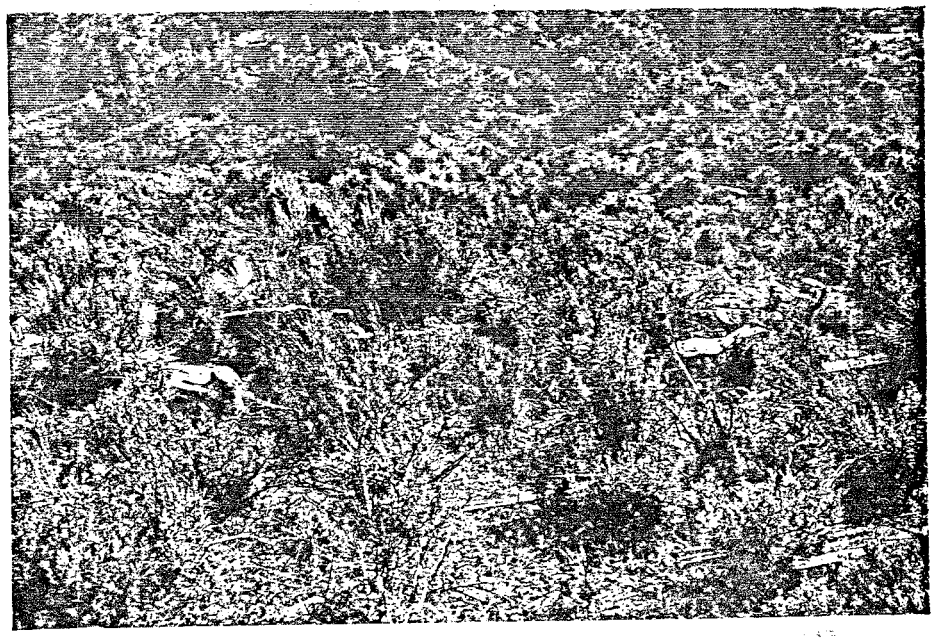
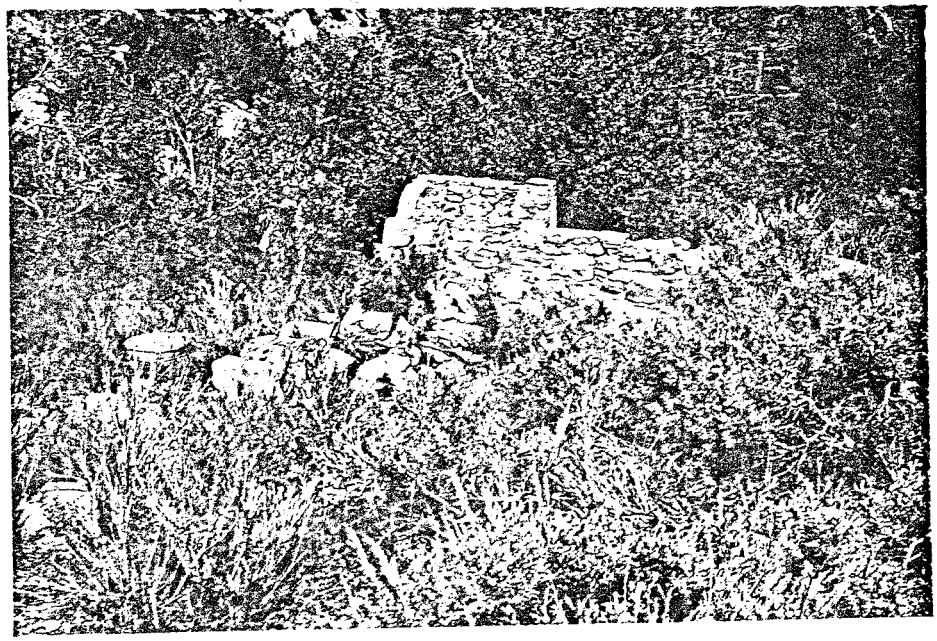
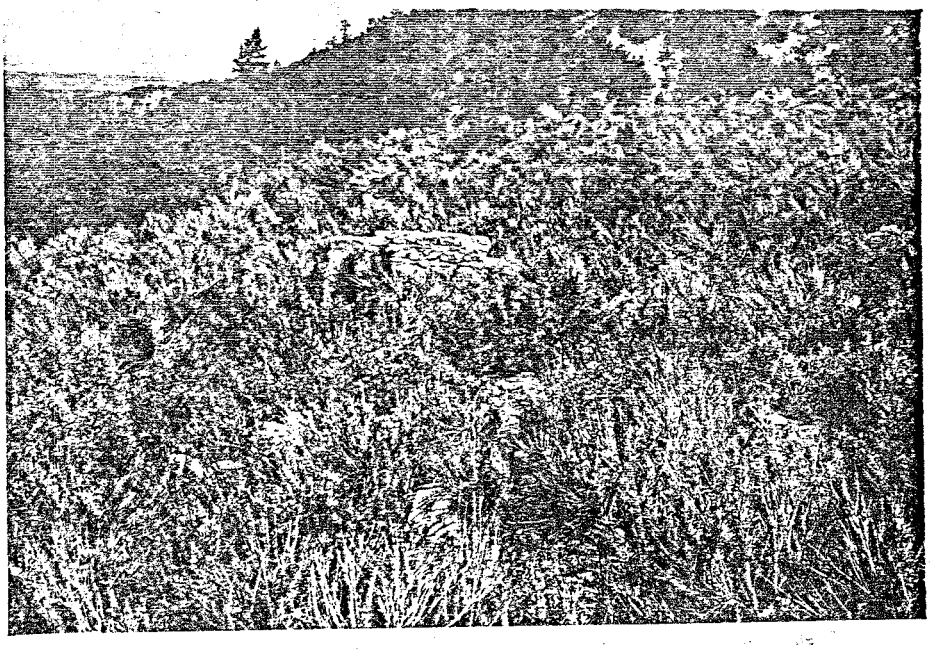


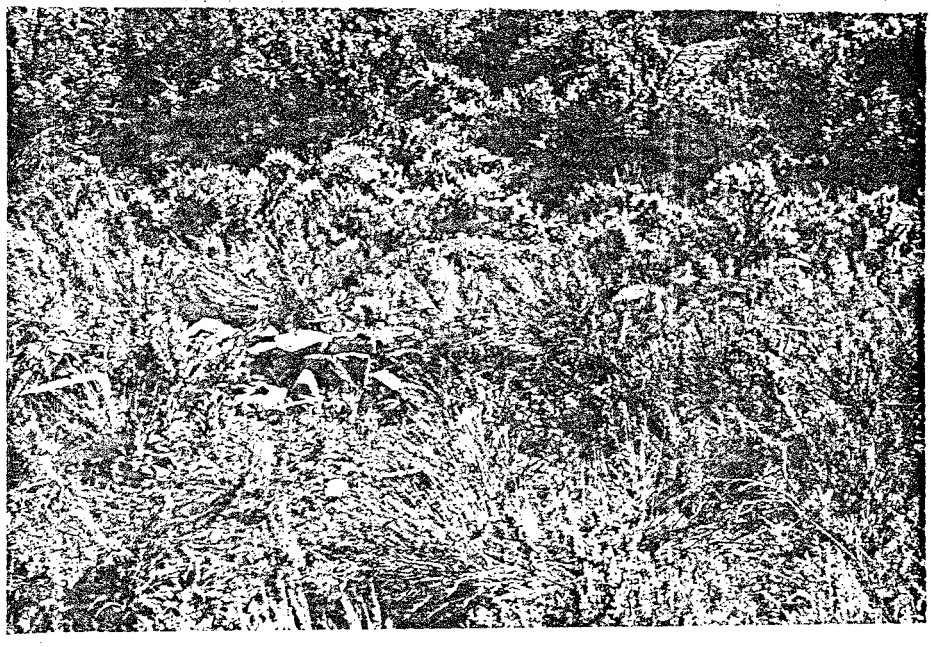
44. Residence
Looking West



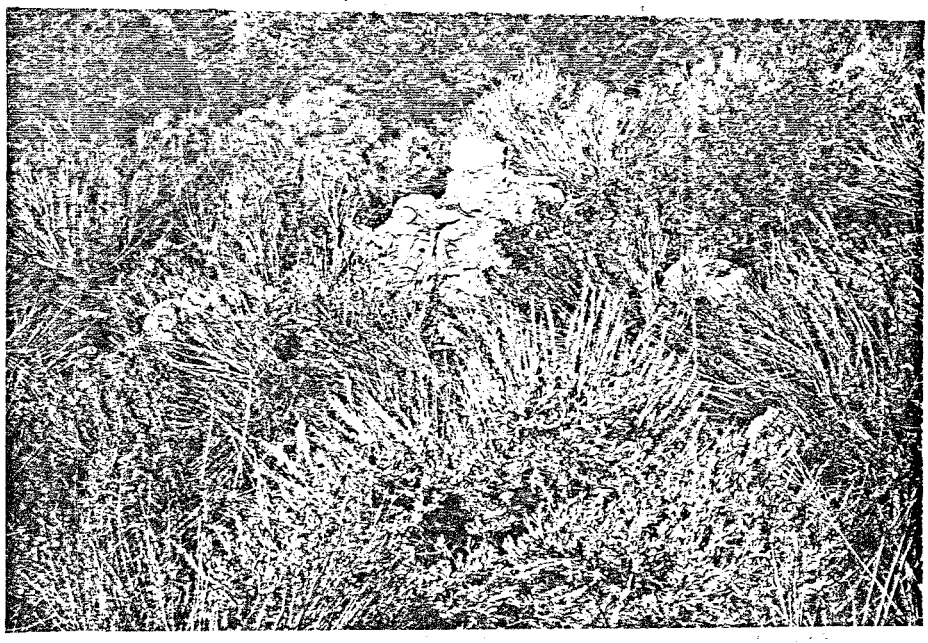
45. Residence
Looking Southeast



46. Residence
Looking Southeast

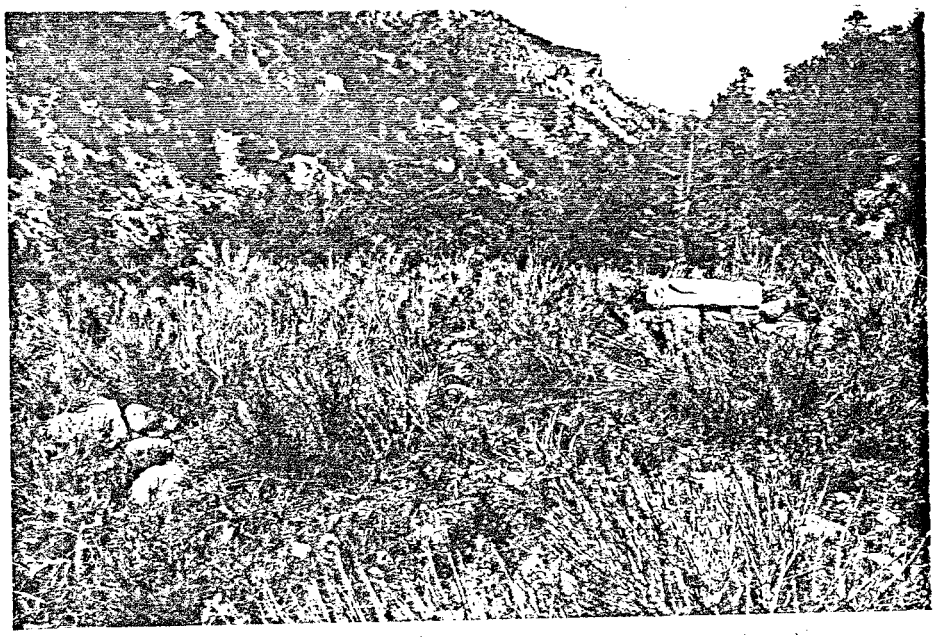


47. Residence
Looking Southwest

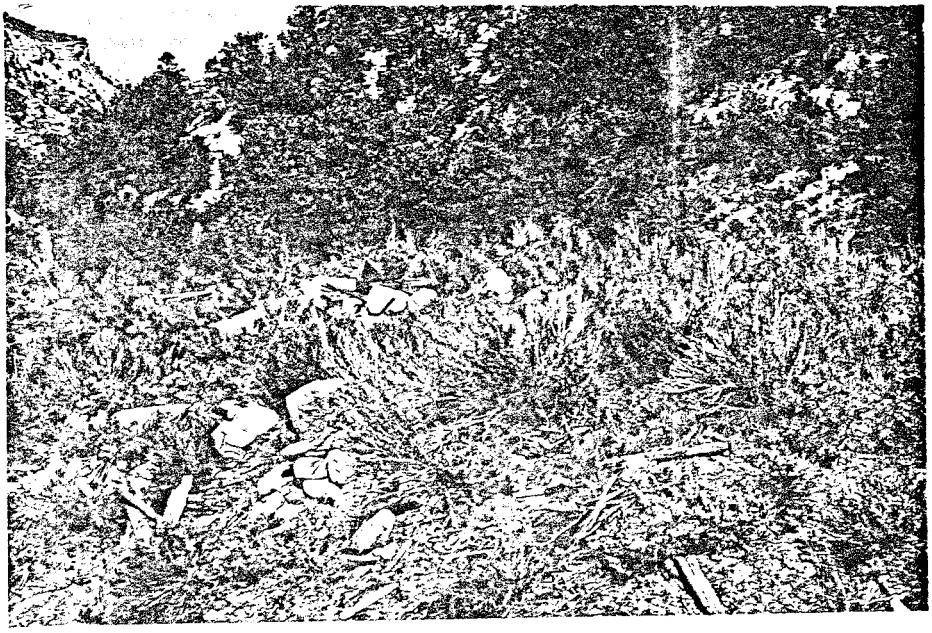


48. Residence
Looking East

49. Residence
Looking East



50. Residence
Looking East

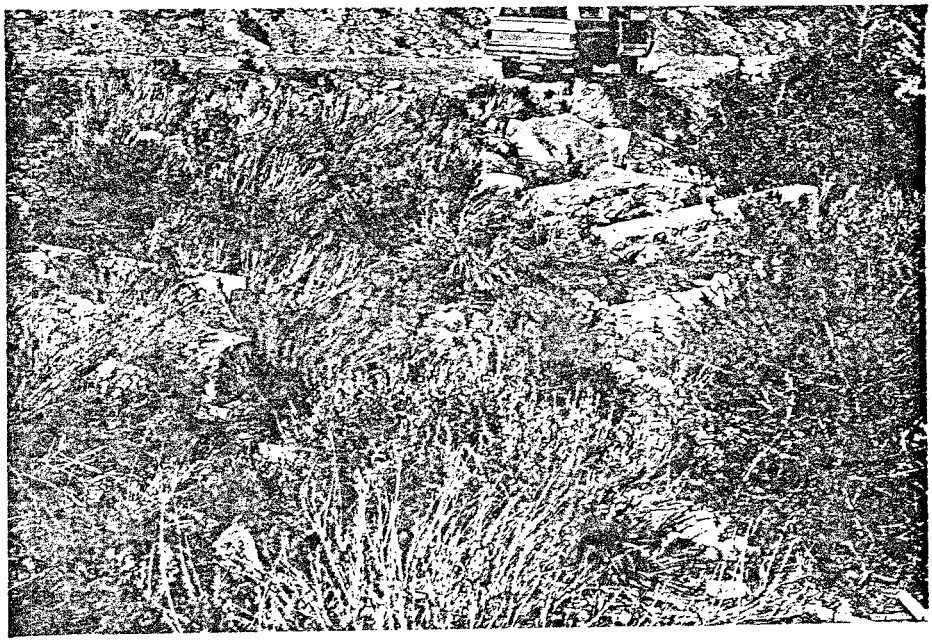


51. Residence
Looking East

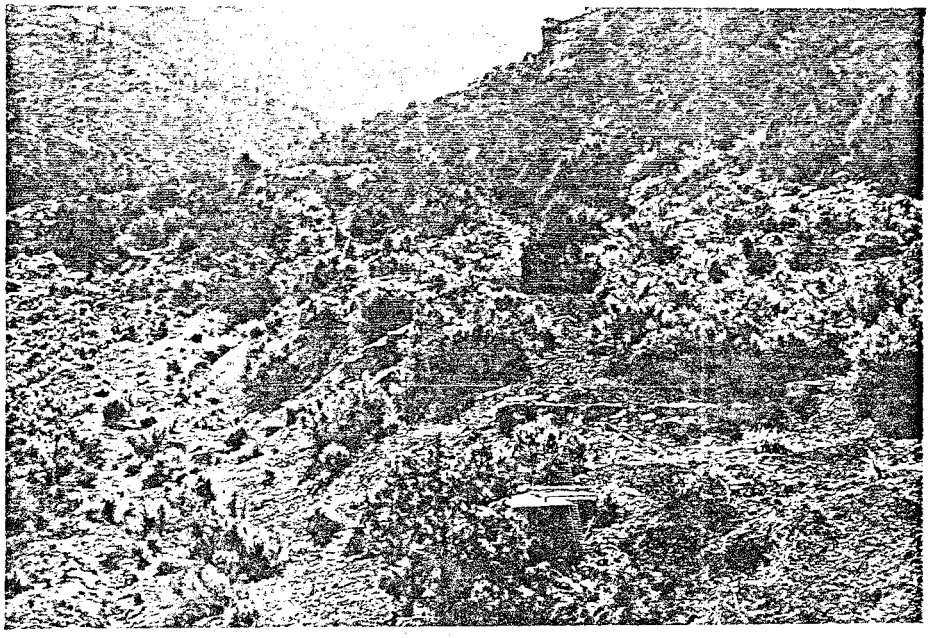
52. Residence
Looking East

53. Residence
Looking South

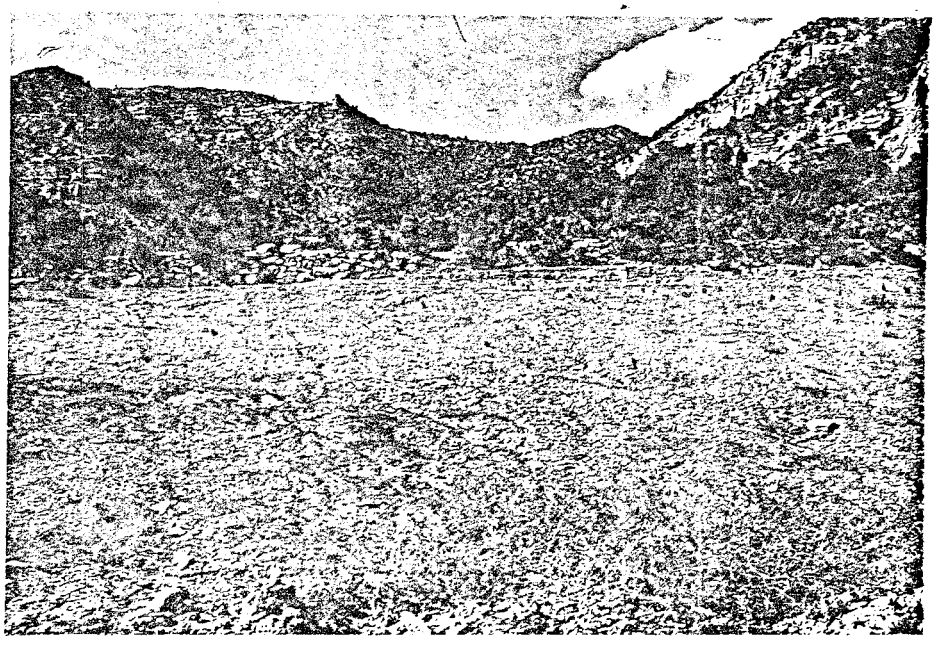
54. Residence
Looking Southwest



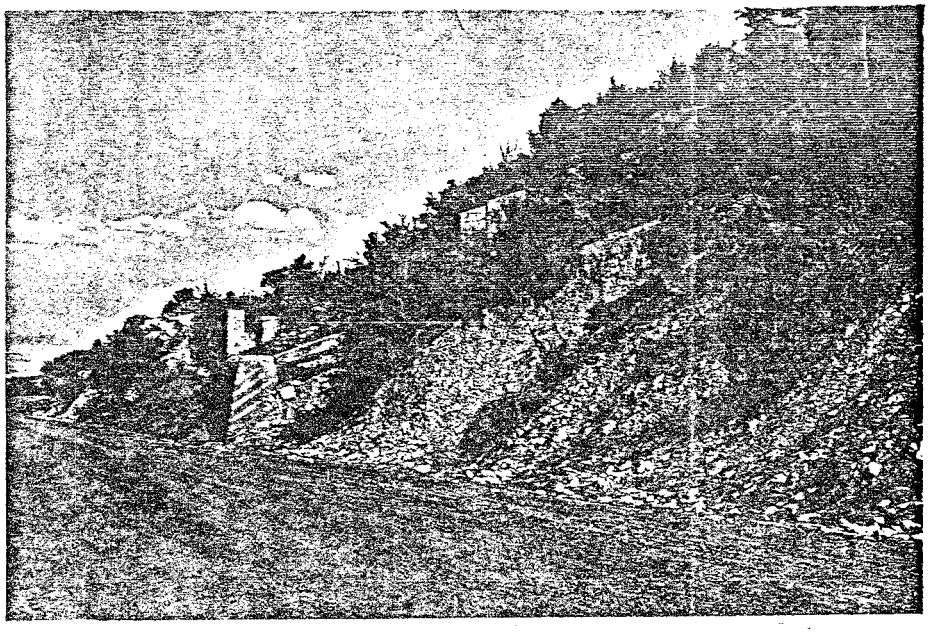
55. Water Tanks Foundation
Looking East



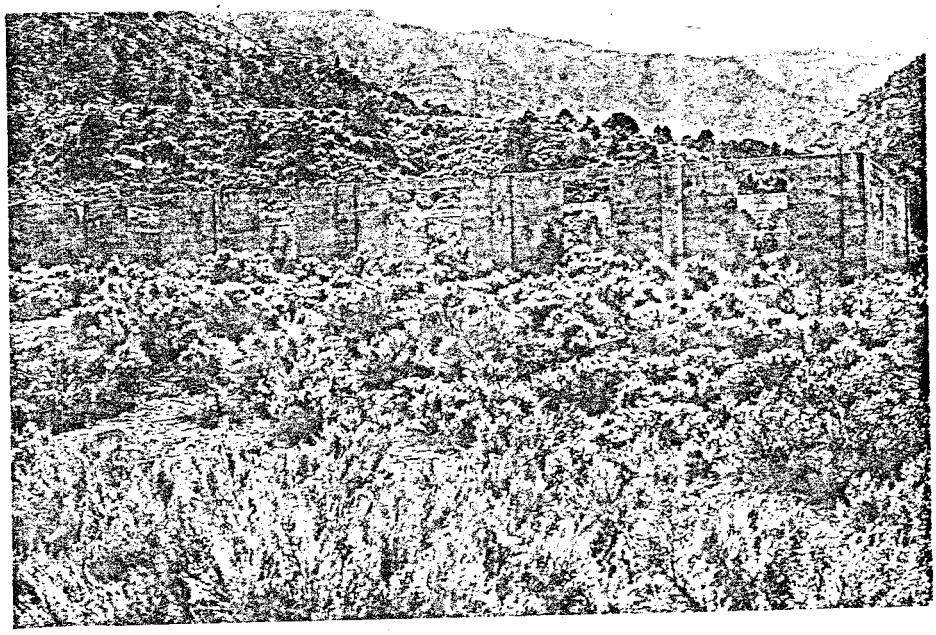
56. Original Tram Trestles
Looking West



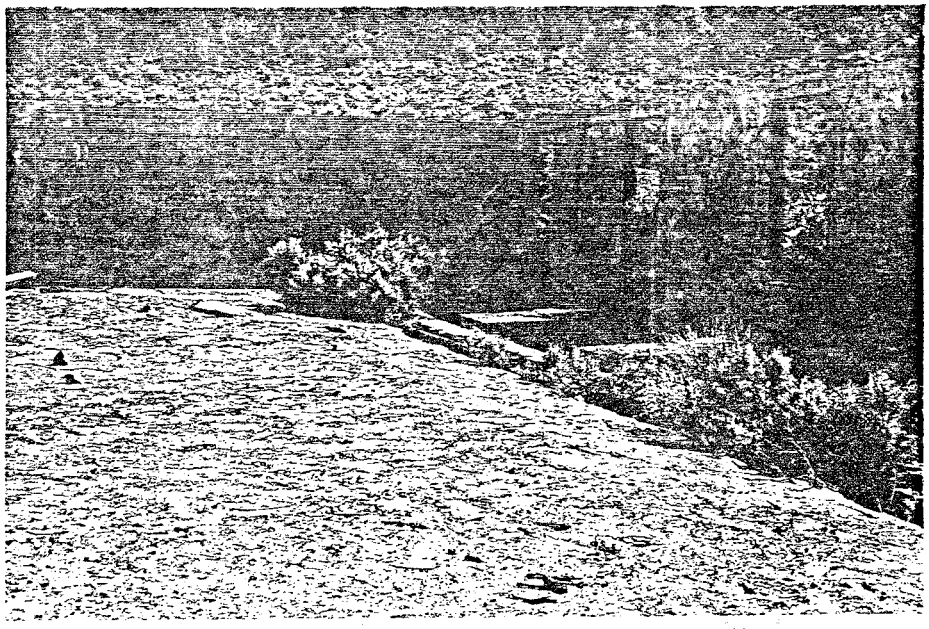
57. Retaining Wall for Residences
Looking North



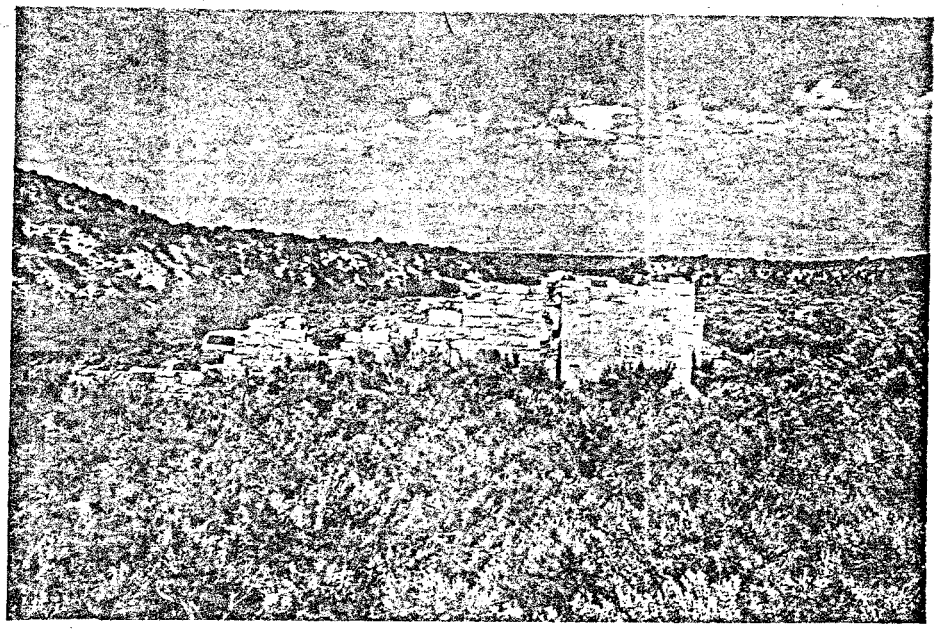
58. Retaining Wall
Looking East



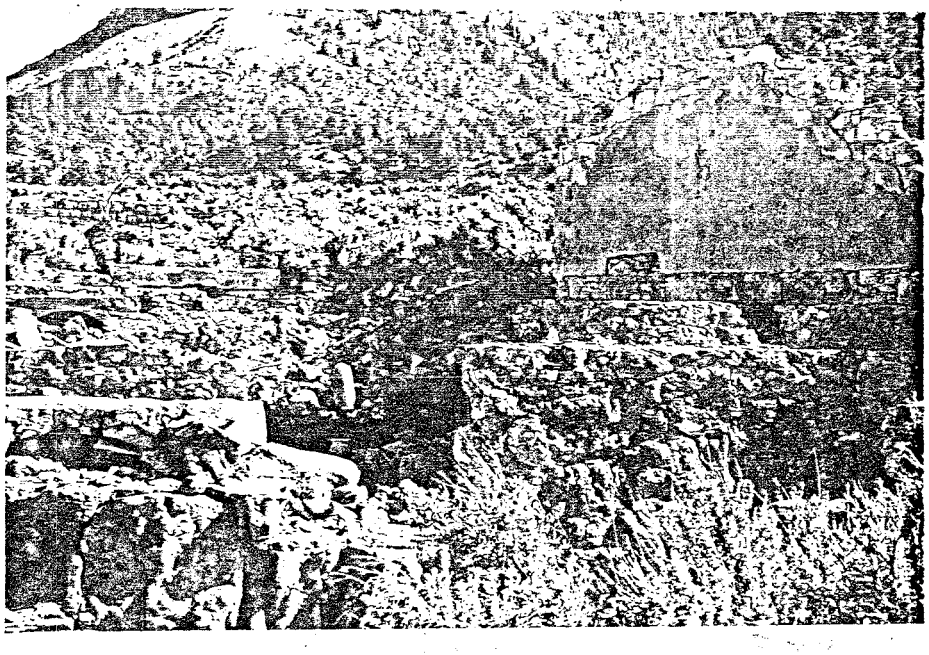
59. Amusement Hall
Looking West



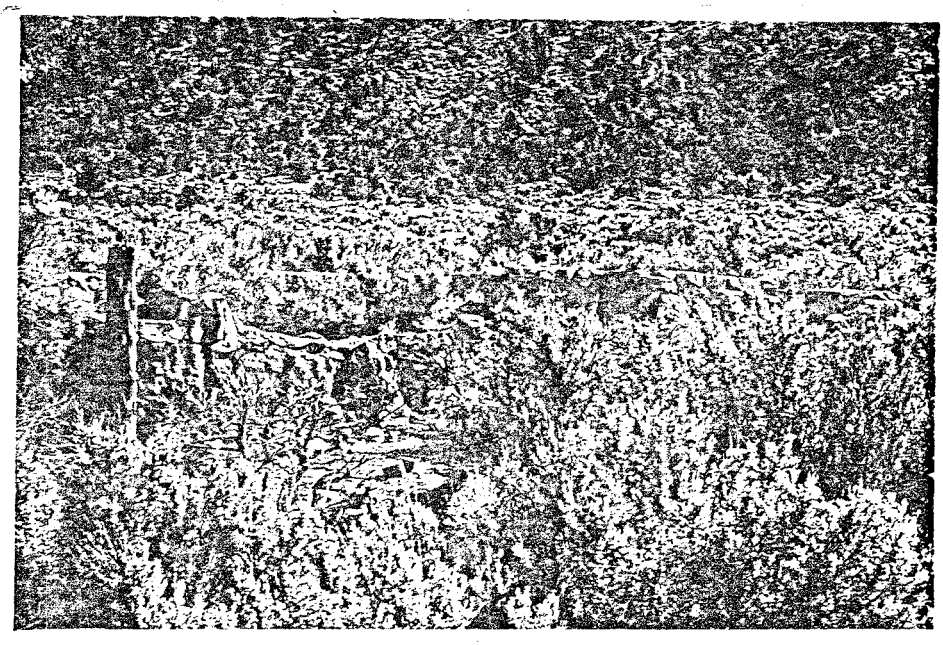
59. Amusement Hall - Interior
Looking South



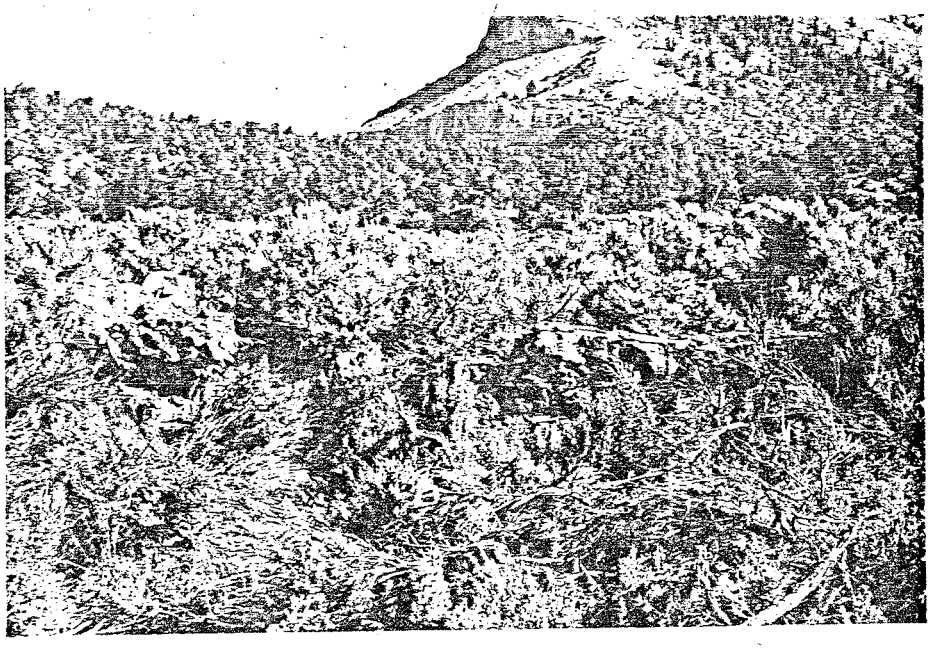
60. Office
Looking East



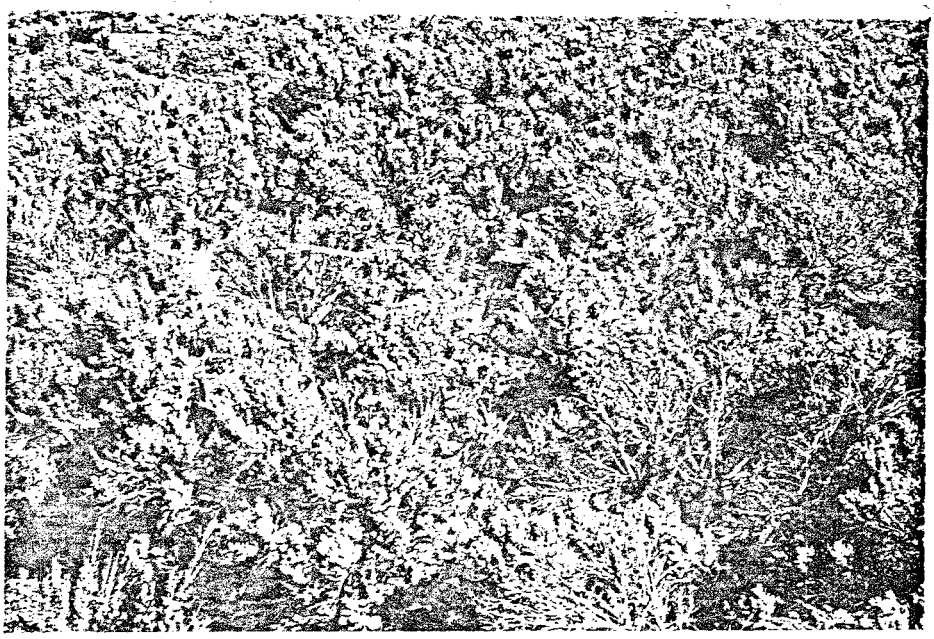
60. Office - Interior
Looking South



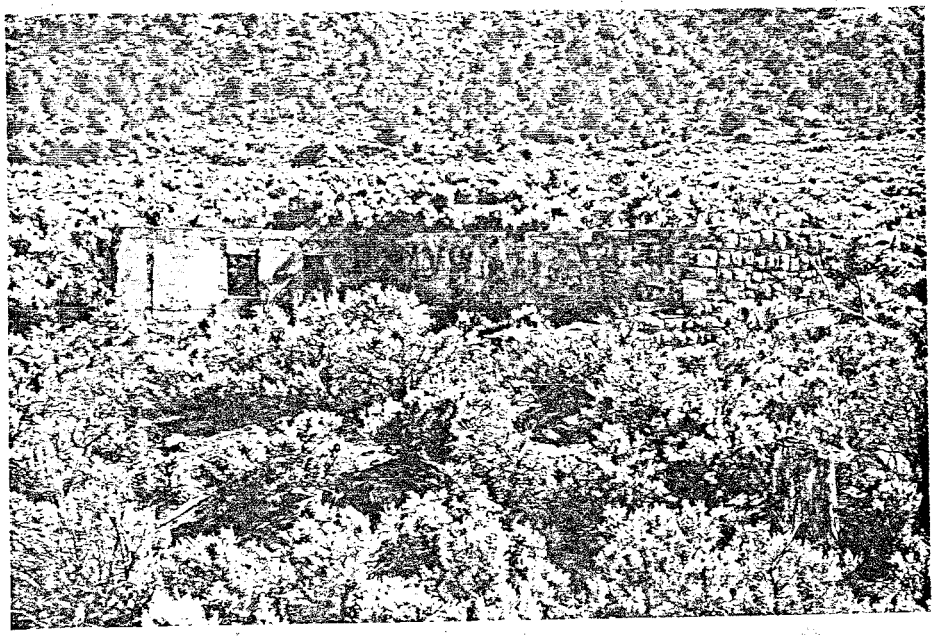
61. Hospital
Looking Southwest



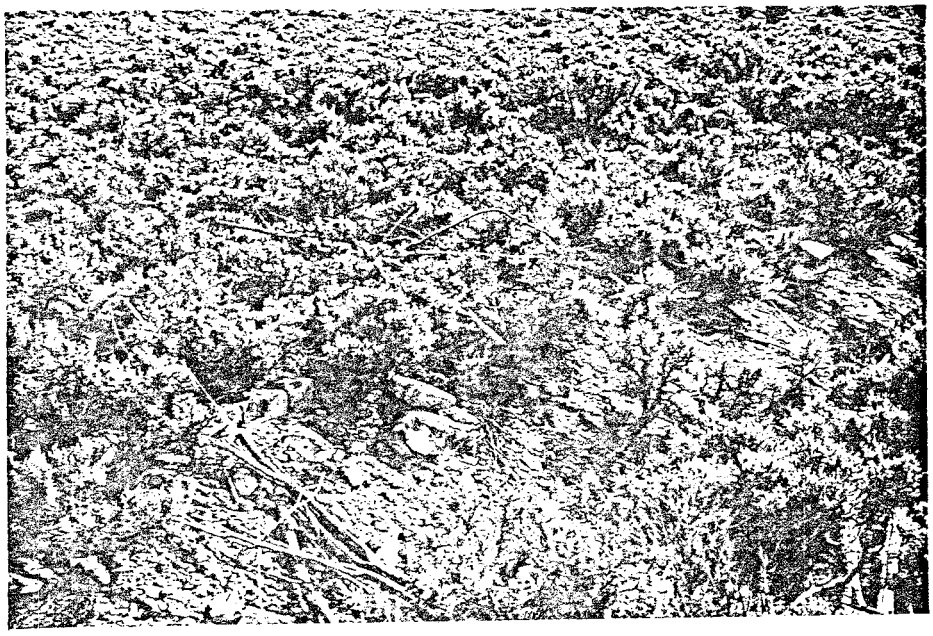
62. Store
Looking South



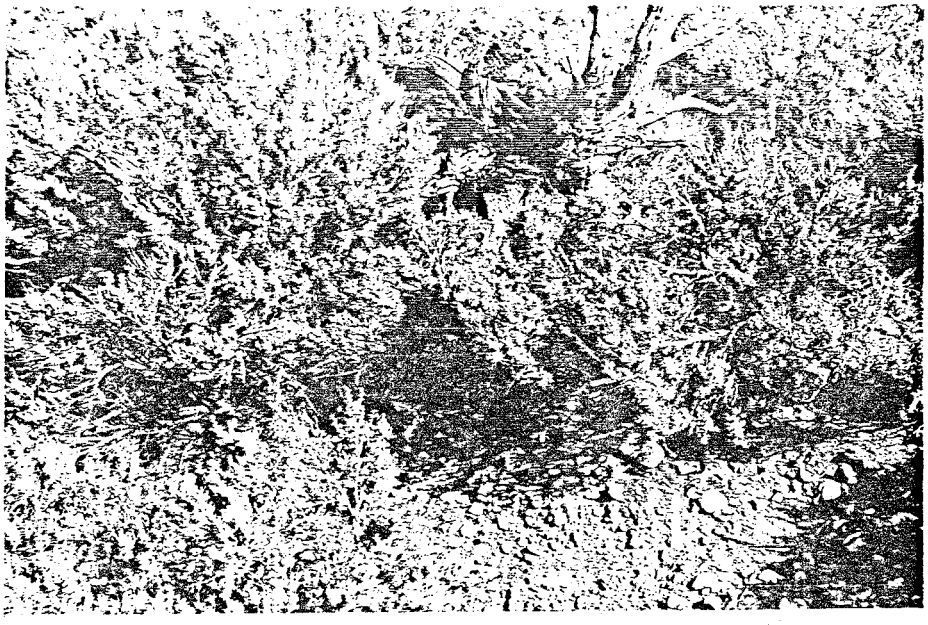
63 & 64. Hotel
Looking South



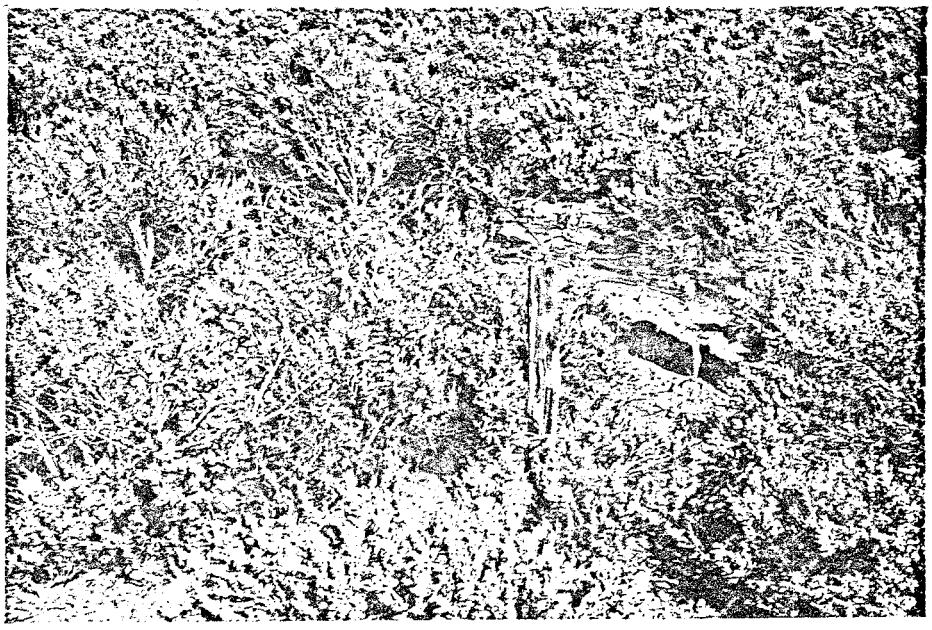
63 & 64. Hotel
Looking Southwest



65. Residence
Looking West

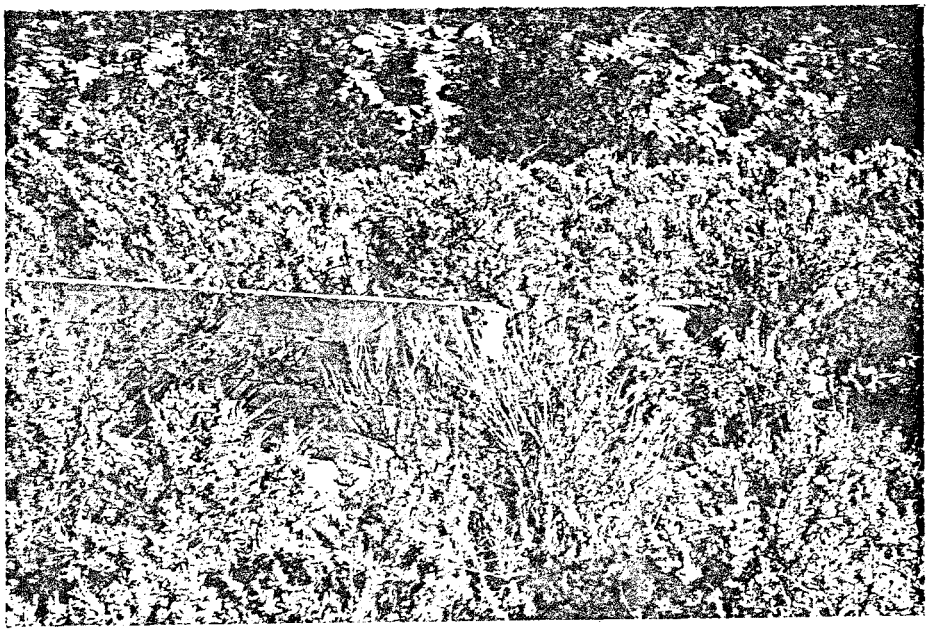


66. Residence
Looking South



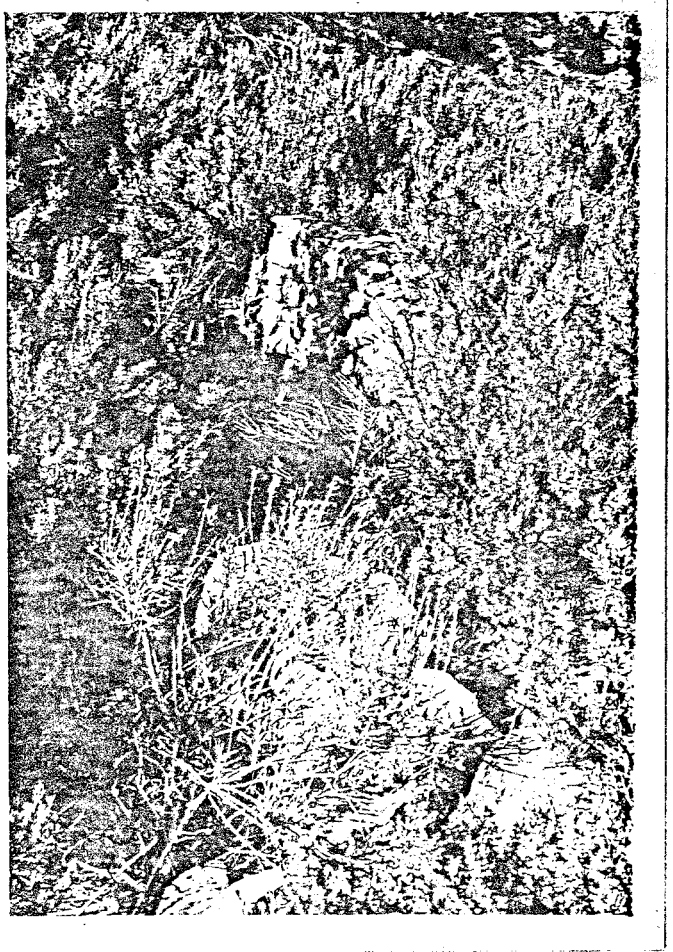
67. Residence
Looking Southeast

68. Residence
Looking South



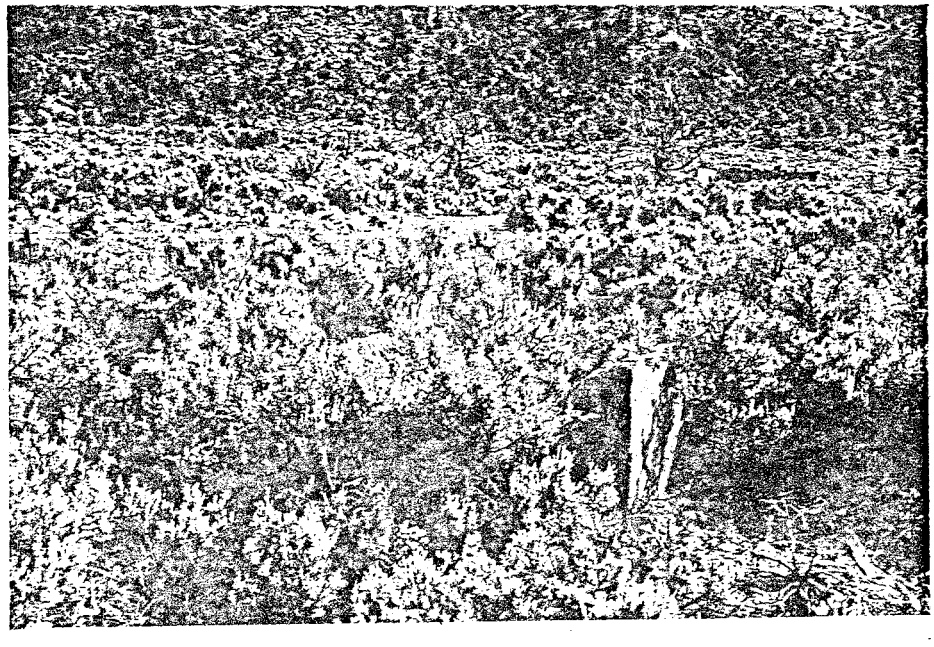
69 & 70. Superintendants House & Garage
Looking Southeast

69 & 70. Superintendant's House & Garage
Looking Southeast

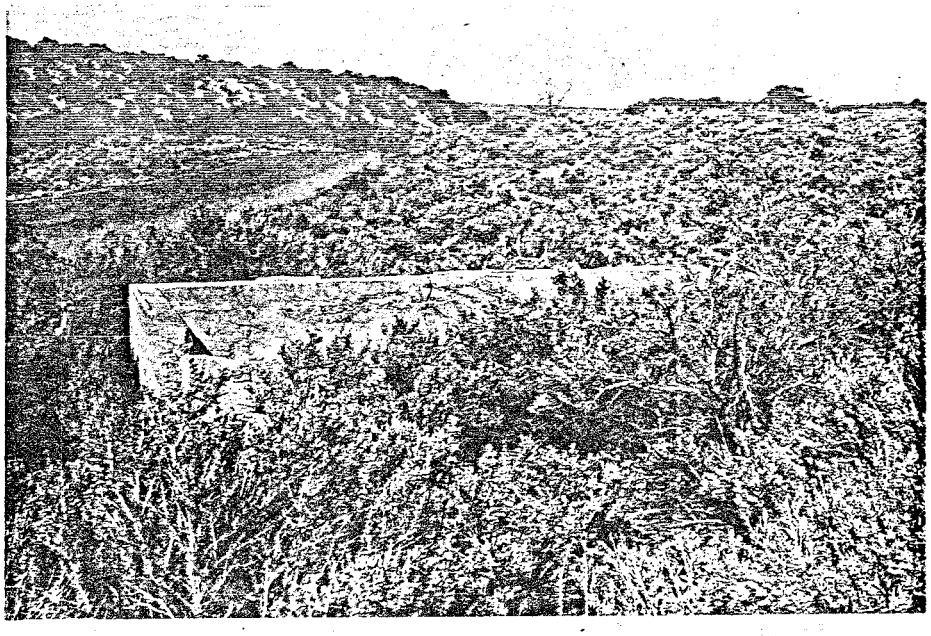


71. Residence
Looking North

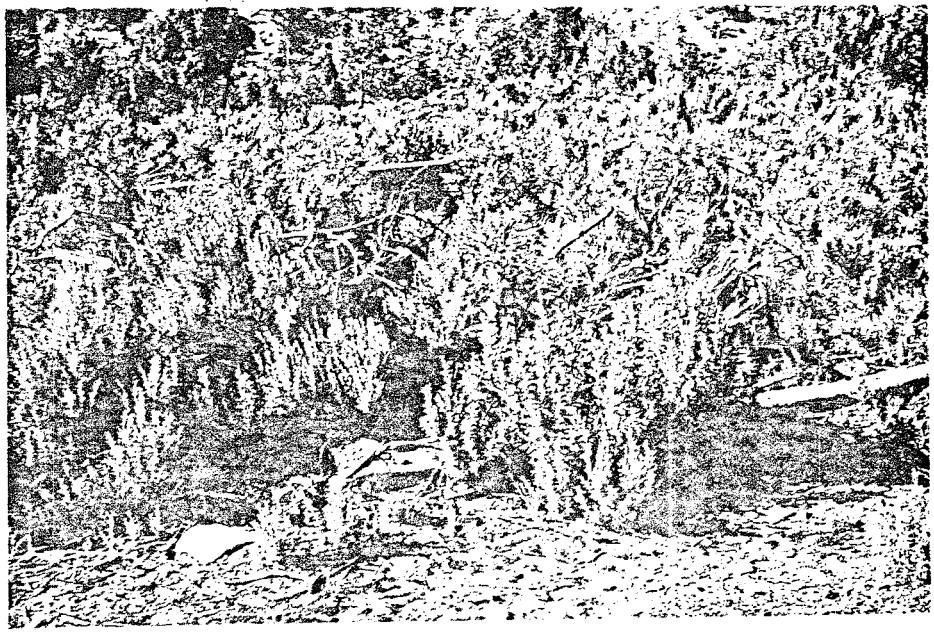
72. Residence
Looking South



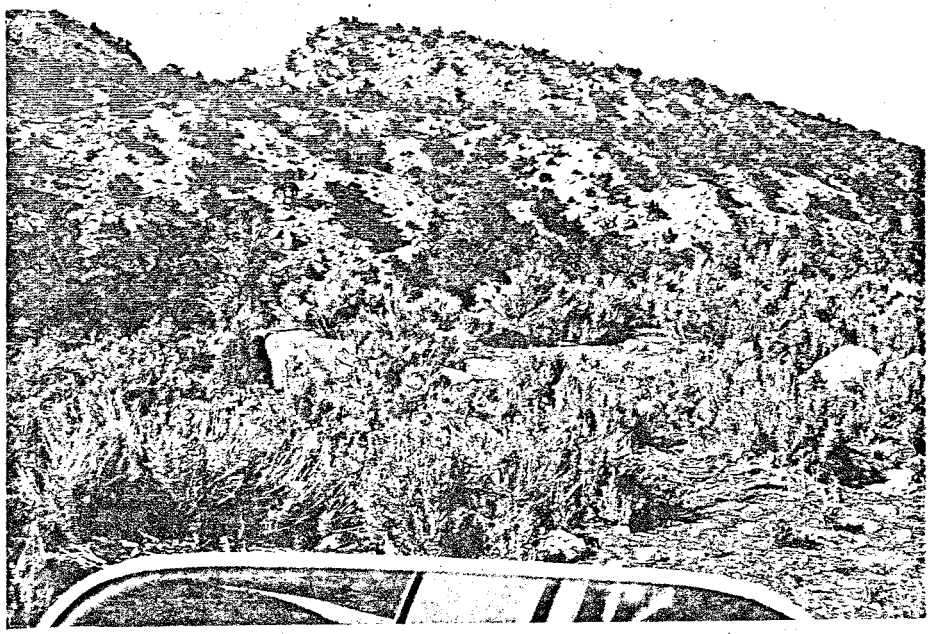
73. Residence
Looking West



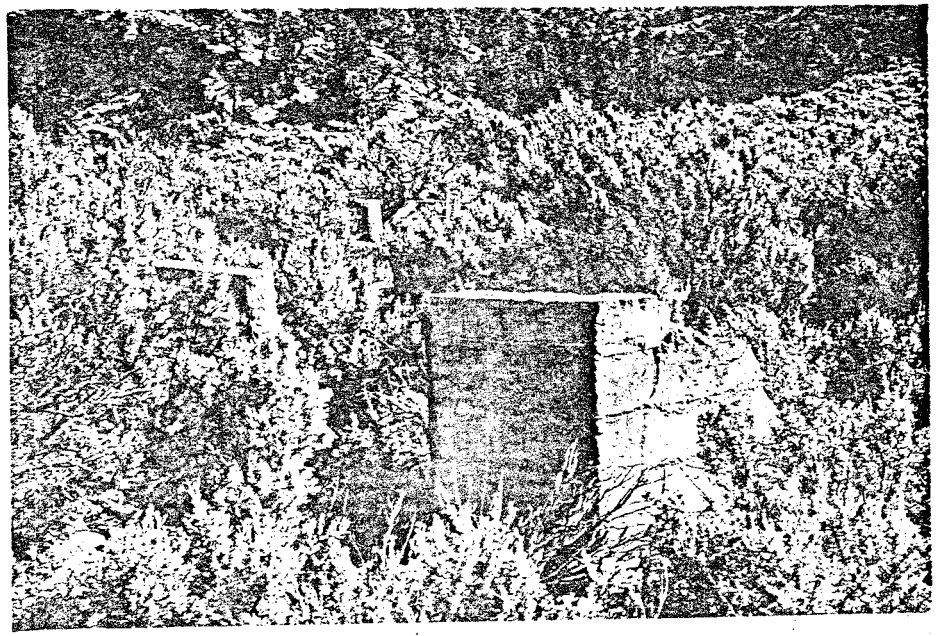
74. Residence
Looking East



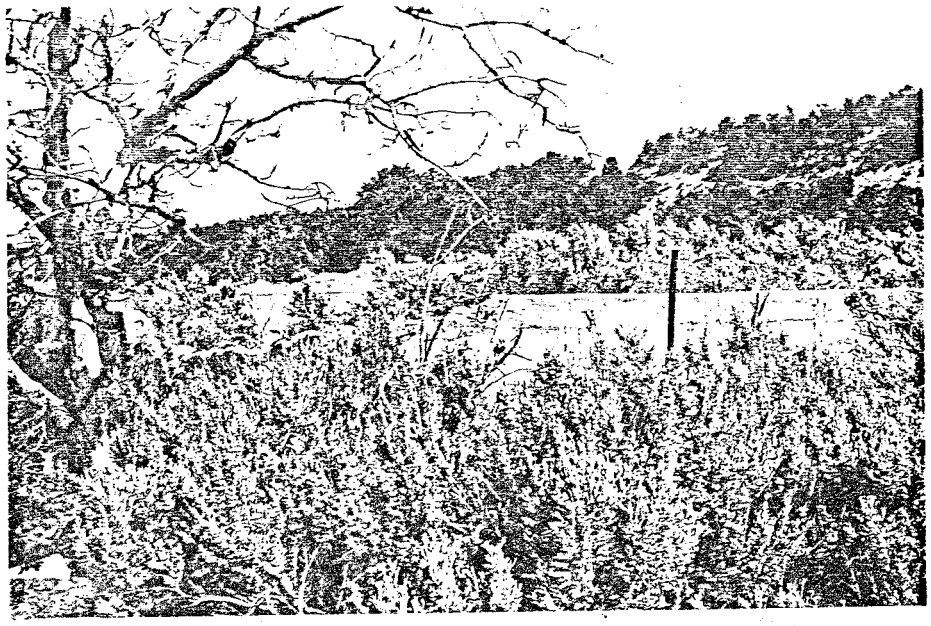
75. Residence
Looking North



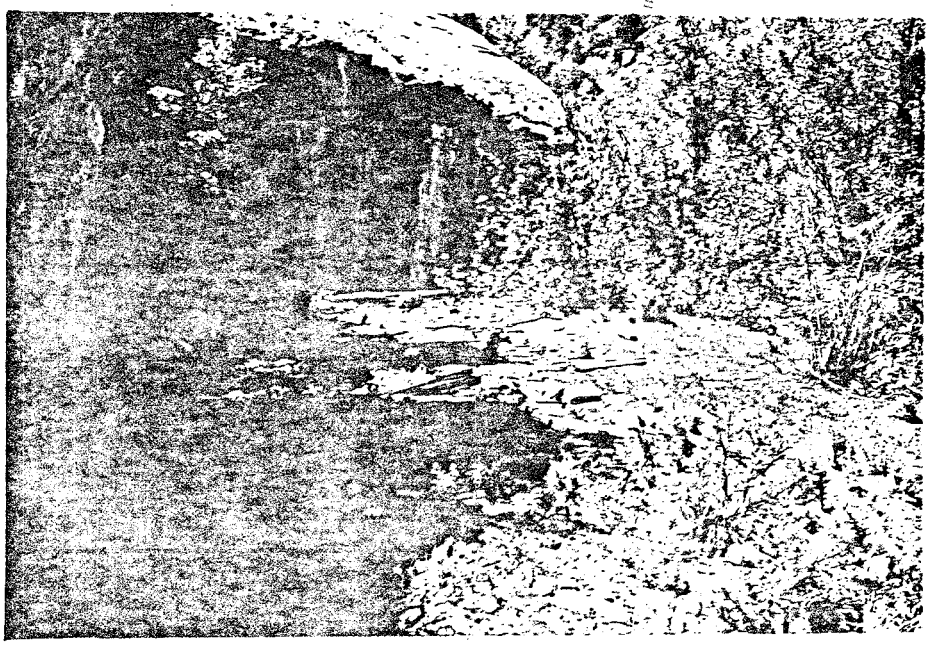
76. Residence
Looking Northeast



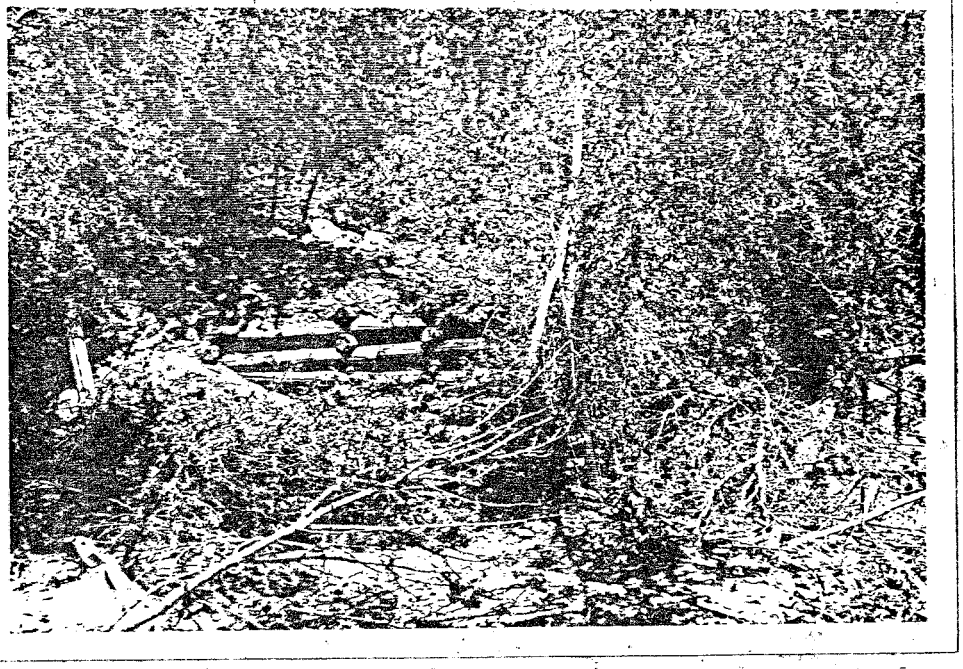
77. Residence
Looking Southwest



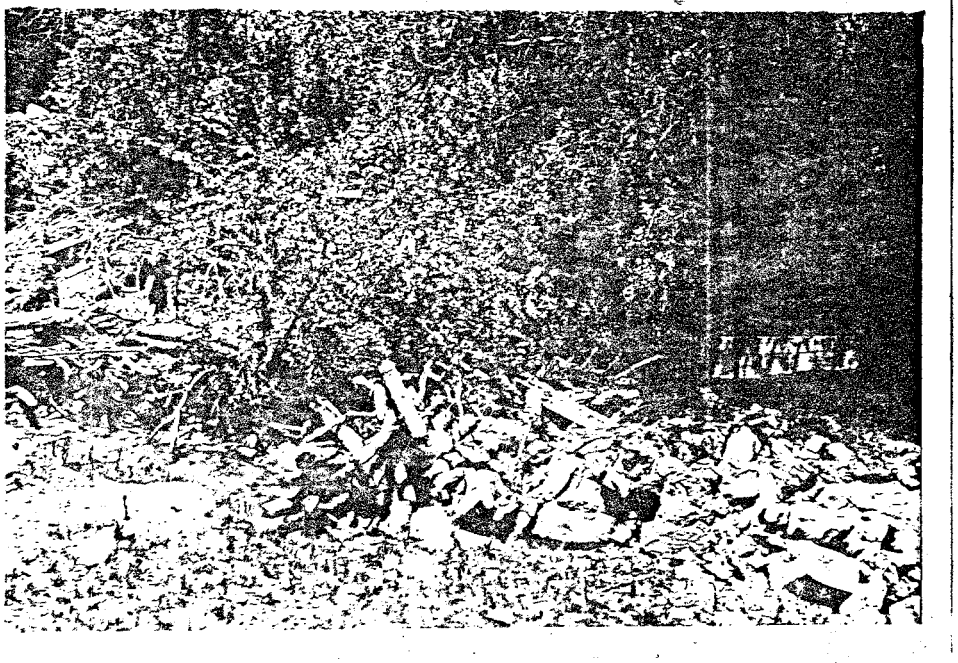
78. Residence
Looking Southeast



79. Barn
Looking West



80. Historic Bridge - North Bank Pilings
Looking North



80. Historic Bridge - Collapsed Portion
Looking North

HYDROLOGIC MONITORING PLAN

For

State of Utah

Department of Natural Resources

Division of Oil, Gas and Mining

1588 West North Temple

Salt Lake City, Utah 84116

by

United States Fuel Company

Hiawatha, Utah 84527

Nov. 30, 1979

HYDROLOGIC MONITORING PLAN

United States Fuel Co.
Hiawatha, Utah

This plan is submitted in connection with 30 CFR 817.52. Included with this plan is a map showing water monitoring points and the location of major hydrologic features in relation to existing mine workings, surface facilities and property boundaries.

A comprehensive water analysis consisting of items listed in Table 1 will be run on samples from each monitoring point to define their initial character. Additional routine sampling and analysis for items listed in Table 2 will be determined for each point at intervals specified for individual sites.

Monitored data will be organized, tabulated and submitted to the regulatory authority on a quarterly basis.

Following is a description of proposed monitoring sites.

STREAMS

1. Right Fork of North Fork of Miller Creek This perennial tributary to Miller Creek will be monitored with a V-notch weir or small Cipolletti weir installed just above the junction with Left Fork. This station will be monitored for flow and analyzed according to Table 2 on a monthly basis for a baseline period. Once the system has been defined, sampling will be reduced to a quarterly basis. This site is generally not accessible during winter months.

2. Left Fork of North Fork of Miller Creek Two stations will be monitored on this perennial tributary. One above the Hiawatha No. 2 Mine diversion point (2 A), and one between the diversion point and the junction with

with Right Fork (2 B). Water will be monitored on a monthly basis for a baseline period then reduced to quarterly monitoring once the system has been defined. Volume measurements will be by V-notch or Cipolletti weirs. Monitoring will be limited to accessible months.

3. Middle Fork of Miller Creek This tributary is intermittent. A recording station consisting of a suitably sized weir will be installed near the confluence with the North Fork of Miller Creek. Flow measurements will be taken bi-monthly. Water samples will be analyzed twice yearly.

4. South Fork of Miller Creek This tributary is intermittent. A weir will be installed near the confluence with Miller Creek and monitored similarily to Middle Fork.

5. Miller Creek This significant perennial stream will be monitored with a 3 foot Cipolletti weir at a point below the confluence of South Fork. Water will be monitored monthly for a baseline period then reduced to quarterly upon approval of the regulatory authority.

6. Cedar Creek This is a significant perennial stream. It will be monitored at a point below the old Mohrland mine portal. Volume measurements will be by a suitably sized weir. Monitoring will be done on a monthly basis until sufficient baseline data is gathered to justify reduced monitoring.

7. Gentry Hollow Creek A recording station for the perennial stream will be installed just above the junction with Wild Cattle Hollow. Due to the remote location of this point, we propose monitoring on a semi-annual basis.

SPRINGS

The map included with this plan shows the location of ten numbered springs which we propose to measure and analyze once in the spring and once in the fall. These springs were selected because of their representative location with respect to mine workings and because they each had some flow during the drought year of 1977. Flow measurements will be made with V-notch weirs on open springs and by the time-volume method where spings discharge from installed pipes. Water samples will be analyzed according to Table 2.

LAKES, RESERVOIRS AND PONDS

There are no surface lakes or reservoirs on the mine property. An underground storage reservoir is maintained in the old Hiawatha No. 2 Mine as a culinary water supply for the King 4 and King 5 mine facilities. This water is also used as a supplementary supply for the town of Hiawatha. Water diverted into this reservoir will be monitored near a diversion dam on the Left Fork of Miller Creek.

Several sedimentation ponds are proposed for construction in the vicinity of disturbed surface areas as required by 30 FR 15426. A request for modification of our existing NPDES permit to include discharges from these ponds has been submitted to the E.P.A. Monitoring will be in accordance with their requirements.

MINE WATER DISCHARGE

At the present time, mine water is being discharged at the old Mohrland portal in Cedar Creek Canyon. Water from this point is partly diverted to Cedar Creek and partly diverted to Miller Creek by way of a pipeline which supplies water for culinary and industrial purposes at Hiawatha. Water from

the pipeline regularly overflows at the town water tanks and drains into Miller Creek.

This mine water discharge is covered by E.P.A. Permit No. UT 0023094 dated October 17, 1977. Monitoring requirements under this permit are listed in Table 3.

In addition to E.P.A. requirements, the parameters of specific conductance, total manganese, and dissolved iron will be analyzed monthly.

BEAR CANYON FAULT

The Bear Canyon Fault, running notherly through the area and having a displacement in excess of 200 feet, is a major water-bearing structure. Mine workings that intercept the fault zone have all encountered flows of water that make up the major discharge from the Mohrland portal. Monitoring the Mohrland discharge will closely reflect the character of water intercepted along the fault.

Robert Eccli

Robert Eccli,
Mine Engineer

TABLE 1

INITIAL COMPREHENSIVE ANALYTICAL SCHEDULE

- Flow Rate
- pH
- Air & Water Temperature
- Specific Conductance
- Total Suspended Solids (Surface Water Only)
- Total Dissolved Solids
- Total Organic Carbon
- Calcium
- Magnesium
- Sodium
- Potassium
- Iron
- Carbonate
- Fluoride
- Bicarbonate
- Chloride
- Sulface
- Nitrate Plus Nitrite (as N)
- Kjeldahl N
- Dissolved Phosphorus
- Silica
- Trace Elements
  - Arsenic
  - Cadmium
  - Zinc
  - Selenium
- Radioactivity
  - Gross Alpha
  - Gross Beta

TABLE 2

ROUTINE SAMPLING ANALYTICAL SCHEDULE

Flow Rate
pH
Air & Water Temperature
Acidity (Surface & Mine Water Only)
Specific Conductance
Total Suspended Solids (Surface & Mine Water Only)
Total Dissolved Solids
Total Manganese (Surface & Mine Water Only)
Total Iron
Dissolved Iron
Nitrate (as N)
Sulfate
Chloride
Oil and Greas (Surface & Mine Water Only)

TABLE 3

E.P.A. MONITORING REQUIREMENTS FOR MOHRLAND MINE WATER DISCHARGE

Effluent Characteristic	Monitoring Frequency
Flow	Monthly
Total Suspended Solids	"
Total Dissolved Solids	"
Total Iron	"
Alkalinity-Acidity	"
pH	"
Oil & Grease	"
BOD_5	Quarterly
Total Coliforms/100 ML	"
Fecal Coliforms/100 ML	"

site contains both the mine workings of the Castle Valley Coal Company and the company-owned town adjacent to the mine features in Cedar Creek Canyon. The survey uncovered approximately 18 structures related to the actual mining operation and 60 structures from the town, the majority of which were residences. On the hillside outside and west of the survey area were other foundations for residences which were not recorded by this survey. The various components are briefly listed below.

5.3.2.1 Mine Structures

1) Powder magazine. This structure is listed on the historic map of Mohrland (Figure V-6) as a powder magazine. All that remains of the powder magazine is the cement foundation slab and a small cement structure within the building interior. The small structure has a metal door.

2) Portal/manway. This structure was the west portal of the mine, used primarily for ventilation. It has been almost completely backfilled, and all that remains is a small opening and some wire-mesh screen.

3) Bathhouse. The bathhouse has been almost completely obliterated. There remains a cement floor with a basement entrance on the east side. There is a stone stove piping in the basement which at one time was probably connected to a

0301

File ACT/007/011
Copy to Wayne w/Plans
Jim

UNITED STATES FUEL COMPANY

HIAWATHA, UTAH 84527

December 23, 1980

RECEIVED
DEC
DIVISION OF
OIL, GAS & MINING

Mr. James Smith
Coordinator of Mined Land Development
Utah Department of Natural Resources
Division of Oil, Gas, and Mining
1588 West North Temple
Salt Lake City, Utah 84116

Dear Mr. Smith:

Enclosed are three copies of our revised Surface and Groundwater Monitoring plan. This plan has been revised to address comments and recommendations outlined in a review by the Federal Office of Surface Mining on July 18, 1980. Stipulations set forth by your agency on June 15, 1979 and August 21, 1979 were addressed in an earlier plan and carried forward in this revision. We assume you will forward this response to the Office of Surface Mining.

Following is a summary of OSM's comments and recommendations and U. S. Fuel Company's response as incorporated in the plan.

1. Comment: Within the Gentry Mountain area, there are many springs in in addition to those on U. S. Fuel Company's map. Many of these springs are critical to the maintenance of the existing population of livestock and wildlife. The Office of Surface Mining (OSM) the Division of Oil, Gas, and Mining (DOGM), the Forest Service (FS), and the Company need to meet to identify critical springs for monitoring.

   Response: While it is true that there are many springs within the Gentry Mountain area in addition to those shown on our map, many of these springs to the north and west of our property are being monitored by a neighboring mining company (Plateau Mining Company). We feel that the 10 springs selected by us for monitoring are significant and will be useful in determining the effects of mining. They are significant due to their location with respect to existing and projected underground mine workings. Also, they are significant in that they all had some flow during the fall of the drought year of 1977 when many springs had dried up.

   According to 30 CFR 817.52, it is our understanding that the purpose of a hydrologic monitoring plan is to "determine the effects of underground mining activities on the recharge capacity of reclaimed lands and on the quantity and quality of water in the ground water systems in the mine plan and adjacent areas". Monitoring these 10 springs along with the

UTAH KING COAL

Quotations subject to immediate acceptance. Coal will be sold and invoiced at price in effect on date of shipment, at mine weights f. o. b. cars at place of shipment, unless otherwise specifically agreed in writing. Agreements are contingent upon causes of delay beyond our control, including strikes, accidents, riots, acts of God, lockouts, fire, flood, inability to secure cars or transportation.

Mohrland portal mine water discharge and stream drainages, should meet these requirements. If it is deemed necessary to monitor springs because they are critical to livestock and wildlife populations, the company would be willing to consider this in connection with a wildlife plan; however, we feel that this should not be a limiting factor in approving a hydrologic monitoring plan. As a point of interest, 4 of the 10 springs selected (SP-1, SP-4, SP-5 and SP-7), are developed with watering troughs or ponds.

NOW. FRANCOM MINE IS INACTIVE

2. Comment: Those springs that contribute to streams flowing through disturbed areas should be monitored monthly.

   Response: Springs SP-3, SP-7, SP-9 and SP-10 do not contribute to streams that flow through disturbed areas. Springs SP-1, SP-2, SP-4, SP-5 and SP-6 are located considerable distances from flowing streams and their flow rates (5 to 50 G.P.M.) are so small that any contribution to stream flow would most likely not justify monthly monitoring. Spring SP-8 discharges from a steel pipe directly into Cedar Creek. This spring will be monitored monthly, as recommended.

3. Comment: Final locations and procedures for sampling must be approved by the regulatory agencies.

   Response: The accompanying plan describes locations and sampling procedures. U. S. Fuel Company requests approval of this plan.

4. Comment: Basic geologic data, including a map, should be part of this monitoring program.

   Response: Geologic data, including a map, have been included as requested.

5. Comment: The Bear Canyon Fault is apparently a major groundwater channel. The effects of mining on flow rates needs to be addressed.

   Response: The effects of past mining on flow rates from the Bear Canyon fault is addressed in the accompanying plan. Future plans are to stop all mining within at least 100 feet of the fault. Water derived from the fault is presently being monitored at the old Mohrland portal discharge point.

6. Comment: A ground water inventory should be included in the plan.

   Response: A question is raised as to the intended extent of a ground water inventory. If one were to inventory every ground water seep in the Gentry Mountain area, probably over a hundred could be identified. If one were to inventory only those sites which have significant flow rates and are strategically located to reflect the effects of mining,

then the 10 springs selected should constitute a good inventory. The hydrology map (M-2) included with the revised plan shows the location of 7 additional springs selected for monitoring by a neighboring mine. Also shown are 4 springs which are periodically monitored by the U.S. Geological survey. Would the 21 above mentioned springs constitute a good inventory?

7. Comment: Exploratory drill holes and an old gas well that is still cased could possibly be used to develop a water level map.

   Response: Eleven exploritory drill holes were drilled for U. S. Fuel Company from the surface of Gentry Mountain to coal seam horizons during 1976 and 1977. All of these holes have been plugged with concrete as required by our U.S.G.S. drilling permit. The old gas well appears to be sealed at the collar. Also, it is located on Federal Lease SL-031286 which is held by a neighboring mine. Drill hole No. 13 ($SE\frac{1}{4}NW\frac{1}{4}$, Sec. 30, T.15S., R.8E.) was drilled from the surface in 1923 and not plugged; however, its lower extension was intersected by mine workings (no longer accessible) thus precluding its use as a water level indicator.

8. Comment: The plan states that water diverted into the underground storage reservoir will be monitored, but the location and procedure has not been identified.

   Response: This water will be monitored at site ST-2A as clarified in the revised plan.

9. Comment: U. S. Fuel Company's program calls for samples of intermittent streams to be analyzed biannually. Samples should be analyzed on a monthly basis, when water is present, so that water quality data is representative of runoff, high and low flows, rainfall and baseflow.

   Response: Intermittent streams will be monitored monthly as recommended.

10. Comment: Perennial streams in areas of disturbance should be monitored monthly during baseline collection and after mining begins. If effluent limitations are being exceeded, a higher frequency is required.

    Response: Perennial streams will be monitored monthly or more frequently if effluent limitations are exceeded.

11. Comment: We are concerned about how data will be displayed. Appropriate data displays, such as maps, charts, tables, overlays, and narrative descriptions are essential to the success of the program.

    Response: Maps, tables and drawings are provided in our plan. Monitoring data will be systematically recorded by qualified personnel. Water samples will be collected in specially treated bottles in accordance

with sampling and transporting recommendations of a certified analyst (Ford Chemical Laboratory, Inc.). Field data and analysis results will be organized and clearly tabulated for submittal to the regulatory authority.

12. Comment: U. S. Fuel Company must make a commitment to maintain the sampling sites and to have qualified persons taking samples.

    Response: This commitment is made in the monitoring plan.

13. Comment: We would like to commit the operator to at least annual summaries to the regulatory authority.

    Response: An earlier commitment was made with the Division of Oil, Gas, and Mining to submit summaries on a quarterly basis. This has been carried forward in the revised plan.

Yours truly,

Bob Eccli

Bob Eccli,
Mining Engineer

BE/ds

Enclosure(s)

SCOTT M. MATHESON
Governor

GORDON E. HARMSTON
Executive Director,
NATURAL RESOURCES

CLEON B. FEIGHT
Director

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
1588 West North Temple
Salt Lake City, Utah 84116
(801) 533-5771

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January 16, 1981

Mr. John Nadolski, Hydrologist
Office of Surface Mining
Reclamation and Enforcement
Brooks Towers
1020 Fifteenth Street
Denver, Colorado 80202

RE: Surface and Groundwater
Monitoring Plan (Revision)
U. S. Fuel Company
Hiawatha Complex
ACT/007/011
Carbon County, Utah

Dear John:

Enclosed please find two (2) copies of United States Fuel Company's Surface and Groundwater Monitoring Plan in its revised form incorporating OSM comments on their previous plan. The Division has kept one (1) copy for a work copy and will request that additional copies be sent to your agency and ours to make up for copy deficiencies.

A reminder to the Company by your agency for additional copies may aid in speeding up the process.

The Division would appreciate an expeditious review and would like to return our comment by January 30 , 1981, if possible.

Sincerely,

D. Wayne Hedberg

D. WAYNE HEDBERG
RECLAMATION HYDROLOGIST

Enclosures

DWH/btm

SURFACE AND GROUNDWATER MONITORING PLAN
(Revises Plan Submitted Nov. 30, 1979)

For

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1588 West North Temple
Salt Lake City, Utah 84116

by

United States Fuel Company
Hiawatha, Utah
December 22, 1980

RECEIVED
DEC 30 1980
DIVISION OF
OIL, GAS & MINING

INTRODUCTION

This plan is submitted in connection with 30 CFR 817.52 and UMC 817.52. It has been revised to address comments and recommendations outlined in a review by the Federal Office of Surface Mining on July 18, 1980. Stipulations set forth by the State of Utah Department of Natural Resources, Division of Oil, Gas, and Mining on June 15, 1979 and August 21, 1979 were addressed in an earlier plan and carried forward in this revision.

Included with this plan is a hydrology map showing proposed water monitoring points and the location of major hydrologic features in relation to existing mine workings, surface facilities and property boundaries. Also included is a geology map of the property area.

Following is a description of the geology of the area, surface and groundwater information and proposed monitoring sites.

GEOLOGY OF U. S. FUEL COMPANY PROPERTY AREA

The geologic formations of the mine plan area are Cretaceous, Tertiary, and younger in age and, depending on resistance to erosion, form alternating tiers of cliffs and steep slopes where they are exposed. The six formations described in the stratigraphy section consist mainly of sandstones, siltstones, and shales of both marine and nonmarine origin. Some minor limestone beds occur, mainly near the top of the Wasatch Plateau, see Map M-1. Figure 2 shows a view looking west of the stratigraphy through Hiawatha-Mohrland areas. Most stream drainages and flatter slopes are covered with quaternary alluvium, colluvium and glacial debris.

The coal seams of interest occur in the Cretaceous Blackhawk formation. Above and below the Blackhawk are two cliff-forming sandstones, the overlying Castlegate and underlying Star Point. Each are valuable for correlating the generally lenticular coal beds and helpful in field correlations.

Structurally, the beds are relatively flat with a slight dip to the southwest at less than one degree. The strata are generally undisturbed in the vicinity of Mohrland, but become more disturbed in the west. Here the Bear Canyon fault is present and trends north-south through the head of Bear Canyon, as shown on Map M-1. This fault has a displacement of up to 250 ft., and markes the western limit of the past USF mining. Cover over the uppermost mineable seam is moderate, ranging between 0 to 1,500 ft.

The stratigraphy of the Hiawatha-Mohrland area consists of six distinct formations which are described below:

Masuk Shale Member of Mancos Shale: The uppermost member of the Mancos shale, the Masuk, represents the last marine invasion into the area. It ranges from 300 to 1,300 ft. thick and forms steep blue colored slopes where it is exposed near the town of Hiawatha. In the subsurface to the west it changes faces and joins with the Emery and Star Point sandstones. The Masuk is a soft unit in its exposures but usually forms part of the cliffs rising to the top of the Wasatch Plateau.

Star Point Sandstone: The lowest of four formations comprising the Mesaverde group of the Wasatch Plateau, the Star Point consists of several thick, cliffy sandstone units seperated by shale or partings on thin-bedded sandstone. The unit ranges from 90 to 1,000 ft. thick with thicker sections to the west. In the southernmost part of the field it contains sandy shale; in the central and north parts it appears as a broad light colored band on the cliff.

Blackhawk Formation: The Blackhawk in the Mesaverde group of the Wasatch Plateau contains in the lower half of the formation all the coal seams expected to be affected by mining operations in this area. The 700 to 1,000 ft. unit, less resistant than the units that contain it, consists of alternating slope and cliff forming units. The cliff forming sandstones are generally yellow-gray or white-gray on fresh surfaces and weather to shades of tan, yellow or brown. In places they are reddened by the natural burning of nearby coal seams. Sands are fine to medium grained and cemented by either calcite or silicia. In a few places they are argillaceous.

Slopes of the formation are made of various types of shale and coal. The shales, continental in origin, consist of three kinds: clay shale - soft, granular, gray to green in color and the most common; carbonaceous shale in various shades of brown and black; and smoke gray shale usually associated with the coal. The coal beds being affected in this mining lie in the lower 250 to 350 ft. of the formation.

Castlegate Sandstone: The Castlegate sandstone, generally carried as a member of the Price River formation, immediately overlies the Blackhawk formation. The Castlegate varies between 150 to 500 ft. thick. Massive, medium to course grained sandstone beds in places contain conglomerate with a matrix of grit. The cliffy units are occasionally broken by sandy, hard, gray shale and even lenses of coal.

Price River Formation: The rocks are, like the Castlegate, a little less risistant, not as massive and more friable; thus eroding easier, creating the step-like outcrops. The unit ranges from 500 to 1,000 ft. thick.

North Horn Formation: This is the uppermost formation in the Hiawatha area. It consists mainly of shales with lenses of sandstone and fresh water limestone. The relatively hard sandstone lenses cause many of the flat, unbroken surfaces on top of the Gentry Mountain. The lower contact of this formation is not well defined as it grades into the Price River formation. Its thickness is from 500 to 2,500 ft. thick. Boreholes collared in this formation for coal exploration have encountered a water bearing zone at about 300 ft. down which has caused swelling and sloughing of the holes.

Field investigations have shown that most of the springs and seeps outcrop in the Price River, Castlegate and Star Point sandstone formations. In this mining area, springs and seeps are common to all formations. The high elevation aquifers can best be described as perched aquifers. (Final D.O.I. EIS Coal Resources in Central Utah, 1979)

The Wasatch Plateau lies between the simple dome-like uplift of the San Rafael Swell on the east and the highly faulted, structurally complex region of the Great Basin on the west (Spieker, 1931). Faults that are associated with the Wasatch Plateau do not effect the mining area. The Bear Canyon fault is a member of the Pleasant Valley and Joe's Valley fault zones. Bear Canyon fault is the only major fault in the mine plan area and effectively borders the western edge of USF's property. It is a normal fault which strikes nearly due north and dips 85 degrees to the west. Displacement of up to 250 ft. in the west wall of Bear Creek Canyon has been reported.

Several minor faults have recently been encountered underground in the northern part of the King No. 4 mine. These faults also strike north-south and have displacements ranging from a few inches to 5 ft.

There is no major folding in the area although numerous local rolls have been encountered while mining. Spieker's geologic map of the Wasatch Plateau shows a gentle synclinal basin between Long Point and Wild Horse Ridge, near the southern end of the Gentry Mountain. Recent boreholes for coal exploration in that area substantiate these structure contours.

Some igneous intrusions exist in the northern part of the mine plan area. Dikes ranging from a few inches to 4 ft. thick have been encountered in the Hiawatha No. 2, King No. 3 and King No. 4 mines. All are

apparently associated with tension franctures and most have caused natural coking where they contact coal beds. The dikes are reported to consist of a basic lamporphyre material.

6.4 Geology of Coal and Adjacent Units

Six beds or zones of measured coal have been identified in the Hiawatha-Mohrland area of which four are thick enough to be economically mineable at this time. At the USF mines, these beds have been referred to as the Hiawatha, the A, B, and Upper seams. These seams all occur in the Blackhawk formation. Figure 1, following this text, is a general stratigraphic section showing the relative locations of these seams and others that become important to the north and west. The coal is ranked as bituminous, in the high volatile B and C groups with low to medium ash content and very low to medium sulfur content.

Hiawatha Seam: This seam is the lowest and most consistent seam in the Blackhawk formation. It ranges in thickness from 3 or 4 ft. in the northern part of the property where it is seperated by rock splits to over 24 ft. of solid clean coal where it merges with the A seam near Mohrland. It is located 5 to 20 feet above the Star Point Sandstone and is characteristically a bright, blocky coal containing visible resin blebs. The immediate roof is comprised of a laminated fine to medium grained white sandstone that ranges in thickness from 6 to 110 ft. within the area of interest. The floor is generally a hard carbonaceous shale with inter-bedded siltstone partings underlain by white, medium grained sandstone.

A Seam: The A seam splits off from the Hiawatha seam between Cedar Creek Canyon and South Fork, where it gradually increases its elevation above the Hiawatha from 9 to 60 ft. to the north. The seam thickness

ranges from 5 to 12 ft. The A seam consists of an upward increasing grain size sequence of carbonaceous shale, gray siltstone and white, fine grained sandstone. The sandstone is the dominant lithology. Carbonaceous shale comprises the immediate seam floor and is underlain by gray siltstone with interbedded shale partings. The A seam in the area of interest may be correlative to the Blind Canyon seam of the surrounding area. The A seam has been mined in parts of the King No 1 and King No. 4 mines.

where is #1 ? on map.

B Seam: Occurs 0 to 70 ft. above the A seam. The seam may be correlative to the Bear Canyon and Wattis seams of adjacent localities. In an area west of South Fork the A and B seams come together forming a bed from 12 to 18 ft. thick. The B seam underlying the northern mining area is split into two benches with a 3 to 5 ft. shale parting to very bright coal and commonly contains resin inclusions and thin carbonaceous shale and sandstone bands. The upper B bench ranges in thickness from 4 to 12 ft. The lower B bench consists of moderately bright to bright coal, free of partings. The B seam roof is a variable sequence of interbedded carbonaceous silty shale and gray siltstone. Some thin, light gray, fine grained sandstone may also be present. Carbonaceous shale comprises the immediate seam floor. White, fine to medium grained sandstone underlies the carbonaceous shale. The King No. 4 and King No. 5 mines are presently mining this seam.

Upper Seam: The Upper seam has never been mined by USF and is located approximately 300 ft. above the B seam in the northern part of the property and 330 ft. above the Hiawatha seam in the Mohrland area. The maximum thickness encountered by core drilling was 8.5 ft. The average thickness is less than 6 ft. The immediate roof above this seam is gray carbonaceous

shale overlain by white, fine to medium grained sandstone. The floor is gray carbonaceous shale.

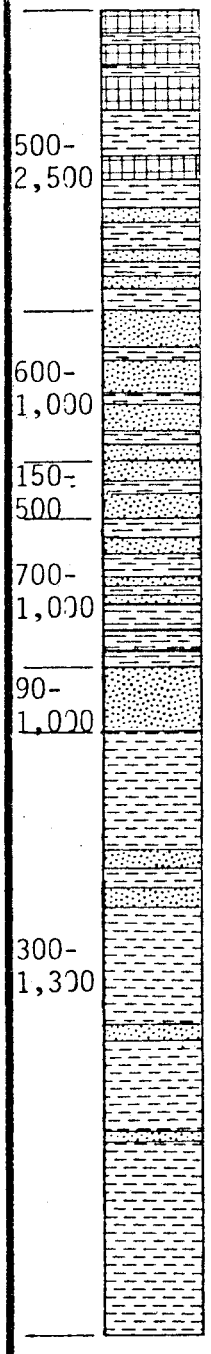
Geologic Effects of Mining

Existing surface facilities as well as proposed new facilities are all located on USF land. The Middle Fork of Miller Creek has King No. 4 and King No. 5 surface facilities, the South Fork has old existing facilities that will be updated for the reopening of King No. 6, and Cedar Creek were the old Mohrland mine workings ~~and~~ which will be reopened for King No. 7 and King No. 8 mines. These facilities will all be located in canyons near coal outcrops on benches. These surface areas are comprised essentially of quaternary alluvium and colluvium derived from sandstone and shale. The alluvial material generally overlies Mancos shale and ranges in thickness from thin sheets to over 50 ft. The Mancos shale has very poor physical properties and should be avoided for surface facilities where ever possible. The alluvial material has good physical properties and provides a good foundation for surface structures.

NOT ON MAP! WILL MOHRLAND MINES BE REOPENED

All existing and proposed mine portals will be located within 500 ft. vertically from the top of the Star Point sandstone formation. Excavations in bedrock for portal face-up areas will affect sanstones, shales, and siltstones of the lower part of the Blackhawk formation. Some minor groundwater seeps can be expected in these areas. The existing coal preparation plant along with related yards and coal processing waste disposal sites are located on thick, gently sloping alluvial deposits.

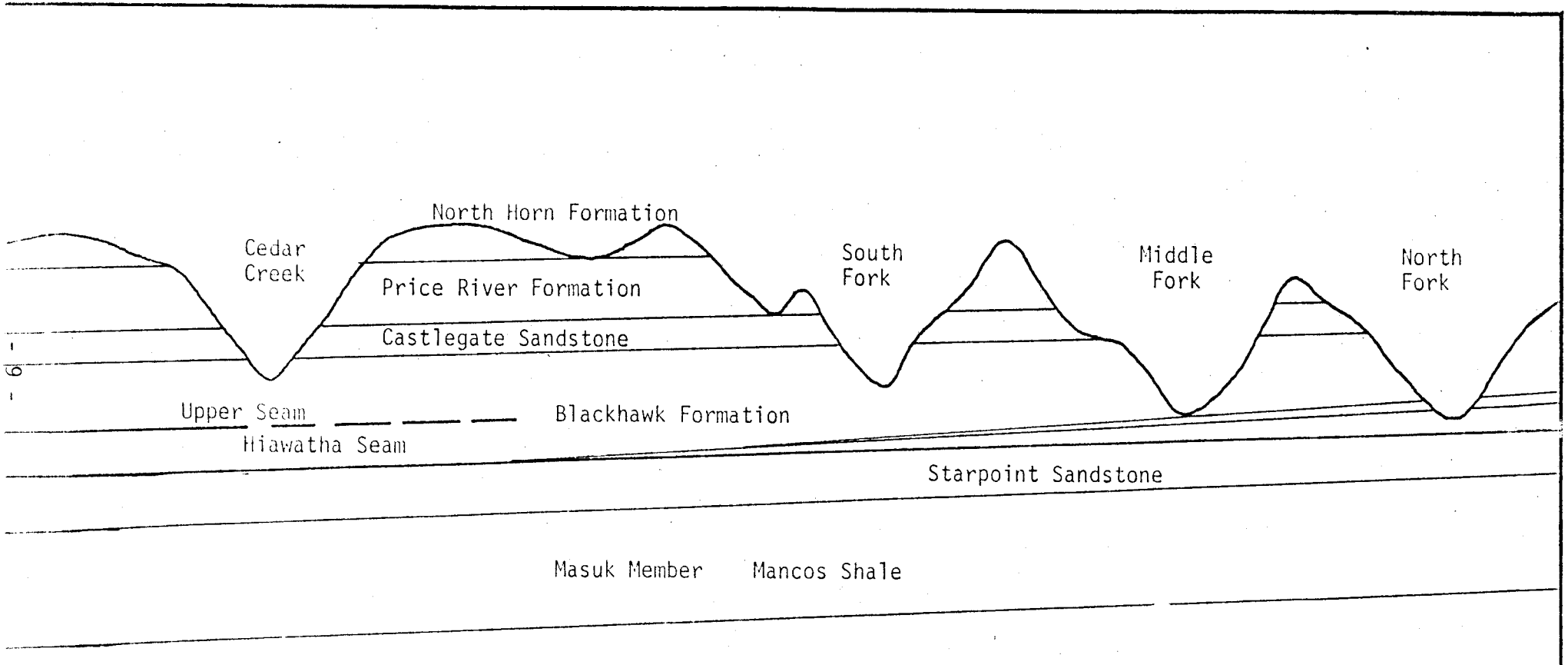
GENERALIZED STRATIGRAPHIC SECTION



Thk. (Ft.)	Formation	Age
500-2,500	North Horn	Tertiary
600-1,000	Price River	
150-500	Castlegate Sandstone	
700-1,000	Blackhawk	
90-1,000	Starpoint Sandstone	
		Upper Cretaceous
300-1,300	5.5 5.5 Mancos Shale	

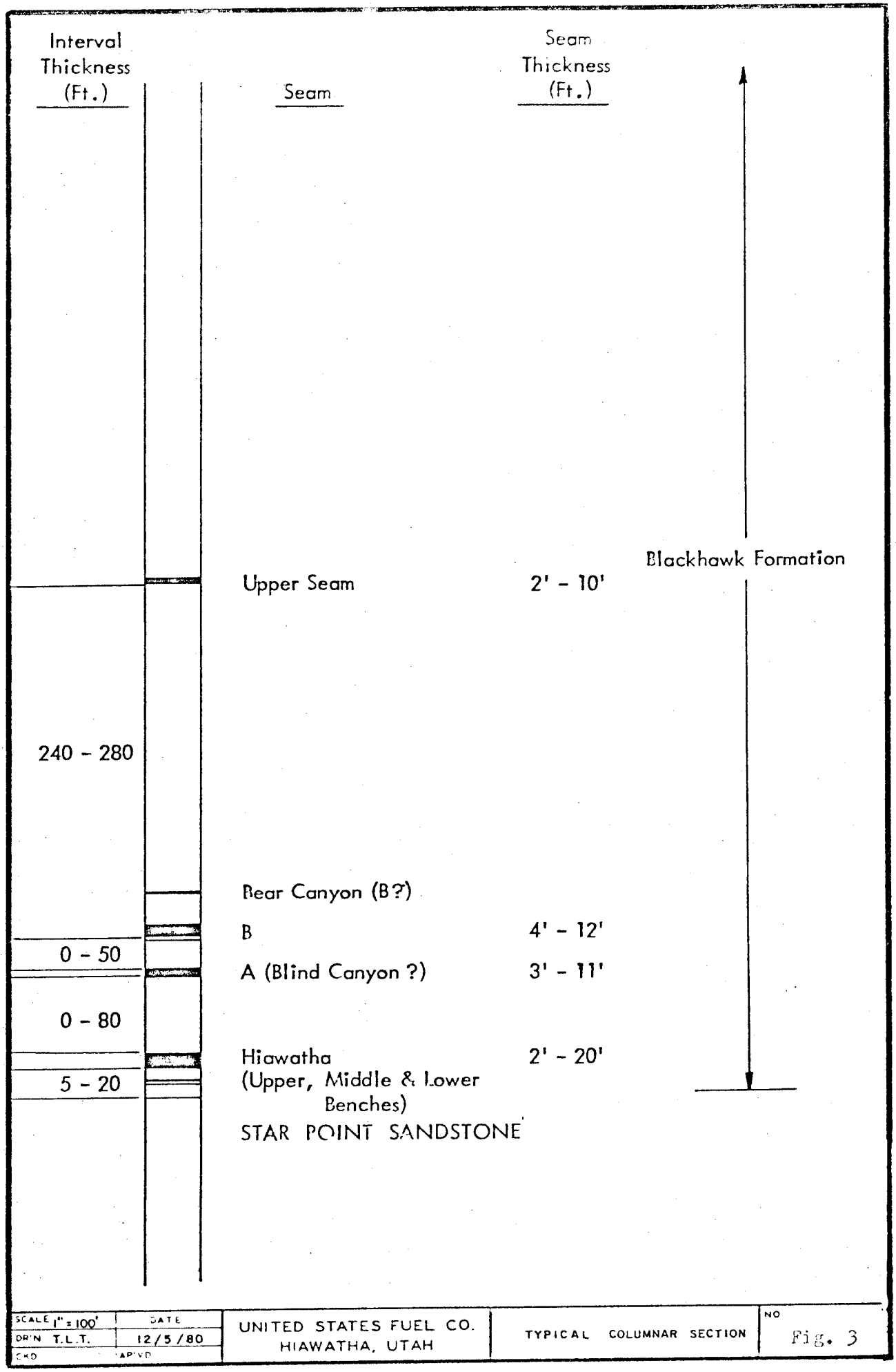
NOT TO SCALE

SCALE	DATE	UNITED STATES FUEL CO. HIAWATHA, UTAH	GENERAL STRATIGRAPHIC SECTION	NO Fig. 1
DRN T.L.T	12/5/80			



NOT TO SCALE

	DATE			
T.L.T	12/5/80	UNITED STATES FUEL CO. HIAWATHA, UTAH	STRATIGRAPHIC SECTION THROUGH HIAWATHA-SEAM	NO. Fig. 2
	AP'VD			


Interval Thickness (Ft.)
Seam
Seam Thickness (Ft.)
Blackhawk Formation
Upper Seam
2' - 10'
240 - 280
Bear Canyon (B?)
B
4' - 12'
0 - 50
A (Blind Canyon ?)
3' - 11'
0 - 80
Hiawatha
2' - 20'
5 - 20
(Upper, Middle & Lower Benches)
STAR POINT SANDSTONE
SCALE 1" = 100'
DATE
DR'N T.L.T.
12/5/80
CK'D
APV'D
UNITED STATES FUEL CO.
HIAWATHA, UTAH
TYPICAL COLUMNAR SECTION
NO
Fig. 3

Groundwater Hydrology

Geology is the principal factor controlling the occurrence and availability of ground water. Unconsolidated deposits of Quaternary age are the most permeable water-bearing formations in parts of this region; sandstone strata of Jurassic, Cretaceous, and Tertiary age contain the most extensive bedrock aquifers (Price and Arnow, 1974)

The region is not very complex structurally, but hydrologically it is divided into units by structural elements such as Book Cliffs, the San Rafael Swell, and the Wasatch Plateau. These units are modified by numerous subsidiary folds, faults, and intrustions; and in the upper formations by deeply cut drainage systems. The deep drainage system in some areas drains the exposed bedrock. The upper water-bearing beds are discontinuous and partially void of water near cliff faces (Final EIS, 1979). The upper formations of the Wasatch Plateau as shown on Figure 1, have been reported as the water-bearing formations. Field investigations have shown that most of the springs and seeps outcrop in the Price River, Star Point, and Castlegate Sandstone formations. The Flagstaff limestone and North Horn formation are conglomerates composed of limestone yielding water to wells for municipal use at Price, Utah. Price and Waddell note that wells in consolidated rocks underlying most of this region generally yield less than 50 gallons per minute. Quaternary alluvial deposits are the most permeable deposits in the area. They can be expected to yield from 10 to 100 gallons per minute to wells in the vicinity of perennial streams.

The lower valley area of the drainage is underlain with a formation called the Mancos shale. The shales have very low permeability, the

little water that originates from this formation has little value due to its bicarbonate sodium and sulfate content. The Ferron Sandstone formation in the southern part of the Wasatch Plateau has yielded potable water to the Emery municipal well and water to underground mine working.

Water-table conditions commonly prevail in shallow alluvium along larger streams, and in relatively flat-lying sedimentary rocks. The deeply cut drainages that are common to the Wasatch Plateau and the Hiawatha area in particular are recharged into the larger streams by the water-table found in the canyon's alluvium. Quaternary alluvial deposits can be expected to yield from 10 to 100 gallons per minute to wells in the vicinity of perennial streams. The ground water is recharged principally in the higher plateaus which receive the most precipitation and produce most of the runoff. Springs, stream courses, and patches of pheatophytes discharge the groundwater into the creeks. The direction of movement of water through the bedrock formations has not been determined accurately for the regional area, although a few local areas have been examined.

The groundwater is recharged primarily by direct infiltration of precipitation (probably much less than 5% of the annual precipitation) in the upper elevations of the plateaus and by infiltration from perennial streams that flow into the Mancos shale lowlands. Although the surficial material may be relatively less permeable than the underlying saturated beds, considerable amounts of water infiltrate to the saturated beds because of the large areas through which the infiltration occurs. Groundwater recharge also takes place to a limited extent by infiltration in outcrops (exposures at the land surface) of some of the more permeable and stratigraphically lower formations. The areas of outcrops are small, and thus limit the amount of rehcarge (Final EIS, 1979).

Depths to ground-water range from less than 50 ft. to more than 1,000 ft. Ground-water levels are generally less than 50 ft. beneath the land surface along alluvial plains of the larger perennial streams (Green, Price, and San Rafael Rivers) and 500 ft. to more than 1,000 ft. beneath the land surface on higher plateaus (Price and Waddell, 1973). Local perched ground-water bodies are only a few feet below the land surface in much of the region. The high elevation aquifers can best be described as perched aquifers, these are generally the springs that recharge the perennial streams.

Groundwater is encountered from time to time in the course of underground mining, possibly existing in perched aquifers. Usually it occurs in the form of drippers or small steady trickles from the roof and floor. These generally tend to decrease and dry up as development advances. Large water flows have been encountered in the past, mainly due to contact with the Bear Canyon Fault, which is a major waterbearing structure. Old mine workings have contacted the fault at several points and this probably accounts for most of the mine water presently being discharged from the old Mohrland portal. Since the dip of the beds in this area is toward the southwest, all water encountered in mining tends to flow to the most southerly opening, the old Mohrland portal. The direction of the subsurface water is demonstrated by both potentiometric surface of the perched aquifers, indicated by the sping elevations and the dip of the formations in the southerly direction. A western development heading, which is still accessible in the King 4 mine, contacted the Bear Canyon fault and exposed a water flow averaging approximately 100 gallons per minute. This water flows southerly away from active mining and is discharged by gravity flow at the old Mohrland portal where it is presently being monitored.

A minor north trending fault zone recently exposed in a section of the King 4 mine contains numerous small water trickles where it was followed for a distance of over 600 ft. The combined flow from these trickles amounts to less than 10 gallons per minute.

Mine workings in an east section of the King 4 mine intersected the lower portion of drill hole 13 which was drilled 950 ft. vertically from the surface on Gentry Mountain. A small trickle of water amounting to less than 1 gallon per minute is flowing from this hole. Numerous small diameter explority holes have been drilled from underground workings throughout the area. Most of these holes are now inaccessible and drill records show little or no data relating to ground water. Eleven core drill holes were driven for coal exploration on Gentry Mountain during 1976 and 1977; however, these holes were completely sealed with concrete as required by U.S.G.S. stipulations.

The coal seams being mined are in the Blackhawk formation which is overlain by the predominant water-bearing formations. These formations including the Blackhawk formation are already highly broken by joints, fractures and heavily mined out areas which are very porous, readily accepting recharge. Depending on the coal extraction method employed, subsidence, in cases, could result in additional fractures through the strata above the Star Point Sandstrone formation into the Castlegate and Price River formations, could reduce the occurrence of springs and seeps, or reduce yields from them. Loss of water from local perched aquifers within the interbedded sandstone layers of the Blackhawk formation itself is likely. Pillars remain in the old works reducing the likelihood of subsidence. The effects of past mining on water sources are not known,

except that significant flows have resulted from contact with major fractures such as the Bear Canyon fault. Parts of King 1 mine were mined out from 10 to 30 years ago by room and pillar methods, yet numerous springs overlying this mine are still flowing. Whether they have diminished as a result of mining is not known.

Diminution of the existing surface and ground water sources could possible affect some livestock and wildlife water sites at higher elevations. Water presently being used for municipal, industrial, and irrigation purposes should not be diminished to any great extent since water diverted into the ground would most likely return to mine openings, springs and streams near the Star Point sandstrone which is well above municipal, industrial and irrigation points of use. Water quality should not be significantly affected by mining as evidenced by the high quality of mine water presently being discharged.

Mine water, besides that used in King 4 for fire prevention and dust suppression, flows southerly away from active mining and is presently discharged by gravity flow at the old Mohrland portal. A quantity of this water enters a 12 in. metal pipe and is diverted to a water tank on Miller Creek for culinary and industrial purposes at Hiawatha. The remainder of mine water flows into Cedar Creek. This mine water discharge is covered by E.P.A. NPDES Permit No. UT-0023094. Monitoring requirements under this permit are listed in Table 1. In addition to the E.P.A. requirements, the parameters of specific conductance, total manganese, and dissolved iron will be analyzed monthly. Monitoring this discharge will closely reflect the character of water encountered during mining.

Table 1

E.P.A. Monitoring Requirements For
Mohrland Mine Water Discharge

Effluent Characteristic	Monitoring Frequency
Flow	Monthly
Total Suspended Solids	Monthly
Total Dissolved Solids	Monthly
Total Iron	Monthly
Alkalinity-Acidity	Monthly
pH	Monthly
Oil and Grease	Monthly
BOD_5	Quarterly
Total Coliforms/100 ML	Quarterly
Fecal Coliforms/100 MS	Quarterly

Proposed Groundwater Monitoring

The map included with this plan (M-2) shows the location of 10 numbered springs which were selected for monitoring because of their representative locations with respect to mine workings and because they each had some flow during the drought year of 1977. These spring are listed in Table 2. Springs SP-1, SP-4, SP-5 and SP-7 have been developed with livestock watering troughs or ponds.

A comprehensive water analysis consiting of parameters listed in Table 3 will be run on samples from each spring to define their initial character. Additional routine sampling and analysis for items listed in Table 4 will be determined for each spring at regular intervals. Sites will be maintained and monitored by qualified personnel. Data will be

organized, tabulated and submitted to the regulatory authority on a quarterly basis.

Flow measurements will be made with V-notch weirs on open springs and by the time volume method where springs discharge from installed pipes. Spring SP-8 will be monitored on a monthly basis since it contributes directly to Cedar Creek which flows near disturbed areas. The other mine springs will be monitored once in the spring and one in the fall.

In addition to springs selected for monitoring by U. S. Fuel Company, numerous other springs near the nothern and western property boundary are monitored by Plateau Mining Company and the U. S. Geological Survey.

Table-2

Proposed Spring Monitoring Sites

Spring	Location	Approximate Flow (G.P.M.)
SP-1	NW¼NE¼, Sec.18, T.15S., R.8E.	3
SP-2	SW¼SW¼, Sec.18, T.15S., R.8E.	4 to 8
SP-3	SE¼SE¼, Sec.14, T.15S., R.7E.	6
SP-4	NE¼NW¼, Sec.31, T.15S., R.8E.	4 to 50
SP-5	NE¼NW¼, Sec.5, T.16S., R.8E.	3
SP-6	SW¼NW¼, Sec.6, T.16S., R.8E.	5 to 10
SP-7	NE¼SW¼, Sec.1, T.16S., R.7E.	10 to 50
SP-8	NW¼SE¼, Sec.8, T.16S., R.8E.	5 to 20
SP-9	SE¼NW¼, Sec.13, T.16S., R.7E.	5 to 10
SP-10	NW¼NE¼, Sec.20, T.16S., R.8E.	5 to 30

Table-3

Initial Comprhensive Analytical Schedule

- Flow Rate
- pH
- Air and Water Temperature
- Specific Conductance
- Acidity (as $CACO_3$)
- Total Suspended Solids (Surface Water Only)
- Total Dissolved Solids
- Total Organic Carbon
- Calcium
- Manganese
- Magnesium
- Sodium
- Potassium
- Total Iron
- Dissolved Iron
- Iron
- Carbonate
- Fluoride
- Bicarbonate
- Chloride
- Sulfate
- Nitrate Plus Nitrite (as N)
- Kjeldahl N
- Dissloved Phosphorus
- Silica
- Trace Elements
  - Arsenic
  - Cadmium
  - Zinc
  - Selenium
- Radioactivity
  - Gross Alpha
  - Gross Beta
- Oil and Grease

Table-4

Routine Sampling Analytical Schedule

Flow Rate

pH

Air and Water Temperature

Acidity (Surface and Mine Water Only)

Specific Conductance

Total Suspended Solids (Surface and Mine Water Only)

Total Dissolved Solids

Total Manganese (Surface and Mine Water Only)

Total Iron

Dissolved Iron

Nitrate (as N)

Sulfate

Chloride

Oil and Grease (Surface and Mine Water Only)

Surface Water Hydrology

The eastern part of the Wasatch Plateau is part of the Colorado River Basin and is drained by small streams tributary to the Price, San Rafael, and Fremont Rivers, branches of the Green and Colorado Rivers. The west slope of the plateau, a smaller part of the total area, is drained by tributaries of the Sevier River, which flows into Sevier Lake, one of the numerous sinks of the Great Basin. The crest of the plateau is thus part of the divide between the Colorado River and the Great Basin (Spieker, 1931).

The Price River is the largest stream in the palteau and drains about 500 square miles in the northeastern part, rising in the general vicinity of Soldier Summit and Pleasant Valley, and flowing eastward through a narrow canyon in the east front of the plateau, across the northern part of Castle Valley, and north of the Beckwith Plateau to its confluence with the Green River, about 14 miles north of the town of Green River. The Price River is normally a moderate-sized stream, having a mean flow of about 200 second-ft., but it varies from year to year, having an extreme recorded maximum of more than 8,000 second-ft. (Spieker, 1931). These conditions are due to the fact that the tributaries of Price River are snowfed, therefore, seasonal fluctuation of flow rates is great. Stream flows are greatest during late spring and early summer, decreasing to a minimum flow in early autumn through mid-winter.

Huntington Canyon is the next large stream south of the Price River. These two waterways are the immediate recipients of surface and ground-water discharge from the U. S. Fuel Company property. Huntington Creek rises on the well-watered plateau surface, flows through a narrow, deep

canyon toward the desert, and joins Cottonwood and Ferron Creeks to form the San Rafael River which eventually drains into the Green River. Its mean flow, measured near the mouth of Huntington Canyon, is normally about 100 second-ft. its maximum about 600, and its minimum about 30. It drains an area in the plateau of about 160 square miles. The Left Fork of Huntington Creek has been impounded at two places, and the reservoirs are used to equalize the seasonal flow of water for irrigation of Castle Valley in the vicinity of Huntington and Cleveland. The main course of Huntington Creek in the plateau is about 30 miles long (Spieker, 1931).

There are several small drainages discharging surface water from U. S. Fuel Company's property. Miller Creek in the northern part of the property (Map M-2), is part of the Price River drainage system. Its main tributaries include North Fork (Right Fork on U.S.G.S. maps), Middle Fork and South Fork (Left Fork on U.S.G.S. maps). The main artery of Miller Creek is a perennial stream and the tributaries, except Left Fork of North Fork of Miller Creek, are intermittent. Miller Creek flows just north of the town of Hiawatha into the bottom lands. Miller Creek is used for municipal, industrial and irrigation purposes.

Cedar Creek, with its Left and Right Fork tributaries, is part of the San Rafael River system. Cedar Creek is a perennial stream. The remaining streams draining surface water from the U. S. Fuel Company property are small and in the southern part of the property, thus they are all part of the San Rafael River drainage system. Ben Johnson, Chris Ottison Canyon and the Left and Right Forks of Fish Creek are ephemeral. Bear Creek Canyon and McCadden Hollow are intermittent. Gentry Hollow Creek tributary to Tie Fork and Huntington Creek which

are also part of the San Rafael River system.

The mine plan areas are located in both Cedar and Miller Creek Canyons. U. S. Fuel Company holds numerous water rights to surface water in these two canyons. Water leaving the mine plan area via Miller and Cedar Creeks is used for irrigation and stock watering pruposes at the Millerton and Cedar Creek Ranches, both of which are owned by U. S. Fuel Company.

There are no surface lakes or reservoirs on the mine property. An underground storage reservoir is maintained in the old Hiawatha No. 2 mine as a culinary water supply for the King 4 and King 5 mines and surface facilities. A diversion dam in the left fork of the north fork of Miller Creek (Cert. 5294), as shown on Map M-2 is being used to divert water to this reservoir. A stream monitoring site (ST-2A) is located near the diversion dam.

Rainfall and runoff relationships have been determined for critical areas where surface effects of underground mining are expected. A report compiled by Vaughn Hansen Associates and supplemented by Rollins, Brown and Gunnell, Incorperated was submitted to the regulatory authorities in connection with earlier submittals. This report addresses runoff volumes expected from various predicted storms and their effect on disturbed surface areas, drainage structures and sedimentation ponds. Seven sedimentation ponds have been constructed in the vicinity of disturbed surface areas as required by 30 CFR 817.42. Discharges from these ponds are covered by E.P.A. NPDES permit No. UT-0023094. Monitoring parameters are the same as those listed in Table 1.

Proposed Surface Water Monitoring

Map M-2 shows the location of 8 proposed stream monitoring sites. These sites will be maintained and monitored by qualified personnel. Data will be organized, tabulated and submitted to the regulatory authority on a quarterly basis.

A comprehensive water analysis consisting of parameters listed in Table 3 will be run on samples from each monitoring point to define their initial character. Additional routine sampling and analysis for items listed in Table 4 will be determined for each point at intervals specified for individual sites.

Following is a description of proposed stream monitoring sites:

ST-1 Right Fork of North Fork of Miller Creek. This perennial tributary to Miller Creek will be monitored with a V-notch weir or small Cipolletti weir installed just above the junction with Left Fork. This station will be monitored for flow and analyzed according to Table 4 on a monthly basis for a baseline period. Once the system has been defined, sampling will be reduced to a quarterly basis. This site is generally not accessible during winter months.

ST-2 Left Fork of North Fork of Miller Creek. Two stations will be monitored on this perennial tributary. One above the Hiawatha No. 2 mine diversion point (2 A), and one between the diversion point and the junction with Right Fork (2 B). Water will be monitored on a monthly basis for a baseline period when reduced to quarterly monitoring once the system

has been defined. Volume measurements will be by V-notch or Cipolletti weirs. Monitoring will be limited to accessible months.

ST-3 Middle Fork of Miller Creek. This tributary is intermittent. A recording station consisting of a suitably sized weir will be installed near the confluence with the North Fork of Miller Creek. Flow measurements will be taken and samples analyzed monthly when water is present.

ST-4 South Fork of Miller Creek. This tributary is intermittent. A weir will be installed near the confluence with Miller Creek and monitored similarly to Middle Fork.

ST-5 Miller Creek. This significant perennial stream will be monitored with a 3 ft. Cipolletti weir at a point below the confluence of South Fork. Water will be monitored monthly for a baseline period then reduced to quarterly upon approval of the regulatory authority.

ST-6 Cedar Creek. This is a significant perennial stream. It will be monitored at a point below the old Mohrland mine portal. Volume measurements will be by a suitably sized weir. Monitoring will be done on a monthly basis until sufficient baseline data is gathered to justify reduced monitoring.

ST-7 Gentry Hollow Creek. A recording station for this perinnial stream will be installed just above the junction with Wild Cattle Hollow. Due to the remote location of this point, we propose monitoring on a simi-annual basis.

0032

UNITED STATES FUEL COMPANY

HIAWATHA, UTAH 84527

Date JAN. 21, 1981

UTAH DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
1588 WEST NORTH TEMPLE
SALT LAKE CITY, UTAH 84116

RECEIVED
JAN 23 1981
DIVISION OF
OIL, GAS & MINING

Attention: WAYNE HEDBERG

Subject: _____

Gentlemen:

We attach for your attention the following:

WAYNE,

ENCLOSED, PLEASE FIND (2) ADDITIONAL COPIES OF OUR "REVISED" SURFACE AND GROUNDWATER MONITORING PLAN AS PER YOUR REQUEST OF JAN. 16, 1981.

FIVE ADDITIONAL COPIES ARE BEING SENT TO O.S.M. AS REQUESTED.

Very truly yours,

U. S. FUEL COMPANY

By Robert Eccli

Quotations subject to immediate acceptance. Coal will be sold and invoiced at price in effect on date of shipment, at mine weights f. o. b. cars at place of shipment, unless otherwise specifically agreed in writing. Agreements are contingent upon causes of delay beyond our control, including strikes, accidents, riots, acts of God, lockouts, fire, flood, inability to secure cars or transportation

SURFACE AND GROUNDWATER MONITORING PLAN
(Revises Plan Submitted Nov. 30, 1979)

For

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1588 West North Temple
Salt Lake City, Utah 84116

by

United States Fuel Company
Hiawatha, Utah
December 22, 1980

Received:
12/30/1980
DWH

INTRODUCTION

This plan is submitted in connection with 30 CFR 817.52 and UMC 817.52. It has been revised to address comments and recommendations outlined in a review by the Federal Office of Surface Mining on July 18, 1980. Stipulations set forth by the State of Utah Department of Natural Resources, Division of Oil, Gas, and Mining on June 15, 1979 and August 21, 1979 were addressed in an earlier plan and carried forward in this revision.

Included with this plan is a hydrology map showing proposed water monitoring points and the location of major hydrologic features in relation to existing mine workings, surface facilities and property boundaries. Also included is a geology map of the property area.

Following is a description of the geology of the area, surface and groundwater information and proposed monitoring sites.

GEOLOGY OF U. S. FUEL COMPANY PROPERTY AREA

The geologic formations of the mine plan area are Cretaceous, Tertiary, and younger in age and, depending on resistance to erosion, form alternating tiers of cliffs and steep slopes where they are exposed. The six formations described in the stratigraphy section consist mainly of sandstones, siltstones, and shales of both marine and nonmarine origin. Some minor limestone beds occur, mainly near the top of the Wasatch Plateau, see Map M-1. Figure 2 shows a view looking west of the stratigraphy through Hiawatha-Mohrland areas. Most stream drainages and flatter slopes are covered with quaternary alluvium, colluvium and glacial debris.

The coal seams of interest occur in the Cretaceous Blackhawk formation. Above and below the Blackhawk are two cliff-forming sandstones, the overlying Castlegate and underlying Star Point. Each are valuable for correlating the generally lenticular coal beds and helpful in field correlations.

Structurally, the beds are relatively flat with a slight dip to the southwest at less than one degree. The strata are generally undisturbed in the vicinity of Mohrland, but become more disturbed in the west. Here the Bear Canyon fault is present and trends north-south through the head of Bear Canyon, as shown on Map M-1. This fault has a displacement of up to 250 ft., and markes the western limit of the past USF mining. Cover over the uppermost mineable seam is moderate, ranging between 0 to 1,500 ft.

The stratigraphy of the Hiawatha-Mohrland area consists of six distinct formations which are described below:

Masuk Shale Member of Mancos Shale: The uppermost member of the Mancos shale, the Masuk, represents the last marine invasion into the area. It ranges from 300 to 1,300 ft. thick and forms steep blue colored slopes where it is exposed near the town of Hiawatha. In the subsurface to the west it changes faces and joins with the Emery and Star Point sandstones. The Masuk is a soft unit in its exposures but usually forms part of the cliffs rising to the top of the Wasatch Plateau.

Star Point Sandstone: The lowest of four formations comprising the Mesaverde group of the Wasatch Plateau, the Star Point consists of several thick, cliffy sandstone units seperated by shale or partings on thin-bedded sandstone. The unit ranges from 90 to 1,000 ft. thick with thicker sections to the west. In the southernmost part of the field it contains sandy shale; in the central and north parts it appears as a broad light colored band on the cliff.

Blackhawk Formation: The Blackhawk in the Mesaverde group of the Wasatch Plateau contains in the lower half of the formation all the coal seams expected to be affected by mining operations in this area. The 700 to 1,000 ft. unit, less resistant than the units that contain it, consists of alternating slope and cliff forming units. The cliff forming sandstones are generally yellow-gray or white-gray on fresh surfaces and weather to shades of tan, yellow or brown. In places they are reddened by the natural burning of nearby coal seams. Sands are fine to medium grained and cemented by either calcite or silicia. In a few places they are argillaceous.

Slopes of the formation are made of various types of shale and coal. The shales, continental in origin, consist of three kinds: clay shale - soft, granular, gray to green in color and the most common; carbonaceous shale in various shades of brown and black; and smoke gray shale usually associated with the coal. The coal beds being affected in this mining lie in the lower 250 to 350 ft. of the formation.

Castlegate Sandstone: The Castlegate sandstone, generally carried as a member of the Price River formation, immediately overlies the Blackhawk formation. The Castlegate varies between 150 to 500 ft. thick. Massive, medium to course grained sandstone beds in places contain conglomerate with a matrix of grit. The cliffy units are occasionally broken by sandy, hard, gray shale and even lenses of coal.

Price River Formation: The rocks are, like the Castlegate, a little less risistant, not as massive and more friable; thus eroding easier, creating the step-like outcrops. The unit ranges from 500 to 1,000 ft. thick.

North Horn Formation: This is the uppermost formation in the Hiawatha area. It consists mainly of shales with lenses of sandstone and fresh water limestone. The relatively hard sandstone lenses cause many of the flat, unbroken surfaces on top of the Gentry Mountain. The lower contact of this formation is not well defined as it grades into the Price River formation. Its thickness is from 500 to 2,500 ft. thick. Boreholes collared in this formation for coal exploration have encountered a water bearing zone at about 300 ft. down which has caused swelling and sloughing of the holes.

Field investigations have shown that most of the springs and seeps outcrop in the Price River, Castlegate and Star Point sandstone formations. In this mining area, springs and seeps are common to all formations. The high elevation aquifers can best be described as perched aquifers. (Final D.O.I. EIS Coal Resources in Central Utah, 1979)

The Wasatch Plateau lies between the simple dome-like uplift of the San Rafael Swell on the east and the highly faulted, structurally complex region of the Great Basin on the west (Spieker, 1931). Faults that are associated with the Wasatch Plateau do not effect the mining area. The Bear Canyon fault is a member of the Pleasant Valley and Joe's Valley fault zones. Bear Canyon fault is the only major fault in the mine plan area and effectively borders the western edge of USF's property. It is a normal fault which strikes nearly due north and dips 85 degrees to the west. Displacement of up to 250 ft. in the west wall of Bear Creek Canyon has been reported.

Several minor faults have recently been encountered underground in the northern part of the King No. 4 mine. These faults also strike north-south and have displacements ranging from a few inches to 5 ft.

There is no major folding in the area although numerous local rolls have been encountered while mining. Spieker's geologic map of the Wasatch Plateau shows a gentle synclinal basin between Long Point and Wild Horse Ridge, near the southern end of the Gentry Mountain. Recent boreholes for coal exploration in that area substantiate these structure contours.

Some igneous intrusions exist in the northern part of the mine plan area. Dikes ranging from a few inches to 4 ft. thick have been encountered in the Hiawatha No. 2, King No. 3 and King No. 4 mines. All are

apparently associated with tension franctures and most have caused natural coking where they contact coal beds. The dikes are reported to consist of a basic lamporphyre material.

6.4 Geology of Coal and Adjacent Units

Six beds or zones of measured coal have been identified in the Hiawatha-Mohrland area of which four are thick enough to be economically mineable at this time. At the USF mines, these beds have been referred to as the Hiawatha, the A, B, and Upper seams. These seams all occur in the Blackhawk formation. Figure 1, following this text, is a general stratigraphic section showing the relative locations of these seams and others that become important to the north and west. The coal is ranked as bituminous, in the high volatile B and C groups with low to medium ash content and very low to medium sulfur content.

Hiawatha Seam: This seam is the lowest and most consistent seam in the Blackhawk formation. It ranges in thickness from 3 or 4 ft. in the northern part of the property where it is seperated by rock splits to over 24 ft. of solid clean coal where it merges with the A seam near Mohrland. It is located 5 to 20 feet above the Star Point Sandstone and is characteristically a bright, blocky coal containing visible resin blebs. The immediate roof is comprised of a laminated fine to medium grained white sandstone that ranges in thickness from 6 to 110 ft. within the area of interest. The floor is generally a hard carbonaceous shale with interbedded siltstone partings underlain by white, medium grained sandstone.

A Seam: The A seam splits off from the Hiawatha seam between Cedar Creek Canyon and South Fork, where it gradually increases its elevation above the Hiawatha from 9 to 60 ft. to the north. The seam thickness

ranges from 5 to 12 ft. The A seam consists of an upward increasing grain size sequence of carbonaceous shale, gray siltstone and white, fine grained sandstone. The sandstone is the dominant lithology. Carbonaceous shale comprises the immediate seam floor and is underlain by gray siltstone with interbedded shale partings. The A seam in the area of interest may be correlative to the Blind Canyon seam of the surrounding area. The A seam has been mined in parts of the King No 1 and King No. 4 mines.

B Seam: Occurs 0 to 70 ft. above the A seam. The seam may be correlative to the Bear Canyon and Wattis seams of adjacent localities. In an area west of South Fork the A and B seams come together forming a bed from 12 to 18 ft. thick. The B seam underlying the northern mining area is split into two benches with a 3 to 5 ft. shale parting to very bright coal and commonly contains resin inclusions and thin carbonaceous shale and sandstone bands. The upper B bench ranges in thickness from 4 to 12 ft. The lower B bench consists of moderately bright to bright coal, free of partings. The B seam roof is a variable sequence of interbedded carbonaceous silty shale and gray siltstone. Some thin, light gray, fine grained sandstone may also be present. Carbonaceous shale comprises the immediate seam floor. White, fine to medium grained sandstone underlies the carbonaceous shale. The King No. 4 and King No. 5 mines are presently mining this seam.

Upper Seam: The Upper seam has never been mined by USF and is located approximately 300 ft. above the B seam in the northern part of the property and 330 ft. above the Hiawatha seam in the Mohrland area. The maximum thickness encountered by core drilling was 8.5 ft. The average thickness is less than 6 ft. The immediate roof above this seam is gray carbonaceous

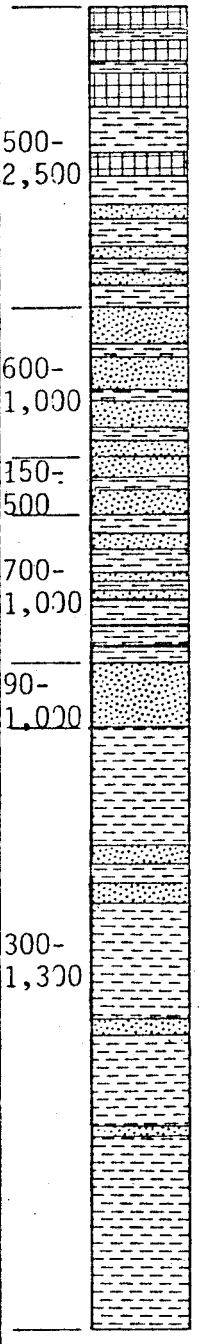
shale overlain by white, fine to medium grained sandstone. The floor is gray carbonaceous shale.

Geologic Effects of Mining

Existing surface facilities as well as proposed new facilities are all located on USF land. The Middle Fork of Miller Creek has King No. 4 and King No. 5 surface facilities, the South Fork has old existing facilities that will be updated for the reopening of King No. 6 and Cedar Creek were the old Mohrland mine workings and will be reopened for King No. 7 and King No. 8 mines. These facilities will all be located in canyons near coal outcrops on benches. These surface areas are comprised essentially of quaternary alluvium and colluvium derived from sandstone and shale. The alluvial material generally overlies Mancos shale and ranges in thickness from thin sheets to over 50 ft. The Mancos shale has very poor physical properties and should be avoided for surface facilities where ever possible. The alluvial material has good physical properties and provides a good foundation for surface structures.

All existing and proposed mine portals will be located within 500 ft. vertically from the top of the Star Point sandstone formation. Excavations in bedrock for portal face-up areas will affect sanstones, shales, and siltstones of the lower part of the Blackhawk formation. Some minor groundwater seeps can be expected in these areas. The existing coal preparation plant along with related yards and coal processing waste disposal sites are located on thick, gently sloping alluvial deposits.

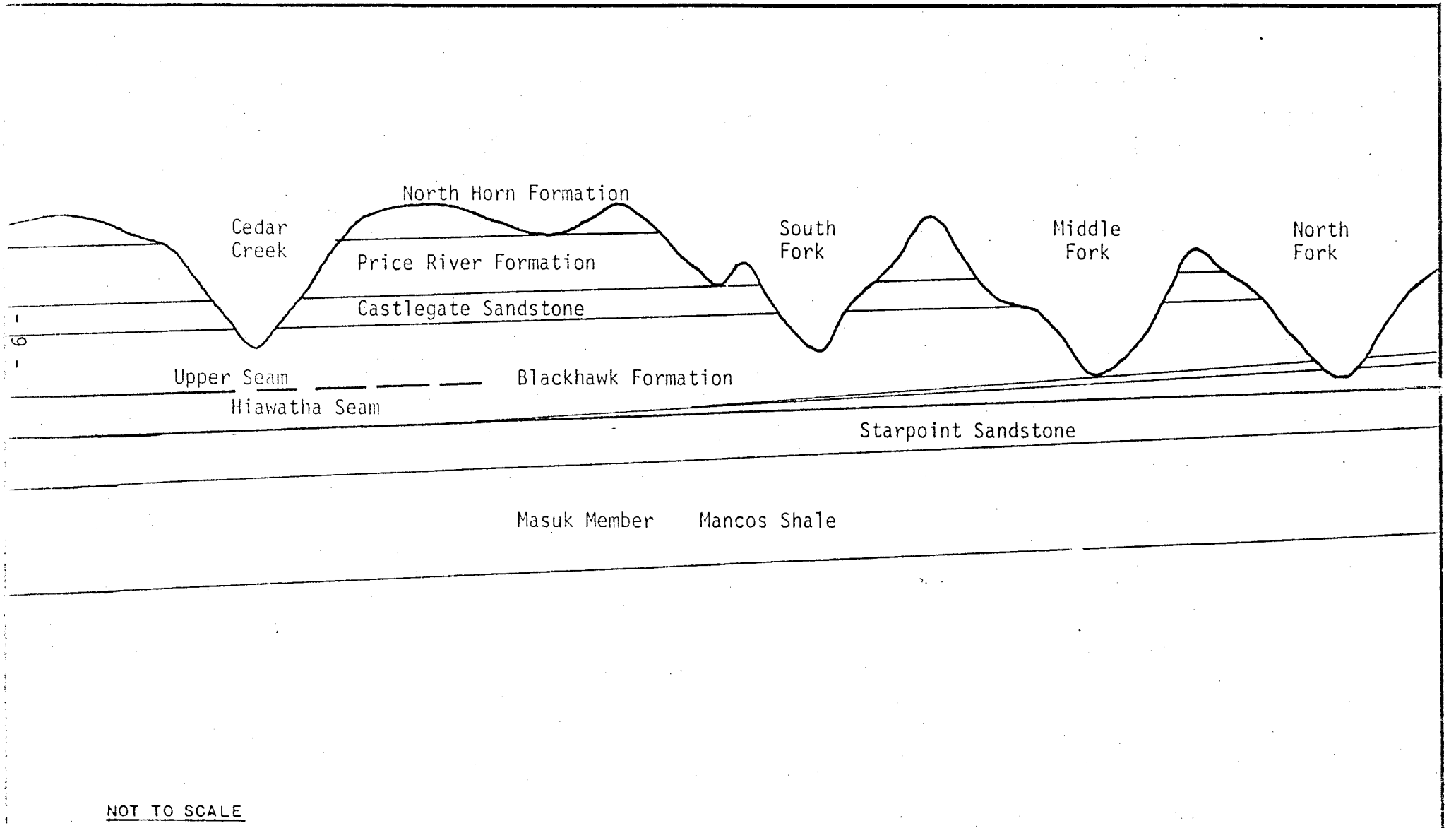
GENERALIZED STRATIGRAPHIC SECTION



Thk. (Ft.)	Formation	Age
500-2,500	North Horn	Tertiary
600-1,000	Price River	
150-500	Castlegate Sandstone	
700-1,000	Blackhawk	
90-1,000	Starpoint Sandstone	
		Upper Cretaceous
5.5		
300-1,300 5.5	Mancos Shale	

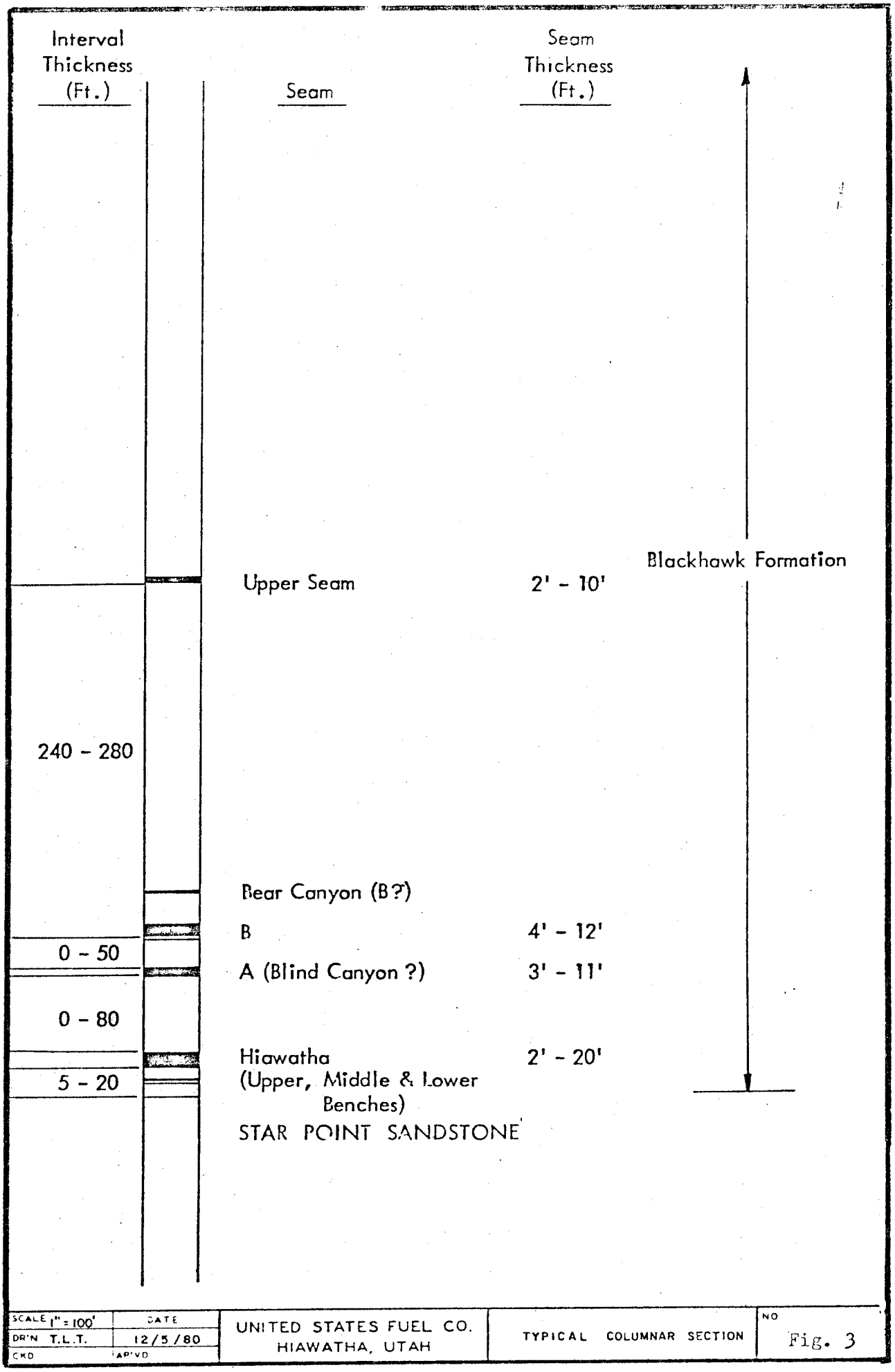
NOT TO SCALE

SCALE	DATE			
DR'N T.L.T	12/5/80	UNITED STATES FUEL CO. HIAWATHA, UTAH	GENERAL STRATIGRAPHIC SECTION	NO Fig. 1
APP'D				



NOT TO SCALE

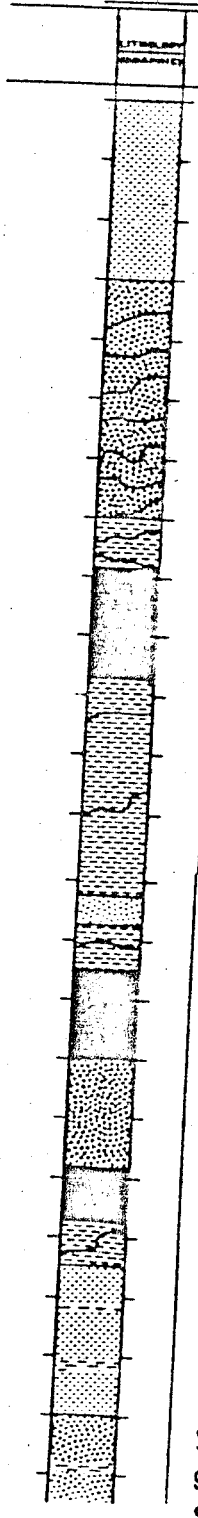
	DATE			
T.L.T	12/5/80	UNITED STATES FUEL CO. HIAWATHA, UTAH	STRATIGRAPHIC SECTION THROUGH HIAWATHA-SEAM	NO. Fig. 2
	AP'VD			


Interval Thickness (Ft.)
Seam
Seam Thickness (Ft.)
Blackhawk Formation
Upper Seam
2' - 10'
240 - 280
Bear Canyon (B?)
B
4' - 12'
0 - 50
A (Blind Canyon ?)
3' - 11'
0 - 80
Hiawatha
(Upper, Middle & Lower Benches)
2' - 20'
5 - 20
STAR POINT SANDSTONE
SCALE 1" = 100'
DATE
DR'N T.L.T.
12/5/80
CKD
APV'D
UNITED STATES FUEL CO.
HIAWATHA, UTAH
TYPICAL COLUMNAR SECTION
NO
Fig. 3

TYPICAL LITHOLOGIC DESCRIPTION OF

Scale, 1" = approx. 7'

Hiawatha Seam



LITHOLOGIC DESCRIPTION

Siltstone, gray, mottled

Sandstone, white, medium grained, with many coal streaks, silty

Shale, gray to black, with some coal streaks

Coal, black, moderately bright to bright, some resin present, some clay partings @ top and bottom

Upper Hiawatha

Shale, gray, some coal streaks

Sandstone, white, fine grained, mottled

Shale, gray to black, with some coal streaks

Coal, black, bright, resin present, occasional thin clay partings

Middle Hiawatha

Sandstone, brown, medium grained

Coal, black, moderately bright, some resin

Lower Hiawatha

Shale, gray to black, with some coal streaks

Siltstone, gray, banded with thin shale partings

Sandstone, white, medium grained, some shale streaks,

Starpoint Sandstone

NOT TO SCALE

SCALE	DATE	UNITED STATES FUEL CO. HIAWATHA, UTAH	LITHOLOGIC DISCRIPTION OF HIAWATHA SEAM INTERVAL	NO XI-4
DR'N T.L.T	12/5/80			

Groundwater Hydrology

Geology is the principal factor controlling the occurrence and availability of ground water. Unconsolidated deposits of Quaternary age are the most permeable water-bearing formations in parts of this region; sandstone strata of Jurassic, Cretaceous, and Tertiary age contain the most extensive bedrock aquifers (Price and Arnow, 1974)

The region is not very complex structurally, but hydrologically it is divided into units by structural elements such as Book Cliffs, the San Rafael Swell, and the Wasatch Plateau. These units are modified by numerous subsidiary folds, faults, and intrustions; and in the upper formations by deeply cut drainage systems. The deep drainage system in some areas drains the exposed bedrock. The upper water-bearing beds are discontinuous and partially void of water near cliff faces (Final EIS, 1979). The upper formations of the Wasatch Plateau as shown on Figure 1, have been reported as the water-bearing formations. Field investigations have shown that most of the springs and seeps outcrop in the Price River, Star Point, and Castlegate Sandstone formations. The Flagstaff limestone and North Horn formation are conglomerates composed of limestone yielding water to wells for municipal use at Price, Utah. Price and Waddell note that wells in consolidated rocks underlying most of this region generally yield less than 50 gallons per minute. Quaternary alluvial deposits are the most permeable deposits in the area. They can be expected to yield from 10 to 100 gallons per minute to wells in the vicinity of perennial streams.

The lower valley area of the drainage is underlain with a formation called the Mancos shale. The shales have very low permeability, the

little water that originates from this formation has little value due to its bicarbonate sodium and sulfate content. The Ferron Sandstone formation in the southern part of the Wasatch Plateau has yielded potable water to the Emery municipal well and water to underground mine working.

Water-table conditions commonly prevail in shallow alluvium along larger streams, and in relatively flat-lying sedimentary rocks. The deeply cut drainages that are common to the Wasatch Plateau and the Hiawatha area in particular are recharged into the larger streams by the water-table found in the canyon's alluvium. Quaternary alluvial deposits can be expected to yield from 10 to 100 gallons per minute to wells in the vicinity of perennial streams. The ground water is recharged principally in the higher plateaus which receive the most precipitation and produce most of the runoff. Springs, stream courses, and patches of pheatophytes discharge the groundwater into the creeks. The direction of movement of water through the bedrock formations has not been determined accurately for the regional area, although a few local areas have been examined.

The groundwater is recharged primarily by direct infiltration of precipitation (probably much less than 5% of the annual precipitation) in the upper elevations of the plateaus and by infiltration from perennial streams that flow into the Mancos shale lowlands. Although the surficial material may be relatively less permeable than the underlying saturated beds, considerable amounts of water infiltrate to the saturated beds because of the large areas through which the infiltration occurs. Groundwater recharge also takes place to a limited extent by infiltration in outcrops (exposures at the land surface) of some of the more permeable and stratigraphically lower formations. The areas of outcrops are small, and thus limit the amount of rehcarge (Final EIS, 1979).

Depths to ground-water range from less than 50 ft. to more than 1,000 ft. Ground-water levels are generally less than 50 ft. beneath the land surface along alluvial plains of the larger perennial streams (Green, Price, and San Rafael Rivers) and 500 ft. to more than 1,000 ft. beneath the land surface on higher plateaus (Price and Waddell, 1973). Local perched ground-water bodies are only a few feet below the land surface in much of the region. The high elevation aquifers can best be described as perched aquifers, these are generally the springs that recharge the perennial streams.

Groundwater is encountered from time to time in the course of underground mining, possibly existing in perched aquifers. Usually it occurs in the form of drippers or small steady trickles from the roof and floor. These generally tend to decrease and dry up as development advances. Large water flows have been encountered in the past, mainly due to contact with the Bear Canyon Fault, which is a major waterbearing structure. Old mine workings have contacted the fault at several points and this probably accounts for most of the mine water presently being discharged from the old Mohrland portal. Since the dip of the beds in this area is toward the southwest, all water encountered in mining tends to flow to the most southerly opening, the old Mohrland portal. The direction of the subsurface water is demonstrated by both potentiometric surface of the perched aquifers, indicated by the sping elevations and the dip of the formations in the southerly direction. A western development heading, which is still accessible in the King 4 mine, contacted the Bear Canyon fault and exposed a water flow averaging approximately 100 gallons per minute. This water flows southerly away from active mining and is discharged by gravity flow at the old Mohrland portal where it is presently being monitored.

A minor north trending fault zone recently exposed in a section of the King 4 mine contains numerous small water trickles where it was followed for a distance of over 600 ft. The combined flow from these trickles amounts to less than 10 gallons per minute.

Mine workings in an east section of the King 4 mine intersected the lower portion of drill hole 13 which was drilled 950 ft. vertically from the surface on Gentry Mountain. A small trickle of water amounting to less than 1 gallon per minute is flowing from this hole. Numerous small diameter explority holes have been drilled from underground workings throughout the area. Most of these holes are now inaccessible and drill records show little or no data relating to ground water. Eleven core drill holes were driven for coal exploration on Gentry Mountain during 1976 and 1977; however, these holes were completely sealed with concrete as required by U.S.G.S. stipulations.

The coal seams being mined are in the Blackhawk formation which is overlain by the predominant water-bearing formations. These formations including the Blackhawk formation are already highly broken by joints, fractures and heavily mined out areas which are very porous, readily accepting recharge. Depending on the coal extraction method employed, subsidence, in cases, could result in additional fractures through the strata above the Star Point Sandstrone formation into the Castlegate and Price River formations, could reduce the occurrence of springs and seeps, or reduce yields from them. Loss of water from local perched aquifers within the interbedded sandstone layers of the Blackhawk formation itself is likely. Pillars remain in the old works reducing the likelihood of subsidence. The effects of past mining on water sources are not known,

except that significant flows have resulted from contact with major fractures such as the Bear Canyon fault. Parts of King 1 mine were mined out from 10 to 30 years ago by room and pillar methods, yet numerous springs overlying this mine are still flowing. Whether they have diminished as a result of mining is not known.

Diminution of the existing surface and ground water sources could possible affect some livestock and wildlife water sites at higher elevations. Water presently being used for municipal, industrial, and irrigation purposes should not be diminished to any great extent since water diverted into the ground would most likely return to mine openings, springs and streams near the Star Point sandstrone which is well above municipal, industrial and irrigation points of use. Water quality should not be significantly affected by mining as evidenced by the high quality of mine water presently being discharged.

Mine water, besides that used in King 4 for fire prevention and dust suppression, flows southerly away from active mining and is presently discharged by gravity flow at the old Mohrland portal. A quantity of this water enters a 12 in. metal pipe and is diverted to a water tank on Miller Creek for culinary and industrial purposes at Hiawatha. The remainder of mine water flows into Cedar Creek. This mine water discharge is covered by E.P.A. NPDES Permit No. UT-0023094. Monitoring requirements under this permit are listed in Table 1. In addition to the E.P.A. requirements, the parameters of specific conductance, total manganese, and dissolved iron will be analyzed monthly. Monitoring this discharge will closely reflect the character of water encountered during mining.

Table 1

E.P.A. Monitoring Requirements For
Mohrland Mine Water Discharge

Effluent Characteristic	Monitoring Frequency
Flow	Monthly
Total Suspended Solids	Monthly
Total Dissolved Solids	Monthly
Total Iron	Monthly
Alkalinity-Acidity	Monthly
pH	Monthly
Oil and Grease	Monthly
BOD_5	Quarterly
Total Coliforms/100 ML	Quarterly
Fecal Coliforms/100 MS	Quarterly

Proposed Groundwater Monitoring

The map included with this plan (M-2) shows the location of 10 numbered springs which were selected for monitoring because of their representative locations with respect to mine workings and because they each had some flow during the drought year of 1977. These spring are listed in Table 2. Springs SP-1, SP-4, SP-5 and SP-7 have been developed with livestock watering troughs or ponds.

A comprehensive water analysis consiting of parameters listed in Table 3 will be run on samples from each spring to define their initial character. Additional routine sampling and analysis for items listed in Table 4 will be determined for each spring at regular intervals. Sites will be maintained and monitored by qualified personnel. Data will be

organized, tabulated and submitted to the regulatory authority on a quarterly basis.

Flow measurements will be made with V-notch weirs on open springs and by the time volume method where springs discharge from installed pipes. Spring SP-8 will be monitored on a monthly basis since it contributes directly to Cedar Creek which flows near disturbed areas. The other mine springs will be monitored once in the spring and one in the fall.

In addition to springs selected for monitoring by U. S. Fuel Company, numerous other springs near the nothern and western property boundary are monitored by Plateau Mining Company and the U. S. Geological Survey.

Table-2

Proposed Spring Monitoring Sites

Spring	Location	Approximate Flow (G.P.M.)
SP-1	NW¼NE¼, Sec.18, T.15S., R.8E.	3
SP-2	SW¼SW¼, Sec.18, T.15S., R.8E.	4 to 8
SP-3	SE¼SE¼, Sec.14, T.15S., R.7E.	6
SP-4	NE¼NW¼, Sec.31, T.15S., R.8E.	4 to 50
SP-5	NE¼NW¼, Sec.5, T.16S., R.8E.	3
SP-6	SW¼NW¼, Sec.6, T.16S., R.8E.	5 to 10
SP-7	NE¼SW¼, Sec.1, T.16S., R.7E.	10 to 50
SP-8	NW¼SE¼, Sec.8, T.16S., R.8E.	5 to 20
SP-9	SE¼NW¼, Sec.13, T.16S., R.7E.	5 to 10
SP-10	NW¼NE¼, Sec.20, T.16S., R.8E.	5 to 30

Table-3

Initial Comprhensive Analytical Schedule

- Flow Rate
- pH
- Air and Water Temperature
- Specific Conductance
- Acidity (as $CACO_3$)
- Total Suspended Solids (Surface Water Only)
- Total Dissolved Solids
- Total Organic Carbon
- Calcium
- Manganese
- Magnesium
- Sodium
- Potassium
- Total Iron
- Dissolved Iron
- Iron
- Carbonate
- Fluoride
- Bicarbonate
- Chloride
- Sulfate
- Nitrate Plus Nitrite (as N)
- Kjeldahl N
- Dissloved Phosphorus
- Silica
- Trace Elements
  - Arsenic
  - Cadmium
  - Zinc
  - Selenium
- Radioactivity
  - Gross Alpha
  - Gross Beta
- Oil and Grease

Table-4

Routine Sampling Analytical Schedule

Flow Rate

pH

Air and Water Temperature

Acidity (Surface and Mine Water Only)

Specific Conductance

Total Suspended Solids (Surface and Mine Water Only)

Total Dissolved Solids

Total Manganese (Surface and Mine Water Only)

Total Iron

Dissolved Iron

Nitrate (as N)

Sulfate

Chloride

Oil and Grease (Surface and Mine Water Only)

Surface Water Hydrology

The eastern part of the Wasatch Plateau is part of the Colorado River Basin and is drained by small streams tributary to the Price, San Rafael, and Fremont Rivers, branches of the Green and Colorado Rivers. The west slope of the plateau, a smaller part of the total area, is drained by tributaries of the Sevier River, which flows into Sevier Lake, one of the numerous sinks of the Great Basin. The crest of the plateau is thus part of the divide between the Colorado River and the Great Basin (Spieker, 1931).

The Price River is the largest stream in the palteau and drains about 500 square miles in the northeastern part, rising in the general vicinity of Soldier Summit and Pleasant Valley, and flowing eastward through a narrow canyon in the east front of the plateau, across the northern part of Castle Valley, and north of the Beckwith Plateau to its confluence with the Green River, about 14 miles north of the town of Green River. The Price River is normally a moderate-sized stream, having a mean flow of about 200 second-ft., but it varies from year to year, having an extreme recorded maximum of more than 8,000 second-ft. (Spieker, 1931). These conditions are due to the fact that the tributaries of Price River are snowfed, therefore, seasonal fluctuation of flow rates is great. Stream flows are greatest during late spring and early summer, decreasing to a minimum flow in early autumn through mid-winter.

Huntington Canyon is the next large stream south of the Price River. These two waterways are the immediate recipients of surface and ground-water discharge from the U. S. Fuel Company property. Huntington Creek rises on the well-watered plateau surface, flows through a narrow, deep

canyon toward the desert, and joins Cottonwood and Ferron Creeks to form the San Rafael River which eventually drains into the Green River. Its mean flow, measured near the mouth of Huntington Canyon, is normally about 100 second-ft. its maximum about 600, and its minimum about 30. It drains an area in the plateau of about 160 square miles. The Left Fork of Huntington Creek has been impounded at two places, and the reservoirs are used to equalize the seasonal flow of water for irrigation of Castle Valley in the vicinity of Huntington and Cleveland. The main course of Huntington Creek in the plateau is about 30 miles long (Spieker, 1931).

There are several small drainages discharging surface water from U. S. Fuel Company's property. Miller Creek in the northern part of the property (Map M-2), is part of the Price River drainage system. Its main tributaries include North Fork (Right Fork on U.S.G.S. maps), Middle Fork and South Fork (Left Fork on U.S.G.S. maps). The main artery of Miller Creek is a perennial stream and the tributaries, except Left Fork of North Fork of Miller Creek, are intermittent. Miller Creek flows just north of the town of Hiawatha into the bottom lands. Miller Creek is used for municipal, industrial and irrigation purposes.

Cedar Creek, with its Left and Right Fork tributaries, is part of the San Rafael River system. Cedar Creek is a perennial stream. The remaining streams draining surface water from the U. S. Fuel Company property are small and in the southern part of the property, thus they are all part of the San Rafael River drainage system. Ben Johnson, Chris Ottison Canyon and the Left and Right Forks of Fish Creek are ephemeral. Bear Creek Canyon and McCadden Hollow are intermittent. Gentry Hollow Creek tributary to Tie Fork and Huntington Creek which

are also part of the San Rafael River system.

The mine plan areas are located in both Cedar and Miller Creek Canyons. U. S. Fuel Company holds numerous water rights to surface water in these two canyons. Water leaving the mine plan area via Miller and Cedar Creeks is used for irrigation and stock watering pruposes at the Millerton and Cedar Creek Ranches, both of which are owned by U. S. Fuel Company.

There are no surface lakes or reservoirs on the mine property. An underground storage reservoir is maintained in the old Hiawatha No. 2 mine as a culinary water supply for the King 4 and King 5 mines and surface facilities. A diversion dam in the left fork of the north fork of Miller Creek (Cert. 5294), as shown on Map M-2 is being used to divert water to this reservoir. A stream monitoring site (ST-2A) is located near the diversion dam.

Rainfall and runoff relationships have been determined for critical areas where surface effects of underground mining are expected. A report compiled by Vaughn Hansen Associates and supplemented by Rollins, Brown and Gunnell, Incorperated was submitted to the regulatory authorities in connection with earlier submittals. This report addresses runoff volumes expected from various predicted storms and their effect on disturbed surface areas, drainage structures and sedimentation ponds. Seven sedimentation ponds have been constructed in the vicinity of disturbed surface areas as required by 30 CFR 817.42. Discharges from these ponds are covered by E.P.A. NPDES permit No. UT-0023094. Monitoring parameters are the same as those listed in Table 1.

Proposed Surface Water Monitoring

Map M-2 shows the location of 8 proposed stream monitoring sites. These sites will be maintained and monitored by qualified personnel. Data will be organized, tabulated and submitted to the regulatory authority on a quarterly basis.

A comprehensive water analysis consisting of parameters listed in Table 3 will be run on samples from each monitoring point to define their initial character. Additional routine sampling and analysis for items listed in Table 4 will be determined for each point at intervals specified for individual sites.

Following is a description of proposed stream monitoring sites:

ST-1 Right Fork of North Fork of Miller Creek. This perennial tributary to Miller Creek will be monitored with a V-notch weir or small Cipolletti weir installed just above the junction with Left Fork. This station will be monitored for flow and analyzed according to Table 4 on a monthly basis for a baseline period. Once the system has been defined, sampling will be reduced to a quarterly basis. This site is generally not accessible during winter months.

ST-2 Left Fork of North Fork of Miller Creek. Two stations will be monitored on this perennial tributary. One above the Hiawatha No. 2 mine diversion point (2 A), and one between the diversion point and the junction with Right Fork (2 B). Water will be monitored on a monthly basis for a baseline period when reduced to quarterly monitoring once the system

has been defined. Volume measurements will be by V-notch or Cipolletti weirs. Monitoring will be limited to accessible months.

ST-3 Middle Fork of Miller Creek. This tributary is intermittent. A recording station consisting of a suitably sized weir will be installed near the confluence with the North Fork of Miller Creek. Flow measurements will be taken and samples analyzed monthly when water is present.

ST-4 South Fork of Miller Creek. This tributary is intermittent. A weir will be installed near the confluence with Miller Creek and monitored similarly to Middle Fork.

ST-5 Miller Creek. This significant perennial stream will be monitored with a 3 ft. Cipolletti weir at a point below the confluence of South Fork. Water will be monitored monthly for a baseline period then reduced to quarterly upon approval of the regulatory authority.

ST-6 Cedar Creek. This is a significant perennial stream. It will be monitored at a point below the old Mohrland mine portal. Volume measurements will be by a suitably sized weir. Monitoring will be done on a monthly basis until sufficient baseline data is gathered to justify reduced monitoring.

ST-7 Gentry Hollow Creek. A recording station for this perinnial stream will be installed just above the junction with Wild Cattle Hollow. Due to the remote location of this point, we propose monitoring on a simi-annual basis.

Sally's initial comments on U.S. Fuels Water Monitoring Plan

On hydrologic monitoring map devised in 1978, there is no indication of location of stations

3A above middle ~~Fork~~ Tunnel of Miller Creek
3B Below " " "
4A Above South ~~Fork~~ Tunnel of Miller Creek
4B Below " "

letter received by Division Aug 1980 ~~states~~ these monitoring sites will be included.

A Region V on-site inspection report May 14, 1980 ~~stated that~~ NPDES #UT0023094 approved for mine discharge from Mohrland Mine area has been ~~expanded~~ to include 7 more discharges from sedimentation ponds. Where are they?

Copy 1 of 10

0003

ADDENDUM TO UNITED STATES FUEL COMPANY PERMIT APPLICATION

FEDERAL LEASE U-51923

UNITED STATES FUEL COMPANY
HIAWATHA, UTAH 84527

ACT/007/011-86A

FILE COPY

UNITED STATES FUEL COMPANY

HIAWATHA, UTAH 84527

February 13, 1987

RECEIVED
FEB 17 1987
DIVISION OF
OIL, GAS & MINING

Susan C. Linner, Permit Supervisor
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Linner;

Enclosed are ten copies of U.S. Fuel Company's "Addendum to United States Fuel Company Permit Application". This application is submitted in order to satisfy DOGM and OSM requirements so that mining may commence in Federal Lease U-51923.

We believe, as this federal lease is within our present permit boundary and permit application, that much of the required information has already been supplied in the current "Application For A Permit".

It is our opinion that the information (text and several revised exhibits) provided in this Addendum combined with the included references to the original permit should provide the Division and OSM with all the information required to grant U.S. Fuel approval to mine the new federal lease.

As we anticipate mining will be at the lease boundary in mid March, we hope you can expedite approval of this modification. Please contact me should you have any questions. Thank you for your assistance with this matter.

Sincerely,

Jean Semborski

Jean Semborski
Environmental Coordinator

JS:lj

UTAH KING COAL

Quotations subject to immediate acceptance. Coal will be sold and invoiced at price in effect on date of shipment, at mine weights f. o. b. cars at place of shipment, unless otherwise specifically agreed in writing. Agreements are contingent upon causes of delay beyond our control, including strikes, accidents, riots, acts of God, lockouts, fire, flood, inability to secure cars or transportation.

#1 of 10

ADDENDUM TO U.S. FUEL COMPANY PERMIT APPLICATION

FEDERAL LEASE U-51923

RECEIVED
FEB 17 1987
DIVISION OF
OIL, GAS & MINING

UNITED STATES FUEL COMPANY

HIAWATHA, UTAH 84527

FILE COPY

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UMC 771.27 VERIFICATION OF APPLICATION

United States Fuel Company

Permit No. ACT/007/011

Errol M. Gardiner being first duly sworn, upon oath deposes and says that he is the Vice President and General Manager of United States Fuel Company and that he has reviewed and knows the contents of U.S. Fuel Company's Addendum to U.S. Fuel Company Permit Application submitted to the Utah Division of Oil, Gas and Mining and the Federal Office of Surface Mining in February 1987.

I verify that the above mentioned plan is true and correct to the best of my information and belief.

Errol M. Gardiner
Vice President and General Manager

Subscribed and sworn to before me this 12 day of February 1987.

Notary Public
Hawaiia, Utah
5-21-88

ADDENDUM TO UNITED STATES FUEL COMPANY PERMIT
FEDERAL LEASE U-51923

CHAPTER I INTRODUCTION

In October, 1985, U.S. Fuel Company was granted federal lease U-51923, a 160 acre coal lease in T. 15 S., R. 8 E., the northwest quarter of Section 20. United States Fuel Company is the surface owner of this tract and is the surface and underground owner of the adjacent property. As this lease is restricted by outcrop on the north, east and south side and contains a limited coal reserve, it is economically accessible only from existing underground development work. United States Fuel Company is currently mining to the west of this federal lease and is mining toward the lease. Unless the coal reserve is extracted in sequence with the present workings it could be rendered inaccessible and therefore not mined.

This lease tract is within the present permit boundary. Mining of this lease will not create any new surface disturbance so no alteration of the present reclamation plan or bond should be required.

Coal from this lease would be extracted through the existing King 4 mine. There will be no new surface disturbance associated with the mining in this lease and no new facilities will be constructed. Acquisition of this lease will only alter underground mining plans. There will be no new surface disturbance in conjunction with the mining of this lease.

U.S. Fuel's existing mine permit application package, currently under review by DOGM and OSM, addresses all of the significant aspects of mining within the present mine permit boundary. As this block is incorporated within the present permit application, it has been evaluated as part of the entire mine plan area but not dealt with specifically. Where the discussion in the original permit application is sufficient to cover the requirements of the regulations the reader will be referred to the appropriate permit chapter in the original application. Some aspects which will require a more specific text will be elaborated on under the appropriate regulation.

CHAPTER II UMC 782 - REQUIREMENTS FOR LEGAL, FINANCIAL, COMPLIANCE, AND RELATED INFORMATION

Scope

United States Fuel Company is applying for a permit to extend their exiting underground coal mining operation into a recently acquired federal lease. The regulations promulgated under UCA 40-10-1 et seg., for the Utah Division of Coal Mining Activities are the guidelines for Chapter II, Legal, Financial, Compliance and Related Information . The prescribed UMC number reference is from the permanent program final rules.

UMC 782.13 Identification of Interests

782.13 (a) (1) Permit applicant

United States Fuel Company
P.O. Box A
Hiawatha, Utah 84527
(801) 343-2471

United States Fuel Company is a wholly owned subsidiary of Sharon Steel Corporation.

Principal office address:

U.S. Route 62
Thomas Road
Hubbard Township, Ohio 44425

Corporate office address:

6917 Collins Avenue
Miami Beach, Florida 33141

(a) (2) Surface and subsurface ownership is shown on Exhibits IV-1 and IV-2.

(a) (3) Appendix II-1 has been revised to show the status of both surface and coal rights. The appendix lists five categories regarding ownership or leasehold interest. These five categories are delineated on revised Exhibits IV-1 and IV-2. Acreages for all five categories are presented for the permit area. The total of all acreages agrees with the areas delineated by the boundaries shown on the exhibits.

(a) (4) Not Applicable

(a) (5) United States Fuel Company will be the operator under this permit application.

(a) (6) Errol Gardiner, Vice President and General Manager
United States Fuel Company
P.O. Box A
Hiawatha, Utah 84527 (801) 343-2471

(b) U.S. Fuel Company is a corporation and incorporated in the State of Nevada.

(b) (1) Name and address of every officer, partner director, or other person performing a function similar to a director of the applicant.

Officer authorized to act on behalf of United States Fuel Company is:

Mr. E.M. Gardiner, Vice President and General Manager

Address: United States Fuel Company
P.O. Box A
Hiawatha, Utah 84527

Officers authorized to act on behalf of Sharon Steel Corporation are:

Victor Posner, Chairman of the Board and Chief Executive Officer

Steven Posner, Vice Chairman of the Board and Chairman of the Executive Committee

Guy F. McCracken, Executive Vice President and Chief Operating Officer

Bernard M. Krakower, Senior Vice President and Secretary

Richard A. Luff, Corporate Controller

Addresses:

6917 Collins Avenue
Miami Beach, Florida 33141
or
U.S. Route 62 at Thomas Road
Hubbard Township
Trumball county, Ohio 44425

(b) (2) Name and address of any person who is a principal share holder of the applicant:

Sharon Steel Corporation
U.S. Route 62 at Thomas Road
Hubbard Township
Trumball county, Ohio 44425

(b) (3) Names under which the applicant, partner or principal shareholder previously operated underground or surface coal mining activities in the United States within the 5 years preceding the date of application;

United States Fuel Company
Hiawatha, Utah 84527

Carpenter Town Coal and Coke Company
Templeton (Armstrong County), PA 16259

(c) Listed above

(d) Carpenter Town Coal and Coke, Sharon Pennsylvania 16146 is a wholly owned subsidiary of Sharon Steel.

As per UMC 782.14(a) the following is a list of coal mining permits held by Carpenter Town Coal and Coke subsequent to 1983. These permits are all of those required to conduct surface and underground coal mining operations in the state of Pennsylvania (see Table II-1).

Carpenter Town Coal and Coke has not been involved in any adjudicated proceedings in the past five years. No state or federal mining permit held by Carpenter Town Coal and Coke has, in the past five years, been suspended or revoked. Also, no mining bond or similar security has been forfeited by the company in the same time period.

(e) Surface and subsurface ownership is presented on Exhibits IV-1 and IV-2.

Exhibit IV-3 shows the mine permit boundary, future mine permit boundary, coordinates, sections, drainages, major mine features, etc. This map can be used to orient all other exhibits through the use of coordinates.

Existing Mines:	King No. 4	King No. 5	King No. 6
MSHA I.D. No. :	42-00098	42-01389	42-01599
Section No.s :	009	001	
	015	002	
	016	003	
	017	004	
	018		

UMC 782.13 (b)-(e) United States Fuel Company uses the terms--patent, conveyance, warranty deed, and quit claim deed as legal descriptions of property ownership and acquistion with their conventional definitions. These words are defined in legal dictionaries. One that contains their definitions is Black's Law Dictionary fifth edition, West Publishing Company, ST. Paul, MN, 1979. The terms with their respective definitions are listed below.

Conveyance:
In its most common usage, transfer of title to land from one person, or class of persons, to another by deed. Term may also include assignment, lease, mortgage or encumbrance of land. An instrument by which some estate or interest in lands is transferred from one perosn to another; such as deed, mortgage, etc.

Patent:
A grant of some privilege, property, or authority, made by the government or sovereign of a country to one or more individuals.

The instrument by which a state or government grants public lands to an individual.

Quit Claim Deed:
A deed of conveyance operating by way of release; that is, intended to pass any title, interest, or claim which the grantor may have in the premises, but not professing that such title is valid, nor containing any warranty or covenants for title. Under the law of some states the grantor warrants in such deed that neither he nor anyone claiming under him has encumbered the property and that he will defend the title against defects arising under and through him, but as to no others.

Warranty Deed:
Deed in which grantor warrants good clear title. The usual covenants of title are warranties of seisin, quiet enjoyment, right to convey, freedom from encumbrances and defense of title as to all claims.

CARPENTER TOWN COAL AND COKE COAL MINING PERMITS

Table II-1

Underground Permits

Permit Number	Type of permit	Issuing agency
Federal Identification Number 36-04595		Mine Safety and Health Administration
139-1A-2	Subsurface mining	Pennsylvania Dept. of Environmental Resources
336-MO-38	Mine drainage	Pennsylvania D.E.R.
36-04025	Prep. Plant I.D. No.	M.S.H.A.
PA-0004201	NPDES	E.P.A.
0374203	Industrial Waste	Pennsylvania D.E.R.
365118	Industrial Waste	Pennsylvania D.E.R.

Table II-1

Surface Permits

Permit Number	Type of Permit	Issuing Agency
1) 3576BDM20	Mine drainage	Pennsylvania D.E.R.
2) 3570BSM26		
3) 3572BSM16		
1) 18410	Surface mining	Pennsylvania D.E.R.
2) 18411		
3) 18412		
4) 18413		
5) 18414		
6) 18415		
500081	Coal refuse disposal	Pennsylvania D.E.R.

Table II-1

Surface Permits - Pending Applications

Permit Number	Type of Permit	Issuing Agency
1) 03820122	Mine drainage	Pennsylvania D.E.R.
2) 03820123		
3) 03820124		
1) 500081-A	Coal refuse disposal	Pennsylvania D.E.R.
2) 03820702		

UMC 782.13 (g) Each application shall contain a statement of all lands, interests in lands, options, or pending bids on interests held or made by the applicant for lands which are contiguous to the area to be covered by the permit

United States Fuel Company wishes to express interest in three lease tracts located within the boundaries of the known recoverable coal resource area. The following data relative to these tracts is submitted in connection with 44FR49522.

Lease Tract No. 1

T.15 S., R.7 E., SLM, Utah - Emery County
Section 25, SW1/4
Section 26, S1/2
Section 35, All
Section 36, W1/2
T.16 S., R.8 E., SLM, Utah - Emery County
Section 1, SW1/4, S1/2 NW1/4, lots 3, 4
Section 2, All

Lease Tract No. 2

T.16 S., R.8 E., SLM, Utah - Emery County
Section 19, E1/2 Se1/4, SE1/4 NE1/4
Section 20, W1/2 SW1/4 , SW1/4 NW1/4, SE1/4 SW1/4
Section 21, S1/2 SE1/4
Section 28, SW1/4, W1/2, NW1/4, N1/2 N1/2 NE1/4
Section 29, NW1/4, SE1/4 SE1/4
Section 30, NE1/4 NE1/4
Section 33, N1/2 Nw1/4, SW1/4 NW1/4

Lease Tract No. 3

T.14 S., R.5 E., SLM, Utah - Emery County
Section 23, W1/2 NE1/4, NW1/4, SE1/4, SE1/4, E1/2 SW1/4
Section 26, E1/2
Section 35, N1/2 NE1/4, E1/2 W1/2, E1/2 SE1/4
Section 36, W1/2
T.15 S., R.6 E., SLM, Utah - Emery County
Section 1, W1/2
Section 2, lots 1-3, SE1/4 NW1/4, NW1/4 SE1/4 E1/2 SE1/4 SE1/4 NE1/4
Section 11, E1/2, E1/2 W1/2
Section 12, W1/2 W1/2, E1/2 NW1/4, NE1/4 SW1/4

UMC 782.14 Compliance Information

a) Each application shall contain a statement of whether the applicant, subsidiary, affiliate, or persons controlled by or under common control with the applicant:

1) Had a federal or state mining permit suspended or revoked in the last five years; or,

Applicant's response: No

2) Forfeited a mining bond or similar security deposited in lieu of bond;

Applicant's response: No

b) Not required for negative responses in a).

c) A listing of each violation notice received by the applicant in connection with any underground or surface coal mining activities during the three year period before the application date, for violations of any law, rule or regulation enacted pursuant to Federal law, rule or regulation or of any provision of the Act pertaining to air or water environmental protection. The application shall also contain a statement regarding each violation notice, including:

1) The date of issuance and identity of the issuing division, department or agency.

2) A brief description of the particular violation alleged in the notice.

3) The date, location and type of any administrative or judicial proceedings initiated concerning the violation, including, but not limited to, proceedings initiated by the applicant to obtain administrative or judicial review of the violations.

4) The current status of the proceedings and of the violation notice.

5) The actions, if any, taken by the applicant to abate the violation.

Notices of Violation February 1984-February 1987

NOV 84-4-5-3

1) Issued by DOGM on February 15, 1984.

2) 1 of 3 - Failure to mine in accordance with approved interim permit.
   2 of 3 - Failure to mine in accordance with approved interim permit.
   3 of 3 - Failure to have sedimentation ponds certified after construction.

3) No proceedings were initiated.

4) 1 of 3 was terminated on March 5, 1984, 2 of 3 was terminated on February 13, 1984 and 3 of 3 was terminated on February 25, 1984.

5) 1 of 3 and 2 of 3 were abated by discontinuing use of an impoundment structure. 3 of 3 was abated by having the sediment ponds certified.

NOV 84-4-8-8

1) This violation was issued by DOGM on May 11, 1984.

2) 1 of 8 - Failure to mine in accordance with an approved interim permit.
   2 of 8 - Failure to prevent suspended solid contributions to streamflow.
   3 of 8 - Failure to pass disturbed area runoff through sediment pond.
   4 of 8 - Failure to store noncoal waste in a designated portion of the permit area.
   5 of 8 - Failure to maintain sediment pond.
   6 of 8 - Failure to prevent suspended solid contributions to streamflow.
   7 of 8 - Failure to construct adequate sediment control structures.
   8 of 8 - Failure to design and construct Class I road in order to control erosion and prevent contributions of suspended solids.

3) No proceedings took place.

4) 1 of 8 - terminated July 13, 1984
   2 of 8 - vacated
   3 of 8 - terminated May 22, 1984
   4 of 8 - terminated June 28, 1984
   5 of 8 - terminated May 2, 1984
   6 of 8 - terminated June 28, 1984
   7 of 8 - terminated June 27, 1984
   8 of 8 - terminated July 13, 1984

5) 1 of 8 - Installed stream channel protection.
   2 of 8 - Violation vacated.
   3 of 8 - Installed drainage control structures.
   4 of 8 - Cleaned up area in question and stored material in approved location.
   5 of 8 - Placed cap on sediment pond discharge pipe.
   6 of 8 - Installed additional sediment control structures.
   7 of 8 - Replaced culvert with a larger one.
   8 of 8 - Constructed additional sediment control structures.

NOV 84-4-9-1

1) Violation issued by DOGM on June 8, 1984.

2) Failure to place and store noncoal waste in an appropriate manner.

3) No proceedings resulted.

4) Violation was terminated on June 8, 1984.

5) Noncoal waste was removed.

NOV 84-8-1-3

1)Issued by DOGM on August 10, 1984.

2) 1 of 3 - Failure to mine in accordance with approved interim permit.
   2 of 3 - Failure to pass runoff through sediment pond.
   3 of 3 - Failure to design and implement required plans.

3) No proceedings were initiated.

4) Violation 1 of 3 and 2 of 3 were terminated August 31, 1984. 3 of 3 was vacated.

5) 1 of 3 - Sediment ponds were certified after construction.
   2 of 3 - Drainage was diverted into sediment pond.
   3 of 3 - Vacated.

NOV 85-6-2-1

1) Issued by DOGM on February 26, 1985.

2) Failure to pass runoff through sediment pond.

3) No proceedings initiated.

4) Violation was terminated February 27, 1985.

5) Runoff was diverted into sediment pond.

NOV 85-6-10-1

1) Violation was issued by DOGM August 28, 1985.

2) Failure to maintain sediment control structures.

3) No proceedings were initiated.

4) Violation was terminated August 29, 1985.

5) Ditch leading to sediment pond was repaired.

NOV 85-6-12-1

1) Issued by DOGM September 13, 1985.

2) Failure to pass runoff through sediment pond.

3) No proceeding were initiated.

4) Violation was terminated September 13, 1985.

5) Ditch to sediment pond was repaired.

NOV 85-6-15-1

1) Issued by DOGM December 5, 1985.

2) Failure to maintain culverts and sediment pond inlets.

3) No proceedings were initiated.

4) Violation was terminated December 12, 1985.

5) Culverts and inlets were cleaned.

NOV 86-9-9-2

1) Issued by DOGM September 26, 1986.

2) 1 of 2 - Failure to maintain diversion ditches.
   2 of 2 - Conducting mining activities off the permit area.

3) No proceedings were initiated.

4) 1 of 2 was terminated September 29, 1986. 2 of 2 was vacated.

5) 1 of 1 - Ditch was repaired. 2 of 2 was vacated.

NOV 86-9-12-1

1) Issued by DOGM November 7, 1986.

2) Failure to maintain support facility.

3) No proceedings were initiated.

4) Violation was terminated November 12, 1986.

5) Leak in pipeline was repaired.

NOV 86-9-13-1

1) Issued by DOGM December 18, 1986.

2) Failure to maintain support facility.

3) No proceedings were initiated.

4) Violation was terminated January 23, 1987.

5) Leak in pipeline was repaired.

UMC 782.15 Right of Entry and Operation Information

UMC 782.15 (a) Each application shall contain a description of the documents upon which the applicant bases his or her legal right to enter and begin underground coal mining activities in the permit area and whether that right is the subject of pending litigation. The description shall identify those documents by type and date of execution, identify the specific lands to which the document pertains, and explain the legal rights claimed by the applicant.

Applicant's response:

Revised Appendix II-1 presents information regarding U.S. Fuel's ownership and leasehold interest. These categories are shown on revised Exhibits IV-1 and IV-2. The legend of Exhibit IV-1 identifies all contiguous lessors and provides an address where they may be contacted.

(b) For underground coal mining activities where the associated surface operations involve the surface mining of coal and the private mineral estate to be mined has been severed from the private surface estate, the applicaion shall also provide, for lands to be affected by those operations within the permit area.

Applicant's response:

All surface operations are located on fee lands and no surface mining of coal is anticipated.

UMC 782.16 Relationship to Areas Designated Unsuitable For Mining

UMC 782.16 (a) Each application shall contain a statement of available information on whether the proposed permit area is within an area designated unsuitable for surface effects of underground coal mining activities under 30CFR 764 and 765 and UMC 764 and 765 or under study for designation in an administrative proceeding initiated or under those Parts.

Applicant's response:

According to DOGM (W. Hedberg, Personal Communication, 13 October 1983), there are no administrative proceedings occurring at this time to designate as unsuitable for mining any property within the proposed permit areas. (See Appendix II-2).

(b) If an applicant claims the exemption in UMC 786.19 (d) (2), the application shall contain information supporting the applicant's assertion that it made substantial legal and financial commitments before January 4, 1977, concerning the proposed underground mining activities.

No exemption claimed.

(c) If an applicant proposes to conduct or locate surface operations or facilities within 300 feet of an occupied dwelling, the application shall include the waiver of the owner of the dwelling as required in UMC 761.12 (e).

Applicant's response:

All occupied dwellings within 300 feet of any proposed mining operations are owned by U.S. Fuel Company. Therefore, no waiver will be required.

UMC 782.17 Permit Term Information

UMC 782.17 (a) Each application shall state the anticipated or actual starting and termination date of each phase of the underground coal mining activities and the anticipated number of acres of surface lands to be affected, and the horizontal and vertical extent of proposed underground mine workings, for each phase of mining and over the total life of the permit.

Table II-2 below presents the required information. The vertical extent of mine workings are limited to the relationships of coal seams and are depicted in Exhibits VI-6A and VI-6B.

UMC 782.17

Table II-2

Mining Methods and Estimated Productivity

Mine	Seam	Mining Methods	Production Date	Termination Date	Estimated Productivity
King 4	B	Continuous Miner Room and Pillar	Operating	2004	700,000 Tons/Year
King 4	A	Continuous Miner Room and Pillar	Operating	2014	200,000 Tons/Year
King 5	B	Continuous Miner Room and Pillar	Operating	2000	250,000 Tons/Year
King 5	A	Longwall and Room and Pillar	2000	2004	450,000 Tons/Year
King 6	H*	Continuous Miner	1981	2005	384,000 Tons/Year

* Hiawatha

In reference to the U-51923 lease area specifically the required information is supplied:

Anticipated starting date: (date production will reach lease boundary)	March 15, 1987 for B seam mining Jan. 1990 for A seam mining
Anticipated number of acres of surface land to be affected:	0 acres
Horizontal and Vertical extent of proposed underground mine workings:	Approximately 61 acres will be mined in the B seam. The coal will vary in vertical height between 5 to 6 feet Approximately 68 acres will be mined in the A seam. The coal will vary in vertical height from 10 to 11 feet.
Anticipated termination date: (Date by which all mineable coal will have been removed from both seams.)	December 2014

(b) If the applicant proposes to conduct the underground coal mining activities in excess of five years, the application shall contain the information needed for the showing required under UMC 786.25 (a).

Applicant's response:

U.S. Fuel Company is applying for a five year permit term although the application is full and complete for varying longer terms. Amendments to the permit are expected to be made during the course of the permit term.

UMC 782.18 Personal Injury and Property Damage Insurance

A copy of the company's current Certificate of Liability Insurance as filed with the Utah DOGM is attached in Appendix II-3.

UMC 782.19 Identification of Other Licenses and Permits

A listing of Licenses and Permits identifies those issued to U.S. Fuel Company by various government agencies. The list is compiled under Table II-3.

An NPDES discharge permit (UT-00023-94) has been issued by the Environmental Protection Agency and certified for compliance with applicable state water quality standards by the Utah Division of Environmental Health. A copy of the permit, showing the number and location of discarge points, is included in the original permit application in Chapter II, Section 2.9.

The State Division of Environmental Health inspects U.S. Fuel Company's facilities for compliance with PSD requirements on a regular basis. A letter verifying this compliance can be found in the original permit application in chapter II, Section 2.9.

Right of Way permits exist for: Utah Railway haulage facilities, Utah Power and Light power lines and Mountain Bell buried telephone cables. Special use permits and leases are issued by the Forest Service and the Bureau of Land Management for livestock grazing on lands where the surface is owned by the Federal Government.

Text reference: Application for a permit, March 1981, Volume I, latest revision Chapter II, Section 2.9

Table II-3

UMC 782.19 Identification of Other Licences and Permits

	Permit	Permitting Agency	Statute
1.	NPDES Permit No. UT-0023094	U.S. Environmental Protection Agency Region VIII 1860 Lincoln Street Denver, Colorado 80295	Permit Granted 10/17/80
2.	Water Supply Facility No Identification Number	Utah Division of Environmental Health 150 West North Temple Salt Lake City, Utah 84110	Facilities Approved 03/17/80
3.	Sedimentation Ponds No Identification Number	Utah Division of Water Rights 1636 West North Temple Salt Lake City, Utah 84116	Ponds Approved 10/16/79
4.	Refuse Piles and Slurry Impoundments No Identification Number	U.S. Army Corps Engineers 125 South State Salt Lake City, Utah 84111	Permit Granted Under Section 404 WPCA of 1972
5.	USGS Conservation Division of Mining Plan No Identification Number	U.S. Geological Survey 8426 Federal Building 125 South State Salt Lake City, Utah 84111	Approved 11/22/78
6.	King IV Roof Control Plan Identification Number 42-00098	Coal Mine Safety and Health Box 25367 Denver, Colorado 80225	Approved 04/25/79
	King IV Ventilation Plan Identification Number 42-00098	Coal Mine Safety and Health Box 25367 Denver, Colorado 80225	Approved 03/20/80
	King V Roof Control Plan Identification Number 42-01389	Coal Mine Safety and Health Box 25367 Denver, Colorado 80225	Approved 05/05/80
	King V Ventilation Plan Identification Number 42-01389	Coal Mine Safety and Health Box 25367 Denver, Colorado 80225	Approved 09/06/79

Table II-3

UMC 782.19 Identification of Other Licences and Permits
(continued)

Permit	Permitting Agency	Statute
Refuse Piles and Slurry Impoundment Stability Identification No. 1211-UT-9-0001 1211-UT-9-0002 1211-UT-9-0003 1211-UT-9-0004 1211-UT-9-0005 1211-UT-9-0007	Coal Mine Safety and Health Box 25367 Denver, Colorado 80225	Approved 1976
King VI Compliance Permits	Coal Mine Safety and Health Box 25367 Denver, Colorado 80225	Approved 01/83

UMC 782.20 Identification of Location of Public Office For Filing of Application

Each application shall identify, by name and address, the public office where the applicant will simultaneously file a copy of the application for public inspection under UMC 786.11 (d).

A copy of the application will be filed with County Recorder for public inspection and comment at the following location:

Carbon County Recorder
Carbon County Courthouse Building
Price, Utah 84501 (801) 637-2543

UMC 782.21 Newspaper Advertisement and Proof of Publication

A copy of the newpaper advertisement of the application and proof of publication of the advertisement shall be filed with the Division and made a part of the complete application not later than four weeks after the last date of publication required under UMC 786.11 (a). The newspaper advertisement and proof of publication will be located in Appendix II-4.

CHAPTER III UMC 783 - Information On Environmental Resources

Scope

United States Fuel Company would like to apply information already submitted in their original permit application to the requirements of this section on environmental resources. As the lease block is already included in the original application we will reference the appropriate material rather than include all of the original submittal. As the lease block is to be accessed from existing underground workings and handled through existing surface facilities, no new surface disturbance will be associated with the mining of this lease. There should be no impact on environmental resources.

UMC 783.11 General Requirements

Environmental resources existing in this and adjacent portions of the permit area are discussed in detail in the original permit application. The 120 acres above this lease are fee property and compose a relatively small portion of the permit area. As no surface disturbance will be associated with the mining of this lease, environmental resources will not be affected.

UMC 783.12 General Environmental Resources Information

Federal Lease U-51923 is composed of 160 acres. Approximately half of the acreage has mineable coal reserves. U.S. Fuel Company would like to begin mining in this lease by March 15, 1987. Additional sections will mine this coal block, at a later date, in the mining sequence for this area.

No known cultural or historic resources exist on this 160 acre tract. A site search was completed by the Utah Division of State History (Utah State Historical Society) for the lease area and entire permit area. As no surface disturbance will occur on the lease area, all mining activity being restricted to underground, no additional site surveys will be performed.

For a more detailed review of archeological, cultural or historical resources in this and adjacent areas, refer to chapter V in the original permit submission.

Text reference: Application For A Permit, March 1981, Volume I, Chapter V

UMC 783.13 Description Of Hydrology and Geology: General Requirements

Information on the geology, hydrology, water quality and quantity for this lease area can be found in the original permit application under the appropriate chapters. All hydrologic information for the permit area can be found in chapter VII. Information pertaining to the geology is located in chapter VI.

UMC 783.14 Geology Description

The geology of the lease area is like that of the adjacent permit area geology. Coal will be mined in the B and A seams in this lease tract. No surface drill hole information is available in this section. No overburden will be removed and no surface disturbance will be created. As a geologic analyses has been done on the coal bearing strata, which includes this tract as well, the reader is refered to the original permit submittals regarding the geology of this region.

Text reference: Application For A Permit, March 1981, Volume II, latest revision Chapter VI
Map reference: Exhibits VI-1, VI-6.A.1. - 6 C latest revisions

UMC 783.15 Ground Water Information

The ground water hydrology for the permit area, including this lease, has been dealt with in depth in the original permit submittal. No springs have been located on this block. As this block of coal is bounded by outcrop on three sides it has a negligible hydrologic regime. No known aquifers are present. No ground water has been encountered in the mine sections adjacent to this block therefore no quality data is available. No groundwater should be encountered in lease block either based on past experience in this area. Water monitoring points have been established and sampled for streams in this vicinity and the entire permit area.

See text and map references below.

UMC 783.16 Surface Water Information

Surface water is discussed for the permit area, including this block, in the original permit application. As no surface disturbance will be required to mine this lease, no impact on surficial water should occur. Springs and streams are depicted on Exhibit VII-1 and VII-1D. Surface water quality data for points adjacent to this lease block is located in the original permit application.

All mining activity in this lease block will occur above the stream elevation. No underground mining acitivities will be within 500 feet of the stream channels.

Text reference: Application For A Permit, March 1981, Volume II, latest revision Chapter VII, Section 7.1 Ground Water Hydrology
Section 7.2 Surface Water Hydrology

Map reference: Exhibits VII-1, 1A, 1B, 1C, 1D latest revisions

UMC 783.17 Alternative Water Supply Information

Proposed underground mining activities should not result in any contamination, diminution or interruption of underground aquifers or surface water sources. This concern is addressed in the original permit application which the reader can reference for furthur discussion.

Text reference: Application For A Permit, March 1981, Volume II, latest revision Chapter VII, Section 7.2, p. 10-12

UMC 783.18 Climatological Information

Climatological information for the permit area is contained in the original permit application.

Text reference: Application For A Permit, March 1981, Volume IV, Chapter XI

UMC 783.19 Vegetation Information

Included in the original permit application are maps, descriptions and reference areas for disturbed areas in the permit area. Since no new surface disturbance will be associated with mining in this lease, no new vegetative information has been generated. Present operating surface facilities will be utilized during mining in this new lease block. Complete reclamation and revegetation plans can be referenced in the original permit submittal.

Text reference: Application For A Permit, March 1981, Volume III, latest revision Chapter IX

Map reference: Exhibit IX-1 latest revision

UMC 783.20 Fish and Wildlife Resources Information

Fish and wildlife studies have been performed on the portions of the permit area where surface disturbance exists or may exist. As there will be no surface disturbance associated with mining in the new lease, no studies have been conducted specifically on the coal block. However, the fish and wildlife resource have been evaluated for this block as well as the entire permit area and are described by text and depicted by map in Chapter X. References are made to the appropriate submittal for furthur study.

Text reference: Application For A Permit, March 1981, Volume III, Chapter X
Mining and Reclamation Plan, July 1983, Chapter X, p. X-6A, X-6B, X-6C

Map reference: Response To Determination of Adequacy, November 7, 1983, Exhibits X-1, X-2, X-3A

UMC 783.21 Soil Resources Information

As no new surface disturbance will occur in conjuction with the mining of the new lease no new soil information has been generated. The original mine permit application does contain information on the present disturbed areas associated with current mining operations. This material can be referenced in Chapter VIII.

Text reference: Application For A Permit, March 1981, Volume III, latest revision Chapter VIII

UMC 783.22 Land Use Information

No surface disturbance will be necessary to mine the new lease. As it is accessible entirely by underground workings, no change in the surface land use is anticipated. A narrative discussing the land use and land status of the entire permit area can be found in Chapter IV.

The proposed mining area, that of U-51923, has not been mined in the past.

Included in Chapter IV of the original permit application is a discussion of the existing uses and classifications for the entire permit area. This lease block would be included in the discussion. Also, Exhibit IV-3A depicts various land use qualities for this block as well as the entire permit area.

Text reference: Application For A Permit, March 1981, Volume I, latest revision Chapter IV

Map reference: Exhibit IV-3A

UMC 783.24 Maps: General Requirements

Boundaries of lands and names of present owners of record for both the surface and sub-surface, included in and contiguous to the lease block and for the entire permit area are depicted in Exhibits IV-1 and IV-2.

United States Fuel Company has the legal right to enter and mine all land shown on the mine permit area map Exhibit IV-3.

Exhibit IV-3 also depicts includes all areas that could potentially be affected by mining activities for the life of the mine. No additional sub-areas are expected to be permitted at this time.

No buildings are located in or within 1000 feet of the lease area.

No surface or sub-surface man-made features are located in the new lease area

No reference areas are located in the lease area because there is to be no new surface disturbance.

No discharge will occur from the lease block.

No public roads are located in or within 100 feet of the lease area.

No public parks or locations of any cultural or historical resources are found located above the lease block.

No public or private cemetery or Indian burial ground is located within the confines of the lease block or adjacent to it.

Map reference: Exhibits IV-1, IV-2 and IV-3 latest revisions

UMC 783.25 Cross-sections, Maps and Plans

No drill holes exist in the new lease block area.

Stream monitoring stations for the permit area are shown on Exhibit VII-1. More detailed information on surface water monitoring can be found in Chapter VII in the original permit submission.

The nature, depth and thickness of the coal seams to be mined have been addressed in Chapter VI of the original permit application. As this lease is a block of coal contiguous to the present mine works the general geology and conditions will be the same.

Outcrop lines and the strike and dip of the coal seams to be mined in the lease block and adjacent permit area are shown on Exhibits VI-3 and VI-4.

The location and extent of know workings active and inactive and mine openings for the King 4 mine are shown on Exhibit III-6B. There are no mine openings to the surface or other underground workings in the new lease block.

No significant amount of sub-surface water is known to exist in the lease block area and adjacent mined area.

Surface water bodies that may occur in or adjacent to the lease area are depicted on Exhibit VII-1.

No surface mined areas exist on or near the lease block.

There exists no areas of spoil, waste, development waste, dams, embankments or impoundments within the lease boundary.

Map reference: Exhibits VI-3. VI-4, III-6B, VII-1

No gas or oil wells are located within the lease block.

UMC 783.27 Prime Farmland Investigation

No surface disturbance will occur in order to mine the new lease. All coal reserves will be accessed through existing underground workings. A prime farmland investigation was performed for the entire permit area. The determination was made that there is no prime farmland in the permit area and the narrative can be found in Chapter VIII.

Text reference: Application For A Permit, March 1981, Volume III, Chapter VIII, Appendix VIII-2

CHAPTER IV UMC 784 - REQUIREMENTS FOR RECLAMATION AND OPERATION PLAN

Scope

All coal mined in federal lease U-51923 will be accessed through existing underground workings in the King 4 mine. The coal will be handled through existing surface facilities that have been discussed in the original permit application. Reclamation and operation plans have been developed for the present operations and are located in Chapter III of the original permit application. No new surface disturbance will be implemented for the mining development of the new lease block. The present reclamation plan will cover all of the disturbance associated with the King 4 mine. The plan is contained within Chapter III in the original mining permit application.

UMC 784.11 Operation Plan: General Requirements

Coal mined from federal lease U-51923 will be basically a minor extension of the King 4 mine. All mining methods, engineering techniques and equipment which has been set forth in the original permit for the operation of the King 4 mine will apply to this lease as well. Mining in the lease will be conducted according to typical room and pillar mining methods. Mining operations will leave a 200 foot coal barrier between the end of the mined section and the outcrop. Production from this lease will be incorporated into the total production from the King 4 mine. Anticipated annual production from the King 4 mine is approximately 700,000 tons per year. This estimate incorporates production from the lease area as well. Production from the lease area will fluctuate depending on the mining rate and conditions encountered. In this lease block, approximately 580,000 tons of coal reserve exists in the B seam and approximately 1,200,000 tons of coal reserve exists in the A seam. This estimate incorporates a two hundred foot coal barrier between the mine workings and the seam outcrop, a recovery factor of eighty percent and optimal conditions. Should adverse conditions be encountered reserve estimates would diminish.

Narrative explaining construction, modification, use, maintanance and removal of the facilities associated with the King 4 mine facility have already been addressed in Chapter III. No new facilities will be required for mining in the new lease block.

Text reference: Application For A Permit, March 1981, Volume I, latest revision
Chapter III

UMC 784.12 Operation Plan: Existing Structures

No new structures will be constructed in conjunction with mining in the new lease block. Coal mined from the lease will be handled through the existing King 4 facilities. These facilities are addressed in the existing mine permit application in Chapter III.

Text reference: Application For A Permit, March 1981, Volume I, latest revision, Chapter III

UMC 784.13 Reclamation Plan: General Requirements

As no new disturbance will occur as a result of mining in the new lease block, no reclamation plan is necessary for the lease block alone. A reclamation plan has already been submitted which covers reclamation of the surface mining associated disturbance in the permit area. Refer to Chapter III for the reclamation plan.

U.S. Fuel Company has obtained the lease for the coal in the NW 1/4 of Section 20 in order to maximize the recoverable coal resources available in this area. As the lease contains a mineable amount of coal in two seams, U.S. Fuel would like to utilize their underground access to mine this reserve. If the coal in not recovered by the present development in the vicinity, the reserve may be lost as it would probably not be great enough to justify the costs that would be incurred from accessing it from the surface, (i.e., constructing surface access and support facilities, plus reclamation costs).

In order to maximize the coal available, the lease block will be mined as an integral part of the mining sequence in the area. The coal reserve will be developed and extracted for a total recovery of about 80% of the coal seam.

Should adverse conditions be encountered, portions of the area may be determined to be unmineable. Justification for not recovering the coal from the lease would be based on an economical evaluation of geologic anomalies such as burned coal, thinning of the seam or other unforseeable factors.

Text reference: Application For A Permit, March 1981, Volume I, latest revision Chapter III

UMC 784.14 Reclamation Plan: Protection Of Hydrologic Balance

Protection of the hydrologic balance for the mine plan area has been discussed in depth in Chapter VII of the original permit submission. As mining of this lease block will only be an extension of the existing King 4 mine, the narrative is applicable to this block as well. No breakouts for air or access are planned during mining of this new reserve block, therefore, no stream contamination from mine water discharge will be possible. As no new structures or disturbance will occur on this lease block, no new sediment control facilities are being planned.

A plan for the collection, recording and reporting of ground and surface water on or adjacent to this lease block is presented in Chapter VII.

Mining of the lease coal should have little or no effect on the hydrologic regime of the area. A spring inventory done in 1983 failed to locate any springs on this block. The lease block is relatively isolated with respect to hydrologic considerations. As it has outcrop on three sides it lacks a source for groundwater recharge. The lease block's connection to Gentry Mountain on the west is down dip from the lease block and therefore would preclude it as a source of groundwater recharge. The outcrop of the lease block is steep and would limit the ability of surface water to percolate in. The streams adjacent to the lease block are fed by surface runoff and springs from the top of Gentry Mountain. Mining of this lease would have no affect on their source.

Text reference: Application For A Permit, March 1981, Volume II, latest revision Chapter VII

Map reference: Chapter VII Exhibits latest revisions

UMC 784.15 Reclamation Plan: Postmining Land Use

Postmining land use of this area will be the same as the premining use.

Underground mining activities will not interrupt the present land usage. Refer to the original permit application for a dicussion of the permit area land use.

Text reference: Application For A Permit, March 1981, Volume I, latest revision Chapter IV

UMC 784.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams and Embankments

There are no man made ponds, impoundments, bank, dams and embankments within or adjacent to the lease block.

UMC 784.17 Protection Of Public Parks And Historic Places

No parks or historic places exist within or adjacent to the lease block.

UMC 784.18 Relocation Or Use Of Public Roads

No public roads lie within the lease block boundaries or within 100 feet.

UMC 784.19 Underground Development Waste

No underground development waste will be generated as a result of mining in the new lease block. No disposal site will be required. Refer to Chapter III of the original submittal for the discussion on underground development waste.

Text reference: Application For A Permit, March 1981, Volume I, latest revision
Chapter III, Section 3.4, pages 35 and 36

UMC 784.20 Subsidence Control Plan

A subsidence control plan has been presented in the original permit application for the entire permit area, of which this new lease is a part. The plan can be found in Chapter III.

Mining operations in the new lease block will minimize potential subsidence effects by leaving a 200 foot barrier between the mine workings and the outcrop.

The potential area of impact is depicted on Exhibit VII-1C for the lease area as well as the entire permit area. It is most probable that no subsidence effects will occur in the lease area based on the mining plan and cover over the mine workings, and past experience. The North Fork stream channels cutting through this lease lie out of the potential zone of impact and are lower in elevation than the mine workings so they definitely would not be affected by underground mining in this lease block. No surface water sources are found to emanate from the lease block area. No water is produced in underground workings adjacent to this lease block.

As United States Fuel Company is the surface owner on this block the question of affecting the rights of the surface owner should not result in litigation.

Text reference: Application For A Permit, March 1981, Volume I, latest revision
Chapter III, Section 3.4, pages 34 and 35, Chapter III,
Section 3.5, page 10, Chapter VII, Section 7.1, pages 14-25

Map reference: Exhibit VII-IC latest revision

UMC 784.21 Fish And Wildlife Plan

As mining in this lease block will be only a continuation of the King 4 underground workings, there should be no affect on the fish and wildlife in the vicinity. The original mine permit application addresses this issue for the entire permit area and should be referenced if additional information on the permit area is desired.

Text reference: Application For A Permit, March 1981, Volume I, latest revision
Chapter III, Section 3.4, pages 28 through 33

UMC 784.22 Diversions

No diversions occur within the lease boundary.

UMC 784.23 Operation Plan: Maps And Plans

Mining in the new lease will result in no new surface facilities or land disturbance. Specific maps and plans have been presented in Chapter III of the original permit application which cover each location of disturbance in the permit area.

Text reference: Application For A Permit, March 1981, Volume I, latest revision
Chapter III

Map reference: Chapter III Exhibits latest revisions

UMC 784.24 Transportation Facilities

No road, conveyor or rail system will be present within the boundary of the lease block.

UMC 784.25 Return Of Coal Processing Waste To Abandoned Underground Workings

No coal processing waste will be returned to any underground workings in the permit area.

UMC 784.26 Air Pollution Control Plan

No fugitive dust will result from mining activities in the new lease. An air pollution control plan is presented in Chapter III of the original permit application that covers possible sources of pollution in the permit area.

Text reference: Application For A Permit, March 1981, Volume I, latest revision
Chapter III, Section 3.4, pages 33 and 34

UMC 800, 805, 806 Proposed Performance Bond

Cost estimates for reclamation of North Fork, South Fork, Middle Fork and the Hiawatha Processing Plant and Loadout Facility are presented in table form. (See Tables III-10, III-11, III-12 and III-13 in the original permit application--Application For A Permit, March 1981, Volume 1, latest revision Chapter III).

UMC 817 Permanent Program Performance Standards Underground Coal Mining Activities

Scope

U.S. Fuel Company proposes to mine federal lease U-51923 through existing underground workings. This will result in a minor increase in the underground extent of mined area. No additional surface area will be disturbed in order to mine this lease. Coal mined from the lease area will be handled by existing facilities. Lease coal will be a minor portion of the total mine production. The total estimated coal production from the King 4 mine is projected to remain constant over the next five years.

Utilizing the present coal handling facilities to mine the lease block will eliminate the need to permit for new disturbed area. The existing facilities have been addressed by a prior permit application and are in compliance with all of the performance standards. Should it be necessary to know how these have been addressed, Chapter III contains specific information in regard to existing facilities and performance standards.

The following sections have been addressed under a previous permit submittal for the mine facilities. They are not directly applicable to the lease block itself. Refer to:

Text References: Application For A Permit, March 1981, Volume I, latest revision Chapter III

UMC 817.11, 817.13, 817.14, 817.15, 817.21, 817.22, 817.23, 817.24, 817.25, 817.41, 817.59, 817.61, 817.62, 817.65, 817.67, 817.68, 817.71, 817.72, 817.73, 817.74, 817.81, 817.82, 871.83, 817.85, 817.86, 817.87, 817.88, 817.89, 817.91, 817.92, 817.93, 817.95, 817.99, 817.100, 817.101, 817.103, 817.106, 817.111, 817.112, 817.113, 817.114, 817.115, 817.116, 871.117, 817.131, 817.132, 817.133, 817.150, 817.151, 817.152, 817.153, 817.154, 817.155, 817.156, 817.160, 817.161, 817.162, 817.163, 817.164, 817.165, 817.166, 817.170, 817.171, 817.172, 817.173, 817.174, 817.175, 817.176, 817.180, 817.181

The following information is provided specifically for the new lease area.

UMC 817.41-817.57 Hydrologic Balance: General Requirements

Underground coal mining in the area of the lease will not change the prevailing hydrologic balance of the lease area or adjacent area. No surface disturbance will occur. As explained earlier under Section UMC 783.15 and 784.14, the hydrologic regime of this area is quite limited and no adverse change is expected. As no surface breakouts will be implemented, no underground mine drainage will mix with surface waters and no special seals will need to be considered. No surface disturbance will occur in conjunction with the mining of this lease, therefore, no sediment ponds will be needed.

No ground water has been encountered in the area of the King 4 mine just west of the federal lease area. No springs occur on the surface of the lease area. A surface water monitoring program is presently inforce. Surface water will continue to be monitored for the permit area which includes Federal Lease U-51923.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

As mining of the lease area will only amount to a minor extension of underground workings no adverse impact to fish, wildlife and related values should occur.

U.S. Fuel Company reported in their original permit application, which includes this lease area, that no threatened or endangered species exist in the permit area.

No power or transmission lines run through the lease area.

No access or haul roads exist in the lease area.

No surface disturbance will occur in the area of the lease so no reclamation plan is required.

UMC 871.121 Subsidence Control: General Requirements
UMC 817.126 Subsidence Control: Buffer Zones

Underground coal mining activities will be carried out in the lease area so as to prevent damage from subsidence. U.S. Fuel is the surface owner of the lease block. No structures exist on the surface. The subsidence plan submitted in the original permit application has been referenced by section UMC 784.20 of this application.

No underground mining in this lease area will be conducted beneath or adjacent to a perennial stream or impoundment.

No underground operations will mine beneath any aquifer that serves as a significant source as none exist at this location.

No underground mining will be conducted beneath or in close proximity to any public buildings.

APPENDIX II-1

U.S. Fuel Company Property Ownership

APPENDIX II-1

UNITED STATES FUEL COMPANY
PROPERTY OWNERSHIP

Land Subdivision	Area (Acres) 1	2	3	4	5	Legal Document	Date of Document	Recorded Book Page	Remarks
								Carbon County	
T.15S., R.7E., SLBM									
Section 13: S1/2					320	Lease U-058261	2/1/61	B.L.M.	All U.S.A.
Section 24: N1/2, SW1/4					480	Lease U-058261	2/1/61	B.L.M.	
N1/2 SE1/4, SW1/4 SE1/4					120	Lease U-058261	2/1/61	B.L.M.	
SE1/4 SE1/4		40				Conveyance	1/3/16	3D-257	Surface-U.S.A.
Section 25: E1/2 E1/2		160				Conveyance	1/3/16	3D-257	Surface-U.S.A.
W1/2 E1/2					160	Lease SL-069985	11/1/69	B.L.M.	All U.S.A.
E1/2 NW1/4					80	Lease U-026583	2/1/61	B.L.M.	All U.S.A.
Section 36: N1/2 NE1/4, W1/2 SE1/4					160	Lease SL-069985	11/1/69	B.L.M.	All U.S.A.
S1/2 NE1/4, E1/2 SE1/4					160	Lease SL-025431	2/8/63	B.L.M.	All U.S.A

APPENDIX II-1

UNITED STATES FUEL COMPANY
PROPERTY OWNERSHIP

Land Subdivision	Area (Acres) 1	2	3	4	5	Legal Document	Date of Document	Recorded Book Page	Remarks
T.15S., R.8E., SLBM								Carbon County	
Section 17: S1/2 NE1/4, SE1/4			240			Patent 1013339	3/8/28	6A-125	Subsurface-U.S.A.
E1/2 SW1/4			80			Patent 1013339	3/8/28	6A-125	Subsurface-U.S.A.
S1/2 NW1/4, NW1/4 SW1/4	10		110			*Conveyance	1/3/16	3D-257	Coal-Plateau Mining
SW1/4 SW1/4	20		20			Conveyance	1/3/16	3D-257	
N1/2 NW1/4 (part)			7.5			Conveyance	1/3/16	3D-257	
Section 18: SE1/4 SE1/4	40					Conveyance	1/3/16	3D-257	
SW1/4 SE1/4	40					"	"	"	
NE1/4 SE1/4 (part)	1.51					"	"	"	
NW1/4 SE1/4 (part)	1.51					"	"	"	
SE1/4 SW1/4	40					"	"	"	
NE1/4 SW1/4 (part)	3.49					"	"	"	
SW1/4 SW1/4	37.78					"	"	"	
NW1/4 SW1/4 (part)	9.10					"	"	"	
NW1/4			155.56						
NE1/4			160						
N1/2 SE1/4			76.97						
N1/2 SW1/4			65.19						

*This 120 acres was acquired by U.S. Fuel in 1916. The coal rights were subsequently sold to Plateau Mining in 1944, other than that portion of the NW1/4 of the SW1/4 lying south of Miller Creek (approximately 10 acres).

APPENDIX II-1

UNITED STATES FUEL COMPANY
PROPERTY OWNERSHIP

Land Subdivision	Area (Acres) 1	2	3	4	5	Legal Document	Date of Document	Recorded Book Page	Remarks
								Carbon County	
T.15S., R.8E., SLBM									
Section 19: All	631					Conveyance	1/3/16	3D-257	
Section 20: E1/2, NW1/4			320			Patent 1013339	3/8/28	6A-125	Subsurface-U.S.A.
N1/2 SW1/4			80			Patent 1013339	3/8/28	6A-125	Subsurface-U.S.A.
S1/2 SW1/4	80					Conveyance	1/3/16	3D-257	
NW1/4				160		Lease U-51923	10/1/85		Subsurface-U.S.A.
Section 21: All			640			Patent 1013339	3/8/28	6A-125	Subsurface-U.S.A.
Section 26: W1/2 SW1/4	80					Warranty Deed	6/21/76	161-112	
Section 27: N1/2 SE1/4, N1/2 SW1/4	160					Conveyance	1/3/16	3D-257	
SW1/4 NW1/4, SW1/4 SW1/4	80					Conveyance	1/3/16	3D-257	
S1/2 SE1/4, SE1/4 SW1/4	120					Conveyance	1/3/16	3D-260	
Section 28: All			640			Patent 1013339	3/8/28	6A-125	Subsurface-U.S.A.

APPENDIX II-1

UNITED STATES FUEL COMPANY
PROPERTY OWNERSHIP

Land Subdivision	Area (Acres) 1	2	3	4	5	Legal Document	Date of Document	Recorded Book Page	Remarks
								Carbon County	
T.15S., R.8E., SLBM									
Section 29: NE1/4 NE1/4			40			Patent 1013339	3/8/28	6A-125	Subsurface-U.S.A.
S1/2 NE1/4									
NW1/4 NE1/4	120					Conveyance	1/3/16	3D-257	
NW1/4, S1/2	480					Conveyance	1/3/16	3D-257	
Section 30: All	631					Conveyance	1/3/16	3D-257	
Section 31: N1/2				316		Conveyance	1/3/16	3D-257	Coal-U.S.A.
S1/2				316		Patent 1013339	3/8/28	6A-125	Subsurface-U.S.A.
Section 32: SE1/4 NE1/4	40					Patent 12257	4/22/20	2A-251	
N1/2 NE1/4,									
SW1/4 NE1/4	120					Quit Claim Deed	5/6/23	3H-427	
NW1/4, S1/2	480					Quit Claim Deed	5/6/23	3H-427	
Section 33: N1/2			320			Patent 1013339	3/8/28	6A-125	
S1/2	320					Conveyance	1/3/16	3D-260	

APPENDIX II-1

UNITED STATES FUEL COMPANY
PROPERTY OWNERSHIP

Land Subdivision	Area (Acres) 1	2	3	4	5	Legal Document	Date of Document	Recorded Book Page	Remarks
								Carbon County	
T.15S., R.8E., SLBM									
Section 34: N1/2 NE1/4, N1/2 NW1/4	160					Conveyance	1/3/16	3D-260	
NE1/4 SW1/4, SW1/4 NW1/4	80					Warranty Deed	12/1/17	5F-309	
SW1/4 NE1/4, NW1/4 SE1/4	80					Patent 12499	10/14/20	2A-252	
SE1/4 NW1/4	40					Patent 12499	10/14/20	2A-252	
SE1/4 NE1/4	40					Patent 11722	10/20/19	2A-226	
S1/2 SW1/4			80			Patent 10835	7/17/18	2A-226	Coal-U.S.A.
NE1/4 SE1/4	40					Warranty Deed	6/21/76	161-112	
NW1/4 SW1/4			40			Patent 1114115	6/4/42	6A-267	Subsurface-U.S.A.
Section 35: E1/2 NW1/4, NW1/4 SW1/4	120					Warranty Deed	6/21/76	161-112	
NW1/4 NW1/4	40					Patent 11723	10/20/19	2A-226	
SW1/4 NW1/4	40					Conveyance	1/3/16	3D-260	

APPENDIX II-1

UNITED STATES FUEL COMPANY
PROPERTY OWNERSHIP

Land Subdivision	Area (Acres) 1	2	3	4	5	Legal Document	Date of Document	Recorded Book Page	Remarks
								Emery County	
T.16S., R.7E., SLBM									
Section 1: E1/2 E1/2					155	Lease SL-205431	2/8/63	B.L.M.	All U.S.A.
W1/2 E1/2					155	Lease SL-069985	11/1/69	B.L.M.	All U.S.A.
Section 12: E1/2 NE1/4					80	Lease SL-025431	2/8/63	B.L.M.	All U.S.A.
W1/2 NE1/4, SE1/4					240	Lease SL-069985	11/1/69	B.L.M.	All U.S.A.
E1/2 W1/2					160	Lease SL-069985	11/1/69	B.L.M.	All U.S.A.
Section 13: E1/2, E1/2 W1/2					480	Lease SL-069985	11/1/69	B.L.M.	All U.S.A.
T.16S., R.8E., SLBM									
Section 3: W1/2	361					Conveyance	1/3/16	A5-318	
Section 4: Lots 1,2,3, 4,5,6,7	202					Conveyance	1/3/16	A5-318	
Lots 8,9, 10,11,12	200					Conveyance	1/3/16	A5-318	
SW1/4	160					Conveyance	1/3/16	A5-315	
SE1/4	160					Warranty Deed	5/31/19	B9-205	

APPENDIX II-1

UNITED STATES FUEL COMPANY
PROPERTY OWNERSHIP

Land Subdivision	Area (Acres) 1	2	3	4	5	Legal Document	Date of Document	Recorded Book Page	Remarks
								Emery County	
T.16S., R.8E., SLBM									
Section 5: Lots 1,5,8,12				140		Patent 11804	11/26/19	A2-50	Coal-U.S.A.
Lots 2,3,4,6, 7,9,10,11			261			Patent 11804	11/26/19	A2-50	Coal-U.S.A.
S1/2			320			Patent 11803	11/26/19	A2-51	Coal-U.S.A.
Section 6: Lots 1,2,3,4, 5,6,7,8,9				291		Patent 11804	11/26/19	A2-50	Coal-U.S.A.
NE1/4 SE1/4			40			Patent 11803	11/26/19	A2-50	Coal-U.S.A.
Lots 10,11,12				127		Patent 11804	11/26/19	A2-50	Coal-U.S.A.
W1/2 SE1/4, SE1/4 SE1/4				120		Patent 11803	11/26/19	A2-50	Coal-U.S.A.
SW1/4				173		Patent 11803	11/26/19	A2-51	Coal-U.S.A.
Section 7: NE1/4 NE1/4			40			Patent 11803	11/26/19	A2-51	Coal-U.S.A.
SE1/4 NE1/4, W1/2 NE1/4				120		Patent 11803	11/26/19	A2-51	Coal-U.S.A.
SE1/4, NW1/4				334		Patent 11803	11/26/19	A2-51	Coal-U.S.A.
SW1/4				173		Patent 11803	11/26/19	A2-51	Coal-U.S.A.

APPENDIX II-1

UNITED STATES FUEL COMPANY
PROPERTY OWNERSHIP

Land Subdivision	Area (Acres) 1	2	3	4	5	Legal Document	Date of Document	Recorded Book Page	Remarks
								Emery County	
T.16., R.8E., SLBM									
Section 8: N1/2, SE1/4	480					Conveyance	1/3/16	A5-315	
SE1/4 SW1/4,						Conveyance	1/3/16	A5-315	
N1/2 SW1/4,	120								
SW1/4 SW1/4				40		Patent 1145347	7/16/54	23-69	Subsurface-U.S.A.
Section 9: W1/2,									
W1/2 NE1/4	400					Conveyance	1/3/16	A5-315	
W1/2 SE1/4,									
SE1/4 SE1/4	120					Conveyance	1/3/16	A5-315	
E1/2 NE1/4,									
NE1/4 SE1/4			120			Patent 1013339	3/8/28	A2-317	Subsurface-U.S.A.
Section 10: S1/2 SE1/4,									
SE1/4 SW1/4	120					Patent 11715	10/18/19	A2-19	
SW1/4 SW1/4	40					Patent 11716	10/18/19	A2-20	
Section 11: SW1/4 SW1/4	40					Patent 11715	10/18/19	A2-19	
SE1/4 SW1/4	40					Patent 11719	10/20/19	A2-21	

APPENDIX II-1

UNITED STATES FUEL COMPANY
PROPERTY OWNERSHIP

Land Subdivision	Area (Acres) 1	2	3	4	5	Legal Document	Date of Document	Recorded Book Page	Remarks
								Emery County	
T.16S., R.8E., SLBM									
Section 15: SE1/4 SW1/4, W1/2 SW1/4	120					Conveyance	1/3/16	A5-315	
SW1/4 NE1/4,	40					Quit Claim Deed	7/16/18	A1-358	Coal-U.S.A.
SE1/4 NW1/4			40			Quit Claim Deed	7/16/18	A1-358	Coal-U.S.A.
N1/2 NE1/4, N1/2 NW1/4	160					Patent 11717	10/18/19	A2-23	
SW1/4 NW1/4			40			Patent 1126838	7/22/49	A2-435	Subsurface-U.S.A.
Section 16: All	640					Conveyance	1/3/16	A5-315	
Section 17: All	640					Conveyance	1/3/16	A5-315	
Section 18: Lots 1,2,3				140		Patent 11807	11/26/19	A2-54	Coal-U.S.A.
E1/2, E1/2 W1/2				480		Patent 11807	11/26/19	A2-54	Coal-U.S.A.
Lot 4					46.93	Lease SL-069985	11/1/49	B.L.M.	All U.S.A.
Section 19: N1/2 N1/2		167				Conveyance	1/3/16	A5-315	Surface-U.S.A.
SW1/4 NE1/4, NW1/4 SE1/4					80	Lease SL-069985	11/1/49	B.L.M.	All U.S.A.

APPENDIX II-1

UNITED STATES FUEL COMPANY
PROPERTY OWNERSHIP

Land Subdivision	Area (Acres) 1	2	3	4	5	Legal Document	Date of Document	Recorded Book Page	Remarks
								Emery County	
T.16S., R.8E., SLBM									
Section 20: NE1/4,									
NE1/4 SE1/4		200				Conveyance	1/3/16	A5-315	Surface-U.S.A.
N1/2 NW1/4		80				Conveyance	1/3/16	A5-315	Surface-U.S.A.
SE1/4 NW1/4,									
NE1/4 SW1/4					80	Lease SL-069985	11/1/69	B.L.M.	All U.S.A.
Section 21: NE1/4,									
NW1/4 SE1/4	200					Conveyance	1/3/16	A5-315	
E1/2 NW1/4	80					Conveyance	1/3/16	A5-315	
W1/2 NW1/4,									
N1/2 SW1/4		160				Conveyance	1/3/16	A5-315	Surface-U.S.A.
NE1/4 SE1/4			40			Patent 1013339	3/8/28	A2-317	Subsurface-U.S.A.
Section 22: NW1/4 NW1/4	40					Conveyance	1/3/16	A5-315	

United States Fuel Company owns or leases coal or surface rights in some 19,211 contiguous acres in Carbon and Emery Counties, Utah. Of this total, 15,490 acres are comprised of coal lands either owned or leased by the company. Of this total acreage, approximately 5,700 acres are Federal Leasehold.

Federal Leasehold: Permit - 2,543 Future Permit - 2,184 TOTAL = 5,727

APPENDIX II-1

UNITED STATES FUEL COMPANY
PROPERTY OWNERSHIP

Land Subdivision	Area (Acres) 1	2	3	4	5	Legal Document	Date of Document	Recorded Book Page	Remarks

DESIGNATION OF TITLE — ACREAGE

1). Surface-Fee Title, Coal Rights-Fee Title.....9,026
2). Surface Rights-None, Coal Rights-Fee Title.....807
3). Surface Rights-Fee Title, Coal Rights-None.....3,651
4). Surface-Fee Title, Coal Rights-Leased.....2,770
5). Surface Rights-None, Coal Rights-Leased.....2,957

Total.....19,211

TOTALS

	Permit	Future Permit	Totals
Category 1	6,426	2,600	9,026
Category 2	200	607	807
Category 3	3,491	160	3,651
Category 4	1,063	1,707	2,770
Category 5	1,480	1,477	2,957
TOTAL	12,660	6,551	19,211

APPENDIX II-2

Areas Designated Unsuitable For Mining

SCOTT M. MATHESON
Governor

GORDON E. HARMSTON
Executive Director,
NATURAL RESOURCES

CLEON B. FEIGHT
Director

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
1588 West North Temple
Salt Lake City, Utah 84116
(801) 533-5771

OIL, GAS, AND MINING BOARD

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STEELE McINTYRE

RECEIVED
1980
JOHN T. BOYD CO.
DENVER

October 2, 1980

Mr. Michael Meenan
Environmental Engineer
John T. Boyd Company
1860 Lincoln Street
Suite 1028
Denver, Colorado 80295

RE: U. S. Fuel Company
Hiawatha Complex
ACT/007/011
Carbon County, Utah

Dear Mr. Meenan:

In response to your letter dated September 23, 1980, regarding areas designated unsuitable for mining; to date, this office has received no determination, application or petition of unsuitability for mining at or near U. S. Fuel Company's Hiawatha Complex in Carbon County, Utah.

Should such a condition arise in the future, U. S. Fuel Company shall promptly be notified.

Sincerely,

JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

cc: Bob Eccli, U. S. Fuel Company

JWS/btm

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Manti-LaSal National Forest - Price Ranger District
10 North Carbon Avenue #2
Price, Utah 84501

John T. Boyd Company
1860 Lincoln Street
Suite 1028
Denver, Colorado 80295
ATTENTION: Michael K. Meenan

Dear Mr. Meenan:

We are in receipt of your letter of 8/27/80 requesting information on U.S. Fuel Company's property in Carbon and Emery Counties, Utah. As we understand it, your request entails any available information regarding unsuitability criteria or "restrictions" that might apply to the subject property as indicated by your accompanying map.

After researching available data at our disposal, the only unsuitability criterion that might apply would be #17 covering municipal watersheds. The leased land (lease nos. SL 069985, SL 025431 and U 026583) under Forest Service jurisdiction falls into the Price River and Huntington Canyon drainages. Both drainages serve municipal water supplies. Since these watersheds cover such a large area of coal bearing lands owned by Federal, State and private interests, a determination has yet to be made relative to the applicability of criterion #17.

Regarding further "restrictions" not covered under the unsuitability criter these would be handled on a more specific basis through the environmental assessment process.

One additional item that we might mention is the fact that the U.S. Fuel property boundary, as shown on your map, includes unleased Federal coal lands under Forest Service administration. Specifically, these lands include Section 19, N½N½, Section 20; N½N½, S½NE¼, NE¼SE¼; Section 21, W½NW¼, N½SW¼, T. 16 S., R. 8 E., SLM.

We hope that the above adequately complies with your request. If you have any further questions, please don't hesitate to contact us.

IRA W. HATCH
District Ranger

6200-11 (1/69)
29877

APPENDIX II-3

Certificate of Liability Insurance

IRM

CERTIFICATE OF INSURANCE

This is TO CERTIFY that the described policies, covering in accordance with the terms thereof, are in force as of the date hereof:

INSURED: SHARON STEEL CORPORATION U.S. Fuel Co.
P.O. Box A, Hiawatha, UT 84527

COVERAGE	COMPANY & POLICY NO.	EXPIRATION DATE	LIMITS OF LIABILITY BODILY INJURY	PROPERTY DAMAGE
Workers' Compensation Employers' Liability	Nat'l Un. Fire Ins. Co. of Pittsburgh, PA WC495-7362 (All States)	10/1/87	Statutory Each Accident $	Nil Nil
Comprehensive General Liability	Nat'l Union Fire Ins. Co. of Pgh., Pa. GLA-197-9887	10/1/87	CSL $100,000/$1,000,000	
	Chesapeake Ins. Co. Ltd. CIC100486	10/1/87	CSL $900,000 excess of $100,000 subject to a $1,000,000 aggregate	
Products Completed Operations	Nat'l Union Fire Ins. Co. of Pgh., PA. 468-7889	10/1/87	CSL $1,000,000/$1,000,000 excess of	$1,000,000/$1,000,000
Comprehensive Automobile Liability	Nat'l Union Fire Ins. Co. of Pgh., Pa. BA 154-9347	10/1/87	CSL $100,000	
	Chesapeake Ins. Co. Ltd. CIC 100486	10/1/87	CSL $900,000 excess of $100,000	
	Nat'l Union Fire Ins. Co. of Pgh., Pa. 468-7890	10/1/87	CSL $1,000,000 excess of $1,000,000	
Excess/Umbrella Liability			Combined Single Limit: $ Aggregate: $	

RE:

This Certificate is issued to:

Division of Oil, Gas & Mining
355 W. N. Temple
3 Triad Center
Suite 350
Salt Lake City, UT 84180-1203

Attn: Pam Lattig

This document is furnished for information only. It does not provide or convey any insurance. Unless specified hereon its issuance does not make the person or organization to whom it is issued an additional insured under any policy of insurance. It neither affirmatively nor negatively amends, extends or alters the coverage afforded by the contract of insurance between the insured and any Company. Amendment, extension or change of such contract can only be effected by endorsement issued by the Company and attached thereto.

Should any above described policy be cancelled, the Company issuing said policy will issue 30 days' notice to the holder of this document, at the address shown herein, but failure to give such notice shall impose no obligation of any kind upon the Company or the undersigned.

DATED: 11-11-86

Attorney for Chesapeake Insurance Co.

Insurance and Risk Management, Inc.
1370 Washington Pike
Bridgeville, PA 15017

APPENDIX II-4

Newspaper Advertisement

AFFIDAVIT OF PUBLICATION

RECEIVED
MAR 09 1987
DIVISION OF
OIL, GAS & MINING

S. FULL CO.
RECEIVED
FEB 27 1987
Gen't. Mgr's
Office

STATE OF UTAH }
County of Carbon, } ss.

I, Dan Stockburger, on oath, say that I am the General Manager of The Sun-Advocate, a weekly newspaper of general circulation, published at Price, State and County aforesaid, and that a certain notice, a true copy of which is hereto attached, was published in the full issue of such newspaper for One (1) consecutive issues, and that the first publication was on the 24th day of February, 19 87, and that the last publication of such notice was in the issue of such newspaper dated the ____ day of ____, 19 ____.

FILE COPY

Dan Stockburger

Subscribed and sworn to before me this 24th day of February, 19 87.

Holly Jo Baker
Notary Public.

My Commission expires My Commission Expires October 22, 1990, 19 ____.

Publication fee, $ 15.60

NOTICE OF FILING APPLICATION FOR COAL MINING AND RECLAMATION PERMIT MODIFICATION

United States Fuel Company, P.O. Box A, Hiawatha, Utah 84527, has filed an addendum to their mining permit application with the DOGM. The addendum addresses mining in Federal Lease U-51923, a 160 acre tract, T15S, R8E, NW¼ Section 20. This tract is located on the USGS 7½ minute Hiawatha quadrangle, within the present permit area boundary. U.S. Fuel Company is the surface owner.

A copy of the application is available for public inspection at the Carbon County Courthouse Recorder's Office, Price, Utah 84501.

A 30 day comment period will begin as of this date of publication. Written comment on the application may be submitted to: State of Utah, Oil, Gas and Mining Division, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203, or Office of Surface Mining, Brooks Towers, 1020 15th Street, Denver, Colo. 80202.

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