



Huddleston-Berry
Engineering & Testing, LLC

2789 Riverside Parkway
Grand Junction, Colorado 81501
Phone: 970-255-8005
Info@huddlestonberry.com

July 20, 2020
Project#01349-0001

Bowie Resources, LLC
43659 Bowie Road
Paonia, Colorado 81428

Attention: Mr. Basil Bear

Subject: Construction Materials Testing
2nd Quarter 2020
Bowie Mine No. 2
Paonia, Colorado

Dear Mr. Bear,

At your request, a representative of Huddleston-Berry Engineering and Testing, LLC (HBET) conducted field moisture and compaction testing, and laboratory moisture testing of coal mine waste materials placed at Bowie Mine No. 2 near Paonia, Colorado. Field testing was conducted on April 27th and June 25th, 2020. Soil compaction test reports, test location data, and laboratory optimum moisture and density (Proctor) data are attached.

We are pleased to be of service to your project. Please contact us if you have any questions or comments regarding the contents of this report.

Respectfully Submitted:
Huddleston-Berry Engineering and Testing, LLC

A handwritten signature in blue ink, reading 'Michael A. Berry', with a stylized flourish at the end.

Michael A. Berry, P.E.
Vice President of Engineering

SOIL COMPACTION TEST REPORT

Task: Gob Pile Densities

Field vs. Lab Densities

Project No.: 01349 - 0001

Tested By: MS **Date:** 4/27/20

Project Name: Bowie Mine

Work Order No: 66115

Client Name: Bowie Resources

Authorized By: Client **Date:** 4/27/20

Placement Contractor: Bowie Resources

Reviewed By: MAB **Date:** 5/1/20

Contractor Representative: _____

No.	Point No.	Elevation	Max. Dry Density (pcf)	Optimum Moisture (%)	Wet Density (pcf)	Speedy Moisture (%)	Field Dry Density (pcf)	Relative Field Comp.(%)	Tare Weight (g)	Wet Weight (g)	Dry Weight (g)	Lab Dry Density (pcf)	Lab Moisture (%)	Relative Lab Comp.(%)	
1	474	5881.7	95.5	14.0	105.4				526.1	1609.1	1493.4	94.1	12.0%	99%	
2	475	5880.6	95.5	14.0	104.8				527.8	1797.9	1660.7	93.5	12.1%	98%	
3	479	5894.5	104.0	13.5	106.7				393.9	1551.8	1428.4	95.3	11.9%	92%	
4	480	5900.3	104.0	13.5	106.4				391.0	1464.0	1352.0	95.3	11.7%	92%	
5	481	5905	95.5	14.0	107.3				398.1	1912.3	1705.0	92.6	15.9%	97%	
6	482	5913.5	104.0	13.5	110.1				390.9	1592.7	1465.2	98.4	11.9%	95%	
7	483	5906.5	95.5	14.0	103.3				387.4	1905.6	1724.1	91.0	13.6%	95%	
8	484	5899.2	104.0	13.5	113.5				391.5	2315.9	2107.0	101.2	12.2%	97%	

Remarks: _____

Gauge Number: 2472

Density Counts: 2748

Moisture Counts: 393

Record No. 35 S

SOIL COMPACTION TEST REPORT

Task: Gob Pile Densities

Field vs. Lab Densities

Project No.: 01349 - 0001

Tested By: MS **Date:** 6/25/20

Project Name: Bowie Mine

Work Order No: 67285

Client Name: Bowie Resources

Authorized By: Client **Date:** 6/25/20

Placement Contractor: Bowie Resources

Reviewed By: MAB **Date:** 7/9/20

Contractor Representative: _____

No.	Point No.	Elevation	Max. Dry Density (pcf)	Optimum Moisture (%)	Wet Density (pcf)	Speedy Moisture (%)	Field Dry Density (pcf)	Relative Field Comp.(%)	Tare Weight (g)	Wet Weight (g)	Dry Weight (g)	Lab Dry Density (pcf)	Lab Moisture (%)	Relative Lab Comp.(%)	
1	485	5888	95.5	14.0	99.4				321.5	1302.2	1181.8	87.2	14.0%	91%	
2	486	5889	95.5	14.0	100.2				277.8	1131.5	1040.0	89.5	12.0%	94%	
3	487	5889.6	95.5	14.0	99.4				282.9	1164.6	1063.3	88.0	13.0%	92%	
4	488	5892.2	104.0	13.5	107.9				323.0	1114.5	1030.7	96.5	11.8%	93%	
5	489	5891.4	95.5	14.0	101.0				291.0	1212.4	1110.5	89.8	12.4%	94%	
6	490	5902.3	104.0	13.5	113.0				308.8	1958.1	1785.1	101.1	11.7%	97%	
7	491	5908	104.0	13.5	106.0				383.5	1407.5	1300.7	94.9	11.6%	91%	
8	492	5912.9	104.0	13.5	112.6				390.9	2023.1	1854.8	101.0	11.5%	97%	
9	493	5921.5	95.5	14.0	104.9				392.7	2097.4	1908.9	93.3	12.4%	98%	
10	494	5915.5	95.5	14.0	100.6				397.8	1346.4	1243.0	89.6	12.2%	94%	
11	495	5907.5	95.5	14.0	104.4				396.9	1241.2	1150.2	93.1	12.1%	98%	

Remarks: _____

Gauge Number: 2472

Density Counts: 2755

Moisture Counts: 388

Record No. 36 S

Gob Pile #3

27-Apr-20

Point #	North	East	Elev.
474	17616.29	35877.11	5881.7
475	17597.08	35915.46	5880.6
479	17462.99	35827.21	5894.5
480	17528.71	35767.47	5900.3
481	17599.63	35699.26	5905
482	17580.75	35639.28	5913.5
483	17477.09	35704.55	5906.5
484	17399.4	35768.59	5899.2

Gob Pile #3

25-Jun-20

Point #	North	East	Elev.
485	17630.21	35941.44	5888.8
486	17574.89	35911.58	5889.0
487	17527.17	35882.97	5889.6
488	17571.19	35819.81	5892.2
489	17631.83	35855.36	5891.4
490	17475.17	35802.06	5902.3
491	17521.94	35742.08	5908.0
492	17600.18	35684.48	5912.9
493	17571.14	35613.02	5921.5
494	17515.27	35671.92	5915.5
495	17449.01	35733.11	5907.5



Huddlestone-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

MOISTURE-DENSITY RELATIONSHIP

CLIENT Bowie Resources, LLC

PROJECT NAME Bowie Mine #2

PROJECT NUMBER 00489-0003

PROJECT LOCATION Paonia, CO

Sample Date: _____

14-0195

Sample No.: _____

Source of Material: _____

Gob #3 Borrow Blend

Description of Material: _____

Test Method: _____

ASTM D698C

TEST RESULTS

Maximum Dry Density

104.0 PCF

Optimum Water Content

13.5 %

GRADATION RESULTS (% PASSING)

#200

#4

3/4"

ATTERBERG LIMITS

LL

PL

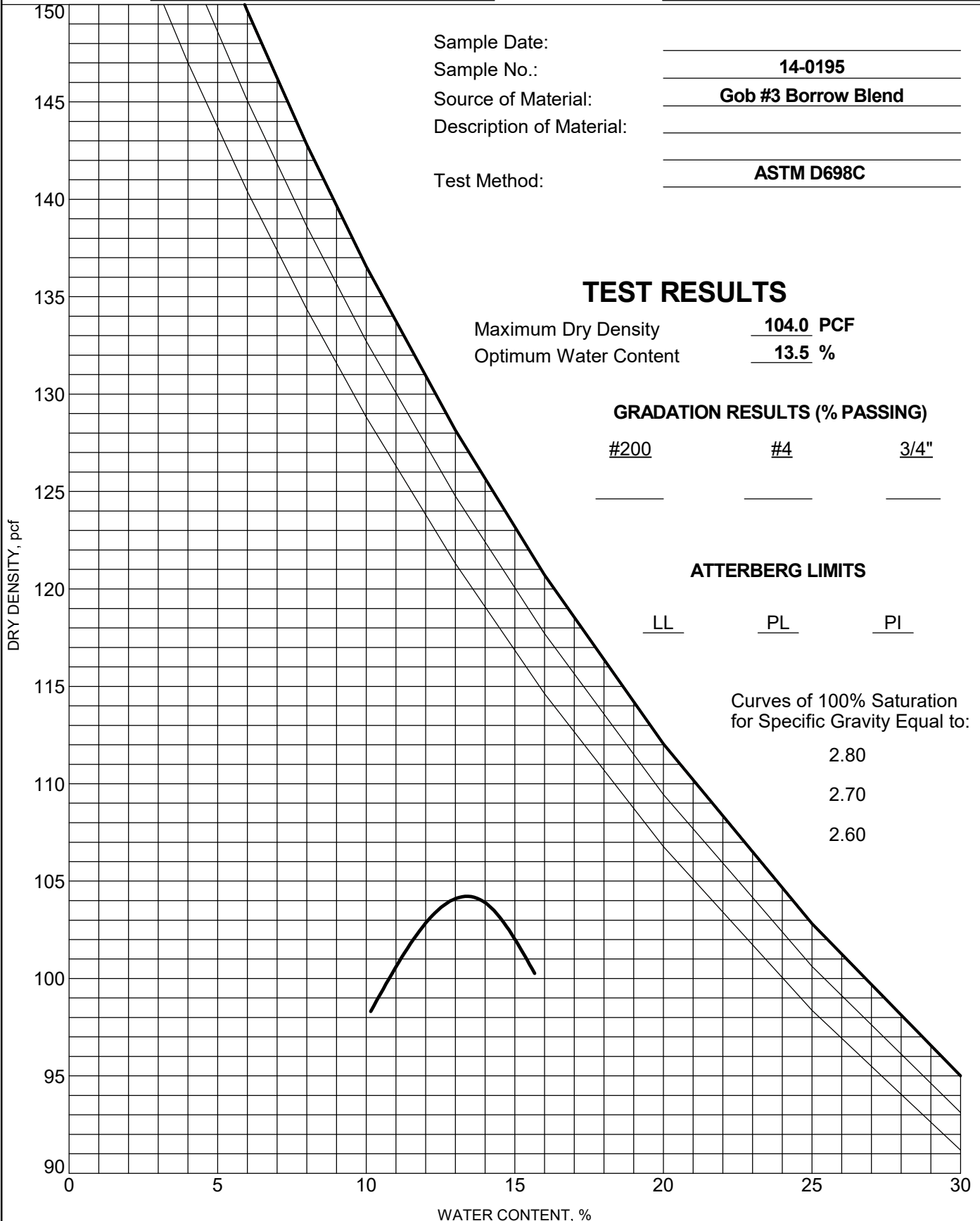
PI

Curves of 100% Saturation
for Specific Gravity Equal to:

2.80

2.70

2.60





Huddlestone-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

MOISTURE-DENSITY RELATIONSHIP

CLIENT Bowie Resources, LLC

PROJECT NAME Bowie Mine #2

PROJECT NUMBER 00489-0003

PROJECT LOCATION Paonia, CO

Sample Date: 3/28/2015
Sample No.: 15-0116
Source of Material: Gob 3 03/28/15
Description of Material: SILTY SAND with GRAVEL(SM)
Test Method: ASTM D698C

TEST RESULTS

Maximum Dry Density 95.5 PCF
Optimum Water Content 14.0 %

GRADATION RESULTS (% PASSING)

<u>#200</u>	<u>#4</u>	<u>3/4"</u>
<u>100</u>	<u>100</u>	<u>100</u>

ATTERBERG LIMITS

<u>LL</u>	<u>PL</u>	<u>PI</u>
<u>34</u>	<u>24</u>	<u>10</u>

Curves of 100% Saturation
for Specific Gravity Equal to:

2.80

2.70

2.60

