



Huddleston-Berry
Engineering & Testing, LLC

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Grand Junction, Colorado 81501
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January 25, 2022
Project#01349-0001

Bowie Resources, LLC
43659 Bowie Road
Paonia, Colorado 81428

Attention: Mr. Basil Bear

Subject: Construction Materials Testing
4th Quarter 2021
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 October 4th and November 22nd, 2021. 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 that reads "Michael A. Berry". The signature is fluid and cursive, with a long horizontal stroke at the end.

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



Huddlestone-Berry
Engineering & Testing, LLC

SOIL COMPACTION TEST REPORT

Task: Gob Pile Densities

Field vs. Lab Densities

Project No.: 01349 - 0001

Tested By: Dm **Date:** 10/4/21

Project Name: Bowie Mine

Work Order No.: _____

Client Name: Bowie Resources

Authorized By: Client **Date:** 10/4/21

Placement Contractor: Bowie Resources

Reviewed By: MAB **Date:** 10/10/21

Contractor Representative: Basil

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	3110	5903.11	104.0	13.5	117.1				291.4	972.1	883.2	101.8	15.0%	98%	
2	3111	5906.28	104.0	13.5	115.2				316.1	909.6	842.1	102.1	12.8%	98%	
3	3112	5900.37	104.0	13.5	114.4				292.8	1246.4	1144.5	102.2	12.0%	98%	
4	3113	5902.89	104.0	13.5	113.9				318.4	1508.7	1351.3	98.8	15.2%	95%	
5	3114	5898.66	104.0	13.5	115.6				387.1	1187.7	1099.9	102.9	12.3%	99%	
6	3115	5901.98	104.0	13.5	116.6				533.2	1700.3	1544.7	101.1	15.4%	97%	
7	3116	5896.07	104.0	13.5	115.8				388.0	1401.1	1271.6	101.0	14.7%	97%	
8	3117	5894.21	104.0	13.5	114.7				379.0	1823.7	1670.5	102.5	11.9%	99%	
9	3118	5893.11	104.0	13.5	115.2				395.8	1017.2	933.9	99.8	15.5%	96%	
10	3119	5893.17	104.0	13.5	115.8				395.4	1302.9	1205.1	103.3	12.1%	99%	
11	3120	5897	104.0	13.5	114.0				385.2	1898.9	1705.0	99.4	14.7%	96%	
12	3121	5900	104.0	13.5	118.9				391.5	1513.1	1363.5	103.0	15.4%	99%	
13	3122	5896.81	104.0	13.5	117.4				397.6	1192.4	1093.0	102.7	14.3%	99%	
14	3123	5900.34	104.0	13.5	118.0				400.6	1364.6	1240.4	102.8	14.8%	99%	
15	3124	5904	104.0	13.5	114.2				388.3	1269.5	1152.7	99.1	15.3%	95%	

Remarks: Steve not present on this day so Locations shot by Basil

Gauge Number: 12122

Density Counts: 1427

Moisture Counts: 609

Record No. 51 **51 S**



Huddleston-Berry
Engineering & Testing, L.L.C.

SOIL COMPACTION TEST REPORT

Task: Gob Pile Densities

Field vs. Lab Densities

Project No.: 01349 - 0001

Tested By: Dm **Date:** 10/4/21

Project Name: Bowie Mine

Work Order No: _____

Client Name: Bowie Resources

Authorized By: Client **Date:** 10/4/21

Placement Contractor: Bowie Resources

Reviewed By: MAB **Date:** 10/10/21

Contractor Representative: Basil

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	3125	5909.14	104.0	13.5	112.6				189.6	1004.9	904.3	98.7	14.1%	95%	
2	3126	5927.22	104.0	13.5	114.9				528.0	1382.0	1290.1	102.5	12.1%	99%	
3	3127	5925.74	104.0	13.5	113.2				153.7	869.2	795.2	101.5	11.5%	98%	
4	3128	5918.21	104.0	13.5	114.4				530.8	1863.6	1690.1	99.5	15.0%	96%	
5	3129	5922.05	104.0	13.5	111.5				387.0	1503.7	1381.4	99.3	12.3%	95%	
6	3130	5924.94	104.0	13.5	113.9				393.8	1332.0	1223.3	100.7	13.1%	97%	
7	3131	5927.04	104.0	13.5	113.0				156.2	960.5	871.4	100.5	12.5%	97%	
8	3132	5926.86	104.0	13.5	114.6				154.5	948.0	859.0	101.7	12.6%	98%	
9	3133	5926.46	104.0	13.5	115.9				154.2	886.8	804.0	102.8	12.7%	99%	
10	3134	5925.23	104.0	13.5	112.2				155.0	966.3	869.2	98.8	13.6%	95%	

Remarks: Steve not present on this day so Locations shot by Basil

Gauge Number: 12122

Density Counts: 1427

Moisture Counts: 609

Record No. 52 **52 S**



Huddleston-Berry
Engineering & Testing, LLC

SOIL COMPACTION TEST REPORT

Task: Gob Pile Densities

Field vs. Lab Densities

Project No.: 01349 - 0001

Tested By: Dm **Date:** 11/22/21

Project Name: Bowie Mine

Work Order No.: _____

Client Name: Bowie Resources

Authorized By: Client **Date:** 11/22/21

Placement Contractor: Bowie Resources

Reviewed By: MAB **Date:** 12/2/21

Contractor Representative: Basil

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	3135	5913.5	104.0	13.5	113.4				291.6	1277.9	1172.3	101.3	12.0%	97%	
2	3136	5908.8	104.0	13.5	111.8				395.9	975.5	911.9	99.5	12.3%	96%	
3	3137	5907.3	104.0	13.5	110.7				293.3	1089.2	999.5	98.2	12.7%	94%	
4	3138	5902.9	104.0	13.5	113.6				316.3	792.7	741.2	101.3	12.1%	97%	
5	3139	5905.7	104.0	13.5	113.8				394.0	905.9	846.5	100.6	13.1%	97%	
6	3140	5909.8	104.0	13.5	114.5				393.3	1529.3	1394.1	100.9	13.5%	97%	
7	3141	5904.3	104.0	13.5	112.2				385.4	1039.4	961.2	98.8	13.6%	95%	
8	3142	5902	104.0	13.5	116.0				387.6	1093.8	1003.5	101.1	14.7%	97%	
9	3143	5900.4	104.0	13.5	115.4				389.0	1356.4	1250.4	102.8	12.3%	99%	
10	3144	5896.5	104.0	13.5	114.1				401.7	1563.6	1438.7	101.8	12.0%	98%	
11	3145	5893.9	104.0	13.5	115.2				387.0	1251.9	1156.2	102.5	12.4%	99%	
12	3146	5896.2	104.0	13.5	110.3				387.6	1385.4	1281.4	98.8	11.6%	95%	
13	3147	5899.8	104.0	13.5	115.8				387.2	1358.8	1252.4	103.1	12.3%	99%	

Remarks: Steve not present on this day so Locations shot by Basil

Gauge Number: 12122

Density Counts: 1421

Moisture Counts: 622

Record No. 53 **53 S**

Point		Northing	Easting	Elevation	Description
	#				
1	3110	18225.865973	36373.435600	5903.117708	Drying Area
2	3111	18226.285870	36386.661181	5906.285993	Drying Area
3	3112	18204.383898	36444.966714	5900.376369	Drying Area
4	3113	18206.232643	36458.557734	5902.891816	Drying Area
5	3114	18276.344177	36514.055128	5898.662101	Drying Area
6	3115	18249.189067	36520.196514	5901.983884	Drying Area
7	3116	18122.976712	36558.928157	5896.470101	Drying Area
8	3117	18020.494585	36590.699549	5894.210196	Drying Area
9	3118	17949.901719	36593.867553	5893.110852	Drying Area
10	3119	17937.992965	36481.015317	5893.973791	Drying Area
11	3120	17915.945305	36351.277485	5897.002376	Drying Area
12	3121	18014.732917	36326.081271	5900.100965	Drying Area
13	3122	18022.936904	36452.925897	5896.812861	Drying Area
14	3123	18113.355308	36442.393600	5900.345535	Drying Area
15	3124	18087.184072	36315.786961	5904.003674	Drying Area
16	3125	18164.590231	36298.034050	5909.143041	Drying Area
17	3126	17533.292644	35549.644868	5927.223065	Main Pile
18	3127	17494.831902	35576.560617	5925.7484	Main Pile
19	3128	17412.904984	35629.884099	5918.215015	Main Pile
20	3129	17439.082776	35548.746291	5922.054476	Main Pile
21	3130	17485.147718	35522.420142	5924.941167	Main Pile
22	3131	17600.275486	35667.144597	5927.048278	Main Pile
23	3132	17629.306420	35736.960143	5926.866628	Main Pile
24	3133	17676.055763	35844.832648	5926.465506	Main Pile
25	3134	17712.684750	35894.882004	5925.232197	Main Pile

	Pt #	Northing	Easting	Elevation	Description
1	3135	18192.25313	36308.86121	5913.503149	DA
2	3136	18249.34124	36423.84695	5908.813064	DA
3	3137	18276.95421	36510.35632	5907.255046	DA
4	3138	18201.31663	36555.39618	5902.901837	DA
5	3139	18165.98811	36451.06577	5905.767964	DA
6	3140	18127.35353	36317.46839	5909.27818	DA
7	3141	18028.691	36318.70277	5904.32171	DA
8	3142	18045.8605	36407.51247	5902.085186	DA
9	3143	18062.89436	36472.09997	5900.409171	DA
10	3144	18081.15887	36572.36177	5896.518123	DA
11	3145	17977.07112	36568.47411	5893.940376	DA
12	3146	17957.13913	36460.28128	5896.213332	DA
13	3147	17932.80775	36337.30937	5899.835926	DA



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

