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ARCO Coal Company
555 Seventeenth Street
Denver, Colorado 80202
Telephone 303 575 7502

Environmental Services

ACT/015/004

Interim PLAN.
SPECIAL Stipulation No 25

November 17, 1980

Mr. Lee Spencer
Utah Division of Oil, Gas & Mining
1588 West North Temple
Salt Lake City, Utah 84116

Dear Mr. Spencer:

Dan Guy of the Beaver Creek Coal Company, Price, Utah, informed me that you were missing a copy of the Fugitive Dust Control Plan for Huntington Canyon #4 Mine. Therefore, you will find one (1) copy of the plan enclosed.

If you should have any questions concerning the plan, please call me at (303) 575-7506.

Sincerely,

David R. Chenoweth (cdt)

David R. Chenoweth
Environmental Coordinator

DRC/bjs
Enclosure

cc: Dan Guy

RECEIVED
NOV 19 1980
DIVISION OF
OIL, GAS & MINING

FUGITIVE DUST CONTROL PLAN

Huntington Canyon Mine #4

The major pollutant emitted by a coal mine is particulate emissions as fugitive dust. Insignificant emissions of gaseous pollutants are emitted from equipment and vehicle exhausts and have negligible impact on the air. The operations of an underground mine can be divided into two groups: those that occur within the mine itself and those that take place on the surface. Underground activities consist of the actual mining operations and intermittent construction activities. These activities are rigidly controlled to insure the safety of the miners by MSHA and therefore are not a source of significant particulate emissions. The surface activities which could give rise to fugitive dust emissions include coal conveying, transferring, storing, loading and hauling.

The potential for the emission of fugitive dust from coal handling is minimal due to the moisture content of the coal (4.4%) and the water carryover from dust suppression sprays underground. Water sprays are used on the continuous miner to eliminate coal dust at the face, underground. As the coal is loaded onto the mine conveyor, it is again sprayed with water for additional dust suppression. The inherent surface moisture of the coal, together with the added water sprays, agglomerates the small dust particles and reduces the potential for fugitive dust emissions. The water sprays are estimated to provide between 50 and 75 percent control efficiency.

On the surface the coal travels on a covered conveyor and down a covered chute. This cover prevents wind erosion from the conveyor, the major cause of fugitive emissions from conveying. The cover provides an additional estimated 90 percent control efficiency. The coal drops from the covered chute to the stockpile. The water carryover from the in-mine dust suppression sprays will aid in minimizing the fugitive dust emissions. Wind erosion is the major cause of stockpile emissions. The canyon walls may provide some protection from wind erosion by acting as a wind shield or by slowing the wind velocity. Wind erosion does not occur below the threshold velocity of approximately 12 mph. The mean wind velocity (8-10 mph) in the canyon is estimated to be below this threshold velocity for wind erosion. Some fugitive dust will be emitted from coal loading by frontend loaders onto the haul trucks. The limited drop distance (a few feet) from the loader bucket to the truck will help minimize the dust generation.

Cursory emission estimates for fugitive dust emitted from coal handling indicate that the emissions are minor on the order of approximately 2.2 tons/year. These estimates are based on a coal production rate of 800,000 tons/year and applying the controls discussed above. Current state-of-the-art emission factors were utilized in the determination. The coal handling sources can be considered insignificant and would be de minimus under the EPA's revised PSD designations.

The coal haulage over the one mile long, gravel-surfaced Forest Service access road has a greater potential for fugitive dust emission than the coal handling sources. Administrative controls will be applied to prevent the haul trucks from being overloaded and to maintain a strict speed limit (25 mph) within Mill Fork Canyon. These measures will aid in reducing the fugitive dust potential. In addition, the road will be watered as necessary to help alleviate the dust produced by traffic. The frequency of application will be determined by visual observation of the degree of road dustiness. The amount of watering will be based on levels which will control the dust but not make the road muddy or slippery. The control efficiency of road watering is estimated to be between 50 and 78 percent. Similar control efficiencies can be achieved through natural climatic effects; that is rain, snow, frozen surface and damp surface from dew or frost. Cursory estimates of haul road emissions are on the order of 76 tons/year, which should have only minor impact on air quality. Dust suppressant chemicals are not being added to the water because of objections from the Forest Service.

Impact from the fugitive dust emissions is localized close to the source of emission. Most fugitive dust is composed of large sized particles (greater than 10 um) which settle out within about a half of a mile of the emission source. These large particles also do not produce any health effects since they are not inhalable or respirable. Since most light scattering is caused by micron sized particles, little impact on visibility is anticipated from the fugitive dust emissions from the Huntington Canyon #4 Mine. Most of the air quality impact from the mine emissions, if any, will be generally confined to Mill Fork Canyon.

AIR MONITORING PLAN

Huntington Canyon Mine #4

I. NETWORK DESCRIPTION

The Huntington Canyon No. 4 Mine is located in Mill Fork Canyon which is a side canyon off of the main Huntington Canyon. The terrain is mountainous with steep cliffs and deeply incised drainages. There is approximately 2,300 feet of relief with elevations ranging between 7,200 and 9,500 feet. The mine site is reached by a gravel-surfaced Forest Service road about a mile in length extending from Utah State Route #31.

Meteorology

The terrain has a major influence on the local wind patterns. Surface air flow at the Huntington Mine site is typical of a mountain valley system. Down canyon flows occur during the night and early morning, and up canyon flows occur during the day-time hours. In addition to the up and down canyon flows, relatively thin-layered winds (slope winds) flowing up slope during the day and down slope during the night are also present. Superimposed upon this local wind regime are the upper air (synoptic) winds which at times overpower the locally influenced wind. This results in increases in both the speed and duration of either up or down canyon flows.

Based on data collected in Huntington Canyon, up canyon flow commences between 9 and 10 AM and down canyon flow begins between 4 and 7 PM. Seasonal variations do not appreciably effect the diurnal flow pattern, however the wind speed was influenced by these variations. Summer months tend to have the highest average wind speeds and the winter months have the lowest wind speeds. Average wind speeds were observed to be stronger in the morning than in the evening. The average wind speed is between 8 and 10 miles per hour.

Existing Air Quality

General background levels of gaseous contaminants are estimated to be very low as would be expected in an area of low population density and with light industrial activity. The mine site is not expected to be significantly impacted from the Huntington Canyon Power Plant emissions. The annual average background level for total suspended particulates (TSP) for rural central Utah is estimated to be about 20 micrograms per cubic meter (ug/m^3). This has been confirmed by monitoring data measured within Huntington

Canyon which averaged 12 ug/m^3 and 22 ug/m^3 at up canyon and down canyon sites respectively. Most of the particulate matter collected in the canyon area is composed of natural soil dust. The short-term (24-hour) TSP concentrations may exceed the NAAQS at times as a result of windblown dust.

Monitoring Rationale

Particulate matter is the only air pollutant which might degrade air quality at the mine site. The particulate matter is predominantly fugitive dust. Increases in concentrations of other pollutants such as sulfur dioxide, nitrogen oxides, carbon monoxide, and photochemical oxidants are insignificant.

Fugitive dust emissions at the mine site will be minor due to the surface moisture of the coal and the water sprays added underground. These fugitive emissions resulting from coal handling at the mine site are estimated to be less than 10 tons/year. Sources of this magnitude are generally considered insignificant by air regulatory agencies. Secondly, fugitive dusts from materials handling are predominately large particles (greater than 10-30 um) which fall out rapidly due to gravitational settling. These dust particles will not impact air quality to any great degree at distances greater than one-half mile from a source.

In order to monitor the impact of fugitive dust on air quality at the mine site, a dustfall network is proposed. This network will collect and measure settleable particulates which represent a major portion of fugitive dusts. A dust fall network was selected for two reasons:

1. Dustfall is the only standard method for the collection and measurement of fugitive dusts (ASTM-D 1739-70). Other particulate measurement techniques, such as HiVols and dichotomous samplers, sample smaller particle size ranges generally less than 30 um in diameter. HiVols measure total suspended particulate (TSP) matter and dichotomous samplers measure fine or inhalable particulates.

2. Installation and operation of other particulate monitoring devices such as HiVols or dichotomous samplers would result in greater environmental disturbance and siting problems than a dustfall network. At the Huntington Canyon site the narrow canyon and steep sides make it very difficult to properly locate a HiVol sampler. It is recommended that a minimum of 100 feet separate a sampler from a source or unpaved road to prevent undue influence by source or traffic emissions impacting on the monitoring site. Also,

in a forested area it would be difficult to site a HiVol with a clearing of 70 feet or more in every direction without cutting down some trees.

Vehicle accessibility and the availability of electricity for HiVols or dichotomous units would result in increased surface disturbance to cut access roads to the monitoring sites and run electrical cable. In addition, special use permits would in all probability be required from the U.S. Forest Service for the installation of a monitoring station, access road, and power line.

A dustfall network on the other hand will cause little environmental disturbance. It consists of poles set in the ground on to which are attached dustfall collectors. No power is required and access can be by foot. Since samples are collected on a monthly basis, there would be little additional human intrusion compared to the daily or weekly servicing requirements for the other types of particulate monitoring.

II. MONITOR SITE DESCRIPTION

The dustfall network will consist of four dustfall collector sites. The tentative location of these sites is indicated on the map, Figure I. The dustfall collector will be mounted on a pole that has been set in the ground. The height of the collector above the ground will be a minimum of 8 feet. The sampling site will have free exposure so that the sample is collected by gravity settling only. Efforts will be made to select sites that are free from undue local sources of pollution and free from interference from higher objects (i.e. cliffs, trees, etc.). Distances from obstructions and from pollutant sources and roadway will be measured and recorded.

III. MONITOR DESCRIPTION

The collector is an open-topped cylinder with vertical sides and flat bottom. The cylinder will be not less than 6 inches in diameter. The collector is prepared by thoroughly rinsing. Distilled water is placed in the collector so that the level stands at one half the collector depth when the test is started. In cold weather, a sufficient volume of antifreeze (isapropylalcohol) will be mixed in with the distilled water to prevent freezing. The collector samples particulates settling from the atmosphere. The collected material is taken to the laboratory in a closed container for weighing and analysis. The total weight of settable particulates is determined and reported as grams of settable particulates per square meter per month.

IV. SAMPLING PROGRAM DESCRIPTION

The collectors will be positioned in the field for a sampling period of 1 calendar month corrected to 30 days. Allowances of ± 2 days is permissible for setting out or collecting sampling jars or both. Throughout the sampling period, the collectors will be checked regularly (minimum of once every two weeks). The collector liquid should be kept at a reasonable level during the testing period (at least 1 inch of water at all times). Liquid will be added as needed. At the end of each sampling period, the collector jar will be removed and covered and then taken to the laboratory for analysis. A new collector jar will be installed at that time.