0016

File Copy - Kaiser Sunnyside Coal Mine. ACT/007/007 Rt to Jim

United States Department of the Interior
OFFICE OF SURFACE MINING
Reclamation and Enforcement
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202

OFFICE OF THE REGIONAL DIRECTOR

Route to Lee and others for comments. Action on this needs to be taken fairly soon. Jim

ACT/007/007

OCT 27 1980

SK

Lee 11/20

MAW

Mr. James Good
398 West Fourth Street
San Bernardino, CA 92401

RE: Sunny Side Mines - Application for Experimental Practices Permit

Dear Mr. Good:

Thank you for your letter of April 29, 1980 containing an application for Experimental Practices Permit for study of the effects of coal processing wastes used as surface materials for roads. I apologize for the lateness of this response.

We have found the application to not meet the requirements for experimental practices in that (1) it does not encourage advances in mining and reclamation technology and (2) it does not help to achieve a postmining land use included under "Experimental Practices." These are the principal criteria for experimental practices under Section 711 of the Surface Mining Control and Reclamation Act. We do not envision that the use of coal processing wastes as road surface material is an experimental deviation from the environmental protection performance standards. Rather, the acceptability of the material is to be determined by its durability and chemical nature. If the material is acid- or toxic-forming, it cannot be used. If the material is not durable, it should not be used unless erosion is controlled to the same degree that erosion would be controlled through use of durable material.

We recommend, for your consideration, two possible solutions. These are:

1. Routing of drainage from those roads where coal wastes are used as surface material through sediment control devices, such as sedimentation ponds.

2. Providing sufficient information to demonstrate, through the use of acceptable engineering test methods, that the material is durable and that it is not toxic-forming. The test data provided to date show the material to not be durable. The toxicity of the material to aquatic life does not appear to be adequately addressed as

— Have we rec'd the results of aquatic study yet?

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OCT 30 1980
DIVISION OF
OIL, GAS & MINING

Certainly a study of the aquatic system affected by the coal processing wastes would be interesting. However, the use of coal processing wastes can likely be assessed without such a study. Rather, the physical and chemical characteristics of sufficient samples of coal wastes to represent on-site conditions should be more thoroughly assessed. The requirements of Section 817.154 should be satisfied prior to any further use of the material. The material already in place should be covered or otherwise stabilized if it remains subject to erosion.

Please find enclosed a copy of our regional staff analysis of your proposal sent to us on April 29th.

Sincerely,

DONALD A. CRANE

Attachment

cc: Ron Daniels

I think Raven needs to make a better case if they are which I doubt and that OSM is correct in their assessment.
Lee 11/20

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2 2 OCT 1980

MEMORANDUM

TO: Donald A. Crane

FROM: John E. Hardaway

SUBJECT: Proposed Experimental Practice: Kaiser Steel, Sunnyside Mine, Utah Use of Coal Waters as Road Surface Material.

We received, in May 1980, the subject application pursuant to Section 711 of the Surface Mining Control and Reclamation Act for an "experimental practice." It is our recommendation that the application not be considered a valid experimental practice since the proposed study does not encourage advances in mining and reclamation technology or achieve a postmining land use identified in 30 CFR 785.13(e)(2)(ii).

It is our recommendation that the applicant be informed that the submission is not suitable, in its present form, for consideration as an experimental practice. We also recommend that the applicant be offered two solutions. One involves directing runoff from those road surfaces "maintained" with coal wastes into sediment control facilities such as ponds. The other would involve submission of representative highway engineering tests identified at the end of this memorandum. A letter to the applicant is attached for your consideration.

The application was filed by Jordon, Graham, Varner, Savage and Nolan on behalf of Kaiser Steel Corporation and operations at the Sunnyside Mine. The application is filed in response to an OSM Notice of Violation No. 79-V-5-1. The violation (#1) cited "[F]ailure to dispose of excess rock and earth materials on surface areas [not] approved by the regulatory authority."

Abatement required submission of a plan for removal of "excess rock and earth materials." The Notice was issued on May 10, 1979. On April 13, 1979, the State regulatory authority notified Kaiser Steel that "The access road to the upper mine portal is not constructed of durable material and thus contributing to sedimentation in the runoff from the road." The operator was directed by the State regulatory authority among other things to ["C]ease maintaining the surface of the access road with coal waste" and to "[S]urface the road with a durable material."

The application requests approval of a "Special Study Project" developed to measure any adverse environmental effects of using the coal waste material. The Project was approved by the State Regulatory Authority on October 24, 1979 as a six to twelve month project. The coal waste has been used, allegedly, over the past 30 years as a substitute for gravel on access and (presumably) refuse haul roads. The gravel is reported to have "sunk in" the roads while the coal waste is reported to remain on the surface.

The pertinent parts of the regulations for environmental protection performance standards are 30 CFR 717.17, 817.54, and 817.164. Section 717.17(j)(iv) requires that road surface material be durable. Section 817.154(a) requires that surfacing material be approved by the regulatory authority as sufficiently durable for the anticipated volume of traffic, weight, and speed of vehicles. Section 817.154(b) prohibits the use of acid or toxic materials. Thus the showing to be made to permit use of materials as road surfacing materials under both the interim and the permanent programs is "durability." Since the interim program also addresses control of acid and toxic materials (Section 717.17(g)), both programs also require a showing that the materials are not acid- or toxic-forming. See also (817.154, 817.164).

An analysis of information submitted by the applicant is attached. Based on this analysis, we believe the applicant's presentation is not adequate to support the continued use of coal wastes as road surfacing material unless the majority of the road drainage is conveyed to sediment control facilities. The coal wastes are not demonstrated to be durable. The potential toxic-forming nature of alkaline coal wastes is not clearly identifed. The proposed study of the environmental effects of perhaps 30 years of continued use of these wastes is not presented in a manner that entitles the regulatory authority to assess whether implementation will support conclusions regarding use of the coal wastes. The Company may perform the study and, if properly conducted, may be able to assess the ability to comply with the applicable environmental protection performance standards.

It appears to us that the operator, in order to show durability, should perform representative tests showing that surface material either meets, at a minimum, the following criteria, or that all major road surface areas are drained to sediment control facilities. The criteria include:

- A minimum of 8% material passing the #200 sieve
- Maximum liquid limit of 35
- Plasticity index from 4 to 9
- Coarse aggregate should have maximum % no less than 40%
- Maximum size of aggregate for wearing surface should be 1 inch

(References: (Oglesby, C.H. 1975. "Highway Engineering", John Wilty and Sons, NY 783p (p.543).

Retter, L.J. and Paquette, R.J., 1966, "Highway Engineering", The Randall Press, NY, 782p (p490).)

Attachment

Analysis of Kaiser Steel - Sunnyside
Coal Wastes

Physical Analysis of "soil samples" - Rollins, Brown, & Gunnell
July 9, 1979

The "surface natural" material tested was "non-plastic." 50.2% was less than No. 200 sieve (silt). The material does not appear to be clayey . It is not known what the "surface material" was

> Coal wastes were tested. AASHTO T96 test gave 42.1% wear. The CBR value written in on the July 9 letter was 5%. The maximum dry density was 91.2 percent at 2.5% moisture/ 5 tests at varying moisture content.

Summary: It is not at all clear what the samples represent. The coal wastes, if properly represented by the T96 test, are not durable from the standpoint of use as typical road surface. The CBR test, if official, indicates the material would not be useful for subgrade material. The density (91.2 pcf) is low. The "Surface Material", whatever it is, since high in silt, could be quite erosible.

Water and Alfalfa samples - American Chemical and Research Laboratories - May 22, 1979.

Table 1 indicates a somewhat wide range of some parameters. pH is relatively constant. However iron ranges to 55 ppm, mercury to 0.27 ppm, and lead to 0.28. The relationship of these samples to the coal wastes is not clear. Alfalfa samples (Table 2) show high zinc, copper, iron and maganese. Again the relationship of the Alfalfa to the coal wastes is not clear. The analysis of fertilizer (Attachment 3) does not provide any information of value since the water soluble portions are not identified.

Summary: The water samples show no tendency toward acidity. It is not clear the hydrologic relationships between the samples and the locations of coal wastes. The additional analyses are not adequately explained to permit evaluation.

Use on County Roads - Carbon County - June 22, 1979.

The letter states "the material used is a good, durable substance."

Summary:

The engineering tests provided do not support this statement.

Additional Water Samples

Alkalinity 268-606 ppm
Ba 0.020 - 0.060 ppm
B 0.070 - 0.385 ppm
Ca 48 - 432 ppm
Cl 4.0 -214 ppm
Cr.Tot 0.003 - 0.16 ppm
Cu 0.003 - 0.035 ppm
Fe diss 0.030 - 1.87 ppm
Pb < 0.001 - ppm
Mn 0.012 - 0.645 ppm
Ni 0.616 - 0.236 ppm
K 1.24 - 670 ppm
Si 8.8 - 15 ppm
Na 30 - 2,052 ppm
TDS 345 - 12,600 ppm

As < 0.001 - 0.017 ppm
HCO_3 297-746 ppm
Ca < 0.001 - 0.002 ppm
CO_3 < 0.01 - 31 ppm
CrHex < 0.001 ppm
Conduc 550 - 19,400
F 0.27 - 1.11 ppm
Fe tot 0.130 - 1.93 ppm
Mg 34 - 732 ppm
Hg < 0.0002 ppm
NO_3 < 0.01 - 0.20 ppm
Se < 0.001 - 0.025 ppm
Ng 0.001 - 0.012 ppm
SO_4 60 - 8140 ppm
Zn 0.030 - 0.104 ppm

Summary:

A wide range of values for water quality is reported. Their relationship to the coal wastes is not clear.

Proposed Study

1. Water samples to be collected monthly from upstream and downstream of the mine area. (If reported data are representative of these two locations, most parameters are essentially the same at the two locations. Examples of exceptions include Ca, CO_3, - up 28 ppm; HCO_3 - down 30 ppm; Carbonate - up 31 ppm; Cl - up 7 ppm; Cr^{tot} - up X 10; Fe diss - up 0.06 ppm, Fe tot - up, a 160 ppm; Mg - down 28 ppm; Na - down X 8; pH - up and Turbidity - up 5 JTUS.)

2. Creek bottom samples to be collected quarterly.
   Vegetation growth to be measured on refuse test plot.

3. Analyses of coal and coal refuse. (Samples presented do not confirm durability and analyses of a sample collected from "bottom of old pond - exit to Icelander Creek" show high (iron, runoff samples show high mercury.)

4. Soils Analyses. Types of analyses not specified.

5. Road Drainage Patterns. Appears this map(s) should be made available in any case.

6. Support material and report.

Summary:

Without a map and improved description of the proposed study, its value to determining the effect of the use of coal wastes cannot be determined.

cc: Ray Aufmuth, Headquaters
Bill Penny
Murray Smith