CHAPTER IV

R645-301-400 LAND USE AND AIR QUALITY

UNITED STATES FUEL COMPANY
Hiawatha, Utah

DECEMBER 4, 1998

INCORPORATED
EFFECTIVE:

UTAH DIVISION OIL, GAS AND MINING
# TABLE OF CONTENTS

## CHAPTER IV: LAND USE AND AIR QUALITY

<table>
<thead>
<tr>
<th>REGULATION NUMBER</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>R645-301-400</td>
<td>1</td>
</tr>
<tr>
<td>R645-301-410</td>
<td>1</td>
</tr>
<tr>
<td>R645-301-411</td>
<td>1</td>
</tr>
<tr>
<td>411.100</td>
<td>1</td>
</tr>
<tr>
<td>411.110</td>
<td>1</td>
</tr>
<tr>
<td>411.120</td>
<td>2</td>
</tr>
<tr>
<td>411.130</td>
<td>4</td>
</tr>
<tr>
<td>411.140</td>
<td>4</td>
</tr>
<tr>
<td>411.141</td>
<td>8</td>
</tr>
<tr>
<td>411.142</td>
<td>9</td>
</tr>
<tr>
<td>411.143</td>
<td>10</td>
</tr>
<tr>
<td>411.144</td>
<td>10</td>
</tr>
<tr>
<td>411.200</td>
<td>10</td>
</tr>
</tbody>
</table>
TABLE OF CONTENTS (Continued)

CHAPTER IV: LAND USE AND AIR QUALITY

<table>
<thead>
<tr>
<th>REGULATION NUMBER</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>R645-301-412</td>
<td></td>
</tr>
<tr>
<td>412.100</td>
<td>11</td>
</tr>
<tr>
<td>POST-MINING LAND USE PLAN</td>
<td>11</td>
</tr>
<tr>
<td>412.200</td>
<td>14</td>
</tr>
<tr>
<td>LAND OWNER OR SURFACE MANAGER COMMENTS</td>
<td>14</td>
</tr>
<tr>
<td>412.300</td>
<td>16</td>
</tr>
<tr>
<td>SUITABILITY AND COMPATIBILITY</td>
<td>16</td>
</tr>
<tr>
<td>R645-301-420</td>
<td>17</td>
</tr>
<tr>
<td>AIR QUALITY</td>
<td>17</td>
</tr>
<tr>
<td>R645-301-421</td>
<td>17</td>
</tr>
<tr>
<td>COMPLIANCE WITH THE CLEAN AIR ACT</td>
<td>17</td>
</tr>
<tr>
<td>R645-301-422</td>
<td>17</td>
</tr>
<tr>
<td>COORDINATION AND COMPLIANCE WITH UTAH BUREAU OF AIR QUALITY</td>
<td>17</td>
</tr>
<tr>
<td>R645-301-423</td>
<td>17</td>
</tr>
<tr>
<td>AIR POLLUTION CONTROL PLAN</td>
<td>17</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>19</td>
</tr>
<tr>
<td>FOOTNOTES</td>
<td>19</td>
</tr>
</tbody>
</table>

LIST OF FIGURES

Figure IV-1  CWMU Wildlife Management Plans
TABLE OF CONTENTS (Continued)

CHAPTER IV: LAND USE AND AIR QUALITY

LIST OF EXHIBITS

Exhibit IV-1  Surface Ownership Map
Exhibit IV-2  Subsurface Ownership Map
Exhibit IV-3  Mine Permit Area
Exhibit IV-4  Livestock Range Sites
Exhibit IV-5  Current and Abandoned Mine Sites
Exhibits IV-6A thru D  Cultural and Historic Resources
LIST OF APPENDICES

Appendix IV-1  Cultural Resource Inventory Of Middle Fork Surface Facilities
Appendix IV-2  Archeological Reconnaissance of a Proposed Coal Facility at The King VI Mine
Appendix IV-3  Livestock Grazing Plan For U. S. Fuel Co.
Appendix IV-4  Comments And Stipulations Relating To Federal Lease Lands
Appendix IV-5  Letters & Responses From Land Owners And Local And State Agencies
Appendix IV-6' Most Recent Air Quality Approval Order
Appendix IV-7  Additional Historical Data
Appendix IV-8  Cultural and Historic Resources - 1998 Survey
Appendix IV-9  Cultural and Historic Resources - Mitigation
United States Fuel Company operated coal mines in the Hiawatha area since the early part of the century. Land use has remained relatively unchanged in the various topographies on the property over the years and is not expected to change significantly in the future. The land use picture is still and will remain primarily wildlife habitat, logging and livestock grazing. Hiawatha Coal Company mining operations are located in the narrow canyons that lead to the top of the Wasatch Plateau, therefore, no cropland or prime farmland is within the mine area. Control measures needed to mitigate impacts shall include steps necessary to protect ground and surface water, soil resources, vegetation, wildlife and air quality.

A description of the condition and capability of the land within the permit area, excluding Forest Service land, is given by the Soil Conservation Service in the publication Soil Survey of Carbon Area, Utah dated June, 1988. This publication describes soil resources and gives estimates of rangeland and woodland understory production, recreational development, wildlife habitat and water management as they relate to soils. A statement of the condition of rangeland and forestland within the Forest Service boundaries of the permit area is given in Chapter II on the last page of Appendix II-2.

The uses of the land at the time of filing of the permit application were coal mining, wildlife habitat, livestock grazing and outdoor recreation. Exhibit IV-4 shows existing livestock range sites. Exhibit IV-5 shows locations of existing and abandoned mine sites.

The mine plan area contains habitat for numerous wildlife species. The varied topography and diversity of vegetative environments ranging from semi-desert shrubs to high mountain forests provide a variety of life zones for game and nongame animals. The mine plan area and surrounding lands contain both summer and winter range for big game animals and are included in deer management area numbers 33 and 66. Three elk management area number 21. See Exhibits III-1 and III-2.
There are no developed recreation sites in the area, though dispersed recreation such as camping, hiking, sightseeing and especially big game hunting have been and are increasingly prevalent.

The upper reaches of Miller Creek and Cedar Creek have been municipal water sheds, providing domestic water for the town of Hiawatha, industrial water for mining and coal processing, and agricultural water for irrigating farm lands further downstream. Stream flow, depending on seasonal variations, is from 0.1 to 4 cubic feet per second for Miller Creek and 0.8 to 4.5 cubic feet per second for Cedar Creek.

Some oil and gas exploration has been done in the past and most likely will continue due to increased demand. Although there are no oil or gas wells in the mine plan area, several have been drilled on adjacent lands. The potential for oil and gas discovery in this area is high with estimated reserves for the Gentry Mountain area averaging 28 billion cubic feet of gas and 12 billion barrels of oil.

**CAPABILITY OF LAND TO SUPPORT A VARIETY OF USES**

Regional land use consists primarily of mining, grazing, recreation and forestry related activities. No developed recreation sites exist in the area. There is some dispersed recreation associated with camping, hiking, sightseeing and big game hunting in the fall.

Land use in the mine plan area has remained pretty much unchanged since the early part of this century. These uses include livestock grazing, logging, mining, wildlife habitat, watershed, dispersed recreation and oil and gas exploration.

The first significant use of the land was for livestock grazing. In the 1880's the Miller Brothers ranged large herds of cattle and sheep on the Wasatch Plateau and surrounding lowlands from Scofield to the Colorado River. Their headquarters were at the Millerton Ranch (once owned by U.S. Fuel Company) on Miller Creek approximately four miles east of Hiawatha. The ranch and mountain rangelands are still being used.

A substantial amount of logging was done in the area in earlier days. Historical accounts note that a saw mill was located near the forks of Miller Creek around the turn of the century. In the early 1930's logging intensified. Thereafter the logging activity slowed and subsequently ceased. Although no logging has been done in recent years, there is now a renewed interest by various timber companies in logging the property. The current landowner anticipates logging activities to begin again as early as 1999.
In the Manti-LaSal National Forest, of which part of the mine plan is included, the Forest Service estimates standard component timber volumes of 10,000 board feet per acre for conifers and 5,300 board feet per acre for aspen. An extensive timber survey was performed by the Forest Service in 1929 in connection with mine prop logging on U. S. Fuel Company property near Hiawatha. The survey notes that there were no even aged stands of timber except aspen. "The coniferous species are all adapted to growing under considerable shade and consequently have developed all age stands". The following data derived from the survey is included as a guide to existing conditions since little logging or unnatural changes have occurred since that time.

<table>
<thead>
<tr>
<th>TIMBER SPECIES DISTRIBUTION - HIWATHA AREA 1929</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOREST TYPES</td>
</tr>
<tr>
<td>60% or more Douglas fir with alpine fir, white fir and spruce.</td>
</tr>
<tr>
<td>60% or more white and alpine fir with Douglas fir and spruce.</td>
</tr>
<tr>
<td>Varying mixtures of alpine and subalpine species.</td>
</tr>
<tr>
<td>60% or more aspen, often nearly pure but also with conifers</td>
</tr>
<tr>
<td>Pinyon-Juniper, Grassland-Brush scattered or stunted spruce-fir.</td>
</tr>
</tbody>
</table>
AGE DISTRIBUTION (CONIFERS ONLY)

<table>
<thead>
<tr>
<th>AGE</th>
<th>DIAMETER</th>
<th>PERCENT OF TIMBERED AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saplings 0 - 40 years</td>
<td>Under 4&quot;</td>
<td>0.5</td>
</tr>
<tr>
<td>Poles 40 - 80 years</td>
<td>4&quot; to 8&quot;</td>
<td>9.0</td>
</tr>
<tr>
<td>Intermediate 80 to 160 years</td>
<td>8&quot; to 12&quot;</td>
<td>39.0</td>
</tr>
<tr>
<td>Mature 120 to 160 years</td>
<td>Over 12&quot;</td>
<td>14.0</td>
</tr>
<tr>
<td>Over-mature Over 160 years</td>
<td>Over 12&quot;</td>
<td>15.0</td>
</tr>
</tbody>
</table>

Oil and gas ownership on the property is comprised of fee and federal lands. In the past, two oil and gas wells were drilled in the proximity of the property but both resulted in dry holes. There is currently no oil and gas production on the Hiawatha property. Federal oil and gas leases on the property are detailed in Table IV-1.

LAND USE CLASSIFICATIONS UNDER LOCAL LAW

The mine plan and surrounding areas are classified as recreation, forestry, grazing and mining lands under local county zoning ordinances. Due to rugged topography, however, there are no croplands in the area.

CULTURAL AND HISTORICAL RESOURCES INFORMATION

A site survey conducted by Utah's Division of State History located no known archeological or cultural sites. Sites have been identified in the area but none are located on the property. See Attachment IV-6. In the event any paleontological remains are discovered during mining operations, Hiawatha Coal Company will notify the Division of State History.
Table IV-1

FEDERAL OIL AND GAS LEASES IN THE MINE PERMIT AREA

<table>
<thead>
<tr>
<th>Township 15 South, Range 7 East</th>
<th>Lease Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sections</td>
<td>U-17534</td>
</tr>
<tr>
<td>13: S%</td>
<td></td>
</tr>
<tr>
<td>24: N%, SW%, N%SE%, SW%SE%</td>
<td>U-17537</td>
</tr>
<tr>
<td>25: W%, W%E%</td>
<td>U-17535</td>
</tr>
<tr>
<td>36: SE%, E%NE%</td>
<td>U-21236</td>
</tr>
<tr>
<td>36: W%NE%</td>
<td>U-17535</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Township 15 South, Range 8 East</th>
<th>Lease Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sections</td>
<td>U-42783</td>
</tr>
<tr>
<td>31: S%</td>
<td></td>
</tr>
<tr>
<td>34: S%SE%</td>
<td>U-31707</td>
</tr>
<tr>
<td>35: SE%SE%</td>
<td>U-31707</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Township 16 South, Range 7 East</th>
<th>Lease Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sections</td>
<td>U-36982</td>
</tr>
<tr>
<td>1: SE%</td>
<td></td>
</tr>
<tr>
<td>12: All</td>
<td>U-38968</td>
</tr>
<tr>
<td>13: All</td>
<td>U-23270</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Township 16 South, Range 8 East</th>
<th>Lease Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sections</td>
<td>U-21129</td>
</tr>
<tr>
<td>3: E%</td>
<td></td>
</tr>
<tr>
<td>9: NE%NE%, NE%SE%</td>
<td>U-22011</td>
</tr>
<tr>
<td>9: SE%NE%</td>
<td>U-42784</td>
</tr>
<tr>
<td>10: N%, N%S%</td>
<td>U-14454</td>
</tr>
<tr>
<td>11: N%, N%SE%, NW%SW%</td>
<td>U-14454</td>
</tr>
<tr>
<td>15: SW%NW%, NE%SW%</td>
<td>U-34988</td>
</tr>
<tr>
<td>16: SE%NE%, E%SE%, W%SE%</td>
<td>U-34988</td>
</tr>
<tr>
<td>19: S%N%, SE%, SW%</td>
<td>U-23794</td>
</tr>
<tr>
<td>20: SE%NW%, NW%SW%, E%SW%</td>
<td>U-23794</td>
</tr>
<tr>
<td>20: SW%NW%, SW%SW%</td>
<td>U-42784</td>
</tr>
<tr>
<td>21: SE%SW%, S%SE%</td>
<td>U-23852</td>
</tr>
<tr>
<td>21: NE%SE%</td>
<td>U-42784</td>
</tr>
<tr>
<td>22: SE%</td>
<td>U-17416</td>
</tr>
<tr>
<td>22: SW%, W%NE%, S%NW%, NE%NW%</td>
<td>U-14455</td>
</tr>
<tr>
<td>23: SE%</td>
<td>U-19013</td>
</tr>
<tr>
<td>23: N%NW%, SW%SW%</td>
<td>U-17416</td>
</tr>
<tr>
<td>23: NE%, S%NW%, N%SW%, SE%SW%</td>
<td>U-26309</td>
</tr>
<tr>
<td>27: SE%</td>
<td>U-20763</td>
</tr>
<tr>
<td>28: NE%, E%SE%, SW%SW%</td>
<td>U-20763</td>
</tr>
<tr>
<td>28: NE%, E%SE%, SW%SE%</td>
<td>U-45422</td>
</tr>
<tr>
<td>28: SE%SW%, N%SW%, S%NW%, NW%NW</td>
<td>U-26309</td>
</tr>
<tr>
<td>29: SE%SE%</td>
<td>U-20763</td>
</tr>
<tr>
<td>29: SW%SE%, SW%SW%, SE%NW%</td>
<td>U-20763</td>
</tr>
<tr>
<td>29: NW%SE%, SW%NE%, SE%SW%</td>
<td>U-23794</td>
</tr>
<tr>
<td>29: N%SW%, N%NW%, SW%NW%</td>
<td>U-26309</td>
</tr>
<tr>
<td>30: All except SE%NE%</td>
<td>U-23794</td>
</tr>
<tr>
<td>33: SE%NW%, SE%SW%</td>
<td>U-26309</td>
</tr>
<tr>
<td>33: E%, N%NW%, SW%NW%</td>
<td>U-20763</td>
</tr>
<tr>
<td>33: NE%SW%, W%SW%</td>
<td>U-20763</td>
</tr>
<tr>
<td>34: N%SE%</td>
<td>U-34988</td>
</tr>
<tr>
<td>34: W%, NE%, SE%SE%</td>
<td>U-14455</td>
</tr>
</tbody>
</table>
March 3, 1980

Mr. Robert Eccli  
Mine Engineer  
United States Fuel Company  
Hiwatha, Utah  84527

Dear Mr. Eccli:

As requested by your letter of February 22, 1980, a site search was completed of the area located on the map furnished by your office. The search located no known archeological or cultural sites. There are a number of known sites in the area, but none are located on your property. Also enclosed is a copy of 36 CFR 800 and a list of surveyors as requested.

If our office can be of further help on advise, please contact me.

Sincerely,

[Signature]
Jim Dykman  
Compliance Administrator

JLD: re
Enclosure:
COMPLIANCE WITH E011593 AND THE NATIONAL HISTORIC PRESERVATION ACT

U. S. Fuel contracted with Brigham Young University through Asa Nielsen of the Department of Anthropology to conduct a field survey necessary for compliance with E011593. This survey was conducted at the Middle Fork mine yard area where a new portal breakout was proposed. This comprises about 0.5 acre and is attached directly on its south boundary to the King IV mine yard. No artifacts or sites were located here. Refer to Appendix IV-1. An archeological field survey was also conducted in the vicinity of the King VI mine. No cultural resources of any significance were encountered in this area either. See Appendix IV-2.

No new disturbance under the term of this permit is projected at this time. Any new construction will be done on presently disturbed areas and no survey will be required.

U. S. Fuel Company has assembled a file of historical information pertaining to the town of Hiawatha. The information collected is available for review in the Hiawatha Coal Company office in Hiawatha, Utah. Some of this information has been included as appendix IV-7.

In 1998, a historical survey of the entire minesite was conducted by Sagebrush Consultants. This report is included in appendix IV-8.

Cultural and Historic Resource Maps. Exhibits IV-6 showed the locations of the evaluated cultural and historical sites. These sites are discussed in Appendix IV-8. Photographs and a map of the town of Hiawatha are located at the Hiawatha Coal Company office in Hiawatha, Utah and at SHPO in Salt Lake City, Utah. Cultural and historical resource information is limited since the site was disturbed by mining prior to the creation of laws and regulations to govern the collection of cultural and historical data. However, an inventory has been performed on all structures within or adjacent to the Disturbed area. This inventory is in appendix IV-8.
Coordination with State Historic Preservation Officer. SHPO was contacted concerning the Hiawatha town site and adjacent areas. During 1980 and 1981 Nancy Jacobus Taniguchi, on behalf of the Utah State Historical Preservation Office (SHPO), performed a survey of the dwellings and buildings in the Hiawatha area. SHPO Structure/Site Information Forms were completed and photographs taken of each structure. The photographs, forms, history, and notes provided by Ms. Taniguchi are available for review at SHPO in Salt Lake City, Utah. Photographs and a brief description of the dwellings and structures remaining in the Hiawatha area in 1997 and 1998 are available for review at the Hiawatha Coal Company office. A copy of these photographs and descriptions will also be provided to SHPO.

A summary of the data and map from the SHPO inventory performed by Ms. Taniguchi and the 1997 inventory are located in Appendix IV-7. A summary of the 1998 inventory is located in appendix IV-8.

In 1981, Dr. Melvin T. Smith, Utah State Historic Preservation Officer, proposed that the Town of Hiawatha, Utah be nominated to the National Register. That proposal was declined. There are no registered historic or prehistoric properties located within the Hiawatha permit boundary in The National Register of Historic Places in 1997. Sites eligible for listing are shown in exhibits IV-6.

A cultural resource inventory was performed for the town of Mohrland by Brigham Young University in June and July of 1983. This inventory and other data concerning this site and adjacent areas are located in the AMR 015/909 and 015/910 files in the UDOGM Library. Photographs and a brief description of the dwellings and structures remaining in the Mohrland area in 1997 are available for review at the Hiawatha Coal Company office. A copy of these photographs and descriptions will also be provided to SHPO. A description is also included in Appendix IV-7.

411.141 CULTURAL AND HISTORIC RESOURCES MAPS

411.141.1 There are no public parks within or adjacent to the permit area. Parks and campgrounds in the surrounding region are given in Table IV-2.

There are no known cultural or historical resources listed in the National Register of Historic Places and no known archeological sites within or adjacent to the permit area. Historic sites eligible for listing are shown on Exhibit IV-6. See 411.140 and Attachment IV-1.
Table IV-2

REGIONAL PUBLIC PARKS AND CAMPING AREAS

<table>
<thead>
<tr>
<th>FACILITY</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANTI-LASAL NATIONAL FOREST</td>
<td></td>
</tr>
<tr>
<td>Ferron Canyon</td>
<td>7.4 mi. W. of Ferron</td>
</tr>
<tr>
<td>Ferron Reservoir</td>
<td>25 mi. W. of Ferron</td>
</tr>
<tr>
<td>Fish Creek</td>
<td>4.1 mi. N.W. of Scofield</td>
</tr>
<tr>
<td>Flat Canyon</td>
<td>20 mi. W. of Fairview</td>
</tr>
<tr>
<td>Forks of Huntington</td>
<td>15.9 mi. N.W. of Huntington</td>
</tr>
<tr>
<td>Gooseberry</td>
<td>15 mi. W. of Fairview</td>
</tr>
<tr>
<td>Indian Creek</td>
<td>24 mi. N.W. of Orangeville</td>
</tr>
<tr>
<td>Joe's Valley</td>
<td>18 mi. W. of Orangeville</td>
</tr>
<tr>
<td>Joe's Valley Boat Ramp</td>
<td>18 mi. W. of Orangeville</td>
</tr>
<tr>
<td>Joe's Valley Marina</td>
<td>18 mi. W. of Orangeville</td>
</tr>
<tr>
<td>Old Folk's Flat</td>
<td>18 mi. N.W. of Huntington</td>
</tr>
<tr>
<td>BUREAU OF LAND MANAGEMENT</td>
<td></td>
</tr>
<tr>
<td>Cedar Mountain</td>
<td>30 mi. S.E. of Cleveland</td>
</tr>
<tr>
<td>Cleveland-Lloyd</td>
<td></td>
</tr>
<tr>
<td>Dinosaur Quarry</td>
<td>15 mi. E. of Cleveland</td>
</tr>
<tr>
<td>Price Canyon Rec. Area</td>
<td>15 mi. N. of Price</td>
</tr>
<tr>
<td>San Rafael</td>
<td>29 mi. S.E. of Cleveland</td>
</tr>
<tr>
<td>UTAH STATE PARKS</td>
<td></td>
</tr>
<tr>
<td>Goblin Valley</td>
<td>35 mi. N.W. of Hanksville</td>
</tr>
<tr>
<td>Green River</td>
<td>450 S. Green River Blvd.</td>
</tr>
<tr>
<td>Huntington Lake</td>
<td>2 mi. N.E. of Huntington</td>
</tr>
<tr>
<td>Millsite Reservoir</td>
<td>4 mi. W of Ferron</td>
</tr>
</tbody>
</table>

The Hiawatha town cemetery is shown on Exhibit IV-6A. According to the information available, the cemetery was only used to bury infants in the early 1900's. In 1998, HCCI cleaned the cemetery by vacuuming the coal fines. Following the cleaning, an estimated 20 grave sites were located beneath the coal fines. This number was also given to HCCI by a relative of one of the infants buried in the cemetery, so HCCI feels it is accurate.

HCCI commits to continued cleaning of the cemetery as needed, of any future wind-blown coal fines.

INCORPORATED
EFFECTIVE:
DEC 04 1998

UTAH DIVISION OIL, GAS AND MINING
0097A
There is no land within the permit area which is within the boundaries of any units of the National System of Trails or the Wild and Scenic Rivers System (Personal communication, P. Kay Salazar, Branch of Technical Assistance, National Park Service, Rocky Mountain Regional Office, Denver, Co., Mar. 18, 1992). There are no study rivers designated under section 5(a) of the Wild and Scenic Rivers Act within the permit area (personal conversation, Walter E. Nowak, District Ranger, Manti LaSal National Forest, April 6, 1992).

COORDINATION WITH STATE HISTORIC PRESERVATION OFFICER

A survey of the entire disturbed area was conducted in coordination with SHPO in 1998. The results of this survey are presented in Appendix IV-8. Prior to the initiation of any new ground disturbance, HCCI will consult with the Utah Division of Oil, Gas and Mining and the State Historical Preservation Organization as to the need for a cultural resource inventory to be conducted on the area to be disturbed. If an inventory is required, all cultural resources will be properly evaluated in terms of the National Register of Historic Places eligibility criteria. Appropriate impact mitigation measures will be developed, in consultation with the appropriate agencies, when or if any such significant sites to be affected are discovered.

IDENTIFICATION OF HISTORIC AND ARCHEOLOGICAL RESOURCES

See 411.140, 411.141 and 411.142.

PROTECTION OF HISTORIC OR ARCHEOLOGICAL PROPERTIES

Protection measures for historic site are described in Sections 411.140, 411.141 and 411.142. Appendix IV-9 contains documentary and mitigation information on each structure which is eligible for the National Register of Historic Places.

PREVIOUS MINING ACTIVITY

Coal mining in this area began just after the turn of the century. During that time, the Consolidated Fuel Company, the Blackhawk Coal Company and the Castle Valley Coal Company opened mines in the canyons west of Hiawatha and Mohrland. Early mining was almost exclusively in the Hiawatha seam which has been the predominant coal producing seam in the area. United States Fuel Company acquired the properties of the above mentioned companies in 1915 and since then has mined in the Hiawatha seam, the A seam (0 to 60 feet above the Hiawatha seam) and the B seam (50 to 120 feet above the Hiawatha). Eight significant mines have developed since the beginning of mining in this area. Five of these were abandoned prior to SMCRA and three are currently inactive. See Exhibit IV-5. Coal extraction has been entirely by the room and pillar mining method. Mining continued uninterrupted for over 80 years with a total production of over 50 million tons. Coal used primarily for mining included wildlife habitat, livestock grazing, forestry and outdoor recreation.
POST-MINING LAND USE PLAN

After the recoverable coal reserves have been extracted and final reclamation accomplished it is expected and anticipated that the current status of the existing land use area will remain unchanged. Mining in this immediate area has been ongoing since the turn of the century without any significant disruptions to existing land use.

The permit area and surrounding lands are classified as recreation, forestry, grazing and mining lands under local county zoning ordinances.

Hiawatha Coal Company's post-mining land use plan is to reclaim the land such that ANR Company, the property owner, may utilize the land presently within the permit area for wildlife habitat, livestock grazing (ranching), forestry (logging) and outdoor recreation. Towards this end, the access roads leading to the mine sites will remain in place as per the road agreement and will be left in place to support these activities.

WILDLIFE HABITAT

The land within the permit area is already used as wildlife habitat and conforms with the existing land use, supports the recreational land use plan and has co-existed with the livestock grazing and forestry practices of the past. The roads will be used to allow wildlife population inspections, habitat condition evaluations and forage assistance in severe winters.

In response to U.S. Fuel's requests, the Division of Wildlife Resources commented on U.S. Fuel's post-mining land use plan on 2/14/84 and again on 4/12/92. In their 1984 letter DWR noted they would prefer that roads along with other surface facilities be reclaimed with habitat more suitable to wildlife. In their 1992 letter DWR did not comment on retention of roads but rather expressed concern about possible subsidence effects on wildlife habitat and loss of water resources.

DWR concerns about the degree of accessibility and use of the roads are addressed as follows. Access to the roads in the permit area is controlled by a gate at the end of State Highway 122. The traffic on the road is expected to be light during the spring, summer and fall seasons. No traffic is expected during the winter season.
In 1997, ANR Company leased the hunting rights for the property as part of a private hunting unit (PHU). The establishment of the PHU required the development of a wildlife management plan, which has been developed through consultation with DWR. Figure IV-1, shows the plans for wildlife management which has eden provided to HCC by the PHU manager. This plan calls for additional service roads to be used to enhance the wildlife habitat, primarily deer and elk. Existing roads which will remain will also be used to facilitate this wildlife habitat enhancement.

**LIVESTOCK GRAZING**

In addition to ANR Company's 11,000 acres of rangeland, it holds water rights and approved diversions for industrial, municipal, domestic, livestock watering and irrigation purposes on both Miller Creek and Cedar Creek. This combination has proven to be desirable for summer grazing of livestock. ANR Company's property has been leased to numerous local ranching families for decades.

The canyon roads are an asset to modern ranching operations and contribute to the value of the land for that purpose. Cattle are trucked to the mouths of the canyons from distant lowland winter ranges in the spring and trucked back in the fall. Roads provide ready access to gates and fences required to confine livestock to selected grazing sites and to rotate them between forage areas as the summer progresses. Roads also allow quick inspection of the location and condition of widely scattered groups of livestock.

**FORESTRY**

ANR Company plans to use the surface land which it owns for forestry purposes. Existing timber stands can be logged profitably under the current market conditions. The existing roads will greatly facilitate both the logging operations and the replanting process. Traffic volume for the logging operation is expected to be light.

**OUTDOOR RECREATION**

The canyons and surrounding lowlands in the vicinity of Hiawatha are scenic; diverse in land forms, wildlife and vegetation; and are historically significant to local, state and county residents as well as out of state visitors. Many former residents of Hiawatha, now living in other states, return to visit the area during the spring, summer and fall months for sentimental and recreational purposes.
In review of the post-mining land use plan, Carbon County has expressed concern about any possible road closures (see letter in Appendix IV-5). The county would like to retain all roads that provide access to otherwise inaccessible regions of the county. Access to historic and scenic areas provide recreation to county residents and enhance the local economy by attracting and holding out of state visitors.

In addition to the historic and scenic recreational use, the property is ideal for camping, hiking, horseback riding, wild life photography, and big game hunting. Although no developed campsites are planned, the roads provide access up the canyons to many natural camping areas. The roads also allow greater access to trailheads for the remaining activities. Except for the hunting season, the road traffic should be light.

The proposed post-mining land use will be achieved by regrading and revegetating mining related disturbed areas to support wildlife habitat, forestry, livestock grazing and outdoor recreation. The roads are necessary to support these uses and will therefore be left in place as per the road agreement with the land owner.

Range and grazing is one of the proposed post-mining uses. The Soil Conservation Service, at the request of U. S. Fuel Company, compiled a grazing plan for the mine property area. this plan identifies five range types and addresses soils, vegetation and productivity. The plan is given in Appendix IV-3. The range site locations are shown on Exhibit IV-4.

No land use different from the pre-mining land use is proposed.

Consideration has been given to making all of the proposed coal mining and reclamation operations consistent with surface owner plans and applicable Utah and local land use plans. Letters from U.S. Fuel describing the proposed post-mining land use plans and requesting comments, approvals or authorizations have been sent to the following Agencies:

- U. S. Forest Service
- Carbon County
- Emery County
- Southeastern Utah Association of Governments
- Utah Division of Water Rights
- Utah Division of State Lands and Forestry
- Utah Division of Wildlife Resources

Copies of letters sent and responses from those agencies which chose to respond are given in Appendix IV-5.
The maintenance of the dwellings and/or buildings of Hiawatha is outside of the permit area and will be consistent with the surface owner's plans. Since these structures are some distance from the disturbed areas, it is not anticipated that they will be affected by the reclamation of the disturbed areas. However, reasonable protective measures will be taken by HCCI, if requested by the Hiawatha property owner, to protect the current integrity of the dwellings and/or buildings in Hiawatha which are not within the disturbed areas, from any deleterious effects associated with reclamation of the disturbed areas.

Currently many, buildings or dwellings within the disturbed area have been determined to be of historical value. The reclaimed contours will be designed to avoid any impacts to these structures in order to preserve their historical value. There are two portals associated with the old Hiawatha #1 and Hiawatha #2 mines which have dates formed into the concrete portal structure. Although these portals are pre-act, they are in close proximity to the current operations. The reclaimed contours will be designed so that these portals will not be covered. Other portals to the east of these which were also associated with the two old Consolidated Fuel Company mines will be left undisturbed. Although Slurry Oin "1" has been determined to be a contributing structure to the historical value of the area, the existing reclamation plan is designed to remove this structure. HCCI will, prior to any modifications of this structure, evaluate the structure for long-term historical value, integrity, and safety. At this time a determination will be made in conjunction with the appropriate regulatory agencies as the whether current reclamation plan should be modified.

The Hiawatha town cemetery will be reclaimed as described in Section 411.141.2.

LAND OWNER OR SURFACE MANAGER COMMENTS

Surface land status of the mine plan area is a combination of fee lands on the eastern side and the Manti-LaSal National Forest lands on the western portion.

Ownership of the surface is detailed on Exhibit IV-1 with the subsurface ownership detailed on Exhibit IV-2. Specific legal descriptions of property control are provided in Chapter I, Appendix I-1.
Surface managing authorities for the non-fee lands consist of two separate and distinct agencies. ANR Company fee lands leased by HCCI are bordered on the east, southeast and northeast by the Bureau of Land Management, with the United States Forest Service Manti-LaSal National Forest bordering the fee lands on the west, southwest and northwest. Federal surface control is illustrated on Exhibit IV-1. The comments of these authorities are contained in Appendix IV-5.

U.S. Fuel, as manager of its surface owned lands, provides the following comments. The future development of the property is enhanced with the proposed post-mining land use and the reclamation of the mining disturbed areas. Although U. S. Fuel has a goal of maximizing income from the property, the aforementioned land uses appear at this time to be the most practical and are compatible with the adjacent surface manager's goals. ANR Company, the current land owner, has established similar goals for the property. It is HCCI's intent to continue to work with all surface managers in the future.

HCCI recognizes the value of the roads for these land uses and to the land as an asset. For these reasons the roads will remain for future use.

Utility corridors traversing the eastern edge of the Hiawatha property consist of two Utah Power & Light Company transmission lines. The first transmission line is a 340 KV north-south line connecting Huntington to Provo, Utah. The second transmission line is a 45 KV north-south line connecting into a substation southeast of the town of Hiawatha that supplies electricity to the mine and town. The Utah Railway Company holds title to a railroad corridor bisecting the eastern portion of the property.

Special use permits and leases are limited primarily to grazing leases issued by the Bureau of Land Management and the United States Forest Service Manti-LaSal National Forest region.

The only coal leases on the property are federal leases which are listed below:

SL-069985
SL-025431
U-026583-058261 (combined)
U-51923
These leases are confined mainly to the western portion of the property and are illustrated on Exhibit IV-2. Appendix I-1 in Chapter I gives the legal description and land area of each lease. Comments and stipulations relating to these federal lands are made a part of each lease document. Appendix IV-4 gives a listing of these comments and stipulations.

Mineral ownership in the area is comprised of fee and federal lands. Coal is the only valuable commodity mined in the area.

**SUITABILITY AND COMPATIBILITY**

Plans for final fills and surface regrading operations for each disturbed site are discussed in Chapter V. Materials to be utilized for final reclamation have all proven to be of a quality suitable for reclamation purposes. See Chapter II, (Soil Resources) and the five year vegetation test plot study given in Appendix III-5.
Coal mining and reclamation operations at the Hiawatha Complex are conducted in compliance with the Clean Air Act and the Utah State Department of Health Air Conservation Regulations. When in operation, the potential sources of air pollution were inspected on a regular basis by the Utah Bureau of Air Quality.

All new installations which could be a source of air pollution constructed after the implementation of the Clean Air Act have been reviewed by and received approval orders from the Utah Bureau of Air Quality. When required by regulation, U. S. Fuel has submitted annual emission inventory reports which included the rate and period of emissions, specific plant sources of pollution, composition of contaminants and types and efficiencies of control equipment. A copy of the most recent air quality approval order is included in Appendix IV-6.

U. S. Fuel Company does not project production rates exceeding 1,000,000 tons of coal per year during the term of this permit, therefore, no air quality monitoring program is required.

Fugitive dust is controlled by watering of unpaved haul roads.
BIBLIOGRAPHY


FOOTNOTES


APPENDIX IV-1

CULTURAL RESOURCE INVENTORY
OF MIDDLE FORK SURFACE FACILITIES

Nov. 4, 1983
A CULTURAL RESOURCE INVENTORY OF MILLER CREEK
SURFACE FACILITIES IN CARBON COUNTY FOR U.S. FUELS

by

Dean Schleisman and Asa S. Nielson

Cultural Resource Management Services
A. S. Nielson, Principal Investigator
Department of Anthropology
Brigham Young University
Provo, Utah 84602

prepared for
Ford, Bacon and Davis, Inc.
Salt Lake City, Utah

4 November 1983
ABSTRACT

CRMS/BYU has completed a three-acre survey for expansion of U.S. Fuels mine facilities in Carbon County, Utah. No cultural resource materials were observed within the survey area, and CRMS recommends to the Utah State Historic Preservation Office that a cultural resource clearance be granted to Ford, Bacon and Davis, Inc. for this project.
# TABLE OF CONTENTS

Abstract

Table of Contents

List of Figures

Introduction

Location

Environment

Previous Research

Survey Methods

Survey Results

Bibliography

# LIST OF FIGURES

Figure 1 - Project Location
A CULTURAL RESOURCE INVENTORY OF MILLER CREEK
SURFACE FACILITIES IN CARBON COUNTY FOR U.S. FUELS

INTRODUCTION

One 2 November 1983 Dean Schleisman, of the Cultural Resource Management Services (CRMS), Brigham Young University, conducted a cultural resource inventory of about 3 acres in Carbon County, Utah, for U.S. Fuels. The inventory area is the proposed location for new surface mine facilities for the expanding U.S. Fuels mine near Hiawatha, Utah. The work was requested by Dr. Jack Elder, of Ford, Bacon and Davis Inc., mine consultants for U.S. Fuels. The survey area is entirely on private land, hence no Federal or State permits were requested. Survey conditions were ideal and ground visibility excellent. The report was prepared by Dean Schleisman and Asa S. Nielsen, and Ted Duffin processed the manuscript.

LOCATION

The proposed mine facility (Figure 1) is located about 2.7 miles due west of Hiawatha, Carbon County, Utah. It is in the upper portion of the Middle Fork of Miller Creek, in the SW1/4 NW1/4 SW1/4 of Section 29, T15S R8E (Hiawatha Quadrangle, Utah, 7.5-minute series topographic). Access to the area is by an existing road leading past the existing Hiawatha Mine.

ENVIRONMENT

The survey area is part of the Wasatch Plateau Subsection of the Basin and Range—Colorado Plateau Transition (Stokes 1977). This area is characterized by deeply entrenched east-to-west canyons which empty into the Mancos Shale Lowlands. Miller Creek has cut its way through successive layers of Cretaceous Black Hawk and Price River Formations, and Paleocene North Horn Formation (Lintz 1980). The mine area is predominantly Black Hawk Formation covered with a thin veneer of talus and colluvial soil. The canyon bottom has in excess of one meter of Recent alluvial deposits of sandy, rocky stream clays.

Flora observed was restricted to big sage, mountain mahogany, pinyon, scrub oak, broom grass and cactus. No fauna were directly observed in the survey area. However, tracks of mule deer and rabbit were observed.
PREVIOUS RESEARCH

Overviews of the culture history of the area are available elsewhere and need not be repeated in detail here. In addition, Ford, Bacon and Davis Inc. is in the process of negotiating a complete overview of the Hiawatha area in addition to proposed additional survey next Spring. Records searches at the Utah Division of State History revealed no known cultural resources in the proposed mine facility area. Consultation with the State and National Registers of Historic Places also revealed no known National Register sites within the survey boundaries.

SURVEY METHODS

The survey was accomplished by completing several parallel transects back and forth over the area of proposed disturbance. Much of the surface is dominated by a moderate hill slope. All possible overhangs, level areas or other potential areas were examined.

SURVEY RESULTS

No cultural resource sites or isolated artifacts were noted during the inventory. The historic Hiawatha Mine is about 300 m due east, but will not be impacted by the new mine facilities. No significant cultural resources will be directly impacted; therefore, CRMS recommends to the Utah State Historic Preservation Office that a cultural resource clearance be granted for this phase of the project, with the following restrictions:

1. that personnel and equipment associated with the development be restricted to those areas cleared for the project;

2. that personnel associated with the project refrain from collecting or otherwise disturbing cultural materials which may be encountered during development; and

3. that should unreported cultural materials be encountered during development, activities in the affected area(s) should cease immediately and the Utah State Historic Preservation Office notified prior to resuming such activities.
BIBLIOGRAPHY

Hintze, Lehi F.

Stokes, William Lee
APPENDIX IV-2

ARCHEOLOGICAL RECONNAISSANCE OF A PROPOSED COAL FACILITY AT THE KING VI MINE

APRIL 17, 1981
SUBJECT: Archaeological Reconnaissance of A Proposed Coal Facility
At The King #6 Mine, United Fuel Company, Hiawatha, Utah

AUTHOR: Clayton W. Cook
Staff Archaeologist

DATE: April 17, 1981

PROJECT: USF-81-1

PERMIT: #80-Ut-137

PREPARED FOR:

Mr. Robert Eccli
United States Fuel Co.
P.O. Box A
Hiawatha, Utah 84527

Mr. Chuck Jahne
Sharonsteel Mining Division
19th Floor, University Club Building
136 East South Temple
Salt Lake City, Utah 84111

Dr. David B. Madsen
Utah State Archaeologist
300 South Rio Grande
Salt Lake City, Utah 84101
INTRODUCTION

On April 14, 1981 Utah Archaeological Research Corporation was contacted by United States Fuel Company of Hiawatha, Utah to conduct a cultural survey of a proposed coal facility in the south fork of Miller Creek. The project area is privately owned and the legal description is as follows (see attached map):

Township 15 South, Range 8 East, Section 32 S½, NE¼
UTM Zone 12, Easting 496000, Northing 469750

The project consists of building a coal conveyor just to the north of an existing road, a truck load-out and turn around, and a sedimention pond. The conveyor will be approx. 3000 feet long and will carry the coal from the mine to the load-out. The project will disturb approx. 3 acres of area. The field work was conducted by Clayton Cook, UTARC Staff Archaeologist on April 15, 1981.

ENVIRONMENTAL SETTING

The project is located in a east trending canyon which washes off the east face of the Wasatch Plateau and into the Castle Valley Area; the creek is known as the South Fork of Miller Creek. The project area is 2½ miles east of the present town of Hiawatha. The project is located in the Montane Vegitational Zone. The area has about 80% vegetational coverage with 20% sage, 40% conifers (Abies concolor, Pseudotsuga menziesii, etc.) and 40% miscellaneous grasses.
and forbes. Sediments in the area are basically colluvial. Faunal observed consisted of deer and various small rodents. The land has been utilized mostly for mining since 1915. Before the 1900's, there was some stock ranging in the area.

HISTORICAL SETTING

Coal mining has long been an important part of Carbon County's economical base and has been responsible for the founding of several small communities in the county, including Hiawatha. The first large mines to be opened on the east front of the Wasatch Plateau were opened from 1909 to 1911 in Miller and Cedar Creek Canyons. These operations were soon consolidated into one operation known as King Mine.

The Consolidated Fuel Company organized in 1907 was the first to mine in the area. It built the old Southern Utah Railroad from Price to Hiawatha and opened the mine known as West Hiawatha. A year later the railroad was extended up Cedar Creek Canyon to the Mohrland Mine which was owned and operated by the Castle Valley Coal Company. In 1911, the Blackhawk Coal Company opened the Black Hawk Mine on the mountainside approximately 1000 feet above the present town of Hiawatha. The United States Fuel Company was organized in 1915, and in 1916 commenced operation by taking over the properties owned by the Consolidated Fuel Company, Castle Valley Coal Company, Black Hawk Coal Company, and the Panther Coal Company at Hiener, Utah. The King Coal operations at Hiawatha, owned and operated by United States Fuel, are the longest continuously operated mines in Utah.
In 1948, the King #3 Mine was opened in the South Fork of Miller Creek. The #3 Mine operated until 1975, when it was shut down. Operations at #3, consisted of the portal and vent shaft, showers and office, shop buildings and stock pile.

The proposed operation of King #6, is to reopen the King #3 Mine. This will be accomplished by opening a new portal and bypassing the old #3 portal. Many of the existing buildings will be renovated and reused. The conveyor, as mentioned, will carry the coal to the new load-out facility. These are the only operations which will be constructed on areas that were not previously disturbed by construction of King #3.

FILE SEARCH

A file search was conducted at the Utah State SHPO Office and at the State Bureau of Land Management Office prior to entering the field. No cultural resources have been recorded in Section 32 in past work. However, sites have been recorded in Sections 10, 11, 23, 24, 25, and 26 of the same Township and Range. Most of these sections are on ridge tops and not in steep walled canyons such as Section 32. There could possibly have been some aboriginal hunting activity in the area but, no evidence has been encountered as of yet.

METHODOLOGY

Field Survey of the proposed construction was conducted by walking parallel transects spaced at 10 foot intervals across the area where the sedimentation pond and turn around will be constructed. A corridor of
approximately 100 feet was walked along the proposed location of the conveyor. This way all areas of potential impact were thoroughly checked for cultural resources.

RESULTS AND RECOMMENDATIONS

Two existing structures will be torn down during the construction of the turn around and load-out. These structures consist of one powder magazine and one cap magazine. These buildings were built in the late 1940's. They are not considered to be significant because they are not unusual or unique in their construction or function.

No cultural resources of any significance were encountered in the area of the proposed construction. Therefore, clearance is recommended with the stipulation that if buried resources are encountered during construction, work be stopped and a qualified archaeologist be contacted to determine their significance.

"Reference Cited"

Thirty Years of Coal Mining - Pamphlet Published by The United States Fuel Company, Salt Lake City, Utah 1946.
View looking East - Conveyor will run along, and to the left of, the existing road.
View of proposed turn around and load-out looking NW.
View looking SE of proposed sedimentation pond location.
Township 15 South
Range 8 East
Section 32
Hiawatha Quad
Carbon County, Utah
APPENDIX IV-3

LIVESTOCK GRAZING PLAN FOR U. S. FUEL CO.
<table>
<thead>
<tr>
<th>FIELD NO.</th>
<th>PLANNED</th>
<th>AMOUNT</th>
<th>YEAR</th>
<th>APPLIED</th>
<th>AMOUNT</th>
<th>MONTH AND YEAR</th>
<th>LAND USE AND TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>12,800</td>
<td>1979</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Range 12,800 acres</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Proper Grazing use</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Graze at an intensity which will maintain enough to cover to protect soil and maintain or improve the quality and quantity of desirable vegetation. (rule of thumb: take half and leave half and both halves will get bigger.) see job sheet #1 for proper use of key species.</td>
</tr>
<tr>
<td>1-3</td>
<td>12,800</td>
<td>1979</td>
<td></td>
<td>1-3</td>
<td>5 each</td>
<td>1979-1980</td>
<td>Planned Grazing System</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>See job sheet No. 2 use either alternate #1 which is a rest rotation system or alternate #2 which is a deferred rotation grazing system.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Water Development</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ponds will be made &amp; springs will be maintained and developed where needed.</td>
</tr>
<tr>
<td>1-3</td>
<td></td>
<td></td>
<td></td>
<td>1-3</td>
<td>2 mi.</td>
<td>1977</td>
<td>Fencing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fences will be constructed where needed to better control and distribute livestock.</td>
</tr>
</tbody>
</table>
Job Sheet #1  
PROPER GRAZING USE

OPERATOR: U.S. Fuel

<table>
<thead>
<tr>
<th>SPECIES OF GRAZING ANIMAL</th>
<th>SEASON OF USE</th>
<th>LOCATION OF KEY GRAZING AREA</th>
<th>KEY PLANT(S) FOR JUDGING PROPER GRAZING USE</th>
<th>PLANNED USE OF KEY SPECIES AT END OF GRAZING PERIOD</th>
<th>ESTIMATED USE OF KEY SPECIES BY WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle Sum.</td>
<td>High Mt. Loam Range Site South side of unit</td>
<td>Little &amp; Tall</td>
<td>Not to exceed</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Native bluegrass</td>
<td></td>
<td>50%</td>
</tr>
<tr>
<td>Cattle Sum.</td>
<td>Mt. Shallow Loam (Sec. 30)</td>
<td>Little &amp; Tall</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Native bluegrass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle Sum.</td>
<td>Mt. Shallow (Sec. 30)</td>
<td>Little &amp; Tall</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Native bluegrass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle Sum.</td>
<td>Mt. Shallow Loam (Sec. 31)</td>
<td>Little &amp; Tall</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Native bluegrass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle Sum.</td>
<td>Section 17</td>
<td>Bluebunch</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conservationist Assisting with Planning: [Signature]

Conservationist Assisting with Application: [Signature]

Name and Date: 7/10/79
ALTERNATE #1 Rest Rotation

<table>
<thead>
<tr>
<th>Year</th>
<th>Graze</th>
<th>Rest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>1&amp;2</td>
<td>3</td>
</tr>
<tr>
<td>Year 2</td>
<td>2&amp;3</td>
<td>1</td>
</tr>
<tr>
<td>Year 3</td>
<td>3&amp;1</td>
<td>2</td>
</tr>
<tr>
<td>Year 4</td>
<td>1&amp;2</td>
<td>3</td>
</tr>
<tr>
<td>Year 5</td>
<td>2&amp;3</td>
<td>1</td>
</tr>
<tr>
<td>Year 6</td>
<td>3&amp;1</td>
<td>2</td>
</tr>
</tbody>
</table>

Use Job Sheet #1 as a guide to change pastures with livestock.

ALTERNATE #2 Rotation Deferred

Year 1       1,2&3
Year 2       3,2,&1
Year 3       2,1,&3 if needed

Use the use factor on the key plants as an indicator as listed in Job Sheet #1 to rotate pastures.
<table>
<thead>
<tr>
<th>Site &amp; Woodland Site</th>
<th>Acres</th>
<th>Prod</th>
<th>Total Harvest</th>
<th>% Utilization</th>
<th>Available Forage</th>
<th>Proper Use</th>
<th>Usable Forage</th>
<th>Aums</th>
<th>Potential Aums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mtn. Loam</td>
<td>735</td>
<td>1000</td>
<td>735000</td>
<td>35</td>
<td>257250</td>
<td>50</td>
<td>128625</td>
<td>150</td>
<td>800</td>
</tr>
<tr>
<td>n Grass</td>
<td>735</td>
<td>1000</td>
<td>735000</td>
<td>40</td>
<td>294000</td>
<td>50</td>
<td>147000</td>
<td>150</td>
<td>500</td>
</tr>
<tr>
<td>Shallow Loam</td>
<td>1475</td>
<td>1100</td>
<td>1522500</td>
<td>25</td>
<td>407625</td>
<td>50</td>
<td>202912</td>
<td>25</td>
<td>500</td>
</tr>
<tr>
<td>s Fir</td>
<td>240</td>
<td>700</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>s Vill</td>
<td>735</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td>500</td>
</tr>
<tr>
<td>Story Loam</td>
<td>900</td>
<td>1200</td>
<td>1176000</td>
<td>35</td>
<td>411600</td>
<td>50</td>
<td>205800</td>
<td>257</td>
<td>550</td>
</tr>
<tr>
<td>Total</td>
<td>4900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>853</td>
<td>2350</td>
</tr>
<tr>
<td>Mtn. Loam</td>
<td>325</td>
<td>1000</td>
<td>325000</td>
<td>30</td>
<td>975000</td>
<td>50</td>
<td>487500</td>
<td>60</td>
<td>350</td>
</tr>
<tr>
<td>n Grass</td>
<td>800</td>
<td>1000</td>
<td>800000</td>
<td>40</td>
<td>260000</td>
<td>50</td>
<td>130000</td>
<td>162</td>
<td>600</td>
</tr>
<tr>
<td>Shallow Loam</td>
<td>975</td>
<td>1100</td>
<td>1072500</td>
<td>25</td>
<td>268125</td>
<td>50</td>
<td>134062</td>
<td>167</td>
<td>335</td>
</tr>
<tr>
<td>Story Loam</td>
<td>395</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>s Fir</td>
<td>1950</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>s Vill</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and Shallow Loam PJ</td>
<td>1700</td>
<td>700</td>
<td>910000</td>
<td>35</td>
<td>318500</td>
<td>50</td>
<td>159250</td>
<td>252</td>
<td>3715</td>
</tr>
<tr>
<td>Total</td>
<td>6500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>823</td>
<td></td>
</tr>
<tr>
<td>Mtn. Loam</td>
<td>260</td>
<td>1200</td>
<td>336000</td>
<td>75</td>
<td>252000</td>
<td>50</td>
<td>126000</td>
<td>157</td>
<td>300</td>
</tr>
<tr>
<td>n Grass</td>
<td>350</td>
<td>1200</td>
<td>390000</td>
<td>70</td>
<td>294000</td>
<td>50</td>
<td>147000</td>
<td>183</td>
<td>260</td>
</tr>
<tr>
<td>Shallow Loam</td>
<td>490</td>
<td>1100</td>
<td>539000</td>
<td>30</td>
<td>161700</td>
<td>50</td>
<td>80850</td>
<td>101</td>
<td>170</td>
</tr>
<tr>
<td>s Fir</td>
<td>140</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>s Vill</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>744</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2137</td>
<td></td>
</tr>
</tbody>
</table>

**Difference**: 2650

Possible stocking Rate of 400 - 425 head for 5 months but would try 300 - 350 for a season or two.
RANGE SITE DESCRIPTIONS

HIGH MOUNTAIN LOAM (ASPEN)

This site occurs in a rainfall belt of 22 inches or greater. Fifty percent or more of this comes during the growing season. The soils are medium textured and deep. The infiltration rate and the waterholding capacity are good. An over-story of aspens identifies this site.

Mountain and nodding brome grass, blue wildrye, bearded and slender wheatgrass, pea vine, butterweed and aspen make up the bulk of the potential plant community. Potential production for this site ranges from 2750-4000 pounds per acre.

HIGH MOUNTAIN LOAM

This site occurs in association with your High Mountain Loam (Aspen) site but does not have aspen on it. The soils making up this site are medium textured. Infiltration rates and waterholding capacity are good. This site occurs in a rainfall belt of greater than 22 inches. Potential production can reach 2700 pounds in favorable years.

Bearded and slender wheatgrass, mountain brome, columbia needlegrass, big sagebrush, snowberry and oakbrush make up the bulk of the potential plant community.

MOUNTAIN STONY LOAM

Medium textured soils make up this site. The soil profile has 50% or more of stones. Although the site is in a favorable rainfall belt (16-22 inches) the stoniness limits the waterholding capacity. This affects total production. Deep rooted plants are a "natural" for this site as moisture percolates deep.

Mountain mahogany, bitterbrush, sagebrush, and blue-bunch wheatgrass make up the bulk of the potential plant community. Potential production ranges from 750 to 2000 pounds per acre.

MOUNTAIN SHALLOW LOAM

This site occurs in a rainfall belt from 16 to 22 inches. Fifty percent or more comes during the growing season. Soils in this site are stony or cobbly, shallow and well drained.
Bluebunch wheatgrass, Indian ricegrass, Great Basin wildrye, prairie junegrass, balsamroot, native bluegrass, bitterbrush, and big sagebrush are potential plants for the bulk of the production. Potential production for the site is 750-1500 pounds depending on how favorable the year.

This is a woodland range site as pinon-juniper dominates the site. Soils making up the site are medium textured, have a good infiltration rate and store all the moisture that normally falls. The site occurs in the 12-16 inch rainfall belt.

Potential production for the site is 950-2600 pounds per acre. Pinon-juniper, bluebunch wheatgrass, Indian ricegrass, sandberg and western wheatgrass yield the bulk of the production.

Soils of this site are stony, cobbly and shallow. Waterholding capacity is limited by the shallow depth and the high percentage of stone in the soil. The site occurs in the 12-16 inch rainfall belt.

Juniper, Indian ricegrass, needle-and-thread, blue grama, sedge and yellowbrush make up the bulk of the potential plant community.

This is a pinon-juniper tree site. The soils are medium textured and occur in the 12-16 inch rainfall belt. Limited rainfall as well as a high percentage of stones in the soil limits production.

Fifty percent of the total production can be expected from pinon and juniper. Other potential plants for the site are bluebunch wheatgrass, needle-and-thread, bluegrasses, bitterbrush, big and black sagebrush.

Land that is too steep, barren, or inaccessible to livestock.
### Soils
Soils are deep, well-drained - surface layers being loam, silt loam as clay loam and in places stony, gravelly cobby or very cobby. Intake rate is moderate to rapid and water movement through the soil is good. Water holding capacity is high (ten to fourteen inches in a six foot profile.)

### Potential Native Plant Community
<table>
<thead>
<tr>
<th></th>
<th>Overstory</th>
<th>Understory Grass</th>
<th>Shrub</th>
<th>Forb</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aspen</td>
<td>40</td>
<td>60</td>
<td>610</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20 30</td>
</tr>
</tbody>
</table>

### Density
<table>
<thead>
<tr>
<th></th>
<th>Overstory</th>
<th>Understory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25-70%</td>
<td>80%</td>
</tr>
</tbody>
</table>

### Grainy Valve
Potential forage valve rating 60%
heavy weight of desirable species

### Important Species
- Columbia Needlegrass
- Mountain Brome
- Letterman's Needlegrass
- Western Wheatgrass
- Slender Wheatgrass
- Lupine
- Aspen Peavine
- American Vetch
**Englemann Spruce Woodland Suitability Group**

| Vegetation | Overstory - Englemann Spruce  
| Understory - Mountain Pine and  
| Frond of Fores  |
| Productive Capacity | Site Class V1 site index (unavailable)  
| Productive Rating low for Englemann Spruce  |
| Soils | Extremely Stony Loam  |
| Hazards and Limitations | High percentage of Rock, steep slopes  |
| Yield Data | unavailable  |
13. HIGH MOUNTAIN LOAM

Topography
This site occurs on partly sloping to very steep mountain slopes. On this site
slope range from 20 to 60°. It will
be found primarily on north and east
exposures.

Soils
The soils are deep, well-drained soils.
Infiltration and internal water move-
ment are good. The soil has a high
water holding capacity ranging from about
10 to 14.5 inches in a six foot profile.
Amount of stone, cobble or gravel is
variable throughout the profile but
is less than 50%.

Potential Native
Plant Community
Grass - 45
Shrubs - 30
Forbs - 25%

Potential Production
1300 pounds in unfavorable years to
2700 pounds in favorable years.

Density
A potential density of herbage cover
by ocular estimate is 70 to 75%.

Important Plants
Mountain Bromo
Cleveland Wheatgrass
Tallgrass
Western Wheatgrass
Lettman's Needlegrass
Columbia Needlegrass
L픈
Tall Larkspur
Big Sagebrush
Physiographic Factors

This site will be found on steep mountain slopes ranging from 30 to 65%. On this site it will be found primarily on south and west exposures, and ridge tops. Elevation 7500 to 2000 feet.

Soils

The soils are stony or cobbly and shallow over bedrock (10 to 20 inches). They are well drained. Water intake rate is moderate to slow. Water holding capacity is low due to the shallow depth and rock fragment content.

It ranges from 1.5 to 3.0 inches with a water supplying capacity of 5 to 8 inches.

Potential Native Plant Community

Grass - 50%
Shrubs - 45%
Forbs - 5%

Potential Production

600 pounds in unfavorable years to 1700 pounds in favorable years.

Density

Potential density of herbage by ocular estimation is 45 to 50%

Important Plants

Lettewy's Needlegrass
Longtongue Nuttgrass
Pit Sagebrush
Pinegrass
Mountain Snowberry
APPENDIX IV-4

COMMENTS AND STIPULATIONS
RELATING TO FEDERAL LEASE LANDS
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 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 on the final day of the months 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 $5,000. 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 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. 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 a LMU or part of a LMU, subject to the provisions set forth in the regulations.

The stipulations established in a 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.

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 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,
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 Act (5 U.S.C. 552).

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

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

Lessee shall carry on all operations in accordance with approved methods and practices as provided in the operating regulations, having due regard for the prevention of injury to life, health, or property, and prevention of waste, damage or degradation to 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 are not limited to, modification to proposed siting or design of facilities, timing of operations, and specification 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

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

This lease may only be transferred in whole or in part to another small business qualified under 13 CFR 121.

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

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

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

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

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

Sec. 13. INDEMNIFICATION - Lessee shall indemnify and hold harmless the United States from any and all claims arising out of the lessee's activities and operations under this lease.
Sec. 14. SPECIAL STATUTES - This lease is subject to the Federal Water Pollution Control Act (33 U.S.C. 1151-1175); the Clean Air Act (42 U.S.C. 1857 et seq.), and to all other applicable laws pertaining to exploration activities, mining operations and reclamation, including the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.).

Sec. 15. SPECIAL STIPULATIONS -

The Regulatory Authority shall mean the State Regulatory Authority pursuant to a cooperative agreement approved under 30 CFR Part 745 or in the absence of a cooperative agreement, Office of Surface Mining. The Authorized Officer shall mean the State Director, Bureau of Land Management. The Authorized Officer of the Surface Management Agency shall mean the Forest Supervisor, Forest Service. Surface Management Agency for private surface is the Bureau of Land Management.

The Authorized Officers, of the Bureau of Land Management, Office of Surface Mining (Regulatory Authority), and the Surface Management Agency (Forest Service) respectively, shall coordinate, as practical, regulation of mining operations and associated activities on the lease area.

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) and final determination of suitability for mining. The United States Government does not warrant that the entire tract will be susceptible to mining.

2. Federal Regulations 43 CFR 3400 pertaining to Coal Management make provisions for the Surface Management Agency, the surface of which is under the jurisdiction of any federal agency other than the Department of Interior, to consent to leasing and to prescribe conditions to insure the use and protection of the lands. All or part of this lease contain lands the surface of which are managed by the United States Department of Agriculture, Forest Service - Manti-LaSal National Forest.

The following stipulations pertain to the lessee responsibility for mining operations and the lease area and on adjacent areas as may be specifically designated on National Forest System Lands.

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 appropriate authorities. 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 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 U.S. Fish and Wildlife Service, Migratory Bird Management Office, Washington, D.C. 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. 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.

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

7. The limited area available for mine facilities at the coal outcrop, steep topography, adverse winter weather, and physical limitations on the size and design of the access road, are factors which will determine the ultimate size of the surface area utilized for the mine. A site specific environmental analysis will be prepared for each new mine site development and for major modifications to existing developments to examine alternatives and mitigate conflicts.

8. Consideration will be given to site selection to reduce adverse visual impacts. Where alternative sites are available, and each alternative is technically feasible, the alternative involving the least damage to the scenery and other resources shall be selected. Permanent structures and facilities will be designed, and screening techniques employed, to reduce visual impacts, and where possible achieve a final landscape compatible with the natural surroundings. The creation of unusual, objectionable, or unnatural lands forms and vegetative landscape features will be avoided.
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. The Lessee shall provide for the suppression and control of fugitive dust on haul roads and at coal handling and storage facilities. On Forest Development Roads (FDR), Lessees may perform their share of road maintenance by a commensurate share agreement if a significant degree of traffic is generated that is not related to their activities.

11. 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, 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.

12. 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 specific approved locations.

13. If removal of timber is required for clearing of construction sites, etc., such timber shall be removed in accordance with the regulations of the surface management agency.

14. The coal contained within, and authorized for mining under this lease shall be extracted only by underground mining methods.

15. Existing Forest Service owned or permitted surface improvements will need to be protected, restored, or replaced to provide for the continuance of current land uses.

16. In order to protect big game wintering areas, elk calving and deer fawning areas, sagegrouse strutting areas, and other critical wildlife habitat and/or activities, specific surface uses outside the mine development area may be curtailed during specified periods of the year.

17. Support facilities, structures, equipment, and similar developments will be removed from the lease area within two years after the final termination of use of such facilities. Disturbed areas and those areas previously occupied by such facilities will be stabilized and rehabilitated, drainages re-established, and the areas returned to a premining land use.

18. 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 land monuments (section corners, 1/4 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 land net. This work shall be conducted at the expense of the Lessee, by a professional land surveyor registered in the State of Utah, and to the standards and guidelines found in the Manual of Surveying Instructions, United States Department of the Interior.

19. The Lessee at their expense will be responsible to replace any surface water identified for protection, that may be lost or adversely affected by mining operations, with water from an alternate source in sufficient quantity and quality to maintain existing riparian habitat, fishery habitat, livestock and wildlife use, or other land uses.

The United States of America

U.S. Fuel Co.
Company or Lessee Name

[Signature of Lessee]

(Signature of Lessee)

[Title]

(Vice President of Lessee)

[Date]

May 24, 1985

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 statement 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.

(By)

ROBERT LOPEZ

(Signing Officer)

Chief, Minerals

Adjudication Section

(Date)

SEP 05 1985

(Date)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statement 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.

(FR Doc. 84-8502 Filed 3-29-84: 8:45 a.m.)

Billing Code 4310-84-C
APPENDIX IV-5

LETTERS AND RESPONSES FROM
LAND OWNERS AND LOCAL AND STATE AGENCIES
Agreement

This agreement made and entered into on the 27th day of January 2009, by and between
A.N.R Inc. (A.N.R.) and Hiawatha Coal Company, a Utah Corporation, (Hiawatha Coal)
WHEREAS, there are existing private roads in Carbon County located in land owned by ANR in and around
the town of Hiawatha
WHEREAS, Hiawatha Coal requires use of said roads, and
WHEREAS, A.N.R. is the owner of the private portions of these roads,
NOW, THEREFORE, be it agreed as follows:

1. ANR grants unto Hiawatha the right to use those private roads owned by ANR which may be necessary or
   convenient for Hiawatha to conduct its mining operations.

2. Hiawatha Coal will indemnify and defend A.N.R. for any damage caused, or loss incurred to or claim made
   by any public or private individual, firm, group, association, partnership or corporation as a result of any
   mining related activities conducted on the private roads.

3. Hiawatha Coal agrees to allow access to other property served by Middle Fork Road, and all other private
   roads owned by A.N.R. Said access shall be allowed to the owner of the property, their successor in interest
   or any other individual, firm, group, association, partnership or corporation who requires access due to their
   association with the owner or because the owner has granted permission to the individual, firm, group,
   association, partnership or corporation to go upon it's property. Hiawatha Coal will not withhold access due
   to the type of activity which the then owner or his agents, employees or invitees intend to or in fact conduct.

4. Hiawatha accepts the roads "as is" and agrees to keep and maintain the roads in as good a condition as on
   the day of this agreement. Ordinary wear and tear excepted. ANR shall have no obligation to keep or maintain
   the roads.

5. All upgrades to any portion of the Middle Fork road and any portion of any roads used by Hiawatha, the
   town of Hiawatha, the property owner, or his agents, as defined in item 2 of this agreement, will remain in
   place post-mining. These upgrades may include, but are not limited to road base, asphalt, concrete, and
   drainage controls.

6. A.N.R. reserves the right to require Hiawatha Coal to leave, post-mining, any additional portions or all
   portions of any private road owned by A.N.R. and located within the Hiawatha Mine permit area, as defined
   by any plan held by the Office of Surface Mining or the Division of Oil, Gas, and Mining, at A.N.R.'s
   discretion.

IN WITNESS WHEREOF, this agreement is executed the day and year above.

A.N.R. Incorporated

By [Signature]
Officer A.N.R. Incorporated

IN WITNESS WHEREOF this agreement is executed at Huntington, Utah. Dated this 27th day of January
2009

Hiawatha Coal Company

By [Signature]
Officer Hiawatha Coal

INCORPORATED

AUG 18 2009

Div. of Oil, Gas & Mining
Mr. William D. Howell, Executive Director  
Southeastern Utah Association of Governments  
145 West 3450 South  
Price, Utah 84501

Dear Mr. Howell:

United States Fuel Company, a coal mining company located approximately 15 miles south west of Price, Utah, is currently in the process of renewing its Mining and Reclamation Permit with the Utah Division of Oil, Gas and Mining. Permit application regulations require that we obtain comments from Utah and local government agencies which would have to initiate, implement, approve or authorize the proposed use of the land following reclamation.

A map showing the permit area is enclosed. The land within the permit area is owned by U. S. Fuel Company and the U. S. Government (Forest Service). There are no other surface land owners. All disturbed surface areas related to U. S. Fuel’s mining operations are on private land owned by U. S. Fuel Company. United States Fuel Company holds Federal Lease rights to coal lands within the Federal portion of the permit.

U. S. Fuel Company’s reclamation plan calls for removal of mining related surface structures, backfilling and grading, topsoil distribution and revegetation of disturbed sites.

The permit area and surrounding lands are classified as recreation, forestry, grazing and mining lands under local county zoning ordinances.

United States Fuel Company’s post mining land use plan is to restore the land for future use as wildlife habitat, livestock grazing and outdoor recreation. Towards this end, the access roads leading to the mine sites are not proposed to be reclaimed but will be left in place to support these activities. U. S. Fuel owns ranch sites and agricultural lands outside the permit boundary on
Miller Creek and Cedar Creek. U. S. Fuel also holds water rights for industrial, municipal, domestic, livestock watering and irrigation purposes on both streams.

We would appreciate any comments you may have or any information regarding approvals or authorizations required by your agency.

Sincerely,

Michael W. Baum
President & Gen. Mgr.

MWB/re

Enclosure:
March 31, 1992

U. S. Fuel Company
P.O. Box A
Hiawatha, Utah 84527

Dear Sirs:

Thank you for the opportunity to comment on your planned reclamation activities at your mine site in and around the Hiawatha area.

From your letter I gather that the permit renewal is for reclamation only. In this case, Carbon County has two areas of concern which warrant your consideration.

First, the County is interested in the preservation of any significant historical features that hark back to Carbon County's coal mining past. Second, Carbon County is concerned about any possible road closures. The county would like to retain all roads that have utility for access to otherwise inaccessible regions of the county and may be interested in assuming responsibility for roads that might otherwise be abandoned.

Since we are generally unfamiliar with your mine site, the county cannot say for certain that either historic sites or roads of interest exist. For this reason the county would be interested in touring your proposed reclamation site to gain first hand knowledge of the project.

If you are willing to tour representatives of county through your reclamation site please contact Commissioner Emma Kuykendall at 637-4700 at your convenience.

Sincerely,

William D. Howell
Executive Director

cc: Commissioner Emma Kuykendall
Mr. Harold Marston, County Planner  
Carbon County  
Courthouse Building  
Price, Utah 84501  

Dear Mr. Marston:

United States Fuel Company is currently in the process of renewing its Mining and Reclamation Permit with the Utah Division of Oil, Gas and Mining. Permit application regulations require that we obtain comments from Utah and local government agencies which would have to initiate, implement, approve or authorize the proposed use of the land following reclamation.

A map showing the permit area is enclosed. The land within the permit area is owned by U. S. Fuel Company and the U. S. Government (Forest Service). There are no other surface land owners. All disturbed surface areas related to U. S. Fuel’s mining operations are on private land owned by U. S. Fuel Company. United States Fuel Company holds Federal Lease rights to coal lands within the Federal portion of the permit.

U. S. Fuel Company’s reclamation plan calls for removal of mining related surface structures, backfilling and grading, topsoil distribution and revegetation of disturbed sites.

The permit area and surrounding lands are classified as recreation, forestry, grazing and mining lands under local county zoning ordinances.

United States Fuel Company’s post mining land use plan is to restore the land for future use as wildlife habitat, livestock grazing and outdoor recreation. Towards this end, the access roads leading to the mine sites are not proposed to be reclaimed but will be left in place to support these activities. U. S. Fuel owns ranch sites and agricultural lands outside the permit boundary on
Miller Creek and Cedar Creek. U. S. Fuel also holds water rights for industrial, municipal, domestic, livestock watering and irrigation purposes on both streams.

We would appreciate any comments you may have or any information regarding approvals or authorizations required by your agency.

Sincerely,

Michael W. Baum
President & Gen. Mgr.

MWB/re

Enclosure:
March 19, 1992

Mr. Bryant Anderson, County Planner  
Emery County  
95 East Main  
Castle Dale, Utah 84513

Dear Mr. Anderson:

United States Fuel Company is currently in the process of renewing its Mining and Reclamation Permit with the Utah Division of Oil, Gas and Mining. Permit application regulations require that we obtain comments from Utah and local government agencies which would have to initiate, implement, approve or authorize the proposed use of the land following reclamation.

A map showing the permit area is enclosed. The land within the permit area is owned by U. S. Fuel Company and the U. S. Government (Forest Service). There are no other surface land owners. All disturbed surface areas related to U. S. Fuel's mining operations are on private land owned by U. S. Fuel Company. United States Fuel Company holds Federal Lease rights to coal lands within the Federal portion of the permit.

U. S. Fuel Company's reclamation plan calls for removal of mining related surface structures, backfilling and grading, topsoil distribution and revegetation of disturbed sites.

The permit area and surrounding lands are classified as recreation, forestry, grazing and mining lands under local county zoning ordinances.

United States Fuel Company's post mining land use plan is to restore the land for future use as wildlife habitat, livestock grazing and outdoor recreation. Towards this end, the access roads leading to the mine sites are not proposed to be reclaimed but will be left in place to support these activities. U. S. Fuel owns ranch sites and agricultural lands outside the permit boundary on
Miller Creek and Cedar Creek. U. S. Fuel also holds water rights for industrial, municipal, domestic, livestock watering and irrigation purposes on both streams.

We would appreciate any comments you may have or any information regarding approvals or authorizations required by your agency.

Sincerely,

Michael W. Baum
President & Gen. Mgr.

MWB/re
Enclosure:
March 19, 1992

Mr. Mark P. Page, Area Engineer
State of Utah Natural Resources
Water Rights
P.O. Box 718
Price, Utah 84501

Dear Mr. Page:

United States Fuel Company is currently in the process of renewing its Mining and Reclamation Permit with the Utah Division of Oil, Gas and Mining. Permit application regulations require that we obtain comments from Utah and local government agencies which would have to initiate, implement, approve or authorize the proposed use of the land following reclamation.

A map showing the permit area is enclosed. The land within the permit area is owned by U. S. Fuel Company and the U. S. Government (Forest Service). There are no other surface land owners. All disturbed surface areas related to U. S. Fuel's mining operations are on private land owned by U. S. Fuel Company. United States Fuel Company holds Federal Lease rights to coal lands within the Federal portion of the permit.

U. S. Fuel Company's reclamation plan calls for removal of mining related surface structures, backfilling and grading, topsoil distribution and revegetation of disturbed sites.

The permit area and surrounding lands are classified as recreation, forestry, grazing and mining lands under local county zoning ordinances.

United States Fuel Company's post mining land use plan is to restore the land for future use as wildlife habitat, livestock grazing and outdoor recreation. Towards this end, the access roads leading to the mine sites are not proposed to be reclaimed but will be left in place to support these activities. U. S. Fuel owns ranch sites and agricultural lands outside the permit boundary on
Miller Creek and Cedar Creek. U. S. Fuel also holds water rights for industrial, municipal, domestic, livestock watering and irrigation purposes on both streams.

We would appreciate any comments you may have or any information regarding approvals or authorizations required by your agency.

Sincerely,

Michael W. Baum
President & Gen. Mgr.

MWB/re
Enclosure:
May 18, 1992

U.S. Fuel Company
Attn: Michael W. Baum, President and General Manager
P.O. Box A
Hiawatha, Utah 84527

Re: Mining and Reclamation Permit

Dear Mike:

In response to your recent letter, please be advised that this Division would only be concerned with your reclamation work if it pertains to any approved stream alteration permits, and the water rights associated with your mining, domestic and agricultural uses. Depending on the approved reclamation plan, change applications may need to be filed on the water rights. Please be aware that should you cease mining, the mining and domestic water right for the Town of Hiawatha could be lost through a 5-year non-use period. To help alleviate this potential problem, U.S. Fuel may want to consider filing Extensions of Time to Resume Use, on certain of its water rights.

I appreciate the opportunity to comment during the mining and reclamation permit renewal process. If you have specific questions relating to any Stream Alteration activity or water rights management, please feel free to contact me.

Sincerely,

Mark P. Page
Regional Engineer

MPP/mjk
Mr. Timothy Provan, Director
Utah Division of Wildlife Resources
1596 West North Temple
Salt Lake City, Utah 84116

Dear Mr. Provan:

United States Fuel Company, a coal mining company located approximately 15 miles south west of Price, Utah, is currently in the process of renewing its Mining and Reclamation Permit with the Utah Division of Oil, Gas and Mining. Permit application regulations require that we obtain comments from Utah and local government agencies which would have to initiate, implement, approve or authorize the proposed use of the land following reclamation.

A map showing the permit area is enclosed. The land within the permit area is owned by U. S. Fuel Company and the U. S. Government (Forest Service). There are no other surface land owners. All disturbed surface areas related to U. S. Fuel’s mining operations are on private land owned by U. S. Fuel Company. United States Fuel Company holds Federal Lease rights to coal lands within the Federal portion of the permit.

U. S. Fuel Company’s reclamation plan calls for removal of mining related surface structures, backfilling and grading, topsoil distribution and revegetation of disturbed sites.

The permit area and surrounding lands are classified as recreation, forestry, grazing and mining lands under local county zoning ordinances.

United States Fuel Company’s post mining land use plan is to restore the land for future use as wildlife habitat, livestock grazing and outdoor recreation. Towards this end, the access roads leading to the mine sites are not proposed to be reclaimed but will be left in place to support these activities. U. S. Fuel owns ranch sites and agricultural lands outside the permit boundary on
Miller Creek and Cedar Creek. U. S. Fuel also holds water rights for industrial, municipal, domestic, livestock watering and irrigation purposes on both streams.

We would appreciate any comments you may have or any information regarding approvals or authorizations required by your agency.

Sincerely,

Michael W. Baum
President & Gen. Mgr.

MWB/re
Enclosure:
April 21, 1992

Mr. Michael W. Baum
United States Fuel Company
P.O. Box A
Hiawatha, Utah 84527

Dear Michael:

In response to your letter of March 19, the Division of Wildlife Resources (DWR) has reviewed the application for the renewal of your permanent program mining permit for the Hiawatha Mines Complex. We appreciate your request for input. DWR has the following concerns, comments and recommendations concerning this permit.

The permit area provides habitat for a variety of wildlife including deer, elk, moose, raptors and a number of nongame species. DWR is concerned about the effect of subsidence on wildlife species. Our two main concerns are loss of habitat for species dependent on cliffs or similar topographic features and modification or destruction of critical water sources.

Golden eagles are dependent on cliffs and outcrops as nesting areas. Escarpment failures due to subsidence can destroy nest sites. There are seven golden eagle nests within the permit area. Four of these nests were active within the past five years. DWR recommends that these nests be monitored to determine if they become active. If activity is noted, measures should be taken to prevent damage to the nests. The area contains potential habitat for a number of other raptor species. Monitoring should also determine if active nest sites of these species are established and if potential damage from subsidence could occur.

Subsidence can result in the modification of flows at seeps, springs, perennial streams and even intermittent channels. Such an impact can have serious consequences on the available water that the area's wildlife use as drinking water. Ultimately, flow reductions result in a decreased carrying capacity for terrestrial and aquatic wildlife. Subsidence occasionally results in increased flows. While this may appear as a benefit, in actuality, it could mean that some other aquatic system has lost flows. DWR supports the philosophy that each and every seep, spring and stream is a critical resource for wildlife.
Riparian areas support a high diversity of wildlife species. Reduction in perennial stream flows will likely cause a degradation of riparian habitat. DWR recognizes riparian areas as critical wildlife habitat and such a loss would be harmful.

Most wildlife species have relatively small home ranges. Loss of habitat, terrestrial or aquatic, due to subsidence results in wildlife being displaced from their home range. This often forces them into areas already occupied by other individuals. This results in mortality due to direct conflict or over-utilization of resources. Loss of habitat will require mitigation.

An opportunity for the enhancement of wildlife habitat in conjunction with mining activities exists in the case of many species of bats. Species of bats found in Utah, including Townsend's big-eared bat, little brown bat, long-eared myotis, fringed bat, big brown bat, Mexican free-tailed bat and most other bat species will use mine tunnels and portals as hibernation and roost sites. Mines can provide important hibernation and roost sites that may not be available in natural habitats. These man-made roosts may be critical to the survival of some bat species. Sixty-four percent of all U.S. bat species are known to roost in mines. It is important that mine tunnels and portals be inspected for use by bats. As mine reclamation is planned and carried out, use of tunnels by bats should be considered and opportunities for wildlife habitat enhancement be considered. Developing bat roost sites in tunnels represents an alternative to be used in mitigation. Rather than sealing mine portals, gates which allow bats to access roost sites, while at the same time preventing human intrusion, could be used to preserve these crucial roosts. Programs to enhance and protect bat species using mines in California have been very successful. DWR supports any program which enhances wildlife habitat. This is a chance for mining operations to participate in such habitat enhancement. DWR is currently working on recommendations and guidelines for survey and enhancement programs dealing with this issue. These will be provided to the Division of Oil, Gas and Mining for incorporation into future plans.

Monitoring of seeps, springs and streams should continue during operation to assess water flows and determine if depletion is occurring. In the event that subsidence does occur and flows of seeps, springs or streams are affected, mitigation is anticipated. An impact would be deemed substantial if daily flows were reduced by 50 percent or more. Mitigation would then include measures designed to replace lost water. Such measures could include sealing of cracks or construction of other water sources such as
guzzlers. Guzzlers are water catchments that utilize a collection surface which channels water into a storage basin. This water is then available for use by wildlife. These water catchment structures should be designed according to DWR standards to allow passage and safety of wildlife species, while excluding livestock.

DWR supports U.S. Fuel Company's reclamation plan to develop the area for wildlife habitat. Reclamation must not only include revegetation, but also maintenance of water sources. Enclosed is our recommendation for seed bed preparation, habitat specific lists of seeding rates and appropriate species that should be used in the reclamation process.

DWR provides recommendations for approval of permit renewals and guidelines for compliance with wildlife laws through the Division of Oil, Gas and Mining. Any stipulations from our agency concerning approval or authorization would be channeled through the Division of Oil, Gas and Mining. Concerns dealing with threatened or endangered wildlife or federally protected wildlife, such as golden eagles, require consultation with the U.S. Fish and Wildlife Service. DWR has made it a practice to work closely with area coal mines. We appreciate your letter and your request for our input. If we can be of further assistance or if you have any questions, feel free to contact Ken Phippen, Regional Habitat Manager (637-3310).

Sincerely,

Timothy H. Provan
Director

Enclosures
Recommended guidelines for seedbed preparation and planting techniques within the SUBLARCOME ecological association.

A. Seedbed Preparation: (1) Disturbed areas should be double ripped. (2) Fertilizer (0-16-8) at a rate of 50 lb/acre should be disked into the topsoil mass prior to seeding. (3) Where possible, the grass segment of the seed mix should be drilled. The remainder of the seed mix should be hydrosprayed in a slurry containing tackifier (60 lb/acre) and wood fiber mulch (400 lb/acre). Seed mix applied by hydrospray technique should be increased by 1.5 times. This first application containing the seed should be immediately followed by another hydrosprayed slurry to incorporate more tackifier (60 lb/acre), more wood fiber mulch (2,000 lb/acre), and nitrogen fertilizer (33-0-0 distributed at a rate of 50 lb/acre). (3a) If a hydrospray technique is not utilized, the entire seed mix should be drilled. (3b) If broadcast, the seed mix should be doubled, spread and covered through use of a harrow or chain. (4) After seed application (3a or 3b), nitrogen fertilizer (33-0-0 distributed at a rate of 50 lb/acre) should be broadcast and an acceptable mulch should be applied at a rate of 2,000 lb/acre to protect the raw soil from erosion and to conserve moisture. Mulch should be held in place by tackifying, crimping, or netting. (5) Seeding should occur following a permanent killing frost which is usually after October 1.

B. Nursery Stock or Transplants: Planting of nursery or transplant stock should occur in the spring when soil moisture is greatest. Nursery stock should be planted after dormancy breaks; greatest success for transplant stock is achieved during dormancy. Shoots spaced 2, 3, 4, 6, 10, 12, 13, and 15 feet apart will achieve 10888, 4840, 2722, 1210, 436, 302, 258, and 193 plants per acre, respectively. A goal of 60% canopy cover should be reached. All plantings need to have the soil compacted around the roots.

C. Cuttings of Woody Riparian Species (willow, cottonwood, etc.): Cut stems at a length of 12 to 18 inches from 1-3 year old local, wild stock (0.5 to 1.0 inch diameter) with a 30-45° angle at the basal end. Lateral branches and leaves must be removed. Cuttings can be immediately transplanted or cold stored until the ground thaws. The basal end can be dipped in indolebutyric acid prior to planting to aid in root formation. When planting, all but one inch of the stem should be extended into the moist soil to a depth of the water table. This will protect recreators from inadvertent injury. Dormant logs (1.5 to 6 inches diameter and up to 20 feet long) can also be used for many species as long as the water table is reached.

D. Bare-root or Containerized Plants: Prior to planting, bare-root or containerized plants should be stored at 34-39° F for one week to "harden." Planting should be in an adequately sized hole to insure that roots are well distributed and extending full length into the hole. For both bare-root and containerized stock, care needs to be taken that the root hairs are not allowed to dry. The entire edge of the root mass for containerized stock should be scarified to alleviate root binding.

E. Plugs: Plugs of vegetation can be excavated with a shovel or front-end loader. They should be handled such that moist soil remains packed firmly around the roots. A similar sized hole needs to be excavated and the plug planted.

F. Rhizomic Plants: Woody plants with interconnected root stock should be located and excavated intact. The tops of the plants should be removed so that only one remains. Connecting roots should be aligned vertically and buried. In the instance of herbaceous plants, the rhizomes can be harvested with a front-end loader, and distributed with a manure spreader. A one inch layer of top soil should be compacted over plantings.
Table 1. Revegetation prescription for disturbed areas within the PINYON/JUNIPER ecosystem in the SUBMONTANE ecological association.

<table>
<thead>
<tr>
<th>Plant Material</th>
<th>Pounds of Pure Live Seed/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GRASS SPECIES</strong>:&lt;br&gt; Smooth brome (<em>Bromus inermis</em>)</td>
<td>1.0 (southern variety)</td>
</tr>
<tr>
<td>Hard sheep fescue (<em>Festuca ovina</em>)</td>
<td>0.5</td>
</tr>
<tr>
<td>Intermediate wheatgrass (<em>Agropyron intermedium</em>)</td>
<td>1.0</td>
</tr>
<tr>
<td>Russian wildrye (<em>Elymus junceus</em>)</td>
<td>1.0</td>
</tr>
<tr>
<td>Indian ricegrass (<em>Stipa hymenoides</em>)</td>
<td>1.0</td>
</tr>
<tr>
<td>Palute orchardgrass (<em>Dactylis glomerata</em>)</td>
<td>0.5</td>
</tr>
<tr>
<td>Pubescent wheatgrass (<em>Agropyron dasystachyum</em>)</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>FORB SPECIES</strong>:&lt;br&gt; Northern sweetvetch (<em>Hedysarum boreale</em>)</td>
<td>1.0 (Out of hull)</td>
</tr>
<tr>
<td>Alfalfa (<em>Medicago sativa</em>)</td>
<td>1.0</td>
</tr>
<tr>
<td>Small burnet (<em>Sanguisorba minor</em>)</td>
<td>1.0</td>
</tr>
<tr>
<td>Yellow sweetclover (<em>Heliotropium officinale</em>)</td>
<td>1.0</td>
</tr>
<tr>
<td>Palmer penstemon (<em>Penstemon palmeri</em>)</td>
<td>0.5</td>
</tr>
<tr>
<td>Lewis flax (<em>Linum levisii</em>)</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>SHRUB AND TREE SPECIES</strong>:&lt;br&gt; Wyoming big sagebrush (<em>Artemisia tridentata wyomingensis</em>)</td>
<td>0.25 (20% purity)</td>
</tr>
<tr>
<td>Basin big sagebrush (<em>Artemisia tridentata tridentata</em>)</td>
<td>0.25 (20% purity)</td>
</tr>
<tr>
<td>Fourwing saltbush (<em>Atriplex canescens</em>)</td>
<td>1.0</td>
</tr>
<tr>
<td>Winterfat (<em>Eurotia lanata</em>)</td>
<td>1.0</td>
</tr>
<tr>
<td>Forage kochia (<em>Kochia prostrata</em>)</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>NURSERY OR TRANSPLANT STOCK</strong>:&lt;br&gt; Fourwing saltbush (<em>Atriplex canescens</em>)</td>
<td>STEMS/ACRE (SPACING)</td>
</tr>
<tr>
<td>True mountainmahogany (<em>Cercocarpus montanus</em>)</td>
<td>Plant 545 of each species per acre</td>
</tr>
<tr>
<td>Utah serviceberry (<em>Amelanchier utahensis</em>)</td>
<td>randomly placed 4 feet apart to</td>
</tr>
<tr>
<td>Common chokecherry (<em>Prunus virginiana</em>)</td>
<td>reach a goal of 2,722 stems/acre.</td>
</tr>
<tr>
<td>Forage kochia (<em>Kochia prostrata</em>)</td>
<td></td>
</tr>
</tbody>
</table>

1 Note attachment: Recommended guidelines for seedbed preparation and planting techniques in the SUBMONTANE ecological association.


3 Alternate forb species: Arrowleaf balsamroot (*Balsamorhiza sagittata*), Pacific aster (*Aster chilensis*), Bouncingbet (*Saponaria officinalis*), Gooseberryleaf globemallow (*Sphaeralcea grossulariifolia*)

4 Alternate shrub and tree species: Mountain big sagebrush (*Artemisia tridentata vaseyana-low elevation*), Black sagebrush (*Artemisia nova*), White rubber rabbitbrush (*Chrysothamnus nauseosus hololeucus*), True mountainmahogany (*Cercocarpus montanus*), Curleaf mountainmahogany (*Cercocarpus ledifolius*), Squaw-apple (*Peraphyllum ramosissimum*), Cliffrose (*Purshia mexicana*)

5 Alternate nursery or transplant stock species: Common snowberry (*Symphoricarpus albus*), Cliffrose (*Purshia mexicana*), Green Mormon-tea (*Ephedra viridis*), Nevada Mormon-tea (*Ephedra nevadensis*)

6 This species should not be covered. It should be hydrosprayed in the seed mix slurry or broadcast over the surface after drilling or covering of other seed and before application of mulch.
Table 1. Revegetation prescription for disturbed areas within the SAGEBRUSH/GRASS ecosystem in the SUBMONTANE ecological association.1

<table>
<thead>
<tr>
<th>Plant Material</th>
<th>Pounds of Pure Live Seed/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GRASS SPECIES</strong>2:</td>
<td></td>
</tr>
<tr>
<td>Needle-and-thread grass (Stipa comata)</td>
<td>1.0</td>
</tr>
<tr>
<td>Intermediate wheatgrass (Agropyron intermedium)</td>
<td>1.0</td>
</tr>
<tr>
<td>Pubescent wheatgrass (Agropyron intermedium trichophorum)</td>
<td>1.0</td>
</tr>
<tr>
<td>Western wheatgrass (Agropyron smithii)</td>
<td>1.5</td>
</tr>
<tr>
<td>Russian wildrye (Elymus junceus)</td>
<td>1.0</td>
</tr>
<tr>
<td>Indian ricegrass (Stipa hystenosides)</td>
<td>1.0</td>
</tr>
<tr>
<td>Smooth brome (Bromus inermis)</td>
<td>1.0 (southern variety)</td>
</tr>
<tr>
<td><strong>FORB SPECIES</strong>3:</td>
<td></td>
</tr>
<tr>
<td>Alfalfa (Medicago sativa)</td>
<td>1.0 (Ladak, Nomad, Spreader)</td>
</tr>
<tr>
<td>Yellow sweetclover (Melilotus officinalis)</td>
<td>1.0</td>
</tr>
<tr>
<td>Small burnet (Sanquisorba minor)</td>
<td>0.5</td>
</tr>
<tr>
<td>Lewis flax (Linum lewisii)</td>
<td>1.0</td>
</tr>
<tr>
<td>Palmer penstemon (Penstemon palmeri)</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>SHRUB AND TREE SPECIES</strong>4:</td>
<td></td>
</tr>
<tr>
<td>Basin big sagebrush (Artemisia tridentata tridentata)</td>
<td>0.25 (20% purity)</td>
</tr>
<tr>
<td>Mountain big sagebrush (Artemisia tridentata vasevana)</td>
<td>0.25 (20% purity)</td>
</tr>
<tr>
<td>Winterfat (Eurotia lanata)</td>
<td>1.0</td>
</tr>
<tr>
<td>Antelope bitterbrush (Purshia tridentata)</td>
<td>1.0</td>
</tr>
<tr>
<td>White rubber rabbitbrush (Chrysanthemum nauseosus hololeucus)</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>NURSERY OR TRANSPLANT STOCK</strong>5:</td>
<td></td>
</tr>
<tr>
<td>Basin big sagebrush (Artemisia tridentata tridentata)</td>
<td>0.25 (20% purity)</td>
</tr>
<tr>
<td>Utah serviceberry (Amelanchier utahensis)</td>
<td>1.0</td>
</tr>
<tr>
<td>Common chokecherry (Prunus virginiana)</td>
<td>1.0</td>
</tr>
<tr>
<td>Forage-kochia (Kochia prostrata)</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>14.5</td>
</tr>
</tbody>
</table>

Note attachment: Recommended guidelines for seedbed preparation and planting techniques in the SUBMONTANE ecological association.

2Alternate grass species: Tall wheatgrass (Agropyron elongatum), Bluebunch wheatgrass (Agropyron spicatum), Basin wildrye (Elymus cinereus), Alkali sacaton (Sporobolus airoides), Green needlegrass (Stipa viridula), Paiute orchardgrass (Dactylis glomerata), Slender wheatgrass (Agropyron trachycaulum)

3Alternate forb species: Common sainfain (Onobrychis vicilifolia), Pacific aster (Aster chilensis), Northern sweetvetch (Hedysarum boreale), Arrowleaf balsamroot (Balsamorhiza sagittata), Bouncingbet (Saponaria officinalis), Showy goldeneye (Heliomeris multiflora)

4Alternate shrub and tree species: Utah serviceberry (Amelanchier utahensis), Fourwing saltbush (Atriplex canescens), Mexican cliffrose (Cowania mexicana), Black sagebrush (Artemisia nova)6, Silver sagebrush (Artemisia cana)6, Green Mormon-tea (Ephedra viridis)

5Alternate nursery or transplant stock species: Blue elderberry (Sambucus cerulea), Longflower snowberry (Symphoricarpus longiflorus), Squawbush (Rhus trilobata), Wyoming big sagebrush (Artemisia tridentata wyomingensis)

6This species should not be covered. It should be hydrosprayed in the seed mix slurry or broadcast over the surface after drilling or covering of other seed and before application of mulch.
March 19, 1992

Ms. Charlene V. McDougald  
Acting District Ranger  
Manti-LaSal National Forest  
Price Ranger District  
599 West Price River Drive  
Price, Utah 84501

Dear Ms. McDougald:

United States Fuel Company is currently in the process of renewing its Mining and Reclamation Permit with the Utah Division of Oil, Gas and Mining. Permit application regulations require that we obtain comments from owners of the surface of the permit area regarding the proposed use of the land following reclamation.

A map showing the permit area is enclosed. The land within the permit area is owned by U. S. Fuel Company and the U. S. Government (Forest Service). There are no other surface land owners. All disturbed surface areas related to U. S. Fuel's mining operations are on private land owned by U. S. Fuel Company. United States Fuel Company holds Federal Lease rights to coal lands within the Federal portion of the permit.

U. S. Fuel Company's reclamation plan calls for removal of mining related surface structures, backfilling and grading, topsoil distribution and revegetation of disturbed sites.

The permit area and surrounding lands are classified as recreation, forestry, grazing and mining lands under local county zoning ordinances.

United States Fuel Company's post mining land use plan is to restore the land for future use as wildlife habitat, livestock grazing and outdoor recreation. Towards this end, the access roads leading to the mine sites are not proposed to be reclaimed but will be left in place to support these activities. U. S. Fuel owns ranch sites and agricultural lands outside the permit boundary on
March 19, 1992

Land Use Planning Coordinator  
Utah Department of Natural Resources  
Division of State Lands and Forestry  
3 Triad Center, Suite 400  
Salt Lake City, Utah 84180

Dear Sir or Madam:

United States Fuel Company, a coal mining company located approximately 15 miles south west of Price, Utah, is currently in the process of renewing its Mining and Reclamation Permit with the Utah Division of Oil, Gas and Mining. Permit application regulations require that we obtain comments from Utah and local government agencies which would have to initiate, implement, approve or authorize the proposed use of the land following reclamation.

A map showing the permit area is enclosed. The land within the permit area is owned by U. S. Fuel Company and the U. S. Government (Forest Service). There are no other surface land owners. All disturbed surface areas related to U. S. Fuel’s mining operations are on private land owned by U. S. Fuel Company. United States Fuel Company holds Federal Lease rights to coal lands within the Federal portion of the permit.

U. S. Fuel Company’s reclamation plan calls for removal of mining related surface structures, backfilling and grading, topsoil distribution and revegetation of disturbed sites.

The permit area and surrounding lands are classified as recreation, forestry, grazing and mining lands under local county zoning ordinances.

United States Fuel Company’s post mining land use plan is to restore the land for future use as wildlife habitat, livestock grazing and outdoor recreation. Towards this end, the access roads leading to the mine sites are not proposed to be reclaimed but will be left in place to support these activities. U. S. Fuel owns ranch sites and agricultural lands outside the permit boundary on
Miller Creek and Cedar Creek. U. S. Fuel also holds water rights for industrial, municipal, domestic, livestock watering and irrigation purposes on both streams.

We would appreciate any comments you may have or any information regarding approvals or authorizations required by your agency.

Sincerely,

Michael W. Baum
President & Gen. Mgr.

MWB/re

Enclosure:
Memorandum

To: Center Administrator, OSM, Denver

Attention: Sarah Bransom

From: District Manager, Moab

Subject: Modification of Permanent Program Permit to Mine Application; U. S. Fuel's Hiawatha Complex

This office has received and reviewed the following items relating to subject modification:

1. Submittal of 05/14/84, Exhibits III-2C, 2D and 3E.

2. Submittal of 15/17/84, Submittal in Response to OSM Determination of Adequacy Letter (05/01/84).

3. Submittal of 06/01/84, Additional Information on Proposed Unit Loadout.

We do not have any comments on these modifications or the plan in general because 1) Surface facilities are located entirely on private estate with any impact on BLM managed lands adequately mitigated, 2) The Federal surface over the Federal coal leases is managed by the Forest Service, and 3) Review of the Resource Recovery and Protection Plan is by our State Office.

Your request for our review of the above specifically asked for our analysis of 1) Post-mining land use, 2) Coal recovery procedures, and 3) A final concurrence letter. For the reasons enumerated above, we do not have any comment on these items. For documentation purposes you may consider this as our "final concurrence letter".
APPENDIX IV-6

MOST RECENT AIR QUALITY APPROVAL ORDER
July 25, 1989

Robert Eccli  
United States Fuel Company  
P.O. Box A  
Hiawatha, Utah 84527

Dear Mr. Eccli:

Re: Approval Order for King #4 Coal Mine Surface Loadout Facilities Modification

The above-referenced project has been evaluated and found to be consistent with the requirements of the Utah Air Conservation Regulations (UACR) and the Utah Air Conservation Act. A 30-day public comment period was held and all comments received were evaluated. The conditions of this approval order reflect any changes to the proposed conditions which resulted from the evaluation of the comments received. This air quality approval order authorizes the project with the following conditions and failure to comply with any of the conditions may constitute a violation of this order:

1. United States Fuel Company, King #4 coal mine located 3.5 miles south of Hiawatha, Carbon County shall install, construct and operate the new surface facilities according to the information submitted in the notice of intent dated March 1, 1989.

2. The modified approved installations shall consist of only the following equipment located at the site:
   A. Scalper screen
   B. Hammer mill
   C. 100 ton storage silo
   D. 3 new conveyors
   E. Existing mine conveyors
   F. Existing 13,000 tons storage pile
   G. Existing reclaimed conveyor
   H. Existing loader/dozer

3. This approval order shall replace and void any previously issued approval order for the King #4 mine surface facilities.

4. Visible emissions from the following emission points shall not exceed the following values:
   A. All crushers - 15% opacity
   B. All screens - 10% opacity
   C. All conveyor transfer points - 10% opacity
   D. Conveyor drop points to storage piles - 20% opacity
   E. Haul roads, operations areas, disturbed areas, and storage piles - minimize emissions
   F. All other points - 20% opacity
Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9. Opacity observations of intermittent sources shall use procedures similar to Method 9, but the requirement for observations to be made at 15-second intervals over a 6-minute period shall not apply. The averaging time shall be the actual time interval over which visible emissions are observed. Any time interval with no visible emissions shall not be included.

5. The following production limits shall not be exceeded without prior approval in accordance with Section 3.1, UACR:

A. tons/hr 500
B. tons/yr 1,000,000

Compliance with the annual limitations shall be determined on a rolling monthly total. On the first day of each month a new 12-month total shall be calculated using the previous 12 months. Records of production shall be kept for all periods when the plant is in operation. Records of production shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request. Coal production shall be determined by State mining reports.

6. The existing paved haul road shall be properly maintained and cleaned to minimize fugitive emission.

7. All unpaved roads and other unpaved operational areas which are used by mobile equipment shall be water sprayed and/or chemically treated to reduce fugitive dust. Control is required at all times (24 hours per day every day) for the duration of the project/operation. The application rate of water shall be a minimum of 0.25 gallons per square yard, and shall be made at least once every two hours during all times the installation is in use unless daily rainfall exceeds .10 of an inch, the road is in a damp condition, or if it is covered with snow. If chemical treatment is to be used, the plan must be approved by the Executive Secretary. Records of water treatment shall be kept for all periods when the plant is in operation. The records shall include the following items:

A. Date
B. Number of treatments made, dilution ratio, and quantity
C. Rainfall received, if any, and approximate amount
D. Time of day treatments were made

Records of treatment shall be made available to the Executive Secretary upon request and shall include a period of two years ending with the date of the request. The on site haul road length shall not exceed 1.0 miles without prior approval in accordance with Section 3.1, UACR. The speed of vehicles on the haul road shall not exceed 20 miles per hour without prior approval in accordance with Section 3.1, UACR.
8. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

A. All crushers  
B. All screens  

The sprays shall operate whenever dry conditions warrant or as determined necessary by the Executive Secretary.

9. In addition to the requirements of this approval order, all provisions of 40 CFR 60, NSPS Subparts A and Y apply to this installation.

10. For sources which are subject to NSPS, visible emission observations which are performed during the initial compliance inspection shall consist of 30 observations of six minutes each in accordance with 40 CFR 60, Appendix A, Method 9. It is the responsibility of the owner/operator of the source(s) to supply these observations to the Executive Secretary. Emission points which are subject to NSPS shall include the following:

A. All crushers  
B. All screens  
C. All conveyor transfer points

11. The free moisture content of the coal shall be maintained at a value of no less than 5.0% by weight. The moisture content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

12. The storage piles shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary.

13. Eighteen months from the date of this approval order the Executive Secretary shall be notified in writing of the status of construction of this project unless the construction is complete and operation has commenced.

14. All installations and facilities authorized by this approval order shall be adequately and properly maintained.

15. The Executive Secretary shall be notified in writing upon startup of the installation, as an initial compliance inspection is required.

Any future modifications to the equipment approved by this order must also be approved in accordance with Section 3.1.1, UACR.
This approval order in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including the Utah Air Conservation Regulations.

"Allowable emissions" as defined in Section 1.12, UACR, for this source (the entire plant) are currently calculated at 8.8 tons/yr for particulate and 6.4 tons/yr for PM$_{10}$. These calculations are for the purposes of determining the applicability of PSD and nonattainment area major source requirements of the UACR. They are not to be used for purposes of determining compliance.

Sincerely,

[Signature]
F. Burnell Cordner, Executive Secretary
Utah Air Conservation Committee

FBC:LCB:slt

cc: EPA Region VIII, John Dale
Southeastern Utah District Health Department
HIAWATHA HOUSES AND STRUCTURES
FEDERAL HOUSING PROJECT

<table>
<thead>
<tr>
<th>STRUCTURE #</th>
<th>STRUCTURE CONDITIONS 1980</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>2</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>3</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>4</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>5</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>6</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>7</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>8</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>9</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>10</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>11</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>12</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>13</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>14</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>15</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>16</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>17</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>18</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>19</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>20</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>21</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>STRUCTURE #</td>
<td>STRUCTURE CONDITIONS 1980</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>22</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>23</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>24</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>25</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>26</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>27</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>28</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>29</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>30</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>100</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>105</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>Pierucci Building</td>
<td>Demolished Prior to 1980</td>
</tr>
<tr>
<td>Pierucci Building</td>
<td>Demolished Prior to 1980</td>
</tr>
</tbody>
</table>
### HIWATHA HOUSES AND STRUCTURES

<table>
<thead>
<tr>
<th>STRUCTURE #</th>
<th>STRUCTURE CONDITIONS 1980</th>
<th>STRUCTURE CONDITIONS 1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Mine Office</td>
<td>Good, Unaltered, Significant</td>
<td>Fair, 1997 Photo</td>
</tr>
<tr>
<td>2 - Store</td>
<td>Good, Alterations, Significant</td>
<td>Deteriorated, 1997 Photo</td>
</tr>
<tr>
<td>3 - Hall</td>
<td>Good, Alterations, Significant</td>
<td>Fair, 1997 Photo</td>
</tr>
<tr>
<td>4 - Service Station</td>
<td>Good, Alterations, Significant</td>
<td>Deteriorated, 1997 Photo</td>
</tr>
<tr>
<td>5 - Post Office</td>
<td>Good, Unaltered, Significant</td>
<td>Deteriorated, 1997 Photo</td>
</tr>
<tr>
<td>6</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>7 - Jail</td>
<td>Good, Unaltered, Significant</td>
<td>Good Condition - Structure seems sound</td>
</tr>
<tr>
<td>8 - Fire Station</td>
<td>Good, Unaltered, Not of the Historic Period</td>
<td>Fair, 1997 Photo</td>
</tr>
<tr>
<td>9</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>10 - Change House</td>
<td>Good, Alterations, Contributory</td>
<td>Deteriorated, unsafe foundation and roof, 1997 Photo</td>
</tr>
<tr>
<td>11 - Church</td>
<td>Good, Alterations, Significant</td>
<td>Interior demolition started, foundation unstable, 1997 Photo</td>
</tr>
<tr>
<td>12 - Dormitory</td>
<td>Good, Unaltered, Significant</td>
<td>* Deteriorated, 1997 Photo</td>
</tr>
<tr>
<td>14 - Depot</td>
<td>Deteriorated, Alterations, Significant</td>
<td>* Deteriorated, 1997 Photo</td>
</tr>
<tr>
<td>19</td>
<td>Good, Alterations, Significant</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>20</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
</tbody>
</table>

**Fair** - general structure was stable  
**Deteriorated - Unsafe**  
* Houses/dwellings have broken windows, interior vandalism, weather/wildlife damaged interiors, leaking roofs with ceiling damage, and deteriorating foundations and flooring.  
**Demolished/Moved** - Individuals were allowed to move houses/dwellings from the town site. Accurate records were not maintained as to which structures were moved, therefore it is unknown whether they were moved or demolished.
### HIAWATHA HOUSES AND STRUCTURES

<table>
<thead>
<tr>
<th>STRUCTURE #</th>
<th>STRUCTURE CONDITIONS 1980</th>
<th>STRUCTURE CONDITIONS 1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Site</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>22</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>24</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>26</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>28</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>30</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>32</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>34</td>
<td>Deteriorated, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>36</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>40 - Dwelling</td>
<td>Good, Alterations, Contributory</td>
<td>* Deteriorated, 1997 Photo</td>
</tr>
<tr>
<td>42 - Dwelling</td>
<td>Good, Alterations, Contributory</td>
<td>* Deteriorated, 1997 Photo</td>
</tr>
<tr>
<td>43 - Dwelling</td>
<td>Good, Alterations, Contributory</td>
<td>Fair - Modernized, inhabited until 1992, vandalism and weather damage, foundation and roof questionable - 1997 Photo</td>
</tr>
<tr>
<td>45</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>46 - Officials Cottage</td>
<td>Good, Alterations, Significant</td>
<td>* Deteriorated, 1997 Photo</td>
</tr>
</tbody>
</table>

Fair - general structure was stable  
Deteriorated - Unsafe  
* Houses/dwellings have broken windows, interior vandalism, weather/wildlife damaged interiors, leaking roofs with ceiling damage, and deteriorating foundations and flooring.  
Demolished/Moved - Individuals were allowed to move houses/dwellings from the town site. Accurate records were not maintained as to which structures were moved, therefore it is unknown whether they were moved or demolished.
HIAWATHA HOUSES AND STRUCTURES

<table>
<thead>
<tr>
<th>STRUCTURE #</th>
<th>STRUCTURE CONDITIONS 1980</th>
<th>STRUCTURE CONDITIONS 1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>47</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>48 - Dwelling</td>
<td>Good, Alterations, Contributory</td>
<td>* Deteriorated, 1997 Photo</td>
</tr>
<tr>
<td>49 - Dwelling</td>
<td>Good, Alterations, Contributory</td>
<td>* Deteriorated, 1997 Photo</td>
</tr>
<tr>
<td>50</td>
<td>Good, Alterations, Significant</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>51</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>52</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>53</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>54 - Dwelling</td>
<td>Good, Alterations, Contributory</td>
<td>* Dwelling Deteriorated, Roof Missing. Bomb Shelter/Root Cellar between Dwellings #54 and #52 in good shape. 1997 Photos</td>
</tr>
<tr>
<td>55</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>56 - Dwelling</td>
<td>Good, Alterations, Contributory</td>
<td>* Deteriorated, 1997 Photo</td>
</tr>
<tr>
<td>57</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>58 - Dwelling</td>
<td>Good, Alterations, Contributory</td>
<td>Deteriorated, Unsafe Foundation, Weather/Wildlife Damage, 1997 Photo</td>
</tr>
<tr>
<td>59</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>60 - Dwelling</td>
<td>Good, Alterations, Contributory</td>
<td>Deteriorated, Unsafe Roof, Weather/Wildlife Damage, 1997 Photo</td>
</tr>
<tr>
<td>61</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
</tbody>
</table>

Fair - general structure was stable
Deteriorated - Unsafe
* Houses/dwellings have broken windows, interior vandalism, weather/wildlife damaged interiors, leaking roofs with ceiling damage, and deteriorating foundations and flooring.

Demolished/Moved - Individuals were allowed to move houses/dwellings from the town site. Accurate records were not maintained as to which structures were moved, therefore it is unknown whether they were moved or demolished.
HIAWATHA HOUSES AND STRUCTURES

<table>
<thead>
<tr>
<th>STRUCTURE #</th>
<th>STRUCTURE CONDITIONS 1980</th>
<th>STRUCTURE CONDITIONS 1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>62</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>63</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>64</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>66</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>68</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>69</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>70</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>72</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>73</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>74</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>75</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>76</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
</tbody>
</table>

Fair - general structure was stable
Deteriorated - Unsafe
* Houses/dwellings have broken windows, interior vandalism, weather/wildlife damaged interiors, leaking roofs with ceiling damage, and deteriorating foundations and flooring.
Demolished/Moved - Individuals were allowed to move houses/dwellings from the town site. Accurate records were not maintained as to which structures were moved, therefore it is unknown whether they were moved or demolished.

INTEGRATED EFFECTIVE:
DEC 04 1998
UTAH DIVISION OF MINING AND OIL, GAS AND MINING
### HIAWATHA HOUSES AND STRUCTURES

<table>
<thead>
<tr>
<th>STRUCTURE #</th>
<th>STRUCTURE CONDITIONS 1980</th>
<th>STRUCTURE CONDITIONS 1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>77</td>
<td>Deteriorated, Unaltered, Contributory</td>
<td>Demolished</td>
</tr>
<tr>
<td>78 - Machine Shop</td>
<td>Contributory</td>
<td>Fair, Structure and Roof 1997 Questionable - 1997 Photo</td>
</tr>
<tr>
<td>79 - Warehouse</td>
<td>Contributory</td>
<td>Fair, Holes Between Wall and Floor Boards, Unsafe - 1997 Photo</td>
</tr>
<tr>
<td>80</td>
<td>Contributory</td>
<td>Demolished</td>
</tr>
<tr>
<td>81</td>
<td>Contributory</td>
<td>Demolished</td>
</tr>
<tr>
<td>82</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>83</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>84</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>Contributory</td>
<td>Demolished</td>
</tr>
<tr>
<td>86</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>86A</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>87</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>88</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>89</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>90</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>91</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>92</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
</tbody>
</table>

**Fair** - general structure was stable
**Deteriorated - Unsafe**
- Houses/dwellings have broken windows, interior vandalism, weather/wildlife damaged interiors, leaking roofs with ceiling damage, and deteriorating foundations and flooring.

**Demolished/Moved** - Individuals were allowed to move houses/dwellings from the town site. Accurate records were not maintained as to which structures were moved, therefore it is unknown whether they were moved or demolished.
HIAWATHA HOUSES AND STRUCTURES

<table>
<thead>
<tr>
<th>STRUCTURE #</th>
<th>STRUCTURE CONDITIONS 1980</th>
<th>STRUCTURE CONDITIONS 1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>94</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>95</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>96</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>97</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>98</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>99</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>211</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>212</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>213</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>214</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>215</td>
<td>Good, Unaltered, Contributory</td>
<td>Dwelling Demolished/Moved, Deteriorating Wood Shed/Garage Standing in 1997</td>
</tr>
<tr>
<td>216</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>217</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>218</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>219</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
</tbody>
</table>

Fair - general structure was stable
Deteriorated - Unsafe
* Houses/dwellings have broken windows, interior vandalism, weather/wildlife damaged interiors, leaking roofs with ceiling damage, and deteriorating foundations and flooring.

Demolished/Moved - Individuals were allowed to move houses/dwellings from the town site. Accurate records were not maintained as to which structures were moved, therefore it is unknown whether they were moved or demolished.
# HIAWATHA HOUSES AND STRUCTURES

<table>
<thead>
<tr>
<th>STRUCTURE #</th>
<th>STRUCTURE CONDITIONS 1980</th>
<th>STRUCTURE CONDITIONS 1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>220</td>
<td>Good, Alterations, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>221</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>222</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>223</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>224</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>225</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>227</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>229</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>231</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>233</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>235</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>236</td>
<td>Excellent, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>237</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>238</td>
<td>Excellent, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>239</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
</tbody>
</table>

- **Fair** - general structure was stable
- **Deteriorated** - Unsafe
  - Houses/dwellings have broken windows, interior vandalism, weather/wildlife damaged interiors, leaking roofs with ceiling damage, and deteriorating foundations and flooring.
- **Demolished/Moved** - Individuals were allowed to move houses/dwellings from the town site. Accurate records were not maintained as to which structures were moved, therefore it is unknown whether they were moved or demolished.

---

**INTEGRATING EFFECTIVE:**

**DEC 04 1998**

**UTAH DIVISION OIL, GAS AND MINING**

---

**INTEGRATING EFFECTIVE:**

**DEC 04 1998**

**UTAH DIVISION OIL, GAS AND MINING**
### HIAWATHA HOUSES AND STRUCTURES

<table>
<thead>
<tr>
<th>STRUCTURE #</th>
<th>STRUCTURE CONDITIONS 1980</th>
<th>STRUCTURE CONDITIONS 1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>240</td>
<td>Excellent, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>241</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>243</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>245</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>247</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>249</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>250</td>
<td>Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>251</td>
<td>Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>252</td>
<td>Demolished Prior to 1980</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>253</td>
<td>Good, Unaltered, Contributory</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>254</td>
<td>Demolished Prior to 1980</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>256</td>
<td>Demolished Prior to 1980</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>258</td>
<td>Demolished Prior to 1980</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>260</td>
<td>Demolished Prior to 1980</td>
<td>Demolished/Moved</td>
</tr>
<tr>
<td>302</td>
<td>Demolished Prior to 1980</td>
<td>Demolished/Moved</td>
</tr>
</tbody>
</table>

Fair - general structure was stable
Deteriorated - Unsafe
* Houses/dwellings have broken windows, interior vandalism, weather/wildlife damaged interiors, leaking roofs with ceiling damage, and deteriorating foundations and flooring.

Demolished/Moved - Individuals were allowed to move houses/dwellings from the town site. Accurate records were not maintained as to which structures were moved, therefore it is unknown whether they were moved or demolished.

**INCORPORATED EFFECTIVE:**

DEC 04 1998

Utah Division Oil, Gas and Mining
# HIWATHA HOUSES AND STRUCTURES

<table>
<thead>
<tr>
<th>STRUCTURE #</th>
<th>STRUCTURE CONDITIONS 1980</th>
<th>STRUCTURE CONDITIONS 1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>304</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>306</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>308</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>312</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>314</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>316</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>427 Fan House #</td>
<td>Deteriorated, Unaltered, Significant</td>
<td>Deteriorated</td>
</tr>
<tr>
<td>429 Hoist House #</td>
<td>Deteriorated, Unaltered, Significant</td>
<td>Deteriorated</td>
</tr>
<tr>
<td>503</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>509</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>510</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>511</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>512</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>513</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>514</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>515</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>516</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>517</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
<tr>
<td>519</td>
<td>Demolished Prior to 1980</td>
<td></td>
</tr>
</tbody>
</table>

Fair - general structure was stable
Deteriorated - Unsafe
* Houses/dwellings have broken windows, interior vandalism, weather/wildlife damaged interiors, leaking roofs with ceiling damage, and deteriorating foundations and flooring.
Demolished/Moved - Individuals were allowed to move houses/dwellings from the town site. Accurate records were not maintained as to which structures were moved, therefore it is unknown whether they were moved or demolished.

# Location not shown on drawing provided, but survey description provided in SHPO study.
The Hiawatha Mines Complex is located on the east side of the Wasatch Plateau in central Utah, about 15 miles southwest of Price, in Carbon and Emery Counties (Figure 1). The life-of-mine area encompasses 19,211 acres and is located within: T. 15 S., R. 7 E., SLM, Sections 13, 24, 25, 36; T. 15 S., R. 8 E., SLM, Sections 17-21, 26-35; T. 16 S., R. 7 E., SLM, Sections 1, 12, 13; and T. 16 S., R. 8 E., SLM Sections 3-11, 15-22 (Figure 2). In this area, approximately 5,726 acres (approximately 30 percent) of Federal coal are leased by United States Fuel Company (U.S. Fuel). The Federal coal leases are: SL-025431 (2,370.26 acres), SL-069985 (2,356.09 acres), and the combined leases U-058261 and U-026583 (1,000 acres). All of the leases are contained within the life-of-mine area. Most of the remainder of the coal in the life-of-mine area (9,833 acres) is owned by U.S. Fuel.

The Surface Mining Control and Reclamation Act (SMCRA) permit area includes 12,605 acres in T. 15 S., R. 7 E., SLM, Sections 13, 24, 25, 36; T. 15 S., R. 8 E., SLM, Sections 17-21, 26-35; T. 16 S., R. 8 E., SLM, Sections 3-6, 8, 9. The mining plan area consists of the 2,543 acres of Federal coal within the permit area. Some portion of each Federal lease is in the mining plan area, although each also extends outside the permit area.

The Hiawatha Mines Complex is a consolidation of the original King, Hiawatha, Black Hawk, and Mohrland coal mines, which began operating in the early 1900's. U.S. Fuel was organized in 1915 and began operation in 1916, when it took over the properties of the Consolidated Fuel Company, Castle Valley Coal Company, and Black Hawk Coal Company, all of which are located within the current permit boundary. The current 5-year permit application applies to three underground mines (King 4, 5, and 6) which are existing operations. Mining will remove coal from the A (King 4 and 5), B (King 4, 5, and 6), and Hiawatha (King 6) seams of the Blackhawk Formation. All coal is currently shipped by rail from the town of Hiawatha to an electrical generating plant in Nevada and to military facilities in the northwestern states.

Approval of the mining plan by the Assistant Secretary for Land and Minerals Management will provide for mining and reclamation activities in the mining plan area. Approval of the permit application package and issuance of the SMCRA permit by the Office of Surface Mining (OSMRE) will allow mining and reclamation activities within the permit area for the 5 year permit term (1985-1990). The SMCRA permit is subject to successive renewals, but the applicant must submit permit application packages to extend the mining and reclamation operations into areas outside the permit area. Expansion of such operations into Federal coal outside the approved permit area will require Secretarial approval for plan modification.
Miller Creek and Cedar Creek drainages are the major perennial stream systems present. However, neither drainage supports fish populations. Cedar Creek supports an aquatic invertebrate community. There is no information on the existence of aquatic life in Miller Creek.

The permit area contains approximately 8,305 acres of critical deer and elk winter range, 3,335 acres of high-priority deer and elk summer range, and 1,017 acres of high-priority elk winter range. Past and current mining activities (surface disturbance) have already affected the critical and high-priority deer and elk winter ranges.

Springs and seeps are scattered throughout the area and provide an important habitat feature for many wildlife species. Riparian habitats are restricted to the narrow floodplains of major streams like Miller and Cedar Creeks. Riparian woodlands constitute about 1.4 percent of the permit area.

The golden eagle, great horned owl, and American kestrel are probably the most common raptors in the permit area. No known active nest or roost sites are present. The bald eagle and American peregrine falcon may occasionally visit the area. There are no known occurrences of threatened or endangered species or designated critical habitats present in the permit area.

Land Use

Land uses in the permit area include mining, logging, livestock grazing, wildlife habitat, watershed, oil and gas exploration, and recreation. Most of these uses have existed since the early 1900's and are expected to continue without disruption by continued mining at the Hiawatha complex.

Cultural Resources

The cultural resources of the Hiawatha complex impact areas have been partially inventoried. To date, no historic or archaeological sites have been recorded within the permit area. The applicant has agreed to provide an historical background study of the town of Hiawatha and to complete a pedestrian inventory of proposed direct impact areas associated with the processing plant, waste disposal sites, and substitute topsoil locations. The applicant has proposed measures to ensure that no adverse effects to any significant cultural sites which may be located within the permit area will occur as a result of mining operations. The Utah State Historic Preservation Officer (SHPO) has concurred with OSMRE's finding of no adverse effect for the project. Since the SHPO letter of 7/9/84 was written, the permit area covered by the Hiawatha mine permit application has been changed, and none of the 3 sites mentioned in the letter are included in the proposed permit area.

Transportation

The permit area is accessible on Utah Highway 122 and on paved haul roads up the Middle Fork and the South Fork of Miller Creek. The town of Hiawatha is the terminal point of Utah Highway 122 and the lower portions of the haul roads also receive use by the public. The haul roads also provide access to water diversion, storage and service facilities for the potable water for the town of Hiawatha. Run-of-mine coal is hauled by truck to the processing plant site in the town of Hiawatha. There the coal is loaded on rail cars for shipment over the Utah Railroad system.
Figure 1
AREA MAP
HIWATHA MINES COMPLEX

SCALE IN MILES
EFFECTIVE:
DEC 04 1998

Huntington

Wild Catita
and
North

Cedar

Creek

Huntington

Creek

NORTH

0 1 2 4
Figure 2
HIWATHA MINES COMPLEX

LEGEND

- SMCRA PERMIT BOUNDARY
- AREA OF MINING PLAN APPROVAL
- LIFE OF MINE BOUNDARY
- FEDERAL LEASE BOUNDARY

INTEGRATED EFFECTIVE:
EFFECTIVE: 12/31/1998

Utah Division Oil, Gas, and Mining

DO97A
FINAL REPORT
CULTURAL RESOURCE INVENTORY OF THE
U.S. FUEL CEDAR CREEK MINE EXPANSION,
EMERY COUNTY, UTAH

by
Asa S. Nielson
and
David Merrill

Prepared for
United States Fuel Company
Hiawatha, Utah

5 July 1983

Utah State Antiquities Permit Number 879
Emery County
which fed it onto some shaking screens in the tipple. Three grades of coal were made the first year (State of Utah 1911). Castle Valley Coal also installed a power plant with three boilers to furnish electricity for the mining machines and lighting, and a Stevens fan for ventilation.

Across from the tipple the company began the construction of a community to house the miners. A large mercantile store and mine office, fourteen residences, two nationality boarding houses and numerous tents were erected the first year. Perhaps the major effort during the 1909-1910 period was the construction of an eight-mile extension to the Southern Utah Railroad terminus near Hiawatha. The first coal shipments began in September 1910 (Salt Lake Mining Review, June 30, 1911).

The Castle Valley Coal Company called its mine at Mohrland the King Mine, and its product was known throughout the West as King Coal. In 1911 the company expanded its operations with the construction of a second tipple and the improvement of the tram system. The Salt Lake Mining Review describes how Mohrland had grown by 1911:

The town of Mohrland is located near the tipple at the southern terminal of the Castle Valley Railroad. This is a pretty little settlement containing from 75 to 100 modern four-room cottages and cabins for the use of company employees. There are also boarding and bunk houses. The store of
Captain John Gunnison, although locating no archaeological sites, gave brief reference to historic Indian occupation around the Green River-Castle Valley area. The first actual archaeological sites found in the area were reported by the John W. Powell expeditions of 1869 and 1871, who recorded ruins somewhere in the Chandler Creek vicinity (Dellenbaugh 1926), and other sites within the San Rafael River area, from which collections were taken for the Smithsonian (Beaman 1874; Powell 1875). Fragments of pottery were also located near Bowknot Bend (Dellenbaugh 1926).

Following these initial discoveries, no record is made of further research or finds until the 1929-1930 Claflin-Emerson expedition, during which several sites were noted (Gunnerson 1969; Morss 1931). In the following 20 years surveys were carried out by Morss in the Upper Fremont River area, Black Dragon Canyon and Temple Wash (Morss 1931); by Henry Roberts in the Muddy River and Horseshoe (Barrier) Canyon areas (including some excavations) (Gunnerson 1969; Morss 1931); by both Scott and Leh in Range Creek Canyon (Leh 1936); by Gaumer in Desolation Canyon and on the West Tavaputs Plateau (Gaumer 1937, 1939); and by Reagan (location not known) (Reagan 1935).

During the 1950s the University of Utah carried out...
United States Fuel Company
Cedar Creek Mine Expansion

extensive surveys in the Emery County area, locating sites in the Range, Last Chance, Qu Ritchupah, Muddy, Ivie and Ferron Creek areas. In all, 49 sites were recorded. In addition, excavations were carried out at the Silverhorn Site (Gunnerson 1956), at Snake Rock Village and the Round Spring Site (Gunnerson 1957) and at the Poplar Knob and Old Woman Sites (Taylor 1957).

Recent work has been carried out in the area by several organizations. Besides numerous surveys (Rauch 1981), the University of Utah has conducted several significant excavations which have greatly expanded the archaeological data base for the region. These include Clyde's Cavern (Wylie 1971), Windy Ridge, Crescent Ridge and Power Pole Sites (Madsen 1975b), Innocents Ridge (Schroedl and Hogan 1975), Fallen Woman, Old Road and Ivie Ridge Sites (Wilson and Smith 1976) and Sudden Shelter (Jennings, Schroedl and Holmer 1980).

Brigham Young University has surveyed extensively in the Castle Valley area (Berge 1973; Berge and Benson 1977; Berge and Nielson 1977; Berge and Spencer 1977), as has the Museum of Northern Arizona (Keller 1975a–d, 1976), Southern Utah State College (Dykman and Thompson 1976) and various agencies, including the Bureau of Land Management, U.S. Army, and the U.S. Forest Service.
Forest Service and the Antiquities Section of the Utah Division of State History. The latter two agencies have also conducted important excavations at Joes Valley Alcove (DeBloois, unpublished) and Pint-Size Shelter (Lindsay and Lund 1976), respectively.

Hauck (1979) presents a synthesis of research and sample survey in Emery County up to 1977, as does Sargent (1977). Rauch (1981) and Cook (1980) cover much of the work which has occurred since that time. These sources may be consulted for further information on previous archaeological work in the area.

More specific to the mine area, Hauck (1979) reported surveys to the west, but recorded no sites that will be affected by the USF expansion. Nielson (1982) and Juell (1982) completed surveys for the Anaconda Minerals-Beaver Creek Coal Mine Permit about 5 km (3.5 miles) southwest of Mohrland. One site, the Bear Creek Rockshelter (42EM 1572), was tested for significance (Nielson and Schleisman 1982). This shelter demonstrated sporadic use of the rugged region near Mohrland by Archaic and Formative (Fremont) groups. Occasional finds of prehistoric and historic artifacts suggested light use of the area by prehistoric hunters and historic grazing and mining activity.
Several prehistoric sites have been recorded east of the mine expansion area. Most consist of small lithic scatters of camps, but one (42EM 965) is a very large significant Formative Fremont habitation (Blaine Miller 1983, personal communication). This particular site is on land controlled by USF, but will not be directly affected by the proposed expansion. Current files checked in all of the various State and Federal agencies failed to reveal any recorded or known cultural resources or cultural resource projects within the proposed mine expansion area.

5.2 Methods

5.2.1 Present Objectives

This research has two specific goals. The first is to record all observed cultural resources and to assess their significance; the second is to provide clearly defined management recommendations to USF, based on the significance of the cultural resources and the nature of the proposed impacts to the cultural resources. These goals should combine to satisfy the various mandates which deal with immediate or future impacts caused by State- or Federally-licensed activities (see 5.1.2).
The mines in the area incorporated as "Hiawatha" were opened in the third phase of development in Carbon County's coal industry. The first coal vein opened was in the Pleasant Valley District (Scofield, Clear Creek and Winter Quarters, in the northwest part of Carbon County) where mining began around 1875. The second phase began with the opening of the mines at Castle Gate in the mid-1880's, and at Sunnyside in 1898. Coal from both of these fields was utilized largely for the production of coke, then in great demand at ore smelters throughout the West for the extraction of gold, silver and other heavy metals. The third phase of development began around 1907-08 in Kenilworth, just below Castle Gate, and at the border of Carbon and Emery Counties where Hiawatha, Black Hawk and Mohrland (in Emery County) were located.

This third phase began partly in response to a tremendous demand for coal, particularly for use in the metal industry. (There is some speculation that the proliferation of small, "independent" companies may have also been prompted by fears of trust-busting then commencing. The railroads of Utah, owners of most of the coal land at that time, were one of President Theodore Roosevelt's primary targets. Although perhaps not directly involved with the coal expansion, the railroads did not interfere with new development nor try to assume control, as they previously had.) The close connection between coal production and metal smelting was a major factor in the development of Hiawatha and governed its later growth.
The mines around Hiawatha opened before the town was built, in common with most mining developments. The earliest portals were driven in 1909 at what would later become West Hiawatha, and in 1910 at Black Hawk. An additional portal was opened in 1914 at West Hiawatha. These three mines formed the economic base of the area and gave reason for the development of the towns in greater Hiawatha.

Very little is known of the men who actually dug the initial tunnels, although their handiwork remains. A concrete portal with embedded date encircles each tunnel, and each Man Way is carefully labelled. Some of the earliest miners at Hiawatha were Italians, some driven out of Kenilworth after an altercation with Superintendent Tom Bell over weighing procedures. One of these, Pete Aiello (age 91), recalled that he, Louie Ravatsani and Carlo Romano were among the group that worked the first year at West Hiawatha and opened the mine at Black Hawk.

"Louie Ravatsani was a mason by trade, but they didn't have no other job (except coal digger). He was working in the mine. But they was a contractor over there by the name of Mr. Silvagni, that he found out he was stonemason, and he give him a job as stonemason."¹ Ravatsani may be responsible for much of the fine stone work still seen at Hiawatha, especially near the Black Hawk Portal (labelled "King Mine, 1910-1923").

The earliest miners lived in tents or cabins; later houses were.

¹Pete Aiello interview, 23 November 1979, Price, Utah.
built and three towns coalesced in the area. These third phase towns of East Hiawatha, West Hiawatha and Black Hawk (as well as Mohrland in Emery County) always operated in close cooperation with each other. The first three towns were incorporated as "Hiawatha" in 1911. The town's boundaries include much of the coal land surrounding the settlements, making it the largest incorporated town in Utah. The town was originally incorporated by officials of its owner, the Consolidated Fuel Company (with the accompanying signatures of 68 town residents on the petition). Although the town and company have maintained separate functions throughout the years (an unusual situation for a company town), the originators of this practice insured a close cooperation between the two parties, up until the last few years.

In 1912 the United States Smelting, Refining and Mining Company exercised its option to buy Consolidated Fuel. In the transaction they acquired "5,000 acres of the finest bituminous coal land in the great west, the townsit of Hiawatha and half interest in the Southern Utah railroad, connecting the company's mines with the Denver & Rio Grande railroad at Price.... Aside from its significance as a mammoth move for unprecedented development of Utah's coal industry, the transaction means that a number of Salt Lake stockholders will realize small fortunes.... Developments as planned by the interests in control will make the United States Smelting, Refining & Mining company one of the biggest concerns of its kind in the country. The company will be placed in a position to compete for the immense market of the Pacific coast and northwest, which will mean that sums of money will be
diverted form (sic) the course hitherto traveled and brought into Utah.2 This single acquisition by a Boston company tied the growth of Hiawatha to the economic development of half the nation.

To facilitate operations, the United States Smelting, Refining and Mining Company incorporated a subsidiary company, United States Fuel, under the laws of Nevada on May 3, 1915. This company has retained ownership of the town to the present day. Although U.S.S.R.&M. was bought out by U.V. Industries in 1972, U.S. Fuel continues to run Hiawatha.

After the incorporation of the United States Fuel Company, some consolidation took place. At that time the company's headquarters were established at Black Hawk and the town's name was changed to Hiawatha, the name it still retains. It gradually achieved supremacy over both East and West Hiawatha, the earlier towns, where now only sites remain.

PRESENT-DAY HIAWATHA (BLACK HAWK)

The earliest structures built at Hiawatha have been largely obliterated. One local source reports that the first settler in the area was an Austrian by the name of Smith,3 but no trace of him or his ranch remain in local records or on the land. "In 1911, STEELE:"

---


3Thursey Jessen Reynolds, comp., Centennial Echoes from Carbon County (Salt Lake City: Daughters of Utah Pioneers, 1948), p. 213.
houses were built east of the railroad tracks," in an area later called Greek Town, now under the Hiawatha dump. During the next two years, houses were built to the south, along the tramway leading to the Black Hawk mine portal (also known as King Mine). This area later became Jap Town. Four stone foundations are still visible in the sagebrush, the remains of these houses, including one with a communal bath used by the Japanese.

Most structures remain intact, however. The oldest surviving houses date from 1912 and 1913, when they were built by the U.S.S.R. & M. (later United States Fuel). They stand on the bench west of Hiawatha's center and along the entry road in the southeastern part of town. In 1913 "downtown" Hiawatha was begun with the construction of the company store and butcher shop and the following year the mine office building went up across the street from the store. Also in 1914, the Official's Cottage, a hotel for visiting V.I.P.'s, was constructed on the western bench near earlier homes that housed resident mine officials.

The town remained stable until the coal boom associated with the United States' entry into World War I. From 1916 to 1918 the production of Carbon County coal increased from almost 3 million short tons to over 4½ million. Miners flocked to the coal fields, and new housing was quickly constructed to meet the needs of the time. Around twenty new

---

4 Ibid.

5 State Coal Mine Inspector's Report for 1916 and 1917.
houses were built in Hiawatha, interspersed with the older construction on the entry road into town, thereby decreasing the size of the lots.

The influx of so many workers also created new needs in the community. The first requirement was for a hospital and doctor's residence built in 1917 and still in use as a duplex. Second, to encourage miners to come to this remote area, in 1911 the company built an Amusement Hall. The Hall, rented to the town for one dollar a year, has since been used for dances, roller skating, sporting events, movies, banquets (both private parties and town functions), bowling, and religious services.

Coal production decreased in 1919, but in 1920 it surged again to over 5 million short tons in Carbon County,\(^6\) prompting another building spurt at Hiawatha. Several more houses were constructed higher on the bench west of the officials' houses, and on the east side of town further out along the entry road. In 1921 a frame dormitory was also constructed, originally for teachers employed at the schoolhouse next door (now gone). In later years the dormitory housed the town's nurses; now it has been subdivided into four apartments. Since 1921 no more homes have been built at Hiawatha. However, around 1934 many of the older homes were updated and indoor bathrooms added by the company.

Throughout the town's existence, the company's operations have continued to expand, and several industry-related structures have gone up.

---

Included in these are the present tipple (built and expanded from 1938 to 1957), a resin recovery plant (1956-70), a heating plant (1948) and several garages, bath houses, workshops and other small structures completed over the years.

Throughout the town's existence, the company also dealt with the religious needs of the community. The south wing of the Amusement Hall was rented to the Roman Catholic Church; a community church, now gone, operated in a structure near the hospital; and the L.D.S. faithful met in a building deeded to them by the company in 1949. (The structure had been used by the Mormons before that time, but during the coal boom of World War II the company converted it into a dormitory for miners. After the war, the L.D.S. Church received the deed.)
CENTENNIAL ECHOS FROM CARBON COUNTY

Compiled By
Thursey Jessen Reynolds

Assistants
Daphne Hartle
A. E. Gibson
Pollie Jessen Empey
Mary F. Biddle

Published By
DAUGHTERS OF UTAH PIONEERS
of
CARBON COUNTY
1948
now, but a guess would be that the Arronco's took it over about 1939 or 1940.

John Arronco died within a year or so after taking over the mine, but it has been operated intermittently ever since by his family. The coal is a first class domestic coal and very accessible to Price, Helper and Wellington. It usually finds a ready market.

Hiawatha

From History compiled by C. H. Madsen

Hiawatha nestles at the foot of the Gentry Mountain, two arms of which seem to reach out and almost encircle the town. Its location is eighteen miles southwest of Price by the highway, but it would not be that distance if we could go across country. The elevation is 7,180 feet.

According to available records and tradition, the first settler in Hiawatha was an Austrian by the name of Smith. He located a ranch on the present site of Hiawatha. Traces of his dugouts may still be seen in the wash a few hundred feet from the building that was formerly used as a teachers' dormitory. All other early buildings have long since been torn down and forgotten.

The development of the coal mining industry in the adjoining mountains was the reason for the founding of Hiawatha as a community. In 1908, F. A. Sweet, then owner of the Standardville property, opened a mine on the middle fork of the Miller Creek. He called this camp Hiawatha. Later, two other mining men, Browning and Eccles by name, opened a mine in what is now Hiawatha proper and called the camp Black Hawk.

The first houses in the community were erected in what is now known as Creek Town. In 1911, sixteen houses were built east of the railroad tracks. The houses along the tramway were built in 1912 and 1913. A year later, houses west of the present school building were erected. During World War II, apartments were built east of the tracks as an emergency housing measure and thus the town has grown.

The citizens of the Hiawatha circulated a petition in 1911, asking that the town be incorporated. This petition was granted by the County Commissioners and on September 26, the city government was established. Henry E. Lewis was the first president of the town board and George E. Haymond, Dr. J. E. Dowd, Dr. J. R. Fleming, and D. Johnson were the members of the board. At that time there were fewer than five hundred people in Hiawatha.

The United States Fuel Company purchased and consolidated the two mines in 1912. At this time the headquarters of the company were established in Black Hawk. Both towns, Hiawatha and Black Hawk, had post offices. In 1915, the post office
at Hiawatha was closed and the town government was moved to Black Hawk, following the consolidation. The name of the entire community was changed to Hiawatha.

In 1908, when the mine was opened on Miller Creek, Reuben G. Miller owned all the water rights. It was necessary for the Fuel Company to purchase Miller's rights, and the ranch owned by him, in order to get water for the camp. The Smith ranch was purchased as a townsite for Black Hawk.

When the mines were first opened, good judgment was used in laying out and developing the property. The "room and pillar" method was used. The existing conditions necessitated this—it was possibly the best method under the circumstances. When the mines were first opened, all the operations of getting the coal loose and loading it on the mine cars were done by hand. Undercutting machines were later purchased. (For further information we refer you to the Watt's Report.)

The first railroad to Hiawatha was built by the Consolidated Fuel Company in 1909. While this road was in operation, the railroad headquarters and shops were located in East Hiawatha. Due to the heavy grades and the impossibility of hauling large trains, a new road was built by the Fuel Company in 1914. This road extended from Castle Gate, a distance of 23 miles. The road to Price was abandoned and the steel torn up in 1917.

The visitors' first impression of Hiawatha is that they have come to a community of contented property owners. The houses in the camp are kept in a very fine condition and the surroundings are indicative of a splendid interest on the part of the occupants. A profusion of trees, lawns, flowers, and gardens emphasize the pride the miners have in their community. The company has encouraged this attitude through the years by giving special inducements to promote it. The pretentious school building, the church spires, the recreation hall, the hotel and store buildings are other evidences of community interest. The Fuel Company built the churches and gave their use to the people to encourage worship in the church of the people's choice. One of these was converted during World War II into a housing unit but the Latter-day Saints, who formerly worshipped in this building, have hopes of obtaining its use again. They meet now in the school building. Carlos Larsen is the present bishop of the Latter-day Saint Ward. One other bishop and four presiding elders have led the Hiawatha L.D.S. group since 1920. Sey-

from Carbon County

mour Oliphant served from June 20, 1920 until 1927, Stanley Edwards from 1927 until 1931, Clifford Albrechtsen from 1932 until 1939, LeRoy Meecham from 1939 until 1943, and Claude Erickson from 1943 to 1945.

A modern health and sewage disposal system operates under the direction of the company. However, not all the houses are modern. Pure spring water is supplied to the homes and milk is made available from a dairy, the Millerton, owned and operated by the company. No effort is spared to promote health and safety from every angle. The town officials are in accord with the measures promoted by their employers for the good of the community. The incumbent town officials, L. F. Crogan, president; B. E. Christensen, Dan Garber, T. C. Johnson, and LeRoy Davis, members of the Board of Trustees; with S. H. Sherman, clerk; J. G. Reese, Jr., treasurer and James Catterall, justice of the peace, are doing everything in their power to promote the interests of the community.

Until 1920, when the present school building was erected, considerable difficulty was experienced in housing the pupils. During one school year schools were held in five different buildings in the town and the teachers could not find places to live or board. The commodious teachers' dormitory solved this problem for the time being but there has been a tendency for many of the more recent teachers to live elsewhere while teaching here or to be recruited during the teacher shortage from local people whose homes are already in Hiawatha.

Information was not available regarding all the names of the school principals, who have directed the local schools. H. A. Dahlsrud was principal for many years but resigned at the close of the year 1945-1946. He was succeeded by R. S. Williams, who is the present principal. Hiawatha has always taken pride in the quality of its schools and community interest and support has been given the Board of Education and its employees.

Possibly one of the greatest needs of a community like Hiawatha is adequate entertainment for its people. The company, realizing this, built the amusement hall in 1917 and turned it over to the Y.M.C.A. to operate. This organization had charge of the hall until 1924, when the Hiawatha Welfare Association was organized and given charge of its management. The policy has always been to use this building for the civic imp-
provision and entertainment of the people of the town. Picture shows are operated, dances conducted, road shows encouraged to "make" Hiawatha, and all other types of wholesome entertainment are encouraged. At various times during the history of the community, the town has supported baseball and other clubs to occupy the leisure time of its people. Hiawatha has a fine Scout organization and enthusiastic leaders who sponsor it.

Reliable data was not submitted regarding the personnel of the mining superintendents who have served Hiawatha since the establishment of the camp. James McKim is the present head of the United States Fuel Company properties at Hiawatha.

This history was written by Joe D. Hansen for the Sego Lily Camp. Their president is Elizabeth Frandsen.

Hiawatha, pleasantly situated where Miller Creek enters the valley, is the operating headquarters of the United States Fuel Company.

Of the early history of this locality very little can be recorded since its values were reflected in the limited stands of Douglas Fir and aspen. It was, however, a very good summer grazing area for cattle and horses, and later, sheep, whose owners repeated what took place in Utah generally, overgrazed mountainsides until erosion all but destroyed the vegetation causing destructive "flash floods," which in the fifty years have caused very extensive and costly damage to many localities in Utah and surrounding states.

It is quite probable that Miller Creek may have been visited by some of the trappers of the Rocky Mountain Fur Company, as is well known that William Ashley, Henry Jedediah Smith, and others carried on their trapping operations as far south as Salina Canyon, their headquarters for this area being located near Vernal on Ashley Fork of Green River.

The writer remembers having seen beaver dams in Manti Canyon about the year 1879, and they were also found in nearly all the canyons of the Sanpete and Emery County mountains; the beaver, however, had been entirely exterminated.

In the early 1880's Miller brothers brought a large number of cattle and horses into Castle Valley grazing them on the mountains in the summer and in the valley in the winter, establishing their headquarters where the Millerton Dairy is now located.

Here they built camp houses and corrals and sowed quite a large acreage to alfalfa, utilizing the water flowing down Miller Creek for culinary and irrigation purposes, thereby acquiring title through beneficial use.

The early settlers built sawmills in the forks of the canyon, which gave them much needed lumber for building homes and other necessary buildings.

Coal was discovered about the year 1909 when Mr. Fred Sweet opened Mines No. 1 and No. 2 at West Hiawatha. The coal was brought down the canyon over a gravity tramway a distance of somewhat more than two miles to a wooden constructed tipple where it was prepared for shipment. A railroad was constructed from Price to the tipple which was known as East Hiawatha, a town being built at that place.

Mr. Sweet also developed the Black Hawk Mine, about the year 1912. The coal from this mine was brought down a gravity tramway nearly two miles to a point where the United States project is now located below the present railroad track.

About the year 1914 the United States Fuel Company was organized which company acquired the two Hiawatha mines as well as the Black Hawk mine, also Moreland, and built a modern steel tipple on the site where it is now located. At this time a town was laid out with substantial office rooms, store buildings, material house, and an up to date machine shop. Cottages containing 4, 6, and 8 rooms to the number of 800 were built at Black Hawk and East and West Hiawatha.

One of the first projects to be taken up was the laying out of a water system of sufficient capacity to supply the people with an adequate amount of water, as well as the heating plant and railroad engines; also keeping in mind full fire protection.

The railway system known as the Utah Coal Route was built into the camp about the year 1914, which connected with the main line of the Denver and Rio Grande Western at Martin Junction. This road acquired a joint traffic agreement with D&RGW by laying a double track to Provo, Utah.

About the year 1918 a Sunday School was organized by the Carbon Stake Presidency through the effort of Henry E. Taylor and a small group of L.D.S. members. They carried on for sometime under adverse conditions, as there was no meeting house available.

In 1920 the company built an amusement hall which contained a main hall 80 by 40 feet with a stage and scenery for
theatre and picture show room, a banquet room with fully equipped kitchen, and a large reading room.

A branch of the church was organized with Seymour Oliphant, presiding elder, Calvin Tuft first, and Rupert Lindsey second counselors. Sunday school was organized with Ira Oviatt, superintendent, Henry Taylor first, and James McPhie second assistant superintendent.

Relief Society was organized with sister McPhie as president.

All the organizations held their weekly meetings in the reading room but were not very successful as the pool room and bowling alley in the lower room created so much noise that often the meetings were almost a failure.

In the summer of 1924 through the efforts of Moroni Heiner, vice president and general manager of the U. S. Fuel Company, two chapels were built; one for the Community Churches and one for the Latter-day Saints. By November they were finished and the two church groups purchased enough oak pews to seat both churches. The L.D.S. had three extra rooms for classes.

The church members contributed liberally to furnish suitable lockers, rugs, children's chairs, piano and the necessary books. A choir was organized at this time with an active membership of 30. C. L. Christens was president; Sister Oliphant, secretary and treasurer; Joseph Hanson, director; Nellie Faddis and Ruth Oviatt, organists.

This organization continued its activities until October, 1943, with a membership sufficient to fill appointment as they might arise.

This camp is located in a cove in the mountains, about twenty miles from Price. An opening toward the east enables one to view the surrounding country. From the mine entrance, on the hillside west of the camp, one can see far stretches of the Castle Valley. The elevation is approximately 7,500 feet.

Mining operations began in 1916, when Wattis Brothers and Mr. Browning bought 160 acres from the United States and took steps to open the property for production. Coal was not shipped until the autumn of 1917, at which time the railroad was completed. The camp was named for W.
September 27, 1984

James W. Smith, Jr.
Administrator
Mineral Resource Development
and Reclamation Program
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Attn: Susan C. Linner

RE: Supplemental Material for Hiawatha Complex, U.S. Fuel,
ACT/007/011 #2, Carbon County, Utah

In Reply Refer To Case No. E409

Dear Mr. Smith:

The Utah Preservation Office has received for consideration
your letter of September 12, 1984, concerning the supplemental
material for the Hiawatha Complex Mine belonging to U.S. Fuel,
located in Carbon County. After review of the material, our
office notes no changes concerning cultural resources, and
therefore our office has no comment.

Since no formal consultation request concerning eligibility,
effect or mitigation as outlined by 36 CFR 800 was indicated
by you, this letter represents a response for information
concerning location of cultural resources. If you have any
questions or concerns, please contact me at 533-7039.

Sincerely,

James D. Dykman
Cultural Resource Advisor
Office of State Historic
Preservation Officer

JLD:jrc:E409/0887V
July 9, 1984

Rex L. Wilson
Chief Archeologist
Office of Surface Mining
Reclamation and Enforcement
Brooks Towers
1020 - 15th Street
Denver, Colorado 80202

RE: U. S. Fuel Company's Hiawatha Mines Complex

In Reply Refer To Case No. E409

Dear Mr. Wilson:

The Utah Preservation Office has received for consideration your letter of June 29, 1984, requesting consultation on the Hiawatha Mines Complex owned by U.S. Fuel Company.

After review of the material provided, our office would concur with the eligibility of the three sites mentioned, the Mohrland town site, (42Em1642), the prehistoric rock shelter (42Em1641), and the townsite of Hiawatha. Also, after consideration of the proposed mitigation plans of the U.S. Fuel Company, our office would concur with the Office of Surface Mining's determination of no adverse effect as outlined by 36 CFR 800.

The above is provided on request as information or assistance. We make no regulatory requirement, since that responsibility rests with the federal agency official, as outlined by 36 CFR 800. However, if you have questions or need additional assistance, please let us know. Contact Jim Dykman at 533-7039.

Sincerely,

Wilson G. Martin
Deputy State Historic Preservation Officer

JLD:jrc:E409/0602V
Dear Friend:

Thank you for your letter commenting on a nomination to the National Register of Historic Places. We are forwarding your comments to the appropriate State Historic Preservation Officer (SHPO).

On December 12, 1980, President Carter signed into law several amendments to the National Historic Preservation Act of 1966. These amendments (Public Law 96-515), require the Secretary of the Interior to revise Federal regulations to provide the private owner or owners of nominated property an opportunity to concur in, or object to, the nomination of the property or district to the National Register. If the owner or owners of any privately owned property, or a majority of the owners of such properties within a historic district, object to nomination, such property shall not be included in the National Register.

The Department of the Interior is currently revising Federal regulations which govern the National Register nomination process. These revisions must have Congressional review before they can become effective. Regulations will establish the mechanism to be used to give owners an opportunity to concur in or object to nominations. Although many owners of nominated properties have written to the Department of the Interior or their SHPO asking that their properties be listed, we are not presently listing any privately owned properties until new regulations take effect.

All nominations which include privately owned properties are being held by SHPOs until we can resume listing privately owned properties. Those which were not listed in the National Register prior to the signing of Public Law 96-515, but had been forwarded to the Department of the Interior, have been returned to the appropriate SHPOs. Soon after we resume listing privately owned properties, SHPOs will be seeking owner opinions on pending nominations. Should you wish to comment further, contact your SHPO directly (see enclosed leaflet for addresses).

If we can be of further assistance to you, please let us know. We appreciate your interest in the preservation programs of the National Park Service.

Sincerely yours,

Carol D. Shull
Acting Keeper
of the National Register

Enclosures
May 8, 1981

CERTIFIED MAIL--RETURN RECEIPT REQUESTED

Dr. Melvin T. Smith
State Historic Preservation Officer
300 Rio Grande Street
Salt Lake City, UT 84101

Re: Land Owner Objection to National Register Listing of Hiawatha, Utah

Dear Dr. Smith:

Pursuant to the reported efforts by your office to nominate the Town of Hiawatha, Utah, for listing on the National Register of Historic Places, United States Fuel Company, through its attorneys Pruitt & Gushee, hereby objects to such listing pursuant to Section 201(a)(6) of the National Historic Preservation Act Amendments of 1980 (P.L. 96-515). While U.S. Fuel is flattered at the recognition of its historic contribution to the coal mining industry in Utah, the financial and managerial constraints imposed by a National Register listing compelled this formal objection. Please regard Hiawatha as ineligible for inclusion on the National Register until the objection made herein is expressly revoked by us in writing.

Thank you for your attention to this matter.

Yours very truly,

Robert G. Pruitt, III
PRUITT & GUSHEE
Attorneys for United States Fuel Company

RGPIII:jr
cc Keeper of the National Register
Secretary of Interior
John Lind, U.S. Fuel Company
APPENDIX IV-8

CULTURAL AND HISTORIC RESOURCES

1998 SURVEY
A CULTURAL RESOURCES SURVEY OF
HIAWATHA COAL MINE, HIAWATHA, UTAH

by
Kevin O’Dell
Archaeologist

and
Don Southworth
Principal Archaeologist

Prepared for:
Hiawatha Coal Company
P.O. Box 1202
Huntington, Utah 84528

Prepared by:
Sagebrush Archaeological Consultants, L.L.C
3670 Quincy Avenue, Suite 203
Ogden, Utah 84403

Utah State Antiquities Permit No. U-98-SJ-0206p

Archaeological Report No. 1045-01

June 1, 1998
ABSTRACT

Pursuant to federal mine permitting and reclamation regulations, Hiawatha Coal Company of Huntington, Utah, requested Sagebrush Consultants, L.L.C. to conduct a cultural resources survey of proposed areas of reclamation and continued operations. The authors carried out the fieldwork for the current project in April and May 1998. All work was conducted under authority of Utah State Antiquities Permit No. U-98-SJ-0206p. One historic mining district, comprised of 130 historic properties and features, was identified. The Hiawatha Mining District is recommended eligible to the National Register of Historic Places (NRHP) under criterion A, C, and D.
INTRODUCTION

In April 1998, Hiawatha Coal Company (Hiawatha Coal) of Huntington, Utah, requested Sagebrush Archaeological Consultants, L.L.C. (Sagebrush) to conduct a cultural resources inventory of the Hiawatha Coal Company property located at Hiawatha, Utah. The purpose of this survey was to identify cultural resources pursuant to federal mine regulations regarding mine permitting and reclamation projects.

The project is located in Township 15 South, Range 8 East, Section 21 on the Wattis, Utah (1979) 7.5' USGS Quadrangle; Township 15 South, Range 8 East, Sections 26 and 27 on the Poison Spring Bench, Utah (1969) 7.5' USGS Quadrangle; and Township 15 South, Range 8 East, Sections 28, 29, 30, 32, 33, 34, and 35 on the Hiawatha, Utah (1978) 7.5' USGS Quadrangle. All work was conducted under authority of Utah State Antiquities Permit No. U-98-SJ-0206p.

The authors conducted a file search for previously conducted cultural resources projects, documented resources sites, and paleontological localities near the current project area. This search was carried out at the Division of State History, Utah State Historic Preservation Office (SHPO), Salt Lake City on April 26, 1998. Four previous projects were conducted in the current project area. In 1980, SHPO personnel conducted an architectural survey of the Hiawatha townsite. Three buildings identified in 1980, building #510, the warehouse, and the bathhouse, are located within the current project area. Data recovered during this survey was subsequently compiled into a National Register nomination. This nomination was declined by U.S. Fuel. In 1981, Utah Archaeological Research Corporation conducted a cultural resource survey for a proposed coal loading facility in South Fork canyon. No sites were encountered (Cook 1981). In 1984, Sagebrush conducted two cultural resources surveys for nine proposed seismic lines in Carbon and Emery counties. Portions of two lines were located near the current project area. No sites were encountered along these lines (Carpenter 1984 and Montgomery 1984).

ENVIRONMENT

The project area lies 28.8 km (18 mi) south and west of Price, Utah at elevations between 2158 m and 2560 m (7080 ft and 8400 ft) a.s.l. The terrain is comprised of three steep canyons, rolling hills, and flat creek bottoms. Three branches of Miller Creek, North (Right) Fork, Middle Fork, and South (Left) Fork, flow through the canyons and converge into a single channel of Miller Creek at the base of the canyons. The vegetation consists of sagebrush, ponderosa pine, Douglas fir, rabbit brush, cactus, and cheat grass. Decorative and fruit-bearing flora, including aspen and apricot trees, were introduced to the area, during the historic period of occupation.
Project area. Taken from USGS 7.5' Quadrangle Hiawatha (1978).
Figure 3. General project area. Taken from USGS 7.5' Quadrangle Watts (1929).
Figure 1. General project area. Taken from USGS 7.5' Quadrangle Poison Spring Bench (1969).
Figure 4. West Hiawatha and Middle Fork Mine complex structures, c.1917. Adapted from "Improvement Map Showing the United States Fuel Co.'s East and West Hiawatha, Carbon County, Utah," c.1917.
HISTORIC OVERVIEW

Utah industry has relied upon Carbon County coal over 100 years. Coal mining within the county began in 1875 with the opening of the Pleasant Valley mines (northwestern Carbon County). The region’s extensive coal beds quickly gained the attention of the Denver and Rio Grande Railroad. The company immediately acquired title to several acres of coal land and established subsidiary companies to open mines, such as Castle Gate (mid 1880’s) and Sunnyside (1898) (Notarianni 1982:10). The coal from these mines heated homes, fueled industry, and provided high quality coke for metal processing.

The need for coal increased dramatically during the first decade of the twentieth century. Between 1903 and 1909, the state’s coal consumption for home heating increased 99% (Harrington 1910:22). Industrial use also increased. Utah’s metal industry continued to grow while sugar beet production surged; leading to the growth of the state’s candy industry. Several independent companies soon formed in order to meet the ever increasing coal demands. These companies filed on over 8,000 acres of Utah coal lands in 1907 alone (Taniguchi 1981:3).

One of these small enterprises was the Consolidated Fuel Company. The company was organized by the Sweet brothers, owners of the Salt Lake City based Sweet Candy Company (Taniguchi 1981:3). In 1908 the company drove the first portal on their recently acquired Miller Creek property (Taniguchi 1981:5). The company named their new mine and nearby town, Hiawatha, probably after the central character in Henry Wadsworth Longfellow’s poem (Cunningham 1990:33). By January 1909, Hiawatha mine was in full operation.

Most mining companies built and owned towns. Aside from the obvious reason of providing their workers a place to live, company’s used these accommodations to attract stable, skilled workers. In addition, companies hoped to instill owner loyalty into their workers by providing a store, schools, churches, social halls, or other facilities. Consolidated Fuel followed this established practice and built two communities. West Hiawatha was located immediately below the mines in Middle Fork canyon. The community consisted mostly of miners’ houses but did include an amusement hall, school, store, and hospital (Taniguchi 1981:8). The community continued to function well into the 1920’s. East Hiawatha, located directly across from the tipple and loading yard at the mouth of Middle Fork canyon, featured the mine superintendents house, a store, a school, and houses (Taniguchi 1981:8). East Hiawatha was incorporated as the town of Hiawatha in 1911. In 1913, the community of Black Hawk was renamed Hiawatha (the present town location).

Workers, representing several different ethnic backgrounds, were employed at the Hiawatha mines. Both West and East Hiawatha featured distinct ethnic neighborhoods. A 1913 insurance map illustrating West Hiawatha, for example, features a "Jap" hotel and a "Greek" coffee house.

With the help of eastern investors, Consolidated Fuel Company invested in modern mining equipment and hired skilled miners. A 10,500 feet tram transported coal from the mines to a "modern" tipple at the mouth of the Middle Fork canyon (Higgins 1911:19). The tipple sorted the coal by sizes and loaded it into rail cars. The Southern Utah Railway Company, a subsidiary of Consolidated Fuel, then hauled the coal to the Denver and Rio Grande Railroad at...
Price, Utah. By the spring of 1911, a steam powered power house, located at the loading facility, generated electric power for the tipple and the hoists, hauling equipment, pumps, and lights at the mine (Higgins 1911:19). This operation was producing 2,000 tons of coal per day (Higgins 1911:18).

The Hiawatha mine quickly gained a reputation for its modern operation and coal quality. A 1910 *Salt Lake Mining Review* article stated the mine is an

"...ideal operating proposition, while two workable seams of good quality coal, less than 150 feet perpendicular above, add to the attractive features of this region. Timber in abundance, good mountain water throughout the year and a picturesque townsite, aid to make the region attractive to both coal operator and coal worker." (Harrington 1910:22)

In addition, coal extracted from the mine was low in impurities and retained its shape after long storage periods (Higgins 1911:19). These positive attributes peaked the curiosity of larger companies, prompting Consolidated Fuel to sell its Hiawatha property.

In 1912 United States Smelting, Refining and Mining Company (USSRM) purchased "5,000 acres of the finest bituminous coal land in the great west, the townsite of Hiawatha and half interest in the Southern Utah railroad (Anonymous 1912:19)." USSRM also acquired the nearby Black Hawk and Mohrland mines. In 1913, the company began to concentrate operations at Black Hawk, naming the community Hiawatha (Taniguchi 1981:8). The company opened a second portal (Mine #2) in Middle Fork canyon in 1914. United States Fuel Company (U.S. Fuel) created in 1915 as a subsidiary of USSRM, operated the Hiawatha mines. That same year, U.S. Fuel made several improvements to the property. The company built a shop and warehouse and platted a town cemetery.

Mining continued in Middle Fork canyon until 1926 when U.S. Fuel closed down the mine and concentrated operations at the Black Hawk and Mohrland mines (U.S. Fuel Co. 1946:8). The company returned to the canyon in 1972; built an earth platform and dug the King #4 and King #5 portals (Watson, personal communication, 30 April 1998). During the 1940's, the company began exploring the coal seams in upper South Fork canyon. The company built an earth platform, which supported the King #3 mine and its support structures. In 1982, King #6 mine was added to the South Fork complex (Watson, personal communication, 30 April 1998). By this time, the Middle and South forks mines were connected by a series of tunnels. Both operations continued until the entire mine shut down in 1992.

**METHODOLOGY**

On April 23 and 24, 1998, Sagebrush and Hiawatha Coal personnel conducted an on site visit. On April 28, 29, and 30, and May 1, 1998, Sagebrush archaeologists performed a reconnaissance level cultural resources survey. Snow drifts, several feet deep, hampered site and feature identification in the canyons. Snow and mud prevented the survey crew from recording the King #4 air intake portal on North Fork until May 28, 1998. That same day,
<table>
<thead>
<tr>
<th>Building #</th>
<th>Year</th>
<th>M</th>
<th>Condition</th>
<th>Eligibility</th>
<th>A &amp; D</th>
</tr>
</thead>
<tbody>
<tr>
<td>#862</td>
<td>c.1917</td>
<td>M-185</td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#861</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>#860</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#859</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#858</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#857</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#856</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#855</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#854</td>
<td>c.1917</td>
<td>M-185</td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#853</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#852</td>
<td>c.1917</td>
<td>M-185</td>
<td>Vegetation</td>
<td>Insufficient Data</td>
<td>N/A</td>
</tr>
<tr>
<td>#851</td>
<td>c.1917</td>
<td>M-185</td>
<td>Vegetation</td>
<td>Insufficient Data</td>
<td>N/A</td>
</tr>
<tr>
<td>#850</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#849</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#848</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#847</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#846</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#845</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#843</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#842</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#841</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#840</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#839</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#838</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#836</td>
<td>c.1917</td>
<td>M-185</td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#833</td>
<td>c.1917</td>
<td>M-185</td>
<td>Rubble</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#832</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#831</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#830</td>
<td>c.1917</td>
<td>M-185</td>
<td>Earth Platform</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#829</td>
<td>c.1917</td>
<td>M-185</td>
<td>Rubble</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>#828</td>
<td>c.1917</td>
<td>M-185</td>
<td>Rubble</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #827</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #826</td>
<td>c.1917</td>
<td>M-185</td>
<td>Rubble</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #825</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #824</td>
<td>c.1917</td>
<td>M-185</td>
<td>Rubble</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #823</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #822</td>
<td>c.1917</td>
<td>M-185</td>
<td>Rubble</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #821</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #820</td>
<td>c.1917</td>
<td>M-185</td>
<td>Rubble</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #819</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #818</td>
<td>c.1917</td>
<td>M-185</td>
<td>Rubble</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #817</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #815</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #814</td>
<td>c.1917</td>
<td>M-185</td>
<td>Rubble + Cellar</td>
<td>Eligible-Contributing</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #813</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #812</td>
<td>c.1917</td>
<td>M-185</td>
<td>Rubble + Cellar</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #811</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #807</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #805</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #803</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #801</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #800</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Location</td>
<td>Year</td>
<td>Condition</td>
<td>Eligibility</td>
<td>Status</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------</td>
<td>-----------</td>
<td>-----------------------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>West Hiawatha School</td>
<td>1923</td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>South Fork Water Tank</td>
<td>c.1910</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>King #3</td>
<td>c.1948</td>
<td>Altered</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Fork Bathhouse</td>
<td>1948</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>South Fork Shop</td>
<td>c.1950</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>South Fork Substation</td>
<td>c.1948</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>South Fork Garage</td>
<td>c.1982</td>
<td>Intact</td>
<td>Not eligible</td>
<td>O.P.</td>
<td></td>
</tr>
<tr>
<td>South Fork Shed</td>
<td>c.1982</td>
<td>Intact</td>
<td>Not eligible</td>
<td>O.P.</td>
<td></td>
</tr>
<tr>
<td>South Fork Conveyor Belt</td>
<td>c.1982</td>
<td>Intact</td>
<td>Not eligible</td>
<td>O.P.</td>
<td></td>
</tr>
<tr>
<td>Building #313</td>
<td>c.1910</td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Building #313A</td>
<td>c.1910</td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Upper Rail Yard Pump House</td>
<td></td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Upper Rail Yard Fuel Tanks</td>
<td>c.1920</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Tipple Base</td>
<td>c.1920</td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
<td></td>
</tr>
<tr>
<td>Original Tipple Base</td>
<td>c.1910</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
<td></td>
</tr>
<tr>
<td>Railroad Depot</td>
<td>c.1920</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Fuel Storage Buildings (2)</td>
<td>n.d.</td>
<td>Intact</td>
<td>Not Eligible</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Portable Phone Booths (2)</td>
<td>n.d.</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Garage</td>
<td>n.d.</td>
<td>Intact</td>
<td>Not Eligible</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Lower Rail Yard Tracks</td>
<td>c.1915</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Utah Railroad Yard</td>
<td>c.1915</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Tunnel (Utah Railroad)</td>
<td>c.1910</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Cemetery</td>
<td>1915</td>
<td>Overgrown</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
<td></td>
</tr>
<tr>
<td>Baseball Field</td>
<td>c.1920</td>
<td>Overgrown</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Slurry Pond #1</td>
<td>n.d.</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Slurry Pond #4</td>
<td>n.d.</td>
<td>Reclaimed</td>
<td>Not Eligible</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Slurry Pond #5</td>
<td>n.d.</td>
<td>Reclaimed</td>
<td>Not Eligible</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Refuse Pile #1</td>
<td>n.d.</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Refuse Pile #2</td>
<td>n.d.</td>
<td>Reclaimed</td>
<td>Not Eligible</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Substations (2)</td>
<td>c.1920</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Store Yard</td>
<td>n.d.</td>
<td>Intact</td>
<td>Eligible-Contributing</td>
<td>A &amp; C</td>
<td></td>
</tr>
</tbody>
</table>
SUMMARY

One historic mining district, comprised of 130 historic properties and features, was identified. The Hiawatha Mining District is recommended eligible to the National Register of Historic Places under criterion A, C, and D, as outlined in 36 CFR 60.4.

This survey was conducted in order to locate cultural resources within the project area. This investigation was conducted with techniques considered adequate for locating cultural resources that are available for visual inspection and that could be adversely affected by the project. However, should cultural resources be discovered during mining operations and reclamation activities, a report should be made immediately to the Division of History, Utah State Historic Preservation Office, Salt Lake City, Utah.
REFERENCES CITED

Anonymous

Carpenter, W.W.

Cook, Clayton

Cunningham, Frances

Harrington, Daniel
1910 "Utah as a Coal-Producing State." The Salt Lake Mining Review 11, no. 23.

Higgins, Will C.
1911 "Success of the Consolidated Fuel Company." The Salt Lake Mining Review 13, no. 1.

Marsh & McLennan Insurance Co.

Montgomery, Keith R.

Taniguchi, Nancy

United States Fuel Company

1946 Thirty Years of Coal Mining. United States Fuel Company, Salt Lake City.
c.1917  "Improvement Map Showing the United States Fuel Co.'s Towns of East and West Hiawatha, Carbon County, Utah." Hiawatha Coal Company Collection, Hiawatha Utah.

Vogrinec, Al  
1998  Personal communication. [Al Vogrinec was born, raised, and worked at the Hiawatha mines. Mr. Vogrinec was interview by Don Southworth on May 28, 1998].

Watson, Mike  
1998  Personal communication. [Interview of Mr. Watson, current president of U.S. Fuel Company, by Kevin O'Dell and Don Southworth April 30, 1998, regarding the history of the Hiawatha mining operations. 30 April].
Sagebrush personnel monitored equipment excavation along the south and east perimeter of the Hiawatha cemetery.

Fortunately, most of the historic structures located on the property were recorded on a series of insurance and plat maps drawn between 1913-1950. These documents coupled with information gathered through an oral interview with U.S. Fuel Company president, Mike Watson, were used by the field crew to locate structures in the field. In all, approximately 1,330,621 m² (329 acres) were inventoried. The authors also conducted documentary research at the Utah State Historic Preservation Office and the Utah State Historical Society in Salt Lake City.

RESULTS

No prehistoric or paleontological resources were located during the reconnaissance. However, one potential NRHP historic district, comprised of 130 historic properties and features, was identified. This district features remnants of several components that comprised the coal mine operation. The individual components, including coal extraction, coal processing, coal transportation, company towns, and water procurement, functioned together as one system.

North Fork

King #4 Vent

The King #4 air intake vent has been destroyed and the area reclaimed. Evidence of the vent include scattered structural debris including rebar. Coal is scattered throughout the area. The company built an access road, which diverged from an existing jeep trail. This road dead-ends at the vent site.

Water Line

A portion of metal water line crosses the access road and follows North Fork of Miller Creek. Most of this line is located outside the project area.

Upper (west) Reservoir

This reservoir measures 61 m long by 30.5 m wide by 6 m deep (200 ft by 100 ft by 20 ft) and features a vertical filter pipe, 0.5 m diameter by 3.6 m high (18 in by 12 ft), with a debris screen on top. A wood causeway/service platform entered the reservoir from the south side. This collapsed structure was supported by at least four posts and provided access to two head gates. The southern head gate drained the reservoir while the northern head gate controlled the water intake. The reservoir is oriented east/west with the intake stream located on the west elevation.
Lower (east) Reservoir

This reservoir is located approximately 198 m (650 ft) east of the upper reservoir. The feature measures approximately 91.5 m by 26 m (300 ft by 150 ft). A gable, pump house/gate house is located on the west side next to a concrete flume. Water used by the downstream communities left the reservoir through a pipe located near the east side of the reservoir.

Wood stave pipe

Water traveled from the reservoirs to mine company towns through a wood stave pipeline. A 7.6 m (25 ft) portion of water pipe is exposed on the north side of the North Fork road, approximately 804 m (2,640 ft) southeast of the lower reservoir. The banded, redwood pipe is 30.5 cm (12 in) in diameter. A 20.32 cm by 5 cm (8 in by 2 in) plank support trestle, collapsed, supported the pipe.

Middle Fork

Portals

The features located in upper Middle Fork canyon represent two distinct mining phases. Consolidated Fuel Company began their mining operations here in 1908. By 1915, the company had two mines in operation; Hiawatha Mine #1 and #2. Several of these concrete portals are still intact. These portals include Mine #1 main slope (built 1909) and fan portal; Mine #2 main slope (built 1914), man way, and fan portal. The portal, located east of the Mine #2 fan portal, was used as a stable for the mine mules.

Water Tank

This round water tank rests on 4" x 4" wood blocks supported by a concrete foundation. Fourteen metal pipe collars keep the vertical tongue and groove siding from expanding. Ends of the collars are marked: “FEDERAL PIPE & TANK CO—SEATTLE WASH.” A vertical metal pipe (water supply pipe?) parallels the exterior the west elevation and enters the tank approximately two feet below the roof eave. A wood ladder attached to the west elevation provided roof access. The cone-shaped roof is composed of plywood sheathing covered with rolled roofing. The structure is ventilated by at least three square roof vents and a round vent that extends up from the center of the roof. A square hatch on the east roof elevation provides access to the tank interior. Two water valves are located on the east elevation below the tank floor. The valve access pit is lined with cinder block and covered by a shed roof addition.

The remainder of this complex lies on an earth bench that was created by bulldozers in 1972. This working platform permitted access to King #4 and #5 portals which were dug from the interior of the mine out. All extant structures on the bench, including the King #4 belt portal, King #4 track portal, King #5 intake portal, King 35 belt portal, King #5 return portal, bathhouse/office, four power/switch houses, exhaust fan house, garage/shop, power substation, storage shed, loading silo, and conveyor belt were constructed c.1972 (Watson, personal communication, 30 April 1998).
Rock Flume

Approximately 244 m (800 ft) of the original 427 m (1400 ft) rock flume remains visible. The “U” shaped feature runs the length of the residential complex of West Hiawatha (south of the current road) and ties into the Middle Fork of Miller Creek.

West Hiawatha

This site consists of the remains of West Hiawatha, which is situated between the canyon walls and along the sides of the Middle Fork of Miller Creek. This area was built by Consolidated Fuel Company for their employees just after the turn-of-the-century. While many of the structures have been removed and covered by the road, a few foundations, walls and standing structures remain. The numbers, which are used for identification, come from a c.1910 map of the area. All foundations and buildings consist of random ashlar laid hewn stone, unless otherwise identified. The stones used for buildings are laid with cement mortar, while those stones used for retaining walls are mostly dry laid courses.

891: The remains of this 8.53m by 7.6m (28ft by 25ft) building consist of a 6m (20ft) long and 1m (3ft) high section of the front foundation wall along with 7.6 m (25ft) section of the east foundation. The east wall has notching, which were used for the floor joists. The front exterior wall has a cement stucco covering. An electric conduit is located in the center of the interior of the front wall.

888: This site consists of a 228mm (9in) wide concrete foundation which measures 8.53m by 7.6m (28ft by 25ft).


875: Fan Housing: Concrete walls have been partially destroyed

874: Shop: Hewn random ashlar laid stone ruins of back wall.

873: Fan Housing: Hewn ashlar laid stone ruins of back wall.

872: Residence: Gone - dry laid stone retaining wall is all that is remains of the house. This wall measures 8.53m (28ft) long by 2.4m (8ft) high which are 457mm (18in) thick.

871: Residence: Gone - Hewn stone foundation measures approximately 9m (28ft) long and 1.8m (6ft) high.

870: Amusement Hall: Gone - Partially removed by construction of roadway. All that remains is the back wall of the building. The structure measures 8.53m (28ft) long by 1.8m (6ft) high and projects out approximately 1.54m (5ft) out for the foundation on the west end. A 4.5m (15ft) long retaining wall runs along the hillside from the west end of the back wall and has a stone drain pipe located near the top of the wall.
869: Residence: Gone - Hewn stone foundation measures approximately 8.53m by 7.6m (28ft by 25ft).

867: Residence: Gone - Hewn stone foundation measures approximately 8.53m by 7.6m (28ft by 25ft).

866: Residence: Gone - Partial stone foundation projecting from hillside.

865: Residence: Gone - Hewn stone foundation measures approximately 8.53m by 7.6m (28ft by 25ft).

864: Gone: Replaced with later building dated "1919". The walls and partial roof are still standing. The structure consists of hewn random ashlar laid stones that measure 9m long by 7.6m wide and 3.7m high (30ft by 25ft by 12ft). The building a 1-Part Block with a stepped parapet front. The front consists of two sets of a window and door. All windows and doorways have stone sills and lintels. The interior is divided into two rooms with an arched doorway located in the partition wall near the front of the building. Both rooms have been plastered with a cement stucco. The concrete shed roof was constructed of railroad rails with rock and cement placed on top. An electrical conduit projects out from the front wall over the eastern most door.

863: "Jap Hotel": Gone - This site consists of a large hewn stone foundation measuring 24.4m by 9.7m (80ft by 32ft) with an additional wall running the length of the foundation in the center, possibly a center baring wall. The rear of the foundation was covered with snow and was not entirely visible.

862: Store: This site consists of the partial back wall of the stone store measuring 9m (30ft) long. Floor joist holes are visible approximately .76m (2.5ft) above the surface. Part of the base of the wall is covered with a concrete stucco.

861: Support structure for Building #863: Gone - Stone foundation.

860: Residence: Gone - Stone foundation measures approximately 8.53m by 7.6m (28ft by 25ft).

859: Residence: Gone - All that remains of this foundation is a rough stone alignment.

858: Residence: Gone - Stone foundation measures approximately 8.53m by 7.6m (28ft by 25ft).

857: Residence: Gone - Stone foundation measures approximately 8.53m by 7.6m (28ft by 25ft).

856: Residence: Gone - Stone foundation measures approximately 8.53m by 7.6m (28ft by 25ft).

855: Residence: Gone - Stone foundation measures approximately 9m by 7.6m (30ft by 25ft).
854: Heating Plant: This site consists of the rear gable wall of the heating plant. The wall is constructed of hewn stone that measures 4.57m (15ft) wide, 3.7m (12ft) high at the gable peak, and 457mm (18in) thick. A .6m (2ft) diameter red ceramic pipe is located in the upper west end of the wall. A small wooden vent is located just below the gable peak.

853: Residence: Gone - Stone foundation measures approximately 9m by 9m (30ft by 30ft).

852: Residence: Gone - Foundation area is completely overgrown with heavy vegetation and was impossible to see.

851: Residence: Gone - Foundation area is completely covered with grass and topsoil and was not visible on the surface.

850: Residence: Gone - Foundation in ruins and disarticulated.

849: Residence ?: Gone - This stone and concrete foundation has railroad rails in the cement and measured 12.8m by 9m (42ft by 30ft). Three concrete porch piers were located along the front.

846: Greek Town - Residence: Gone - Partial stone alignment covered with snow and not wholly visible.

845: Greek Town - Residence: Gone - Partial stone foundation of two walls covered with snow and not wholly visible.

843: Greek Town - Residence: Gone - Partial stone alignment covered with snow and not wholly visible.

842: Greek Town - Residence: Gone - Partial stone foundation covered with snow and not wholly visible. An unidentified building is located behind 842. It consists of four hewn stone walls and measures approximately 8.53m by 7.6m (28ft by 25ft).

841: Residence: Gone - Partial stone alignments of two walls covered with soil and not wholly visible.

840: Residence: Gone - Partial stone foundation covered with topsoil and not wholly visible.

839: Residence: Gone - Front wall foundation consists of stone alignment.

838: Residence: Gone - Foundation consists of the front and rear walls along with that of the partial west wall. The area measures 8.53m by 7.6m (28ft by 25ft). Part of the foundation is covered with snow and not wholly visible.

836: This building is located on the north side of the canyon high up the slope. It consists of standing hewn stone walls and measures 7.77m by 8.38m (25.5ft by 27.5ft). The front of the building has two doors and two windows. Each opening has stone sills and lintels. The top of the wall ends just above the lintels. There is no indication as to the type of
roof used on the structure. A stone and wood root cellar is located to the east of the building.

833: Residence ?: Gone - Site consists of disarticulated rubble.

832: Residence: Gone - Site consists of concrete foundation that measures 8.53m by 7.6m (28ft by 25ft). This site possibly 890?

831: This site consists of the front and east end of the hewn stone foundation, which measured 8.53m by 7.6m (28ft by 25ft). A dry laid stone retaining wall is located in front and below the structure platform. At the rear of the structure is stone and wood root cellar. The stone walls act as a retaining wall with the cellar in the middle of the wall. The 1.8m by 1.8m (6ft by 6ft) cellar is constructed from vertically placed railroad ties and covered with a shed roof. A plank door covered the access.

830: Residence ?: Gone - Site consists of the earthen platform and partial front wall.

829: Residence ?: Gone - Site consists of the earthen platform and the disarticulated rubble.

828: Residence ?: Gone - Site consists of disarticulated rubble.

814: Residence ?: Gone - Site consists of disarticulated rubble with an associated stone root cellar.

812: Residence ?: Gone - Site consists of disarticulated rubble with an associated stone root cellar (possible habitation site) that measures 4.6m by 4.6m (15ft by 15ft). The roof of the cellar consists of a low angle Anglo-Western log roof covered with dirt.

School House: This building consists of two structures. The first is a hewn stone single story building measuring 8.53m by 7.6m (28ft by 25ft). It is located on the side of the hill behind the later addition and is connected to the front two story addition at the second story. The second part of the building consists of a concrete two story addition, which measures 22 m by 9.8m (72ft by 32ft). At the top of the building a date of “1923” in embossed into the cement and over the door are the words “West Hiawatha”. A concrete furnace and chimney are located in the center of the west concrete wall.

The following list of building numbers are those that were destroyed by a bull dozer or are now located under the existing asphalt roadway.

899: Motor Barn: Under roadway.

877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 889, and 898 were all removed when the King Mine #4 and #5 platform was built c.1972.

872, 871, 827, 825, 823, 821, 819, 817, 815, 813, 811, 807, 805, 803, 801, and 800 were all removed and currently lay under the existing asphaltered roadway.
826, 824, 822, 820, and 818 were all bulldozed and are now disarticulated rubble.

South Fork

The site is located at the extreme western end of South Fork of Miller Creek. In the 1930's or 1940's, U.S. Fuel Company constructed an earth platform at this location. The Company then constructed mine facilities including maintenance buildings and portals, on and around the platform.

Water Tank

This 40,000 gallon, round water tank rests on wood plank unevenly spaced. The vertical wood wall planks are reinforced with fifteen metal pipe collars. Two vertical pipe enter the tank on the east elevation. One pipe parallels the exterior wall and enters the tank approximately 20 cm (8 in) below the eave. The other pipe, located approximately 1.5 m (5 ft) from the tank, enters through the roof. The twelve-sided roof is composed of tongue and groove sheathing. The east roof elevation features a square hatch accessible by a wood ladder attached to the tank wall. A 1.2 m by 1.2 m (4 ft by 4 ft) pit lined with two inch boards provides access to water valves located beneath the tank on the east elevation.

Water entered the tank via a 19.2 m (63 ft) square flume supported by five trestle legs. The 0.6 m² (2 ft²) flume is comprised of wood plank on four sides with corrugated tin providing addition protection on the top surface. The flume ties into a worn surface path west of the water tank.

Portals

The site contains remnants of three mine stages. During the 1940's mining operations at South Fork centered on the King #3 mine. The concrete fan house and portal for King #3 are still intact. The King #3 intake portal, located north of the shop, has been backfilled. Remnants of exploratory mining operations, which were abandoned in 1948, are evident approximately 33.5 m (110 ft) north of the bathhouse. This area consists of three collapsed portals and a timber platform which measures 4.3 m by 4.3 m (14 ft by 14 ft). The platform extends over a road indicating that it may have been utilized as a coal loading structure. In 1982, U.S. Fuel Co. opened King #6 mine. The company built at least one new portal, which is buried, and utilized the old King #3 fan house to ventilate the new mine.

Bathhouse and Office

In 1948, U.S. Fuel built this side-gable, aluminum clad structure, which rests on a concrete foundation (U.S. Fuel n.d.). The building measures 49 m by 12 m (160 ft by 40 ft). Fenestration consists of two, three over four windows on the west elevation; three, three over four windows, three aluminum sliding windows, and two pedestrian doors on the south elevation; and two aluminum sliding windows and one pedestrian door on the east elevation. The middle two rows of the three over four windows are louvered. Interior walls feature both cinder block and frame construction. The ceiling and frame walls have an aluminum siding treatment. Four round metal
ventilators protrude from the roof. In 1950, the company doubled the length of the structure by adding on to the east elevation. The addition retains the same aluminum siding. Several years later, U.S. Fuel built an “L” shaped cinder block wall, covered by a corrugated tin roof, off the west elevation. Two entry porches were added to the south elevation. These open porches consist of a concrete pad and a gable roof supported by two metal posts.

Shop

This “L” shaped, gable-front shop was reportedly built from corrugated metal salvaged from the demolished Black Hawk tipple. Previous fastener holes on the metal indicates the material is reused. The building measures 20 m x 20 m (66 ft by 66 ft). Fenestration includes a roll-up garage door, one pedestrian door, two sliding doors on a track, and a bank of four, three-over-three windows on the west elevation; a bank of twelve, three-over-three windows over four sets of three-over-three windows on the south elevation; one sliding door on the east elevation; and four three-over-three windows on the north elevation. A concrete pad out south of the shop to the mine access road. The south edge of the pad is supported by a cinder block retaining wall.

Power Substation

This 1940's facility includes transformers enclosed by a fence measuring 4 m by 4.5 m (14 ft by 15 ft).

Two pole buildings (garage and storage shed), a concrete foundation, and a conveyor belt were constructed within the last fifty years (Watson, personal communication, 1998).

Upper Rail Yard

This site is located at the base of North Fork and Middle Fork Canyons of Miller Creek. The area was utilized for coal processing and loading.

Power House (Building #313)

All that remains of this building are the stone foundation walls 0.6 m (2 ft) thick by 2.5 m (8 ft) high and a sub-surface concrete structure. The structure measures 46 m by 15 m (150 ft by 50 ft). The area around the building is covered with building rubble and brick (some labeled “GOLDEN”).

Power Plant Foundation (Building #313A)

This structure may be associated with the power house. A stone foundation 8 m by 6 m by 1 m high (26 ft by 20 ft by 3 ft). The structure contains three round, brick lined, fireboxes or furnace foundations. Each box is 1.2 m (4 ft) in diameter.

2nd Power Plant Foundation

This foundation may have been associated with the railroad roundhouse which was demolished. The stone foundation measures 7 m by 14 m (23 ft by 47 ft). The walls are 0.9 m
thick by 1 m wide (3 ft by 3.5 ft). Four round fireboxes or furnace foundations, each 2 m (6 ft) in diameter are located within the structure.

Pump House

This building is located immediately southwest of the power house. Remains of the structure consist of a trench lined with 1 m (3 ft) high concrete walls. Overall dimensions are 1.8 m by 1.2 m (6 ft by 4 ft).

Stone Building

This structure is located immediately below the current access road to the Upper Rail Yard. The only exposed structural element is the north wall which measures 6 m wide by 1.8 m high (20 ft by 6 ft). This wall features a centered door flanked by a window consisting of vertical metal bars. The barred window suggests that this building may have been utilized as a paymasters office.

Fuel Storage Tanks

These seven lead lined tanks are encapsulated in a concrete case 9.7 m by 1.2 m (32 ft by 4 ft). Metal pipes located at the base of each tank were probably used to fill smaller containers. Each tank is labeled with a metal sign (from east to west):

<table>
<thead>
<tr>
<th>CF Co</th>
<th>CF Co</th>
<th>CF Co</th>
<th>Surr</th>
<th>Surr</th>
<th>CF Co</th>
<th>No 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>No 3</td>
<td>No 4</td>
<td>No 5</td>
<td>No 6</td>
<td>No 7</td>
<td>No 8</td>
<td>GASOLINE</td>
</tr>
<tr>
<td>CVL OIL</td>
<td>CRANK OIL</td>
<td>DISTILLATE</td>
<td>--- LIGHT</td>
<td>SIGNAL OIL</td>
<td>ELE TRAN</td>
<td></td>
</tr>
</tbody>
</table>

2nd Tipple Base

This concrete structure is the remnant of a tipple constructed by U.S. Fuel Company c. 1920. The remainder of the tipple extended further north, over the railroad tracks. Measuring 6 m by 8.2 m (20 ft by 27 ft), the structure consists of four legs each 1.2 m by 1 m (4 ft by 3 ft) wide which support a platform 7.6 m (25 ft) above the ground. A machine base and two metal tracks are attached to the top of the platform. The structure is situated at the bottom of a hill. Concrete piers moving south, up the hill, tie into a large, multi-level, concrete structure. This structure appears to be the terminus for trams hauling coal from the Middle Fork mines.

Original Tipple Base

Six 0.5 m by 0.5 m (1.5 ft by 1.5 ft) piers and a concrete pad covered by coal may represent the location of the original Hiawatha tipple.

Lower Rail Yard

Railroad Depot

This rectangular-shaped building features a center gable projecting from the south elevation. Overall dimensions are 21 m by 7.3 m (69.5 ft by 24 ft). Fenestration in the south elevation divided into three sections. All windows are six-over-six double hung unless otherwise
noted. The south wall, west of the projecting gable, features two windows and one pedestrian door. The projecting gable contains four windows, two in the south elevation and one in the west and east walls. Two aluminum siding windows and one pedestrian door are present in the south elevation east of the projecting gable. The east elevation consists of double doors flanked by two aluminum sliding windows. The north elevation consists of two aluminum sliding windows, a double door, two double hung windows, and two casement windows. The west elevation features two double hung windows and a projected eave support by two square columns. A brick chimney protrudes through the roof on the north side. Bungalow features include a hipped roof, wide eave overhangs, bead board soffit, square support columns, and stucco wall treatment. A sign, centered on the projecting gable, reads: “HIWATHA— EL. 7225.”

Fuel Storage Building

This side-gable structure features concrete walls with railroad tie corners and intermediary posts and a corrugated tin roof. The building measures 5.5 m by 3.6 m (18 ft by 12 ft). A set of railroad tracks enter the building through a vertical plank door located on the north elevation. These tracks pass over a small drainage ditch south of the fuel house and connect with yard tracks.

Portable Phone Booths

These two pyramid roof structures measure 1.5 m by 1.7 m (5 ft by 5.5 ft). Each booth features plank flooring supported by skids, drop siding, five panel doors, screen vents along the eaves, and an asphalt shingle roof. The interiors include felt paper wall treatment and a shelf.

Garage

This cable-front structure features railroad tie walls and measures 6.3 m by 5.5 m (20.75 ft by 18 ft). Fenestration includes two 2.4 m (8 ft) vertical hinged doors on the south elevation; one window on the east elevation; and two windows and one pedestrian door on the north elevation.

Tracks

Remnants of at least four sets of track are evident in the Lower Rail Yard.

Storage Shed

This shed roof, cinder block, building measures 5.7 m by 3.6 m (18.75 ft by 12 ft). Tracks enter the structure through two metal doors on the north elevation. The building is out-of-period.

Utah Railroad Yard

Mine company tracks tied into the Utah Railroad track in this yard. Loads of coal were stored in this location prior to transport to regional markets. Six of at least nine tracks remain in place. A few of the 90 lb rails are dated 1924. Sometime after 1950, the yard was used for coal storage and car loading. Coal piles are still present east of the tracks.
Tunnels

The Hiawatha Coal Company property contains two ashlar stone tunnels built over Miller Creek. Both tunnels feature arches, keystones, stone wing walls, and are lined with a cement veneer on the interior arch surface. The tunnel located near the Upper Rail Yard is 48.7 m (160 ft) long by 3.6 m (12 ft) wide by 3.6 m (12 ft) high. The second tunnel, located under the Utah Railroad westbound tracks is approximately 61 m (200 ft) long by 4.3 m (14 ft) wide by 4.9 m (16 ft) high.

Cemetery

The cemetery is currently delineated by a 19.8 m by 21.3 m (65 ft by 70 ft) chain-link fence erected in 1997. Only two grave markers are evident; a concrete marker with the inscription “ELMER KOSKI - 1926 1926,” and a small metal plate with no visible inscription. The remainder of the cemetery is buried beneath coal fine dunes and sagebrush.

On May 28, 1998, Sagebrush conducted preliminary test excavations around the cemetery, in order to establish its boundaries. While the current fenced perimeter measures 19.8 m by 21.3 m, a map of Hiawatha (n.d., Revised 1943) plats the cemetery boundaries at 85.3 m by 88.4 m (280 ft by 290 ft). Since the enclosed area of the cemetery is much smaller than the larger platted area, Sagebrush recommended that ground outside the enclosure be tested for additional burials. After consultation with Hiawatha Coal Company, Utah Division of Oil, Gas and Mining, Office Surface Mining, and Utah State Historic Preservation Office, a decision was reached whereby the test excavations were determined necessary.

Prior to commencing the testing, an oral interview was conducted with Al Vogrinec. His brother, who died in childhood, was buried in the cemetery in 1940. This interment was one of the last two to occur in this cemetery (Vogrinec, personal communication, 28 May 1998). Mr. Vogrinec recalled hearing at some time in his life that only children were buried in the Hiawatha cemetery while adult burials were transported to Price at company expense for interment in the city cemetery. Thus, only infants and young children were buried in the Hiawatha cemetery, which accounts for the smaller enclosure. This account of the cemetery is supported by a conversation with Mike Watson, president of U.S. Coal Company (Watson, personal communication, 30 April 1998).

The test excavations consisted of removing the overburden with a front-end loader and then scraping the newly exposed surface with a road grader to a width of 6.1 m (20 ft). When the overburden is stripped away in this manner, the outline of the burial chambers are exposed and thus located. The test trenches were excavated to sterile soil at a depth of approximately .61 m to .91 m (2 ft to 3 ft). Neither the east trench nor the south trench showed any indications of burial chambers being present. Therefore, the test excavations were terminated at this point.
Figure 5. Cemetery overview before excavation; view to the north.

Figure 6. South trench with grader; view east.
Figure 7. Bottom of south trench; view east.

Figure 8. West trench with loader; view south.
Figure 9. West trench bottom; view south.

Figure 10. Intersection of trenches; view to the northeast.
Baseball Field

The baseball field consists of two dugouts, a water fountain, and remnants of the backstop. Each dugout measures 4 m by 2 m (13.5 ft by 7 ft). Five concrete steps lead down to the dugouts, which are protected by a shed roof supported by four metal posts. The roofs are concrete reinforced with fragments of railroad track. The remnants (a vertical metal pipe) of the drinking fountain is located 1.8 m (6 ft) south of the southern dugout. The is centered 6 m (20 ft) from each dugout and consists of four poles 0.25 m (10 in) in diameter and 6 m (20 ft) high. A road currently bisects the field, which has been inundated by native vegetation including sagebrush.

Coal Processing

Slurry Pond #1

This pond, located north and west of the cemetery, is intact and measures approximately 152 m by 305 m (500 ft by 1000 ft).

Refuse Pile #1

This feature, located southeast of Slurry Pond #1, consists of rock laden coal and measures approximately 123 m wide by 183 m long by 18 m (400 ft by 600 ft by 60 ft).

Refuse Pile #2 and Slurry Ponds #4 and #5 have all been reclaimed.

SHOP/FACILITIES

Store Yard

This “T” shaped store yard consists of three components. The north section features a stone retaining wall and is surrounded by a chain link fence. The south and east sections features cinder block retaining walls and asphalt surface. Two timber platforms are located in the east section. Currently, the yard is used to store electrical components including transformers.

Hiawatha Bathhouse

This building originally consisted of a stone, side-gable structure. Fenestration on the East elevation consists of three double hung windows, covered with plywood. The West elevation now acts as a retaining wall for road fill. Two windows on the West elevation have been filled with concrete. Additions were built off the South and North elevations of this structure.

A side-gable addition was built off the South elevation of the stone building. This addition features a concrete foundation, extrudes 1.5 m (5 ft) above the ground surface, and stucco walls. The walls extend higher than the original stone building and are covered by a wood shingle roof with a ridge vent. A centered, enclosed, gable entryway is located on the east elevation. Two plywood doors permit entry. The north and south elevations of the entryway feature one, six light, fixed sash windows. Two bands of two six-over-six double hung windows flank the...
entryway. The South elevation consists of two double hung windows, covered with plywood. Three bands of two, six-over-six double hung windows, boarded up, fenestrate the west elevation. A transformer, resting on a concrete pad and surrounded by a chain link fence lies off the northwest corner of this addition.

Originally, an “L” hotel was attached off the north elevation of the stone building (Marsh and McLennan Insurance Co. 1950). This structure was removed and two, small, cinder block additions were built at that location. These additions functioned as the boiler room for the showers. The only fenestration consists of a metal access door on the east elevation. Both the stone building and the cinder block additions are covered by a contiguous corrugated metal roof.

Building #510 (Shop)

This gable structure consists of a basement and stone foundation. The structure is divided into three sections: electric shop (north), machine shop (middle), and blacksmith/car repair shop (south). The roof of the center portion extends higher than the two end segments. Fenestration of the electric shop consists of three banks of two, six-over-six windows in the east elevation; two, six-over-six windows, a sliding door, and a pedestrian door in the north elevation. Two additions were built on the west elevation (northwest corner) of the electric shop. These additions are comprised of ribbed, metal siding and feature seven aluminum sliding windows and three pedestrian doors. The machine shop features eight, nine-over-nine windows and a large door on the east elevation. An overhead track/rail extends out past the door. Two bands of two, nine-over-nine double hung windows and a set of double doors fenestrate the west elevation. The blacksmith/car repair shop consists of one pedestrian door in the east elevation. Several six-over-six double hung windows on the west elevation have been covered by corrugated metal. Two gable roof vents extend up from the blacksmith shop roof. These vents feature four louvered bays on the east and west elevations. A small shop was added to the east elevation (southeast corner).

Warehouse

U.S. Fuel Company constructed this rectangular warehouse in 1915. The gable structure consists of a basement and stone foundation. Fenestration consists of double doors and two casement windows in the basement in the south elevation. The main floor of the south elevation consists of one pedestrian door and three aluminum windows which, were later added. At least four windows, probably casement, are located in the basement of the east elevation. The east wall is obscured from view by backfill. A bank of eighteen, six-over-six windows in the east elevation. U.S. Fuel Company built numerous additions to the structure. These include a cinder block room and cinder block platform on the west elevation.

Power Substations

There are two sub-stations north of the lower rail yard. The upper (north) station is approximately 27 m by 23 (90 ft by 75 ft) and was constructed prior to 1950. The lower (south) station is approximately 9 m by 9 m (30 ft by 30 ft). Amethyst light globes, containing magnesium, suggest that the lower station was built prior to 1918.
RECOMMENDATIONS

As part of this survey, all sites and features were evaluated for eligibility to the NRHP as outlined in 36CFR 60.4:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects 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 likely yield, information important in prehistory or history.

Despite modifications over the last fifty years, the Hiawatha property retains substantial material integrity. The property is one of the few Utah coal mine locations that retains the components typical of twentieth century coal production, including coal extraction, processing, transportation, and company towns. Therefore, this property is recommended eligible for the NRHP, as a district, under criterion A (36 CFR 60.4). In addition, sites and features on the property maintain "integrity of location, design, setting, materials, workmanship, feeling and association" and embodies "the distinctive characteristics of a type, period," and "method of construction," as outlined in 36 CFR60.4. These sites and features are recommended eligible for the NRHP, under criterion C (36 CFR 60.4). Sites or features with the potential to yield information regarding early twentieth century coal mining in Carbon County are recommended eligible for the NRHP, under criterion D (36 CFR 60.4). Several sites and features lack "integrity of location, design, setting, materials, workmanship, feeling and association" and therefore are recommended not eligible for the NRHP. Structures or features completed within the last fifty years are classified as out-of-period, do not meet current NRHP guidelines and are therefore recommended not eligible for the NRHP.

Table 1: List of Sites and Features, with NRHP Eligibility, within the Project Area.
Abbreviations: N/A = not applicable; O.P. = out-of-period; n.d. = no date.

<table>
<thead>
<tr>
<th>Site</th>
<th>Year Built</th>
<th>Map Source</th>
<th>Condition</th>
<th>NRHP Eligibility</th>
<th>NRHP Eligibility Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>King #4 Air Intake Vent</td>
<td>N/A</td>
<td>N/A</td>
<td>Reclaimed</td>
<td>Not eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>North Fork Water Line</td>
<td>N/A</td>
<td>N/A</td>
<td>Intact</td>
<td>Not eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Property Name</td>
<td>Date</td>
<td>Condition</td>
<td>Eligibility</td>
<td>Status</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------</td>
<td>-----------</td>
<td>-------------------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td>Upper Reservoir</td>
<td>c.1910</td>
<td>N/A</td>
<td>Intact</td>
<td>Eligible-Contributing A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Lower Reservoir</td>
<td>c.1910</td>
<td>N/A</td>
<td>Intact</td>
<td>Eligible-Contributing A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Wood Stave Pipe</td>
<td>c.1910</td>
<td>N/A</td>
<td>Intact</td>
<td>Eligible-Contributing A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Mine #1 Main Slope</td>
<td>1909</td>
<td>M-185</td>
<td>Intact</td>
<td>Eligible-Contributing A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Mine #1 Fan Portal</td>
<td>c.1909</td>
<td>M-185</td>
<td>Ruin</td>
<td>Eligible-Contributing A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Mine #2 Man Way</td>
<td>1914</td>
<td>M-185</td>
<td>Intact</td>
<td>Eligible-Contributing A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Mine #2 Main Slope</td>
<td>c.1914</td>
<td>M-185</td>
<td>Intact</td>
<td>Eligible-Contributing A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Mine #2 Fan Portal</td>
<td>c.1914</td>
<td>M-185</td>
<td>Intact</td>
<td>Eligible-Contributing A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Mule Portal</td>
<td>c.1914</td>
<td>M-185</td>
<td>Intact</td>
<td>Eligible-Contributing A &amp; C</td>
<td></td>
</tr>
<tr>
<td>King Mine #4 Belt Portal</td>
<td>1974</td>
<td>N/A</td>
<td>Intact</td>
<td>Not Eligible O.P.</td>
<td></td>
</tr>
<tr>
<td>King Mine #4 Track Portal</td>
<td>c.1974</td>
<td>N/A</td>
<td>Covered</td>
<td>Not Eligible O.P.</td>
<td></td>
</tr>
<tr>
<td>King #5 Intake Portal</td>
<td>c.1974</td>
<td>N/A</td>
<td>Covered</td>
<td>Not Eligible O.P.</td>
<td></td>
</tr>
<tr>
<td>King #5 Belt Portal</td>
<td>c.1974</td>
<td>N/A</td>
<td>Covered</td>
<td>Not Eligible O.P.</td>
<td></td>
</tr>
<tr>
<td>King #5 Return Portal</td>
<td>c.1974</td>
<td>N/A</td>
<td>Covered</td>
<td>Not Eligible O.P.</td>
<td></td>
</tr>
<tr>
<td>Exhaust Fan House</td>
<td>c.1974</td>
<td>N/A</td>
<td>Intact</td>
<td>Not Eligible O.P.</td>
<td></td>
</tr>
<tr>
<td>Bathhouse</td>
<td>c.1974</td>
<td>N/A</td>
<td>Intact</td>
<td>Not Eligible O.P.</td>
<td></td>
</tr>
<tr>
<td>Power/Switch Houses (4)</td>
<td>c.1974</td>
<td>N/A</td>
<td>Intact</td>
<td>Not Eligible O.P.</td>
<td></td>
</tr>
<tr>
<td>Garage/Shop</td>
<td>c.1974</td>
<td>N/A</td>
<td>Intact</td>
<td>Not Eligible O.P.</td>
<td></td>
</tr>
<tr>
<td>Power Substation</td>
<td>c.1974</td>
<td>N/A</td>
<td>Intact</td>
<td>Not Eligible O.P.</td>
<td></td>
</tr>
<tr>
<td>Storage Shed</td>
<td>c.1974</td>
<td>N/A</td>
<td>Intact</td>
<td>Not Eligible O.P.</td>
<td></td>
</tr>
<tr>
<td>Loading Silo</td>
<td>c.1974</td>
<td>N/A</td>
<td>Intact</td>
<td>Not Eligible O.P.</td>
<td></td>
</tr>
<tr>
<td>Conveyor Belt</td>
<td>c.1974</td>
<td>N/A</td>
<td>Intact</td>
<td>Not Eligible O.P.</td>
<td></td>
</tr>
<tr>
<td>Middle Fork Water Tank</td>
<td>c.1917</td>
<td>M-185</td>
<td>Intact</td>
<td>Eligible-Contributing A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Rock Flume</td>
<td>c.1917</td>
<td>M-185</td>
<td>Intact/Ruin</td>
<td>Eligible-Contributing A &amp; C</td>
<td></td>
</tr>
<tr>
<td>Building #899</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Road</td>
<td>Not Eligible N/A</td>
<td></td>
</tr>
<tr>
<td>Building #891</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing A &amp; D</td>
<td></td>
</tr>
<tr>
<td>Building #889</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Complex</td>
<td>Not Eligible N/A</td>
<td></td>
</tr>
<tr>
<td>Building #888</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing A &amp; D</td>
<td></td>
</tr>
<tr>
<td>Building #887</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Complex</td>
<td>Not Eligible N/A</td>
<td></td>
</tr>
<tr>
<td>Building #</td>
<td>Date</td>
<td>Type</td>
<td>Complex</td>
<td>Eligibility</td>
<td>Notes</td>
</tr>
<tr>
<td>---------------</td>
<td>--------</td>
<td>---------</td>
<td>---------</td>
<td>-----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Building #886</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Complex</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #885</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Complex</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #884</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Complex</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #883</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Complex</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #882</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Complex</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #881</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Complex</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #880</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Complex</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #879</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Complex</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #878</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Complex</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #877</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Complex</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Substation</td>
<td>c.1917</td>
<td>M-185</td>
<td>Under Complex</td>
<td>Not Eligible</td>
<td>N/A</td>
</tr>
<tr>
<td>Building #876</td>
<td>c.1917</td>
<td>M-185</td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #875</td>
<td>c.1917</td>
<td>M-185</td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #874</td>
<td>c.1917</td>
<td>M-185</td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #873</td>
<td>c.1917</td>
<td>M-185</td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #872</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #871</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #870</td>
<td>c.1917</td>
<td>M-185</td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #869</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #867</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #866</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #865</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #864 (Replaced)</td>
<td>1919</td>
<td>N/A</td>
<td>Ruin</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
<tr>
<td>Building #863</td>
<td>c.1917</td>
<td>M-185</td>
<td>Foundation</td>
<td>Eligible-Contributing</td>
<td>A &amp; D</td>
</tr>
</tbody>
</table>
APPENDIX IV-9

CULTURAL AND HISTORIC RESOURCES

MITIGATION
# TABLE OF CONTENTS

INTRODUCTION ................................................................. 3

Slurry Impoundment No. 1 ................................................... 3

---

## List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1-1</td>
<td>1974 photograph showing Slurry Impoundment No. 1</td>
<td>4</td>
</tr>
<tr>
<td>Figure 1-2</td>
<td>1999 Photograph of Slurry Impoundment No. 1</td>
<td>4</td>
</tr>
<tr>
<td>Figure 1-3</td>
<td>1999 As-built of Slurry Impoundment No. 1</td>
<td>5</td>
</tr>
<tr>
<td>Figure 1-4</td>
<td>Proposed Alternate Post-mining Configuration of Slurry Impoundment No. 1</td>
<td>7</td>
</tr>
</tbody>
</table>

---

IV.9-2
INTRODUCTION

This Appendix contains specific historical information for each structure which has been determined as being eligible or contributing to the eligibility of the district to be listed on the National Register of Historic Places, and which will be impacted by the current mining activities. The information includes any mitigation which may be required as a result of the impacts to each structure. As a determination is made of potential impacts to any structures, the documentation will be added to this Appendix.

1 Slurry Impoundment No. 1

The historic evaluation of Slurry Pond 1 given in Appendix IV-8 identifies the structure as "eligible/contributing". This means that the impoundment is a historical contributing factor to the entire mining district to help show how coal mining operations were conducted. Operational activities which impact this structure include the removal of coal fines from this structure for marketing purposes.

No records were found in the United States Fuel Company archives which showed the date of construction for this structure. Verbal statements from Michael Watson indicates that the slurry pond has been filled with fines and emptied several times since its initial construction (the exact number of times are not known). A photograph of the Hiawatha area taken approximately 1974 (Figure 1-1) shows the slurry pond full of coal fines. In the photograph, it appears that coal fines are being extracted. As-built contours of the slurry pond as it existed during this period are shown in Appendix V-I, pg. 24.

Figure 1-1 clearly shows the historical structure, which differs from the current structure. In 1974, the Northern embankment of the slurry pond followed the shape of Miller Creek, avoiding any alteration of the stream channel. Vegetation on the slopes indicate that the embankment was constructed of soil and subsoil materials. In March, 1976, the slurry pond had been emptied of pond fines and U.S. Fuel Company proposed to MSHA to abandon the structure. These plans for abandonment are contained in Appendix V-I.

During the course of permitting the abandonment, U.S. Fuel Company decided to enlarge the structure and resume the use of it. In April, 1983, the Division of Oil, Gas & Mining approved a plan to enlarge the impoundment to the North, altering the Miller Creek stream channel. The new pond embankment was constructed of refuse material, as described in the stability plans contained in Appendix V-I. Following reconstruction, the slurry pond was again used for slurry settlement, and subsequently refilled with coal fines. An as-built of the reconstructed pond is shown in Figure 1-3.
Figure 1-1  1974 photograph showing Slurry Impoundment No. 1

Figure 1-2  shows a photograph of the pond configuration in 1999.
Historically, the slurry placed in Slurry Pond 1 was a by-product of the coal cleaning process. Prior to being sold, the plus 6” lump coal was screened out of the mine run for sales. Large rocks were separated from the plus 6” coal by handpicking. The remainder of the coal passed through a balm jig and then through classifying screens. These screens sized the coal into four size ranges, 3” to 6”, 1 5/8” to 3”, 3/16” to 1 5/8” and minus 3/16”. The 3/16” x 1 5/8” was washed and dried, with the waste slurry being placed in the slurry pond. The majority of the pond fines, however, were produced from washing the minus 3/16” coal. While pond #1 was active, this coal was passed through a hydro-classifier, which separated the rock from the coal. The coal was taken out the overflow, through a thickener, dried and sold. The underflow (tailings) went to the slurry pond. Although the resin process was not used while Slurry Pond 1 was active, the resin plant was installed in 1956. Following its installation, the underflow from the minus 3/16” was passed through the resin plant, extracting resin. The overflow from the resin plant, which was primarily water, was recirculated through the wash plant. The tailings from the resin recovery plant was then deposited in slurry ponds “4” and “5”.

Since U.S. Fuel Company seized operations in 1992, no additional slurry has been added to slurry pond 1. In 1996, U.S. Fuel Company again started to recover coal fines from the slurry pond. This was accomplished by breaching the East embankment and constructing a road into the bottom of the impoundment. Coal fine recovery operations have continued through 1999. The pond’s current configuration has been relatively unchanged since the East embankment was breached. This breach is shown in Figure 1-3.

The current permit calls for removal of Slurry Impoundment #1. Because of the historical contribution of Slurry Impoundment #1, HCCI will leave it in place as a historical post-mining land use. This land use would establish an historical mining district. Since the pond is eligible as a contributing factor to the district, HCCI understands that a final approval to leave the impoundment in place will be subject to the approval of a historical post-mining land use for the entire site, and requests a conditional approval be granted based on this. Figure 1-4 shows the proposed post-mining configuration of the slurry impoundment.
### Physiographic Features

This site will occur on all exposures but primarily on the north and east slopes. The slopes will vary from 30 to 60%. Elevation ranges from 7000 to 9000 feet.

### Soils

The soils are deep well-drained and very gravelly, very stony or very cobbly over 50% by volume throughout the profile. Infiltration and internal water movement are good. Water holding capacity is moderate due to the high contents of rock fragments.

### Potential Native Plant Community

- Grass - 65 - 75%
- Shrubs - 15 - 20%
- Forbs - 5 - 10%

### Potential Production

1000 pounds per acre in unfavorable years to 2500 pounds in favorable years.

### Density

Potential density by ocular estimate, overstory 10 - 20%, understory 40 to 45%.

### Important Plants

- Fullgrass
- Knottgrass
- Letterman’s Needlegrass
- Lupine
- Big Sagebrush
- Mountain Snowberry
- Mountain Monopart

- Bitter Brush
Note: There are no cultural or historic sites within the North Fork disturbed area.