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State of Utah
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DIVISION OF OIL, GAS AND MINING

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March 9, 1998

TO: File

THRU: Daron Haddock, Permit Supervisor DRH

FROM: Wayne H. Western, Senior Reclamation Specialist WHW

RE: Operation Section of the TA, Canyon Fuel Company, LLC, Dugout Canyon Mine, PRO/007/039-98A, File #2, Carbon County, Utah

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

Analysis:

Type and Method of Mining Operations

In Section 523 the Applicant states:

> "Room-and-pillar mining methods will be used in the Dugout Canyon Mine. The use of this mining method has been selected to maximize coal recovery and enhance production rates within the specific geologic constraints of the permit area. Longwall mining methods are not planned because these methods do not allow the selective horizon control that is necessary to reduce dilution of the coal with rock from the in-seam partings.
>
> Continuous miners will be used, with either electric or diesel shuttle cars to haul coal to a feeder breaker at the section conveyor belt terminal end. Alternatively, electric continuous haulage system(s) between the miner and the section conveyor belt may be used. The continuous haulage system is comprised of a coal collecting hopper car located at the miner discharge boom, several track-mounted articulating mobile bridge conveyors, intermediate suspended bridge sections, and a rigid frame module conveyor assembly to discharge onto the section conveyor belt. The continuous haulage configuration is designed for higher production rates as compared with shuttle car haulage and will be used mostly in first and second mining panels. Roof bolters, scoops, power centers, and other auxiliary support equipment will be used in all mining sections.
>
> Mining will consist of driving five to seven main and submain entry systems. Production panels, driven from these access entry systems, will consist of rooms and pillars. Pillar extraction in the panels (second mining) is planned up to overburden depths of approximately 1,750 feet. It is

anticipated that full roof bolting plans will be mandatory from MSHA and that bolting of the ribs throughout the mine will not be required.

Equipment heights and economics will limit seam mining heights to a minimum of 6 feet. Roof bolters planned for use at the Dugout Canyon Mine (Fletcher Model HDDRs) are 73 inches high. The Long Airdox continuous haulage system operator cabs are 77 inches high. The rock duster-equipped Joy continuous miner is 72 inches high. It is presumed at this time that these equipment pieces may be modified to less than 72-inch operating and transport heights without impairing performance, safety, or upper limit operating heights to allow 72-inch mining heights. If such modifications are disallowed by MSHA or not made possible by the equipment manufacturers, or impede productivity, recovery of reserves in this height range may not be possible.

Anticipated Production. Anticipated annual production of coal from the Dugout Canyon Mine during the permit term is a follows:

1998 - 0.1 million tons
1999 - 1.0 million tons
2000 - 1.5 million tons
2001 - 2.0 million tons
2001 - 2.0 million tons

Through the remaining life of the mine, coal production from the mine is anticipated to be 2.0 million tons per year."

The Applicant met the requirements for R645-301-523 by giving the Division a description of the proposed mining method. The Applicant has stated that they plan to use longwall mining when the development work is completed. The Applicant does not want to modify the PAP to show this change out of fear that the change would increase the time needed to approve the permit. The Division told the Applicant that the permit will be processed as is. The Division cannot guarantee if or when any changes to the permit will be approved.

Findings:

The Applicant met the minimum requirements of R645-301-523 by describing the type and method of coal mining, the anticipated annual and total coal production, and the major equipment to be used for coal mining. The Division is aware of the Applicant's intent to use longwall mining methods.

Facilities and Structures

The Applicant lists the existing and proposed facilities and structures in Section 526 and 528 of the PAP. The Division has enough information to evaluate those structures. The Division's analysis of each structure is given in the section of the TA that deals specifically with that structure.

Findings:

The Applicant met the requirements of R645-301-526 and R645-301-528 that deal with sending the Division information about the existing and proposed surface structures and facilities. The Division's analysis of those structures and facilities is given in other parts of the TA.

EXISTING STRUCTURES:

Analysis:

The two existing structures in the permit area are the main access road and the power lines. The main access road is owned by the county up to the Applicant's property line. The dirt road continues through the proposed disturbed area. There is a power line in the proposed permit and disturbed area. The only potential user for the power line is the Applicant. The Applicant plans on upgrading and moving the power line during construction.

There are several dirt roads, jeep trail and wheel tracks in the proposed permit area. Those roads are owned by the Applicant and access is limited. The Division will not require the Applicant to identify each of the dirt roads, jeep trail and wheel tracks that will not be used for mining activities or used only for monitoring and data collection activities.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

RELOCATION OR USE OF PUBLIC ROADS

Analysis:

In Section 526.116 of the PAP the Applicant states:

> "They will conduct no coal mining operation within 100 feet of a right-of-way line of any public road, except where mine access or haul roads join the right-of-way."

In Section 521.100 of the PAP the Applicant states:

> "An existing county road enters the permit area in NE1/4, SE1/4 Sec.22, T. 13S., R. 12E., extending within that section for approximately 500 feet within the permit area. The road then exits the permit area for approximately 1,300 feet length, then reenters the permit area in the SW1/4, NW1/4 Section 23 where it ends at the southern edge of the proposed disturbed area boundary."

In Section 527.00 of the PAP the Applicant states:

"The road which will access the mine is a county road that extends from the Soldier Creek Road (Utah Highway 53) to the mine (a distance of approximately 7.5 miles). Carbon County is currently planning the upgrade of this road to handle the increased traffic which is anticipated as a result of mine operation. The County will construct the upgrade and charge SCM a toll for use of the road."

The Applicant does not propose to move a public road. The County will upgrade the existing county dirt road that goes from the Soldier Creek Road to the mine site. The Division considers the upgrade to the existing dirt road to be a county activity and outside the Division's jurisdiction. The Division will not require the upgrade to be permitted.

The Applicant does not propose to conduct mining and reclamation operations within 100 feet of a public road accept where the mine road accesses the public road. The county road is outside the subsidence zone and disturbed area. Mining and reclamation activities should not interfere with the public's use of the county road. The Applicant has met the requirements of R645-301-521 and R645-301-526 that deals with public roads in or near the permit area.

Findings:

The Applicant has met the minimum requirements of R645-301-526.116 and R645-301-521.133.

COAL RECOVERY

Analysis:

In Section 522 of the PAP the Applicant states:

"Mining operations at the Dugout Canyon Mine during the first 5-year mining term will occur in the Rock Canyon Seam. Future mining operations may also occur in the Gilson Seam. If the decision is made to mine in the Gilson Seam, information pertaining to the mining of this seam will be included in the M&RP prior to the performance of such mining. The overall objective of mining operations in the permit area will be maximum coal recovery coupled with safety. Coal recovery at the mine has been and will continue to be maximized through the following efforts:

- Based on pre-mining analysis of drill-hole data and information obtained from past mining operations in the area, estimates of the nature, depth, and thickness of the coal seam and associated partings have been made. Using these data, the mine plan and mining methods will be periodically evaluated and amended as necessary to maximize coal recovery; and

- Experience gained during mining will be used to amend future mine plans if coal recovery can be increased."

The mine layout has been planned relative to panels, barriers, and pillars to optimize both coal recovery and safety.

Additional information regarding the coal recovery plan is provided in the Confidential Information folder associated with this M&RP. Generally, the minimum mining height will be 6 feet. Based on the anticipated room and pillar mining method, the overall recoverable ratio of the in-place coal reserve is anticipated to be 55 percent.

The Division's staff has reviewed the coal recovery plan in the confidential folder. The guidelines for coal recovery are similar to those approved by the BLM for coal recovery on federal leases. The Division has determined that the Applicant's plan will maximize coal recovery. The Division knows that as information about the coal and mining conditions becomes available that the coal recovery plan will change.

The Division is aware of the Applicant's intentions to use longwall mining. By using longwall mining methods coal recovery should increase. The Division will not approve longwall mining until we have approved an amendment that addresses longwall issues.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

SUBSIDENCE CONTROL PLAN

Renewable resources survey.

Analysis:

R645-301-525.100, requires the Applicant to survey the permit and adjacent areas for structures and renewable resources that have the potential for being damaged by subsidence. Section 525.100 of the PAP contains the subsidence control plan in it the Applicant states:

"As noted in Section 521.100, no transmission lines, pipelines, or agricultural drainage tile field exists within the area of potential subsidence. As described in Section 527.200, the roads within the area of potential subsidence consist of private roads that are owned and maintained by the parent company of SCM. These are unimproved dirt roads that will be used for access to the lease area. While localized damage may occur to these roads from subsidence, this damage will not be monetarily significant to the owner, since the owner is the parent company of SCM. No other structures are known to exist within the area of potential subsidence."

Renewable resource lands within the permit and adjacent areas are shown on Plate 4-1 and discussed in Section 411 of this M&RP. The area of potential subsidence is currently used for livestock grazing and wildlife habitat, with limited timber production on adjacent lands to the east of Dugout Canyon (see Section 411.120). Hydrologic resources in the area are discussed in Chapter 7 of this M&RP. Information regarding baseline groundwater conditions is provided in Section 724.100.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Subsidence control plan.

Analysis:

Since the survey listed the structures and renewable resources that have the potential for subsidence damage the Applicant is required by R645-301-525.100 to develop a subsidence control plan.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Mining Methods

Analysis:

The Applicant states in Section 523 and Section 525.100 that the room-and-pillar method will be used. Entries, haulage routes and airways will be protected by leaving pillars. Both primary and secondary mining will occur in the panels. The size, sequence, and timing for the development of the underground workings are shown on Plate 5-5. The Division has enough information about mining methods to understand where subsidence will occur. The Applicant has met the requirements of R645-301-525.110.

The Division was informed that the Applicant wants to use longwall methods in the future. If the Applicant wants to switch to longwall mining by must amend their subsidence control plan.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Physical Conditions Affecting Subsidence

Analysis:

The Applicant provides a detailed description of the physical conditions that influence subsidence in Chapter 6. The geologic setting of the Dugout Mine is similar to take of the Soldier Canyon Mine and others in the area. Subsidence has not caused major problems in the area and the Division has no reason to assume that subsidence at the Dugout Mine will be different. The Applicant has met the requirements of R645-301-525.120.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Subsidence Control Measures

Analysis:

The main subsidence control method is to conduct mining away from important structures in the permit area. The mine's surface facilities and county road are the major structures in the permit and adjacent areas that need subsidence protection. The county road and surface facilities are outside the subsidence zone and damage to those structures is unlikely. See Plate 5-5. The Applicant has met the requirements of R645-301-525.130.

There are raptor nests in the area scheduled to be subsided. Information on the raptor nests and the protective measures is discussed in Section 333.300 of the PAP. The Division's analysis of the raptor protection plan is given in the biology section of this TA. Approval of the subsidence control plan is dependent upon approval of the raptor protection plan.

Findings:

The Applicant has not yet met the minimum regulatory requirements of this section because the raptor protection plan has not been approved by the Division. Once the Division approves the raptor protection program then the Applicant will have met the requirements of this section.

Subsidence Monitoring

Analysis:

The Applicant will monitor subsidence with annual terrestrial surveys, and aerial surveys when needed. Other mines in the area use similar subsidence monitoring programs. The results of those programs have met the Division's requirements.

The subsidence monitoring stations give the Division information about the settlement that occurs after mining, the angle-of-draw and how long subsidence will occur after mining. This information is useful in evaluating future subsidence monitoring activities.

Terrestrial surveys are the best method for finding subsidence damage. The Applicant should inspect important area such as roads and springs periodically to decide if any subsidence damage has occurred.

The Applicant has established many control points within the permit and nearby areas to help in subsidence surveys (see Plate 5-5). Coordinates and elevations of these control points (as established in January 1984) are provided in Table 5-2. The control points consist of traverse monuments, benchmark monuments, and survey stations (as indicated on Plate 5-5) which the Applicant has constructed generally as follows:

Traverse and Benchmark Monuments - These monuments are constructed with a 3¼-inch diameter tap-on convex cap with a center punch mark and a 5-foot long center rod. The center rod has been empaled in a 5.5- to 6-foot deep poured concrete casing of

approximately 10 inches in diameter. Where rock was encountered before the required depth, the rock was broken with a stone rod and an anchor point was grouted into the rock using a concrete patching material. Alternatively, monuments in rock were emplaced as described below ("Rock Monuments and Stations"). The diameter of the upper portion of the monument pour was enlarged to 1.0 to 1.5 feet. Concrete was emplaced in a continuous pour.

Survey Stations - These stations consist of No. 5 rebar rods with a length of 5 feet. Each rebar has been fitted with a 2-inch diameter aluminum cap which has a plastic insert designed to secure the cap to the rod. The caps are plain with a center punch mark and a concave label across the top. Where survey stations are installed in boulders or rock which did not allow the use of a 5-foot length of rebar, they were installed as indicated below ("Rock Monuments and Stations").

Rock Monuments and Stations - Where survey monuments and stations are established in boulders and rock which does not allow the installation of a 5-foot long rod in a concrete casing, these monuments consist of an aluminum alloy convex marker with a center punch and concave label. They are secured by drilling a ¾-inch diameter hole to a depth of approximately 3 inches and installing the cap in a concrete grout mixture. This product can be obtained from any concrete products center.

The Applicant will install future monuments and stations required for proper survey controls as described above. Since geologic and mining uncertainties often force a change in planned mining sequences, the Applicant may install future control points only after the mine panels are in their development phase.

The Applicant will carry out subsidence monitoring annually and will entail direct ground surveys and visual surveys of the permit area. The major concerns of the subsidence monitoring will be the renewable resources, including perennial streams and springs. The methods used for monitoring are ground surveys of monuments and visual surveys of areas surrounding monitored seeps, springs, and streams during water monitoring or any other surface activities.

Future surveys will concentrate on areas that the Applicant has mined in the past or anticipates mining within the upcoming year. Therefore, the Applicant may expand the survey area each progressive year.

Annual resurveys of the mine permit area will produce vertical control at the same sites as the previous year. The Applicant will monitor each monument annually while they are mining the area underlying the site or is still potentially subsiding. The subsiding monuments that show no change for two consecutive years will be considered stable and omitted from future annual surveys. If the Applicant anticipates additional mining within the stable areas occurs, these areas will again be added to the annual surveys.

Besides the ground surveys, the Applicant will include aerial photogrammetric methods in the surveys when the areas become too large to handle with ground surveys feasiblely. This method may be added to enhance the ground surveys and to cover larger areas as the mine expands. The Applicant will make visual checks for subsidence during all surface activities, especially during water monitoring activities. These visual surveys will detect surface irregularities, and surface cracks.

Each year, the Applicant will send a subsidence monitoring report to the Division. This report will include dates of surveys, a description of the methodology used, and results obtained. This report will also include changes in the monitoring plan that the Applicant may make due to economic conditions or technical advancement in subsidence monitoring.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Performance Standards for Subsidence Control.

Analysis:

The Applicant states in Section 525.200 of the PAP they do not anticipate that subsidence damage to surface resources. However, should material damage occur, SCM will correct any material damage to the extent technologically and economically feasible. In addition, SCM will notify the Division of any slide, rock fall, or other disturbance caused by subsidence that will affect the environment. The Applicant has met the requirements of R645-301-525.170.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

SLIDES AND OTHER DAMAGE

Analysis:

In Section 515.100 of the PAP the Applicant states:

> "If a slide occurs within the permit area that may have a potential adverse effect on the public, property, health, safety, or the environment, SCM will notify the Division by the fastest available means following discovery of the slide and will comply with any remedial measures required by the Division."

The Applicant has met the minimum requirements of R645-301-515.100 by including a commitment to report slides.

Findings

The Applicant has met the minimum regulatory requirements of R645-301-515.100 for reporting and responding to slides.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Road Systems

Analysis:

R645-301-527.100, requires the Applicant to classify each road in the permit area as either primary or ancillary. All roads in the disturbed area are classified as primary and will meet primary road standards.

Several dirt roads, Jeep trail and wheel tracks are in the permit area. The Applicant will use some of those roads for access to monitoring stations and data collection sites. While site monitoring and data collections are considered mining and reclamation activities the Division considers those to have negligible environmental impacts and will not require such roads to be classified. Therefore the Division will not require the Applicant to classify those roads provided they are not used for mining and reclamation activities except access to monitoring station and data collection sites.

If the dirt roads, Jeep trails and wheel tracks are classified as ancillary roads then they must be reclaimed. The Applicant owns the land and wants to retain the roads for the post mining land use. If the dirt roads, Jeep trails and wheel tracks are classified as primary roads then the Applicant would have to bring those roads up to primary road standards. Bringing the dirt roads, Jeeps trails and wheel tracks up to primary road standards would be expensive and provide negligible environmental protection.

Several mines in Utah have dirt roads, Jeep trails and wheel tracks used for access to monitoring and data collection sites. The Division does not require those roads be classified since they are used only for monitoring and data collection activities.

The Division will not require the Applicant to classify the dirt roads, Jeep trails and wheel tracks that are found outside the disturbed area boundaries provided the roads are not used for mining and reclamation activities except access to monitoring and data collection sites. If the dirt roads, Jeep trails or wheel tracks are used for any mining or reclamation activities except access to monitoring and data collection sites the Applicant must then classify the road.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Plans and drawings.

Analysis:

(1) The Applicant must include a map, appropriate cross sections, design drawings, and specifications for road widths, gradients, surfacing materials, cuts, fill embankments, culverts, bridges, drainage ditches, low-water crossings, and drainage structures. In Section 527.200 of the PAP the Applicant states:

Road Specifications. Cross sections of roads that will be used or maintained by SCM are provided in Figure 5-2. Information regarding road drainage structures is presented in Chapter 7.

The road that will access the mine is a county road that extends from the Soldier Creek Road (Utah Highway 53)to the mine (a distance of approximately 7.5 miles). Carbon County is currently planning the upgrade of this road to handle the increased traffic that is anticipated as a result of mine operation. The County will construct the upgrade and charge SCM a toll for use of the road.

As currently anticipated, primary roads within the proposed surface facilities will have a 16-foot finished width. As indicated in Figure 5-2, the roads will consist of 2 to 4 inches of granular material, asphalt, or concrete on a compacted, in-place subgrade. The surface of the roads will generally be crowned in the middle and slope at angles of 1% to 2% for drainage. The grade of the disturbed area primary roads will vary, but should not exceed 10%. Specifically, the primary haul road (see Plate 5-2A) will be constructed at a grade of approximately 8%, the primary storage pad roads will generally be constructed with an approximate grade of 6%.

R645-301-527.200 requires the Applicant to submit detailed description of each road. The description will include a map, appropriate cross sections and specification such as: road width, road gradient, road surface, road cut fill embankment, drainage ditch and drainage structures. The Division does not have any design specifications. The plans were approved by a registered engineer and the Division considers that certification adequate.

(2) The Applicant does not propose: to locate a road in a channel of an intermittent or perennial steam, ford a perennial or intermittent stream, low water crossing. Those items have not been specifically addressed.

(3) Contain a description of measures to be taken to obtain approval of the Division for alteration or relocation of a natural stream channel;

In Section 527.200 Drainage way Alterations the Applicant states:

Coal haulage trucks will enter and leave the surface facilities area in the loop shown on Plate 5-2A immediately upstream from the sediment pond. Culverting of the stream will allow a sufficient turning angle for the coal trucks to access and safely maneuver in this area.

The surface facilities at the Dugout Canyon Mine have been designed to adequately control sediment which is generated from those facilities. However, as indicated in Section 521.100 and Plate 5-2C of this M&RP, past mining at the site has resulted in previous disturbance of the surface area. As a result, several areas along the banks of Dugout Creek which would otherwise not be disturbed by SCM (if the Dugout Creek culvert was not installed) contain overcast, disturbed soils which will continue to erode into Dugout Creek (see, particularly the area of "OB" soils noted on Plate 2-2). Culverting of the creek will protect it from this sediment as well as from wind-blown coal fines which could otherwise be transported to the stream throughout its length within the disturbed area.

The mine surface facilities will be constructed in a narrow canyon, not dissimilar to conditions at

Canyon Fuel operations at the SUFCO and Soldier Canyon Mines. Surface storage and parking requirements at the mine site will be as follows:....

A final advantage of installing the Dugout Creek culvert throughout the disturbed area is the improved safety for surface operations that the culvert will afford. In several areas of the site the embankments into the stream have been over steepened by past activities, with vertical slopes present in selected areas where deep down cutting has occurred from past blockages of an old culvert at the site. Installation of the Dugout Creek culvert will eliminate the safety hazard associated with most of these steep slopes.

R645-301-358.400 requires that coal mining and reclamation operations be conducted in a manner that "will avoid disturbance to, enhance where practicable, restore, OR replace wetlands and riparian vegetation along rivers and streams..." (emphasis added). Installation of culverts DC-1 and DC-2 can unfortunately not be accomplished in a manner that will avoid disturbance to the riparian vegetation along Dugout Creek. However, as noted in Section 322.220 of this M&RP, the lost riparian vegetation will be replaced within the Dugout Creek watershed during the operational period at a ration of three feet of replacement to every on foot of lost vegetation. This action will also immediately enhance the riparian vegetation in the areas where the mitigation is implemented.

Furthermore, during reclamation of the site, the riparian vegetation within the disturbed area will be both enhanced and restored. Enhancement of the riparian vegetation will be facilitated through the construction of reclaimed Dugout Creek channels which, as indicated in Section 762.100 of this M&RP, have been specifically to improve the geomorphological stability of the stream. By increasing this stability, the riparian vegetation will be enhanced and restored along the stream to condition which more closely mimics that which probably existed prior to disturbance of the site. Hence, through installation of culverts DC-1 and CD-2, the requirements of R645-301-358.400 will be met by immediately replacing and enhancing riparian vegetation in the Dugout Canyon watershed, and by ultimately (upon reclamation) restoring the riparian vegetation within the disturbed area. The enhancement, restoration, and replacement activities will result in an improvement of the riparian system to a condition which greatly exceeds that which is present prior to installation of the culverts.

The Division finds that there is sufficient justification placing the culvert cross section U-U' to cross section Q-Q' on Dugout Creek and the tributary into Dugout Creek. The Division finds that the culvert will improve safety, allow additional storage space and prevent materials, such as coal fines, from entering Dugout Creek.

The justification for the culvert from cross section K-K' to U-U' is weaker. The culvert will not provide significant amounts of storage space or decrease stream contamination. The culvert is not needed to widen or straighten the road. The safety benefits of the culvert in this section would be minor.

The Division is concern how the Dugout Creek will be reclaimed from cross section K-K' to U-U'. The Applicant does not give a detailed description of how reclamation will be accomplished. In the reclamation plan the Applicant gives a general description of what type of equipment will be used and what the final surface configuration.

The two main concerns about placing the culvert in the lower section of Dugout Creek are the riparian areas are important to wildlife and the area will be hard to reclaim. The Division concerns about not placing the culvert in the lower section of Dugout Creek are the culvert will protect the creek from mining activities such as snow removal, disturbing the area will not cause major environmental problems. While the Division does have concerns about disturbing the lower section of Dugout Creek, we do feel that the benefits slightly out weight the negative impacts.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Road Specifications.

Analysis:

Cross sections and profiles of roads that will be used or maintained by SCM are provided in Figure 5-2. Information regarding road drainage structures is presented in Chapter 7.

The road which will access the mine is a county road that extends from the Soldier Creek Road (Utah Highway 53)to the mine (a distance of approximately 7.5 miles). Carbon County is currently planning the upgrade of this road to handle the increased traffic which is anticipated as a result of mine operation. The County will construct the upgrade and charge SCM a toll for use of the road.

As currently anticipated, primary roads within the proposed surface facilities will have a 16-foot finished width. As indicated in Figure 5-2, the roads will consist of 2 to 4 inches of granular material, asphalt, or concrete on a compacted, in-place subgrade. The surface of the roads will generally be crowned in the middle and slope at angles of 1% to 2% for drainage. The grade of the disturbed area primary roads will vary, but should not exceed 10%.

The remaining roads within the permit area that may be used by SCM are private roads that are owned and maintained by Canyon Fuel Company, LLC. These roads are private, unimproved dirt roads and will be used for access to the lease area surfaces for the collection of monitoring data (environmental and subsidence data) as well as other uses deemed appropriate by the landowner.

The Applicant stated that the cross sections for the roads are on Plate 2. They do not include plate 2 in the PAP. However, Figure 5-2 shows road cross sections. The road cross sections show the drainage ditches, road surface and embankments.

The Applicant did not include cross sections for the dirt roads in the PAP. Since the dirt roads are existing, structures the Applicant does not have to provide design drawings. Cross section that show that the dirt roads meet they must include the performance standards in the PAP.

In Section 542.600 of the PAP the Applicant states:

All roads not to be retained for an approved postmining land use will be reclaimed immediately after they are no longer needed for mining and reclamation operations. Roads which will be retained through

the disturbed area for access to private land within the permit area are noted on Plate 5-3. All remaining roads within the disturbed area will be reclaimed. All roads to be reclaimed will be graded and/or backfilled as indicated above. Topsoil will be applied to the regraded surfaces and the area will be revegetated as discussed in Chapter 2 and 3 respectively.

In Section 534 the Applicant states:

"534.100 Location, Design, Construction, Reconstruction, Use, Maintenance, and Reclamation

Control of Damage to Public or Private Property. All roads used by SCM have been or will be designed according to applicable county and State standards. By designing according to these standards, damage to public or private property will be minimized.

In Section 534.300 of the PAP the Applicant describes the county access road and give little information about the roads in the disturbed areas. Most of the information about road specifications is given in Section 527 of the PAP. Since the county road is not permitted, the Applicant should reduce references to the county roads and technical specifications about it. The Applicant should give cross references in Section 534.300 that tell that most of the road specifications and designs are presented in Section 527 of the PAP.

Findings:

The Applicant has met the minimum regulatory requirements of this section regarding supplying technical information. The information is presented in a way that is not clear and concise (R645-301-121.200). The Applicant should give cross references in Section 534.300 about the road specification in Section 527. The Applicant should remove all unnecessary information about the county road.

Road Surfacing.

Analysis:

In Section 527.200 of the PAP the Applicant states:

> As indicated in Figure 5-2, the roads will consist of 2 to 4 inches of granular material, asphalt, or concrete on a compacted, in-place subgrade.

The proposed road surfacing is similar to that found at other mines. Those surfaces are adequate to handle normal mine traffic. Should the road surface fail then the Applicant is required under R645-534.300 to repair the road surface.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Slope Stability.

Analysis:

The stability of the county road embankment has been evaluated where it passes next to the

sedimentation pond. Results of this evaluation are presented in Appendix 5-4. This analysis shows that the access road embankment has a minimum safety factor of 4.2 under static unsaturated conditions and 2.1 under static saturated conditions. These values exceed the safety factor of 1.3 required by R645-301-534.130.

The Division analyzed the slope stability of the road embankment in cross section Z-Z' as shown on Plate 5-2B. The Division determined that the safety factor for the slope was less than one under saturated conditions. The Division informed the Applicant of the stability problem and they submitted and analysis of the slope.

The Applicant believes that the entire slope would not become saturated. They believe that the groundwater surface would always be below the ground surface. The Applicant supports this belief by pointout that the operational slopes will be similar to the existing slope that have not failed.

The Applicant believes that the operational slopes will not become saturated, except for a few inches around the surface. They state that the soils will be compacted and that the permability of the soils will be greatly reduced. Total slope saturation would be impossible.

The Applicant's worst case senerio is for the sediment pond at the base of the slope in cross section Z-Z' was full and that the water table was at an equal elevation. The Applicant analized the slope under their worst case senerio and determined that the slope had a safety factor of 1.4. The Division analized the slope under the same conditions and determine the safety factor to be 1.24.

The Division analized the slope under the condition that the top 3 feet of soil had become saturated. Under that condition the slope failed. The failure surface was is the the saturated zone. The intial failure would be confined to the first few feet of the outslope.

The key factor to slope stability is soil saturation. The Applicant claims that only the top few inches of the surface would ever become saturated due to rain or snow melt. The Applicant's analysis shows that even under high groundwater conditions the slope would be stable. The Division does not believe that in a wet year only the top few inches of the slope would be saturated. The Division analysis of the slope shows that under high groundwater condition the safety factor for the slope would be less than 1.3, the minimum requirement.

Since failure will only occur when the soils are saturated one way of preventing slope failure is to develop and opertions plan that would minimize water infiltration near the slopes in cross sections Z-Z' and AA-AA'. The groundwater level at the slope's base could be reduced by having a maintanence program that keeps the water level in the pond at a minimum.

All other roads in the permit area exist on private land owned by Sage Point Coal Company (the parent company of SCM). The Applicant anticipates no stability problems for these roads. Since those roads will not be used for mining or reclamation activities, the Division has not jurisdiction over such roads.

Findings:

The Applicant has not met the requirements of R645-301-534.130. Before road construction the Applicant must demonstrate that the embankment in and around cross section Z-Z' has a safety factor of

at least 1.3 for saturated soils.

Environmental Protection and Safety

Analysis:

R645-301-534.200 requires that all roads be constructed to ensure environmental protection and safety appropriate for their planned duration and use. The Division does not have specific design criteria for roads but may establish design criteria if needed. The Division has not specified any design criteria for the road in disturbed area. Such roads have been design by a registered professional engineer.

Findings:

The Applicant has met the requirements of R645-301-534.200.

Primary Roads

Analysis:

All primary road designs have been certified by a registered professional engineer. All roads in the disturbed area are considered primary.

In Section 534.300, Primary Roads, the Applicant describes the county road that will be used to access the mine site. The Applicant gives little information about their primary roads in the disturbed area. Most of the information about those roads is presented in Section 527. To avoid confusion the Applicant should either address all relevant the R645-301-534.300 rules in Section 534.300 of the PAP or cross reference the information in Section 527.

Findings:

The Applicant met the minimum regulatory requirements of describing the technical issues of the primary roads. The Applicant did not meet the requirement of R645-121.200 because the information about the primary roads is not given or cross referenced in Section 534.300 of the PAP. The Permit should be issued on the stipulation that the Applicant provide information about the primary road in Section 534.300 of the PAP or cross reference the information.

Road Alignment.

Analysis:

The Applicant will not realign any public road. The realignment and upgrading of the county road will be done by the county. The Division will not be permitting any public road associated with the Dugout Mine.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Road Surfacing.

Analysis:

In Section 527.200 of the PAP the Applicant states:

> As currently anticipated, primary roads within the proposed surface facilities will have a 16 foot finished width. As indicated in Figure 5-2, the roads will consist of 2 to 4 inches of granular material, asphalt, or concrete on a compacted, in-place subgrade. The surface of the roads will generally be crowned in the middle and slope at angles of 1 to 2 percent for drainage.

The Applicant gave the Division the specifications for the road surface. The Division does not have specific requirements for road surfaces. The Division usually relies on the design specification of the engineer who designed the road. The Division has no reason to believe that the road designs are inadequate.

Findings:

The Applicant has met the minimum technical regulatory requirements of this section. To avoid confusion the Applicant should have cross references in Section 534.300 of the PAP about road surfaces (See R645-301-121.300)

Road Maintenance.

Analysis:

The access road will be maintained by Carbon County. The Applicant will maintain all roads in the permit area used for coal mining activities.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Road Culverts.

Analysis:

All culverts along the access road will be designed, installed, and maintained by Carbon County. Culverts to be installed within the surface facilities have been designed in accordance with the hydrologic criteria discussed in Section 742.300. These culverts will be installed in accordance with manufacturers' recommendations to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road.

The main access road is a public road that will be upgraded and maintained by the county. The Division does not permit county roads that are outside the disturbed area.

In Section 542.600 of the PAP the Applicant states:

"All roads not to be retained for an approved postmining land use will be reclaimed immediately after they are no longer needed for mining and reclamation operations. Roads which will be retained through the disturbed area for access to private land within the permit area are noted on Plate 5-3. All roads to be reclaimed will be graded and/or backfilled as indicated above. Topsoil will be applied to the regraded surfaces and the area will be revegetated as discussed in Chapters 2 and 3, respectively."

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Performance standards.

Analysis:

The Applicant has met all the engineering performance standards for primary roads except demonstrating that the embankment has a safety factor of 1.3 or greater. Those engineering stands include:

- Prevent or control damage to public or private property
- Use nonacid- and nontoxic-forming substances in road surfacing
- Maintain all roads to meet the performance standards of this part and any additional criteria specified by the Division. A road damaged by a catastrophic event, such as a flood or earthquake, shall be repaired as soon as is practicable after the damage has occurred.
- The construction or reconstruction of primary roads shall be certified in a report to the Division by a qualified registered professional engineer, or in any State which authorizes land surveyors to certify the construction or reconstruction of primary roads, a qualified registered professional land surveyor, with experience in the design and construction of roads. The report shall indicate that the primary road has been constructed or reconstructed as designed and in accordance with the approved plan;
- Each primary road embankment shall have a minimum static factor of 1.3. The Division may establish engineering design standards for primary roads through the State program approval process, in lieu of engineering tests, to establish compliance with the minimum static safety factor of 1.3 for all embankments;

  The Applicant has not shown that all road embankments will have a minimum static safety factor of 1.3.

- Primary roads shall be surfaced with material approved by the Division as being sufficiently durable for the anticipated volume of traffic and the weight and speed of vehicles using the road.

Findings:

The Applicant has not met the minimum regulatory requirements of this section. The performance issue not adequately addressed in the PAP involve slope stability. That issue is addressed in other section of the TA.

Primary road certification.

Analysis:

The Applicant has provided certified maps and plans for the primary road design as required by R645-301-512.250

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Other Transportation Facilities.

Analysis:

The Applicant states that were will be two material handling conveyors on the surface at the mine site. As noted on Plate 5-2A, the Rock Canyon conveyor will transport coal from the mine to the coal stock pile. The reclaim belt will convey coal from the stock pile (via a reclaim tunnel) to the truck loading bin, from which the coal will be loaded into trucks for off-site transportation. Conveyor widths will range from 42 to 60 inches.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

SPOIL AND WASTE MATERIALS

Noncoal

Analysis:

In Section 528.300 of the PAP the Applicant states:

"Non-coal (non-waste rock) waste generated in the permit area will be temporarily stored in a dumpster to be situated at a convenient location within the disturbed area. This dumpster will be located adjacent to the trailers shown on Plate 5-2A northeast of the coal pile. This waste will be disposed of periodically through Carbon County at a permitted landfill.

Liquid wastes such as oil and solvents will be contained and disposed of or recycled, in accordance with applicable State and Federal regulations, at facilities which are permitted to accept such wastes. Small quantities of such wastes (e.g. resulting from cleanup or small spills, etc.) May be contained onto absorbent pads prior to disposal. In all cases, disposal and/or recycling will be only at sites which are

permitted by appropriate regulatory authorities to accept such waste.

No non-coal (non-waste rock) waste other than durable, non-acid and toxic forming, rock-type construction materials (e.g. cinder block) will be permanently disposed of within the permit area. If such waste is permanently disposed of in the permit area, it will be disposed of underground as outlined in Section 536.500 of this M&RP. If such waste is temporarily stored within the permit area prior to ultimate disposal, it will be stored either in a dumpster of in the temporary waste-rock storage area.

It is currently anticipated that no non-coal waste that is defined as hazardous under 40 CFR 261 will be generated at the mine. If such waste is generated in the future, it will be handled in accordance with the requirements of Subtitle C of the Resource Conservation and Recovery Act and any implementing regulations.

The Applicant committed in Section 528.300 of the PAP to dispose of all non-coal waste in either in state approved landfill or in an on site disposal area. The Applicant has committed to dispose of all non-coal waste in an approved manner.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Coal Mine Waste

Analysis:

The Division defines coal mine waste as coal processing waste and underground development waste. Coal processing waste means earth materials separated from the coal during cleaning, concentrating, or the processing or preparation. In Section 528.300 of the PAP the Applicant states that SCM will not process their coal at the Dugout Canyon Mine beyond crushing and screening. Thus, the Applicant will generate no coal processing waste in the permit area.

The Division defines underground development waste as waste-rock mixtures of coal, shale, claystone, siltstone, limestone, or related materials that are excavated moved, and disposed of from underground workings in connection with underground coal mining and reclamation activities. In Section 528.200 of PAP the Applicant states:

Underground development waste which is generated at the Dugout Canyon Mine will be disposed of either:

- At the approved water-rock disposal facility at the SUFCO Mine; or
- At the approved waste-rock disposal facility at the Skyline Mine

Description of the waste-rock disposal facilities at the SUFCO Mine and the Skyline Mine are provided in their respective M&RP's. A discussion of disposal of development waste in the underground workings of the Dugout Canyon Mine is provided in Section 536.500 of this M&RP. The Division approved the disposal of waste rock material generated at the Dugout Mine to be placed in the waste rock disposal

facilities at both the Skyline and SUFCO mines.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Refuse piles.

Analysis:

In Section 513.400 of the PAP the Applicant states:

"Waste rock generated from the Dugout Canyon Mine may be temporarily stored on the surface of the mine site at the location shown on Plate 5-2A. This storage will be for a short period of time prior to ultimate disposal either underground or in the waste-rock disposal areas associated with the SUFCo and/or Skyline Mines. Waste rock will be disposed of after a truck load of material accumulates or every 3 months, whichever is shorter. The short-term nature of this storage precludes the need for special precautions related to spontaneous combustion of the stored materials. Runoff from the stored materials will drain to the site sedimentation pond.

In Section 536 of the PAP the Applicant states:

> The coal mine waste generated from the Dugout Canyon Mine may be temporarily stored on the surface of the Dugout Canyon Mine facilities at the location shown of Plate 5-2A prior to ultimate disposal. Coal mine waste which is stored at the mine site will be removed from the temporary waste rock storage area and placed in its final disposal area at least once each calender year. Runoff from the temporary waste rock storage area will report to the mine site sedimentation pond and be treated accordingly. During the period of temporary storage, berms will be installed around the temporary storage area to contain and direct runoff to ditch DD-2a (see Plate 7-5). The berms around the temporary waste rock storage area ate not noted on Plate 7-5 or elsewhere since these will be located as necessary, depending upon the extent of the waste rock storage.

The Applicant states in Section 513.400 that the material in the temporary storage site will be removed every three months or less.

Findings:

The Applicant met the requirements of R645-301-121.200.

Impounding structures

Analysis:

In Section 533 of the PAP the Applicant states:

> "The only impoundment with an embankment that will be constructed, used, or maintained by CFC will be the sedimentation pond at the mine surface facilities (the remaining two impoundments noted on Plate 7-5 will be totally incised). A slope-stability analysis which was performed on this pond embankment is provided in Appendix 5-4. According to this analysis, the minimum safety factors for the sedimentation pond embankment are 4.2 under static unsaturated conditions, 2.1 under static saturated conditions, and 1.6 under seismic saturated conditions. All analyses were performed assuming that the pond was full to its maximum design depth. These safety factors exceed the minimum requirements of R645-301-533.100.

The Applicant did not address the stability of the two incised ponds. The Division looked at the cross sections of the ponds and saw that the width of the embankment is more than 5 times the height. That ratio is large enough to ensure that the ponds will be stable.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Foundation Considerations

Analysis:

Soils investigations have been conducted at the site of the proposed surface facilities. Results of these investigations are presented in Chapter 2 and Appendix 5-4 of this M&RP. During these investigations, foundation conditions in the area of the proposed sedimentation pond were evaluated. Based on these investigations, no conditions were encountered which suggested that the foundations upon which the pond would be constructed would be unstable. The slope-stability analyses presented in Appendix 5-4 indicate that the pond foundations will also be stable under operating conditions.

Prior to construction of the sedimentation pond, all vegetative matter and topsoil will be removed from the foundation area. Detailed cross sections of the sedimentation pond are presented on Plate 7-4 of this M&RP.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Slope Protection

Analysis:

The outslopes and inslopes of the sedimentation pond will be revegetated following construction to minimize surface erosion and protect the embankments against sudden drawdown. The seed mix to be used for this revegetation effort is described in Section 341.200 of this M&RP.

In the event of a storm, rapid drawdown in the sedimentation pond would be restricted to the

vertical distance between the spillway and the peak water level, a distance of 0.20 foot (Plate 7-4). Drawdown of this magnitude is not considered significant and, therefore, not of erosional concern.

During normal decant of the sedimentation pond, flow rates (and drawdown) will be controlled. Hence, it is unlikely that this drawdown will cause surface erosion of the embankment face.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Embankment Faces

Analysis:

Embankment inslopes and outslopes will be revegetated following construction of the sedimentation pond, as outlined in Section 533.300. Riprap will also be placed on the upstream face of the embankment near the discharge structure.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Highwalls

Analysis:

No highwalls will be located below the water lines of the sedimentation pond.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

MSHA Criteria

Analysis:

The sedimentation pond does not meet the size criteria of 30 CFR 216(a).

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Pond Operation and Maintenance Plans

Analysis:

The sedimentation pond has been designed in accordance with R645-301-740. Details of these designs, and the requirements for operation and maintenance of the pond, are presented in Chapter 7 of this M&RP.

The sediment pond and the two incised ponds are the only impoundment at the mine site. The sediment pond does not meet the criteria for being classified as an MSHA pond because the structure is less than 20 feet high, does not impound more than 20 acre-feet nor is the sediment pond located where failure would be expected to cause loss of life or serious property damage. Sediment ponds that do not meet the MSHA criteria have fewer stringent design and performance standards.

The designs for the sediment pond are in Appendix 7-8 of the PAP and on Plate 7-4. A registered professional engineer certified the designs and drawing.

The report on the slope stability analysis is in Appendix 5-4. The engineer that did the analysis concluded that the minimum safety factors for the sediment pond embankment are 4.2 under static unsaturated conditions, 2.1 under static saturated conditions and 1.6 under seismic saturated conditions.

Stability during rapid drawdown is discussed in Appendix 5-4 of the PAP. The analysis indicates that the upstream slope of the embankment will be stable and have a safety factor of 1.6. Only the upstream slope was evaluated for stability during rapid drawdown. The Applicant beleives that when rapid drawdown does occur failure will first occur on the upstream slope. The Division agreed with that belief and considered the rapid drawdown analysis adequate.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Burning and Burned Waste Utilization

Analysis:

In Section 528.300 of the PAP the Applicant states:

> If coal mine waste fires occur at the SUFCo and Skyline Mines, they will be controlled in the manner outlined in their respective permits.

Waste rock will only be temporarily stored at the surface of the Dugout Canyon Mine prior to ultimate disposal. If spontaneous combustion of this material does occur, the burning section will be removed from the pile using a backhoe or other appropriate means. The affected waste rock will then be spread so that the material can cool and mixed with soil to extinguish the fire. The extinguished material will then be returned to the waste pile.

The plan to handle burning waste rock is adequate. The plan is similar to those used by other mines and the Abandoned Mines Land Program.

Findings:

The Applicant met the requirements of R645-301-528.323.

Return of coal processing waste to abandoned underground workings.

Analysis:

In Section 528.300 the Applicant states that SCM will not process their coal at the Dugout Canyon Mine beyond crushing and screening. They will generate no coal processing waste on site. The Applicant does not plan on returning coal processing waste to the underground workings. The Applicant has addressed the requirements of R645-301-528.300.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

Excess Spoil

Analysis:

In Section 512.200 of the Pap the Applicant states that they will generate no excess spoil from the permit area. The Applicant has met the minimum regulatory requirements for handling excess spoil.

Findings:

The Applicant has met the minimum regulatory requirements of this section.

HYDROLOGIC DESIGN INFORMATION

Analysis:

Discharges into an Underground Mine

In Section 513.600 of the PAP the Applicant states that no discharges will occur from the surface to mine workings underground.

Findings:

The Applicant has met the minimum regulatory requirements.

Impoundments

Analysis:

- In Section 533.600 of the PAP the Applicant states that the sediment pond does not meet the size

criteria of 30 CFR 216(a).

- Richard White a registered professional engineer certified the designs for the sediment pond.

- The embankment stability study for the sediment pond is in Appendix 5-4. The Applicant has shown that the design had safety factors that exceed 1.3. The Applicant has met the minimum regulatory requirements.

In Section 533.200 of the PAP the Applicant states:

"The Applicant has conducted soil investigations at the site of the proposed surface facilities. Results of these investigations are presented in Chapter 2 and Appendix 5-4 of this M&RP. During these investigations, the Applicant evaluated foundation conditions in the proposed sedimentation pond. Based on these investigations, the Applicant encountered no conditions which suggested that the pond's foundations would be unstable. The slope-stability analysis presented in Appendix 5-4 shows that the pond foundations will also be stable under operating conditions.

Prior to construction of the sedimentation pond, all vegetative matter and topsoil will be removed from the foundation area. Detailed cross sections of the sedimentation pond are presented on Plate 7-4 of this M&RP."

The Applicant has met the minimum requirement of R645-301-533.200 to R645-301-533.220. The commitment in the PAP restates the requirement of these regulations.

In Section 533.300 of the PAP the Applicant states:

"The outslopes and inslopes of the sedimentation pond will be revegetated following construction to minimize surface erosion and protect the embankments against sudden drawdown."

In Appendix 5-4 the Applicant shows that the embankment will be stable under rapid drawdown conditions.

In Section 533.500 of the PAP the Applicant states that no highwalls are below the water lines of the sediment pond. The Division agreed with that statement and concluded that the Applicant has met the minimum requirements of R645-301- 533.500.

In Section 514.300 of the PAP the Applicant states that:

"Regular inspections will be made during construction of the sedimentation pond as well as upon completion of construction. These inspections will be made by or under the direction of a registered professional engineer experienced in the construction of similar earth and water structures."

Annual inspections of the sedimentation pond will continue until removal of the structure or

release of the performance bond. A certified report of inspection will be prepared by a qualified registered professional engineer and submitted to the Division within two weeks after each inspection. The report will discuss any appearances of instability, structural weakness or other hazardous conditions, depth and elevation of any impounded waters, existing storage capacity, and existing or required monitoring procedures and instrumentation, and any other aspects of the structure affecting stability. A copy of this report will also be maintained at the mine site.

No impoundments are anticipated within the permit area that are subject to 30 CFR 77.216."

The Applicant has committed to meet the requirements of R645-301-514.311 to R645-301-514.313. Inspections will be done during the critical phases of construction and copies of the reports will be available on site. A qualified registered professional engineer will inspect the pond annually.

Findings:

The Applicant has met the minimum regulatory requirements.

Ponds, Impoundments, Banks, Dams, and Embankments

Analysis:

- Plate 7-4 shows the sediment pond design. The plan was certified by Richard White, a registered professional engineer. The Applicant will excavate most of the pond. Part of the pond will consist of an embankment that is approximately two feet high. They did not include the specifications for the embankment in the plan. The Applicant needs to give the Division written specification for the construction of the pond. See R645-301-533.700.

- The Applicant gave the Division certified maps, and cross section of the sediment pond. Plate 7-4 shows detailed information about the sediment pond. Plate 5-2A and 5-2B also have information about the sediment pond.

- Plate 5-5 shows the areas where the Applicants anticipate subsidence. On that plate the sediment pond is outside the area of potential subsidence.

The Division has enough information to evaluate the stability of the sediment pond. The Division has determined that the pond will be stable and meet the requirements of R645-301-533. The Division does not have enough information about the construction of the sediment pond (R645-301-533.700). Prior to construction the Applicant must give the Division detailed construction specifications.

Findings:

The Applicant did not meet the minimum regulatory requirements of R645-301-533.700 because they did not give the Division detail plans for the construction of the sediment pond. Since that information is not needed until construction of the sediment begins, the Division should approve this portion of the PAP with the stipulation that prior to construction the Applicant will give the Division the contract specifications for the sediment pond.

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Analysis:

Plate 5-2A shows the location of the surface facilities. The Applicant listed the surface facilities in Sections 521.100 subsection Surface Facilities in the PAP.

Findings:

The Applicant has met the minimum regulatory requirements.

Support Facilities

Analysis:

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

- Prevents or controls erosion and siltation, water pollution, and damage to public or private property;
- To the extent possible, using the best technology currently available, minimizes damage to fish, wildlife, and related environmental values; and
- Minimizes additional contributions of suspended solids to stream flow or runoff outside the permit area.

All support facilities will be removed following mining in accordance with the reclamation plan discussed in Section 540 of this M&RP.

Findings:

The Applicant has met the minimum regulatory requirements.

Water Pollution Control Facilities

Analysis:

Water pollution control facilities at the Dugout Canyon Mine consist of the sedimentation pond, the appurtenant structures associated with the sedimentation pond, and the sewage disposal leach field. All water pollution control facilities will be removed following mining in accordance with the reclamation plan discussed in Section 540 of this M&RP.

The sedimentation pond and appurtenant structures will be constructed as discussed in Chapter 7 and will be used and maintained as discussed in Section 533.700. Sanitary sewage will be routed by gravity through a pipeline from the mine surface facility to the leach field at the location shown on Plate 5-2A. The sewage facilities were designed for a projected total employment of 150 persons. An operational permit has

been applied for with the Utah Department of Health for use of the leach field.

Findings:

The Applicant met the minimum requirements of R645-301-526 regarding support facilities.

SIGNS AND MARKERS

Analysis:

Mine and Permit Identification Signs

Analysis:

A mine and permit identification sign will be displayed at the point where the county road ends and the private road forks into the surface-facilities area. This sign will be a design that can be easily seen and read, will be made of durable material, will conform to local regulations, and will be maintained until after the release of all bonds for the permit area. The sign will contain the following information:

- Mine name,
- Company name,
- Company address and telephone number,
- MSHA identification number, and
- Permanent program permit identification number as obtained from the Division.

The Applicant committed to place the mine and permit identification signs at all entrances that are accessible from a public road.

Findings:

The Applicant has met the minimum regulatory requirements.

Perimeter Markers

Analysis:

The perimeter of all areas affected by surface operations or facilities will be clearly marked before beginning mining activities. The markers will be a design that can be easily seen and read, will be made of durable material, will conform to local regulations, and will be maintained until after the release of all bonds for the permit area. Figure 5-2

Findings:

The Applicant has met the minimum regulatory requirements.

Buffer Zone Markers

Analysis:

Stream buffer zone markers will be placed adjacent to Dugout Creek within the disturbed area noted on Plate 5-2A. Each buffer zone marker will be a design that can be easily seen and read, will be made of durable material, will conform to local regulations, and will be maintained until after the release of all bonds for the permit area.

Findings:

The Applicant has met the minimum regulatory requirements.

Topsoil Markers

Analysis:

Markers will be placed on all topsoil stockpiles. These markers will be a design that can be easily seen and read, will be made of durable material, will conform to local regulations, and will be maintained until after the release of all bonds for the permit area.

Findings:

The Applicant has met the requirements of this section.

USE OF EXPLOSIVES

Analysis:

The Applicant states that no surface blasting will occur on the surface. Many underground coal mines in Utah do not have regular surface blasting activities. The Division does not require those mine to address the blasting and explosives regulation in detail. If the need for surface blasting should occur, the Division will require the Applicant to submit a detailed blasting plan.

Findings:

The Applicant has met the minimum regulatory requirement for the R645-301-524 regulations.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Analysis:

The Applicant has supplied the Division with maps and cross sections that show the permit area and the disturbed areas. The Division reviewed the maps and cross section. Most of the analysis was done in the sections of the TA the deal with a specific map or cross section feature or requirement.

The only map that the Division finds inadequate is the mine map. The map does not contain enough details. The Division needed to have a detailed mine map similar to the mine plans supplied to MSHA. The Applicant said that detailed mine maps have not been developed but when they are the Division will receive a copy.

Findings:

The Applicant has not met the minimum regulatory requirements of R645-301-521.140 because they did not supply the Division with detailed mine maps. The Applicant needs to supply the Division with a detailed mine map similar to those submitted to MSHA. The Division should approve the permit with regards to mine maps but stipulate that prior to mining the Applicant give the Division a detailed mine map that is similar to the MSHA maps.

Certification

Analysis:

The Division has certified verifications that all maps listed under R645-301-512 will be completed when we have approved those maps.

Findings:

The findings for map certification will be done when we have approved the maps.