



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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May 27, 1992

TO: Daron Haddock, Permit Supervisor

FROM: Rick P. Summers, Senior Hydrologist 

RE: Review Coal Conveyor Revision (received December 10, 1991), Utah Fuel Company, Skyline Mine, ACT/007/005, Folder 2, Carbon County, Utah

SUMMARY

The proposal to install a coal conveyor from the minesite to the railroad loadout at the Skyline Mine consists of installation of approximately 173 support towers with attendant loading and dumping stations at each terminus of the conveyor. The conveyor will cross Eccles Creek (a perennial stream) at one location near the current road crossing to the railroad loadout. The proposal states the conveyor will be a pipe belt system that will not require transfer points and will totally enclose the coal within the conveyor system (Section 3.2.3, Pg. 3-20A). The loading and unloading facilities are to be totally enclosed and served with dust collectors. The following technical analysis details the proposal. Conditional approval can be given for the deficiencies noted or the deficiencies can be submitted to the operator to be addressed without approval. The decision can be based on the needs of the operator and scheduling of the construction activities.

TECHNICAL ANALYSIS

R645-301-728

Probable Hydrologic Consequences (PHC) Determination

Applicant's Proposal:

The proposed conveyor is a belt pipe system that totally encloses the transported coal along the conveyor route. A gallery totally encloses the conveyor within the Eccles Creek buffer zone, and a coal spill due to belt failure in this area would be contained within the gallery. Section 3.2.3 of the MRP presents information that estimates the potential maximum coal spill from the belt in the event of conveyor failure would be 19 tons. In terms of hydrologic consequences, the worst case belt failure would occur in the vicinity of an ephemeral channel

during a runoff event. The probability of a spill is minimized using an conveyor maintenance and inspection program, electronic sensing equipment for belt failure detection, and a coal spill removal plan.

Analysis:

The hydrologic consequences of the proposed installation of the conveyor are three-fold: 1) potential sediment increases during the period of active conveyor construction, 2) entrainment of coal fines into the surface water drainage system in the event of conveyor failure and subsequent spill, and 3) changes in air-borne coal fine particulates depositing in drainages. The potential for increased sediment loading during construction of the conveyor has been minimized utilizing timing of construction, alternative sediment controls (berms, silt fence, straw bales), and erosion prevention (revegetation, excelsior matting, mulching). Further, monitoring of Eccles Creek during the construction period will ensure that detection of increased sediment loads and source correction are timely.

The conveyor is proposed to be located within a gallery across the buffer zone of Eccles Creek to ensure that coal spills and air-borne coal fines will not directly enter the stream channel. The operator has proposed a spill mitigation plan that minimizes the expected impacts from a coal spill in the event of conveyor failure (Section 3.2.3, pg. 3-20B). The application states that spills within the drainages (ephemeral) will be removed within two to 4 hours, with the entire spill removed within 24 hours. However, that spill removal plan states "In winter, initial clean up can be done immediately, however, final clean up may have to be postponed until the snow leaves the area". The application does not address control of remaining coal fines to the disturbed area during the period of snowmelt until final clean up can be accomplished.

Currently, coal is transported to the railroad loadout using open coal trucks. The conveyor system is a closed belt system with no transfer stations along the conveyor route. At the terminals of the conveyor, dust collectors will be installed to minimize particulates. The installation of the conveyor will reduce the use of open coal trucking significantly. The system has been designed to minimize potential impacts of increased air-borne particulates.

The proposed conveyor will not adversely affect flooding or streamflow alteration, ground water and surface water availability, and no acid-forming or toxic-forming materials have been identified relative to this proposal.

Compliance:

The application will be compliance when the terms of the following conditions are met:

R645-301-728

- 1) Prior to August 1, 1992, the application must be revised to include a plan and specific measures to be used to contain residual coal spilled during periods of snow cover within the disturbed area. The plan must also provide measures to be used to provide secondary treatment of runoff (in addition to operational alternative sediment control measures) from these areas until final spill removal can be accomplished.
- 2) Prior to June 15, 1992, the application must be revised to state specifically the tower locations (with tower identification labels) to be installed in the vicinity of stream channels and drainages. The application should state specifically the distance from channel center to tower disturbance in feet.

R645-301-730

Operation Plan

Applicant's Proposal:

The proposal states the conveyor will require no transfer stations and will therefore minimize the amount of potential air-borne coal fines to the environment. Dust collectors will be installed at the loading/unloading facilities area (section 4.22, pg. 4-100). The conveyor is equipped with an electronic sensor cord in the belting and electronic sensors every 750 ft. along the route. In event of a belt failure, the application contains a coal spill plan that essentially consists of crew removal of the spill with hand tools and vacuuming of the spill area with a portable "Guzzler" vacuum. Ephemeral drainage spills will be removed within two to four hours with other spills within an estimated 24 hours (Section 3.2.3, Pg. 3-20C).

Analysis:

When condition R645-301-728 is met, the coal spill mitigation plan will minimize the potential impacts to the surface water system due to coal spills.

Compliance:

The applicant's proposal demonstrates compliance with this rule.

R645-301-731.200 Water Monitoring

Applicant's Proposal:

Potential surface water impacts from the conveyor construction and operation are considered to be low to minimal. Existing monitoring stations CS-2, VC-6, CS-6, VC-9 will continue to be monitored during the construction, operational and reclamation phases of the project as per the approved monitoring schedule in the MRP.

Analysis:

The application has not proposed a monitoring plan to demonstrate the water quantity and quality of Eccles Creek will not be adversely affected during conveyor construction. Pursuant to R645-301-731.221, the operator must submit a monitoring plan to monitor the impacts relative to construction of the conveyor on Eccles Creek.

Compliance:

R645-301-731.200

- 1) Prior to initiation of construction, the application must be revised to include a plan to monitor Eccles Creek during periods of construction activity. The plan should include monitoring of total suspended solids, settleable solids and turbidity upstream and downstream from all disturbances. The plan should propose a schedule for the monitoring, analysis, and submittal of reports to the Division. The plan should also commit to maintaining monitoring records at the site to be available for inspection.

R645-301-731.600 Stream Buffer Zones

Applicant's Proposal:

The proposed conveyor crosses Eccles Creek (a perennial stream) at one location slightly

downstream of the current creek crossing for the access road to the railroad loadout area (Maps 3.2.3-2b and 3.2.3-2d). Four conveyor trusses will need to be constructed within 100 ft. of Eccles Creek to support the conveyor belt and provide unloading facilities (GB2, GB3, GB4, GB5, Plate 3.2.3-3f). The southern truss (GB2) is located adjacent to the disturbance associated with the current loadout area pad. GB3 and GB4 are located approximately 30 ft. and 100 ft. respectively to the north of Eccles Creek. The proposal includes enclosing the conveyor in a gallery where the belt system crosses Highway 264, Eccles Creek and associated buffer zones (Section 3.2.3, Page 3-20A).

Water encountered in the excavations will be pumped from the hole and routed to the loadout sedimentation pond for treatment. Water from placement of the concrete within the holes will be "sucked off, or diverted into a nearby pit and then covered over" (pg. 5, construction plan).

Buffer zone signs are proposed to be placed between the overland conveyor and Eccles Creek (section 3.2.3, pg. 3-42). A separate letter from the applicant to the Division dated April 30, 1992 requested a finding to allow activities to be conducted within the buffer zone pursuant to R645-301-610.

Analysis:

The construction plan states that the excavations done in the Eccles Creek buffer zone (i.e. within 100 ft. of stream channel) will be done from the uphill side and a double semi-circular barrier of silt fence and straw bales will be installed between the disturbance and Eccles Creek. No activity is proposed within or through the stream. No diversion of stream channels are proposed. The plan commits to installation of the sediment control prior to any excavation work. However, the application fails to discuss sediment control for other disturbances within the stream area (e.g. track drill to be walked off access road, pg. 5, construction plan).

The statement that water from concrete holes will be "sucked off, or diverted into a nearby pit and then covered over" cited above relative to concrete water is not definitive. As stated, the fate of the "sucked off" water is not defined. The statement could be read that the water will be "sucked off" to an unknown destination or diverted to a nearby pit. The application must clarify the fate of this water and specify the location for the pit out of the stream buffer zone. The application should address the handling of concrete in more detail. A discussion should be included that plans for concrete handling, spill removal, equipment rinsing, and disposal of waters associated with the concrete preparation, placement, and cleanup operations. The disposal of excess concrete should be addressed. The plan must provide for measures to protect all surface waters from contamination from these sources.

Compliance:

The application will be compliance when the terms of the following conditions are met:

R645-301-731.600:

- 1) Prior to commencement of construction activity in the Eccles Creek Buffer Zone at the loadout area, the application must be revised to depict the tower locations and disturbed area on Map 3.2.1-3. The stream buffer zone for this area should also be depicted and labelled on that same Map. The narrative must be revised within the construction plan to specify sediment control for all areas disturbed in addition to excavations for tower placement (e.g. tower location equipment access).
- 2) Prior to commencement of construction activity in the Eccles Creek buffer zone at the loadout area, the application must be revised to state specifically the fate of water from the placement of concrete. This is to include, but is not limited to: location of disposal pits, a plan for concrete handling, spill removal, equipment rinsing, and disposal of waters associated with the concrete preparation, placement, and cleanup operations. The plan will provide for protection of all surface waters from contamination from these operations.
- 3) Prior to commencement of construction activity in the Eccles Creek buffer zone at the loadout area, the operator must install appropriate signs designating the buffer zone in the area of disturbance. The signs shall clearly identify the area as a stream buffer zone and state that no disturbance is allowed beyond that point.

R645-301-732

Sediment Control

Applicant's Proposal:

The conveyor alignment permit boundary is given in the MRP as 14.27 with 8.92 acres disturbed (Section 3.2.3 pg. 3-21). Drainage from disturbances associated with the terminals of the conveyor at the main mine facilities and railroad loadout area will be treated within existing sedimentation ponds (0.18 disturbed/ 1.17 undisturbed for the mine site area). The application has not addressed the increased acreage for the loadout area. The application proposes to treat the remainder of the conveyor corridor area using alternative sedimentation control measures. These areas are described in Section 3.2, pg. 3-64G collectively as ASCA

areas 8, 9, 10, and 10a. Areas 8, 9, and 10 are located on the existing conveyor bench. ASCA area 10a is the collective disturbance associated with 57 tower installations from the bench to the railroad loadout. Each disturbance is approximately 100 ft². with 16 locations disturbing 500-600 ft². Total area for this area is 0.34 acres.

Section 3.2.6, pg. 3-35A states that sediment control measures will be installed at the completion of each tower excavation. A detailed construction plan submitted further clarifies that sediment control will be placed and functional at the end of each construction day. Tower excavations and activity will not occur with precipitation events sufficient to produce overland flow from the construction area.

Analysis:

The operation has been designed to minimize increased levels of suspended sediments from leaving the permit area. The permit application does not include a diagram of a typical silt fence and straw bale installation to be used in the placement of these sediment controls, nor contain specifics on any increased disturbed area at the loadout area.

Compliance:

The application will be in compliance with this rule when the following conditions are met:

R645-301-732

- 1) Prior to initiation of construction, the application must be revised to include a diagram of a typical silt fence and straw bale installation to be used in the placement of these sediment controls.
- 2) Prior to initiation of construction activities adjacent to the loadout, the application will be revised to depict the increased disturbed area on Map 3.2.1-3 and address the adequacy of the sedimentation pond to treat the increased drainage.
- 3) Prior to June 15, 1992, the application must be revised to discuss the proposed activities and sediment control measures for ASCA area #7 (docking station at the minesite). The narrative in the MRP should be revised to discuss the disturbed area in terms of redisturbance associated with the conveyor construction, the area that will be disturbed for active operations, the area to be contemporaneously reclaimed (e.g. outslope of pad and access road). The details for drainage and

sediment control should be discussed for this area. The submittal should commit to installing a berm (including runoff design and size) along the access/pad outslope, installing silt fencing at the potential overflow areas, and installation of erosion matting and revegetation methods for the area drainage that will not be treated in the existing sedimentation pond.

R645-301-742.300 Diversions

Applicant's Proposal:

The proposal includes construction of one (1) new additional diversion at the mine site docking area. Diversion DD-12 will be constructed to divert flow from area ARA-1B to the sedimentation pond for treatment (Map 3.2.1-1). The diversion is proposed to be designed for the 10 y.r - 24 hr. precipitation event for the discharge from the 0.18 acre disturbed area.

Analysis:

Division analysis of the calculations presented by the applicant indicates the calculation may be in error for the design peak flow and the design of the diversion. However, Division calculations demonstrate that the proposed configuration of DD-12 is adequate to pass the expected flow calculated using Division values. The proposed diversion is considered by the Division to be of minimal size (appx. 1/2 ft. in depth) and design accuracy is inconsequential for approval. To ensure permit clarity and accuracy, the designs should be revised and resubmitted.

Compliance:

R645-301-742.300

- 1) Prior to August 1, 1992, the application should be revised to present correct calculations for the design of DD-12 and clarify the assumptions used in the design. The calculations should be based upon the as-built configuration of the diversion if field modification of the design is necessary. The operator must contact the Division prior to this date to discuss the specifics of the design inadequacies.