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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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May 11, 1993

Mr. Michael Baum, President
United States Fuel Company
P. O. Box 887
Price, Utah 84501

Dear Mr. Baum:

Re: Remaining Deficiencies in Mining and Reclamation Plan, U. S. Fuel Company,
Hiawatha Mines Complex, ACT/007/011-D092A, Folder #3, Carbon County,
Utah

The Division has completed a review of the February 24, 1993 response to deficiencies identified in the Mining and Reclamation Plan (MRP) for the Hiawatha Mine. The majority of deficiencies identified during the permit renewal have now been adequately addressed. Your responses are approved for insertion into your MRP. There remain only three (3) deficiencies that still require additional response. These deal with: 1) reference areas that must be evaluated during the next growing season; 2) revising page 61 to eliminate the use of sludge; and 3) justification of road retention. A more thorough discussion of the deficiencies is found in the enclosed technical memos. Please review the memos and provide a response by no later than June 11, 1993.

Please don't hesitate to call if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock".

Daron R. Haddock
Permit Supervisor

cc: P. Baker
S. Demczak
J. Helfrich

LASTDEFI.HIA





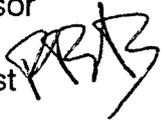
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TO: File

THROUGH: Daron Haddock, Permit Supervisor

FROM: Paul Baker, Reclamation Biologist 

DATE: April 26, 1993

RE: Response to Second Round Review, U. S. Fuel Co., Hiawatha Mine, Folder #2, ACT/007/011, Carbon County, Utah

SUMMARY

On February 24, 1993, U. S. Fuel submitted a response to the review of their submittal intended to satisfy the requirements of the permit renewal Division Order. Several changes have been made to the plan in this second submittal, and most deficiencies have been adequately addressed. The one remaining deficiency needs to be taken care of this coming summer.

ANALYSIS

R645-301-321

Vegetation Information

Second Round Deficiency:

1. *The reference areas must be evaluated by the Soil Conservation Service for range condition and productivity during the next growing season, and an evaluation of alternatives for improving their condition needs to be made if any are in poor condition. It may also be necessary to change one or more reference areas if some are not in fair or better condition.*

Response and Analysis:

It is impossible to evaluate the reference areas now, but they still need to be checked at the first opportunity.

Remaining Deficiency:



1. The reference areas must be evaluated by the Soil Conservation Service for range condition and productivity during the next growing season, and an evaluation of alternatives for improving their condition needs to be made if any are in poor condition. It may also be necessary to change one or more reference areas if some are not in fair or better condition.

**R645-301-341.210. Species and Quantities of
Seeds and Seedlings**

Second Round Deficiencies:

1. *The seed and planting mix(es) for the areas near Hiawatha must be revised to reflect results of the test plots and of species identification performed on big sagebrush.*
2. *The seed and planting mixture for riparian areas contained in Table III-8 needs to be revised so that it will be more likely to achieve the woody species standard for success for this area.*
3. *The plan needs to include plans to restore riparian vegetation along the stream channels.*

Response and Analysis:

The plan has been changed in accordance with recommendations given in the previous review.

Remaining Deficiencies:

None.

R645-301-341.250 Success Determination Methods

Second Round Deficiencies:

1. *The statements in the plan that there will be a maximum sample size for final bond release vegetation sampling should be deleted. The regulations do not allow a maximum sample size.*
2. *Because further baseline and other information has been received, the*

woody species standards for success in the plan need to be revised again to comply with the standards stated in this analysis.

Response and Analysis:

The statements in the plan about maximum sample sizes have been eliminated.

The woody species density standards for success have been changed in accordance with the requirements in the review. These standards will only apply in limited areas because the plan has also been changed to exercise R645-301-356.250 in areas that were previously disturbed by mining and re-mined according to the definitions. Most of the mine area falls into this category.

Remaining Deficiencies:

None.

Second Round Deficiency:

- 2. The application must contain methods of evaluating the diversity, utility, effectiveness, and seasonality of reestablished vegetation including quantitative measures of diversity and similarity to reference areas and methods for evaluating effectiveness of vegetation for erosion control.*

Response and Analysis:

U. S. Fuel has proposed to use a method discussed in a paper presented at an OSM symposium to evaluate diversity, utility, effectiveness, and seasonality of reestablished vegetation. This method is relatively simple to use and should be approved.

The plan still does not contain a method for evaluating erosion control. This is to U. S. Fuel's disadvantage because, without this information, they will not be able to demonstrate that the performance standards have been met. An erosion classification system was developed several years ago by the BLM, and this has been modified by OSM. This method has been used by the BLM as part of a land use suitability rating system to determine if land is capable of supporting grazing. This method is easily learned and applied and can show long-term trends in erosion condition. It is recommended to the Operator. The Division will probably be using this system to evaluate erosion in the reclaimed area through the liability period.

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April 26, 1993

Deficiencies:

None.

RECOMMENDATIONS

The only remaining deficiency is one that cannot be addressed until summer. U. S. Fuel expressed a desire to have the plan approved rather than holding off approval until this deficiency can be addressed. Therefore, it is recommended that the plan be approved with the stipulation that the deficiency regarding the reference areas be addressed at the first opportunity in the summer.



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March 13, 1993

TO: Daron Haddock, Permit Supervisor

FROM:  Priscilla Burton, Soils Reclamation Specialist

RE: Second Response to Division Order 92A. Hiawatha Mine. U.S. Fuel Co. ACT/007/011-92A. Carbon County. Utah. Folder #2.

SUMMARY:

U.S. Fuel Co. was issued a permit renewal on 3/13/92 for the Hiawatha Mine. All remaining deficiencies with the R645-301-200 regulations are addressed in this submittal, received 2/24/93. The response to deficiency #5 of R645-301-233.300 entails the potential use of sewage sludge as a cover material. A revision of page 61 of the MRP is requested.

DEFICIENCY REVIEW:

R645-301-233.300.

Results of Physical and Chemical Analyses of Overburden and Topsoil

Deficiency #5

Evaluate alternative plans for borrow material sources and borrow reclamation techniques.

Analysis/Compliance:

In a meeting with the Division on 2/9/93, the use of dried, digested sewage sludge as a substitute cover material was discussed. The Division suggested that up to 6 inches of sludge could be applied to the site and substituted inch for inch for the required 16" of borrowed, substitute topsoil material. Under this scenario, a minimum of 10 inches of borrow material for the 133 acre slurry and refuse areas (Chap 2, pg 57) would be obtained from presently undisturbed areas designated as A, B, C & D within the plan. That is 178,096 yd³ of borrowed, substitute topsoil and 107,287 yd³ of sludge.

Since the aforementioned meeting, I have reviewed an laboratory analysis of the sludge which indicates that the material is acidic in nature when non-sulfate sulfur is considered (received 2/9/93 and attached). The material has a pyritic sulfur content of 0.05% sulfur which equates to an acid forming potential of 1.56 Tons/1000 Tons of slurry.

The non-sulfate sulfur content of the slurry has an acid forming potential of 14.37 Tons/1000 tons of slurry. The neutralizing content of the slurry is 5 Tons/1000 tons of slurry (calcium carbonate content is 0.7%). Based upon non-sulfate sulfur, this slurry is acid-forming. In light of this, I am hesitant to recommend reduction of the 16 inch cover requirements over the slurry.

Additionally I have come to realize that a trade of 6 inches of sludge for six inches of soil may be short-sighted on the Division's part for the following reasons:

1. The difference in bulk density of sludge in comparison with the density of soil may make this trade-off less than equal. The Division would be trading soil for air.
2. Land application of sludge is based upon nutrient content (especially nitrogen) and most applications are in the 40 - 60 Tons/acre range, probably less than 6 inches, but the volume depends upon bulk density of the sludge.
3. An equivalent weight of soil to a 50 T application of sludge would be approximately 0.3 inches (based upon an acre furrow slice (6" depth) weighing 2 million pounds).

Prior to considering any use of sludge, the Division should be provided with the bulk density of the sludge, the percent moisture at application, the nutrient content of the sludge (nitrogen, phosphorus, and potassium) as well as other chemical constituents required by the 503 regulations.

Deficiency:

At this time, I do not recommend that 6 inches of sludge should be traded for 6 inches of topsoil. Before this commitment on the part of the Division becomes cast in concrete, it is recommended that page 61, "Reclamation Plan - Alternative Topsoil Plan" regarding the trading of 6 inches of sludge for an equivalent volume of soil be stricken from the plan.

CONCLUSION:

Not mentioned in this plan, but discussed at a meeting between U.S. Fuel Co. and the Division on 2/9/93 was the utilization of materials in presently disturbed areas of the storage and rail road yards for a portion of the cover requirements, to reduce the borrow areas in size. The Division should remain involved in any changes to the reclamation plan which may achieve the goal of reducing the borrow area size, while still maintaining adequate cover over the slurry and refuse areas.

The trade of the use of six inches of sludge and equivalent decrease in substitute topsoil should not be pursued due to the nature of the slurry. This divergence from our

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ACT/007/011/92A
3/12/93

earlier agreement was discussed with Mr. Michael Watson of U.S. Fuel by telephone on 3/12/93.

The plan page 61 requires amending.

HIA92A.FIN

cc: HSauer

ACT/007/011
Folder # 2

Client : EarthFax Engineering, Inc.
Address : 7324 S. 1300 E., Su. 100
Midvale, UT 84047
Attn. : David Wheeler
Project :
Sample Matrix: Soil
Sample ID: Composite 1
Sample Date Time: 06/30/92

Lab No. : 92-SI/01058
Date Received: 08/06/92

Parameters

Saturation %	40.	%	
pH, saturated paste	5.7	units	1
Conductivity, sat. paste	3.24	mmhos/cm	1
Calcium, soluble	19.5	meq/l	1
Magnesium, soluble	41.0	meq/l	1
Sodium, soluble	.61	meq/l	1
Sodium Absorption Ratio	.1		
Cation Exchange Capacity	10.	meq/100g	
Exchangeable Sodium %	.8	%	
Nitrate as N, soluble	2.4	mg/kg	6
Nitrogen, total kjeldahl	.30	%	
Boron, soluble	1.2	mg/kg	2
Selenium, soluble	.06	mg/kg	2
Sulfur, organic	.41	%	
Sulfur, pyritic	.05	%	
Sulfur, total	.90	%	
Sulfur, sulfate	.44	%	
Neutralization Potential	.7	% as CaCO3	
Acid-Base Potent. (CaCO3)	5.	Tons/1000T	
Coarse Fragments > 2mm	55.9	%	
Sand 2.00 - .062 mm	66.	%	
Silt .062 - .002 mm	19.	%	
Clay -.002 mm	15.	%	
Texture	SL		

- 1 Saturated Paste Extraction
- 2 Hot Water Extraction
- 6 Water Extraction

Remarks: ‡ ABP Calculated From Pyritic Sulfur.
Note: Negative sign "-" denotes that the value is less than "<"

Scott Habermehl, Quality Assurance Officer/S.H.
Frank E. Polniak, Inorganic Laboratory Supervisor/FP

RECEIVED

FEB 01 1993

DIVISION OF
OIL, GAS & MINING



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DEPARTMENT OF NATURAL RESOURCES
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March 24, 1993

TO: File

THROUGH: Daron Haddock, Permit Supervisor

FROM: James D. Smith 

RE: Final Responses to Technical Deficiency Review, Chapters 6 and 7
U. S. Fuel Company, Hiawatha Mine,
ACT/007/011, Folder #2, Carbon County, Utah

All of the deficiencies from my Technical Completeness Review dated January 25, 1993 have been satisfied. A discussion held in DOGM's Salt Lake office on February 10, 1993 with Bob Eccli, Mike Watson, and Mike Baum of U.S. Fuel produced agreement that several of the deficiencies did not in fact require additions or modifications of the M&RP. To satisfy the remaining deficiencies, U.S. Fuel Company has submitted changes and additions to the text and maps of the M&RP. A brief analysis of each deficiency and U.S. Fuel's response follows.

1. *The location and/or identity of points labeled "DH-8" and "outcrop" on cross section A-A' on Exhibit VI-2 are questionable.*

Exhibits VI-1 and VI-2 have been corrected. Exhibit VI-1 now shows the locations of the outcrop section and of drill hole DH-5. Exhibit VI-2 now shows DH-5 rather than DH-8 as the bore hole providing information for the cross section.

2. *Outcrop and mine measurements of coal and interburden that were previously in Table 2 have been omitted in the new version.*

U.S. Fuel feels the information is proprietary and intentionally removed it from Table 2. It was agreed on February 10 that the information did not need to be returned to Table 2.

3. *The permit area needs to be expanded to include all potentially impacted surface areas (it will overlap Plateau's permit area) or U. S. Fuel needs to incorporate into the M&RP a demonstration that there will be no material damage in the area of potential subsidence around the two springs.*

U.S. Fuel has added information to pages 43-44 of Chapter 7 to demonstrate there will be no material damage within the area of potential subsidence around the two springs mentioned. The

balance of the potential subsidence area that extends beyond the permit boundary is not specifically addressed but the same information applies to it.

4. *The water bearing zone in the upper North Horn Formation, encountered by the exploratory boreholes drilled from the surface, is not described in either Section 722.100 or 724.600.*

A brief description of this water bearing zone has been added to page 30 in Section 724.600.

5. *The original deficiency remains but the opportunity to remedy it has past (referring to the original deficiency - Analyze ground water samples from all ground water monitoring stations for all parameters listed on Table 3 of the DOGM Guidelines for Establishment of Surface and Ground Water Monitoring Programs for Coal Mining and Reclamation Operations. The water samples should be taken during low flow, but in no case should the sampling be done later than September 15, 1992).*

and

6. *The M&RP contains no commitment to analyze ground water, sampled at low flow, following the extended or "baseline" list from Table 3 of the Division's Guidelines for Establishment of Surface and Ground Water Monitoring Programs for Coal Mining and Reclamation Operations (1986) in the year preceding the next permit renewal.*

Table VII-22 was added to the M&RP to provide the information on the schedule for spring monitoring, similar to that provided for streams in Table VII-21. Analyses for the parameters on Table VII-19 (similar to the extended or "baseline" parameter list in Table 3 of the DOGM Guidelines) will be done in 1993 to satisfy the first of the two deficiencies above. Table VII-22 extends to 1997, the year of the next permit renewal, and analyses for the "baseline" parameters are scheduled for 1996.

7. *Surface water monitoring analysis results in Appendix V2.II-14 are incomplete or missing.*

and

8. *Data for surface water monitoring stations ST-2, ST-2B, ST-3, ST-3A, ST-3B, ST-4, ST-4A, and ST-5 have not been updated.*

It was agreed at the February 10 conference that the water analysis results submitted in the quarterly and annual reports to DOGM contain the needed information and meet the requirements of the Coal Mining Rules.

9. *Table VII-21 does not give the schedule for stream monitoring up to the next permit renewal in 1997, including analysis for the extended or "baseline" parameters in the year preceding permit renewal.*

Table VII-21 was extended to 1997, the year of the next permit renewal, and includes analyses for parameters from the "baseline" list in 1996.

10. *The reference to Tables VII-26 through VII-39 in the third paragraph on page 67 needs to be changed to refer to Appendix VII-14.*

The needed change was made on page 67.

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TO: File

THROUGH: Daron Haddock, Permit Supervisor

FROM: Paul Baker, Reclamation Biologist *PBB*

DATE: April 26, 1993

RE: Response to Second Round Review of Chapter 4, U. S. Fuel Co., Hiawatha Mines, Folder #2, ACT/007/011, Carbon County, Utah

SUMMARY

U. S. Fuel did not alter Chapter 4, Land Use and Air Quality, in the second submittal intended to satisfy the requirements of the permit renewal Division Order. The only deficiency remaining in this chapter required that the roads leading to the portals be reclaimed. In a meeting with the Division on February 10, 1993, it was decided that the Division needed to supply U. S. Fuel with more detail on what information they needed to include in the plan to comply with the land use requirements for the roads.

ANALYSIS

R645-301-412 Land Use Reclamation Plan

Analysis:

R645-301-413.200 states that the premining uses of land to which the postmining land use is compared will be those uses which the land previously supported for land that was not previously mined. For land that was previously mined, as was most of the Hiawatha area, the postmining land use will be judged on the basis of the land use that existed prior to any mining.

The plan states under section 411.120 that land use in the mine plan area has remained pretty much unchanged since the early part of the century. These uses include livestock grazing, logging, mining, wildlife habitat, watershed, dispersed recreation, and oil and gas exploration. The plan also states that the Miller brothers ranged large herds of cattle and sheep from the Wasatch Plateau to the Colorado River. The plan does not specifically state whether or not the roads up the canyons existed prior to any mining. It is likely, however, that they did not or, at most, that they were primitive roads because



the mines began operating in about 1909.

The approved reclamation plan for the roads is that they will be reclaimed unless it can be shown that the Town of Hiawatha will remain viable after mining ceases. If Hiawatha was to remain after mining, the roads would be needed to provide access to maintain the town's water supply system.

Because the town is not to remain after mining and since the plan now states that the water supply system will be dismantled, the approved postmining land use for the roads is wildlife and grazing. The most recent version of the plan states that the roads would be left to support the postmining land uses of wildlife habitat, livestock grazing, and outdoor recreation. Under the definition of "land use" in R645-100-200, the rules state that land uses may include land used for support facilities that are an integral part of the use. It might be possible to conclude that the roads are support facilities that are an integral part of the grazing, wildlife, and recreation land uses and that not reclaiming them does not constitute a change in the postmining land use. However, the plan needs to justify that the roads are necessary to support these land uses.

R645-301-358 states that the operator will, to the extent possible using the best technology currently available, minimize disturbances and adverse impacts on fish, wildlife, and related environmental values and will achieve enhancement of such resources where practicable. This requirement is elaborated in R645-301-358.400 which states that coal mining and reclamation operations will avoid disturbances to, enhance where practicable, or restore habitats of unusually high value for fish and wildlife. Habitats of unusually high value are defined as areas delineated by the state as crucial-critical use areas for wildlife.

The value for wildlife of the lands where the roads are located was discussed with Ken Phippen of Wildlife Resources. He stated that, in the general area of Hiawatha, nearly all of the land in pinyon-juniper, sagebrush-grass, and similar vegetative types was considered to be critical big game winter range. Lands near the roads contain primarily these vegetative types. Therefore, they fall within the definition of habitats of unusually high value which R645-301-358.400 requires be avoided, enhanced, or restored. Mr. Phippen's primary concern with leaving the roads was the use that they would have in the late fall through early spring when wildlife are most susceptible to stress.

The previous plan contained comments from Wildlife Resources stating that they would prefer that the roads be reclaimed, but they agreed that the roads would probably be needed to maintain the water supply system. A letter from John Livesay dated February 14, 1984, stated, "...wildlife would be most benefited by decommissioning of the roads along with other surface facilities." This same letter also said, "...the Division would prefer to see the roads reclaimed and revegetated with a habitat more suitable to the

needs of wildlife...". Judging from these comments, the roads are not beneficial to the wildlife postmining land use, and it would be impossible to conclude that roads are an integral part of a wildlife postmining land use. The requirements of R645-301-358 that habitats of unusually high value be restored would appear to preclude road retention, but it might be possible to justify retaining the roads if they are left in an unimproved condition where they would not be passable during the crucial cold weather periods. The plan would need to give evidence of approximate proportions of the time during these crucial periods that the roads would be unusable.

In the February 10, 1993, meeting, Michael Baum briefly mentioned the possibility of performing an unspecified wildlife habitat improvement project to mitigate for retaining the roads. A proposal of this nature would be considered. Wildlife Resources would need to be consulted about a specific project if U. S. Fuel wishes to pursue this option.

The plan states on page 2 that there are no developed recreation sites in the area though dispersed recreation, such as camping, hiking, sightseeing, and especially big game hunting have been and are increasingly prevalent. None of these activities necessarily requires the use of a road. The plan needs to justify the retention of the roads with respect to recreation land use.

Although the plan mentions the ranches in the area, it does not state how the roads are used in conjunction with the ranching operations. Many areas in Utah are used for grazing but are inaccessible by road. The plan must state why the roads are needed for the ranching operations and show that the roads are an integral part of this use.

In addition to the need to address the land use requirements, the plan needs to address road retention from the point of view of not restoring the land to approximate original contour. The requirements of R645-302-270 need to be met in order to approve leaving the roads. This includes showing that the hydrologic characteristics will be improved compared to reclaiming the roads and meeting the engineering requirements of R645-302-271.800. The justifications of the postmining land use discussed above will probably fulfill the requirements of R645-302-271.100 through 500.

Deficiency:

Retention of the roads in South, Middle, and North Forks needs to be justified. For the Division to approve road retention, the roads need to be shown to be an integral part of the approved postmining land use or a higher and better use. The plan must also address protection of wildlife and wildlife habitat.