



Huddleston-Berry
Engineering & Testing, LLC

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Grand Junction, Colorado 81501
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January 11, 2023
Project#01349-0001

Bowie Resources, LLC
43659 Bowie Road
Paonia, Colorado 81428

Attention: Mr. Basil Bear

Subject: Construction Materials Testing
4th Quarter 2022
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 18th, 2022. 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:** 10/18/22

Project Name: Bowie Mine

Work Order No: 82252

Client Name: Bowie Resources

Authorized By: Client **Date:** 10/18/22

Placement Contractor: Bowie Resources

Reviewed By: MAB **Date:** 11/10/22

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	3242	5927.5	104.0	13.5	115.2				152.2	990.5	901.2	102.9	11.9%	99%	
2	3243	5929	104.0	13.5	114.2				535.7	1035.9	976.4	100.6	13.5%	97%	
3	3244	2925.9	104.0	13.5	114.7				154.9	577.4	531.2	102.2	12.3%	98%	
4	3245	5921.97	104.0	13.5	118.6				532.3	803.1	767.8	103.1	15.0%	99%	
5	3246	5922.44	104.0	13.5	116.3				526.4	906.1	864.9	103.7	12.2%	100%	
6	3247	5927.13	104.0	13.5	119.4				157.3	1126.3	1000.9	103.9	14.9%	100%	
7	3248	5929.41	104.0	13.5	115.5				155.9	547.0	504.2	102.9	12.3%	99%	
8	3249	5933.03	104.0	13.5	114.2				155.3	630.2	571.3	100.0	14.2%	96%	
9	3250	5933.94	104.0	13.5	118.7				151.7	850.9	763.1	103.8	14.4%	100%	
10	3251	5935.88	104.0	13.5	113.5				390.8	1093.2	1013.4	100.6	12.8%	97%	
11	3252	5930.49	104.0	13.5	115.6				191.3	1202.2	1090.3	102.8	12.4%	99%	
12	3253	5926.45	104.0	13.5	118.6				153.7	795.7	715.1	103.7	14.4%	100%	
13	3254	5930.45	104.0	13.5	116.4				149.7	589.4	537.1	102.6	13.5%	99%	
14	3255	5932.97	104.0	13.5	115.2				153.5	781.5	710.3	102.1	12.8%	98%	
15	3256	5938.74	104.0	13.5	114.5				154.7	528.0	481.7	100.3	14.2%	96%	

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

Gauge Number: 26667

Density Counts: 1844

Moisture Counts: 434

Record No. 61 **61 S**



Huddlestone-Berry
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Project Name: Bowie Mine

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Client Name: Bowie Resources

Authorized By: Client **Date:** 10/18/22

Placement Contractor: Bowie Resources

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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.(%)	
16	3257	5936.5	104.0	13.5	119.4				153.2	610.1	550.0	103.7	15.1%	100%	
17	3258	5933.72	104.0	13.5	118.2				534.8	957.2	904.4	103.4	14.3%	99%	
18	3259	5932.48	104.0	13.5	116.6				386.0	730.1	692.3	103.8	12.3%	100%	
19	3260	5935.41	104.0	13.5	116.7				156.6	588.6	541.1	103.9	12.4%	100%	
20	3261	5937.35	104.0	13.5	117.2				381.5	846.0	784.4	101.7	15.3%	98%	
21	3262	5938.47	104.0	13.5	117.0				394.6	1052.8	975.6	103.3	13.3%	99%	
22	3263	5939.71	104.0	13.5	118.4				153.8	592.4	535.2	103.0	15.0%	99%	
23	3264	5938.19	104.0	13.5	119.0				152.2	503.8	457.3	103.3	15.2%	99%	
24	3265	5936.22	104.0	13.5	116.2				530.8	824.8	786.6	101.1	14.9%	97%	
25	3266	5932.29	104.0	13.5	118.5				533.8	946.0	895.1	103.9	14.1%	100%	
26	3267	5930.95	104.0	13.5	117.4				282.0	625.7	584.4	103.3	13.7%	99%	
27	3268	5935.82	104.0	13.5	115.9				295.0	833.7	770.1	102.2	13.4%	98%	
28	3269	5939.01	104.0	13.5	116.2				156.4	679.4	621.0	103.2	12.6%	99%	
29	3270	5941.06	104.0	13.5	116.4				153.6	848.5	771.1	103.4	12.5%	99%	
30	3271	5941.25	104.0	13.5	116.9				384.6	759.2	712.1	102.2	14.4%	98%	

Remarks: _____

Gauge Number: 26667

Density Counts: 1844

Moisture Counts: 434

Record No. 62 **62 S**



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Client Name: Bowie Resources

Authorized By: Client **Date:** 10/18/22

Placement Contractor: Bowie Resources

Reviewed By: MAB **Date:** 11/10/22

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.(%)	
31	3272	5939.44	104.0	13.5	115.6				383.8	602.0	573.9	100.7	14.8%	97%	
32	3273	5937	104.0	13.5	116.9				153.8	695.4	633.3	103.5	13.0%	100%	
33	3274	5934.65	104.0	13.5	117.4				533.5	719.6	695.9	102.4	14.6%	99%	
34	3275	5929.12	104.0	13.5	118.2				528.2	1165.8	1085.6	103.3	14.4%	99%	
35	3276	5927.72	104.0	13.5	118.0				395.7	898.2	835.5	103.3	14.3%	99%	
36	3277	5931.49	104.0	13.5	115.9				396.7	671.3	639.9	102.6	12.9%	99%	
37	3278	5935.41	104.0	13.5	116.2				156.4	433.6	400.1	102.2	13.7%	98%	
38	3279	5934.88	104.0	13.5	117.3				535.0	1214.0	1135.8	103.8	13.0%	100%	
39	3280	5931.2	104.0	13.5	116.1				379.4	1119.2	1040.3	103.7	11.9%	100%	
40	3281	5929.5	104.0	13.5	115.9				315.9	509.2	485.3	101.6	14.1%	98%	
41	3282	5925.83	104.0	13.5	116.0				292.8	692.2	644.4	102.1	13.6%	98%	
42	3283	5924.31	104.0	13.5	116.4				536.9	1372.2	1281.6	103.8	12.2%	100%	
43	3284	5927.27	104.0	13.5	118.9				153.8	957.8	852.5	103.3	15.1%	99%	

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

Gauge Number: 26667

Density Counts: 1844

Moisture Counts: 434

Record No. 63 **63 S**

Point #	Northing	Easting	Elevation	Date
3242	18276.38229	36501.69524	5927.49146	10/18/2022
3243	18282.49038	36507.37274	5929.01796	10/18/2022
3244	18196.14985	36524.53229	5925.99555	10/18/2022
3245	18078.99066	36513.05892	5921.97838	10/18/2022
3246	18038.38226	36443.36444	5922.44320	10/18/2022
3247	18148.42865	36422.81648	5927.13062	10/18/2022
3248	18221.80853	36376.20680	5929.41969	10/18/2022
3249	18222.09448	36365.47710	5933.03261	10/18/2022
3250	18163.20470	36214.57053	5933.94527	10/18/2022
3251	18160.90130	36225.57934	5935.88640	10/18/2022
3252	18103.67123	36306.83184	5930.49267	10/18/2022
3253	18000.34215	36314.92673	5926.45382	10/18/2022
3254	17954.99844	36199.69537	5930.45625	10/18/2022
3255	18060.11577	36214.71484	5932.97881	10/18/2022
3256	18136.39843	36097.48179	5938.74008	10/18/2022
3257	18053.05768	36112.59041	5936.50603	10/18/2022
3258	17971.53288	36132.59451	5933.72069	10/18/2022
3259	17900.36335	36081.98493	5932.48460	10/18/2022
3260	17952.19785	36002.96405	5935.41426	10/18/2022
3261	18022.35103	35962.78276	5937.35215	10/18/2022
3262	18119.31001	35943.20011	5938.47005	10/18/2022
3263	18075.78059	35834.90903	5939.71207	10/18/2022
3264	17982.45339	35878.79582	5938.19506	10/18/2022
3265	17905.31354	35908.82307	5936.22409	10/18/2022
3266	17834.37471	35980.34998	5932.29207	10/18/2022
3267	17759.78004	35909.39456	5930.95134	10/18/2022
3268	17805.55468	35817.18311	5935.82444	10/18/2022
3269	17909.48739	35766.53302	5939.01062	10/18/2022
3270	17996.83272	35726.49334	5941.08624	10/18/2022
3271	17898.53397	35649.33018	5941.25331	10/18/2022
3272	17804.30981	35623.56079	5939.44810	10/18/2022
3273	17774.46349	35714.39752	5937.00745	10/18/2022
3274	17706.24192	35721.66530	5934.65567	10/18/2022
3275	17647.99722	35818.19677	5929.12819	10/18/2022
3276	17556.31350	35757.97589	5927.72465	10/18/2022
3277	17600.68288	35678.39484	5931.49411	10/18/2022
3278	17660.90441	35632.85925	5935.41300	10/18/2022
3279	17657.03665	35576.24789	5934.88464	10/18/2022
3280	17559.67573	35531.46552	5931.20707	10/18/2022
3281	17533.09135	35606.34586	5929.50077	10/18/2022
3282	17453.56141	35678.93426	5925.83070	10/18/2022
3283	17392.67075	35590.29869	5924.31792	10/18/2022
3284	17440.20051	35538.08030	5927.27621	10/18/2022



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

