);
b. One milligram per liter (1 mg/L) for antimony:
c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with UAC R317-8-3.4(9); or,
d. The level established by the Executive Secretary in accordance with UAC R317-8-4.2(6).

K. Industrial Pretreatment. Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of The Water Quality Act of 1987, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at 40 CFR 403, the State Pretreatment Requirements at UAC R317-8-8, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters.

In addition, in accordance with 40 CFR 403.12(p)(1), the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under 40 CFR 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).
IV. GENERAL REQUIREMENTS

A. Planned Changes. The permittee shall give notice to the Executive Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Executive Secretary of any planned changes at least 30 days prior to their implementation.

B. Anticipated Noncompliance. The permittee shall give advance notice to the Executive Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit.

E. Duty to Provide Information. The permittee shall furnish to the Executive Secretary, within a reasonable time, any information which the Executive Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Executive Secretary, upon request, copies of records required to be kept by this permit.

F. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Executive Secretary, it shall promptly submit such facts or information.

G. Signatory Requirements. All applications, reports or information submitted to the Executive Secretary shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Executive Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Executive Secretary, and,

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
3. Changes to authorization. If an authorization under paragraph IV.G.2 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph IV.G.2 must be submitted to the Executive Secretary prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. Penalties for Falsification of Reports. The Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than $10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.

I. Availability of Reports. Except for data determined to be confidential under UAC R317-8-3.2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Executive Secretary. As required by the Act, permit applications, permits and effluent data shall not be considered confidential.

J. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the Act.

K. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

L. Severability. The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

M. Transfers. This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Executive Secretary at least 20 days in advance of the proposed transfer date;
2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,

3. The Executive Secretary does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.

N. **State Laws.** Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by UCA 19-5-117.

O. **Water Quality-Reopener Provision.** This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.

2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.

3. A revision to the current Water Quality Management Plan is approved and adopted which calls for different effluent limitations than contained in this permit.

P. **Toxicity Limitation-Reopener Provision.** This permit may be reopened and modified (following proper administrative procedures) to include whole effluent toxicity (WET) testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.
PART V
Permit No. UTG040000

GLOSSARY OF TERMS

A. Definitions.

1. The "30-day (and monthly) average" is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

2. The "7-day (and weekly) average" is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains the Saturday.

3. "Daily Maximum" ("Daily Max.") is the maximum value allowable in any single sample or instantaneous measurement.

4. "Composite samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the composite sample period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:
   a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;
   b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;
   c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,
   d. Continuous collection of sample, with sample collection rate proportional to flow rate.

5. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

6. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

7. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

8. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
9. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

10. "Executive Secretary" means Executive Secretary of the Utah Water Quality Board.

11. "EPA" means the United States Environmental Protection Agency.

12. "Act" means the "Utah Water Quality Act".

13. "Best Management Practices" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

14. "Coal pile runoff" means the rainfall runoff from or through any coal storage pile.


16. "Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharges. This term does not include return flows from irrigated agriculture or agriculture storm water runoff.

17. "Significant spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (see 40CFR 110.10 and 40 CFR 117.21) or Section 102 of the CERCLA (see 40 CFR 302.4).

18. "Storm water" means storm water runoff, snow melt runoff, and surface runoff and drainage.

19. "Waste pile" means any noncontainerized accumulation of solid, nonflowing waste that is used for treatment or storage.

20. "10-year, 24-hour precipitation event" means the maximum 24-hour precipitation event with a probable reoccurrence interval of once in 10 years. This information is available in Weather Bureau Technical Paper no. 40, May 1961 and NOAA Atlas 2, 1973 for the 11 Western States, and may be obtained from the National Climatic center of the Environmental Data Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

21. The term "coal preparation plant" means a facility where coal is crushed, screened, sized and cleaned, dried, or otherwise prepared and loaded for transit to a consuming facility.

22. The term "coal preparation plant associated areas" means the coal preparation plant yards, immediate access roads, coal refuse piles, and coal storage piles and facilities.
APPENDIX 3-7
RECLAMATION BOND ESTIMATE

July 2005
Horizon Mine C/007/020

Total Bond Estimate

Revised February 2001

Bond Summary

Direct Costs

<table>
<thead>
<tr>
<th>Subtotal Description</th>
<th>Amount (2001)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demolition and Removal</td>
<td>$104,670.00</td>
<td></td>
</tr>
<tr>
<td>Backfilling and Grading</td>
<td>$51,735.00</td>
<td></td>
</tr>
<tr>
<td>Revegetation</td>
<td>$87,960.00</td>
<td></td>
</tr>
<tr>
<td>Direct Costs</td>
<td>$244,365.00</td>
<td></td>
</tr>
</tbody>
</table>

Indirect Costs

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount (2001)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mob/Demob</td>
<td>$24,437.00</td>
<td>10.0%</td>
</tr>
<tr>
<td>Contingency</td>
<td>$12,218.00</td>
<td>5.0%</td>
</tr>
<tr>
<td>Engineering Redesign</td>
<td>$6,109.00</td>
<td>2.5%</td>
</tr>
<tr>
<td>Main Office Expense</td>
<td>$16,617.00</td>
<td>6.8%</td>
</tr>
<tr>
<td>Project Mainagement Fee</td>
<td>$6,109.00</td>
<td>2.5%</td>
</tr>
<tr>
<td>Indirect Costs</td>
<td>$65,490.00</td>
<td>26.8%</td>
</tr>
</tbody>
</table>

Total Cost in 2001 Dollars

- $309,855.00

Escalation 3.12% factor

- 0.0312

Number of years

- 5

Escalation

- $51,449.00

Reclamation Cost 2006

- $361,304.00

Bond Amount (rounded to nearest $1,000)

- $361,000.00

Note: A small error was found in the original calculations (summation of the demolition costs) the error was corrected. Since the mistake is 5% no bond adjustment is needed at this time. (5% rule) The current bond amount is $342,000 in 2006 dollars.
**Bond Summary**

**Direct Costs**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtotal Demolition and Removal</td>
<td>$128,720.00</td>
</tr>
<tr>
<td>Subtotal Backfilling and Grading</td>
<td>$69,646.00</td>
</tr>
<tr>
<td>Subtotal Revegetation</td>
<td>$124,961.00</td>
</tr>
<tr>
<td>Direct Costs</td>
<td>$323,327.00</td>
</tr>
</tbody>
</table>

**Indirect Costs**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mob/Demob</td>
<td>$32,333.00</td>
<td>10.0%</td>
</tr>
<tr>
<td>Contingency</td>
<td>$16,166.00</td>
<td>5.0%</td>
</tr>
<tr>
<td>Engineering Redesign</td>
<td>$8,083.00</td>
<td>2.5%</td>
</tr>
<tr>
<td>Main Office Expense</td>
<td>$21,986.00</td>
<td>6.8%</td>
</tr>
<tr>
<td>Project Management Fee</td>
<td>$8,083.00</td>
<td>2.5%</td>
</tr>
<tr>
<td>Subtotal Indirect Costs</td>
<td>$86,651.00</td>
<td>26.8%</td>
</tr>
</tbody>
</table>

**Total Cost**

- $409,978.00

**Escalation**

- Number of years: 1
- Escalation: 0.032

**Reclamation Cost**

- $423,097.00

**Bond Amount (rounded to nearest $1,000)**

- 2011 Dollars: $423,000.00
- Bond Posted 2003: $445,000.00

**Difference Between Cost Estimate and Bond**

- $21,903.00
- Percent Difference: 5.20%
### Horizon Mine Description

<table>
<thead>
<tr>
<th>Description</th>
<th>Materials</th>
<th>Unit Cost</th>
<th>Unit Number</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water Tanks 001</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mine Water Tank</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment’s Disposal Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dismantling Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment’s Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loading Costs</td>
<td>9000 gal to 12000 gal tank</td>
<td>02115 200 0130</td>
<td>1075 Ea.</td>
<td>1 EA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td>9000 gal to 12000 gal tank</td>
<td>02115 200 1029</td>
<td>1000 Ea.</td>
<td>1 EA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Waste Water Tank</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment’s Disposal Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dismantling Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment’s Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loading Costs</td>
<td>9000 gal to 12000 gal tank</td>
<td>02115 200 0130</td>
<td>1075 Ea.</td>
<td>1 EA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td>9000 gal to 12000 gal tank</td>
<td>02115 200 1029</td>
<td>1000 Ea.</td>
<td>1 EA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Culinary Water Tank</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment’s Disposal Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dismantling Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment’s Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loading Costs</td>
<td>9000 gal to 12000 gal tank</td>
<td>02115 200 0130</td>
<td>1075 Ea.</td>
<td>1 EA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td>9000 gal to 12000 gal tank</td>
<td>02115 200 1029</td>
<td>1000 Ea.</td>
<td>1 EA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**INCORPORATED**

**SEP 26 2001**

Printed 10/04/2001
<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit Number</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fuel Tank 002</td>
<td>3000 gal. to 5000 gal. tank</td>
<td>02115 200 0110</td>
<td>500</td>
<td>1</td>
<td>EA</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structure's Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structure's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubble's Weight (exclude steel)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td>3000 gal. to 5000 gal. tank</td>
<td>02115 200 1023</td>
<td>630</td>
<td>1</td>
<td>EA</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Non Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td>3000 gal. to 5000 gal. tank</td>
<td>02115 200 1023</td>
<td>630</td>
<td>1</td>
<td>EA</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steel's Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Steel Driver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1130</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment's Disposal Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dismantling Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transport Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1130</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1130</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1130</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Materials</td>
<td>Means Reference Number</td>
<td>Unit Cost</td>
<td>Unit</td>
<td>Length</td>
<td>Width</td>
<td>Height</td>
<td>Volume</td>
<td>Density</td>
<td>Time</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>--------------------------</td>
<td>------------------------</td>
<td>-----------</td>
<td>------</td>
<td>--------</td>
<td>-------</td>
<td>--------</td>
<td>--------</td>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td><strong>Horizon Mine</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Structure's Demolition Cost</strong></td>
<td>Mixed Materials Bld. Large</td>
<td>02220 100 0100</td>
<td>0.24</td>
<td>ICF</td>
<td>100</td>
<td>20</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Structure's Vol. Demolished</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rubble's Weight (exclude steel)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Truck's Capacity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Haulage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transportation Cost Non Steel Truck</strong></td>
<td>Truck during 15 ton payload</td>
<td>01590 200 5300</td>
<td>531.08</td>
<td>HR</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transportation Cost Non Steel Drive</strong></td>
<td>Truck Driver, Heavy</td>
<td>02320 500 4200</td>
<td>6.56</td>
<td>CY</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Disposal Cost Non Steel</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Steel's Weight</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Truck's Capacity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Haulage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transportation Cost Steel</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transportation Cost Steel Driver</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Disposal Cost Steel</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal Steel Demolished</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Concrete Demolition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Demolition Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Concrete's Vol. Demolished</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Loading Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transportation Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Disposal Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal Concrete Demolition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Concrete Demolition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Demolition Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Concrete's Vol. Demolished</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Loading Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transportation Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Disposal Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal Concrete Demolition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Horizon Mine C/0071020**

Demolition

Revised October 2001

**INCOMPORATED**

SEP 26 2001

DIV OF OIL GAS & MINING

Printed 10/04/2001

DemoMaterialStorageShed003
### Horizon Mine

**Substation Transformer 004**

<table>
<thead>
<tr>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Weight</th>
<th>No.</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Fixed Transformers</td>
<td>Mechanical equipment heavy</td>
<td>15055 300 3600</td>
<td>665 /ton</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td>$950</td>
</tr>
<tr>
<td>1 Portable transformer</td>
<td>Mechanical equipment heavy</td>
<td>15055 300 3600</td>
<td>665 /ton</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>$600</td>
</tr>
<tr>
<td>Structure's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment's Disposal Cost</td>
<td>Chain link remove 8'-10'</td>
<td>02220 875 0700</td>
<td>2.51 /LF</td>
<td>242</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>242 ft</td>
<td>242</td>
<td></td>
<td>$607</td>
</tr>
<tr>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete Demolition</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>10</td>
<td>10</td>
<td>0.5</td>
<td>2 FT</td>
<td></td>
<td></td>
<td>4 CY</td>
<td>51</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 CY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loading Cost</td>
<td>Front end loader 3 CY</td>
<td>02315 400 1300</td>
<td>1.3 /CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.3 CY</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost</td>
<td>12 CY (16 Ton) Dump Truck 1/2 mi. md. trip</td>
<td>02320 200 0320</td>
<td>3.09 /CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5 CY</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td>02220 550 4200</td>
<td>6.56 /CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete Demolition</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>5</td>
<td>5</td>
<td>0.5</td>
<td>2 FT</td>
<td></td>
<td></td>
<td>1 CY</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 CY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loading Cost</td>
<td>Front end loader 3 CY</td>
<td>02315 400 1300</td>
<td>1.3 /CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.3 CY</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost</td>
<td>12 CY (16 Ton) Dump Truck 1/2 mi. md. trip</td>
<td>02320 200 0320</td>
<td>3.09 /CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 CY</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td>Disposal on site</td>
<td>02220 550 4200</td>
<td>6.56 /CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total**

$1,397
## Horizon Mine

<table>
<thead>
<tr>
<th>Map Ref.</th>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Number</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portals 005</td>
<td>Structure's Demolition Cost</td>
<td>Seal Portals</td>
<td>Site</td>
<td>5000 EA</td>
<td>3 EA</td>
<td>3 EA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15000</td>
</tr>
<tr>
<td></td>
<td>Structure's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubble's Weight (exclude steel)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Driver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Non Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steel's Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Steel Truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Steel Driver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>Equipment's Disposal Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15000</td>
</tr>
<tr>
<td></td>
<td>Dismantling Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transport Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>Concrete Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15000</td>
</tr>
</tbody>
</table>

**INCORPORATED**

**SEP 26 2001**

**DIV OF OIL GAS & MINING**

Printed 10/03/2001
**Horizon Mine**

**Portal Structures 006**

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>No.</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Structure's Demolition Cost</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structure's Vol. Demolished</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubble's Weight (exclude steel)</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck's Capacity</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Truck</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Driver</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Non Steel</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck's Capacity</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steel's Weight</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Steel Truck</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Steel Driver</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Steel</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>17</td>
<td>57</td>
<td>12</td>
<td>FT</td>
<td>11628 CF</td>
<td>11628 CF</td>
<td>0.35</td>
<td>4070 CF</td>
<td>2558</td>
<td></td>
</tr>
</tbody>
</table>

**Concrete Demolition**

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>No.</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Concrete Demolition Cost</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>17</td>
<td>17</td>
<td>2</td>
<td>1 FT</td>
<td>21 CY</td>
<td>21 CY</td>
<td>268</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete's Vol. Demolished</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>17</td>
<td>17</td>
<td>2</td>
<td>1 FT</td>
<td>21 CY</td>
<td>21 CY</td>
<td>268</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Cost</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>17</td>
<td>17</td>
<td>2</td>
<td>1 FT</td>
<td>21 CY</td>
<td>21 CY</td>
<td>268</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>17</td>
<td>17</td>
<td>2</td>
<td>1 FT</td>
<td>21 CY</td>
<td>21 CY</td>
<td>268</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>17</td>
<td>17</td>
<td>2</td>
<td>1 FT</td>
<td>21 CY</td>
<td>21 CY</td>
<td>268</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Concrete Demolition**

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>No.</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Concrete Demolition Cost</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>17</td>
<td>21</td>
<td>2</td>
<td>3 FT</td>
<td>21 CY</td>
<td>21 CY</td>
<td>1610</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete's Vol. Demolished</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>17</td>
<td>21</td>
<td>2</td>
<td>3 FT</td>
<td>21 CY</td>
<td>21 CY</td>
<td>1610</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Cost</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>17</td>
<td>21</td>
<td>2</td>
<td>3 FT</td>
<td>21 CY</td>
<td>21 CY</td>
<td>1610</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>17</td>
<td>21</td>
<td>2</td>
<td>3 FT</td>
<td>21 CY</td>
<td>21 CY</td>
<td>1610</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>17</td>
<td>21</td>
<td>2</td>
<td>3 FT</td>
<td>21 CY</td>
<td>21 CY</td>
<td>1610</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total**

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>No.</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>17</td>
<td>21</td>
<td>2</td>
<td>3 FT</td>
<td>21 CY</td>
<td>21 CY</td>
<td>1610</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**INCORPORATED**

**SEP 26 2001**

Printed 10/03/2001

DIV OF OIL GAS & MINING

DemoPortal Structures006
## Horizon Mine

<table>
<thead>
<tr>
<th>Description</th>
<th>Reference Number</th>
<th>Material(s)</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Weight</th>
<th>No.</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mine Conveyor 007</td>
<td>Ref.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure's Demolition Cost</td>
<td>02220 100 0012</td>
<td>Steel Bld. Large</td>
<td>$0.52/CF</td>
<td>CF</td>
<td>110</td>
<td>10</td>
<td>8</td>
<td>CF</td>
<td>880</td>
<td>CF</td>
<td>0.1</td>
<td>880</td>
<td>CF</td>
<td>1936</td>
</tr>
<tr>
<td>Rubble's Weight (exclude steel)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Non Steel Truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Non Steel Drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Cost Non Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel's Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Steel Driver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubble's Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment's Disposal Cost</td>
<td>15055 300 3600</td>
<td>Mechanical equipment heavy</td>
<td>$6.65/ton</td>
<td>5 Ton</td>
<td>665</td>
<td>5</td>
<td>5</td>
<td>5 Ton</td>
<td>3325</td>
<td>Ton</td>
<td></td>
<td></td>
<td></td>
<td>3325</td>
</tr>
<tr>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demolition Cost</td>
<td>ConcreteDemo1</td>
<td></td>
<td>$12.78/CY</td>
<td>20</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>18 CY</td>
<td>690</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td></td>
<td>$1.3/CY</td>
<td>1.3</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23 CY</td>
<td>90</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loading Cost</td>
<td>Front end loader 3 CY</td>
<td></td>
<td>$1.3/CY</td>
<td>1.3</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23 CY</td>
<td>90</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 CY (16 Ton) Dump Truck 1/2 mi. md. tsp</td>
<td>02320 200 0320</td>
<td></td>
<td>$3.06/CY</td>
<td>3.06</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23 CY</td>
<td>213</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td>Disposal on site</td>
<td></td>
<td>$6.56/CY</td>
<td>6.56</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23 CY</td>
<td>433</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubble's Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubble's Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal on site</td>
<td>02220 550 4200</td>
<td></td>
<td>$6.56/CY</td>
<td>6.56</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23 CY</td>
<td>433</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Cost: **$6707**
Horizon Mine

<table>
<thead>
<tr>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Weight</th>
<th>No.</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transfer Belt 008</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure's Demolition Cost</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22</td>
<td>CF</td>
<td>400</td>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
<td>0.1</td>
<td>400 CF</td>
<td>880</td>
</tr>
<tr>
<td>Structure's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubble's Weight (exclude steel)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Non Steel Truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Cost Non Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel's Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Steel Driver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>880</td>
</tr>
<tr>
<td>Equipment's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment's Disposal Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demolition Cost</td>
<td>Mechanical equipment heavy</td>
<td>15055 300 3600</td>
<td>665</td>
<td>/ton</td>
<td></td>
<td>5</td>
<td>/ton</td>
<td></td>
<td></td>
<td>5 /ton</td>
<td></td>
<td>3325</td>
</tr>
<tr>
<td><strong>Loading Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3325</td>
</tr>
<tr>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete Demolition</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78</td>
<td>CY</td>
<td>20</td>
<td>2</td>
<td>4</td>
<td>8 FT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.3</td>
<td>61 CY</td>
<td>79</td>
</tr>
<tr>
<td>Loading Cost</td>
<td>Front end loader 3 CY</td>
<td>02315 400 1300</td>
<td>1.3</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost</td>
<td>12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip</td>
<td>02320 200 0320</td>
<td>3.06</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>61 CY</td>
<td>188</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td>Disposal on site</td>
<td>02220 550 4200</td>
<td>6.56</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>61 CY</td>
<td>400</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1268</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5473</td>
</tr>
</tbody>
</table>

INCORPORATED

SEP 26 2001

DIV OF OIL GAS & MINING
<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit Length</th>
<th>Unit Width</th>
<th>Unit Height</th>
<th>Unit Weight</th>
<th>Unit No.</th>
<th>Unit Cost Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>02220 100 0012</td>
<td>Structure's Demolition Cost</td>
<td>Steel Bid. Large</td>
<td>0.22 /CF</td>
<td>230</td>
<td>10</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1012</td>
</tr>
<tr>
<td>15055 300 3600</td>
<td>Equipment's Disposal Cost</td>
<td>Mechanical equipment heavy</td>
<td>665 /ton</td>
<td>5</td>
<td>5 /ton</td>
<td>5 /ton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3325</td>
</tr>
<tr>
<td>02315 400 1300</td>
<td>Concrete Demolition Cost</td>
<td>Concrete demolition</td>
<td>12.78 /CY</td>
<td>20</td>
<td>2</td>
<td>4</td>
<td>2 FT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>153</td>
</tr>
<tr>
<td>02320 200 0320</td>
<td>Transportation Cost</td>
<td>12 CY (16 Ton) Dump Truck</td>
<td>3.09 /CY</td>
<td>16 CY</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>49</td>
</tr>
<tr>
<td>02220 550 4200</td>
<td>Disposal Costs</td>
<td>Disposal on site</td>
<td>6.50 /CY</td>
<td>16 CY</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>106</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4665</td>
</tr>
</tbody>
</table>

**Horizon Mine**


demoStackerBelt009

**INCORPORATED**

**SEP 26 2001**

**DIV OF OIL GAS & MINING**

Printed 10/03/2001
## Horizon Mine

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>No. Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fan 010</td>
<td>Structure's Demolition Cost</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>20</td>
<td>10</td>
<td>10</td>
<td></td>
<td>200 CF</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structure's Vol. Demolished</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22 /CF</td>
<td>45</td>
<td>10</td>
<td>10</td>
<td></td>
<td>450 CF</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubble's Weight (exclude steel)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Non Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment's Disposal Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dismantling Cost</td>
<td>Mechanical equipment heavy</td>
<td>15055 300 3800</td>
<td>665 /ton</td>
<td>5 Ton</td>
<td>5 Ton</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transport Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demolition Cost</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>20</td>
<td>10</td>
<td>0.5</td>
<td>FT</td>
<td>4 CY</td>
<td>51</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Cost</td>
<td>Front end loader 3 CY</td>
<td>02315 400 1300</td>
<td>1.3 /CY</td>
<td>5 CY</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost</td>
<td>12 CY (16 Ton) Dump Truck 1/2 mi. md. trip</td>
<td>02320 200 0320</td>
<td>3.09 /CY</td>
<td>5 CY</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td>Disposal on site</td>
<td>02220 550 4200</td>
<td>6.56 /CY</td>
<td>5 CY</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demolition Cost</td>
<td>Concrete demolition</td>
<td>ConcreteDemo1</td>
<td>12.78 /CY</td>
<td>45</td>
<td>10</td>
<td>0.5</td>
<td>FT</td>
<td>8 CY</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Cost</td>
<td>Front end loader 3 CY</td>
<td>02315 400 1300</td>
<td>1.3 /CY</td>
<td>10 CY</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost</td>
<td>12 CY (16 Ton) Dump Truck 1/2 mi. md. trip</td>
<td>02320 200 0320</td>
<td>3.09 /CY</td>
<td>10 CY</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td>Disposal on site</td>
<td>02220 550 4200</td>
<td>6.56 /CY</td>
<td>10 CY</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL:** 3733

---

**INTEGRATED SERVICES CORPORATION 2001**

Printed 10/03/2001

DIV OF OIL GAS & MINING
## Horizon Mine

### Description

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Volume</th>
<th>Density</th>
<th>Time</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>011</td>
<td>Temp Office Trailer 011</td>
<td>Mixed Materials Bid. Large</td>
<td>02220 100 0100</td>
<td>0.24 /CF</td>
<td>FT</td>
<td>50</td>
<td>9</td>
<td>9</td>
<td></td>
<td></td>
<td>4050</td>
<td>CF</td>
<td>972</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structure's Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structure's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubble's Weight (exclude steel)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Truck</td>
<td>Truck dump 16 ton payload</td>
<td>01500 200 0000</td>
<td>531.08 /day</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Drive</td>
<td>Truck Driver, Heavy</td>
<td></td>
<td>Triv</td>
<td>36.6 HR</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Non Steel</td>
<td>ECDC</td>
<td></td>
<td>ECDC</td>
<td>35 /TON</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steel's Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment's Disposal Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dismantling Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transport Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INCORPORATED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SEP 26 2001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DIV OF OIL GAS & MINING**

Printed 10/03/2001
### Horizon Mine

<table>
<thead>
<tr>
<th>Description</th>
<th>Materials</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Volume</th>
<th>Density</th>
<th>Time</th>
<th>No.</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office Trailer 012</td>
<td>Mixed Materials bld. Large</td>
<td>02220 100 0100</td>
<td>0.24</td>
<td>CF</td>
<td>60</td>
<td>15</td>
<td>8</td>
<td>FT</td>
<td>100</td>
<td>8/CF</td>
<td>126</td>
<td>TON</td>
<td>7200</td>
<td>CF</td>
<td>1728</td>
</tr>
<tr>
<td>Structure's Demolition Cost</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Rubble's Weight (exclude steel)</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Truck's Capacity</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Haulage</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Transportation Cost Non Steel Truck</td>
<td>Truck dump 16 ton payload</td>
<td>01590 200 5300</td>
<td>531.1</td>
<td>/day</td>
<td>8</td>
<td>HR</td>
<td>1</td>
<td>DAY</td>
<td>51</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>51</td>
</tr>
<tr>
<td>Transportation Cost Non Steel Drive</td>
<td>Truck Driver, Heavy</td>
<td>Trv</td>
<td>36.6</td>
<td>HR</td>
<td>8</td>
<td>HR</td>
<td>8</td>
<td>HR</td>
<td>52</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>Disposal Cost Non Steel</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Steel's Weight</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Truck's Capacity</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Haulage</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Transportation Cost Steel</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Transportation Cost Driver</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Disposal Cost Steel</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Equipment's Disposal Cost</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Dismantling Cost</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Equipment's Vol. Demolished</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Loading Costs</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Transport Costs</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Disposal Costs</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Concrete Demolition</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Demolition Cost</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Loading Cost</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Transportation Cost</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>Disposal Costs</td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>02220 100 0100</td>
<td>0.35</td>
<td>CF</td>
<td>2520</td>
<td>FT</td>
<td>128</td>
<td>CF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
</tbody>
</table>

---

**INCORPORATED**

**SEP 26 2001**

DIV OF OIL GAS & MINING

Printed 10/03/2001
| Ref. | Description | Materials | Means Reference Number | Unit Cost ($/CF) | Unit (FT) | Length (25) | Width (8) | Height (100) | Volume (100) | Density (0.24) | Time (100) | No (16) | Unit (TON) | Swell Factor (0.35) | Quantity (60) | Unit (ton) | Cost (210) |
|------|-------------|-----------|------------------------|-----------------|-----------|-------------|-----------|-------------|-------------|--------------|-----------|--------|----------------|-----------------|-------------|-----------|
| Bathhouse 013 | Structure's Demolition Cost | Mixed Materials Bld. Large | 02220 100 0100 | 0.24 | 60 | 25 | 8 | | | | | | | | | |
| | Structure's Vol. Demolished | | | | | | | | | | | | | | | |
| | Rubble's Weight (exclude steel) | | | | | | | | | | | | | | | |
| | Truck's Capacity | | | | | | | | | | | | | | | |
| | Haulage | | | | | | | | | | | | | | | |
| | Transportation Cost Non Steel Truck | Truck dump 16 ton payload | 01590 200 5200 | 531.08 | 13 | HR | | 16 | 36 | 3 | 6 | | | | |
| | Transportation Cost Non Steel Drive | Truck Driver, Heavy | Thrh | 36 | 13 | HR | | | | | | | | | |
| | Disposal Cost Non Steel | ECDC | | | | | | | | | | | | | | |
| | Steel's Weight | | | | | | | | | | | | | | | |
| | Truck's Capacity | | | | | | | | | | | | | | | |
| | Haulage | | | | | | | | | | | | | | | |
| | Transportation Cost Steel | | | | | | | | | | | | | | | |
| | Transportation Cost Steel Driver | | | | | | | | | | | | | | | |
| | Disposal Cost Steel | | | | | | | | | | | | | | | |
| Subtotal 1 | | | | | | | | | | | | | | | |
| | Equipment's Disposal Cost | | | | | | | | | | | | | | | |
| | Dismantling Cost | | | | | | | | | | | | | | | |
| | Equipment's Vol. Demolished | | | | | | | | | | | | | | | |
| | Loading Costs | | | | | | | | | | | | | | | |
| | Transport Costs | | | | | | | | | | | | | | | |
| | Disposal Costs | | | | | | | | | | | | | | | |
| Subtotal 2 | | | | | | | | | | | | | | | |
| | Concrete Demolition | | | | | | | | | | | | | | | |
| | Demolition Cost | Concrete demolition | ConcreteDemol | 12.78 | 4 | 2 | 2 | 8 | | | | | | | | |
| | Concrete's Vol. Demolished | | | | | | | | | | | | | | | |
| | Loading Cost | Front end loader 3 CY | 02315 400 1300 | 1.3 | | | | | | | | | | | |
| | Transportation Cost | 12 CY (18 Ton) Dump Truck 1/2 mi. med. trip | 02230 200 0320 | 3.09 | | | | | | | | | | | |
| | Disposal Costs | Disposal on site | 02220 550 4200 | 8.56 | | | | | | | | | | | |
| Subtotal 3 | | | | | | | | | | | | | | | |
| Total | | | | | | | | | | | | | | | |
# Horizon Mine

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Weight</th>
<th>No.</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Crusher Screen 014</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22/CF</td>
<td>40</td>
<td>15</td>
<td>20</td>
<td></td>
<td></td>
<td>1200</td>
<td>CF</td>
<td>264</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structure's Demolition Cost</td>
<td>Steel Bld. Large</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck’s Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubble’s Weight (exclude steel)</td>
<td>Steel Bld. Large</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Truck</td>
<td>Steel Bld. Large</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Drive</td>
<td>Steel Bld. Large</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steel’s Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment’s Vol. Demolished</td>
<td>Mechanical equipment heavy</td>
<td>15055 300 3600</td>
<td>665/ton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33:3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dismantling Cost</td>
<td>Mechanical equipment heavy</td>
<td>15055 300 3600</td>
<td>665/ton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33:3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Costs</td>
<td>Mechanical equipment heavy</td>
<td>15055 300 3600</td>
<td>665/ton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33:3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transport Costs</td>
<td>Mechanical equipment heavy</td>
<td>15055 300 3600</td>
<td>665/ton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33:3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td>Mechanical equipment heavy</td>
<td>15055 300 3600</td>
<td>665/ton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33:3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Mechanical equipment heavy</td>
<td>15055 300 3600</td>
<td>665/ton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33:3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>Mechanical equipment heavy</td>
<td>15055 300 3600</td>
<td>665/ton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33:3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete’s Vol. Demolished</td>
<td>Concrete demolition</td>
<td>Concrete Demol</td>
<td>12.78/CY</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>2 FT</td>
<td></td>
<td></td>
<td></td>
<td>2/CY</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete Demolition</td>
<td>Concrete demolition</td>
<td>Concrete Demol</td>
<td>12.78/CY</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>2 FT</td>
<td></td>
<td></td>
<td></td>
<td>2/CY</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demolition Cost</td>
<td>Concrete demolition</td>
<td>Concrete Demol</td>
<td>12.78/CY</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>2 FT</td>
<td></td>
<td></td>
<td></td>
<td>2/CY</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Cost</td>
<td>Concrete demolition</td>
<td>Concrete Demol</td>
<td>12.78/CY</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>2 FT</td>
<td></td>
<td></td>
<td></td>
<td>2/CY</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost</td>
<td>Concrete demolition</td>
<td>Concrete Demol</td>
<td>12.78/CY</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>2 FT</td>
<td></td>
<td></td>
<td></td>
<td>2/CY</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td>Concrete demolition</td>
<td>Concrete Demol</td>
<td>12.78/CY</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>2 FT</td>
<td></td>
<td></td>
<td></td>
<td>2/CY</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Concrete demolition</td>
<td>Concrete Demol</td>
<td>12.78/CY</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>2 FT</td>
<td></td>
<td></td>
<td></td>
<td>2/CY</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>Concrete demolition</td>
<td>Concrete Demol</td>
<td>12.78/CY</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>2 FT</td>
<td></td>
<td></td>
<td></td>
<td>2/CY</td>
<td>26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**INCORPORATED**

**SEP 26 2001**

**DIV OF OIL GAS & MINING**

Printed 10/03/2001
## Horizon Mine

<table>
<thead>
<tr>
<th>Map Ref.</th>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Number</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Emergency Escapeway 015</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structure's Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structure's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubble's Weight (exclude steel)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Driver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Non Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steel's Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Steel Truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Steel Driver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>80.0</td>
</tr>
<tr>
<td></td>
<td>Equipment 's Disposal Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dismantling Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment 's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transport Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>500</td>
</tr>
<tr>
<td></td>
<td>Construct 6x6x1 Cap over Culvert</td>
<td>Cap Escape Culvert</td>
<td>500 EA</td>
<td>1 EA</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>500</td>
</tr>
<tr>
<td></td>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>500</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>500</td>
</tr>
</tbody>
</table>

**INCORPORATED**

**SEP 26 2001**

**DIV OF OIL GAS & MINING**
<table>
<thead>
<tr>
<th>Horizon Mine</th>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>No.</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosive Storage 016</td>
<td>Structure's Demolition Cost</td>
<td>Steel Bld. Large</td>
<td>02220 100 0012</td>
<td>0.22</td>
<td>CF</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>48</td>
<td>CF</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structure's Vol. Demolished</td>
<td>Rubble's Weight (exclude steel)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck's Capacity</td>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Non Steel Truck</td>
<td>Transportation Cost Non Steel Drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Non Steel</td>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haulage</td>
<td>Steel's Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost Steel</td>
<td>Transportation Cost Steel Drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Cost Steel</td>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment's Disposal Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dismantling Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transport Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loading Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**INCORPORATED**

**SEP 26 2001**

DIV OF OIL GAS & MINING
# Horizon Mine Demolition

**Ref.** | **Description** | **Materials** | **Means Reference Number** | **Unit** | **Cost** | **Length** | **Width** | **Height** | **No.** | **Unit** | **Swell Factor** | **Quantity** | **Unit** | **Cost** |
---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
1-L | Culvert Removal 017 | Excavation 1 CY backhoe earth | 02315 440 2040 | 11.4 | CY | 150 | 1.5 | 3 | ft | 25 | CY | 265 |
    | Culvert 18 inch | Backfill Trench Minimal Haul 2 1/4 CY | 02315 900 3080 | 1.57 | CY |  |  |  | ft | 25 | CY |  | |
    | Culvert 36 inch | Excavation 1 CY backhoe earth | 02315 440 2040 | 11.4 | CY | 771 | 3 | 6 | ft | 514 | CY | 514 |
    | Backfill Trench Minimal Haul 2 1/4 CY | 02315 900 3080 | 1.57 | CY |  |  |  |  | |

**Subtotal** | | | | | | | | | | | | | | 6191 |

**Subtotal: Equipment's Disposal Cost** | | | | | | | | | | | | | | 6191 |

**Subtotal: Dismantling Cost** | | | | | | | | | | | | | | 6191 |

**Subtotal: Equipment’s Vol. Demolished** | | | | | | | | | | | | | | 6191 |

**Subtotal: Loading Costs** | | | | | | | | | | | | | | 6191 |

**Subtotal: Transport Costs** | | | | | | | | | | | | | | 6191 |

**Subtotal: Disposal Costs** | | | | | | | | | | | | | | 6191 |

**Total** | | | | | | | | | | | | | | 6191 |
<table>
<thead>
<tr>
<th>Description</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Number</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stacking Tube 018</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure's Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubble's Weight (exclude steel)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Non Steel Truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Non Steel Drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Cost Non Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel's Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Steel Driver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment's Disposal Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loading Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loading Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**INCORPORATED**

**SEP 26 2001**

**DIV OF OIL GAS & MINING**
# Horizon Mine

**Earthwork 001**

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Hourly Operating Costs</th>
<th>Equipment Overhead</th>
<th>Operator's Hourly Wage Rate</th>
<th>Hourly Cost</th>
<th>Number of Men or Eq.</th>
<th>Total Eq. &amp; Lab. Costs</th>
<th>Units</th>
<th>Quantity</th>
<th>Units</th>
<th>Production Rate</th>
<th>Units</th>
<th>Equip. + Labor Time/Dis.</th>
<th>Units</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>769D (20-1) (2Q00)</td>
<td>10/00</td>
<td>37.8</td>
<td>0.1</td>
<td>36.6</td>
<td>145.06</td>
<td>1</td>
<td>145.06</td>
<td>$/HR</td>
<td>10240</td>
<td>CY</td>
<td>169</td>
<td>CY/HR</td>
<td>60</td>
<td>HR</td>
</tr>
<tr>
<td>980G EROPS (5-26) (3Q00)</td>
<td>9235</td>
<td>35.55</td>
<td>0.1</td>
<td>45.95</td>
<td>142.77</td>
<td>1</td>
<td>142.77</td>
<td>$/HR</td>
<td>60</td>
<td>HR</td>
<td>8552</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D8R L EROPS (9-41) (3Q00)</td>
<td>13145</td>
<td>30.65</td>
<td>0.1</td>
<td>45.95</td>
<td>171.72</td>
<td>1</td>
<td>171.72</td>
<td>$/HR</td>
<td>60</td>
<td>HR</td>
<td>10406</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-Shank Ripper 260-359 P (9-47) (3Q009)</td>
<td>2250</td>
<td>4.25</td>
<td>0.1</td>
<td>18.74</td>
<td>1</td>
<td>18.74</td>
<td>$/HR</td>
<td>60</td>
<td>HR</td>
<td>1136</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreman Average, Outside</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pickup Truck Crew 4x4 1 ton (20-6) (2Q00)</td>
<td>770</td>
<td>8</td>
<td>0.1</td>
<td>13.61</td>
<td>1</td>
<td>13.61</td>
<td>$/HR</td>
<td>160</td>
<td>HR</td>
<td>2178</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 gal H2O truck Diesel (20-6) (2Q000)</td>
<td>3420</td>
<td>15.75</td>
<td>0.1</td>
<td>36.8</td>
<td>75.3</td>
<td>1</td>
<td>75.3</td>
<td>$/HR</td>
<td>91</td>
<td>HR</td>
<td>8852</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLAB</td>
<td>35.75</td>
<td>1</td>
<td>35.75</td>
<td>$/HR</td>
<td>160</td>
<td>HR</td>
<td>5721</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subtotal: 51735

**INCORPORATED**

SEP 26 2001

DIV OF OIL GAS & MINING

Printed 10/04/2001

Horizon Mine C007/020
<table>
<thead>
<tr>
<th></th>
<th>Equip. Cost</th>
<th>Hourly Operating Costs</th>
<th>Equipment Overhead</th>
<th>Operator's Hourly Wage Rate</th>
<th>Hourly Cost</th>
<th>Number of Men or Eq.</th>
<th>Total Eq. &amp; Lab. Costs</th>
<th>Units</th>
<th>Quantity</th>
<th>Units</th>
<th>Prod. Rate</th>
<th>Units</th>
<th>Equip. + Labor Time/Dis. Units</th>
<th>Units</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizon Mine Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earthwork 001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5173</td>
</tr>
</tbody>
</table>

INCORPORATED
SEP 26 2001
DIV OF OIL GAS & MINING
Printed 10/04/2001
EarthTotal
<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>Materials</th>
<th>Means Reference Number</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Area</th>
<th>No.</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vegetation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seed Bed Preparation</td>
<td>Excavation Bulk Bank 2 CY (322BL)</td>
<td>02315 400 0260</td>
<td>1.56 CY</td>
<td>CY</td>
<td>9.15 ACRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14762</td>
<td>CY</td>
<td>23029</td>
</tr>
<tr>
<td></td>
<td>Assume 1 ft. depth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mulch</td>
<td>Mulch (material costs)</td>
<td>C0070204</td>
<td>410.25 AC</td>
<td>AC</td>
<td>8.74 ACRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8.74</td>
<td>ACRE</td>
<td>3286</td>
</tr>
<tr>
<td></td>
<td>Mulch</td>
<td>Mulch (equip. &amp; labor) B-65</td>
<td>C0150257</td>
<td>1.85 MSF</td>
<td>MSF</td>
<td>8.74 ACRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8.74</td>
<td>ACRE</td>
<td>716</td>
</tr>
<tr>
<td></td>
<td>Seed Final</td>
<td>Seed Final Seed Mix (#2) (material costs)</td>
<td>C0070201</td>
<td>292 AC</td>
<td>AC</td>
<td>8.74 ACRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8.74</td>
<td>ACRE</td>
<td>2552</td>
</tr>
<tr>
<td></td>
<td>Seed Final</td>
<td>Broadcast Seeding 029205100010</td>
<td>C0070205</td>
<td>35.75 MSF</td>
<td>MSF</td>
<td>8.74 ACRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>381</td>
<td>MSF</td>
<td>13621</td>
</tr>
<tr>
<td></td>
<td>Seed Final</td>
<td>Seed Raparian (material costs)</td>
<td>C0070202</td>
<td>500 AC</td>
<td>AC</td>
<td>0.4 ACRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.4</td>
<td>ACRE</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>Seed Raparian</td>
<td>Broadcast Seeding 029205100010</td>
<td>C0070205</td>
<td>35.75 MSF</td>
<td>MSF</td>
<td>0.4 ACRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>17</td>
<td>MSF</td>
<td>608</td>
</tr>
<tr>
<td></td>
<td>Seedlings</td>
<td>Seedlings (material costs)</td>
<td>C0070203</td>
<td>1734 AC</td>
<td>AC</td>
<td>9.15 ACRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.15</td>
<td>ACRE</td>
<td>15866</td>
</tr>
<tr>
<td></td>
<td>Seedlings</td>
<td>Plant Containerized Stock 029207000160</td>
<td>C0070207</td>
<td>9.69 MSF</td>
<td>MSF</td>
<td>9.15 ACRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>399</td>
<td>MSF</td>
<td>3866</td>
</tr>
<tr>
<td></td>
<td>Silt Fencing</td>
<td>Silt fence</td>
<td>02370 550 1100</td>
<td>0.93 LF</td>
<td>LF</td>
<td>6800 LF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6800</td>
<td>LF</td>
<td>6324</td>
</tr>
<tr>
<td></td>
<td>Revegetation Assume 100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revegetation rate of 25% of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$47,339</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**INCORPORATED**

**SEP 26 2001**

**DIV OF OIL GAS & MINING**

Printed 10/04/2001
<table>
<thead>
<tr>
<th>Description</th>
<th>Reference</th>
<th>Means</th>
<th>Unit</th>
<th>Weight</th>
<th>Density</th>
<th>Time</th>
<th>Number</th>
<th>Unit</th>
<th>Swell Factor</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Road 019</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure's Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubble's Weight (exclude steel)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Non Steel Truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Non Steel Drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Cost Non Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sheets Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck's Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haulage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost Steel Driver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Cost Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment's Disposal Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dismantling Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment's Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loading Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loading Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demolition Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete Vol. Demolished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loading Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*INCORPORATED*  

Revised February 2008  

Div. of Oil, Gas & Mining  

Printed 2/5/08
<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>Units</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Water Tanks</td>
<td></td>
<td>7215</td>
</tr>
<tr>
<td>002</td>
<td>Fuel Tanks</td>
<td></td>
<td>7209</td>
</tr>
<tr>
<td>003</td>
<td>Material Storage Shed 003</td>
<td></td>
<td>17250</td>
</tr>
<tr>
<td>004</td>
<td>Substation Transformer 004</td>
<td></td>
<td>3226</td>
</tr>
<tr>
<td>005</td>
<td>Furnace 005</td>
<td></td>
<td>58020</td>
</tr>
<tr>
<td>006</td>
<td>Portal Structures 006</td>
<td></td>
<td>7529</td>
</tr>
<tr>
<td>007</td>
<td>Mine Conveyer 007</td>
<td></td>
<td>7177</td>
</tr>
<tr>
<td>008</td>
<td>Transfer Belt 008</td>
<td></td>
<td>5563</td>
</tr>
<tr>
<td>009</td>
<td>Stacker Belt 009</td>
<td></td>
<td>4754</td>
</tr>
<tr>
<td>010</td>
<td>Fan 010</td>
<td></td>
<td>3205</td>
</tr>
<tr>
<td>011</td>
<td>Temp Office Trailer 011</td>
<td></td>
<td>4107</td>
</tr>
<tr>
<td>012</td>
<td>Office Trailer 012</td>
<td></td>
<td>7541</td>
</tr>
<tr>
<td>013</td>
<td>Bath House 013</td>
<td></td>
<td>17413</td>
</tr>
<tr>
<td>014</td>
<td>Double Screen 014</td>
<td></td>
<td>5485</td>
</tr>
<tr>
<td>015</td>
<td>Emergency Edgewayway 015</td>
<td></td>
<td>9202</td>
</tr>
<tr>
<td>016</td>
<td>Explosive Storage 016</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>017</td>
<td>Culvert Remove 017</td>
<td></td>
<td>7913</td>
</tr>
<tr>
<td>018</td>
<td>Staircase Tube 018</td>
<td></td>
<td>933</td>
</tr>
<tr>
<td>019</td>
<td>Raw Road 019</td>
<td></td>
<td>8021</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>128725</td>
</tr>
</tbody>
</table>
APPENDIX 3-8
BURIED WASTE LOCATIONS
APPENDIX 3-9
UC-3 CULVERT EXTENSION

3-9.1 Scope

The purpose of this appendix is to discuss the proposed extension of culvert UC-3 to allow for a small expansion of the surface facilities at the Horizon Mine. The information contained in this appendix is intended to fulfill the requirements of a letter dated September 11, 1997 and a Technical Analysis dated October 3, 1997 from the Division of Oil, Gas and Mining and its permit supervisor, Daron R. Haddock, to Horizon Coal Corporation.

The 100-foot extension of culvert UC-3 is proposed for several reasons, the primary reason being safety. The truck turnaround for the mine is on the Jewkes Creek pad area. To access the mine's truck turnaround coal trucks exit the Beaver Creek County Road from the west and reenter the county road from the east. A hill blocks the view of both the trucks exiting the mine from the east and southbound traffic using the Beaver Creek County Road. By removing the hill (i.e., expanding the pad area), this safety concern is alleviated. The secondary reason for expanding the pad is the size of the truck turnaround and the need for storage at the mine. The designed turnaround radius was insufficient for loading and turning; therefore the additional footage improves the truck driver's safety and provides space for material storage.

The area intended for installation of the UC-3 culvert is approximately 100 feet x 50 feet in size. An additional 100 feet x 50 feet portion of an adjacent hillside will also be disturbed at the time of culvert installation. When making the assumption that the upstream end of Jewkes Creek is north, the hillside runs north and south, paralleling Jewkes Creek on the west side of the creek. This hillside blocks the view of existing traffic on the Carbon County Beaver Creek road from vehicles exiting the mine site and will be disturbed to improve safety conditions. Topsoil will be removed on the east hillside as well, during pad construction and stockpile as described below. The topsoil removal area is shown on Plate A in Appendix 8-1.

Field observations indicate that precipitation in the summer of 1997 has been greater than normal. The unusually wet year will require the installation of the culvert with more water in Jewkes Creek than is normal. To accommodate the installation of the culvert, the water will be diverted to the side of or through the intended culvert extension. This diversion will be accomplished by building a small coffer dam upstream from the proposed culvert extension and installing a section of 8-inch (minimum) diameter HDPE culvert along side or through the proposed extension. This diversion will discharge into the upstream end of the existing culvert. It is anticipated that this diversion will be needed for a maximum period of one day.

Following installation of the temporary diversion, topsoil/growth medium will be removed from beneath the area designated for culvert placement. The culvert extension will then be placed. As soon as the culvert extension is secured, the temporary diversion will be removed and the flow of Jewkes Creek will again be redirected into the installed culvert.

Following diversion of the stream flow through the culvert extension, fill material will be placed and compacted on each side of the extension to support the culvert during the removal
of the remaining topsoil/growth medium. The topsoil/growth medium will be removed from one side of the culvert and the area filled and compacted. The soil will then be removed from the other side of the culvert and fill placed and compacted. The fill material will be placed and compacted to meet manufacturer and permit specifications.

During the installation of the UC-3 culvert extension, a 125 foot length of 12" PVC pipe was installed. The pipe was installed simultaneously to prevent future disturbance to the culvert and Jewkes Canyon pad area.

PIPE DESCRIPTION

Length - 125 feet
Size - 12-inch diameter
Type - Schedule 80 PVC
Location - Jewkes Canyon, see Drawing A
Installed slope - 2% slope minimum
Fill cover - Varies from 6 to 18 feet

The potential use for the pipe was as a mine-water discharge line. An application and design for an additional UPDES discharge was not completed at the time of installation. The pipe is presently capped on both ends and receives no discharge.

Subsequent plans have changed regarding the future location of the mine-water discharge line. As a result, the existing 12-inch diameter PVC pipe is not currently needed and will be abandoned in place and removed during reclamation.

Once the topsoil/growth medium is removed from the area of proposed disturbance, the fill material to be placed atop the culvert and pipe will be placed and compacted to meet manufacturer and permit specifications.

When the Portal Canyon pad area was determined to be too high (approximately 2 feet), the fill was removed from around the entrance to the three portals, beneath the convey, around the substation, and in front of the office trailer. The fill was stockpiled temporarily awaiting the approval of the culvert extension. Quantities of rock and soils associated with the face up of the highwall above the portals were also stockpiled and used for fill around the culvert and pipe. All topsoil had previously been removed (1996) from these areas and stored in the topsoil stockpile.

3-9.2 Disturbed Area Boundary

The location of the proposed culvert extension is indicated on Drawing A, which identifies the surveyed disturbed area boundary as it existed in the field in October 1997. This drawing differs from those which were submitted prior to permit approval due to an inaccurate survey performed by the previous permittee. These inaccuracies resulted in confusion concerning the location of (1) the sediment pond, (2) well access road, (3) lower pad area, (4) topsoil stockpile, and (5) fan portal road. The inaccuracies were discovered during pad construction in the Fall and Winter of 1996.
The current permittee performed a survey of the disturbed area boundary and the above listed locations. The resurveyed disturbed area boundary on Drawing A reflects the markers on the ground combined with the site features listed above.

Within the disturbed area, a 2-foot contour interval was used to prepare Drawing A. This contour interval allows the areas and features within the disturbed area to be more accurately located than was possible on maps provided to the Division prior to permit approval. This has contributed to the visual changes in the disturbed area when comparing Drawing A to previous maps.

Although the disturbed area boundary appears different, the amount of disturbed area identified by this resurvey is less than that used in the initial Mining and Reclamation Plan (M&R). The amount of bonded disturbed area listed in the approved permit is 9.15 acres, whereas the resurveyed disturbed area is 8.23 acres, including the area of the proposed culvert extension. Nonetheless, the permit will continue to reflect 9.15 acres of disturbance.

3-9.3 Hydrology and Drainage

A letter dated September 15, 1997 from Mr. Richard B. White of EarthFax Engineering, Inc. has been included in this appendix. This letter indicates that extending the culvert upstream for a distance of 100 feet will not adversely impact the design of the culvert. He further states that "based on the information presented above, it is my opinion that the extension of culvert UC-3 will not adversely impact the hydrologic balance of the area". Mr. White has stamped and signed this letter.

A letter dated September 8, 1997 addressed to Mr. Daron Haddock and stamped received at the Division of Oil, Gas and Mining has also been included in this appendix. This letter indicates that the culvert will be installed "in accordance with the manufacturers specifications as indicated in Horizon’s UDOGM Permit". This commitment agrees with that stated above in Section 3-9.1 of this appendix.

The letter to Mr. Haddock references Appendix 7-4 of the M&R as the location for flow capacity and design details. In addition to Appendix 7-4, Section 7.2.3 within the approved permit discusses the installation of culverts as well as sediment controls.

With the change in the disturbed-area boundary, the drainage area to the sedimentation pond has also changed. The pond was designed with a total drainage area of 35.1 acres, of which 9.1 acres were assumed to be disturbed and 26.0 acres were assumed to be undisturbed. Plate 7-5 has been modified to reflect the changes in the disturbed and undisturbed areas. According to this plate, the actual undisturbed area draining to the pond is 26.8 acres, with 8.2 acres of disturbed area, resulting in a total area of 35.0 acres now draining to the pond. The 0.1-acre decrease in pond drainage area resulted from a slight decrease in the extent of the disturbed area at the upstream end of Portal Canyon.

According to Appendix 7-4 of this M&R, the design of the sedimentation pond was based on a weighted-average curve number of 70 for the combined undisturbed and disturbed areas. Using this curve number, the required runoff storage volume resulting from the 10-year, 24-
hour storm over the 35.0-acre watershed area is 0.55 acre foot. The pond was designed based on a runoff storage volume of 0.56 acre foot.

The sediment storage volume for the pond was based on a ratio of 0.1 acre foot of sediment for every acre of disturbed area. With the reduced disturbed area, the design sediment storage volume is adequate. Hence, even with the additional pad created by the culvert extension, the pond has been adequately designed.

3-9.4 Reclamation

Revisions of the reclamation cost estimate associated with the removal of the additional 100 feet of culvert are reflected in Section 3.5.8 and Appendix 3-7 of the M&RP. The September 8, 1997, letter addressed to Mr. Daron Haddock commits to the following:

"The permit reclamation commitments and corresponding regulations will apply to the intended culvert extension disturbance. Since a portion of this disturbance is a riparian area, the commitments within the Horizon permit concerning riparian reclamation will apply."

Appendix 9-2 of the M&RP contains a survey and map of the riparian area proposed for disturbance in this culvert extension.

The reclamation plan is located in Section 3.5 of this M&RP. The area affected by the extended culvert and pipe will be reclaimed as described in the approved permit.

Since the intended fill material for the culvert extension area will come from the lowering (2 feet) of the upper pad area, this soil/fill has been included in the original mass balance calculations. The quantities of rock and soils associated with the faceup of the highwall above the portals which may also be used for fill around the culvert were estimated and were also included in the original mass balance calculations. Therefore, the material to be used for fill around the culvert has been designated for placement during reclamation in the current approved permit.

Small quantities of coal were generated during faceup of the highwall. This material was not separated from the rock and soils removed from the highwall and may be included in the fill material placed over the culvert.

The reclamation contours for the site and the contours associated with the installation and subsequent removal of the culvert decrease the earthwork volumes originally calculated in the approved M&RP. Therefore no revision in the earthwork bond estimate is necessary for the removal of the culvert extension or the length of pipe.

3-9.5 Refuse

Section 3.3 of the approved permit states, "Refuse material will be segregated on the coal stockpile for temporary storage. The maximum quantity of refuse at the mine prior to disposal will be 500 tons. This refuse material will be blended (in small portion) into the coal to be sold.

Appendix 3-9, UC-3 Culvert Extension
Horizon Coal Corporation
February 16, 1998
shipped to customers as contract quality specifications allow.” In accordance with the approved permit, refuse will not be used as fill material over the culvert extension.

3-9.6 Soils

Topsoil/growth medium (280 cubic yards (CY) was salvaged from the bottom of Jewkes Canyon and along the adjacent hillsides. Horizon intends to disturb limited soil and vegetation on the east hillside, but intends to salvage all available topsoil/growth medium on the west hillside. The evaluation of the west hillside assumed that approximately four feet of topsoil was available for salvage, however when Carbon County was working on the road which parallels the west hillside they found the soil to consist of boulders interspersed with a silty loam. The available salvaged topsoil consisted of 156 cubic yards of riparian soil and 124 cubic yards of topsoil from the adjacent hillsides.

Ninety cubic yards of topsoil/growth medium salvaged from the hillsides during the installation of UC-3 was placed (to a depth of approximately 6 inches) on a slope designated as Area E on Plate A (Appendix 8-1), the remainder (34 cubic yards) was placed in a temporary stockpile (Area E). For clarification, non-riparian topsoil associated with the culvert extension was spread on Area E prior to the creation of the temporary stockpiles. The non-riparian topsoil was used to enhance the probability of the reestablishment of vegetation on Area E to control erosion.

The riparian topsoil removed during the extension was stockpiled and temporarily stored on the area designated as Area E on Plate A in Appendix 8-1. A layer of geotextile fabric was placed on the temporary area prior to the placement of the riparian topsoil, making it simple to determine the extent of riparian topsoil to be moved to the permanent stockpile. The riparian soil will be moved to the permanent topsoil stockpile once access is available and approval has been given by the Division. The temporary mine fan was blocking access to the permanent topsoil stockpile when the soil was initially salvaged. Both the temporary and permanent riparian topsoil locations will be signed to identify the soil as riparian. A qualified soils specialist as on site during the removal of the topsoil/growth medium during the extension of Culvert UC-3. A report prepared by Patricia K. Johnston a qualified soils specialist is included with this appendix.

Topsoil/growth medium salvaged from the bottom of Jewkes Canyon will be segregated, dried, and identified as soil to be returned to the bottom of Jewkes Canyon in the floodplain areas during final reclamation. However, Horizon is not aware of the differences/advantages of the salvaged riparian soil and other soils salvaged in the area after multiple years of laying dormant in a topsoil/growth medium stockpile.

A table, to be included in Appendix 8-1, includes the quantity of topsoil/growth medium salvaged, placed and available for distribution during final reclamation. The locations of the soils placed can be found on Plate A within Appendix 8-1. The salvageable topsoil/growth medium from the extension of Culvert UC-3 (Area 12) is outlined on Figure 8-2B.
3-9.7 Environmental Resource Information

Baseline information for the approximately area proposed for disturbance by the culvert extension is provided in Appendices 3-5, 3-7, 3-8, 4-1, 5-1, 7-2, 7-3, 7-6, 7-11, 7-12, 8-1, 9-1, 9-2, 10-1 and 10-2 of the approved permit.
January 1998

EarthFax Engineering, Inc.
7324 South Union Park Avenue
Suite 100
Midvale, Utah 84047

RE: Soil Salvage - Horizon Mine "Riparian Soil"

Dear Ms. Bailey:

In accordance with Utah Division of Oil, Gas & Mining R645-301-232, Topsoil and Subsoil Removal, 156 cubic yards of topsoil was removed above the Horizon Mine truck turnaround in Jewkes Canyon, also known as the lower pad area.

Topsoil was stripped using a track hoe which scraped 8-12" of soil, depending on the depth of the existing soil resource. Soil conditions were considered favorable and drainage of these riparian resources was not necessary. Soil was then transported by a front end loader and deposited on a geotextile mat approximately 225 feet up the haul road and against the slope. It was not placed in the existing topsoil pile due to lack of access.

Once access to the existing topsoil pile is available, this soil resource will be added to the topsoil stockpile and designated as "riparian soil" for eventual reclamation of the Jewkes Creek area.

This soil recovery operation was supervised and monitored by privately contracted environmental consultant, Patricia K. Johnston for EarthFax Engineering, Inc.

At the same time an additional 90 cubic yards of topsoil was scrapped from the hillsides adjacent to Jewkes Creek west of the truck turnaround. However, this topsoil was of insufficient quantity and quality to warrant salvage and eventual storage in the topsoil stock pile. Therefore, this soil was used immediately onsite to reclaim the hillside that slopes into the haul road connecting the upper pad to the lower pad. This was crucial to the successful stabilization of the slope adjacent to the haul road to prevent sloughing of the slope into the haul road and to reestablish vegetation on the slope.

Sincerely,

Patricia K. Johnston
Environmental Consultant
September 8, 1997

Mr. Daron Haddock  
Utah Division of Oil, Gas and Mining  
1594 West North Temple  
Suite 1210  
Salt Lake City, UT 84114

Dear Daron,

Horizon Coal Corporation intends to extend Culvert UC-3 (36") currently carrying Jewkes Creek northward approximately 100 feet within the disturbed area (Plate A). The anti-seepage collar, trashrack and inlet structure will be move from their current location to the end of the proposed extension.

The 100 feet of culvert will be buried under approximately 10 feet of clean fill material to accomodate the enlargement of the truck turnaround. The fill material has been collected from the site during the lowering of upper pad area and construction of the portals. Presently the radius of the truck turnaround could prove unsafe to the truck drivers and traffic which may be traveling the county road which runs parallel to the turnaround.

The culvert will be installed in accordance with the manufacturers specifications as indicated in Horizon's UDOGM Permit.

Calculations contained in Appendix 7-4 indicate that the flow capacity of the unaltered Jewkes Creek upstream from Culvert UC-3 is 27.7 cfs. UC-3 has the design capacity of 40 cfs. Hence, the capacity of the culvert exceeds the capacity of Jewkes Creek. Therefore the extension should create no flow capacity problems.

Bill Bates from the Division of Wildlife Resources visited the site with Mark Page from the Division of Water Rights. Bill voiced concerns with the proposed extension to Mark who incorporated the concerns into the stream alteration permit, which is attached to this letter. Bill determined that the fencing project completed early this year by Horizon was sufficient mitigation for this proposed extension. The approved stream alteration permit will be incorporated into the UDOGM permit in Appendix 7-12.

The soils in the area will be salvaged as outlined in the UDOGM permit. A revised copy of Table 8-3 has been included to show the potential salvagable soils generated by the culvert extension.

The permit reclamation commitments and corresponding regulations will apply to the intended culvert extension disturbance. Since a portion of this disturbance is a riparian area, the commitments within the Horizon permit concerning riparian reclamation will apply.
Horizon has re-surveyed the disturbed area and 100 feet outside the disturbed area. The revised topography is reflected on Plate A and will be reflected on all plates submitted in the future. The revised topography does not show the realigned county road since it has not yet been surveyed. Revised copies of Plates 3-1, 3-7 and 7-4 will be submitted once the extension has been approved and the county road survey completed. Once the extension is approved Culvert UC-3 will be shown on Plate 7-4.

Please call me should you or your staff have any questions concerning this extension.

Sincerely yours,

Vicky S. Bailey

cc: Michael A. Gipson
September 15, 1997

Mr. Michael A. Gipson
Horizon Coal Corporation
P.O. Box 599
Helper, Utah 84526

Subject: Hydrologic Information Regarding the Extension of Culvert UC-3

Dear Mike:

It is my understanding that Horizon Coal Corporation desires to extend culvert UC-3 approximately 100 feet upstream from its initially-designed inlet point at the Horizon Mine. The purpose of this extension will be to allow local expansion of the mine yard over the culvert.

Extension of the culvert in the upstream direction will have no adverse impact on the ability of the culvert to safely pass the design flow. By extending the culvert upstream, the watershed area will become minimally smaller, thereby slightly decreasing the design flow that the culvert will be required to convey. According to Plate 7-5 of the Mining and Reclamation Plan, the watershed contributing to UC-3 has a drainage area of 356.1 acres. By extending the culvert 100 feet upstream, this drainage area will reduce by approximately 0.3 acre (a reduction of about 0.08 percent). This reduction is within the accuracy of the analytical methods and will not affect the calculation of the peak flow or the design of the culvert diameter.

Extending the culvert will increase the disturbed area which currently drains to the sedimentation pond. However, the sedimentation pond was designed based on an assumed disturbed area of 9.15 acres. In actuality, the surveyed disturbed area is 8.23 acres, including the area of the proposed culvert extension. Hence, even with the culvert extension, the disturbed area will be less than that originally assumed, and the sedimentation pond will be adequate to handle the runoff from the additional disturbed area created by the culvert extension.

In summary, based on the information presented above, it is my opinion that the extension of culvert UC-3 will not adversely impact the hydrologic balance of the area.

Please contact me if you have any questions.

Sincerely,

Richard B. White, P.E.
President
RE: Stream Channel Alteration Permit Number 97-91-08SA to extend culvert for Jewkes Creek in Carbon County.

EXPIRATION DATE: August 14, 1998

Your application to Alter a Natural Stream Channel Number 97-91-08SA is hereby approved pursuant to the requirements of Section 73-3-29 of the Utah Code Annotated, 1953. This approval also constitutes compliance with Section 404 (e) of the Clean Water Act (33 USC 1344) pursuant to General Permit 040 issued to the State of Utah by the U.S. Army Corps of Engineers on October 15, 1987.

Work performed under this permit is subject to the following conditions:

1. The expiration date of this approved application is **August 14, 1998**. The expiration date may be extended, at the State Engineer’s discretion, by submitting a written request outlining the need for the extension and the reasons for the delay in completing the proposed stream alteration.

2. A copy of this approved permit must be kept on-site at any time the work under this approved permit is in progress.

3. Wet cement is toxic to aquatic organisms, and its introduction into waters of the United States would constitute a violation of the Clean Water Act. Wet cement or concrete may not be allowed to enter stream flows. Water must be excluded from areas where concrete or cement is used until it has set. Contaminated water pumped from the construction area may not be discharged in a manner to allow it to enter flows. Equipment used during this type of work must be washed well away from the channel.

4. Excavated material and construction debris may not be wasted in any stream channel or placed in flowing waters, this will include material such as grease, oil, joint coating, or any other possible pollutant. Excess materials must be wasted at an upland site well away from any channel. Construction materials, bedding material, excavated material, etc. may not be stockpiled in riparian or channel areas.
5. Reclamation, following the mining activity, must include the removal of the piped section of the creek and the restoration of the existing riparian area.

6. Within 30 days after the completion of this project, the State Engineer's office must be contacted for a compliance inspection. Failure to provide such notification would invalidate U.S. Army Corps of Engineers General Permit 040, thereby placing the applicant in violation of Section 404 of the Clean Water Act.

This Decision is subject to the provisions of Rule R655-6 of the Division of Water Rights and to Sections 63-46b-13 and 73-3-14 of the Utah Code Annotated, 1953 as amended, which provide for filing either a Request for Reconsideration with the State Engineer, or an appeal with the appropriate District Court. A Request for Reconsideration must be filed with the State Engineer within 20 days of the date of this decision. However, a Request for Reconsideration is not a prerequisite for a court appeal. A court appeal must be filed within 30 days after the date of this Decision, or if a Request for Reconsideration has been filed, within 30 days after the date the Request for Reconsideration is denied. A Request for Reconsideration is considered denied when no action is taken 20 days after the Request is filed.

If you have any questions or need further clarification, please feel free to contact Greg Mladenka at 538-7375.

Sincerely,

[Signature]

Robert L. Morgan, P.E.
State Engineer

RLM/gm/jm

pc: Mike Schwinn - Corps of Engineers
Bob Mairley - EPA
Field Supervisor - U.S. Fish & Wildlife
Jim Dykmann - State History
Carolyn Wright - State Planning
Mark Page - Regional Engineer
Bill Bates - Regional Wildlife Habitat Manager
Bill Bradwisch - Aquatic Habitat Coordinator
September 30, 1997

Ms. Sharon Falvey
Utah Division of Oil, Gas & Mining
1594 West North Temple
Salt Lake City, Utah 84114-5801

Subject: Adequacy of Sedimentation Pond Following Extension of Culvert UC-3, Horizon Mine

Dear Sharon:

I appreciated the opportunity last Friday to discuss the proposed extension of culvert UC-3 at the Horizon Mine. As you indicated, there appears to be a mistake on the top part of Plate 7-5, where one undisturbed drainage area is indicated to have an area of 0.6 acre, while another of similar size is indicated to have an area of 1.7 acres.

I checked with Mr. Tom Suchoski of our office who performed the hydrologic calculations for the Horizon Mine. He indicated that the undisturbed drainage areas were initially estimated from a map with a scale of 1" = 1000', rather than the 1" = 200' map which appears at the top of Plate 7-5. We re-planimetered these two areas from Plate 7-5 and found that the 0.6-acre watershed actually has an area of 1.1 acres and the 1.7-acre watershed actually has an area of 1.3 acres. A revised copy of Plate 7-5 has been attached to clarify this error.

As a result, the actual undisturbed area draining to the Horizon sedimentation pond is 26.0 acres (14.9 + 1.1 + 1.3 + 8.7). The actual disturbed area, including the culvert extension, is 8.2 acres (as surveyed in the field). Hence the total area draining to the sedimentation pond is 34.2 acres.

As indicated in Appendix 7-4 of the M&RP, the sedimentation pond was designed assuming a drainage area of 35.1 acres. Based on a weighted-average curve number of 70 for the combined undisturbed and disturbed areas, this resulted in a runoff volume of 0.56 acre-foot from the 10-year, 24-hour precipitation event. With the reduced area of 34.2 acres, the runoff volume would be 0.54 acre-foot. Hence, even with the additional pad created by the culvert extension, the actual runoff to the pond will be less than the design volume.

The sediment storage volume for the pond was based on a ratio of 0.1 acre-foot of sediment for every acre of disturbed area. Therefore, with a reduced disturbed area, the design storage volume for the pond could also be reduced. Hence, the pond is adequately sized to retain the runoff and sediment which would result from the culvert expansion.

Please contact me if you have any questions.

Sincerely,

Richard B. White, P.E.
President

cc: Mike Gipson (Horizon Coal Corporation)
APPENDIX 3-10

ASTM COAL CLASSIFICATIONS
Chapter 3, Operation and Reclamation Plan
Hidden Splendor Resources, Inc. - Horizon Mine

July 2005

APPENDIX 3-10
ASTM COAL CLASSIFICATIONS
### ASTM Classification

<table>
<thead>
<tr>
<th>ASTM Classification</th>
<th>ASTM Group</th>
<th>Carbon (%)</th>
<th>Oxygen (%)</th>
<th>Moisture (%)</th>
<th>Volatiles (%)</th>
<th>R (vitrinite)</th>
<th>Btu/lb</th>
<th>MJ/kg</th>
<th>kcal/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peat</td>
<td></td>
<td>50 - 60</td>
<td>30 - 42</td>
<td>50 - 95</td>
<td>62 - 72</td>
<td>0.2 - 0.4</td>
<td>3000 - 4000</td>
<td>7.0 - 9.3</td>
<td>4000</td>
</tr>
<tr>
<td>Lignite</td>
<td>B</td>
<td>55 - 73</td>
<td>23 - 35</td>
<td>45 - 60</td>
<td>40 - 65</td>
<td>0.2 - 0.4</td>
<td>&lt; 6300</td>
<td>&lt; 14.6</td>
<td>5500</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>55 - 73</td>
<td>23 - 35</td>
<td>31 - 50</td>
<td>40 - 65</td>
<td>0.2 - 0.4</td>
<td>6300 - 8300</td>
<td>14.6 - 19.3</td>
<td>5500</td>
</tr>
<tr>
<td>Subbituminous</td>
<td>C</td>
<td>60 - 80</td>
<td>15 - 28</td>
<td>25 - 38</td>
<td>35 - 55</td>
<td>0.3 - 0.7</td>
<td>8300 - 9500</td>
<td>19.3 - 22.1</td>
<td>7000</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>60 - 80</td>
<td>15 - 28</td>
<td>20 - 30</td>
<td>35 - 55</td>
<td>0.3 - 0.7</td>
<td>9500 - 10500</td>
<td>22.1 - 24.4</td>
<td>7000</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>60 - 80</td>
<td>15 - 28</td>
<td>18 - 25</td>
<td>35 - 55</td>
<td>0.3 - 0.7</td>
<td>10500 - 11500</td>
<td>24.4 - 26.7</td>
<td>7000</td>
</tr>
<tr>
<td>Bituminous</td>
<td>HV C</td>
<td>76 - 83</td>
<td>8 - 18</td>
<td>10 - 25</td>
<td>35 - 55</td>
<td>0.4 - 0.7</td>
<td>10500 - 13000</td>
<td>26.7 - 30.2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>HV B</td>
<td>80 - 84</td>
<td>7 - 12</td>
<td>5 - 12</td>
<td>35 - 50</td>
<td>0.5 - 0.8</td>
<td>13000 - 14000</td>
<td>30.2 - 32.5</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>HV A</td>
<td>78 - 88</td>
<td>6 - 10</td>
<td>1 - 7</td>
<td>31 - 45</td>
<td>0.6 - 1.2</td>
<td>&gt; 14000</td>
<td>&gt; 32.5</td>
<td>8650</td>
</tr>
<tr>
<td></td>
<td>MV</td>
<td>84 - 91</td>
<td>4 - 9</td>
<td>&lt; 1.5</td>
<td>22 - 31</td>
<td>1.0 - 1.7</td>
<td>&gt; 14000</td>
<td>&gt; 32.5</td>
<td>8650</td>
</tr>
<tr>
<td></td>
<td>LV</td>
<td>87 - 92</td>
<td>3 - 5</td>
<td>&lt; 1.5</td>
<td>14 - 22</td>
<td>1.5 - 2.0</td>
<td>&gt; 14000</td>
<td>&gt; 32.5</td>
<td>8650</td>
</tr>
<tr>
<td>Anthracite</td>
<td>Semi.</td>
<td>89 - 93</td>
<td>3.5</td>
<td>&lt; 1.5</td>
<td>8 - 14</td>
<td>1.8 - 2.6</td>
<td>&gt; 14000</td>
<td>&gt; 32.5</td>
<td>8650</td>
</tr>
<tr>
<td></td>
<td>Anth.</td>
<td>90 - 97</td>
<td>2 - 4</td>
<td>0.5 - 2</td>
<td>2 - 8</td>
<td>2.2 - 5.0</td>
<td>&gt; 14000</td>
<td>&gt; 32.5</td>
<td>8650</td>
</tr>
<tr>
<td></td>
<td>Meta.</td>
<td>&gt; 94</td>
<td>1 - 2</td>
<td>1 - 3</td>
<td>&lt; 2</td>
<td>&gt; 4.5</td>
<td>&gt; 14000</td>
<td>&gt; 32.5</td>
<td>8650</td>
</tr>
</tbody>
</table>

HV - High Volatile  
MV - Medium Volatile  
LV - Low Volatile  
Semi. - Semianthracite  
Anth. - Anthracite  
Meta. - Metanthracite

Source: University of Illinois, Geology Lecture 837556753
APPENDIX 3-11

BLM APPROVAL OF R2P2
IN REPLY PLEASE REFER TO:
3482, UTU-74804, (UT-923)

Certified Mail--Return Receipt Requested
Certificate No.

Derrel Curtis
General Manager
Hidden Splendor Resources
P.O. Box 32
Helper, Utah 84526

Re: Modification to the Resource Recovery and Protection Plan (R2P2), Horizon Mine,
Federal Coal Lease UTU-74804

Dear Mr. Curtis:

The Bureau of Land Management (BLM) has received a modification to the R2P2 from Hidden Splendor for the subject mine. The modification revises the timing and layout of the mining plan now that Hidden Splendor has restarted the Horizon Mine after acquisition from the previous lessee. The revision is for the only Federal coal lease, UTU-74804 and associated fee coal lands.

The Hidden Splendor mining plan is based on a north-west/south-east orientation. Hidden Splendor states that the orientation will allow for panels to parallel the prevalent faulting trend and to probe/cross the faults with submains.

The BLM agrees with the proposal. The new layout will avoid multiple fault crossings in mining panels and, in turn, provide for better delineation of the faults. Remaining recoverable reserves are projected by Hidden Splendor to be 5.9 million tons and they report that 0.52 million tons have been recovered as of 10 Jan 2005. BLM has independently confirmed that 5.9 million remaining recoverable tons is reasonable.

BLM last inspected the mine on 22 September 2004. Some changes have been made to the overall plan approved by this letter and attached map. Hidden Splendor is requested to provide modifications to this approved mine plan on or before 28 February 2005.

This approval of a minor modification to an existing R2P2 is Categorically Excluded from the National Environmental Policy Act (NEPA) analysis in that no new surface disturbance will occur from this action as stated in Overview of BLM's NEPA Process, February 1997, Appendix 2, page 2-7 (F)(7).
The modification of the R2P2 complies with the Mineral Leasing Act of 1920, as amended, the regulations at 3480, and the lease terms and conditions and will achieve maximum economic recovery of the Federal coal. The revised R2P2 for the Horizon Mine is approved as submitted. A copy of the approved mine map is enclosed. If you have any questions, please contact Stephen Falk at the Price Field Office (435) 636-3605 or Jeff McKenzie of my staff at (801) 539-4038.

Sincerely,

J.F. Kohler
Branch Chief, Solid Minerals

Enclosures:
Approved Mine Map

cc: UT-070, Price Field Office (w/encl.)
Utah Division of Oil Gas and Mining (w/encl.)
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801
Mr. David B. Miller
Lodestar Energy, Inc.
HC 35 Box 370
Helper, Utah 84526


Dear Mr. Miller:

On January 30, the Bureau of Land Management (BLM) received Lodestar Energy, Inc.'s request for a minor amendment to the approved Resource Recovery Protection Plan (R2P2) for the Horizon Mine. This letter is to notify you that the BLM has completed our review of Lodestar Energy, Inc.'s minor amendment to the approved R2P2 regarding the Horizon Mine. The purpose of our review is to determine compliance with The Mineral Leasing Act of 1920, as amended, the regulations at 43CFR 3480, and the lease terms and conditions; and to ensure that maximum economic recovery (MER) will be achieved.

Our determination of the subject minor amendment is as follows:

♦ Since DOGM approval for the complete lease is not likely for some time, a new stipulation has been added below allowing for mining south of "Beaver".

♦ Recoverable coal reserves for UTU-74804 are 6,295,700 as determined by the May 12, 1998 Engineering and Geologic Report.

♦ The actual sequencing and initial date of commencement of mining operations on UTU-74804 will probably change. Once all the permits are in place, a revised sequence and timing map will need to be submitted to the BLM.

Based upon the above-stated requirements, BLM determination is conditioned with the following stipulation:

Original Stipulation: Horizon shall submit the following information (as requested above):

♦ An updated mine plan that details mining sequencing and any other changes will be submitted when all permits are in place, but prior to commencement of operations on
the Federal lease.

New Stipulation:

- R2P2 approval is for areas south of "Beaver" as shown on the approved R2P2 amended map. Areas north of "Beaver" are NOT to be mined prior to all permits being in place.

BLM has determined that the information contained in the R2P2 amendment for the Horizon Mine with stipulation does comply with the Mineral Leasing Act of 1920, as amended, the regulations at 43 CFR 3480, and the lease terms and stipulations. Thus, approval for the Horizon Mine's R2P2 amendment is granted. If you have any questions, please contact Jay Marshall at the Price Field Office at (435) 636-3614.

Sincerely,

[Signature]
Field Manager

cc: UT-921, SD, Utah
Utah Division of Oil, Gas and Mining
355 West North Temple Street
3 Triad Center Ste. 350
Salt Lake City, Utah 84180-1203

Joe Wilcox
Office of Surface Mining
Reclamation and Enforcement
1999 Broadway, Suite 3320
Denver, Colorado 80202-5733

INTEGRATED EFFECTIVE: 2/3/2001
Utah Division Oil, Gas and Mining
SURFACE TREATMENT - SOIL

WATERBAR

2:1 SIDE SLOPES OR FLATTER 3:1 MAX FOR VEHICLE CROSSING

PLATE 3-4A. ANCILLARY ROAD TYPICAL SECTION.
CHAPTER 4
LAND STATUS, LAND USE AND POST-MINING LAND USE
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Scope</td>
<td>4-1</td>
</tr>
<tr>
<td>4.2 Methodology</td>
<td>4-1</td>
</tr>
<tr>
<td>4.3 Land Status</td>
<td>4-1</td>
</tr>
<tr>
<td>4.3.1 Surface Land Status</td>
<td>4-1</td>
</tr>
<tr>
<td>4.3.2 Mineral Status</td>
<td>4-1</td>
</tr>
<tr>
<td>4.3.3 Legal Right to Enter</td>
<td>4-1</td>
</tr>
<tr>
<td>4.3.3.1 Road Usage Agreements</td>
<td>4-4</td>
</tr>
<tr>
<td>4.3.4 Associated Surface Mining</td>
<td>4-4</td>
</tr>
<tr>
<td>4.4 Existing Land Use</td>
<td>4-4</td>
</tr>
<tr>
<td>4.4.1 Regional Land Use</td>
<td>4-4</td>
</tr>
<tr>
<td>4.4.2 Mine Plan Area Land Use - Past and Present</td>
<td>4-5</td>
</tr>
<tr>
<td>4.4.3 Affect of Operations on Land Use and Mitigation Measures</td>
<td>4-5</td>
</tr>
<tr>
<td>4.5 Post-Mining Land Use</td>
<td>4-6</td>
</tr>
<tr>
<td>4.6 Socioeconomic Consideration</td>
<td>4-6</td>
</tr>
</tbody>
</table>

LIST OF TABLES

TABLE 4-1 NAMES AND ADDRESSES - RECORD HOLDERS OF LEGAL INTEREST 4-2

LIST OF PLATES

PLATE 4-1 LAND USE
PLATE 4-2 SURFACE OWNERSHIP
PLATE 4-3 COAL OWNERSHIP

LIST OF APPENDICES

APPENDIX 4-1 LAND USE CLASSIFICATION
APPENDIX 4-1a LANDOWNER LETTERS
CHAPTER 4
LAND STATUS, LAND USE AND POST MINING LAND USE

4.1 Scope

This section details surface and mineral ownership as well as lease holders or easement holders, or other pending options or interests in lands which are contiguous to or within the area to be covered by the permit.

The existing regional and site specific land use as well as the possible impacts which may occur during and after mining to the land-use and socioeconomic are considered.

4.2 Methodology

All information documenting land status has been acquired from information on file with various governmental agencies, and also through independent land checks completed by Utah Coal and Chemical Corp.

4.3 Land Status

4.3.1 Surface Land Status

Plate 4-2 shows surface ownership of the area. Surface land owners will be notified by letter of the applicants intent to mine six months prior to mining. Table 4-1 contains addresses for the surface owners. The letter will state the mine's name and address, company contact, purpose of notification, possible impacts to their land due to mining, and request of access to surface for monitoring. A copy of the letters has been forwarded to UDOGM.

4.3.2 Mineral Status

Plate 4-3 shows the ownership and location of the mineral tracts. Table 4-1 list the names and addresses of the mineral ownership.

4.3.3 Legal Right to Enter

Plate 1-1 shows the boundaries of the land within the proposed permit area upon which the applicant has the legal right to enter and conduct coal mining activities. See Chapter 2 of this permit for further information concerning the permit boundary.

Leased Property

Lease documentation, description, and right-to-enter information are located in Chapter 2.
### TABLE 4-1

Names and Addresses  
Record Holders of Legal Interests

<table>
<thead>
<tr>
<th></th>
<th>Name and Address</th>
</tr>
</thead>
</table>
| 1. | U P & L  
P.O. Box 899  
Salt Lake City, Utah  84110                           |
| 2. | Hidden Splendor Resources  
50 West Liberty Street, Suite 880  
Reno, NV  89501                                       |
| 3. | J. Mark & James Jacobs  
734 S. Cherry Drive  
Orem, Utah  84057                                     |
| 4. | Agnes and Eldred E. Peirce, Jr.  
3432 South 500 East  
Price, Utah  84501                                    |
| 5. | Steve and Pete (Jr.) Stamatakis  
1111 South 450 West  
Price, Utah  84501                                    |
| 6. | United States of America  
Bureau of Land Management  
2370 South 2300 West  
West Valley City, Utah  84084                          |
| 7. | R. L. Bird  
1840 East Bryan Avenue  
Salt Lake City, Utah  84108                            |
| 8. | Nielson Ltd.  
P.O. Box 620  
Huntington, Utah  84528                                |
| 9. | Roy M. and Tessie K. Farley  
5240 So. Highland Drive  
Salt Lake City, Utah  84117                            |
| 10. | Robert and Linda N. Jewkes  
Wellington, Utah  84542                                 |
   2030 S. Cave Hollow Way
   Bountiful, Utah 84010

12. Milton A. Oman
   1714 E. Millcreek Way
   Salt Lake City, Utah 84106

13. Utah Division of Wildlife Resources
   455 West Railroad Avenue
   Price, Utah 84501

14. K.C. Jensen and Tonda Hampton
   P.O. Box 957
   Price, Utah 84501

15. Carbon County
    Courthouse Building
    Price, Utah 84501

   4190 Fortuna Way
   Salt Lake City, Utah 84117

17. Utah State Fish and Game
   1095 West Motor Avenue
   Salt Lake City, Utah 84116
4.3.3.1 Road Usage Agreements

In a letter dated May 13, 1996 Carbon County agreed to allow Horizon to use their County Road 290 to access the Horizon No. 1 mining project. Carbon County also agreed to continue the maintenance of county road 290 (Appendix 3-1).

4.3.4 Associated Surface Mining

The surface operations associated with underground coal mining activities do not involve the surface mining of coal. The private mineral lease to be mined (coal) has not been severed from the private surface lands.

4.4 Existing Land Use

4.4.1 Regional Land Use

Agricultural/Livestock

Historically, the livestock industry has played an important part of the region's economy. Early settlers depended on range land for grazing sheep, cattle, and horses. Presently, the trend is towards more cattle grazing and fewer sheep. The lands in the area used for grazing are outlined on Plate 4-1.

Forestry

Timber operations were once closely tied to ranch operations in the area. Early settlers needed the timber for fences, corrals, mine timber, railroad ties, etc. In more recent years, the majority of the sawmills have closed due to less demand for wood products.

During 1995 a logging operation opened on privately owned land above the Horizon proposed permit area. The logging operation uses County Road 290 and the county road (Consumer/Clear Creek) which runs through the proposed disturbed area.

Recreation

A large variety of wildlife zones are present ranging from cold desert to high mountain forest. Mule deer are the most abundant big game in the region. Mule deer and elk are popular big game hunting species. Lakes, streams, and rivers of this region provide habitat for a variety of fishes.

In addition to hunting and fishing, USFS and BLM provide lands for a variety of recreational activities in this region. They include camping, hiking, snowmobiling, etc.
4.4.2 Mine Plan Area Land Use - Past and Present

The land on which the Horizon No. 1 Mine is located has long been used for coal mining. Other than coal mining, this area has been used for hunting, hiking, and grazing. There are no developed campgrounds or paved public roads within the area and none are planned for the future.

The land use within and adjacent to the permit boundary at the time of this application is the monitoring of previous mining operations, mining reclamation activities, wildlife habitat, and grazing. The lands within the permit boundary are monitored to gather data necessary in permitting a mining operation. Horizon is unaware as to the owners intended use for all lands in the area, therefore Plate 4-1 outlines areas with specific or specialized land uses.

Private landowners presently administer the lands in this area for limited livestock forage. Cattle and sheep are herded through the proposed mine site area in spring and back through in the fall. Wildlife habitat, watershed, dispersed recreation, and coal mining are also land uses in the area. There are no range improvements in the area. Access to the grazing lands is limited to jeep trails into the higher elevations leading to Beaver Creek above the proposed mine sites. There are no plans to alter this access situation. The mine area has been classified as M & G by Carbon County. Supportive and descriptive documentation is located in Appendix 4-1.

Carbon County owns and maintains two roads, one runs parallel to the permit boundary on the south (290), the second runs through the disturbed area (for approximately 1250') enabling access to higher elevations for grazing and recreational activities (Consumers/Clear Creek).

4.4.3 Affect of Operations on Land Use and Mitigation Measures

The surface disturbance at the No. 1 Mine will consist of access/haul roads and surface facilities that will service the mining operations; some wildlife will be displaced due to coal hauling and facility operation. There will be little impact on range land as the mine disturbed area is below areas used for grazing by private landowners.

There are no public roads or public parks in or near the proposed mining operations that would suffer any impacts from mining operations. The Gordon Creek State Wildlife Management Unit lies southeast of the permit area.

The sedimentation pond will be constructed below the disturbed area to prevent sediment from entering the North Fork Gordon Creek. Refer to Chapter 7 for the location of runoff and diversion structures.

It is not projected that the mining operation will affect the land use within and adjacent to the permit boundary.
4.5 Post Mining Land Use

Once mining has ceased, the disturbed areas will be reclaimed to a degree acceptable to UDOGM and the land will once again support its principle pre-mining use: i.e., undeveloped land. Private landowners will continue to graze sheep and cattle on areas near Beaver Creek, which is above the mine site.

The restoration of the area will be achieved by regrading the yards, reclaiming the roads and portal areas to a practical degree, planting all disturbed areas and monitoring the revegetation effort.

4.6 Socioeconomic Consideration

The coal mining industry within Emery and Carbon Counties has shown several erratic periods of renewed growth and sudden decline. During the 1950 -1960 census period, the population of Emery County declined 8.79 percent. From 1960 to 1970, Emery County’s population declined .74 percent per year. From 1970 to 1975, the population increased from 5,137 to an estimated 6,700 persons, a 23 percent increase.

Carbon and Emery Counties are economically dependent upon conditions in the coal market. This is evident by the slump in population of these counties that occurred between 1950 -1970. The recent increase in coal mining has centered in Emery County where mining employment has increased over 210 percent from 1969 to 1980. The increase has been more modest in Carbon (40 to 50 percent).
APPENDIX 4-1

LAND USE CLASSIFICATION
May 23, 1989

To Whom It May Concern:

Carbon County Zoning on the property located at Township 13S R8E Section 17 is M & G 1.

See attached a copy of M & G 1 zoning as per Carbon County development code as of 1981.

Sincerely,

Harold R. Marston
Carbon County Planner
A. Legislative Intent

The M&G-1 Mining and Grazing Zone generally covers the low rangeland areas of Castle Valley. Because of the limitations imposed by climate, topography, soil capability, inadequate water supply and the presence of economically significant mineral deposits, this area has historically been utilized as a place for the grazing of livestock on the open range and as the location of numerous mining and mineral exploration sites. The peculiar characteristics and conditions present in this area make the land more appropriately suited for a continuation of these uses. However, because of the relatively fragile balance of nature in the area, all permitted activities must be carried out in a manner consistent with the limitations of the environment.

It is hereby declared that the specific purposes and intent of the Legislative Body in establishing the M&G-1 Mining and Grazing Zone are:

1. To take advantage of and to more fully implement the basic purposes for planning and zoning as set forth in Section 17-27-5 and 17-27-13 of the Utah State Code and Section 1-2 of this Code.
2. To promote the conservation of water, land, mineral and other resources.
3. To prevent the degradation of the natural and social environment.
4. To foster agriculture, mining and industry within the state.

In order to accomplish the above-stated purposes, those uses which are reasonably necessary to the use of the land for agricultural, mining and certain types of industrial operations shall be encouraged, provided that adequate guarantees for the protection of the area have been incorporated. Conversely, residential, commercial and similar urban type uses which are inconsistent with the militate against the continued use of the area for the above-stated purposes are not permitted in this zone.

The specific regulations necessary for the accomplishment of the purposes as outlined above are hereinafter set forth.

B. Permitted Non-Conditional Uses

The following buildings, structures and uses of land shall be permitted upon compliance with the standards and requirements as set forth in this Code:

1. Grazing of livestock on open range land.
2. Production of fruit and crops in the field.
3. Buildings, silos and other structures for the storage and keeping of agricultural products and machinery.
4. Care and keeping of domestic livestock and fowl.
5. Barns, stables, corrals, pens, coops and other buildings for the care and keeping of domestic livestock, provided that no such barn, stable, corral, pen, coop or other building shall be located closer than one hundred (100) feet to an existing dwelling.
6. Raising of mink, beaver, nutria and similar fur-bearing animals, and the pens and other structures necessary in the raising of such animals.
7. Minor utility transmission projects.
8. Kamikaze lakes, reservoirs, ponds and dams when under ten (10) acre-feet in capacity.
9. Minor mines and pits, subject to the prior approval of a site plan as provided under Section 3-3-26.
10. Caretaker dwellings subject to the provisions of Section 3-3-21.
11. Production Wells.

C. Permitted Conditional Uses

The following buildings, structures and uses of land shall be permitted upon compliance with the requirements set forth in this Code and after approval has been given by the designated reviewing agencies: (Approval of other agencies or levels of government may be required.)

1. Major underground and surface mine developments, when approved by the County Commission and in accordance with the applicable provisions of Chapter 5-4.
2. Major utility transmission and railroad projects, when approved by the County Commission in accordance with the applicable provisions of Chapter 5-5.
3. Automobile and motorcycle race tracks and race courses, subject to approval of a site plan by the County Commission.
4. Fairgrounds, rodeo arenas, race tracks and race courses, schools, training and correctional facilities when operated by a public agency and subject to the prior approval of Site Plan by the County Commission.
5. The following industrial uses and activities when approved as a large scale industrial project in accordance with the provisions of Chapter 5-3.
   a. The storage, processing and loading of earth products and facilities relating thereto...
   b. Electric generating plants.
6. Manmade lakes, reservoirs, ponds and dams over ten (10) acre-feet in capacity when approved by the County Commission.
7. Airports, flying fields, helicopter pads, including terminal and aircraft storage facilities, subject to approval of a site plan by the County Commission.
8. Shooting ranges subject to the approval of the County Commission, after recommendation of the Planning Commission.
9. Water treatment plants, culinary water storage tanks and sewage treatment plants when approved by the County Commission.
D. **Area Requirements**

There shall be no minimum area requirements except as may be required under other provisions of this Code.

E. **Width Requirements**

There shall be no minimum width requirements except as may be required under other provisions of this Code.

F. **Location Requirements**

All buildings shall be set back at least sixty (60) feet from the center line of a County road or thirty (30) feet from the front line, whichever is greater.

G. **Size and Height Requirements**

There shall be no size and height requirements.

H. **Utility Requirements**

1. **Culinary Water**

   All dwellings and other buildings used for human occupancy shall:

   a. Be served by an approved central water system, or

   b. Be served by an individual cistern water system subject to the following conditions:

      (1) That connection to an approved central water system is not possible.

      (2) The cistern shall comply with County standards for design and construction of water cisterns as approved by the local health authority.

   c. Regardless of the type of system utilized, the requirements of Section 3-3-23 regarding conveyance of water rights and the availability of a reliable water supply are fully complied with.

2. **Sewage Disposal Facilities**

   No building used for human habitation shall be constructed, nor shall any permit be issued therefor, until sewage disposal facilities have been approved in accordance with minimum health standards as established by the State and/or local health authority.
I. Special Requirements

1. Trash Requirements

   The yards around buildings shall be kept free of debris, refuse, weeds and other flammable material which may constitute a fire hazard.
February 20, 1996

Mr. Richard Gilliam, President
Horizon Coal Corporation
P.O. Box 2560
Wise, VA 24273

RE: MINE PERMIT APPLICATION
UTAH DOGM FILE: PRO/007/020

Dear Mr. Gilliam:

Hidden Splendor Resources, Ltd., the land owner of the lands contained within the disturbed area boundary of the proposed Horizon No. 1 Mine, accepts the reclamation plans and post mining land use proposed by Horizon Coal Corporation in their mine permit application.

Sincerely,

Cecil Ann Walker
President
CAW/mao

copy:
Oliver Gushee Jr., Pruitt, Gushee and Bachtell, SLC, UT
Vicky Bailey, EarthFax Engineering, Midvale, UT
Brad Bourquin, Horizon Coal Corporation, Lakewood, CO
May 13, 1996

Earthfax
7324 South Union Park Ave.
Midvale, Utah 84047

Attn: Vicky Bailey

Dear Ms. Bailey,

Thank-you for your interest in the coal industry of Carbon County. We wish you and your company the greatest good fortune in your venture.

In reference to the access road into your proposed mine site. This is a Carbon County owned road and is currently maintained by the Carbon County Road department. As it pertains to the development of your mine project Carbon County would agree to allow the use of this road and continue to maintain it to help with the operation of your facility.

Again we welcome your company and the economical benefits associated with the re-opening of the historical mine in our county. If we can be of help in any other way please let us know.

Regards,

Neil Breinholt, Chairman
Carbon County Commission
August 15, 1996

Horizon Coal Corporation
P.O. Box 2560
Wise, VA. 24273

Attention: Mr. Brad Bourquin
Ms. Vicki Bailey

Dear Ms. Bailey,

Thank-you for your interest and efforts in the coal industry of Carbon County. We wish you and your company the greatest good fortune in your venture.

In reference to the access roads into your proposed mine sites, County Road 290 and Consumers Road. These are Carbon County owned roads and are currently maintained by the Carbon County Road Department. As it pertains to the development of your project Carbon County would agree to allow use of the roads mentioned herein, and continue to maintain them. Carbon County would require Horizon Coal Corporation to apply, at their expense, a dust suppression control substance. Carbon County recommends the use of Magnesium Chloride to be applied at intervals as needed for dust control.

Again, we welcome your companies efforts and pledges our continued support.

Regards,

Bill Krompel, Carbon County Commissioner
APPENDIX 4-1a
LANDOWNER LETTERS
Certified letters were mailed to the landowners in the current mining permit area. (See attached) No response was received by the landowners as of the time of this submittal.
January 13, 2004

James C. Jacob
J. Mark Jacob
914 East 300 North
Orem, Utah 84097-5096

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Re: Horizon Mine
DOGM Permit # C/007/0020

Dear Mr. Jacob:

Hidden Splendor Resources, Inc. acquired the Horizon Mine from Lodestar Energy, Inc. on July 1, 2003. As part of the Utah Division of Oil, Gas & Mining permit transfer, Hidden Splendor Resources, Inc. is required under Regulation R645-301-114.200 to have written consent from surface landowners within the permit area.

Hidden Splendor Resources, Inc. is currently the leaseholder of Federal Coal Lease #U-74804 and is currently operating the Horizon underground mine in the above-mentioned lease.

Hidden Splendor Resources, Inc. does not anticipate any adverse effects to your property, nor plans any surface disturbance to your property because of its underground mining operation.

The description of your surface property within the permit area is as follows:

SW1/4 NW1/4 Section 17, Township 13 South, Range 8 East, SLBM
NW1/4 NE1/4 Section 17, Township 13 South, Range 8 East, SLBM
NE1/4 NE1/4 Section 18, Township 13 South, Range 8 East, SLBM

Hidden Splendor Resources, Inc. respectfully requests written consent from you as landowners of the aforementioned property allowing the Horizon Mine to continue its underground mining operations.
Should you have any questions or comments, please feel free to contact Mark Wayment, Mine Manager or Kit Pappas, Environmental Coordinator, at 435-472-1313.

Thank you, in advance, for your consideration and prompt response in this matter.

Mark Wayment
Mine Manager

Cc: File
1. Article Addressed to:
   JAMES C JACOB
   J. MARY JACOB
   914 E 300 N
   OREM, UT 84097-5098

2. Article Number
   (Transfer from service label)
   7002 2410 0006 2522 3840

3. Service Type
   Certified Mail  [ ] Express Mail
   Registered  [ ] Return Receipt for Merchandise
   Insured Mail  [ ] C.O.D.

4. Restricted Delivery? (Extra Fee)  [ ] Yes

---

1. Article Addressed to:
   ROY M. FARLEY
   TESS FARLEY
   4807 S. WALLACE LANE
   HOLIDAY, UT 84117

2. Article Number
   (Transfer from service label)
   7002 2410 0006 2522 3833

---

INCORPORATED
APR 02 2004
CHAPTER 5
CULTURAL AND PALEONTOLOGICAL RESOURCES
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Scope</td>
<td>5-1</td>
</tr>
<tr>
<td>5.2 Cultural and Historic Resources</td>
<td>5-1</td>
</tr>
</tbody>
</table>

LIST OF APPENDICES

APPENDIX 5-1  HISTORICAL, CULTURAL, AND PALEONTOLOGICAL RESOURCES STUDY, SHPO CORRESPONDENCE
CHAPTER 5

CULTURAL AND HISTORICAL RESOURCES

5.1 Scope

The historical, cultural and paleontological resources inventory and Class I literature search for Horizon Coal Corporation were completed by Baseline Data, Inc. (BDI) in 1995. The field work was completed during the week of August 1, 1995 and the literature search done in July, August and September of 1995. A copy of the data collected by BDI can be found in Appendix 5-1.

The area surveyed lies approximately 14 miles northwest of Price, Utah in Township 13 South, Range 8 East, Section 17. The BDI inventory consisted of a 100% examination of the proposed mine disturbed area.

Coal mines were opened in the area in the 1920s. Among the larger mines in the area were Sweet in 1925, Consumers in 1922, and National in 1908. Mining camps sprang up at the mines and for a short time Coal City (Dempseyville), located 2 miles east of the mines served as the business and residential center of the mining district. Remains of the major mining camps and coal mining operations can still be seen, including remains of cabins and work areas constructed by National Coal Company.

To the best of the applicants knowledge the permit area does not contain any public parks, cemeteries, archeological sites, units of the National System of Trails or of the Wild and Scenic River System.

The archaeological survey of the area recorded no historic archaeological sites. A search of the site files at the Utah Division of State History turned up no previously recorded sites in or near the permit area (see Appendix 5-1).

During 1985 Desert West Research completed an inventory and cultural history review of the Blue Blaze/Consumers Mine area for UDOGM. Desert West determined that the Blue Blaze/Consumers Mine was eligible for nomination to the National Register of Historic Places. Due to the access, mining reclamation efforts, and continued disturbance by the public, the area has undergone significant impacts since its nomination in 1985. According to a conversation with James L. Dykmann of the Utah State Historical Preservation Office (SHPO) on January 19, 1996 he is "unaware of the Blue Blaze/Consumer Mine being listed at this time".

Letters from the Utah State Historical Preservation Office on May 30, 1995 and October 24, 1995 both recommend that there would be "No Effect" upon cultural resources by the Horizon Mine project. The letters from James L. Dykmann (SHPO) are located in Appendix 5-1.

5.2 Cultural and Historic Resources

Hidden Splendor Resources is unaware of any site within the permit boundary which qualify as being of cultural or historical value. Should cultural or historical artifacts be discovered, the appropriate regulatory agencies will be notified and the site will be protected from further disturbance until it can be examined by authorized personnel.
The information in Appendix 5-1 may conflict with other reports prepared by qualified consultants, therefore the information presented by BDI should only be considered relevant when it discusses historical, cultural, and paleontological data.
APPENDIX 5-1

HISTORICAL, CULTURAL, AND PALEONTOLOGICAL RESOURCES STUDY

SHPO CORRESPONDENCE

INCORPORATED

APR 02 2004

DIV OF OCE GAS & MINING
HISTORICAL, CULTURAL AND PALEONTOLOGICAL RESOURCES

Prepared For

Horizon Coal Corporation
Carbon County, Utah

Prepared by
Baseline Data, Inc.

September 1995
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>Table of Contents</td>
<td>ii</td>
</tr>
<tr>
<td>5.1</td>
<td>Scope</td>
<td>1</td>
</tr>
<tr>
<td>5.1.1</td>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>5.1.2</td>
<td>General Information and Legal Background</td>
<td>1</td>
</tr>
<tr>
<td>5.1.2.1</td>
<td>General Goals</td>
<td>4</td>
</tr>
<tr>
<td>5.1.2.2</td>
<td>Location</td>
<td>4</td>
</tr>
<tr>
<td>5.1.3</td>
<td>Environmental Overview</td>
<td>6</td>
</tr>
<tr>
<td>5.1.3.1</td>
<td>Physical Features of the Mine Area: Topography, Drainage and Elevation</td>
<td>6</td>
</tr>
<tr>
<td>5.1.3.2</td>
<td>Soils</td>
<td>7</td>
</tr>
<tr>
<td>5.1.3.3</td>
<td>Bedrock Geology</td>
<td>7</td>
</tr>
<tr>
<td>5.1.3.4</td>
<td>Flora and Vegetation</td>
<td>8</td>
</tr>
<tr>
<td>5.1.3.5</td>
<td>Fauna</td>
<td>9</td>
</tr>
<tr>
<td>5.1.3.6</td>
<td>Present Climate</td>
<td>9</td>
</tr>
<tr>
<td>5.1.3.7</td>
<td>Past Climate</td>
<td>11</td>
</tr>
<tr>
<td>5.1.3.8</td>
<td>Present Land Use</td>
<td>12</td>
</tr>
<tr>
<td>5.1.3.9</td>
<td>Historic Land Use</td>
<td>12</td>
</tr>
<tr>
<td>5.1.3.10</td>
<td>Previous Research</td>
<td>14</td>
</tr>
<tr>
<td>5.1.4</td>
<td>Cultural Resource Overview</td>
<td>15</td>
</tr>
<tr>
<td>5.1.4.1</td>
<td>Prehistoric</td>
<td>15</td>
</tr>
<tr>
<td>5.1.4.2</td>
<td>Historic</td>
<td>20</td>
</tr>
<tr>
<td>5.1.4.3</td>
<td>History of Gordon Creek Area</td>
<td>24</td>
</tr>
<tr>
<td>5.2</td>
<td>Inventory Methods</td>
<td>25</td>
</tr>
<tr>
<td>5.2.1</td>
<td>Field Methods</td>
<td>25</td>
</tr>
<tr>
<td>5.3</td>
<td>Inventory Results</td>
<td>27</td>
</tr>
<tr>
<td>5.3.1</td>
<td>Prehistoric Inventory</td>
<td>27</td>
</tr>
<tr>
<td>5.3.2</td>
<td>Paleontological Inventory</td>
<td>27</td>
</tr>
<tr>
<td>5.3.3</td>
<td>Historic Inventory</td>
<td>27</td>
</tr>
<tr>
<td>5.4</td>
<td>National Register Consideration</td>
<td>35</td>
</tr>
</tbody>
</table>
5.4.1 National Register Evaluations

5.5 Impacts to Historic, Cultural and Paleontological Resources
5.5.1 Mine Development Impacts and Project Recommendations

5.6 Parks and Recreation
5.6.1 Mine Impacts to Parks and Recreation

References Cited

Appendix I IMACS Site Forms (Limited Distribution)
Appendix II Paleontological Report
Appendix III Paleontological Site Forms (Limited Distribution)
5.1 Scope

5.1.1 Introduction

Baseline Data, Inc. (BDI), has completed an historical, cultural and paleontological resource inventory of the proposed Horizon Mine Corporation, Mine area near Gordon Creek, Carbon County, Utah. The inventory is part of the requirements of a mine permit application required by the Department of Natural Resources Division of Oil, Gas and Mining, State of Utah ((hereafter D.O.G.M.). The mine permit application is for the proposed mine, located in the North Fork of Gordon Creek in Carbon County (Figure V-1). The inventory consisted of a 100% examination of the proposed mine disturbance area. This document includes the results of the Class I literature search for historical, cultural and paleontological resources and the 100% inventory of the proposed mine development area. The format is a slightly modified version of the Permit Applications-General Guidelines of Organization Format and Content published by D.O.G.M.

5.1.2 General Information and Legal Background

Baseline was contracted by Mr. Bradley J. Bourquin, P.E., consultant for Horizon Coal Corporation (hereafter Horizon), to complete the historical, cultural and paleontological inventory of the proposed mine location. The field work was completed during the week of August 1, 1995. The historical and cultural resource inventory and literature search were completed under the direction of Asa S. Nielson, Principal Investigator for Baseline, assisted in the field by Charles E. Hughes and Shane R. Sulz. The historical research and file search were completed by Charles E. Hughes. The paleontological research was completed by Dr. Wade E. Miller of Miller Consulting. All of the research carried out for Horizon was completed under Utah State Project Authorization No. U95-BS-416P. The report was prepared by Asa S. Nielson, with contributions by Charles E. Hughes, James B. Allison and Shane R. Sulz.

All field and literature notes, correspondence, maps and site data are on file at the office of Baseline Data, Inc., in Orem, Utah. No artifacts were collected during the inventories. This report is being distributed to Horizon and their appointed consultants, and to all appropriate state and federal agencies.
The historical, cultural and paleontological inventory is required for Horizon to comply with pertinent government regulations. First, the inventory fulfills requirements of the Utah Coal Mining and Reclamation Act of 1979. The inventories also help Horizon to comply with federal legislation, i.e., Executive Order 11593 "Protection and Enhancement of the Cultural Environment" (Federal Register, Vol. 36, No. 95, May 15, 1971), "The National Historic Preservation Act of 1966 (80 Stat. 915) and amended in 1976, The Archeological and Historical Data Preservation Act of 1974", which is amendment of the "The Reservoir Salvage Act of 1960" (74 Stat. 220), and finally, the "Archeological Resources Protection Act of 1979".

In general, these laws recognize the fragile, non-renewable nature of our historical, cultural and paleontological resources. The legislation has been enacted in order to identify, report and eluate these resources prior to any proposed federal or state undertaking.

5.1.2.1 General Goals

The inventories have one primary goal, and that is to identify and evaluate the historic, cultural and paleontological resources found within the proposed Horizon Mine area. The BDI's research was restricted to the surface coal processing area in the Gordon Creek area. Any other research for historical, cultural and paleontological resources that may be required on the federal, private or state coal leases will be addressed under separate contracts with appropriate consultants. Horizon provided BDI with a detailed map showing the proposed Horizon area. Relying on this map, BDI was able to determine the types of effects that would occur at any one location in the mine project area to historical, cultural or paleontological resources. The entire surface facility area was examined at a 100% intensive level.

5.1.2.2 Location

The project area is located about 14 miles northwest of the Carbon County community of Price, and is near the head of the North Fork of Gordon Creek. Specifically, the area examined by BDI consists of about 30 acres in the NE1/4 SE1/4 SW1/4, the W1/2, SE1/4 NE1/4 SW1/4, the E1/3 SW1/4 NE1/4 SW1/4, the SE1/4 NE1/4 NE1/4 SW1/4 and the NW1/4 NW1/4 NW1/4 SE1/4 of Section 17, T. 13S R.8E (Figure V-2 Jump Creek Quadrangle Utah-Carbon Co. 7.5 Minute Series (Topographic)). All of the land examined during the inventory is under private ownership.
5.1.3 Environmental Overview

5.1.3.1 Physical Features of the Mine Area: Topography, Drainage and Elevation

The proposed mine area is found in an unnamed tributary to the North Fork of Gordon Creek. The tributary canyon has its own smaller tributary found about 1200 feet (365 meters) north of the confluence with the North fork of Gordon Creek and the proposed mine will extend into that smaller tributary. The topography of the Horizon area is best characterized as a well-incised, mature canyon with eroded hillsides and occasional rock outcrop formations. At the confluence of the unnamed tributary and the North Fork of Gordon Creek, the elevation is about 7525 feet (2293.6 meters) above sea level. The northern end of the proposed mine area will reach an elevation of about 7720 feet (2353 meters).

The mine area is at the head of the North Fork of Gordon Creek, which drains a portion of the Wasatch Plateau south and east toward Price and the Price river. North and west of the mine area is a high ridge line that divides the Gordon Creek drainage from the Beaver Creek Drainage. Beaver Creek flows north into Johnson Creek, which in turn continues northward to join the Price River near Colton and U.S. Highway 6/50. The divide between Gordon and Beaver Creek reaches an elevation of about 8900 feet (2712 meters) on a rounded knoll about .6 miles north of the mine area.

The tributary canyons the mine facilities will occupy, are typical of the V-shaped and incised canyons located along the east side of the Wasatch Plateau. The slopes are steep, but eroded with only small rock outcrops that forms cliffs or overhangs. The canyon bottoms range from as narrow as 10 feet (3 meters) at the extreme north end of the mine area, to as wide as 250 feet (75 meters). In their natural, unaltered state, the wide portions of the canyons were probably far narrower, but historic mining activity has cut into the canyon fill and colluvial slopes of the canyon sides, artificially expanding the lever areas of the canyon surface.

5.1.3.2 Soils

A more precise description of the soils found in the mine area are found elsewhere in the mine permit application. In general, the canyon the mine facilities will occupy is filled with colluvium, mixed at the bottom of the drainages with worked alluvium, sand and clay. Vegetation in the bottom of the canyons builds us soil rich in organic matter but are still thin and eroded. Most of the soils in the project area are probably entisols and inceptisols.
Pediments at the base of the canyon sides probably contain the oldest soils. A small undisturbed section of native soil found on the north ends of the mine area is about 7 feet (2+ meters) deep, and consists of laminated sand, clay, and angular fragments of sandstone. Shallow “A” horizons are forming under the vegetation matte on the canyon bottom. Elsewhere, the canyon sides are too geologically active, effected more by erosion, to form mature soils.

5.1.3.3 Bedrock Geology

The proposed mine facility is within the Wasatch Plateau Subsection of the Basin and Range–Colorado Plateau Transition (Stokes 1977:2). The Wasatch Plateau differs from other subsections of the High Plateau in that it is entirely capped with sedimentary, as opposed to volcanic, cap rock (Stokes 1977:15). In general, the mine area is within the Late Cretaceous Mesaverde Group Sandstone Formation, with various subdivisions of the Black Hawk Formation exposed on the walls of the surrounding canyon (Hintze 1980). The Black Hawk Formation is the primary coal bearing deposit in Utah. Specifically, the exposed bedrock consists of alternating tan sandstones and gray shales with occasional reddish brown sandstone units. Thin coal seams are found on the canyon sides, usually associated with shales, but also interbeded with sandstone (Miller 1995-see Appendix 2). Most of the bedrock formations have been masked by the down slope colluvial activity. Exposed bedrock faces are found only on the sides of the main tributary canyon and near the north end of the mine area where erosion had cut and removed the intermittent creek deposits down to bedrock.

5.1.3.4 Flora and Vegetation

The proposed mine facility is within a Mountain Brush Plant community, and is immediately surrounded by a Ponderosa Pine Plant Community (Welsh et al 1987:7). The canyon bottom is dominated by an open big sagebrush park, with thick clumps of Gambles oak and scattered juniper being found scattered on the bottom and sides of the canyon. Rabbitbrush, bitterbrush, and a variety of annual forbs and grasses are found scattered over the area as well. Historic mining activities and grazing have reduced the native vegetation. In highly disturbed locations, plants such as broom snakeweed and thistle have invaded the area. Beyond the boundaries of the mine location, thick stands of Ponderosa pine and aspen with their associated montane understory cover the north facing slopes and deep, shadowed canyon bottoms.
5.1.3.5 **Fauna**

The mine area is within the Middle Rocky Mountain Faunal Area-High Plateau Province: Northern High Plateau Subcenter (Durrant 1952:480). The various subcenters defined by Durrant are based on the presence of unique subspecies of mammals. There are no divisions based on reptilian or Avery populations. The subcenter shares major fauna species with surrounding subcenters. The relatively limited time spent in the mine area allowed for direct observation of only a few species. Direct observation of fauna was limited to several mule deer, red squirrels, chipmunks, pinyon jays, a single golden eagle, common crows, sage sparrows, pine hens, sage and side-blotch lizards. Tracks and dropping of elk and coyote were noted throughout the area. Dens of burrowing rodents and packrats were also observed.

5.1.3.6 **Present Climate**

Data for the modern climatic environment are extracted from records complied at Hiawatha which is located several miles south of the Blue Blaze Mine. Figure V-3 summarized the annual, modern climatic conditions at Hiawatha. Hiawatha is used simply because it is in a similar environmental location on the east edge of the Wasatch Plateau and probably reflects more accurately the annual precipitation and temperature than would Price which is located in the Mancos Lowlands east of the project area.

Annual precipitation at Hiawatha varies from just less than 1 inch (25 millimeters) in February and November to as high as 2 inches (50+ millimeters) in August. The increase in August precipitation is reflective of summer monsoon moisture originating over the Gulf of Mexico. Winter storms originate in Pacific cyclonic storms and typically carry lower amounts of moisture. The mine location is about 500 feet (150 meters) higher that Hiawatha. The difference in elevation and differing micro-orographic effects may slightly alter the total precipitation. Annual mean precipitation at Hiawatha is about 14.15 inches (160 millimeters).

The mine area probably experiences approximately 200 frost-free days. Occasional cold air pockets forming on the higher plateau to the west may flow into the mine area and even during the warmer periods of the summer, frost could possibly occur at the mine location. Average mean temperatures at Hiawatha are about 45.5 degrees.
5.1.3.7 Past Climate

There are few detailed prehistoric climatic studies that have been conducted in the eastern portion of the Wasatch Plateau and none have been conducted in the immediate facility of the mine location. Studies from surrounding areas can be used to infer past climate for the project area. In general, the last major period of Pleistocene glacial climate occurred between 22,000 to 13,000 B.P. (before present). Increased effective moisture created vast pluvial lakes in the Great Basin to the west and extensive glaciers in the high mountains to the north and east. There is no evidence for glacial activity within the mine area.

During periods of Pleistocene glaciation, the area probably underwent significant environmental changes. These probably included: decreased temperatures and/or increased precipitation, elevations lowering of vegetation zone, increased runoff in streams and springs, higher ground water tables, increased snow pack and increased colluvial activity on slopes. Fluctuations in the fauna assemblage probably occurred in the areas as well.

Post-Pleistocene (Holocene Era 10,000 B.P. to the present) climatic conditions are better documented from the surrounding region (Madsen and Currey 1979; Currey 1976; Currey 1980; Linday 1980). Between about 13,000 and 8,000 B.P., a gradual warming with several lesser episodes of cooling occurred, resulting in rapid deglaciation in the higher mountains. The Altithermal, a mid-post-glacial warming period, lasted from about 8,000 to 5,000 B.P., with short periods of increased effective moisture (Neoglacial). Subsequently, three documented periods of effective moisture (Neoglacial) lead up to the end of the “Little Ice Age” in 1850, and our modern climatic conditions. The net effect on local environments probably included minor movement of vegetation on the slopes of the canyons, periods in down-cutting or alluviation in the canyon bottoms, and minor impacts of the human population that may have used the canyon.

5.1.3.8 Present Land Use

At the present time, the project area consists of number of collapsed and abandoned mine structures from previous mining operations. Occasional recreation activities (hunting and recreation vehicle use) were observed during the inventory. Wood cutting activities are underway in the canyon west of the proposed mine.
5.1.3.9 Historic Land Use

The general region has been occupied by Native Americans for several thousand years (see 5.2. below). There is no evidence of permanent occupation by Native Americans, and their use of the area was probably limited to passage to higher grounds west of the mine or seasonal hunting and foraging activities.

Historic use of the area may have occurred as early and the 1830-1840s by fur trappers, but no evidence of this activity has been documented in the area. The first use of the mine location by Euro-Americans probably occurred in the early 1850s in the form of grazing by settlers from the Sanpete Valley. Grazing activities in the Gordon Creek Canyon were probably continued if not increased with the settlement of the Price River area east of the mine location.

The first documented settlement of the mine area was that of Alfred Grams in 1885. Grams used the Gordon Creek area for farming and grazing. Local environmental conditions probably restricted the used of the mine area to grazing.

The potential of the area of mineral extraction was first discovered in 1920 by Arthur E. Gibson. A high quality coal seam was discovered in 1921 and the first coal was removed from the mine area in 1922. Between 1922 and 1956, the mine area was the location of the operating Blue Blaze Mine. The mine expanded and contracted through those years with the ups and downs of local and national economic conditions.

From 1956 to the present, little activity has occurred at the mine property. There have been a few proposals to reopen the mines but none successfully. The mine properties generally deteriorated and buildings collapsed. In the mid-1980s, efforts aimed at public safety closed several portals and removed some mine buildings. Recreation activities continue in the form of hunting, camping and recreation vehicle use.

5.1.3.10 Previous Research

BDI conducted Class I file searches for the project area at the Utah State Historic Preservation Office in Salt Lake City for historical and prehistorical resources. A file search was also completed at the Utah State Geological and Mineral Survey for paleontological resources. Secondary files at the
Carbon County Recorders Office, and the Historic Mining Museum in Helper were also examined. General research was also conducted at the University of Utah and Brigham Young University libraries.

The records indicate that only one project has been completed at the mine location. Desert West Research (1985) completed an inventory and cultural history review of several mine locations slated for mine reclamation for the D.O.G.M. One of the mine locations was the Blue Blaze Mine. Desert West recorded the site, and later, several of the features were closed (mine portals) or removed (tipples). The report determined the site 42Cb 517, the Blue Blaze Mine or Consumers, was eligible for nomination to the National Register of Historic Places. The nearby mines and towns of Sweet (42Cb 516) and National (42Cb 518) were also included in the report and were also determined to be eligible for the National Register.

No prehistoric sites or isolated artifacts were found during the inventory of the Blue Blaze Mine area. Other inventories of mine properties, roads, vegetation rehabilitations, energy development (oil, gas, mining, electric corridors) have been completed in the surrounding area but none have crossed over the proposed Blue Blaze Mine location and are of no direct consequence to this report. No other sites or isolated artifacts have been recorded within the mine area.

5.1.4 Cultural Resource Overview
5.1.4.1 Prehistoric

The prehistory of the eastern Great Basin has been summarized previously (e.g., Jennings 1978; Madsen 1982), and does not need to be repeated in any great detail here. A brief summary will be useful, however, for establishing the types of sites that might be expected in the region.

The prehistory of the eastern Great Basin is usually divided into several periods, each thought to represent a particular way of life. These periods, and their approximate dates, are 1) the Paleo-Indian period (12,000-9,000 B.P.); 2) the Archaic period (8500-1500 B.P.); the Formative (1500-600 B.P.); and the Late Prehistoric (600-150 B.P.)

**Paleo-Indian** - The Paleo-Indian period is usually thought to represent a period of specialized big-game hunting, although direct evidence for big-game hunting is rare in Utah. Several different kinds of projectile points, most notably the fluted Clovis and Folsom points, are diagnostic of this period. Outside
of the eastern Great Basin, Clovis and Folsom points have often been found in association with extinct species of megafauna (e.g., Wheat 1972; Roberts 1938). Scattered finds of fluted projectile points have been made throughout Utah (Copeland and Fike 1988).

In the central and western Great Basin, stemmed points that date to the Paleo-Indian period are often found in association with the shorelines of Pleistocene-early Holocene lakes (e.g., Beck and Jones 1990; Willig et al. 1988). These are rarer in the eastern Great Basin, but they have been found as far east as the Sevier Desert (Macpherson 1992; Simms and Lindsay 1989). The association of these stemmed points with extinct lakes suggests that some Paleo-Indian peoples may have had a specialized adaptation to wetland environments. Madsen (1982:213) suggests that fluted points in Utah may also be associated with late Pleistocene-early Holocene lakes, and suggests that the presumed wetland adaptation may have led to some degree of sedentism.

Archaic - The Archaic period is usually thought of as a time when people followed an extremely flexible, broad-based economic strategy. Small, mobile groups followed seasonal rounds in order to exploit resources throughout a large home range. A number of Archaic sites have been excavated in Utah, including Danger Cave (Jennings 1957), Hogup Cave (Aikens 1970), Sudden Shelter (Jennings et al. 1980), and Cowboy Cave (Jennings 1980). These sites generally support the model of a highly flexible, mobile economic strategy, although some (e.g., Madsen 1982) have suggested that larger groups and more sedentary adaptations are likely in wetland environments.

Several projectile point styles are diagnostic of the Archaic period. In general, these are fairly large points intended for use with an atlatl rather than an arrow. Some of the most common are Elko series points (Elko Side-notched, Elko Corner-notched, and Elko Eared), although Holmer (1986:101-102) notes that Elko points may persist as late as A.D. 1000. Archaic period sites in unsheltered contexts are likely to consist of scatters of lithic debitage, sometimes with groundstone. In most cases these probably represent the remains of small campsites, which may have been reused annually. Some excavated sites from the latter part of the Archaic Period have pithouses (Janetski 1993; Talbot and Richens 1993; Talbot et al. 1995), suggesting longer occupation or more frequent use of those sites.

Formative - Sometime shortly before A.D. 1, domesticated plants, most notably maize, were first grown in the eastern Great Basin (Wilde and Newman 1989). As subsistence became more focused on
domesticated plants, people began to live in larger groups and became more sedentary. Because people were less mobile, they constructed more substantial houses and storage structures, and began the fine art of making pottery. The bow-and-arrow also began to be used during the Archaic-Formative transition. From about A.D. 500 to A.D. 1300 or 1400, people throughout most of the eastern Great Basin were living in pithouses, making and using pottery, and growing domesticated plants. Archaeologists usually refer to these people as the Fremont. There is some debate over the relative importance of domesticated plants as opposed to marsh resources in certain parts of the Fremont culture area (Nielson 1978; Madsen 1980, 1982; Madsen and Lindsay 1977), and the exact relationships among the various peoples subsumed under the Fremont label are not entirely clear. How sedentary the Fremont were is also not clear.

Some archaeologists (e.g., Weymouth and Eckerle 1994) have begun referring to this time period in the eastern Great Basin as the Late Archaic Period, with the implication that, despite the use of domesticated plants, things were not really so different from before. Willey and Phillips (1958:146) define the Formative Stage “by the presence of agriculture, or any other subsistence economy of comparable effectiveness, and by the successful integration of such an economy into well-established, sedentary village life.” Given this definition, the classification of Fremont as Formative might be questioned on the grounds that they may not have had sedentary village life, and, if they did, it was not well established. There is some evidence that some Fremont, at least, did have well-established village life, and maybe the terminology doesn’t even matter. Still, there are reasons why it may be preferable to classify the Fremont as Formative. As Madsen (1982: 216-217) notes, there is agreement that the Fremont “are related in some overriding way” by their architecture, use of domesticates, and use of pottery. This assemblage of traits also distinguishes the Fremont from their predecessors, and links them with contemporary peoples in the Southwestern United States who were unquestionably ‘Formative’ by Willey and Phillips’ definition. Our understanding of New World farming societies has changed considerably in recent years, and even in the Southwest people were apparently more mobile than anyone thought in Willey and Phillips’ time (e.g., Kent 1992; Powell 1983, 1990). Ultimately, the labels archaeologists use do matter, because they subtly structure the way archaeologists approach prehistory. The question ultimately is whether the Fremont should be studied using approaches that have been relatively successful in the study of mobile hunter-gatherers, or using approaches that have been successfully applied to more (but not necessarily completely) sedentary farmers.
Several different site types are likely to be associated with the Fremont. Habitation sites are likely to be the most easily recognized. These sites are likely to have depressions marking the locations of collapsed pithouses, and perhaps small mounds where adobe surface structures have decayed. They should also have relatively substantial deposits of domestic trash, including ceramics, chipped stone, and ground stone artifacts. Some of these sites are quite large (e.g., Five-Finger Ridge [Talbot et al. 1995]; Nawthis Village [Jones and O’Connell 1981]; and Backhoe Village [Madsen and Lindsay 1977]). Other habitation sites may be much smaller, consisting of only one or a few pithouses. A variety of short-term camp sites and limited activity sites are also likely to date to the Formative Period (e.g., Simms 1986). These can be recognized as Fremont if they have Fremont ceramics or projectile points diagnostic of the Formative Period. The diagnostic points are generally small arrow points; in central Utah Rose Spring Corner-notched, Uinta Side-notched, and Nawthis Side-notched are the most likely to be encountered (Holmer and Weder 1980). Some lithic scatters that lack diagnostic points or ceramics may also date to the Formative Period, although it is usually not possible to distinguish these sites from earlier or later sites in the absence of diagnostics.

Late Prehistoric - The Late Prehistoric Period is not particularly well known in Utah. Recent research has added considerably to our knowledge of the period (Madsen and Rhode 1994; Forsyth 1986; Janetski 1986, 1990a, 1990b, 1994), but much of that research has been focused in the vicinity of Utah Lake and the Great Salt Lake. Based on ethnohistoric analogy to historically and ethnographically known Numic peoples, the Late Prehistoric Period throughout most of the eastern Great Basin is assumed to have been much like the Archaic, with small groups of people following a mobile lifestyle. Brush wickiups were used for shelter in most cases. The use of the bow-and-arrow, and limited use of ceramics distinguish the Late Prehistoric lifeways from the Archaic, however. Along the lake shores, larger, more sedentary groups took advantage of lacustrine resources (Janetski 1986).

Archaeological remains associated with the Late Prehistoric Period are likely to be mostly scatters of chipped stone debitage, occasionally with ground stone or Late Prehistoric ceramics. Desert Side-notched points are diagnostic of this period, but many sites dating to this period are likely to be undatable.
The State of Utah was initially settled in 1847 when the first Mormon pioneers entered the Salt Lake Valley. The Mormon pioneers, led by their leader Brigham Young, arrived in the valley on July 24, 1847. Desiring to leaving religious persecution behind them, the Mormons sought refuge in the Rocky Mountains, and hoping to escape any outside distractions, settled in the isolated Salt Lake Valley. This isolation however, only lasted a few short years. The discovery of gold in California in 1849 ended the isolation that Brigham Young sought (Poll 1975).

Although the Mormon pioneers were the first permanent white settlers in Utah, 131 years earlier, Spanish missionaries from Mexico were the first Europeans to travel through Utah. The Spanish occupation in central Mexico beginning in 1514 was followed by a series of expeditions into regions to the north. One such expedition was led by Francisco Vasquez de Coronado in 1540 to 1542. His expedition consisted of several hundred Spanish soldiers and a baggage train of 1,300 friendly Indians, servants, and slaves. Coronado was first and foremost in search of material wealth, specifically gold, rumored to exist is vast quantities in the country north of the Valley of Mexico. He never found the gold or the fabled Seven Cities of Cibola which he sought that had been reported by earlier Spanish explorers, however, he did open much of southern Rocky Mountain region to Spanish occupation, and other regions to further exploration (Billington and Ridge 1982).

A result of this northern occupation was the establishment of a series of missions spread throughout what would eventually become the states of Texas, New Mexico, Arizona, Colorado and California. In 1776, in an effort to find a new shorter route from Santa Fe, New Mexico to the missions located in California, two Spanish missionaries became the first recorded Europeans to see the Utah Territory. Fray Francisco Atanasio Dominguez and Fray Silvestre Velez de Escalante entered the present state of Utah on September 11, 1776 at a point due east of Jensen on Cliff Creek-just west of the Utah-Colorado border. They traveled southwest until they encountered Utah Lake and the Utah Valley where they stayed for a number of days. After this rest stop they continued their journey on toward California, however, bad weather, early snow, and fatigue forced them to abandon their original destination and the exploratory party elected to return to Santa Fe (Poll 1978).

It is of interest that the first observation of the coal resources in Utah were made by the Dominguez and Escalante expedition. Traveling through Spanish Fork Canyon to the north and west of
the Gordon Creek area, the two explorers noted fragments of coal, but major development of the resource would wait nearly 100 more years.

As noted above, permanent settlement of the region by Euro-Americans would not occur until the arrival of the Mormon pioneers in 1847. Soon thereafter, the Mormon leader Brigham Young, began a vigorous campaign to settle most of the Intermountain West to establish the authority and the security of the followers of the Mormon faith. Hundreds of communities from Wyoming to California owe their origins to that colonizing effort. Among the first areas to be settled were Utah and Sanpete valleys to the west of the project area. Mormon settlers occupied both locations by 1849.

The settlement of the Carbon County area lagged behind other regions for two primary reasons; first, the general area was initially viewed as less conducive for agriculture (Powell 1979:48), and second, but undoubtedly the most important, the area was controlled and used by aggressive Native Americans. With the signing of a treaty ending the Black Hawk Indian War, attitudes toward the area quickly changed (Lever 1898).

The first settlers to use the area did so from the Sanpete Valley and moved to establish grazing for livestock from the west side of the high Wasatch Plateau. Just prior to is death in 1877, Brigham Young, sent Jefferson Tidwell from Sanpete County to examine the area which would soon become Carbon County, as well as sending several other Sanpete Valley families to settle in the Castle Valley located to the south of the project area in what is now Emery County. The first settlement occurred along the Price River and was less than successful. Efforts to control the river failed every year for five years, but in 1883, a dam across the river held and the first adequate crops were produced.

By 1880, enough settlers has arrived and succeeded at surviving that a petition was signed and acted upon to created Emery County out of a large portion of Sanpete County. In 1894, a attempt to move the county seat to Price failed, but the effort did lead to the creation of Carbon County, with the county seat at Price (Notarianni 1981:26).

Coal deposits were occasionally noted as early settlers fanned out over the landscape. However, for several years, the coal deposits remained relatively untapped. The primary reason for the later development of the coal deposits was the lack of transportation to markets such as Salt Lake City that
desperately needed the energy resources. The impetuous to develop the coal resource would be provided by the expansion of the Utah economy into industrial (smelting) areas that would be serviced by competing national railroads, but in the meantime, coal was used as a local source of heat. Settlers discovered deposits of coal in numerous steep canyons along the east side of the Wasatch and would access the deposits by wagons drawn by teams of horses or oxen. Efforts to remove the coal were not systematic and rarely was more coal removed than was required for local consumption for winter heat.

As the Utah economy expanded beyond domestic heat requirement into industrial uses for coal, an attempt to meet the need was provided by local mines and the Union Pacific Railroad which imported coal from deposits in Wyoming. The cost of moving the coal from local sources was high and the price of imported coal extravagant. The first viable effort to move large quantities of high quality coal needed for industry occurred in 1884 at Winter Quarter near Scofield, located only six miles from the project area in Gordon Creek. Coal was at first moved along a railroad known as the Calico Road to Tucker in Spanish Fork Canyon then west to the expanding state and national markets (Poll 1978:463-65; Notarianni 1981:26-28).

In 1882, competition for the Union Pacific developed in the form of the Denver and Rio Grande Western which extended railroads from eastern Utah to Salt Lake City in 1882. Spur lines were developed or purchased from smaller local rail companies and extended into the Winter Quarters area by 1889. The expansion of the railroad greatly increased the ability to access and market coal from other portions of the region as well. By the turn of the century, the Emery/Carbon (especially Carbon) county area had developed into the center of coal production in the west (Poll 1978:383).

5.1.4.3 History of Gordon Creek Area

Development of the coal resources discovered in Gordon Creek came relatively late in the broad picture of coal mining in Carbon County. Unlike the predecessors of the 1880s, the coal at Gordon Creek was developed along with others of the time as an effort to break the domination of the coal mining industry by the railroads by “independent” coal companies (Desert West Research 1985:5, 23-24).

Gordon Creek was initially settled not for its coal resources, but as a ranching and farming area by Alfred Grams in 1885. If Grams ever knew of the coal resource, he never left any records, nor was he known to have mined the coal in Gordon Creek. In 1889, Arthur E. Gibson arrived in Price, working as a
telegrapher for the railroad. Gibson was an astute prospector and would later become the superintendent of the Spring Canyon Coal Mine. Gibson prospected the Gordon Creek in 1920 and in the Spring of 1921, discovered a substantial deposit of high quality coal in the canyon walls. He so secured a lease for 1480 acres in Gordon Creek and began development of the coal seam he had discovered (Daughters of the Utah Pioneers 1958). However, an early winter prevented Gibson from developing any coal until the following year.

In 1922, Gibson with a small crew of assistants removed 34 carloads of coal from Gordon Creek Canyon. The coal was shipped to prospective stockholders in Salt Lake City via the Utah Railway Company. Investors from Salt Lake City purchased the stock and organized the Consumers Mutual Coal Company which would later be known as the Blue Blaze Coal Company (Desert West, 1985). Two other coal mines developed in Gordon Creek—the National and Sweet mines. National was actually developed earlier (1908) than Consumers by an engineer named Williamson who leased land from the government. In 1921, Fred Sweet took over the property developed by Williamson and started the National Coal Company. A tent city developed around the Sweet Mine which was soon replaced by regular housing. Red tile housing constructed at National can still be seen at the site today. By 1925, the National Railroad extended into the area which greatly increased the capacity of each mine.

The community of Consumers (Blue Blaze Mine) boasted of a four story apartment house, store, service station, and a post office. During the later 1920s each of the three communities continued to develop. National had a row of red tile homes with arched doorways that are still found at the site, a store and a service station. The Consumers Mine closed in 1938, but a prominent Carbon County mining operator names Terry McGown opened the mine at a later date. By 1952, the demand for coal was low and all three of the mines in Gordon Canyon shut down. During its years of operation, the Blue Blaze produced over 2.5 million tons of coal (Doelling, 1972).

5.2 Inventory Methods

5.2.1 Field Methods

BDI was provided with a detailed plan map of the proposed mine facility area. The exact boundaries of the proposed mining activity were marked on the landscape with flagging, but were easily
outlined by the boundary of the existing historic mine activities. All of the proposed new mine activity will be contained within the area of historic disturbance. To insure that the area was adequately surveyed, the entire historic mine site of Consumers was examined. Examination of the additional land surface extended about 100 m beyond the observed historic disturbance area. This was done to make sure that cultural or paleontological resources near the proposed mine that could possible suffer secondary impacts would be discovered and recorded.

The area was examined by walking compass-guided transects spaced an average of about 15 meters apart over the relatively flat portions of the canyon bottom. Steep hill slopes were surveyed by walking transects along the contours spaced 20-25 m apart. Notes were completed on individual features as they were encountered. The features were then plotted on the plan map provided by Horizon and photographs were taken of the features. None of the features were tested or probed for potential depth. No artifacts were collected from any of the features or the sites.

The Paleontological inventory was completed in a similar way, but the emphasis was placed on the edges of the canyon where bedrock and talus are exposed. The bottom of the canyon where historic impacts have covered the surface was examined for possible displaced fossil material, but not at the same intensive level as the undisturbed canyon sides.

5.3 Inventory Results

5.3.1 Prehistoric Inventory

No prehistoric sites or artifacts were noted during the inventory. The surface of the mine area has been heavily impacted by historic mining and the remains of any prehistoric sites have been removed or completely covered in mine tailing and historic rubble. Undisturbed areas along the edges of the mine location contained no evidence for prehistoric remains.

5.3.2 Paleontological Inventory

The paleontological inventory recorded the presence of plant "hash", or leaves, stems and branches. Occasional isolated larger wood sections were observed. In most instances, the paleontological remains are either impressions or compressions. A few of the finer sandstone and siltstone units contain
well defined leaves, but these are the exception rather than the rule. The plant remains suggest the presence of Cretaceous deciduous trees and more limited conifers.

In addition to the plant remains, occasional invertebrate burrows were noted in the sandstone units. These trace fossils are fillings of burrows that preserved their shapes. The identification of the invertebrate animal that created the burrows would be difficult. Neither the plant hash or the trace burrows are considered to be paleontologically sensitive.

5.3.3 Historic Inventory

The field inventory recorded the location of site 42Cb 517, consumers or the Blue Blaze Mine. The site has been previously recorded by Desert West Research (1985), but has undergone significant impacts since that recording. Several features have been removed or covered for mine reclamation purposes.

Features 1-9 (F-1 to 9 Figures V-4 and 5) are old mine portals or air shafts associated with the Blue Blaze Mine. All of these portals or air shafts have been covered or closed with wire as part of the D.O.G.M. mine rehabilitation process. Most of the features were located on the west side of the smaller tributary canyon. Two were found on the east side of the canyon near the confluence of the two tributaries and one was found on the north face of the main tributary at the southeast corner of the mine. Most of the portals were timber supported and in the case of one air shaft or entry, the front was supported by formed concrete and formed concrete blocks.

Feature 10 is the only remaining portal that has not been covered. It has been left open for potential mine entry in the future at the request of Roger Skaggs, who has from time to time been involved in attempts to reopen the Blue Blaze Mine. The portal has a deep-cut trench leading to the entry and the mouth of the portal is non-supported, native bedrock. Associated with the feature is a deep deposit of mine tailing that form a road and canyon crossing to features found on the south and east side of the canyon.

Feature 11 is the remains of what was probably a mine support office or work shop. The feature is designated as a mine office (Feature 3) Desert West Research (1985:194), but none of the documentation provided to Baseline specifically identified this as the use of the building. A map provided by Mr.
Skaggs dated 7/10/29 does not show this structure. It was probably added during the mine expansion of the 1930s and 40s. It is a wood framed building with plaster and lath walls and a wood floor. Cinder block was also used for its construction. It has been placed on a shaped sandstone block foundation that is partially covered with soil. The foundation may have been from an earlier building. The roof and some off the wall were missing in 1985 and even more of the remaining walls have collapsed since that Desert West surveyed the area. Associated with the building is a set of wood steps that lead to a path and the building. The steps are found off the northeast corner of the feature.

**Feature 12** is the remains of a concrete foundation and machine parts that may have been a hoist house (Desert West Research Feature 12). It has been partially obliterated by the road and covered by hillside erosion. The feature is about 5 x 10 meters and is partially constructed into the side of the hill. A wood-framed roof supporting corrugated tin remains on the east side of the feature. It is found on the hillside directly south of the confluence of the two tributary canyons.

**Feature 13** is the remains of a large concrete tipple (Desert West Research Feature 13) found on the north slope of the main tributary canyon. The structure has been demolished and all that remains are a few concrete footings and associated shaped sandstone block retaining walls. The total size and shape of the tipple were not noted by Desert West Research. The building was removed by D.O.G.M.

**Feature 14** is the remains of a tramway footing or other support facilities of unidentified function. Desert West Research assigned no. 15 to the feature. All that remains are a few concrete footings, shaped sandstone blocks and scattered wood remains.

**Feature 15** is the remains of a large tipple (Desert West Research Feature 13) that was just above the entry to the canyon on the south facing slope. This feature was a large concrete building nearly 27 meters long. It has been removed by D.O.G.M. and all that now remains are a few concrete footings and chunks of concrete and wood on the hill slope.

**Feature 16** is the remains of a large coal load out or tipple support found near the entry of the main tributary canyon (Desert West Research Feature 14). The feature has no superstructure and all that remains are concrete formed walls and pyramid-shaped supports on the top of the walls. It is about 8
x 8 meters and about 3 meters high. It is found in the bottom of the canyon wash. Coal mine tailing have been piled up against the west side of the feature.

**Feature 17** is a concrete foundation believed to have been the footing for weight scales (Desert Research Feature 16). The area around the feature has been leveled and contains crushed cans, metal fragment, glass fragments, ceramics, wood and brick. The canyon wash now flows over the feature.

**Feature 18** is the remains of a portal found in the front of Feature 9 (Desert West Research Feature 17). The portal has been filled in and the concrete lintel and exterior support features have collapsed.

**Feature 19** is a small concrete foundation or footing of unidentified function. It was not numbered by Desert West Research but is on the plan map completed by Desert West Research. The 1929 map show a feature, but does not identify its use, in the location of Feature 19.

**Feature 20** is the remains of the mine shop and were not assigned a feature number by Desert West Research. The shop was build on a foundation of formed concrete. Cinder block walls supported a wood roof. A concrete and block vault is still standing at the back of the shop. The doors were still locked and in place in the early 1960s when vandals dynamited the doors looking for gold but managed to destroy only the papers within. Unfortunately, the papers that were destroyed were all of the records and maps for the post-1928 operation of the mine (Robert Skaggs-personal communication 1995).

**Feature 21** is the mine store on the 1929 map. The building is a rectangle measuring about 5 x 10 meters and is constructed out of shaped sandstone blocks on a concrete foundation. Entryways and window sills are formed concrete. The walls have been plastered. The roof has collapsed and the roof style is not known. This features is on the Desert West Research map but was not assigned a feature number.

**Feature 22** is the lamphouse found behind the mine store. It is constructed out of shaped sandstone blocks mortared together with gray cement. It has a low-pitch roof and most of the interior room dividers are still standing. It is about 6 x 6 meters.

**Feature 23** is the collapsed remains of the old boiler room and shower house. It is made from a combination of cinder blocks, shaped sandstone blocks and formed concrete. A coal chute for the furnace
is found protruding from the south wall. It appears to have gone through several constructions or remodels and is about 10 x 8 meters. A large deposit of coal ash and clinkers is found on the south side of the feature.

**Feature 24** are the remains of the old mine garages and apartment buildings. There are several small apartments behind the main feature that are now being activity covered by erosion from the hillside. The garage is a multi-bay feature constructed of formed concrete. It has 18 bay openings and ascends up the slope of the canyon floor in steps. In all, it is nearly 50 meters long and about 8 meters wide. The building also contained several apartments above the garages. The apartments were constructed of milled wood and housed the mine employees. The apartments have been completely demolished.

**Feature 25** is the remains of an old mine store that was converted in the later mining period to an apartment complex and the mine hospital. It is a large rectangular structure that is about 25 meters long and 10 meters wide. The interior is divided by a wall. It is constructed out of formed concrete, sandstone blocks that have been plastered and sits on a stone foundation. A large wall extends down the slope from the south end of the feature. The purpose of the wall is not known but may have been used as a retaining wall. The superstructure of the building has been dismantled.

**Feature 26** is a long concrete and sandstone trench found at the end of a large deposit of mine tailing. The feature was not part of the Desert West Research recording and appears to be a loadout facility. The Gordon Creek road is found at the base of the feature. It is about 10 meters long, 3 meters wide and nearly 2 meters deep. Associated remains include milled wood and metal fragments.

5.4 National Register Consideration

5.4.1 National Register Evaluations

The criteria for judging the significance of any given site, and its potential for nomination to the National Register are provided in 36 CFR 60.4.

The quality of significance in American history, architecture, archaeology, and culture is present in district, sites, buildings, structures, and objects of state and local importance
that possess integrity of location, design, setting, materials, workmanship, feeling and association; and

a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

b) that are associated with the lives of persons significant in our past; or

c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d) that have yielded, or may be likely to yield, information important in prehistory or history.

Site 42Cb 517 was originally evaluated as being eligible for nomination to the National Register (Desert West Research 1985). Since that time, several of the major site features have been impacted or totally removed. This is an adverse impact and changes the determination of eligibility. The precatory language of the Register criterion a-d requires that a site have integrity of location. In the case of site 42Cb 517, this means that the site should retain most of its original construction integrity. Post-operation impacts from demolition of the structures, vandalism, natural decay and erosion, and especially the impacts brought about by the D.O.G.M. rehabilitation have diminished the integrity of the site. Other records of the site (maps, photos, and agency records) provide information on the mine and its operation. The site is neither unique in architectural design, workmanship, setting, feeling or association. The mine was neither a major factor in the local history or associated with a major historic person or event. Other larger mines, many in better stages of preservation and with unique combinations of features, exist throughout the region. The site has little data recovery potential.

Paleontological remains are judged as sensitive if they are unique or are important index fossils. Index fossils are important time markers or indicators of paleoenvironmental conditions. None of the fossil remains found within the mine area are in the sensitive category.
5.5 Impacts to Historic, Cultural and Paleontological Resources

5.5.1 Mine Development Impacts and Project Recommendations

Horizon will construct a surface mine facility at the inventory location. The construction of mine portals, conveyor systems, access roads, separation tanks, offices, shops, settlement ponds, loadouts and storage piles will cover or remove all of the existing site features with the exception of Feature 24 and possibly 26. It is the opinion of BDI that impacts to the features and site 42Sb 517 as a whole and the observed paleontological remains, will have no effect on the region's historical, cultural or paleontological resource data base. No further research or mitigation is recommended for the area. It is suggested that if significant or unique paleontological resources are found during construction that Horizon consult with a qualified paleontologist.

5.6 Parks and Recreation

5.6.1 Mine Impacts to Parks and Recreation

The proposed mine area has no established parks or recreation areas. None are planned for construction by Horizon. Current camping and recreation vehicle activity in the area is being done under trespass and will probably be eliminated.
References Cited

Aikens, C. Melvin

Beck, Charlotte, and George T. Jones

Billington, Ray Allen and Martin Ridge

Copeland, James M., and Richard E. Fike

Curry, Donald R.


Daughters of the Utah Pioneers
1958 Centennial Echoes from Carbon County, Daughter of the Utah Pioneers, Salt Lake City.

Desert West Research
1985 An Archeological Evaluation of Historic Coal Mining Sites in Carbon County: Spring Canyon, Bear Canyon, Scofield and Gordon Creek Areas. Desert West Research, Salt Lake City.

Doelling, H.H.

Durrant, Steven D.

Forsyth, Donald W.

Hintze, Lehi F.

Holmer, Richard N.

Holmer, Richard N., and Dennis G. Weder

Janetski, Joel C.


Jennings, Jesse D.


Jennings, Jesse D., Alan R. Schroedl, and Richard N. Holmer  

Jones, Kevin T., and James F. O'Connell  

Kent, Susan  

Madsen, D.B. and D. R. Currey  

Lever, W. H.  
1898  *History of Sanpete and Emery Counties, Utah*. Ogden, Utah.

Lindsay, L.W.  

Macpherson, Roy  

Madsen, David B.  


Madsen, David B., and LaMar Lindsay  
Madsen, David B., and David Rhode

Nielson, Asa S.

Norarianni, Philip F.
1981 *Carbon County: Eastern Utah’s Industrialized Island.* Utah State Historical Society, Salt Lake City.

Poll, Richard D., Thomas G. Alexander, Eugene E. Campbell and David E. Miller
1978 *Utah’s History.* Brigham Young University Press, Provo.

Powell, Allan K.
1979 *Emery County: Reflections on its Past and Future.* Utah State Historical Society, Salt Lake City.

Powell, Shirley


Roberts, Frank H.H., Jr.

Simms, Steven R.

Simms, Steven R., and LaMar W. Lindsay

Stokes, William L.

Talbot, Richard K., and Lane D. Richens
Talbot, Richard K., Lane D. Richens, James D. Wilde, Joel C. Janetski, and Deborah E. Newman

Weymouth, Heather M., and William Eckerle

Wheat, Joe Ben

Wilde, James D., and Deborah E. Newman

Willey, Gordon R., and Philip Phillips

Willig, Judith A., C. Melvin Aikens, and John L. Fagan
FIGURE 2  PROJECT/SITE AND ISOLATED ARTIFACT LOCATION
Average monthly temperatures and precipitation at Hiawatha, Utah, altitude 7230 feet. Mean annual temperature is 45.5°F; mean annual precipitation is 14.15 inches. (U.S. Dept. Comm. 1973)

Figure V-3. Climatic Summary for the Hiawatha Area.
Figure V-4. Feature Location Map. (Adapted from Desert West Research-1984)
Figure V-5. Feature Location Map. (Adapted from Desert West Research-1984)
PALEONTOLOGICAL FIELD SURVEY OF
PROPOSED COAL LAND DEVELOPMENT FOR
HORIZON COAL COMPANY
(Wasatch Plateau, Carbon County, Utah)

REPORT OF SURVEY

Prepared for
BASELINE DATA, INC.

By Wade E. Miller, Ph. D.
MILLER CONSULTING
2871 Indian Hills Drive
Provo, Utah 84604
(801) 375-5058
FAX: (801) 375-2151

August 8, 1995
Introduction

A paleontological field survey for a proposed development of coal land was performed by Wade Miller, consulting paleontologist, on August 7th. The principal area surveyed consists of 15+ acres in the southcentral portion of Sec. 17, T13S, R8E. This land is roughly bisected by a road which forks to the east of a Carbon County road (1308), and lies immediately above the northernmost portion of the Gordon Creek North Fork. Authorization to perform the present paleontological survey was relayed through Mr. Asa Nielson of Baseline Data, Inc. on August 1, 1995. The present survey began just north of the site where the secondary dirt road bisecting the coal land forks east of County road 1308 and proceeded north as well as northeast up a tributary canyon.

Exposed rock in the area of investigation is entirely comprised of the late Cretaceous Black Hawk Formation – the chief coal producer in Utah. These rocks consist primarily of alternating tan sandstones and gray shales with occasional reddish brown sandstone units. Thin coal seams occur in the area, usually associated with the shales, but sometimes interbedded with sandstones. All units were inspected for fossils, as well as the scree from them which lie along slopes.

The paleoenvironment represented by these rock units and their contained fossils, here and in surrounding regions, is one of an alternating low coastal plain to delta. Dense forests of mixed deciduous and conifer trees would grow along the coastal plain, only to be killed and buried in fine sediment as sea level rose. When sea level would drop, a new coastal forest would develop and the cycle would again repeat over the entire region. This accounts for the many coal seams that exist in eastern Utah. The plant fossils especially that have been found associated with the above rock units are very important to an
understanding of the climatic conditions that existed then. New areas of identifiable plant fossils, such as the present one, are very useful in detailed studies of plant communities through time and the environments reflected by them.

Results of Survey

The entire 15-17 acre plot was carefully examined for fossils. Sandstone layers produce sufficient bedding plane exposures, especially on loose rocks, such that they were relatively easy to examine. Shales on the other hand are mostly well weathered, and tend to form a disintegrated rubble. However, some, particularly where running water had scoured them through the weathered surfaces, did allow examination of bedding planes. Almost all sandstones contain plant fossils. In coarser units these fossils are usually well broken up and present basically a plant 'hash' of leaves, stems, and branches. Occasionally isolated larger wood sections were seen. In most instances the fossils are either impressions or compressions. Some of the finer sandstone to siltstone units contain well defined leaves that are readily identifiable. These, though, are the exception rather than the rule. Basically, plant fossils are common, but good, identifiable leaf impressions are not. However, those that exist show a wide variety of deciduous trees and more limited conifers.

In addition to plant fossils, there are locally abundant invertebrate burrows in sandstone units. At least two types are present – large and small. These trace fossils are essentially the fillings of burrows that preserved their shapes. Identification of the exact type of invertebrate animals that made the burrows would be difficult.
Recommended Mitigation

As noted, fossil plant material and invertebrate burrows are relatively common in the presently proposed area of coal development. Most of the plant fossils comprise either a 'hash' or isolated branch impressions. Neither are of very much paleontological significance. The same is true of the reported burrows. However, where good leaf impressions are present, these should be collected for future identification and research.

Although not found at the present site, dinosaur bones, footprints are skin impressions have been discovered in similar beds of the same age elsewhere. These have occurred at different sites in the Book Cliffs to the east. Similar fossils, deemed of very great importance, might well occur in rocks and coal layers of the present region. For this reason it is highly recommended that a monitoring program be considered when significant excavations are made. This could be done on a spot check basis. A qualified paleontologist needs to do the monitoring.

Wade E. Miller, Ph.D.
August 1, 1995
Ms. Pamela Grubaugh-Littig  
Permit Supervisor  
Division of Oil, Gas and Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, UT  84180-1203

RE: Request for Review, Horizon Mine Proposed Mining and Reclamation Plan, Horizon Mine, Horizon Coal Company, PRO/007/020, Folder #2, Carbon County, Utah

In Reply Please Refer to Case No. 95-1410

Dear Ms. Grubaugh-Littig:

The Utah State Historic Preservation Office received the above referenced request on October 19, 1995. After consideration of chapter 5, the Utah Preservation Office concurs with the results of reports and recommends that No Historic Properties will be impacted by the project.

This information is provided on request to assist DOGM with its Section 106 responsibilities as specified in 36CFR800. If you have questions, please contact me at (801) 533-3555. My computer address on internet is: jdykman@email.state.ut.us

Your humble servant,

James L. Dykman  
Compliance Archaeologist

JLD:95-1410 OSM
Pamela Grubaugh-Littig  
Division of Oil, Gas and Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, UT 84180-1203

RE: Horizon No. 1 and No. 2 Mines, Consumers Canyon

In Reply Please Refer to Case No. 90-0858

Dear Ms. Malin:

The Utah State Historical Preservation Office received the above referenced proposal on May 22, 1995. After review of the material provided, the Utah Preservation Office recommends that there would be No Effect upon cultural resources by the project.

This information is provided on request to assist DOGM with its Section 106 responsibilities as specified in 36CFR800. If you have questions, please contact me at (801) 533-3555. My computer address on internet is: jdykman@email.state.ut.us

Your humble servant,

James L. Dykman  
Compliance Archaeologist

JLD:90-0858 OSM
### TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Scope</td>
<td>6-1</td>
</tr>
<tr>
<td>6.2 Methodology</td>
<td>6-1</td>
</tr>
<tr>
<td>6.3 Regional Geologic Framework</td>
<td>6-1</td>
</tr>
<tr>
<td>6.4 Geology of Project Vicinity</td>
<td>6-4</td>
</tr>
<tr>
<td>6.4.1 Stratigraphy</td>
<td>6-4</td>
</tr>
<tr>
<td>6.4.2 Structure</td>
<td>6-5</td>
</tr>
<tr>
<td>6.5 Geology of Coal Beds and Adjacent Strata</td>
<td>6-7</td>
</tr>
<tr>
<td>6.5.1 Exploration and Drilling</td>
<td>6-7</td>
</tr>
<tr>
<td>6.5.1.1 Casing and Sealing</td>
<td>6-10</td>
</tr>
<tr>
<td>6.5.2 Stratigraphy - Coal Seams</td>
<td>6-10</td>
</tr>
<tr>
<td>6.5.2.1 Hiawatha Seam</td>
<td>6-10</td>
</tr>
<tr>
<td>6.5.2.2 Gordon Coal Zone</td>
<td>6-11</td>
</tr>
<tr>
<td>6.5.2.3 Castlegate &quot;A&quot; Seam</td>
<td>6-11</td>
</tr>
<tr>
<td>6.5.2.4 Bob Wright Seam</td>
<td>6-11</td>
</tr>
<tr>
<td>6.5.3 Oil and Gas Wells</td>
<td>6-11</td>
</tr>
<tr>
<td>6.5.4 Detailed Cross Sections</td>
<td>6-12</td>
</tr>
<tr>
<td>6.5.5 Coal Reserves</td>
<td>6-12</td>
</tr>
<tr>
<td>6.5.6 Coal Quality and Characteristics</td>
<td>6-12</td>
</tr>
<tr>
<td>6.5.7 Adjacent Units (Overburden and Underburden)</td>
<td>6-12</td>
</tr>
<tr>
<td>6.5.7.1 Rock Characteristics, Acid-toxic, Pyrite, Clay and Alkalinity</td>
<td>6-12</td>
</tr>
<tr>
<td>6.5.7.2 Roof and Floor Properties</td>
<td>6-21</td>
</tr>
<tr>
<td>6.6 Geologic Effects of Mining</td>
<td>6-23</td>
</tr>
<tr>
<td>6.6.1 Mining Hazards</td>
<td>6-23</td>
</tr>
</tbody>
</table>
TABLE OF CONTENTS (Continued)

Section                                                                                                               Page
6.6.2 Surface Hazards                                                                                                   6-23
6.6.3 Impacts of Mining                                                                                                 6-23
6.6.4 Subsidence                                                                                                       6-23
6.7 Post Mining Reclamation                                                                                             6-23
6.8 References                                                                                                         6-24

LIST OF TABLES

TABLE 6-1 CENTRALIZED STRATIGRAPHIC SECTION NORTHERN WASATCH PLATEAU                                                 6-3
TABLE 6-2 DRILL HOLE EVALUATION                                                                                       6-9
TABLE 6-3 CROSS SECTION BORING LOCATION NORTH-SOUTH CROSS SECTION                                                     6-13
TABLE 6-4 CROSS SECTION BORING/MEASURED SECTION LOCATION EAST-WEST CROSS SECTION                                       6-15
TABLE 6-5 QUALITY OF HIAWATHA COAL SEAM                                                                            6-17
TABLE 6-6 ACID- AND TOXIC-FORMING POTENTIAL OF HIAWATHA COAL, ROOF, AND FLOOR SAMPLES                               6-19
TABLE 6-7 UNIAXIAL STRENGTH TEST RESULTS BEAVER CREEK COAL COMPANY, DRILL HOLES GCD-10, 4 AND 7                     6-22

LIST OF FIGURES

FIGURE 6-1 LOCATION MAP                                                                                                 6-2
FIGURE 6-2 REGIONAL GEOLOGIC MAP OF THE BLUE BLAZE NO. 1 & 2 MINE PERMIT AREA                                          6-6
FIGURE 6-3 REGIONAL STRUCTURAL CONTOUR MAP                                                                          6-8

INCORPORATED

JULY 2005
DIV OF OIL GAS & MINING
Chapter 6, Geology
Hidden Splendor Resources, Inc.

July 2005

LIST OF PLATES

PLATE 6-1 GEOLOGY
PLATE 6-2 GEOLOGIC CROSS SECTION N-S
PLATE 6-3 GEOLOGIC CROSS SECTION E-W

LIST OF APPENDICES

APPENDIX 6-1 DRILL HOLE LOGS
APPENDIX 6-2 LABORATORY DATA SHEETS
6.1 Scope

This chapter includes the geologic information for the Horizon Mine area in accordance with the requirements set forth in R645-301-600.

6.2 Methodology

Previously assembled geologic data obtained from Beaver Creek Coal Co. has been used as a basis for this chapter. The data from Beaver Creek Coal Co. included drill logs generated during their mining efforts. This chapter also includes information from more recent drilling and mining operations in the Horizon Mine area. Information from recent geologic publications and in-house reports is also included to supplement the information obtained from Beaver Creek Coal Co.

6.3 Regional Geologic Framework

The Horizon No. 1 Mine is located in the northern portion of the Wasatch Plateau (Figure 6-1). The Wasatch Plateau is the northwestern outlier of the eroded San Rafael Swell. The plateau dips westward producing a great monoclinal fold that is interrupted by faults in the borderlands of the Great Basin. Superimposed over the region are numerous structural features including anticlines, synclines, faults and igneous intrusions.

The Wasatch Plateau is comprised primarily of Cretaceous to Tertiary age sedimentary rocks. These rocks are principally siliciclastic of both continental and marine origin. Coal seams of economic significance occur in the Cretaceous sediment (Table 6-1).

The Upper Cretaceous Rocks of the Wasatch Plateau were deposited along the western margin of the Western Interior Basin. The dynamic depositional sequence of the Mesaverde Group is the result of deltaic sedimentation. During the Upper Cretaceous, the area now occupied by the Wasatch Plateau was a trough, gradually subsiding, attracting drainage and receiving terrigenous clastics from the tectonically active Sevier highlands. Wave-dominated delta complexes prograded easterly into this epicontinental sea. The Sevier orogenic belt was tectonically active during the entire Cretaceous Period. Near the end of the Cretaceous Period, rocks that were deposited in the marginal marine environments were deformed as the result of the Laramide Orogeny.
Chapter 6, Geology
Hidden Splendor Resources, Inc.

May 2004

HIDDEN SPLENDOR RESOURCES, INC.
HORIZON MINE
MINE LOCATION MAP

FIGURE 6-1 - LOCATION MAP

DIV OF OIL GAS & MINING
### TABLE 6-1
CENTRALIZED STRATIGRAPHIC SECTION - NORTHERN WASATCH PLATEAU

<table>
<thead>
<tr>
<th>SYSTEM</th>
<th>STRATIGRAPHIC UNIT</th>
<th>THICKNESS (feet)</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>TERTIARY</td>
<td>WASATCH GROUP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>North Horn Formation</td>
<td>500-2,500</td>
<td>Variegated shales with subordinate sandstone, conglomerate and freshwater limestone, slope former; sandstone and limestone units may supply limited quantities of groundwater.</td>
</tr>
<tr>
<td></td>
<td>Price River Formation</td>
<td>600-1,000</td>
<td>Gray to white gritty sandstone interbedded with subordinate shale and conglomerate, ledge and slope former, little potential for groundwater.</td>
</tr>
<tr>
<td></td>
<td>Castlegate Sandstone</td>
<td>150-500</td>
<td>White to gray, coarse-grained often conglomeratic sandstone, cliff former, weathers to shades of brown, good aquifer material, groundwater not present if outcrops occur nearby.</td>
</tr>
<tr>
<td></td>
<td>Blackhawk Formation (Major Coal Seams)</td>
<td>700-1,000</td>
<td>Yellow to gray, fine to medium-grained sandstone, interbedded with subordinate gray and carbonaceous shale, several thick coal seams; perched groundwater may occur in sandstone units.</td>
</tr>
<tr>
<td></td>
<td>Star Point Sandstone</td>
<td>90-1,000</td>
<td>Yellow-gray massive cliff-forming sandstone, often in several tongues separated by Masuk Shale.</td>
</tr>
<tr>
<td></td>
<td>Masuk Shale</td>
<td>300-1,300</td>
<td>Yellow to blue-gray sandy shale, slope former.</td>
</tr>
<tr>
<td></td>
<td>Emery Sandstone (Coal)</td>
<td>50-800</td>
<td>Yellow-gray friable sandstone tongue cliff former. Coal present in subsurface; major regional aquifer.</td>
</tr>
<tr>
<td></td>
<td>Blue Gate Member</td>
<td>1,500-2,400</td>
<td>Pale blue-gray, nodular and irregularly bedded marine mudstone and siltstone with several arenaceous beds, weathers into rolling hills and badlands.</td>
</tr>
<tr>
<td></td>
<td>Ferron Sandstone Member (Major Coal Seams)</td>
<td>50-950</td>
<td>Alternating yellow-gray sandstone, sandy shale and gray shale with important coal beds of Emery coal field, resistant cliff former; major regional aquifer.</td>
</tr>
<tr>
<td></td>
<td>Tununk Shale Member</td>
<td>400-650</td>
<td>Blue-gray to black sandy marine shale slope forming mudstone.</td>
</tr>
</tbody>
</table>

(Modified from Doelling, 1972)
Chapter 6, Geology  
Hidden Splendor Resources, Inc.  
July 2005

6.4 Geology of Project Vicinity

6.4.1 Stratigraphy

The coal beds of interest lie within the Upper Cretaceous Mesaverde Group. This group is divided into four stratigraphic units and include in ascending order: The Star Point Sandstone, the Blackhawk Formation, the Castlegate Sandstone, and the Price River Formation. The minable seams are found in the lower 350 feet of the Blackhawk Formation. Plates 6-2 and 6-3 are geologic cross sections that illustrate the stratigraphic relationships of the Blackhawk and Star Point Formations and the mappable coal beds present in the Horizon No. 1 Mine area.

Star Point Sandstone

The Star Point Sandstone is the oldest stratigraphic unit exposed in the lease areas. It is the basal unit of the Mesaverde Group and is approximately 440 feet thick. The formation contains the Panther, Storrs, and Spring Canyon Sandstone Members which consist of coarsening upward littoral sequences of white to light gray, fine to medium grained, tight, quartzose sandstone (Blanchard 1981). The Star Point Formation overlies and intertongues with the marine Mancos Shale. The Star Point is the lowest cliff-forming unit over most of the east side of the Wasatch Plateau.

Blackhawk Formation

The Blackhawk Formation measures approximately 900 feet thick in the Gordon Creek area and consists of interbedded fluvial and marine sandstone, siltstone, and shale. The Blackhawk Formation conformably overlies the Star Point Sandstone and the boundary between the two formations is sharp; the massive Spring Canyon Sandstone member of the Star Point Sandstone is overlain by an easily erodible, shaley sandstone.

A total of eight coal seams can be identified in the Gordon Creek region. Four of the eight seams are present in the mine area and outcrop on the walls of the North Fork of Gordon Creek Canyon, Coal Canyon, and Bryner Canyon. Weathering, burning and vegetation obscures the majority of coal outcrops of the Hiawatha, Gordon, Castlegate "A", and Bob Wright seams. Only the Hiawatha and Castlegate "A" seams have been economically mined in the area. The Hiawatha seam marks the base of the Blackhawk Formation. The Castlegate "A" seam overlies the Aberdeen Sandstone. The Aberdeen is a marine sandstone sequence that coarsens upward, and is similar in character to the Star Point Sandstone. The Aberdeen measures over 120 feet at Price Canyon (Sec. 12, T13S, R9E) and thins to the west. In the vicinity of the Horizon No. 1 Mine and the National Mine (Sec. 17, T13S, R8E), the Aberdeen Sandstone is apparently discontinuous and not easily recognizable on outcrop. The westward pinch-out of the Aberdeen Sandstone is illustrated on the west-east stratigraphic section between drill hole LMC-4 and the Arco measured section near the National Mine as illustrated on Plate 6-3.

In the lease area, the Blackhawk Formation is the principal surficial bedrock unit. The Blackhawk is disconformably overlain by the massive, coarse grained, fluvial Castlegate Sandstone.

Castlegate Sandstone
The Castlegate Sandstone is exposed in the central and northeastern portion of the lease block (Plate 6-1). The formations consists of a white to gray, coarse grained to conglomeratic fluvial sandstone. Exposures of the Castlegate Sandstone typically form cliffs to steep slopes. The Castlegate Sandstone is approximately 300 feet thick in the Gordon Creek area.

**Price River Formation**

The Price River Formation occurs in the northeastern portion of the lease block (Plate 6-1). The Price River is also a fluvial deposit and contains gray to white silty sandstones with interbedded subordinate shale and conglomerate. The formation typically forms ledges and slopes. The Price River formation ranges from 600 to 1,000 feet in thickness.

**Unconsolidated Deposits**

Unconsolidated deposits composed of silt and fine grained sand, alluvial sediments and talus debris occur along valley floors and at the base of steep slopes. The thickness of these sediments is variable. In the Horizon No. 1 Mine area, the thickest alluvial deposits occur along Beaver Creek. Based on field observations, the alluvial sediments appear to exceed 10 feet in thickness.

**Igneous Dikes**

Several igneous dikes have been reported in area mines including the Beaver Creek Coal Mines #2 and #3. The dikes are reported to be Miocene age and are a mica peridotite (Tingey, 1986). The dikes are typically associated with faults that bisect the area and trend east-west to northwest-southeast.

### 6.4.2 Structure

The area of the permit is heavily faulted (Plate 6-1). Two major fault zones affect the lease block: the North Gordon and Fish Creek fault zones (Figure 6-2). The North Gordon fault zone measures three miles wide and five miles in length and is located east of the lease. The Fish Creek fault zone averages two miles wide and enters the lease from the northwest.

The permit area contain essentially two major fault trends. They are the N60 degree west trending faults (Range N50-75W) associated with the Fish Creek fault zone, and the N-S trending faults associated with the North Gordon fault zone. Sympathetic faulting also occurs within the mine area. Displacements of the faults in the mine area are variable ranging from a few feet to as much as 200 feet.
FIGURE 6-2. REGIONAL GEOLOGY MAP OF THE BLUE BLAZE NO. 1 & 2 MINE PERMIT AREA (HANSEN, 1988).
The faulting in the mine area appears to have influenced the development of stream courses. For example, the North Fork of Gordon Creek drainage appears to have formed subsequent or contemporaneously with the movement along the Gordon Creek Fault Zone (Plate 6-1).

Faulting may also affect the locations of springs and seeps in the mine area. The faulting and fracturing of the bedrock in the mine area may provide open conduits for surface water to enter into the subsurface or allow groundwater movement between aquifers. A series of springs at the head of the North Fork of Gordon Creek in the northwest corner of Section 18 T13S R8E may be related to the faults bisecting the area. Immediately east of the permit area, groundwater associated with faulting was encountered in the Beaver Creek #3 mine. The effects of faulting on the groundwater system in mine area is discussed further in Section 7.1.2.

Another major structural feature which influences the lease is the Beaver Creek Syncline (Figure 6-3). The synclinal axis trends NE-SW and actually crosses the southern portion of the lease. The strata dip toward this axis at approximately 3.5 degrees.

The igneous dikes of the area generally trend parallel to the Fish Creek fault trend. The dikes range from 0.1 to 14.0 feet in thickness.

6.5 Geology of Coal Beds and Adjacent Strata

6.5.1 Exploration and Drilling

Numerous surface exploration and surface development holes have been drilled by various energy companies and government agencies in the area surrounding the Horizon No. 1 and 2 Mine lease areas. Many of these drill holes were drilled under the direction of the Beaver Creek Coal Company during exploration and evaluation projects for their Gordon Creek mines. Four holes, LMC 1 - 4, were drilled within the lease boundaries under the direction of LMC Resources. The LMC drill hole geophysical logs were interpreted and lithologic logs were constructed by the Bureau of Land Management (BLM). The location of LMC holes are shown on Plate 7-1. Table 6-2 provides the date and depth drilled, the measured depth (February 1992), depth to the top of the Castlegate and Hiawatha seams for the LMC drill holes. Copies of the LMC drill hole logs are included in Appendix 6-1 and the HZ logs are included in Appendix 7-5.

A re-interpretation of the geophysical and lithologic log of LMC-2 was made by after discovering that the previous interpretation of the LMC-2 logs did not correlate with the lithologic interpretation of other drill holes in the area. Initially, the Castlegate "A" seam was identified at approximately 370 feet below ground surface (elevation 7880) and the Hiawatha seam at 518 feet below ground surface (elevation 7732). In drill hole LMC-3, which is located less than 2000 feet west of LMC-2, the same seams were identified at approximately 630 feet (elevation 7590) and 791 feet (elevation 7429) respectively. No faults have been
FIGURE 6-3. REGIONAL STRUCTURAL CONTOUR MAP.

DATUM IS TOP OF SPRING CANYON MEMBER OF STARPOINT FORMATION EXCEPT IN SHADDED AREAS.
IN SHADDED AREAS, DATUM IS TOP OF EMERY SANDSTONE MEMBER OF MANCOS SHALE. (HANSEN, 1988).
TABLE 6-2

DRILL HOLE EVALUATION

<table>
<thead>
<tr>
<th>Hole ID</th>
<th>Date Drilled</th>
<th>Depth Drilled</th>
<th>Measured Depth (Feb. 1992)</th>
<th>Depth to Top of Castlegate (ft)</th>
<th>Depth to Top of Hiawatha (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMC-1</td>
<td>Sep 1976</td>
<td>900 ft</td>
<td>599 ft</td>
<td>793</td>
<td>*</td>
</tr>
<tr>
<td>LMC-2</td>
<td>Oct 1976</td>
<td>568 ft</td>
<td>None</td>
<td>518</td>
<td>*</td>
</tr>
<tr>
<td>LMC-3</td>
<td>Nov 1976</td>
<td>836 ft</td>
<td>664 ft</td>
<td>630</td>
<td>791</td>
</tr>
<tr>
<td>LMC-4</td>
<td>Jan 1980</td>
<td>430 ft</td>
<td>217 ft</td>
<td>105.2</td>
<td>215.3</td>
</tr>
<tr>
<td>HZ-95-1</td>
<td>10/8/95</td>
<td>1075 ft</td>
<td>-</td>
<td>857</td>
<td>1012</td>
</tr>
<tr>
<td>HZ-95-2</td>
<td>10/15/95</td>
<td>1195 ft</td>
<td>-</td>
<td>1025</td>
<td>1149</td>
</tr>
<tr>
<td>HZ-95-3</td>
<td>10/28/95</td>
<td>465 ft</td>
<td>-</td>
<td>225</td>
<td>413</td>
</tr>
</tbody>
</table>

* Drilling completed before reaching the Hiawatha seam.

<table>
<thead>
<tr>
<th>Hole ID</th>
<th>Date Drilled</th>
<th>Depth Drilled</th>
<th>Measured Depth (11/17/01)</th>
<th>Depth to Top of Castlegate (ft)</th>
<th>Depth to Top of Hiawatha (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HZ-01-6-1</td>
<td>Oct 2001</td>
<td>1550 ft</td>
<td>944 ft</td>
<td>+</td>
<td>1383</td>
</tr>
</tbody>
</table>

+ Castlegate Seam not intercepted.
mapped in the area that would offset the formations encountered in the two drill holes. Assuming the current interpretation by the BLM is not correct, a better stratigraphic and structural fit is achieved if the coal seam initially identified as the Hiawatha is re-interpreted as the Castlegate "A" seam and the overlying coal seams initially identified as the Castlegate "A" are reclassified as local coal beds. Personnel at the Salt Lake Office of the BLM were contacted and questioned about the accuracy of their interpretation of the LMC boreholes. The BLM personnel feel that many of the interpretations of the logs are suspect.

A north to south geologic cross-section and an east to west geologic cross-section were generated from the logs of several of the drill holes advanced under the direction of Beaver Creek Coal Company, LMC, and the U.S.G.S. The cross sections are shown on Plates 6-2 and 6-3 respectively. The locations of the drill holes from which the logs were used to construct the cross sections are shown on an index map included on the plates. The cross sections provide a graphic illustration of the stratigraphic and structural relationships of the coal seams in the lease area.

6.5.1.1 Casing and Sealing

Drill holes LMC 1, 2, 3, and 4 will be plugged and abandoned following State approved methods. Four new holes have been (HZ-I, HZ-2, HZ-3, and HZ01-6-1) drilled and completed as monitoring wells within the uppermost saturated zone beneath the Hiawatha seam to better predict the potential of inflow into the mine.

When no longer needed for monitoring or other use approved by the UDOGM and upon a finding of no adverse environmental or health and safety effects, or unless approved for transfer as a water well, each well or boring will be capped, sealed, backfilled, or otherwise properly managed, as required by UDOGM. Permanent closure measures will be designed to prevent access to the borings or monitoring wells by people, livestock, fish and wildlife, machinery and to keep acid or other toxic drainage from entering the groundwater system.

6.5.2 Stratigraphy - Coal Seams

The commercial coal beds on the tract occur in the Blackhawk Formation. Only the Castlegate "A" and Hiawatha Seams are minable.

6.5.2.1 Hiawatha Seam

The Hiawatha Seam is the lowest stratigraphic coal in the Horizon mining lease. It directly overlies the Star Point Sandstone and is the most laterally persistent seam in the area. It can be correlated with the Kinney or Upper O'Connor seams mined in the Pleasant Valley area in the western part of the plateau (Plate 6-3). The Hiawatha seam ranges in thickness from 6.0 to 11.0 feet, averaging 7.0 feet within the lease block. A thin rider seam overlies the Hiawatha in the southwestern part of the lease.
Chapter 6, Geology
Hidden Splendor Resources, Inc.

The floor rock of the Hiawatha seam ranges from the competent littoral Spring Canyon of the Star Point Sandstone to fluvial overbank shales and siltstone and channel sandstones.

6.5.2.2 Gordon Coal Zone

The Gordon seam is stratigraphically located about 80 feet above the Hiawatha. It is very lenticular and generally less than 5.0 feet in thickness with multiple splits. It is not economically mineable in the Gordon Creek area. The roof and floor consist essentially of shale and because of this, the outcrop is often covered by slump and soil.

6.5.2.3 Castlegate "A" Seam

The Castlegate "A" seam is stratigraphically located 150 to 230 feet above the Hiawatha seam. The seam ranges 4.0 to 14.0 feet in thickness. The average thickness in this area is 8.3 feet. The Castlegate "A" seam nearly pinches out and becomes unmineable in areas near the southwestern boundary.

The floor of this seam appears to vary from a carbonaceous silty shale to a fine grained fluvial sandstone. Water production from this floor strata has not been observed in other mining operations in the area.

The roof consists essentially of overbank carbonaceous silty shales (approximately 80%). In the northeastern part of the lease a persistent rider seam is present. The remainder of the mine roof consists of fluvial channel sandstones. The frequency of channeling increases to the west. Local scouring of the seam occurs in some of the channels. The general channel trend is NE-SW and range 100 to 500 feet in width. During mining, some channels may initially produce water which will, more than likely, dry within weeks. However, if sustained flows are encountered during mining operations, the water will be managed as described in Chapter 7.

Poor top conditions generally are located adjacent to channel margins due to differential compaction of the adjacent shale units. This is indicated by the abundance of slickenside features in the shale.

6.5.2.4 Bob Wright Seam

The Bob Wright seam lies about 120 feet above the Castlegate "A" seam. It is very lenticular and contains abundant partings. It does not achieve minable thickness (4.0 ft.) within the Gordon Creek area. However, the seam does thicken above 4.0 feet southwest of the lease. Within the Horizon mining leases, the seam contains a shale roof and floor. Locally, sandstone occurs in the roof.

6.5.3 Oil and Gas Wells

No oil and gas exploration or production wells are located in the permit area.
6.5.4 Detailed Cross Sections

Plates 6-2 and 6-3 are geologic cross sections which show the general stratigraphic relations through the Horizon Mine area. The stratigraphic relationships of the Castlegate "A" and Hiawatha seams are illustrated in these sections. Tables 6-3 and 6-4 list the borings and their locations used to construct the cross sections.

6.5.5 Coal Reserves

For coal reserve calculations see Section 3.3.3.1.

6.5.6 Coal Quality and Characteristics

Table 6-5 summarizes the quality of the Hiawatha coal seam. The analyses were performed on core samples from drill hole LMC-4 as well as the HZ drill holes. Supporting laboratory data sheets are provided in Appendix 6-2.

According to data provided in Table 6-5, the average moisture content of the Hiawatha coal seam is 7.99 percent. The pyritic sulfur content of the coal is low, with a maximum of 0.07 percent and an average of 0.05 percent.

Data presented in Appendix 6-2 and summarized in Table 6-6 indicate that the Hiawatha coal seam does not possess toxic-forming characteristics. Boron and selenium concentrations, as well as sodium adsorption ratios, are all within a range classified as "good" by Leatherwood and Duce (1988). However, the acid-base potential of each of the three coal samples which were collected from the HZ-series holes suggests that the coal has a potential to be acid-forming.

The acid-forming potential of the coal will be tempered by its slightly alkaline nature (with a pH that varies from 7.3 to 7.8, according to Appendix 6-2). Furthermore, impacts to the environment of the permit and adjacent areas resulting from this acid-forming potential will be minimized by two factors. First, coal will be stored on the surface for only short periods of time before being shipped off site, thus reducing the potential for weathering, oxidation, and generation of acid drainage. Second, runoff from the coal stockpile will be routed through the facility sedimentation pond, where it will mix with more-alkaline runoff from additional areas, thus neutralizing any acidic drainage which might form.

6.5.7 Adjacent Units (Overburden and Underburden)

6.5.7.1 Rock Characteristics, Acid-toxic, Pyrite, Clay and Alkalinity

Table 6-6 lists the analytical results of tests performed to determine the acid- and toxic-forming potential of floor and roof samples collected adjacent to the Hiawatha coal seam from LMC-4 and from the HZ holes. Comparing the data in Table 6-6 with the guidelines presented by Leatherwood and Duce (1988) indicate that the roof and floor materials should be neither...
**TABLE 6-3**

CROSS SECTION BORING LOCATIONS
NORTH-SOUTH CROSS SECTION

<table>
<thead>
<tr>
<th>Boring</th>
<th>Location (BY SECTION)</th>
<th>Location (BY U.S. CADASTRAL SYSTEM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCCC MC-2-2</td>
<td>T13S R8E SW NE sec. 18</td>
<td>(D-13-8) 18ac</td>
</tr>
<tr>
<td>ARCO (1980) GC-8</td>
<td>T13S R8E NW SW sec. 8</td>
<td>(D-13-8) 8cb</td>
</tr>
<tr>
<td>Blue Blaze Coal Co. Consumers (1927) DH-3</td>
<td>T13S R8E NW NE sec. 8</td>
<td>(D-13-8) 8ab</td>
</tr>
<tr>
<td>USGS (1976) W-BC-4-S</td>
<td>T13S R8E NE NE sec. 8</td>
<td>(D-13-8) 8aa</td>
</tr>
<tr>
<td>ARCO (1980) GC-7</td>
<td>T13S R8E SE SE sec. 5</td>
<td>(D-13-8) 5dd</td>
</tr>
<tr>
<td>ARCO (1980) GC-6</td>
<td>T13S R8E NE NE sec. 6</td>
<td>(D-13-8) 6da</td>
</tr>
<tr>
<td>USGS (1976) W-BC-5-S</td>
<td>T12S R8E SW SW sec. 32</td>
<td>(D-12-8) 32cc</td>
</tr>
</tbody>
</table>
TABLE 6-4
CROSS SECTION BORING/MEASURED SECTION LOCATIONS
EAST-WEST CROSS SECTION

<table>
<thead>
<tr>
<th>Boring/Measured Section</th>
<th>Location (Section)</th>
<th>Location (U.S. Cadastral System)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCO Measured Section No. 3 &amp; No. 6 Mines at Portals</td>
<td>T13S R8E NE SW Sec. 16</td>
<td>(D-13-8) 18ac</td>
</tr>
<tr>
<td>Beaver Creek Coal Co. Mine Core MC-3-1</td>
<td>T13S R8E NW SW Sec. 16</td>
<td>(D-13-8) 8cb</td>
</tr>
<tr>
<td>Beaver Creek Coal Co. No. 3 Mine Workings MW-3-2 (1976)</td>
<td>T13S R8E SW SW Sec. 16</td>
<td>(D-13-8) 8ab</td>
</tr>
<tr>
<td>LMC Resources (1976) C &amp; W Coal Co. Submittal LMC-4</td>
<td>T13S R8E SW NE Sec. 17</td>
<td>(D-13-8) 8aa</td>
</tr>
<tr>
<td>ARCO (1980) Measured Section Near National Mine</td>
<td>T13S R8E SE SW Sec. 17</td>
<td>(D-13-8) 5dd</td>
</tr>
<tr>
<td>Beaver Creek Coal Co. (1976) Certified Point OC-2-1</td>
<td>T13S R8E SE SE Sec. 18</td>
<td>(D-13-8) 6da</td>
</tr>
<tr>
<td>Beaver Creek Coal Co. (1976) No. 2 Mine Core MC-2-2</td>
<td>T12S R8E SW NE Sec. 18</td>
<td>(D-12-8) 32cc</td>
</tr>
<tr>
<td>Beaver Creek Coal Co. (1976) Certified Point OC-2-2</td>
<td>T13S R8E SW SW Sec. 18</td>
<td>(D-13-8) 18cd</td>
</tr>
<tr>
<td>USGS (1976) W-BC-3-S</td>
<td>T13S R7E SE SW Sec. 12</td>
<td>(D-13-7) 12cd</td>
</tr>
<tr>
<td>ARCO (1980) GC-3</td>
<td>T13S R7E NW SW Sec. 13</td>
<td>(D-13-7) 13cb</td>
</tr>
<tr>
<td>ARCO Measured Section N. Fork Gordon Creek</td>
<td>T13S R7E NE NE Sec. 23</td>
<td>(D-13-7) 23aa</td>
</tr>
<tr>
<td>Arco (1980) GC-2A</td>
<td>T13S R7E SW SE Sec. 15</td>
<td>(D-13-7) 15dc</td>
</tr>
<tr>
<td>USGS (1980) UGC-3</td>
<td>T13S R7E SE SE Sec. 16</td>
<td>(D-13-7) 16dd</td>
</tr>
<tr>
<td>USGS (1980) UGC-5</td>
<td>T13S R7E NE NE Sec. 16</td>
<td>(D-13-7) 16aa</td>
</tr>
</tbody>
</table>
TABLE 6-5
QUALITY OF HIWATHA COAL SEAM

<table>
<thead>
<tr>
<th>Hole Number</th>
<th>Interval Sampled (ft)</th>
<th>Moisture Content (%)</th>
<th>Ash Content (%)</th>
<th>Volatile Matter (%)</th>
<th>Fixed Carbon (%)</th>
<th>Heat Energy (Btu/lb)</th>
<th>Total Sulfur (%)</th>
<th>Pyritic Sulfur (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMC-4</td>
<td>224.0-227.5</td>
<td>5.38</td>
<td>7.63</td>
<td>42.51</td>
<td>44.48</td>
<td>12,448</td>
<td>0.47</td>
<td>0.04</td>
</tr>
<tr>
<td>HZ-95-1</td>
<td>1012.4-1012.8</td>
<td>8.06</td>
<td>6.10</td>
<td>40.57</td>
<td>45.27</td>
<td>12,230</td>
<td>0.58</td>
<td>0.02</td>
</tr>
<tr>
<td>HZ-95-1</td>
<td>1013.3-1015.4</td>
<td>9.17</td>
<td>5.26</td>
<td>40.51</td>
<td>45.06</td>
<td>12,450</td>
<td>0.57</td>
<td>0.07</td>
</tr>
<tr>
<td>HZ-95-1</td>
<td>1015.4-1015.8</td>
<td>8.81</td>
<td>19.00</td>
<td>36.31</td>
<td>35.88</td>
<td>10,287</td>
<td>0.45</td>
<td>0.04</td>
</tr>
<tr>
<td>HZ-95-1</td>
<td>1015.8-1017.6</td>
<td>8.94</td>
<td>5.24</td>
<td>40.20</td>
<td>45.62</td>
<td>12,533</td>
<td>0.45</td>
<td>0.05</td>
</tr>
<tr>
<td>HZ-95-1</td>
<td>1017.6-1019.0</td>
<td>10.49</td>
<td>13.27</td>
<td>35.10</td>
<td>41.14</td>
<td>10,957</td>
<td>0.38</td>
<td>0.03</td>
</tr>
<tr>
<td>HZ-95-2</td>
<td>1147.3-1148.4</td>
<td>9.11</td>
<td>5.68</td>
<td>40.10</td>
<td>45.11</td>
<td>12,306</td>
<td>0.49</td>
<td>0.05</td>
</tr>
<tr>
<td>HZ-95-2</td>
<td>1148.4-1149.7</td>
<td>7.63</td>
<td>17.38</td>
<td>37.44</td>
<td>37.55</td>
<td>10,665</td>
<td>0.38</td>
<td>0.04</td>
</tr>
<tr>
<td>HZ-95-3</td>
<td>412.6-414.0</td>
<td>7.41</td>
<td>4.22</td>
<td>41.11</td>
<td>47.26</td>
<td>12,768</td>
<td>0.59</td>
<td>0.05</td>
</tr>
<tr>
<td>HZ-95-3</td>
<td>415.5-417.05</td>
<td>6.87</td>
<td>4.26</td>
<td>42.24</td>
<td>46.63</td>
<td>12,940</td>
<td>0.61</td>
<td>0.07</td>
</tr>
<tr>
<td>HZ-95-3</td>
<td>417.05-418.2</td>
<td>7.57</td>
<td>4.64</td>
<td>41.03</td>
<td>46.76</td>
<td>12,672</td>
<td>0.58</td>
<td>0.06</td>
</tr>
<tr>
<td>HZ-95-3</td>
<td>418.2-419.2</td>
<td>7.53</td>
<td>14.10</td>
<td>36.40</td>
<td>41.97</td>
<td>11,187</td>
<td>0.53</td>
<td>0.06</td>
</tr>
<tr>
<td>HZ-95-3</td>
<td>419.2-420.1</td>
<td>6.84</td>
<td>11.89</td>
<td>38.33</td>
<td>42.94</td>
<td>11,846</td>
<td>0.56</td>
<td>0.04</td>
</tr>
</tbody>
</table>

On an "as-received" basis. Laboratory reports provided in Appendix 6-2.
### TABLE 6-6
ACID- AND TOXIC-FORMING POTENTIAL OF HIWATHA COAL, ROOF, AND FLOOR SAMPLES

<table>
<thead>
<tr>
<th>Hole Number</th>
<th>Interval Sampled (ft)</th>
<th>Unit Sampled</th>
<th>Boron Conc. (ppm)</th>
<th>Selenium Conc. (ppm)</th>
<th>Sodium Adsorp. Ratio</th>
<th>pH</th>
<th>Acid/Base Pot. (b)</th>
<th>Total Sulfur (%)</th>
<th>Pyritic Sulfur (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMC-4</td>
<td>214.0-217.0</td>
<td>Roof</td>
<td>1.61</td>
<td>&lt;0.1</td>
<td>1.98</td>
<td>7.12</td>
<td>--</td>
<td>--</td>
<td>0.24</td>
</tr>
<tr>
<td>LMC-4</td>
<td>224.0-227.5</td>
<td>Coal</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.47</td>
<td>0.04</td>
</tr>
<tr>
<td>LMC-4</td>
<td>227.3-230.5</td>
<td>Floor</td>
<td>&lt;0.1</td>
<td>&lt;0.1</td>
<td>1.04</td>
<td>8.09</td>
<td>--</td>
<td>--</td>
<td>0.05</td>
</tr>
<tr>
<td>HZ-95-1</td>
<td>1011.2-1012.4</td>
<td>Roof</td>
<td>--</td>
<td>--</td>
<td>0.35</td>
<td>7.96</td>
<td>20.3</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>HZ-95-1</td>
<td>1012.4-1012.8</td>
<td>Coal</td>
<td>0.13</td>
<td>&lt;0.01</td>
<td>0.40</td>
<td>7.32</td>
<td>-13.6</td>
<td>0.58</td>
<td>0.02</td>
</tr>
<tr>
<td>HZ-95-2</td>
<td>1146.2-1147.3</td>
<td>Roof</td>
<td>0.22</td>
<td>0.05</td>
<td>1.36</td>
<td>7.94</td>
<td>64.0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>HZ-95-2</td>
<td>1147.3-1148.4</td>
<td>Coal</td>
<td>0.17</td>
<td>&lt;0.01</td>
<td>0.91</td>
<td>7.77</td>
<td>-9.1</td>
<td>0.49</td>
<td>0.05</td>
</tr>
<tr>
<td>HZ-95-2</td>
<td>1158.2-1159.3</td>
<td>Floor</td>
<td>0.21</td>
<td>0.07</td>
<td>1.29</td>
<td>8.53</td>
<td>30.1</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>HZ-95-3</td>
<td>411.9-412.6</td>
<td>Roof</td>
<td>0.29</td>
<td>0.05</td>
<td>0.68</td>
<td>7.89</td>
<td>22.3</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>HZ-95-3</td>
<td>412.6-414.0</td>
<td>Coal</td>
<td>0.17</td>
<td>&lt;0.01</td>
<td>0.41</td>
<td>7.31</td>
<td>-15.8</td>
<td>0.59</td>
<td>0.05</td>
</tr>
<tr>
<td>HZ-95-3</td>
<td>420.3-421.0</td>
<td>Floor</td>
<td>0.05</td>
<td>0.01</td>
<td>0.55</td>
<td>7.21</td>
<td>29.0</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

(a) Analyses performed in accordance with Leatherwood and Duce (1988). Laboratory reports provided in Appendix 6-2.

(b) In tons of CaCO₃ per 1000 tons of material.
acid-generating nor toxic-forming. One sample (LMC-4 roof material) did contain an anomalously-high pyritic sulfur content of 0.24 percent. However, comparison with other samples collected in the area indicates that this high pyritic sulfur content is likely of limited areal extent. This is further verified by the high neutralization potential of the remaining roof and floor materials (with acid/base potentials varying from 20.3 to 64.0 tons of CaCO₃ per 1000 tons of material).

To monitor conditions of the overburden and underburden, samples will be taken at 2,000 ft intervals throughout the mine and will be tested according to the Divisions requirements.

6.5.7.2 Roof and Floor Properties

As discussed in Section 6.5.2, the roof and floor rock of the Castlegate "A" and Hiawatha seams varies from shale to competent sandstone. Information obtained from the LMC drill holes and selected drill holes from the Beaver Creek Coal Company permit application for their mines in the area have been utilized to determine roof and floor conditions that can be anticipated while mining the Hiawatha seam. The location of the of the Beaver Creek drill holes are included on Plate 3-3. Logs of the wells used to determine the properties of the roof and floor rock are included in Appendix 6-1.

The logs of drill hole LMC-3 and LMC-4 indicate the floor rock of the Hiawatha consists of five feet of carbonaceous silty shale and silty sandstone overlying the massive sandstone of the Spring Canyon Member of the Star Point Formation. No cores were obtained from LMC-3 and LMC-4 to determine the geotechnical properties of roof or floor rock. However, uniaxial strength tests were performed by Beaver Creek Coal Company on samples of shales and sandstones obtained from drill holes GCD-4, 7, and 10. These drill holes are located approximately one mile west-southwest of the Horizon Mine portals. The results of the tests are provided in Table 6-7.

The logs from drill hole LMC 1 indicate the roof of the uppermost split of the Castlegate "A" seam is approximately 35 feet of sandstone. The floor of the seam consists of four feet of shale overlying approximately 30 feet of sandstone. In LMC-2, the upper split roof rock consists of 42 feet of carbonaceous shale and the floor consists of 38 feet of shaley silty sandstone. In LMC-3, the upper split roof rock consists of 4.5 feet of shale overlain by 19 feet of silty sandstone and the floor rock consists of four feet of shale overlying 8.5 feet of sandstone. In LMC-4, the roof rock consists of 15 feet of sandstone and the floor rock is five feet of siltstone overlying 26 feet of sandstone. Information from Beaver Creek Coal Company GCD-4 indicates that the roof rock of the Castlegate"A" seam in the area of the drill hole consists of sandstones interbedded with shales and the floor consists of shale. The results of uniaxial strength tests for samples obtained from the roof and floor rock of the Castlegate "A" seam in drill hole GCD-4 is provided in Table 6-7.
### TABLE 6-7

UNIAXIAL STRENGTH TEST RESULTS
BEAVER CREEK COAL COMPANY, DRILL HOLES GCD-10, 4, AND 7

<table>
<thead>
<tr>
<th>Sample I.D.</th>
<th>Depth Interval (feet)</th>
<th>Diameter (inches)</th>
<th>Length (inches)</th>
<th>Description</th>
<th>Compressive Strength (psi)</th>
<th>Young's Module (psi x 10⁶)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCD-10</td>
<td>80.0 - 85.0</td>
<td>1.85</td>
<td>3.86</td>
<td>Shale</td>
<td>14327</td>
<td>1.0994</td>
</tr>
<tr>
<td>GCD-10</td>
<td>76.2 - 76.8</td>
<td>1.85</td>
<td>3.74</td>
<td>Shaly sandstone</td>
<td>8448</td>
<td>2.9047</td>
</tr>
<tr>
<td>GCD-10</td>
<td>20.0 - 20.5</td>
<td>1.86</td>
<td>3.64</td>
<td>Shaly sandstone</td>
<td>16874</td>
<td>2.4769</td>
</tr>
<tr>
<td>GCD-10</td>
<td>29.7 - 30.2</td>
<td>1.86</td>
<td>3.75</td>
<td>Shaly sandstone</td>
<td>N/A</td>
<td>5.0169</td>
</tr>
<tr>
<td>GCD-10</td>
<td>35.8 - 36.9</td>
<td>1.85</td>
<td>3.75</td>
<td>Shaly sandstone</td>
<td>15977</td>
<td>2.0718</td>
</tr>
<tr>
<td>GCD-10A</td>
<td>26.4 - 27.6</td>
<td>1.85</td>
<td>3.67</td>
<td>Shale</td>
<td>7772</td>
<td>1.1189</td>
</tr>
<tr>
<td>GCD-10B</td>
<td>26.4 - 27.6</td>
<td>1.85</td>
<td>3.71</td>
<td>Shale</td>
<td>16601</td>
<td>1.753</td>
</tr>
<tr>
<td>GCD-4</td>
<td>364.0 - 366.0</td>
<td>2.87</td>
<td>5.20</td>
<td>Roof rock, sandstone interbedded w/shale</td>
<td>9130</td>
<td>1.1977</td>
</tr>
<tr>
<td>GCD-4</td>
<td>366.0 - 368.0</td>
<td>2.58</td>
<td>4.73</td>
<td>Roof rock, sandstone interbedded w/shale</td>
<td>5860</td>
<td>1.0791</td>
</tr>
<tr>
<td>GCD-4</td>
<td>369.0 - 370.0</td>
<td>2.41</td>
<td>4.91</td>
<td>Roof rock, sandstone interbedded w/shale</td>
<td>10606</td>
<td>1.9149</td>
</tr>
<tr>
<td>GCD-4</td>
<td>381.0 - 382.0</td>
<td>2.40</td>
<td>4.93</td>
<td>Floor rock, shale</td>
<td>10616</td>
<td>1.7017</td>
</tr>
<tr>
<td>GCD-7</td>
<td>122.0 - 122.5</td>
<td>1.85</td>
<td>3.80</td>
<td>Sandstone interbedded w/shale</td>
<td>11257</td>
<td>1.6076</td>
</tr>
</tbody>
</table>
6.6 Geologic Effects of Mining

6.6.1 Mining Hazards

The types of mining hazards which have been encountered at other mines in the immediate area and within the Wasatch Plateau are anticipated to be encountered while mining in the Horizon No. 1 Mine. Roof conditions vary from excellent to poor depending upon the type of rock overlying the coal. Methane has never been detected in the mine workings in this area. The maximum thickness of overburden is not excessive; therefore, explosive rock bursts and "rib rolls" are not expected to occur.

6.6.2 Surface Hazards

Rockfalls occur naturally, but can be more frequent with activities associated with mining such as increased men, machinery, noise, and bulk movement of soil using tractors and mining equipment. This is a relatively minor problem and nothing of any more concern is expected to occur.

6.6.3 Impacts of Mining

There will be no geologic effects other than the possible disturbance of the groundwater and surface subsidence. These potential problems have been discussed in Chapter 7 and Section 3.4.8.

6.6.4 Subsidence

Subsidence of the sediments overlying the mining area will be monitored. A detailed description of the subsidence monitoring plan, including a map illustrating the location of monitoring stations, is presented in Section 3.4.8.

6.7 Post Mining Reclamation

Reclamation of the mine site following completion of the mining operations as required by state regulations R645-301 and R645-302 will be accomplished. The reclamation plan is discussed in detail in Section 3.5 of this permit application.
6.8 References


Hansen, C.D., 1988, Geology of the Jump Creek 7 1/2' Quadrangle Carbon County, Utah: Brigham Young University Master's Thesis.

Leatherwood, J. And D. Duce, 1988, Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining. Utah Division of Oil, Gas and Mining. Salt Lake City, Utah.

APPENDIX 6-1

DRILL HOLE LOGS
DRILL HOLE LOGS

INCORPORATED
APR 02 2004
DIV OF OIL GAS & MINING

The information contained in this appendix is true and correct to the best of my knowledge. RSW
<table>
<thead>
<tr>
<th>DEPTH (ft)</th>
<th>LITHOLOGIC DESCRIPTION AND OBSERVATIONS</th>
<th>FORMATION/REGIONAL GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 100'</td>
<td>SANDSTONE, SILTSTONE, SHALE (interbedded) No lithology log</td>
<td></td>
</tr>
<tr>
<td>Depth (ft)</td>
<td>Lithologic Description and Observations</td>
<td>Formation/Regional Group</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>100</td>
<td>0 - 200' SANDSTONE, SILTSTONE, SHALE (interbedded) No lithology log</td>
<td>BLACKHAWK FORMATION</td>
</tr>
</tbody>
</table>

**Drilling Log**

- **Project Name:** BLUE BLAZE COAL
- **Owner/Client:** ROGER SKAGGS
- **Boring/Well Number:** LMC-1
- **Reference Elevation:** --
- **Reference Point:** GROUND SURFACE
- **Date Drilled:** SEPT 1976
- **Logged By:** --
- **First occurrence of G.W.:** --
- **Static W.L.:** --
- **Boring Depth (ft):** 899'
- **Well Depth (ft):** --
- **Boring Diameter (in):** 4 3/4"
<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Lithologic Description and Observations</th>
<th>Formation/Regional Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>0 - 279' Sandstone, Siltstone, Shale (interbedded) No lithology log</td>
<td>Blackhawk Formation</td>
</tr>
<tr>
<td>279 - 280.5'</td>
<td>Coal. No lithology log</td>
<td></td>
</tr>
<tr>
<td>280.5 - 300'</td>
<td>Sandstone, Siltstone, Shale. No lithology log</td>
<td></td>
</tr>
<tr>
<td>DEPTH (ft)</td>
<td>LITHOLOGIC DESCRIPTION AND OBSERVATIONS</td>
<td>FORMATION/REGIONAL GROUP</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>0 - 300</td>
<td>280.5 - 300' SANDSTONE, SILTSTONE, SHALE (interbedded) No lithology log.</td>
<td>BLACKHAWK FORMATION</td>
</tr>
<tr>
<td>300 - 310</td>
<td></td>
<td></td>
</tr>
<tr>
<td>310 - 320</td>
<td></td>
<td></td>
</tr>
<tr>
<td>320 - 330</td>
<td></td>
<td></td>
</tr>
<tr>
<td>330 - 340</td>
<td></td>
<td></td>
</tr>
<tr>
<td>340 - 350</td>
<td></td>
<td></td>
</tr>
<tr>
<td>350 - 360</td>
<td></td>
<td></td>
</tr>
<tr>
<td>360 - 370</td>
<td></td>
<td></td>
</tr>
<tr>
<td>370 - 390</td>
<td></td>
<td></td>
</tr>
<tr>
<td>390 - 400</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DATE LOGGED:** SEPT 1976

**DATE DRILLED:** SEPT 1976

**LOGGED BY:**

**PROJECT NUMBER:** UC-244

**PROJECT NAME:** BLUE BLAZI COM

**OWNER/CLIENT:** ROBER BKABBB

**BORING/WELL NUMBER:** UNK-1

**REFERENCE ELEVATION:**

**REFERENCE POINT:** GROUND SURFACE

**DRILLING CONTRACTOR:** HOLLANDER

**BORING DEPTH (FT):** 399'  

**WELL DEPTH (FT):**

**BORING DIAMETER (IN):** 4 3/4"
<table>
<thead>
<tr>
<th>DEPTH (FT)</th>
<th>LITHOLOGIC DESCRIPTION AND OBSERVATIONS</th>
<th>FORMATION/REGIONAL GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>280 - 500'</td>
<td>SANDSTONE, SILTSTONE, SHALE (interbedded)</td>
<td>BLACKHAWK FORMATION</td>
</tr>
</tbody>
</table>
### Lithologic Description and Observations

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Lithology</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 - 540</td>
<td>SANDSTONE, SILTSTONE, SHALE (interbedded)</td>
</tr>
</tbody>
</table>

**Formation/Regional Group:** BLACKHAWK FORMATION
<table>
<thead>
<tr>
<th>DEPTH (FT)</th>
<th>LITHOLOGIC DESCRIPTION AND OBSERVATIONS</th>
<th>FORMATION/REGIONAL GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td>280-5-700' SANDSTONE, SILTSTONE, SHALE (interbedded) No lithology log.</td>
<td>BLACKHAWK FORMATION</td>
</tr>
<tr>
<td>610</td>
<td></td>
<td></td>
</tr>
<tr>
<td>620</td>
<td></td>
<td></td>
</tr>
<tr>
<td>630</td>
<td></td>
<td></td>
</tr>
<tr>
<td>640</td>
<td></td>
<td></td>
</tr>
<tr>
<td>650</td>
<td></td>
<td></td>
</tr>
<tr>
<td>660</td>
<td></td>
<td></td>
</tr>
<tr>
<td>670</td>
<td></td>
<td></td>
</tr>
<tr>
<td>680</td>
<td></td>
<td></td>
</tr>
<tr>
<td>690</td>
<td></td>
<td></td>
</tr>
<tr>
<td>700</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LITHOLOGIC DESCRIPTION
AND OBSERVATIONS

FORMATION/REGIONAL GROUP

280.5 - 750' SANDSTONE, Siltstone, Shale (interbedded) No
lithology log.

BLACKHAWK FORMATION

750 - 752' COAL

752 - 793' SANDSTONE, Siltstone, Shale No lithology log.

793 - 799' COAL No lithology log

799' - 800' SHALE No lithology log

INCORPORATED
APR 02 2004
DIV OF OIL, GAS & MINING
Castlegate "A" Upper Split
<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Lithologic Description</th>
<th>Formation/Regional Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 - 804</td>
<td>COAL, No lithology log.</td>
<td></td>
</tr>
<tr>
<td>804 - 805</td>
<td>SHALE, No lithology log.</td>
<td></td>
</tr>
<tr>
<td>805 - 806.5</td>
<td>COAL, No lithology log.</td>
<td>Coalgate &quot;A&quot; Lower Split</td>
</tr>
<tr>
<td>806.5 - 856</td>
<td>SANDSTONE, SILTSTONE, SHALE, No lithology log.</td>
<td></td>
</tr>
<tr>
<td>856 - 860</td>
<td>COAL</td>
<td>Gordon Coal Seam</td>
</tr>
<tr>
<td>860 - 899</td>
<td>SANDSTONE, SILTSTONE, SHALE, No lithology log.</td>
<td></td>
</tr>
</tbody>
</table>

**Boring/Well Number:** UMC-1  
**Boring/Well Location:**  
**Reference Elevation:**  
**Reference Point:** GROUND SURFACE  
**First occurrence of S.W.:**  
**Static W.L.:**  
**Boring Depth (ft):** 999'  
**Well Depth (ft):**  
**Boring Diameter (in):** 4 3/4"
**DRILLING LOG**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Lithologic Description and Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Sandstone, siltstone, shale (interbedded) No lithology log</td>
</tr>
</tbody>
</table>

**PROJECT NAME:** BLUE BLAZE COAL  
**Owner/Client:** ROGER SKAGGS  
**Project Number:** UC-244  
**Date Drilled:** 13 OCT 1976  
**Logged By:** --  
**Drilling Contractor:** HOLLANDER  
**Drilling Method:** --  
**Rig Type:** --  
**Boring Depth (ft):** 568'  
**Well Depth (ft):** --  
**Boring Diameter (in):** < 3/4"  

**Reference Elevation:** 8250'  
**Reference Point:** GROUND SURFACE  

**INTEGRATED**  
**APR 2 2004**  
**DIV OF OIL GAS & MINING**
<table>
<thead>
<tr>
<th>DEPTH (FT)</th>
<th>LITHOLOGIC DESCRIPTION AND OBSERVATIONS</th>
<th>FORMATION/REGIONAL GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td></td>
<td>BLACKHAWK FORMATION</td>
</tr>
<tr>
<td>110</td>
<td></td>
<td></td>
</tr>
<tr>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>130</td>
<td></td>
<td></td>
</tr>
<tr>
<td>140</td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>160</td>
<td></td>
<td></td>
</tr>
<tr>
<td>170</td>
<td>169 - 170': COAL: Possibly shaley</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td></td>
<td>170 - 172.5': SHALE: Carbonaceous, silty</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td></td>
<td>172.5 - 173': COAL: Shaley.</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td></td>
<td>173 - 194.9': SANDSTONE: Massive.</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>180</td>
<td>194.9 - 195': COAL</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>190</td>
<td>195 - 219': SANDSTONE: Shaley.</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>200</td>
<td></td>
<td>Local Coal Group</td>
</tr>
</tbody>
</table>
**EARTHFAX ENGINEERING, INC.**

**DRILLING LOG**

<table>
<thead>
<tr>
<th>Project Name</th>
<th>BLUE BLAZE COAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner/Client</td>
<td>ROGER SKAGGS</td>
</tr>
<tr>
<td>Drilled</td>
<td>13 OCT 1976</td>
</tr>
<tr>
<td>Logged By</td>
<td>UC-244</td>
</tr>
<tr>
<td>First occurrence of G.W</td>
<td>Static W.L.</td>
</tr>
<tr>
<td>Dates Measured</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Boring/Well Number</td>
<td>LMC-2</td>
</tr>
<tr>
<td>Boring/Well Location</td>
<td></td>
</tr>
<tr>
<td>Reference Elevation</td>
<td>8250'</td>
</tr>
<tr>
<td>Reference Point</td>
<td>GROUND SURFACE</td>
</tr>
<tr>
<td>Drilling Contractor</td>
<td>HOLLANDER</td>
</tr>
<tr>
<td>Drilling Method</td>
<td></td>
</tr>
<tr>
<td>Rig Type</td>
<td></td>
</tr>
<tr>
<td>Boring Depth (Ft)</td>
<td>568'</td>
</tr>
<tr>
<td>Well Depth (Ft)</td>
<td></td>
</tr>
<tr>
<td>Boring Diameter (in)</td>
<td>4 3/4&quot;</td>
</tr>
</tbody>
</table>

**LITHOLOGIC DESCRIPTION AND OBSERVATIONS**

- 195 - 215' SANDSTONE Shale

- Interbedded massive sandstone at 231 - 244'

- Interbedded massive sandstone at 288 - 312'

**FORMATION/REGIONAL GROUP**

BLACKHAWK FORMATION
**LITHOLOGIC DESCRIPTION AND OBSERVATIONS**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Lithology</th>
<th>Description</th>
<th>Formation/Regional Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>319 4' - 319 5'</td>
<td>Coal</td>
<td>Possibly &lt;0 5% shaley coal present</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>319 5' - 322 9'</td>
<td>Shale</td>
<td>Carbonaceous, silty</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>322 9' - 323'</td>
<td>Coal</td>
<td>Possibly &lt;0 5% shaley coal present</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>323' - 343'</td>
<td>Shale</td>
<td>Sandy</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>343' - 366 5'</td>
<td>Sandstone</td>
<td>Massive</td>
<td>BLACKHAWK FORMATION</td>
</tr>
<tr>
<td>366 5' - 369 9'</td>
<td>Shale</td>
<td>Carbonaceous, silty</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>369 9' - 370'</td>
<td>Coal</td>
<td>Castlegate Coals replaced with channel deposit</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>370' - 380 4'</td>
<td>Shale</td>
<td>Carbonaceous, silty Castlegate Coals replaced with channel deposit</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>380 4' - 380 5'</td>
<td>Coal</td>
<td>Castlegate Coals replaced with channel deposit</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>380 5' - 393 4'</td>
<td>Shale</td>
<td>Carbonaceous, silty Castlegate Coals replaced with channel deposit</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>393 4' - 393 5'</td>
<td>Coal</td>
<td>Castlegate coals replaced with channel deposit</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>393 5' - 402'</td>
<td>Shale</td>
<td>Carbonaceous, sandy Channel deposit</td>
<td>Local Coal Group</td>
</tr>
<tr>
<td>Depth (ft)</td>
<td>Lithologic Description and Observations</td>
<td>Formation/Regional Group</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------------</td>
<td>--------------------------</td>
<td></td>
</tr>
<tr>
<td>353 - 402</td>
<td>SHALE Carbonaceous, sandy Channel deposit?</td>
<td>BLACKHAWK FORMATION</td>
<td></td>
</tr>
<tr>
<td>402 - 415</td>
<td>SANDSTONE Shaley</td>
<td></td>
<td></td>
</tr>
<tr>
<td>415 - 421</td>
<td>SHALE Carbonaceous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>421 - 433</td>
<td>SANDSTONE Shaley Remnant of Aberdeen Deposit?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>433 - 435</td>
<td>SHALE Carbonaceous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>435 - 535</td>
<td>COAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>535 - 456</td>
<td>SHALE Sandsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>456 - 478</td>
<td>SANDSTONE Silt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shale zone 467 - 470</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>475 - 516</td>
<td>SHALE Sand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth (ft)</td>
<td>Lithologic Description and Observations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>575 - 518</td>
<td>SHALE Sandy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>518 - 522</td>
<td>COAL 4 C' on geophysical log</td>
<td></td>
<td></td>
</tr>
<tr>
<td>522 - 529</td>
<td>SHALE Carbonaceous, silty *Floor unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>529 - 566</td>
<td>SANDSTONE Shaley, silty Lithofacies equivalent of the massive Spring Canyon Sandstone?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LITHOLOGIC DESCRIPTION AND OBSERVATIONS**

**FORMATION/REGIONAL GROUP**

BLACKHAWK FORMATION

CASTLEGATE "A"?

Aberdeen Sandstone?
### LITHOLOGIC DESCRIPTION AND OBSERVATIONS

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Description</th>
<th>Formation/Regional Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10'</td>
<td>SOIL</td>
<td>QUATERNARY</td>
</tr>
<tr>
<td>10 - 432.9'</td>
<td>SANDSTONE, SILTSTONE, SHALE (interbedded)</td>
<td>BLACKHAWK FORMATION</td>
</tr>
</tbody>
</table>

Massive sandstone at 47 - 53'
<table>
<thead>
<tr>
<th>DEPTH (ft)</th>
<th>Lithologic Description and Observations</th>
<th>Formation/Regional Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>10 - 432.9&quot; Sandstone, Siltstone, Shale (interbedded)</td>
<td>Blackhawk Formation</td>
</tr>
<tr>
<td></td>
<td>Massive sandstone at 131 - 193'</td>
<td></td>
</tr>
<tr>
<td>DEPTH (FT)</td>
<td>GENERAL DES</td>
<td>LITHOLOGIC DESCRIPTION AND OBSERVATIONS</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>200</td>
<td></td>
<td>10 - 432.9' SANDSTONE, SILTSTONE, SHALE (interbedded)</td>
</tr>
<tr>
<td>210</td>
<td></td>
<td></td>
</tr>
<tr>
<td>220</td>
<td></td>
<td></td>
</tr>
<tr>
<td>230</td>
<td></td>
<td></td>
</tr>
<tr>
<td>240</td>
<td></td>
<td></td>
</tr>
<tr>
<td>250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>260</td>
<td></td>
<td></td>
</tr>
<tr>
<td>270</td>
<td></td>
<td></td>
</tr>
<tr>
<td>280</td>
<td></td>
<td></td>
</tr>
<tr>
<td>290</td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Massive sandstone at 219 - 226'.
<table>
<thead>
<tr>
<th>DEPTH (FT)</th>
<th>LITHOLOGIC DESCRIPTION AND OBSERVATIONS</th>
<th>FORMATION/REGIONAL GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>10' - 32' 9&quot; SANDSTONE, SILTSTONE, SHALE (interbedded).</td>
<td></td>
</tr>
<tr>
<td>340</td>
<td>Massive sandstone at 370 - 396'.</td>
<td></td>
</tr>
</tbody>
</table>

**PROJECT NAME:** BLUE BLAZZ CO.

**DATE DRILLED:** 5 NOV 1976

**LOGGED BY:**

**REFERENCES ELEVATION:** 8290'

**REFERENCES POINT:** GROUND SURFACE

**DATE MEASURED:**

**Boring/Well Number:** LWC-3

**Boring/Well Location:** 4, 394 410 N 495 640 E

**Reference Point:**

**Drilling Contractor:** HOLLANDER

**Rig Type:**

**Drilling Method:**

**PROJECT NUMBER:** UC-299

**OWNER/CLIENT:** ROGER BRADBURY
LITHOLOGIC DESCRIPTION AND OBSERVATIONS

10 - 432.9': SANDSTONE, SILTSTONE, SHALE (interbedded):

Massive sandstone at 412 - 426'.

432.9 - 433': COAL:
433 - 411.9': SHALE: Carbonaceous, sandy.

441.9 - 442': COAL:
442 - 455.5': SHALE: Carbonaceous, sandy.

455.5 - 456': COAL: Shaley.
456 - 592.5': SANDSTONE: Shaley.

FORMATION/REGIONAL GROUP

BLACKHAWK FORMATION

Local Coal Group
Local Coal Group
Local Coal Group
Local Coal Group
<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Lithologic Description and Observations</th>
<th>Formation/Regional Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>556 - 582.5'</td>
<td>SANDSTONE Shaley.</td>
<td>BLACKHAWK FORMATION</td>
</tr>
<tr>
<td>582.5 - 596.5'</td>
<td>COAL</td>
<td></td>
</tr>
<tr>
<td>596.5 - 594.5'</td>
<td>SHALE Carbonaceous, sandy.</td>
<td></td>
</tr>
<tr>
<td>594.5 - 595'</td>
<td>SHALE Shaley</td>
<td>Bob Wright Group</td>
</tr>
<tr>
<td>595 - 606'</td>
<td>SHALE Carbonaceous, silty</td>
<td>Bob Wright Group</td>
</tr>
</tbody>
</table>

Massive sandstone at 539 - 557'.
<table>
<thead>
<tr>
<th>Depth (Ft)</th>
<th>Lithologic Description</th>
<th>Formation/Regional Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>595 - 606'</td>
<td>SHALE Carbonaceous, silty</td>
<td>BLACKHAWK FORMATION</td>
</tr>
<tr>
<td>606 - 625 5'</td>
<td>SANDSTONE Silty</td>
<td></td>
</tr>
<tr>
<td>625 5 - 630'</td>
<td>SHALE Carbonaceous, silty</td>
<td>Castlegate A</td>
</tr>
<tr>
<td>630 - 635 5'</td>
<td>COAL</td>
<td></td>
</tr>
<tr>
<td>635 5 - 642'</td>
<td>SHALE Carbonaceous, silty</td>
<td>Castlegate A</td>
</tr>
<tr>
<td>642 - 649 2'</td>
<td>COAL</td>
<td>Castlegate A</td>
</tr>
<tr>
<td>648 2 - 651 4'</td>
<td>SHALE Carbonaceous, silty, IM FR-3.2', carbonaceous silty shale, next 5.0' coal</td>
<td>Castlegate A</td>
</tr>
<tr>
<td>651 4 - 654 4'</td>
<td>COAL</td>
<td></td>
</tr>
<tr>
<td>654 4 - 658 5'</td>
<td>SHALE Carbonaceous, sandy</td>
<td></td>
</tr>
<tr>
<td>658 5 - 667'</td>
<td>SANDSTONE Shaley Remnant of channel sandstone?</td>
<td></td>
</tr>
<tr>
<td>667 - 668 2'</td>
<td>COAL: Local coal seams of limited extent</td>
<td></td>
</tr>
<tr>
<td>668 2 - 671'</td>
<td>SHALE Carbonaceous</td>
<td></td>
</tr>
<tr>
<td>671 - 676 9'</td>
<td>COAL: Shaley, Shale parting 673 0 - 674 4', Shaley coal 674 - 675 5'</td>
<td>Aberdeen Sandstone</td>
</tr>
<tr>
<td>676 9 - 691'</td>
<td>SANDSTONE: Shaley, silty Top 3' shaley remnant of channel, Sandstone - Aberdeen Sandstone?</td>
<td></td>
</tr>
<tr>
<td>691 - 701 9'</td>
<td>SHALE Sandy</td>
<td></td>
</tr>
<tr>
<td>700</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEPTH (FT)</td>
<td>GRAphic LOG</td>
<td>Lithologic Description and Observations</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>900</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>798.2 - 803.2': SHALE Carbonaceous, silty.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>803.2 - 936': SANDSTONE: Massive.</td>
</tr>
</tbody>
</table>
LITHOLOGIC DESCRIPTION AND OBSERVATIONS

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Lithology</th>
<th>Formation/Regional Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 55'</td>
<td>No Lithological Log</td>
<td></td>
</tr>
<tr>
<td>56 - 59.9'</td>
<td>Sandstone: Massive, Channel sandstone remnant?</td>
<td>Blackhawk Formation</td>
</tr>
<tr>
<td>59.9 - 60'</td>
<td>Coal: Castlegate Coal replaced with channel deposit</td>
<td>Castlegate A</td>
</tr>
<tr>
<td>60 - 63</td>
<td>Silty Sandstone: Carbonaceous, sandy</td>
<td>Castlegate A</td>
</tr>
<tr>
<td>63 - 64'</td>
<td>Coal: Castlegate Coal replaced with channel deposit</td>
<td>Castlegate A</td>
</tr>
<tr>
<td>64 - 68</td>
<td>Silty Sandstone: Carbonaceous, sandy</td>
<td>Castlegate A</td>
</tr>
<tr>
<td>68.9 - 69'</td>
<td>Coal: Castlegate Coal replaced with channel deposit</td>
<td>Castlegate A</td>
</tr>
<tr>
<td>69 - 74'</td>
<td>Silty Sandstone: Carbonaceous, sandy, Red color in log * boxed? By what coal?</td>
<td></td>
</tr>
<tr>
<td>74 - 100</td>
<td>Sandstone: Remnant of channel sandstone?</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Log data includes depth in feet (ft) and lithological description with observations and formations.
**LITHOLOGIC DESCRIPTION AND OBSERVATIONS**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Lithology</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 - 112'</td>
<td>COAL, Shale</td>
<td>Carbonaceous, silty.</td>
</tr>
<tr>
<td>100.7 - 105.2'</td>
<td>SANDSTONE, Shaley</td>
<td>Carbonaceous, silty.</td>
</tr>
<tr>
<td>105.2 - 112'</td>
<td>COAL, Shale, Shale partings</td>
<td>Carbonaceous, silty.</td>
</tr>
<tr>
<td>112 - 120'</td>
<td>SANDSTONE, Shaley, silty, Shaley</td>
<td>Carbonaceous, silty.</td>
</tr>
<tr>
<td>120 - 139.2'</td>
<td>SHALE, Carbonaceous, silty.</td>
<td>Carbonaceous, silty.</td>
</tr>
<tr>
<td>139.2 - 139.5'</td>
<td>COAL</td>
<td>Carbonaceous, sandy.</td>
</tr>
<tr>
<td>139.9 - 140.9'</td>
<td>SHALE</td>
<td>Carbonaceous, sandy.</td>
</tr>
<tr>
<td>140.9 - 143.3'</td>
<td>COAL</td>
<td>Carbonaceous, sandy.</td>
</tr>
<tr>
<td>143.3 - 155'</td>
<td>SHALE</td>
<td>Carbonaceous, sandy.</td>
</tr>
</tbody>
</table>

**FORMATION/REGIONAL GROUP**

- BLACKHAWK FORMATION
- Castlegate A
- Aberdeen Sandstone
- Gordon Coal
**ERTFAX ENGINEERING, INC.**

**DRILLING LOG**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
</tr>
<tr>
<td>310</td>
</tr>
<tr>
<td>320</td>
</tr>
<tr>
<td>330</td>
</tr>
<tr>
<td>340</td>
</tr>
<tr>
<td>350</td>
</tr>
<tr>
<td>360</td>
</tr>
<tr>
<td>370</td>
</tr>
<tr>
<td>380</td>
</tr>
<tr>
<td>390</td>
</tr>
<tr>
<td>400</td>
</tr>
</tbody>
</table>

**LITHOLOGIC DESCRIPTION AND OBSERVATIONS**

- **324.5 - 367.9 ft:** Shale, Silty
- **367.9 - 368.9 ft:** Coal
- **368 - 420 ft:** Sandstone, Silty, Massive

**FORMATION/REGIONAL GROUP**

- Lower O'Conner
- Starks Sandstone

**INCORPORATED**

**APR 02 2004**

**DIV OF OIL GAS & MINING**
**Lithologic Description and Observations**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Lithology Description</th>
<th>Formation/Regional Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 - 430'</td>
<td>Sandstone: Silty, Massive.</td>
<td>Storrs Sandstone</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 6-2
LABORATORY DATA SHEETS
PART II

COAL QUALITY AND
PETROGRAPHIC ANALYSES
February 7, 1980

Sample identification by

Sanders Exploration, Limited

102.0' - 105.2'
3' Above Castle Gate "A" Seam

Analysis report no. 72-89854

ACIDITY, pH

<table>
<thead>
<tr>
<th>1:1</th>
<th>1:5</th>
<th>1:20</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.03</td>
<td>8.92</td>
<td>9.29</td>
</tr>
</tbody>
</table>

% Pyritic Sulfur (Dry Basis) = 0.04

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

G. D. PALMER, Manager, Denver Laboratory
February 14, 1980

Sample identification by

Sanders Exploration, Limited

Castle Gate "A" Seam

105.2' - 108.2'
109.6' - 111.6'
112.0' - 114.0'

PROXIMATE ANALYSIS

As Received

| % Moisture | 6.52 |
| % Ash | 18.54 |
| % Volatile | 36.26 |
| % Fixed Carbon | 38.68 |
| Btu/lb. | 10189 |
| % Sulfur | 0.61 |
| 100.00 | 100.00 |

Dry Basis

| % Moisture | XXXX |
| % Ash | 19.83 |
| % Volatile | 38.79 |
| % Fixed Carbon | 41.38 |
| Btu/lb. | 10900 |
| % Sulfur | 0.65 |

FUSION TEMPERATURE OF ASH

Reducing

| Initial Deformation | XXX °F |
| Softening (H = W) | XXX °F |
| Softening (H = ½ W) | XXX °F |
| Fluid | XXX °F |

Oxidizing

| Initial Deformation | XXX °F |
| Softening (H = W) | XXX °F |
| Softening (H = ½ W) | XXX °F |
| Fluid | XXX °F |

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

G. D. PALMER, Manager, Denver Laboratory

GDP/md/vt
February, 7, 1980

Sample identification
by

Sanders Exploration, Limited
114'-117.0'
3' Below Castle Gate "A" Seam
LMC-4

| Kind of sample reported to us | Coal |
| Sample taken at | xxxxx |
| Sample taken by | Sanders Exploration, Limited |
| Date sampled | xxxxx |
| Date received | 1-22-80 |

Analysis report no. 72-89856

**ACIDITY, pH**

<table>
<thead>
<tr>
<th>1:1</th>
<th>1:5</th>
<th>1:20</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.05</td>
<td>5.72</td>
<td>6.62</td>
</tr>
</tbody>
</table>

% Pyritic Sulfur (Dry Basis) = 0.02

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

G. D. PALMER, Manager, Denver Laboratory
February 21, 1980

Sample identification

by

Sanders Exploration, Limited

3' Above Hiawatha
214.0' - 217.0'

Analysis report no. 72-99851

ACIDITY %

<table>
<thead>
<tr>
<th>1:1 Equivopotential</th>
<th>1:5</th>
<th>1:20</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.12</td>
<td>8.00</td>
<td>8.54</td>
</tr>
</tbody>
</table>

% PYRITIC SULFUR (Dry Basis) = 0.24

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

G. D. PALMER, Manager, Denver Laboratory
SANDERS EXPLORATION, LIMITED
10 West Center
Kaysville, Utah 84037

February 14, 1980

Sample identification by

Kind of sample reported to us: Coal
Sample taken at: X
Sample taken by: Sanders Exploration, Limited
Date sampled: X
Date received: 1-22-80

Analysis report no. 72-89852 Page 1

PROXIMATE ANALYSIS

<table>
<thead>
<tr>
<th></th>
<th>As Received</th>
<th>Dry Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Moisture</td>
<td>5.38</td>
<td>XXXXX</td>
</tr>
<tr>
<td>% Ash</td>
<td>7.63</td>
<td>8.06</td>
</tr>
<tr>
<td>% Volatile</td>
<td>42.51</td>
<td>44.93</td>
</tr>
<tr>
<td>% Fixed Carbon</td>
<td>44.48</td>
<td>47.01</td>
</tr>
</tbody>
</table>

100.00 100.00

Btu/lb.
% Sulfur

12488 13198
0.47 0.50

FUSION TEMPERATURE OF ASH

Reducing  Oxidizing

Initial Deformation
Softening (H = W)
Softening (H = \( \frac{1}{2} \) W)
Fluid

XXX °F  XXX °F
XXX °F  XXX °F
XXX °F  XXX °F
XXX °F  XXX °F

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

G. D. PALMER, Manager, Denver Laboratory
February 7, 1980

Sample identification
by

Sanders Exploration, Limited

227.3' - 230.5'
3' Below Hiawatha "A" Seam

Analysis report no. 72-89853

ACIDITY, PH

<table>
<thead>
<tr>
<th>1:1</th>
<th>1:5</th>
<th>1:20</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.09</td>
<td>8.69</td>
<td>9.22</td>
</tr>
</tbody>
</table>

% Pyritic Sulfur (Dry Basis) = 0.05

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

G. D. PALMER, Manager, Denver Laboratory
Castlegate "A" Seam Analyses  
Blue Blaze No. 3 - McGowan Mine

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Mine or Prospect Coal Bed</th>
<th>PROXIMATE ANALYSES</th>
<th>Sulfur %</th>
<th>Btu/lb.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AN</td>
<td>M</td>
<td>VM</td>
</tr>
<tr>
<td>4</td>
<td>McGowan Mine</td>
<td>A</td>
<td>5.3</td>
<td>43.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>46.2</td>
<td>48.5</td>
</tr>
<tr>
<td>5</td>
<td>McGowan Mine</td>
<td>A</td>
<td>.59</td>
<td>44.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>46.9</td>
<td>46.6</td>
</tr>
<tr>
<td>6</td>
<td>McGowan Mine</td>
<td>A</td>
<td>4.5</td>
<td>44.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>46.2</td>
<td>46.5</td>
</tr>
<tr>
<td>7</td>
<td>McGowan Mine</td>
<td>A</td>
<td>6.1</td>
<td>42.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>44.9</td>
<td>48.0</td>
</tr>
<tr>
<td>8</td>
<td>McGowan Mine</td>
<td>A</td>
<td>4.1</td>
<td>44.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>46.1</td>
<td>47.2</td>
</tr>
</tbody>
</table>

Note: Above information taken from Central Utah Coal Fields, Monograph Series 3, H. H. Doelling (U.G.M.S. 1972), page 117.
PETROGRAPHIC ANALYSIS
FOR
IAD BATCH #: 97-0889-003-03
SAMPLE #: 89855, 89852
February 11, 1980

Anne Verity Oldham
Coal Petrographer

Approved by:
M. L. Jacobs, Ph.D., Mngr.
Instrumental Analysis Div.

Gail D. Palmer, Manager, Denver Branch

COMMERCIAL TESTING & ENGINEERING CO.
PYRITE/MARCASITE ANALYSES

Summary of Procedures:

A representative split of each sample was crushed to minus 20 mesh, mixed with epoxy and pelletized. Sample pellets were then polished to create a planar surface suitable for microscopic examination in incident light.

Differentiation of Pyrite and Marcasite was based on slight differences in optical properties. Pyrite is isotropic and Marcasite is anisotropic. Crossed-polarized light with a gypsum compensating plate was used during the analysis to intensify the optical differences.

Since the distinction is not always absolute, particularly on small particles, the percentage values reported for Pyrite and Marcasite should be considered to be semi-quantitative values.

In most instances, Marcasite occurred in close association with Pyrite. Approximately 60 occurrences were recorded for each sample.
PYRITE/MARCASITE ANALYSIS

Total Weight % Pyritic Sulfur (Dry Basis) by Standard Chemical Analysis: 0.04%

Weight % Pyrite as determined petrographically: 0.038% (96.0% of Total Pyritic Sulfur)

Weight % Marcasite as determined petrographically: 0.002% (4.0% of Total Pyritic Sulfur)
Petrographic Analysis
For
IAD Batch #: 97-D889-003-03
Sample #: 89855, 89852
February 11, 1980

Anne Verity Oldham
Coal Petrographer

Approved by:
M. L. Jacobs, Ph.D., Mngr.
Instrumental Analysis Div.

Geil D. Palmer, Manager, Denver Branch
PYRITE/MARCASITE ANALYSES

Summary of Procedures:

A representative split of each sample was crushed to minus 20 mesh, mixed with epoxy and pelletized. Sample pellets were then polished to create a planar surface suitable for microscopic examination in incident light.

Differentiation of Pyrite and Marcasite was based on slight differences in optical properties. Pyrite is isotropic and Marcasite is anisotropic. Crossed-polarized light with a gypsum compensating plate was used during the analysis to intensify the optical differences.

Since the distinction is not always absolute, particularly on small particles, the percentage values reported for Pyrite and Marcasite should be considered to be semi-quantitative values.

In most instances, Marcasite occurred in close association with Pyrite. Approximately 60 occurrences were recorded for each sample.
SANDEPS EXPLORATION, LIMITED
IAD Batch #: 97-D889-003-03
Report of Analysis on Sample: 89852

PYRITE/MARCASITE ANALYSIS

Total Weight % Pyritic Sulfur (Dry Basis) by Standard Chemical Analysis: 0.04%

Weight % Pyrite as determined petrographically: 0.038% (96.0% of Total Pyritic Sulfur)

Weight % Marcasite as determined petrographically: 0.002% (4.0% of Total Pyritic Sulfur)
PETROGRAPHIC ANALYSIS
FOR
IAD BATCH #: 97-0889-003-03
SAMPLE #: 89855, 89852
February 11, 1980

Anne Verity Oldham
Coal Petrographer

Approved by:
M. L. Jacobs, Ph.D., Mngr.
Instrumental Analysis Div.

Gail D. Palmer, Manager, Denver Branch
Summary of Procedures:

A representative split of each sample was crushed to minus 20 mesh, mixed with epoxy and pelletized. Sample pellets were then polished to create a planar surface suitable for microscopic examination in incident light.

Differentiation of Pyrite and Marcasite was based on slight differences in optical properties. Pyrite is isotropic and Marcasite is anisotropic. Crossed-polarized light with a gypsum compensating plate was used during the analysis to intensify the optical differences.

Since the distinction is not always absolute, particularly on small particles, the percentage values reported for Pyrite and Marcasite should be considered to be semi-quantitative values.

In most instances, Marcasite occurred in close association with Pyrite. Approximately 60 occurrences were recorded for each sample.
PYRITE/MARCASITE ANALYSIS

Total Weight % Pyritic Sulfur (Dry Basis) by Standard Chemical Analysis: 0.04%

Weight % Pyrite as determined petrographically: 0.039%
(97.5% of Total Pyritic Sulfur)

Weight % Marcasite as determined petrographically: 0.001%
(2.5% of Total Pyritic Sulfur)
Petrographic Analysis

For

IAD Batch #: 97-D889-C03-03
Sample #: 89855, 89852
February 11, 1980

Anne Verity Oldham
Coal Petrographer

Approved by:
M. L. Jacobs, Ph.D., Mngr.
Instrumental Analysis Div.

Gail D. Palmer, Manager, Denver Branch

COMMERCIAL TESTING & ENGINEERING CO.
PYRITE/MARCASITE ANALYSES

Summary of Procedures:

A representative split of each sample was crushed to minus 20 mesh, mixed with epoxy and pelletized. Sample pellets were then polished to create a planar surface suitable for microscopic examination in incident light.

Differentiation of Pyrite and Marcasite was based on slight differences in optical properties. Pyrite is isotropic and Marcasite is anisotropic. Crossed-polarized light with a gypsum compensating plate was used during the analysis to intensify the optical differences.

Since the distinction is not always absolute, particularly on small particles, the percentage values reported for Pyrite and Marcasite should be considered to be semi-quantitative values.

In most instances, Marcasite occurred in close association with Pyrite. Approximately 60 occurrences were recorded for each sample.
PYRITE/MARCASITE ANALYSIS

Total Weight % Pyritic Sulfur (Dry Basis) by Standard Chemical Analysis: 0.04%

Weight % Pyrite as determined petrographically: 0.039%
   (97.5% of Total Pyritic Sulfur)

Weight % Marcasite as determined petrographically: 0.001%
   (2.5% of Total Pyritic Sulfur)
Blue Blaze Coal Co.
P.O. Box 784
Price, UT 84501

Oct. 5, 1990

Sample identification

by

Manager, Huntington Laboratory

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
<table>
<thead>
<tr>
<th>Kind of sample reported to us</th>
<th>Soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample taken at</td>
<td>------</td>
</tr>
<tr>
<td>Sample taken by</td>
<td>------</td>
</tr>
<tr>
<td>Date sampled</td>
<td>------</td>
</tr>
<tr>
<td>Date received</td>
<td>------</td>
</tr>
</tbody>
</table>

| Analysis report no.          | ES-119544 |

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.9 units</td>
</tr>
<tr>
<td>Electrical conductivity</td>
<td>7.6 mmhos/cm</td>
</tr>
<tr>
<td>Saturation %</td>
<td>71.5</td>
</tr>
</tbody>
</table>

**PARTICLE SIZE:**
- % Sand: 53
- % Silt: 36
- % Clay: 11

**SOLUBLE CATIONS:**
- Calcium: 22.05 meq/l
- Magnesium: 89.88 meq/l
- Sodium: 7.79 meq/l

<table>
<thead>
<tr>
<th>Sodium Adsorption Ratio</th>
<th>1.04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selenium, total available</td>
<td>&lt;0.1 mg/kg</td>
</tr>
<tr>
<td>Boron, total available</td>
<td>&lt;0.1 mg/kg</td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td>0.05 %</td>
</tr>
<tr>
<td>Nitrate-nitrogen</td>
<td>0.8 mg/kg</td>
</tr>
<tr>
<td>Organic carbon</td>
<td>3.95 %</td>
</tr>
<tr>
<td>Rock fragments</td>
<td>9.7 %</td>
</tr>
<tr>
<td>Available water capacity*</td>
<td>11.1 (1/3)</td>
</tr>
<tr>
<td>(%ATM)</td>
<td>3.8 (15)</td>
</tr>
</tbody>
</table>

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES
Blue Blaze Coal Co.
P.O. Box 784
Price, UT 84501

Oct. 5, 1990

Sample identification
by

Analysis report no. 59-116545

pH 8.2 units
Electrical conductivity 0.4 mmhos/cm
Saturation % 57.6

PARTICLE SIZE:
% Sand 0
% Silt 63
% Clay 37

SOLUBLE CATIONS:
Calcium 1.63 meq/l
Magnesium 2.32 meq/l
Sodium 1.29 meq/l
Sodium Adsorption Ratio 0.91

Selenium, total available <0.1 mg/kg
Boron, total available <0.1 mg/kg
Total Nitrogen 0.09 %
Nitrate-nitrogen 0.64 mg/kg
Organic carbon 3.72 %
Rock fragments 8 %

Available water capacity* 23.7 (1/3)
(1.4T)
(1.4T)
*analysis by Utah State Univ.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

DATE

Manager, Huntington Laboratory

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCA TED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES
Blue Blaze Coal Co.
P.O. Box 784
Price, UT 84501

Kind of sample reported to us: Soil

Sample taken at: 

Sample taken by: 

Date sampled: 

Date received: 

Analysis report no.: 59-119546

pH: 8.2 units
Electrical conductivity: 0.3 mmhos/cm
Saturation %: 30.3

PARTICLE SIZE:
%
Sand: 57
Silt: 30
Clay: 13

SOLUBLE CATIONS:

Calcium: 1.31 meq/l
Magnesium: 0.74 meq/l
Sodium: 1.33 meq/l

Sodium Adsorption Ratio: 0.52

Selenium, total available: <0.1 mg/kg
Boron, total available: <0.1 mg/kg
Total Nitrogen: 0.04 %
Nitrate-nitrogen: 1.2 mg/kg
Organic carbon: 0.71 %
Rock fragments: 88 %

Available water capacity*: 11.9 (1/3)
(5/4ATM)
*analysis by Utah State Univ.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES