NorthWest Colorado Consultants, Inc.
Geotechnical / Environmental Engineering • Materials Testing

July 9, 2020

Twentymile Coal Company
29515 RCR #27
Oak Creek, CO 80467

Attn: Miranda Kawcak

Job Number: 99-3983

Subject: Quarterly Observation Report, Refuse Pile, Foidel Creek Mine, Routt County, Colorado.

Miranda,

As requested, NWCC, Inc. (NWCC) has prepared this report outlining our observations made during the second quarter of 2020 at the Refuse Pile located at Twentymile Coal Company's (TCC) Foidel Creek Mine in Routt County, Colorado. During this quarter, Timothy Travis of NWCC visited the project site on June 30, 2020 to provide the quarterly inspection/observations of the Refuse Pile.

At the time of our site visit on June 30, 2020, NWCC completed a site inspection of the existing refuse pile. Based on our observations made during this visit, it appeared that the contractor was presently stockpiling, grading and compacting refuse coal in the new Expansion Area. At the time of our site visit, the refuse coal had been placed and compacted to an elevation near the third bench situated along the east side of the stockpile.

In addition, compaction testing in the new Expansion Area of the refuse pile was completed on June 25, 2020. Three compaction tests (#590 to #591) were taken in Expansion Area during this quarter. All of the tests taken during this quarter met the minimum compaction requirement of 90% of the maximum standard Proctor density. Copies of the compaction test results and the daily field reports are attached. It should be noted that the abbreviations given in the Nuclear Density Test Results (Proctor Data) are as follows: Maximum DD = Maximum Dry Density and OMC = Optimum Moisture Content. Both of these values have been determined in accordance with ASTM D698.

It should be noted that the area of the Expansion Area that was accessible and compacted was limited; therefore, only two tests were taken at the time of our visit. At the time of our inspection on June 30, 2020, the contractor was in the process of grading the stockpiled materials. NWCC advised Jenna Spencer of TCC that compaction testing should be taken as soon as possible after the contractor has completed grading and compacting the stockpiled materials, so a larger area can be tested.

The internal roadways in the new expansion area of the pile are in good condition. The upper haul road to Areas 2, 3 and 4 of the refuse pile was accessible at the time of our site visit and in good condition.

A seepage area at the toe of the northeast end of the refuse pile expansion area, approximately 30 feet northwest of the outlet of the underdrain, developed in fall 2014. At the time of our observations, the seepage was surfacing at the toe of the slope and flowing into the drainage from the undrain outlet then into the existing pond east of the Refuse Pile Expansion Area. The discharge was clear, with no evidence of sediment. No signs of washout, slumps or slope instability were observed at this time. The seepage area will be monitored during future inspections and noted in our inspection reports. Photographs of the seepage area taken at the time of our inspection on June 30, 2020 are attached.

Based on our observations, the surface drainage conditions, generally appeared to be adequate across the top and sides of the pile. Based on our observations, we did not observe any signs of instability, structural weakness or hazardous conditions at the refuse pile.

We were advised that the wash plant had produced approximately 71,454 tons of waste coal during the month of April 2020: approximately 83,263 tons during May 2020: and approximately 68,378 tons during June 2020. It is our understanding that the fines being produced at the wash plant, which consists of approximately 10 to 20 percent of the total materials being produced, are being pumped underground into the mine. It should also be noted that the wash plant was down periodically during this period due to construction of the new thickener tank.

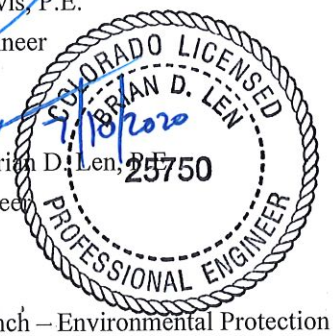
We were previously informed by Brian Watterson of TCC that all of the original monitor wells installed in the Refuse Pile were destroyed in July 2012. Two new monitor wells were constructed in Area 1 of the Refuse Pile in December 2013. NWCC was provided monthly monitor well readings for this quarter by Miller Water Monitor Service, Inc. The water level in the western monitor well (RW#1) was measured at 57.82 feet below the existing ground surface (bgs) on April 20th at 58.24 feet bgs on May 7th and at 58.31 feet bgs on June 8th of 2020. The water level in the eastern monitor well (RW#2) was measured at 56.73 feet bgs on April 20th, at 56.89 feet bgs on May 7th and at 56.97 feet bgs on June 8th of 2020. An additional monitor well (RW#3) was constructed at the southeast end of the 1st bench in new Expansion Area in June of 2014. The water level in the expansion area monitor well (RW#3) was dry when checked on April 20th, May 7th and June 8th of 2020.

Based on our observations, it appears that the pile is currently being constructed and maintained in general accordance with the project specifications and plans submitted under 2.05.3(8) and that the potential hazard to human life and property at the site in its present condition is minimal. This report fulfills the quarterly inspection requirements as specified by Rules 4.09.1(11)(a), 4.09.1(11)(b), 4.10.2(2)(a) and 4.10.2(2)(b).

If you have any questions regarding this report or our observations, please contact this office.

Sincerely,
NWCC, INC.,

Timothy S. Travis, P.E.
Sr. Project Engineer



Reviewed by Brian D. Len, P.E.
Principal Engineer

cc: Tabetha Lynch – Environmental Protection Specialist - CDRM&S

June 30, 2020-Expansion Area from Area 2, 3, 4

June 30, 2020-Expansion Area Grading

June 30, 2020- Seepage Area

June 30, 2020-Seepage Area and Drain Outlet

June 30, 2020-3rd Bench on East Side of Refuse Pile

NORTHWEST COLORADO CONSULTANTS, INC.

Project:	Refuse Pile	**Project No.:**	99-3983	**Date:**	6/25/2020
				Time:	4.0
Location:	Foidel Creek Mine	**Report No.:**	96	**Mileage:**	45
Client:	Twentymile Coal Co.			**Engr. /Tech:**	CR

Work Performed:

As requested, we visited the project site on today's date and conducted compaction test No's 590 through 591 on the fill materials being placed within the Refuse Pile.

Twentymile Coal Company crews placed and compacted processed waste coal in the Refuse Pile.

We also obtained a sample of material and returned it to our laboratory in Steamboat Springs, CO for standard checkpoint Proctor testing. The sample matched a previous Proctor 12P for this project.

Remarks:

The material tested today generally met project specifications for compaction.

Please refer to attached sheet for results of today's testing.

Verbal Discussions:

Twentymile Coal Co. was notified of today's test results.

NUCLEAR DENSITY TEST RESULTS

Project: Refuse Pile **Project No.:** 99-3983 **Date:** 6/25/2020
Report No.: 96

Test No.	Location Northing/Easting	Depth Elev.	Proctor No.	Dry Density (pcf)	Water Content (%)	Actual Compaction	Required Compaction
590	3154.692/17400.20	7002.16	12	104.3	3.4	95	90
591	31634.004/17219.10	7002.31	12	101.0	1.6	92	90

PROCTOR DATA

No.	Maximum Dry Density (pcf)	Optimum Moisture Content (%)	Relative Density Minimum Density (pcf)	Relative Density Maximum Density (pcf)	Soil Type
12	109.8	7.6			Processed Waste Coal
11	100.3	10.2			Processed Waste Coal
10	107.6	11.0			Processed Waste Coal

Comments:

BSG=	**Below Subgrade Grade**	**NWC=**	**Northwest Corner**
SG=	**Subgrade Grade**	**NEC=**	**Northeast Corner**
SBG=	**Subbase Grade**	**SWC=**	**Southwest Corner**
BSBG=	**Below Subbase Grade**	**SEC=**	**Southeast Corner**
BCG=	**Base Course Grade**	**BFG=**	**Below Footing Grade**
BBF=	**Below Bottom of Footing**	**FG=**	**Footing Grade**