



*"Safety as a Value"*

Telephone: 970.385.4528  
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GCC Energy, LLC  
6473 County Road 120  
Hesperus, CO 81326

July 8, 2020

State of Colorado  
Division of Reclamation, Mining & Safety  
1313 Sherman St, Room 215  
Denver, CO 80203

Attention: Janet Binns, Environmental Protection Specialist III

Re: C-1981-035, King I Refuse Pile 2020 Compaction Test Results

Ms. Binns:

Attached is a report by Geomat, Inc. documenting results of annual compaction tests performed on June 24, 2020 at the King I Refuse Pile.

Please call Tom Bird at (970) 385-4528 x 6503 if you have any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to be 'Tom Bird', written over a horizontal line.

Tom Bird  
GCC Energy, LLC



915 Malta Avenue  
Farmington, NM 87401  
Phone: 505-327-7928 | Fax: 505-326-5721

## Soil Nuclear Gauge

Report Date: 7/2/2020  
Test Method: ASTM D6938

### Client:

GCC Energy, LLC  
6473 County Road 120  
Hesperus, CO 81326

### Project:

201-3529  
Refuse Pile Density Testing  
6473 CR 120  
Hesperus, CO 81326

### Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
1		6/24/20	9773	C	--	12.6	80.3	6.1	78.7	8	98	90	DP
2		6/24/20	9773	C	--	12.6	80.3	5.2	76.7	8	96	90	DP
3		6/24/20	9773	C	--	12.6	80.3	6.1	81.9	8	102	90	DP
4		6/24/20	9773	C	--	12.6	80.3	6.3	76.2	8	95	90	DP
5		6/24/20	9773	C	--	12.6	80.3	5.6	76.4	8	95	90	DP
6		6/24/20	9773	C	--	12.6	80.3	5.5	80.7	8	100	90	DP
7		6/24/20	9773	C	--	12.6	80.3	7.1	82.9	8	103	90	DP

### Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1	Other: NEC of the Bottom GOB Pit	20.0	Ft. below top of fill	Troxler / 3440 / 21261 / 1/22/2020	Joe Kelly
2	Other: Bottom GOB Pit, 50' W and 15' S of the NEC	20.0	Ft. below top of fill	Troxler / 3440 / 21261 / 1/22/2020	Joe Kelly
3	Other: Bottom GOB Pit, 120' W and 15' S of the NEC	20.0	Ft. below top of fill	Troxler / 3440 / 21261 / 1/22/2020	Joe Kelly
4	Other: Bottom GOB Pit, 120' W of the NEC	20.0	Ft. below top of fill	Troxler / 3440 / 21261 / 1/22/2020	Joe Kelly
5	Other: Upper GOB Pit, 300' E and 20' N of the SWC	15.0	Ft. below top of fill	Troxler / 3440 / 21261 / 1/22/2020	Joe Kelly
6	Other: Upper GOB Pit, 200' E and 20' N of the SWC	15.0	Ft. below top of fill	Troxler / 3440 / 21261 / 1/22/2020	Joe Kelly
7	Other: Upper GOB Pit, 350' E and 70' N of the SWC	30.0	Ft. below top of fill	Troxler / 3440 / 21261 / 1/22/2020	Joe Kelly

Remarks	Comments
DP: Density Pass	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.  <b>1, 2, 3, 4, 5, 6, 7:</b> Moisture content adjusted based upon average correlation with ASTM D2216 laboratory moisture content determination.

Reviewed by Nathan Compton P.E.



915 Malta Avenue  
Farmington, NM 87401  
Phone: 505-327-7928  
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# Daily Observation Report

**Client:**

GCC Energy  
6473 CR 120  
Hesperus, CO 81326

**Project:**

201-3529  
Refuse Pile Density Testing  
6473 CR 120  
Hesperus, CO 81326

**Date:** 06/24/2020

**Weather Conditions:** Sunny / Clear / Calm

**Equipment on site:** Loader

**Unexpected site conditions:** None

**Work in Progress / Remark:**

Arrived onsite at the King Coal I refuse pile at 7:45am and completed the site specific safety training. Performed seven total field density tests; four on the bottom GOB pit and three on the top GOB pit. A moisture sample was collected from each test location. A composite sample for proctor analysis was also collected. Sample was composed of material gathered from each test location. Test results pending proctor and moisture sample analysis.

**Persons Notified:** Joel Riggins

<b>No. of Density Tests</b>	Pass: 7	Retest: 0	Fail: 0	Total: 7
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**Concrete Tests**

<b>Total Time:</b> 4.0	Travel Time: 2.00	Test Time: 2.0
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**Client Representative:** Wade

**GEOMAT Technician:** Joe Kelly

## LABORATORY REPORT

**Client:** GCC Energy, LLC  
 6473 County Road 120  
 Hesperus, CO 81326

**Attn:** Wade Wymore

**Project:** Refuse Pile Density Testing

**Location:** Hesperus, Colorado

**Report Date:** June 29, 2020  
**GEOMAT Project No:** 201-3529  
**Page No:** 1 of 1  
**Lab No:** 9773

**Sampled By:** J. Kelly/GEOMAT  
**Sampled Date:** June 24, 2020  
**Requested By:** W. Wymore/GCC Energy

**Sample Location:** Composition sample from density test locations on the upper and lower pile

**Source:** GOB Refuse

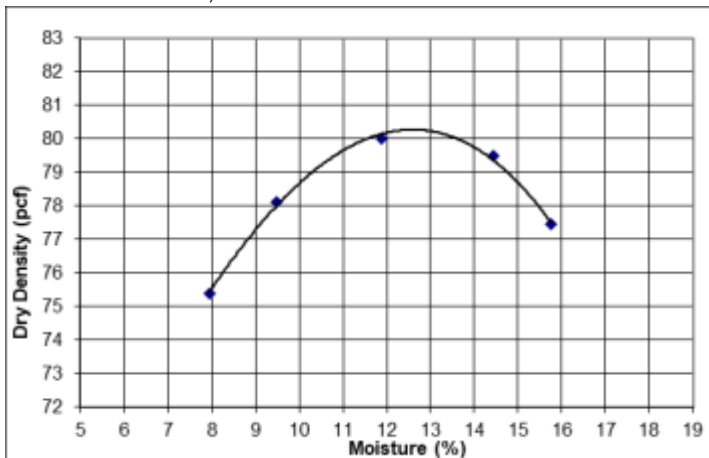
**Material Description (Color, Symbol, Group):** GOB Refuse Coal

Sieve Analysis, ASTM C117, C136		
Sieve Size	% Passing	Specifications
6"		
5"		
4"		
3"		
2 1/2"		
2"		
1 1/2"		
1"		
3/4"		
1/2"		
3/8"		
No. 4		
No. 8		
No. 10		
No. 16		
No. 30		
No. 40		
No. 50		
No. 100		
No. 200		

Plasticity Index, ASTM D4318		
	Results	Specifications
Liquid Limit (LL)		
Plastic Limit (PL)		
Plasticity Index (PI)		

Moisture-Density Relationship, ASTM D698 Method C	
Maximum Dry Density, pcf	80.3
Optimum Moisture Content, %	12.6

100% Saturation, SG = 2.75 Estimated



Description of Rammer	Manual
Preparation	Dry

**Reviewed By:**

*Nathan Caplan*

**Distribution:** GCC Energy – Wade Wymore (1), Joel Riggins (1)

**Note:** This is a summarized report of the referenced procedures and does not include all reporting requirements. Additional data can be provided at client's request.