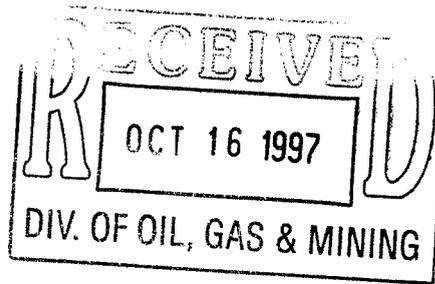


October 15, 1997



EarthFax
Engineering Inc.
Engineers/Scientists
7324 So. Union Park Ave.
Suite 100
Midvale, Utah 84047
Telephone 801-561-1555
Fax 801-561-1861

Mr. Robert Davidson
Reclamation Specialist
State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1594 West No. Temple
Suite 1210
Salt Lake City, UT 84114-5801

ACT/007/039 #2

RE: Soil Removal from within the Culvert Expansion Area
Canyon Fuel Company Dugout Canyon Mine

Dear Mr. Davidson:

This letter report concerning the soils to be disturbed as part of the culvert expansion at the Canyon Fuel Company Dugout Canyon Mine is being submitted to you for your consideration. It is intended that this report will become part of the Dugout Canyon Mine M&RP.

INTRODUCTION

On September 19, 1997, a brief site visit was made to the Dugout Canyon Mine to determine the location and approximate volume of soil to be disturbed or removed as part of the construction project to place a culvert in the Dugout Canyon Creek through the disturbed area. The following persons were present during visit:

Mr. Robert A. Davidson, UDOGM,
Mr. Wayne Western, UDOGM,
Mr. Dan Ferriter, Canyon Fuel Company, and
Mr. Chris Hansen, EarthFax Engineering, Inc.

SITE VISIT RESULTS

To better identify the areas where soils would be removed during culvert construction, the group walked the bottom of the creek channel from the downstream disturbed area boundary upstream to the currently existing culvert. Beyond this point, the channel was observed from the east bank of the stream channel. The areas where soil may be removed as part of the culvert construction were marked on a map. Plate 1 was drawn using this field map and is provided as Attachment A to this report. The areas not

designated as potential soil removal areas are locations where no soil is present (i.e., bedrock or slope talus), removal of slope soils would cause structural or environmental damage, or the channel is of sufficient width to accommodate the culvert without channel modification.

Several locations along the channel were observed to have slopes greater than 1.5:1 and removing soil from these slopes would jeopardize their natural stability. Additionally, the existing road was present above steep slopes that were also part of the stream channel bank. The naturally over-steepened slopes were typically on the northwest facing slopes downstream of the existing culvert and on the southeast facing slopes upstream of the existing culvert. The exceptions are those slopes directly beneath the existing road and they are typically southeast facing. Removing soils from these areas would result in extensive slope erosion and increased instability. Additionally, portions of the southeast facing slope upstream of the existing culvert consisted of mine waste and side cast material that will not be removed as part of the soil salvaging operations. The exact location of the areas where soils should not be removed will be determined in the field by a qualified representative of Canyon Fuel Company.

A discussion was held regarding the reclamation of the channel and the methods that could be used to preserve the soils that would not be removed during culvert construction. Mr. Davidson suggested that a geotextile material be placed on the surface of the soils left in place. The material then could be covered with backfill. During final reclamation, the geotextile material would act as a marker indicating the maximum extent of backfill removal. Those in attendance agreed that this could be a workable protection plan for the in-situ soils.

REMOVED SOIL VOLUMES AND STORAGE

Based on the site visit, seven areas from which soils will be removed have been identified. The locations of the soil removal areas are illustrated on Plate 1. The approximate volume of soil to be removed is 1,568 CY. This volume is based on the assumptions and calculations provided in Attachment B of this report. The soil to be removed during construction will be stored, possibly temporarily, on-site. If moved, it will be placed in the designated Dugout Canyon Mine topsoil storage area in the Soldier Canyon Mine permit area (Dugout Canyon M&RP). Regardless of the storage location, the soils will be properly protected from erosion as specified in the Division's R645 regulations and the M&RP.

During culvert construction, the A, B and C horizons will be removed and stored together. An effort will be made to remove the large woody portion of the vegetation from the soils to be stored. The remaining vegetation will be incorporated in the stored soils. It is also anticipated that the soil removed during the culvert construction will be used to supplement the volume of topsoil/growth media to be placed over the entire

Mr. Robert Davidson
Utah Division of Oil, Gas and Mining
October 15, 1997

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disturbed area during final reclamation. It is assumed that the soils to be removed from the identified areas are similar to those found during the initial permit soils investigation; i.e., the soils are comprised of sandy loams with varying amounts of rock fragments and have physical and chemical characteristics that are acceptable for reclamation purposes.

If you have any questions regarding this culvert construction soils removal report, please give me a call at (801) 561-1555.

Sincerely,



Chris D. Hansen

enclosures

Mr. Robert Davidson
Utah Division of Oil, Gas and Mining
October 15, 1997

Dugout Canyon Mine
Expanded Culvert Soil Removal

ATTACHMENT A

PLATE 1

Mr. Robert Davidson
Utah Division of Oil, Gas and Mining
October 15, 1997

Dugout Canyon Mine
Expanded Culvert Soil Removal

ATTACHMENT B

SOIL REMOVAL VOLUME CALCULATIONS

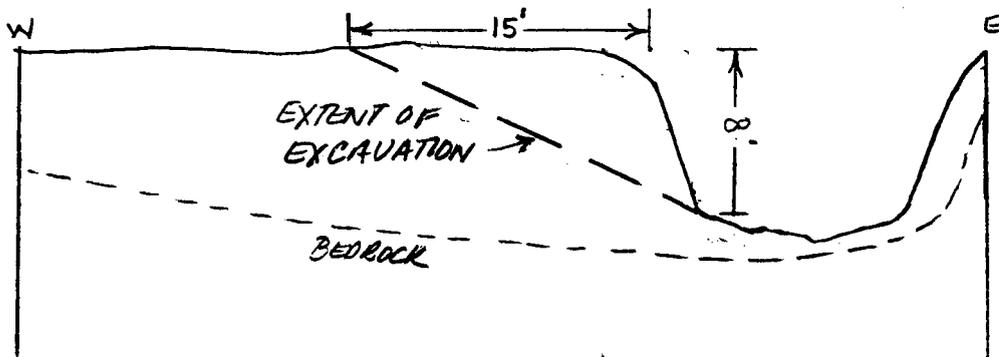
AREA #1

CULVERT EXPANSION SOILS VOLUME

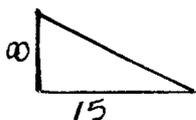
ASSUME:

LENGTH 120'
WIDTH 15'
DEPTH 8' (MAX)

Also, the maximum depth of removal is at the channel.
Daylights at point 15' back from channel edge.



FOR CALCULATION PURPOSES ASSUME:



AREA = 8' x 15' x 0.5 = 60 SF

VOLUME:

60 SF x 120 FT = 7,200 CF ÷ 27 CF/CY = 262 CY

AREA #2

ASSUME:

LENGTH 100'
WIDTH 15'
DEPTH 6'

ALSO, BASICALLY SAME SHAPE AS #1 (SEE ILLUSTRATION ABOVE)

AREA = 6' x 15' x 0.5 = 45 SF

VOLUME:

45 SF x 100 FT = 4500 CF ÷ 27 CF/CY = 167 CY

AREA #3

ASSUME:

LENGTH 50'
WIDTH 15'
DEPTH 6'

SAME BASIC SHAPE AS AREA 1 (SEE PRECEDING PAGE)

$$\text{AREA} = 6 \text{ FT} \times 15 \text{ FT} \times 0.5 = 45 \text{ SF}$$

VOLUME:

$$45 \text{ SF} \times 50 \text{ FT} = 2,250 \text{ CF} \div 27 \text{ CF/CY} = \underline{83 \text{ CY}}$$

AREA #4

ASSUME:

LENGTH 80'
WIDTH 15'
DEPTH 8'

SAME BASIC SHAPE AS AREA 1 (SEE PRECEDING PAGE)

$$\text{AREA} = 8 \text{ FT} \times 15 \text{ FT} \times 0.5 = 60 \text{ SF}$$

VOLUME:

$$60 \text{ SF} \times 80 \text{ FT} = 4800 \text{ CF} \div 27 \text{ CF/CY} = \underline{178 \text{ CY}}$$

AREA #5

ASSUME:

LENGTH 170'
WIDTH 10'
DEPTH 10'

ALSO A WEDGE SHAPE AS AREA #1

$$\text{AREA} = 10 \text{ FT} \times 10 \text{ FT} \times 0.5 = 50 \text{ SF}$$

VOLUME:

$$50 \text{ SF} \times 170 \text{ FT} = 8500 \text{ CF} \div 27 \text{ CF/CY} = \underline{315 \text{ CY}}$$

AREA #6

LENGTH 250 FT
WIDTH 15 FT
DEPTH 6 FT

WEDGE SHAPE AS AREA*

$$\text{AREA} = 15 \text{ FT} \times 6 \text{ FT} \times 0.5 = 45 \text{ SF}$$

VOLUME:

$$45 \text{ SF} \times 250 \text{ FT} = 11,250 \text{ CF} \div 27 \text{ CF/CY} = \underline{417 \text{ CY}}$$

AREA 7

LENGTH 190 FT
WIDTH 10 FT
DEPTH 4 FT

WEDGE - SHAPE AS AREA #1

$$\text{AREA} = 4 \text{ FT} \times 10 \text{ FT} \times 0.5 = 20 \text{ SF}$$

VOLUME:

$$20 \text{ SF} \times 190 \text{ FT} = 3,800 \text{ CF} \div 27 \text{ CF/CY} = \underline{141 \text{ CY}}$$

TOTAL VOLUME OF SOILS

<u>AREA</u>	<u>CY</u>
#1	267
#2	167
#3	83
#4	178
#5	315
#6	417
#7	<u>141</u>

4,568 CY OF SOIL TO BE REMOVED



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

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

1594 West North Temple, Suite 1210

Box 145801

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801-538-5340

801-359-3940 (Fax)

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April 3, 1997

Reed W. Olsen, General Manager
Canyon Fuel Company, LLC
Skyline Mines
P.O. Box 719
Helper, Utah 84526

039-95A?

RE: Dugout Canyon Exploration, EXP/007/018-95A, File #2, Carbon County, Utah

Dear Mr. Olsen,

Your one year extension request for the referenced exploration permit dated February 11, 1997, is hear by approved effective April 3, 1997.

If you have any questions please call.

Sincerely,

Joseph C. Helfrich
Permit Supervisor

tt

cc: Keith Zobell
Barry Barnum
Steve Demczak

O:\APDUGOUT.WPD