J. E. STOVER & ASSOCIATES, INC.

2352 NORTH 7TH STREET, UNIT B
GRAND JUNCTION, COLORADO 81501
PHONE: (970) 245-4101, FAX: (970) 242-7908

MINE ENGINEERING
MINE RECLAMATION
CIVIL ENGINEERING
CONST. MANAGEMENT

Via Electronic Transmittal

October 23, 2019

Rob Zuber
Division of Reclamation, Mining & Safety
1313 Sherman St., Room 215
Denver, CO 80203

Re: Bowie Resources, LLC, Bowie No. 2 Mine
Coal Mine Waste Banks & Instrumentation Monitoring
Pond Quarterly Inspections
Permit C-1996-083

Dear Mr. Zuber:

Enclosed please find the referenced reports for the 3rd quarter of 2019, including the instrumentation and monitoring data from HBET.

This quarterly report is tardy due to HBETs server being hacked the weekend of October 12. It took them several days to restore the server and get files backed up. Once the files were backed up, HBET worked hard to catch up and get projects out.

Please call if you have any questions.

Sincerely,

Tamme Bishop

Tamme Bishop, P.E.
Project Engineer

cc: Basil Bear

QUARTERLY POND INSPECTION REPORT

Operator:	Bowie Resources LLC	Quarter:	Third 2019
Mine:	Bowie No. 2 Mine - C-1996-083	Inspection Date:	10-Sep-19

Pond Identification	B	C	D - Gob Pile	F - New Gob	J UTL East	K UTL West
Type of Pond	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
Status During Inspection:						
Approximate Water Level	Puddle	Puddle	Puddle	Puddle	5849	Damp
Sediment (% remaining)	90%	90%	85%	80%	90%	80%
Outflow (cfs)	0	0	0	0	0	0
Features	Problem Yes/No	Problem Yes/No	Problem Yes/No	Problem Yes/No	Problem Yes/No	Problem Yes/No
Erosional						
Rills & Gulleys	No	No	No	No	No	No
Inadequate Vegetation	No	No	No	No	No	No
Outlet Channel Erosion	No	No	No	No	No	No
Burrows	No	No	No	No	No	No
Other	No	No	No	No	No	No
Structural						
Differential Settling	No	No	No	No	No	No
Cracks or Slides	No	No	No	No	No	No
Seepage	No	No	No	No	No	No
Other	No	No	No	No	No	No
Appurtenant Structures						
Defective Spillways	No	No	No	No	No	No
Dewatering Devices Clogged	No	No	No	No	No	No
Faulty Gates, Etc.	No	No	No	No	No	No
Other	No	No	No	No	No	No

Additional Comments

Design depth measured from pond bottom to invert of emergency spillway:
Pond B=10, C=10, D=10, J=10, K=3, F=10' TD
Pond Bottom Elevations B=5942, C=5990, D=5970, J=5846, F=5944, K=5819
Pond B was damp with a very small puddle at the east end.
Pond C held just a small puddle.
Pond D was held just a puddle.
Pond J held between 2-3' of water.
Pond K was wet with no standing water visible.
Pond F held a puddle and was in the process of being cleaned out.

SWMP components evaluated as part of this inspection. No corrections necessary at this time.

Name of Inspector: Tamme Bishop

Tamme Bishop
Colorado P.E. 43402 Date

BOWIE RESOURCES, LLC
Bowie No. 2 Mine
Coal Mine Waste Bank Nos. 1, 2, & 3 Inspections –3rd Quarter 2019

On September 10th, 2019, a visual inspection of the Bowie No. 2 Mine coal mine waste banks was performed by the undersigned in accordance with Rule 4.10.2. This inspection includes Gob Pile Nos. 1, 2, and 3. Pile No. 1 is considered inactive. Pile no. 2 is located north of Bowie Road. Pile no. 3 is located south of Bowie Road.

I, Tamme Bishop, P.E., have a wide variety of experience in the design and construction of earth fill embankments. Nothing was observed during the inspection that would indicate the piles have a potential for failure. The slips discussed in the 4Q 2016 and 1Q 2017 report had been regraded to the design contours and show no evidence that would be cause for concern of slipping again. A fair cover of volunteer vegetation has been established.

Gob Pile #2: A small area of seepage discussed in past reports at the toe of gob pile #2 and west of the haul road is still seeping. However, there is no movement associated with the seep and nothing seen during the inspection that would indicate the pile has a potential for failure. The aforementioned seep was first documented in 2Q of 2016. Since that time, the seep has not increased noticeably in flow and has not caused any instability in the pile. This area will continue to be monitored and discussed as needed in quarterly reports.

There are no windrows remaining on top of gob pile #2. All organic material and topsoil has been removed ahead of the waste bank founding. The upper diversion ditches were cleaned out during June, 2017 and were in good repair.

At gob pile #2, the first bench east of the haul road is covered with soil. The second bench east of the haul road is mostly covered with a subsoil pile. Most of the third and forth benches east of the road are covered with soil. Soil has been placed on most of the second and third benches west of the haul road.

The top of gob pile #2 can serve as a drying area for end dumped gob, however, no gob is currently stockpiled on top of the pile. Gob is to be stacked to a maximum height of 20 feet, with a slope angle up to 1.5h:1v. A 25-foot buffer zone on the face of the gob pile will be maintained at all times. Gob will be spread and compacted to the currently approved slope configuration as soon as gob and weather conditions allow.

Gob Pile #3: The upper diversion and lower ditches at gob pile #3 were inspected, and were in good condition, however the upper diversion ditch should be cleaned out during 2019. The lower diversion ditch (J3) and culvert J1 were cleaned out in September 2019. The seep that is north of the east drying area continues to flow, although at a much lower rate during the time of inspection than compared to the 2Q inspection. Bowie has been closely monitoring the flow and has made the Fire Mountain Canal aware of the loss of water from the canal. Because there is no gob currently being placed in the area of the seep, it will not impact the long-term stability of the gob pile. However, before final placement and compaction of gob in the footprint of the east drying area, an underdrain will be installed. Approval of the underdrain design was incorporated into the permit under Technical Revision No. 105.

There was no coal mine waste was generated from the preparation plant during the quarter. Coal mine waste is to be placed in the piles in approximately horizontal lifts no more than 24-inches thick. The coal mine waste is dried and then spread and compacted by self propelled sheepsfoot compactors. There were sixteen compaction tests were taken at gob pile #3 during the quarter. There were no compaction tests taken at gob pile #2 during the quarter.

The westernmost and easternmost sections of gob pile #3 serve as drying areas for end dumped material. The purpose of the gob drying area is to provide an area for temporary storage of gob for drying purposes. End-dumped gob in the gob drying areas is worked with dozers and track hoes to assist in the drying process. There was no work at gob pile #3 during the inspection although placement and compaction efforts have occurred during the second quarter.

During active mining conditions, it is necessary to stockpile gob material at gob pile #3 during the winter months, then place and compact the stockpiled gob when weather allows. Stockpiling of gob can commence November 15 and end April 15. Winter stockpiled material will be re-handled and compacted by September 30. Beginning on October 1, the Operator should be compacting all material concurrently, until conditions again require stockpiling. The stockpiling dates listed above should be considered flexible and may change slightly from year to year based on weather conditions. The gob material will be stockpiled in rows generally running from northwest to southeast. The rows of gob will be placed in a controlled manner and overlap will be minimized so there is space between rows to allow for drainage to the southeast. Windrows were located on top of the pile and contained gob that had been hauled out of the west drying area.

The available volume of coverfill material is sufficient to meet the requirements of Rule 4.10.4(5). No coverfill was used for blending or other uses during the quarter.

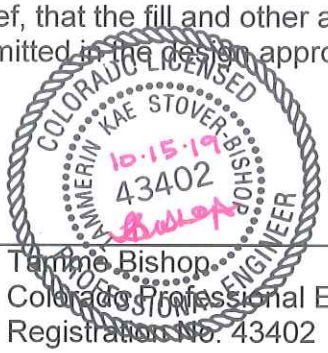
Maintenance work performed during the quarter include cleaning of Pond F, and cleaning of Ditch F7. The culvert at curve #11 was installed, and riprap was placed in the section of ditch F4 that was downcutting.

A failure of the gob pile no. 1 would probably not be a hazard to human life. The pile is located above a large flat bench. The bench is approximately 80 to 150-feet wide directly below the pile. Additionally, the gob pile sediment pond is located below the pile. If the coal mine waste bank failed, the material would very likely be contained on the bench below the pile and or within the gob pile sediment pond.

A failure of gob pile no. 2 would probably not be a hazard to human life. A residential dwelling is located over 300-feet below pile no. 2. The piles are located above Bowie Road. A failure of the piles might damage Bowie Road and the Fire Mountain Canal but would not likely impact the residential dwelling.

A failure of gob pile no. 3 would not be a hazard to human life. A failure of the pile might damage the rail track below the pile. A small slip/slide occurred in February on the southern edge of the pile, no offsite damage occurred. The road at the toe of the pile was covered with gob making it inaccessible to vehicles.

I certify that to the best of my knowledge and belief, that the fill and other aspects of the coal mine waste banks have been constructed as permitted in the design approved by the DRMS.



Tammie Bishop Date
Colorado Professional Engineer
Registration No. 43402

Huddleston-Berry
Engineering & Testing, LLC

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

October 16, 2019
Project#01349-0001

Bowie Resources, LLC
43659 Bowie Road
Paonia, Colorado 81428

Attention: Mr. Basil Bear

Subject: Summary of Instrumentation Monitoring
3rd Quarter 2019
Bowie Coal Waste Disposal Area No. 2
Paonia, Colorado

Reference: *Summary of Instrumentation Monitoring, 2nd Quarter 2018, Bowie Coal Waste Disposal Area No. 2, Paonia, Colorado* by Huddleston-Berry Engineering & Testing, LLC for Bowie Resources, LLC, July 19, 2019.

Stability Evaluation, Technical Revision #85, Gob Pile #2 Drying Area, Bowie No. 2 Mine by Huddleston-Berry Engineering & Testing, LLC for Bowie Resources, LLC, June 3, 2014.

Dear Mr. Bear,

At the request of the Colorado Division of Reclamation, Mining and Safety (DRMS), Huddleston-Berry Engineering & Testing, LLC (HBET) prepared this letter regarding quarterly monitoring of vibrating wire piezometers and inclinometers at Coal Waste Disposal Area No. 2 (CWDA No. 2) at the Bowie mine near Paonia, Colorado. The intent of the monitoring was to detect significant changes in the pore water pressures or significant displacements within the coal waste which may impact the stability of the waste pile.

Inclinometers

In 2005, three inclinometers, designated BG05-04, BG05-05, and BG05-07, were installed at CWDA No. 2 through the coal refuse and into the native foundation soils. The inclinometers have been monitored quarterly since August 2005. The 3rd Quarter 2019 monitoring was completed by DOWL on September 30th, 2019. The monitoring report prepared by DOWL includes a site plan showing the locations of the inclinometers and cumulative displacement curves relative to the baseline readings in 2005. Axis "A" reflects deformation with depth in the direction of anticipated movement perpendicular to the face of the gob. Axis "B" reflects deformation with depth parallel to the face of the gob.

Discussion of Inclinometer Monitoring

The last two inclinometer readings show deflection in BG05-5. However, the deflection is perpendicular to the slope direction. As a result, HBET does not believe that the reported deflection is an indication of instability. However, the 4th Quarter data will provide additional information for evaluation. No significant movements were reported for the other inclinometers.

Vibrating Wire Piezometers

Between 2005 and 2012, a total of ten vibrating wire piezometers were installed in CWDA No. 2. However, several of the piezometers have been damaged or have otherwise ceased to function. Currently, five of the piezometers are functional.

Monitoring of the functioning piezometers was completed by DOWL September 30th, 2019. The attached monitoring report prepared by DOWL includes the piezometer monitoring data and the data is summarized in the following table.

VWP ID	Initial Pore Pressure (psi)	06/14/19 Pore Pressure (psi)	09/30/19 Pore Pressure (psi)	Difference Since Installation (psi)	Difference Since Last Reading (psi)
VWP-05	6.8	1.5	1.9	-4.9	+0.4
VWP-06	11.3	12.2	12.0	+0.7	-0.2
VWP-08	8.2	8.9	8.8	+0.6	-0.1
VWP-09	2.8	2.8	2.8	0.0	0.0
VWP-10	-1.9	-1.8	-1.8	+0.1	0.0

Discussion of Vibrating Wire Piezometers

VWP-05

VWP-05 was installed on August 3, 2005 near the toe of CWDA No. 2 adjacent to the access road/bench. The pore pressures recorded at VWP-05 have shown some seasonal fluctuations; however, the range of pore pressure changes is fairly small. In general, HBET does not believe that the pore pressures in VWP-05 are cause for concern regarding stability of the gob pile.

VWP-06

VWP-06 was installed on June 5, 2009 near the existing top of CWDA No. 2. The pore pressures recorded at VWP-06 have fluctuated since installation. In general, the fluctuations have been seasonal and reflect the level of coal mine waste placement activity on top of CWDA No. 2. In general, HBET does not believe that the measured pore pressures are an indication of any instability in CWDA No. 2.

VWP-08

VWP-08 was installed on June 5, 2009 at a slightly lower elevation than VWP-06. The pore pressures recorded at VWP-08 have fluctuated since installation. However, the fluctuations have generally been within a narrow range of values. The measured pore pressures are generally consistent with the level of coal mine waste placement activity at CWDA No. 2.

As indicated in the referenced *Stability Evaluation* report, the stability of CWDA No. 2 is sensitive to increases in pore pressures in VWP-08. An increase in the pore pressure of 7 psi in VWP-08 would result in a reduction of the Factor of Safety to below 1.5.

The current pore pressure reflects a piezometric surface elevation of approximately 6096 feet which is much less than the critical elevation of 6113 feet. As a result, HBET does not believe that the measured pore pressures in VWP-08 are any indication of instability in CWDA No. 2.

VWP-09

VWP-09 was installed on May 18, 2012 near the toe of CWDA No. 2. The pore pressures recorded at VWP-09 have been fairly steady since installation. This suggests that dewatering of the gob in this area is likely nearly complete. It is anticipated that the pore pressures at VWP-09 will remain fairly steady over time.

VWP-10

VWP-10 was installed on May 18, 2014 near the toe of CWDA No. 2. The pore pressures recorded at VWP-10 have been fairly steady since installation. This suggests that dewatering of the gob in this area is likely nearly complete. It is anticipated that the pore pressures at VWP-10 will remain fairly steady over time.

General

In general, based upon the results of the recent VWP and inclinometer monitoring data, HBET does not believe that there is any reduction in the stability of CWDA No. 2. Due to the limited activity at the mine, HBET recommends that the monitoring frequency be reduced to semi-annually.

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

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

ATTACHMENTS

970-249-6828 ■ 800-865-9847 (fax) ■ 222 South Park ■ Montrose, Colorado 81401 ■ www.dowl.com
Alaska ■ Arizona ■ Colorado ■ Montana ■ Oregon ■ Washington ■ Wyoming

October 4, 2019

Mike Berry
Huddleston-Berry Engineering and Testing, LLC
640 White Avenue
Grand Junction, CO 81501

SUBJECT: Summary Report, 3rd Quarter 2019, Inclinometer and Active Vibrating Wire Piezometer Data July – September 2019, Bowie Mine #2 Coal Waste Disposal Area (CWDA) #2

Dear Mr. Berry:

DOWL conducted quarterly monitoring of inclinometers and vibrating wire piezometers (VWP) at Coal Waste Disposal Area #2 (CWDA #2), Bowie Resources, LLC. This report is intended to cover the period of July through September 2019. VWP and inclinometer data was recorded on 9/30/19. Per CDRMS and your instructions, vibrating wire piezometer and inclinometer readings for all active instruments are taken quarterly.

Vibrating Wire Piezometers

The physical locations of the piezometers are shown on the attached Instrumentation Site Plan (Map 1). As seen on this map, five of the original VWP's were damaged and some were replaced. Currently, there are five active VWP's and three of them are adjacent to the three inclinometers. The graph of historical data from 5/16/05 through 5/21/14 is presented for reference as Figure 1. A graph of measured pore pressures of active piezometers is presented on the attached Figure 2 and is presented numerically in Table 1 below.

Table 1. Summary of VWP Pore Pressure Readings

VWP ID #	Installation Pore Pressure (psi)	6/14/19 (Q2) Pore Pressure (psi)	9/30/19 (Q3) Pore Pressure (psi)	Difference Since Installation (psi)	Difference Since Last Quarter (psi)
VWP-05	6.8	1.5	1.9	-4.9	0.4
VWP-06	11.3	12.2	12.0	0.7	-0.2
VWP-08	8.2	8.9	8.8	0.6	-0.1
VWP-09	2.8	2.8	2.8	0.0	0.0
VWP-10	-1.9	-1.8	-1.8	0.1	0.0

As seen on Figure 2, the VWP readings are consistent either with previous recent or historic readings. Pore pressure readings went down slightly in two piezometers, up slightly in one piezometer, and stayed the same in two piezometers when compared to the Q2 readings.

Inclinometers

Three inclinometers, designated BG05-4, BG05-5, and BG05-7, were installed at CWDA #2 in August 2005. The inclinometers were installed through the coal refuse and approximately 20 feet into the native foundation soils. The physical locations of the inclinometers are shown on the attached Instrumentation Site Plan (Map 1). Baseline readings were taken on 8/10/05 and subsequent readings have generally been taken quarterly since that time. Displacement curves for each of the three inclinometers for the current and the prior three readings are presented as attachments to this letter in Figure 3. Axis "A" reflects deformation with depth in the direction of anticipated movement (downslope), while Axis "B" is orthogonal to Axis A.

As described in previous reports, we believe historic displacements indicated on the plots for the approximate upper ten feet of the inclinometers are likely due to placement of cover soil on the face of the waste pile during normal operations for maintenance and revegetation. Recent downslope readings (Axis A) are generally consistent with previous readings. There appears to be some displacement in the orthogonal direction (Axis B) for inclinometer BG05-5B. In March 2019 there was no displacement, but in June the displacement was above 14 feet, and in the recent September the displacement appeared to continue to roughly 42 feet. However, this displacement is not in the downslope direction, so it is not overly concerning, and may be due to a systematic recording error. There is no downslope displacement of any of the three inclinometers. This discrepancy should be evaluated during the next (Q4) reading.

If you have any questions regarding this letter or the instrumentation monitoring at CWDA #2, please contact me at (907) 562-2000 or *jholland@dowl.com*.

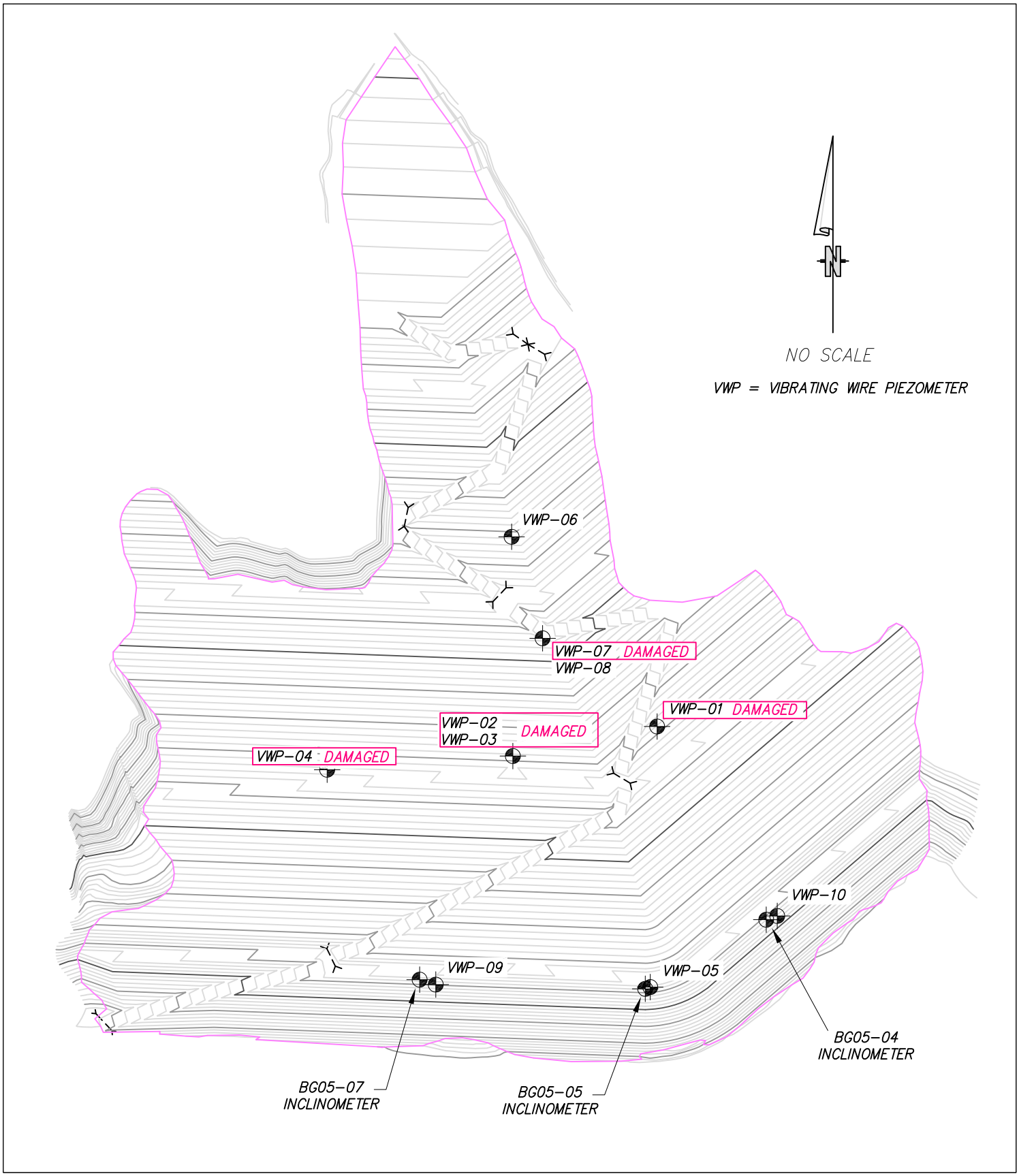
Respectfully Submitted,
DOWL

Jeremiah E. Holland, P.E.
Geotechnical Engineer

LJB/JEH

Enclosures: Map 1 – Instrumentation Location Plan
Figure 1 – Active and Damaged Piezometer Data Graph (2005-2014)
Figure 2 – Active Vibrating Wire Piezometer Data Graph (to present)
Figure 3 – Inclinometer Displacement Curves

INSTRUMENTATION SITE PLAN



Map 1 OF 1	DATE 2017 JOB NO. 7131.74699.01	Huddleston-Berry BOWIE #2 GOB PILE DELTA COUNTY, COLORADO	DOWL WWW.DOWL.COM 222 South Park Avenue Montrose, Colorado 81401 970-249-6828

Figure 1 - Bowie Mine #2 - CWDA #2
Active and Damaged Vibrating Wire Piezometer Data

Inception (5/16/05) through 5/21/14

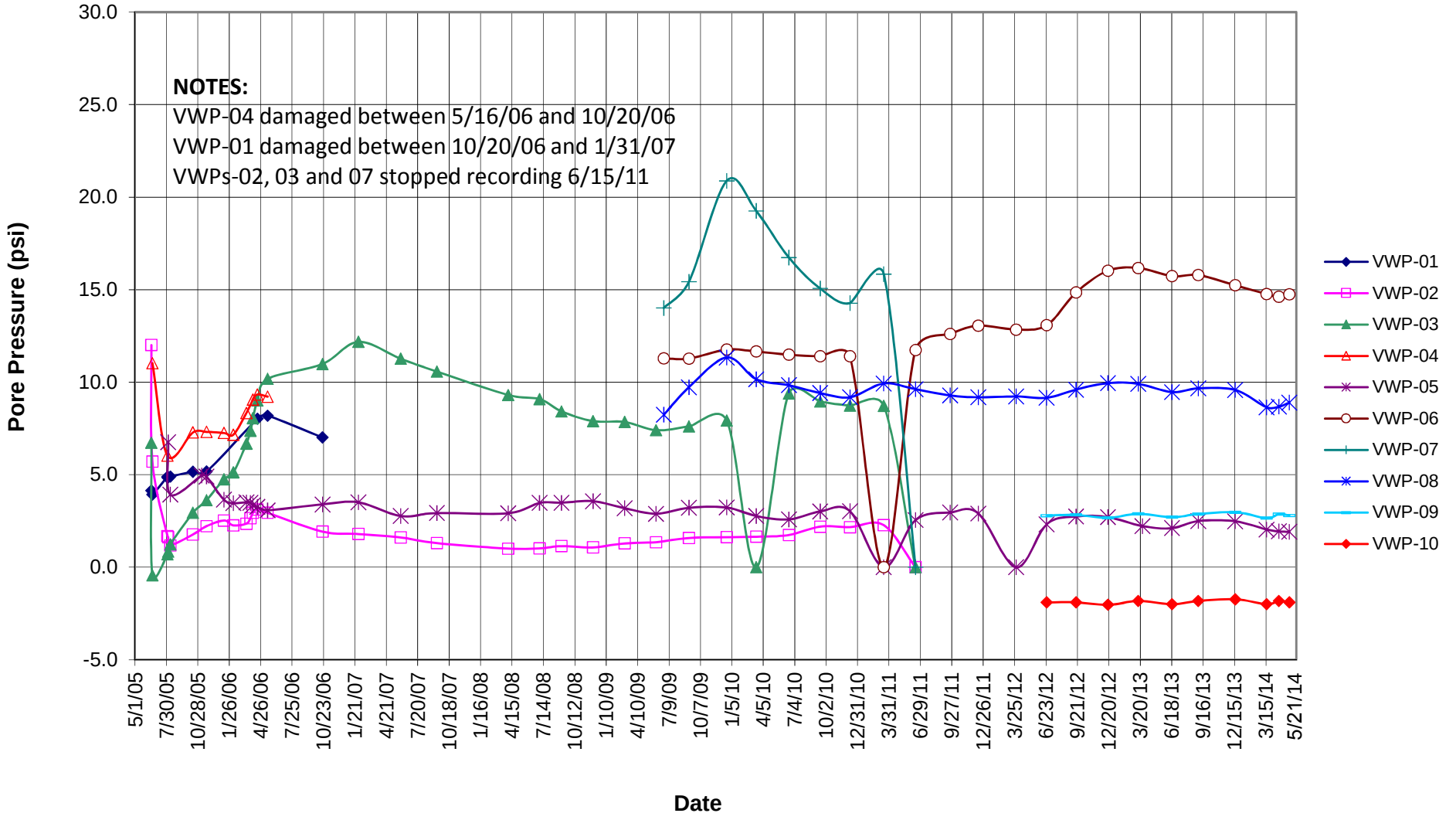


Figure 2 - Bowie Mine #2 - CWDA #2
Active Vibrating Wire Piezometer Data

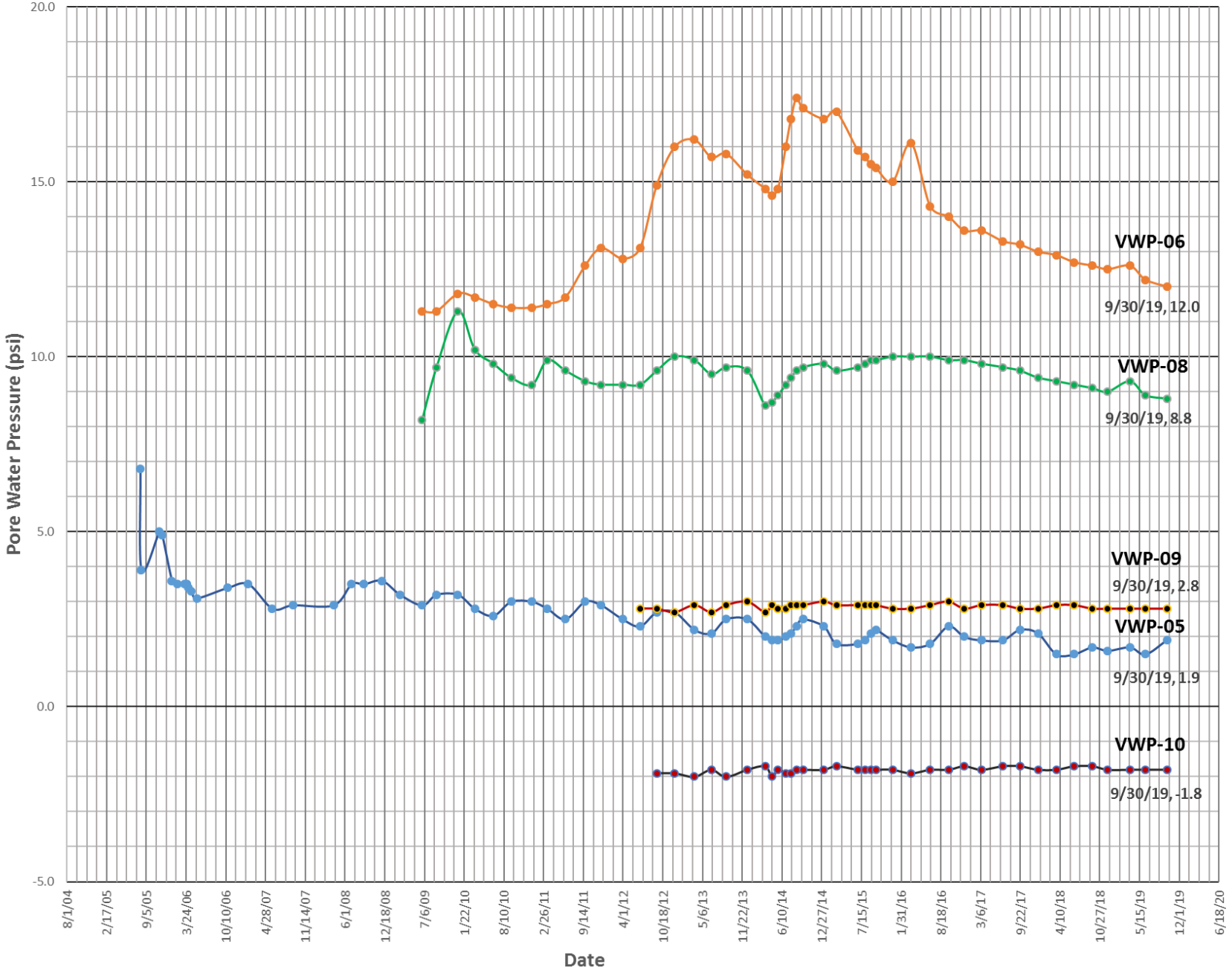
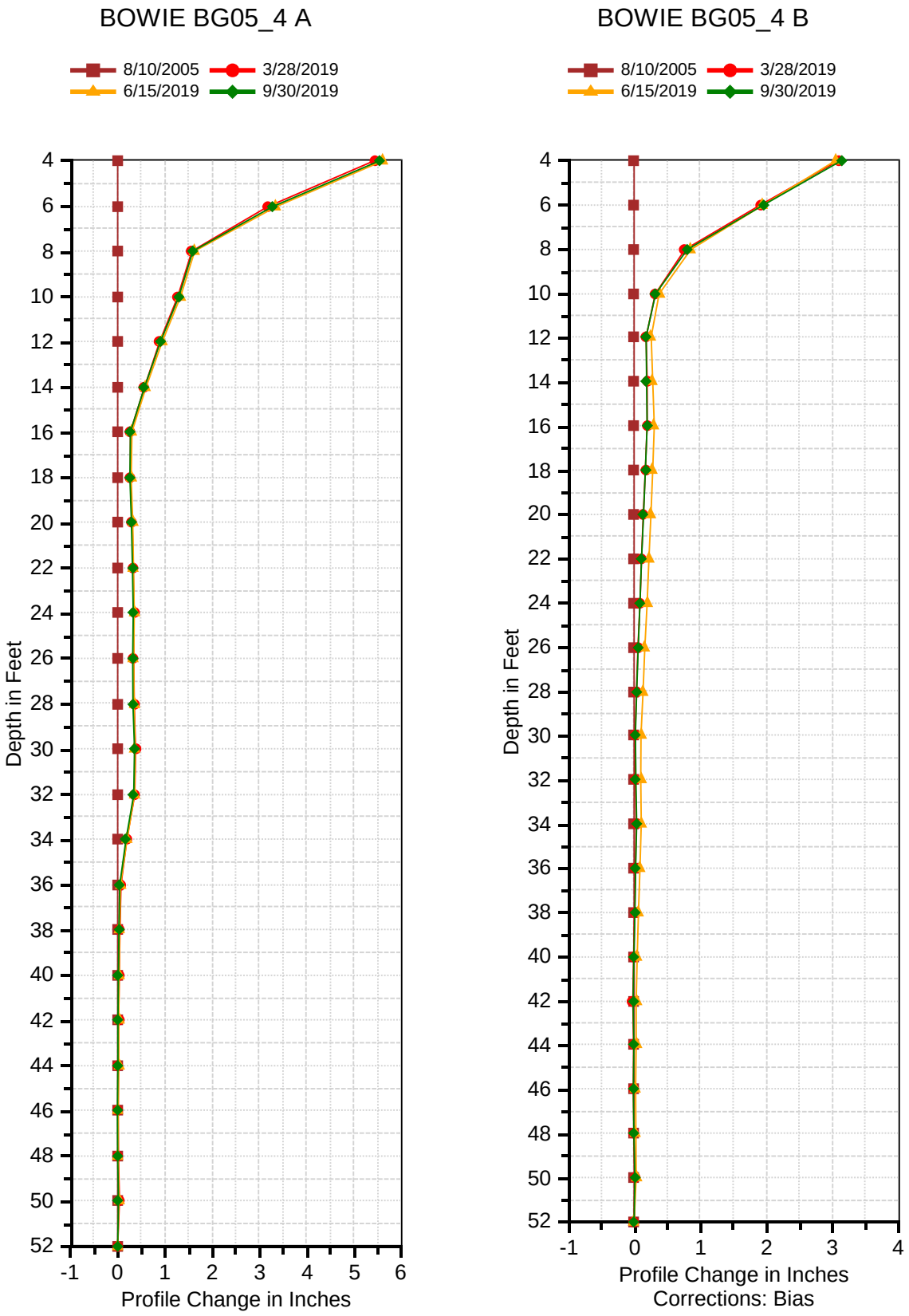
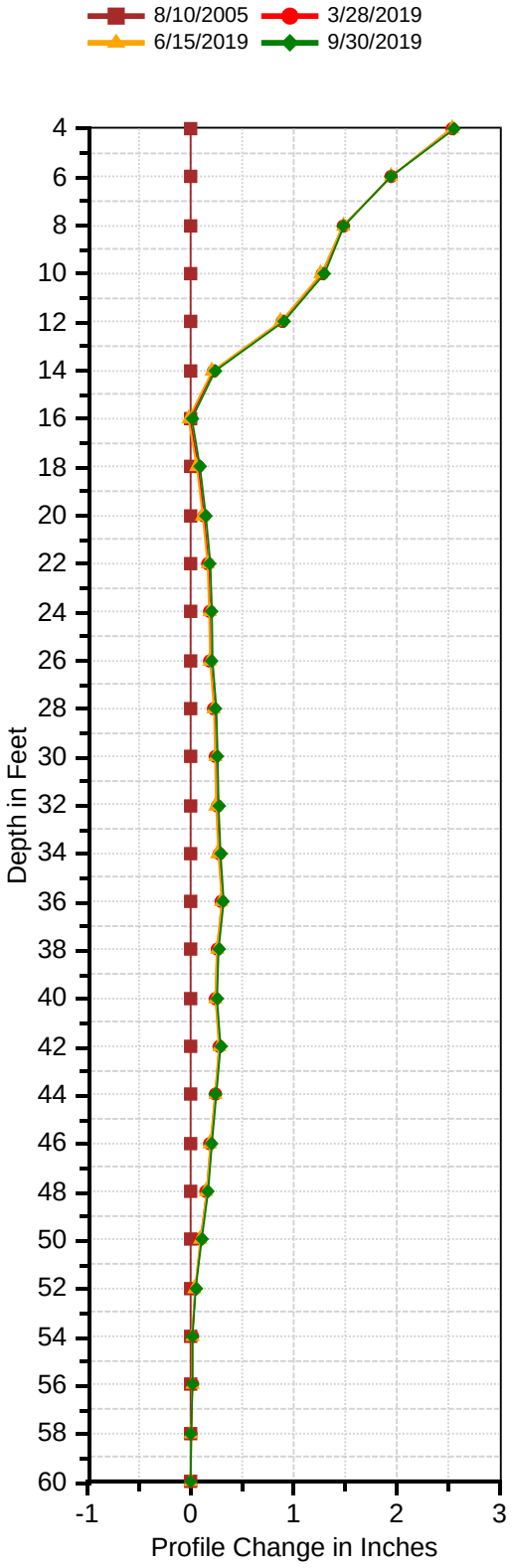


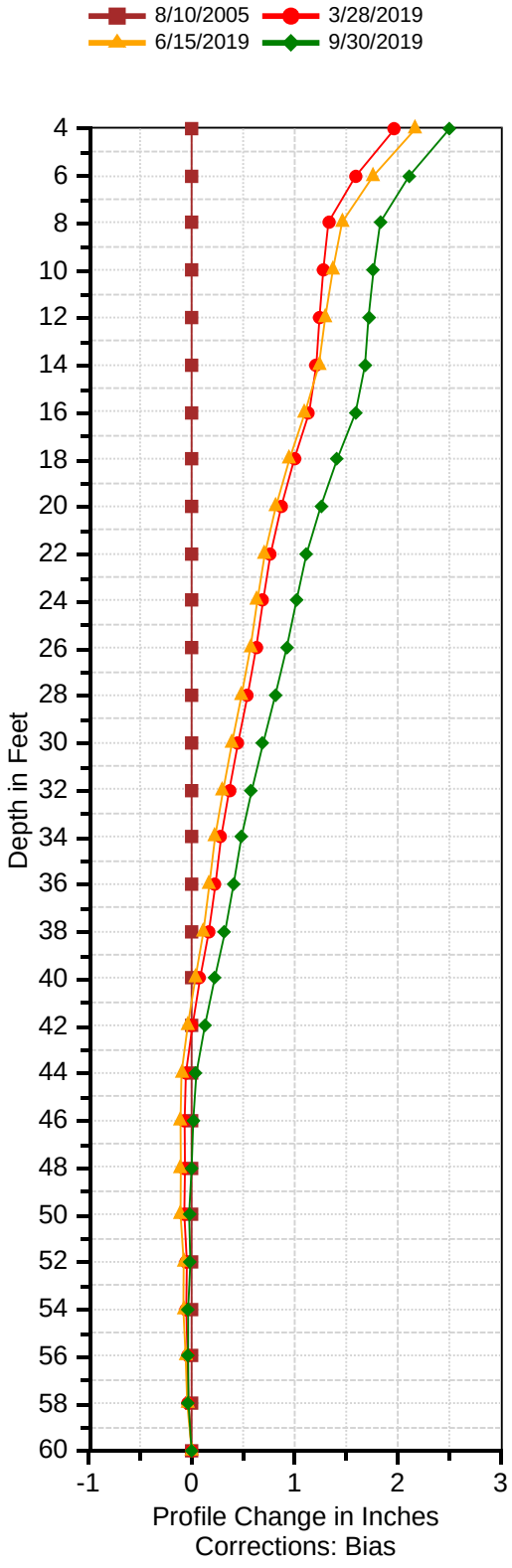
Figure 3 - Inclinometer Displacement Curves

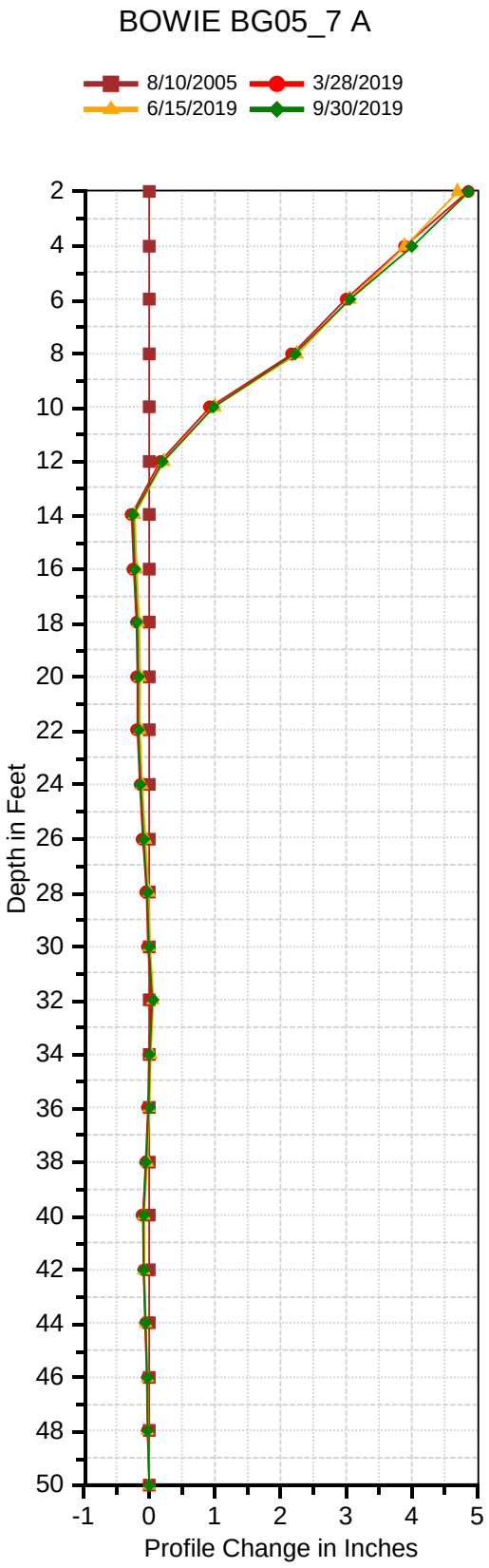


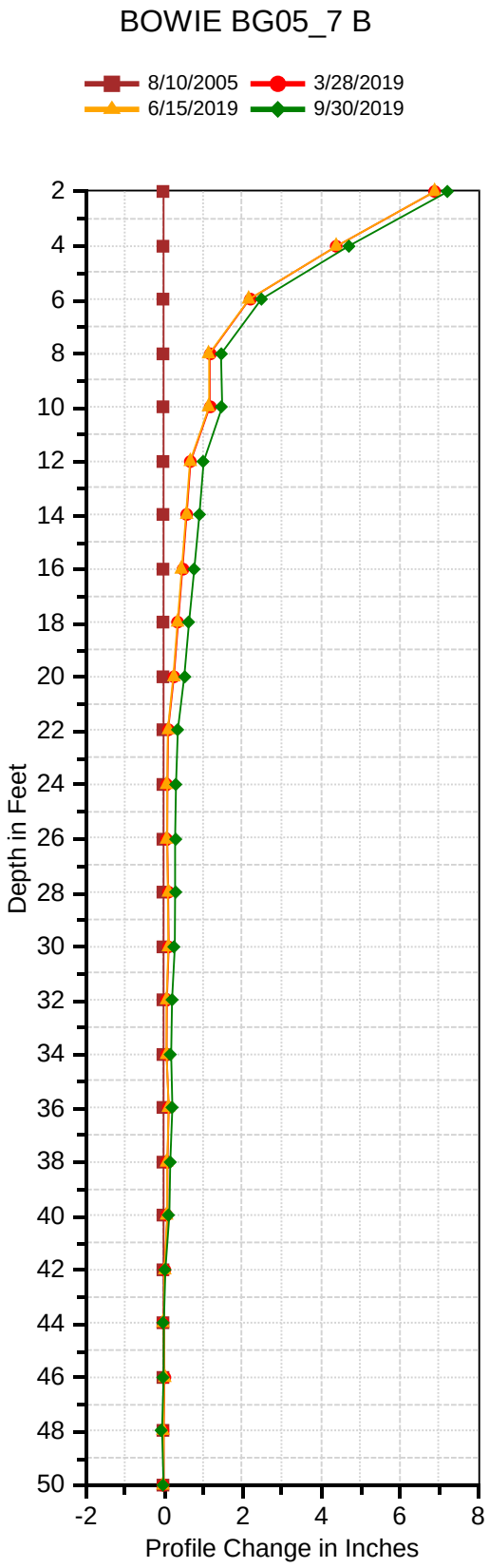
BOWIE BG05_5 A



BOWIE BG05_5 B




BOWIE BG05_7 A
8/10/2005
3/28/2019
6/15/2019
9/30/2019
Depth in Feet
Profile Change in Inches


BOWIE BG05_7 B
8/10/2005
3/28/2019
6/15/2019
9/30/2019
Depth in Feet
Profile Change in Inches

Huddleston-Berry
Engineering & Testing, LLC

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

October 23, 2019
Project#01349-0001

Bowie Resources, LLC
43659 Bowie Road
Paonia, Colorado 81428

Attention: Mr. Basil Bear

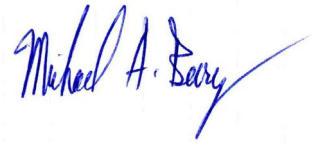
Subject: Construction Materials Testing
3rd Quarter 2019
Bowie Mine No. 2
Paonia, Colorado

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 July 3rd and August 22nd, 2019. 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



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

Huddleston-Berry
Engineering & Testing, LLC

SOIL COMPACTION TEST REPORT

Task: Gob Pile Densities

Field vs. Lab Densities

Project No.: 01349 - 0001
Project Name: Bowie Mine
Client Name: Bowie Resources
Placement Contractor: Bowie Resources
Contractor Representative: Ron

Tested By: MS **Date:** 7/3/19
Work Order No: 60045
Authorized By: Client **Date:** 7/3/19
Reviewed By: MAB **Date:** 7/8/19

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	431	5880.8	104.0	13.5	109.1				241.4	915.0	842.8	97.4	12.0%	94%	
2	432	5881.9	104.0	13.5	105.0				290.9	1030.7	950.0	93.5	12.2%	90%	
3	433	5884	104.0	13.5	105.5				237.1	1787.1	1604.8	93.1	13.3%	90%	
4	434	5891.8	104.0	13.5	106.6				241.5	1339.6	1222.9	95.3	11.9%	92%	
5	435	5890.4	104.0	13.5	108.2				292.0	1167.9	1075.0	96.7	11.9%	93%	
6	436	5887.7	104.0	13.5	107.8				310.6	1933.3	1739.8	94.9	13.5%	91%	

Remarks:

Gauge Number: 2472 Density Counts: 2792 Moisture Counts: 391 **Record No.** 31 S

Huddleston-Berry
Engineering & Testing, LLC

SOIL COMPACTION TEST REPORT

Task: Gob Pile Densities

Field vs. Lab Densities

Project No.: 01349 - 0001
Project Name: Bowie Mine
Client Name: Bowie Resources
Placement Contractor: Bowie Resources
Contractor Representative: Ron

Tested By: MS **Date:** 8/22/19
Work Order No: 61198
Authorized By: Client **Date:** 8/22/19
Reviewed By: MAB **Date:** 8/28/19

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	437	5888.7	104.0	13.5	106.6				322.9	1514.2	1388.9	95.4	11.8%	92%	
2	438	5887.8	95.5	14.0	99.2				242.8	1600.5	1436.0	87.2	13.8%	91%	
3	439	5893.7	95.5	14.0	103.0				317.5	1523.5	1392.0	91.8	12.2%	96%	
4	440	5892.9	95.5	14.0	99.1				388.8	1216.4	1123.6	88.0	12.6%	92%	
5	441	5897.4	95.5	14.0	99.9				392.5	1678.3	1540.9	89.2	12.0%	93%	
6	442	5895.9	95.5	14.0	102.9				314.8	1600.9	1461.8	91.8	12.1%	96%	
7	443	5890.4	95.5	14.0	101.9				244.9	880.5	809.5	90.5	12.6%	95%	
8	444	5889	104.0	13.5	106.2				308.0	1258.6	1153.9	94.5	12.4%	91%	
9	445	5886.6	95.5	14.0	103.8				389.3	1401.3	1284.5	91.8	13.0%	96%	
10	446	5883.7	104.0	13.5	107.1				397.3	1022.7	948.6	94.4	13.4%	91%	

Remarks:

Gauge Number: 2472 Density Counts: Moisture Counts: **Record No.** 32 S

Bowie Resources Gob Disposal
Location of Compaction Tests

Gob Pile # 3
July 03, 2019

Point #	North	East	Elev	Date
431	17494.73	35856.09	5880.8	July-03
432	17521.03	35828.82	5881.9	
433	17550.24	35791.6	5884.0	
434	17552.79	35722.58	5891.8	
435	17500.29	35730.39	5890.4	
436	17449.97	35770.46	5887.7	

Bowie Resources Gob Disposal
Location of Compaction Tests

Gob Pile # 3
August 22, 2019

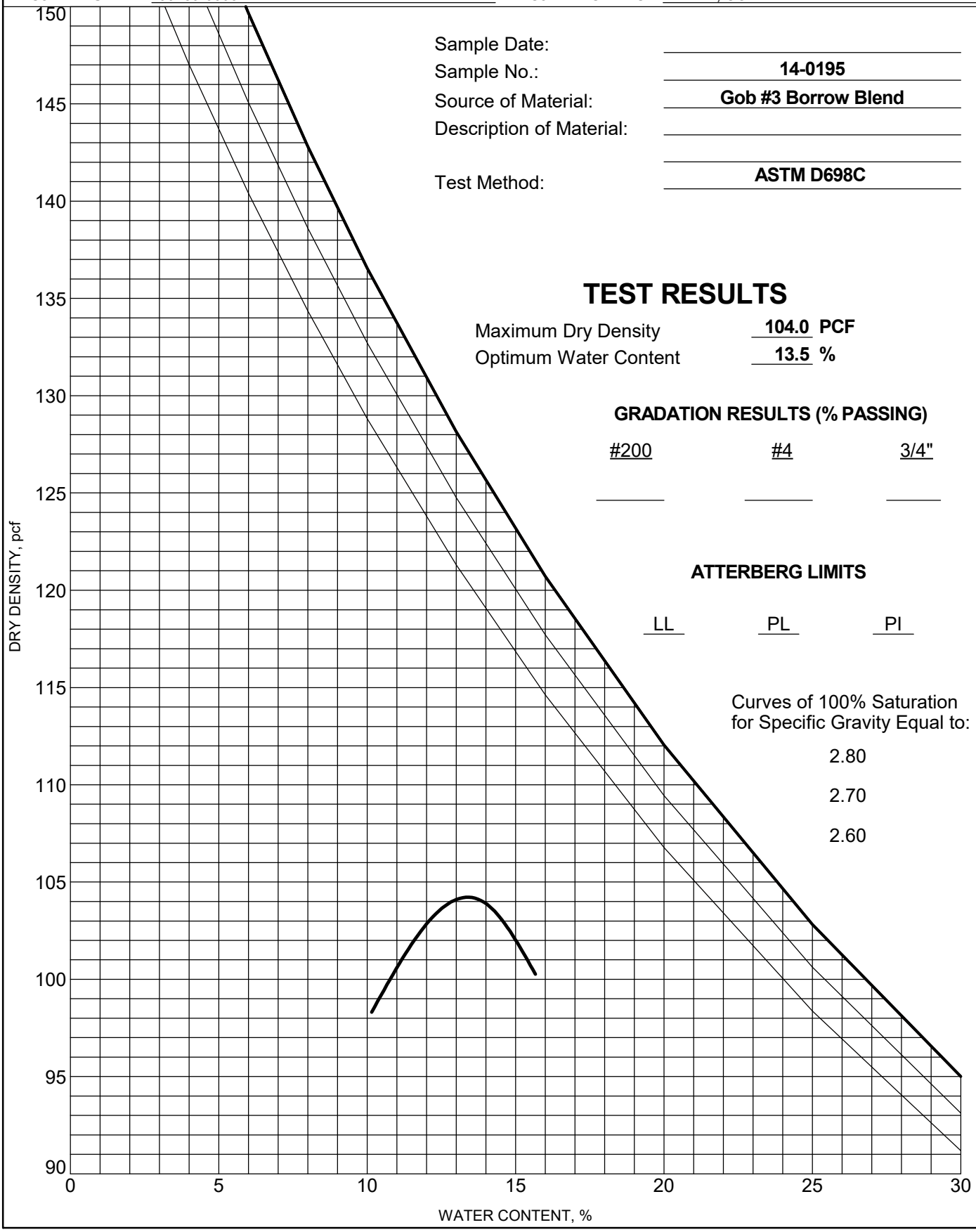
Point #	North	East	Elev	Date
437	17384.46	35819.63	5888.7	Aug-22
438	17386.87	35816.13	5887.8	
439	17468.86	35743.80	5893.7	
440	17471.45	35750.37	5892.9	
441	17541.16	35678.63	5897.4	
442	17549.46	35683.95	5895.9	
443	17602.13	35749.14	5890.4	
444	17594.81	35745.77	5889.0	
445	17535.50	35806.19	5886.6	
446	17470.88	35867.25	5883.7	

Huddleston-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:

Sample No.: **14-0195**

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

Huddleston-Berry Engineering & Testing, LLC
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970-255-8005
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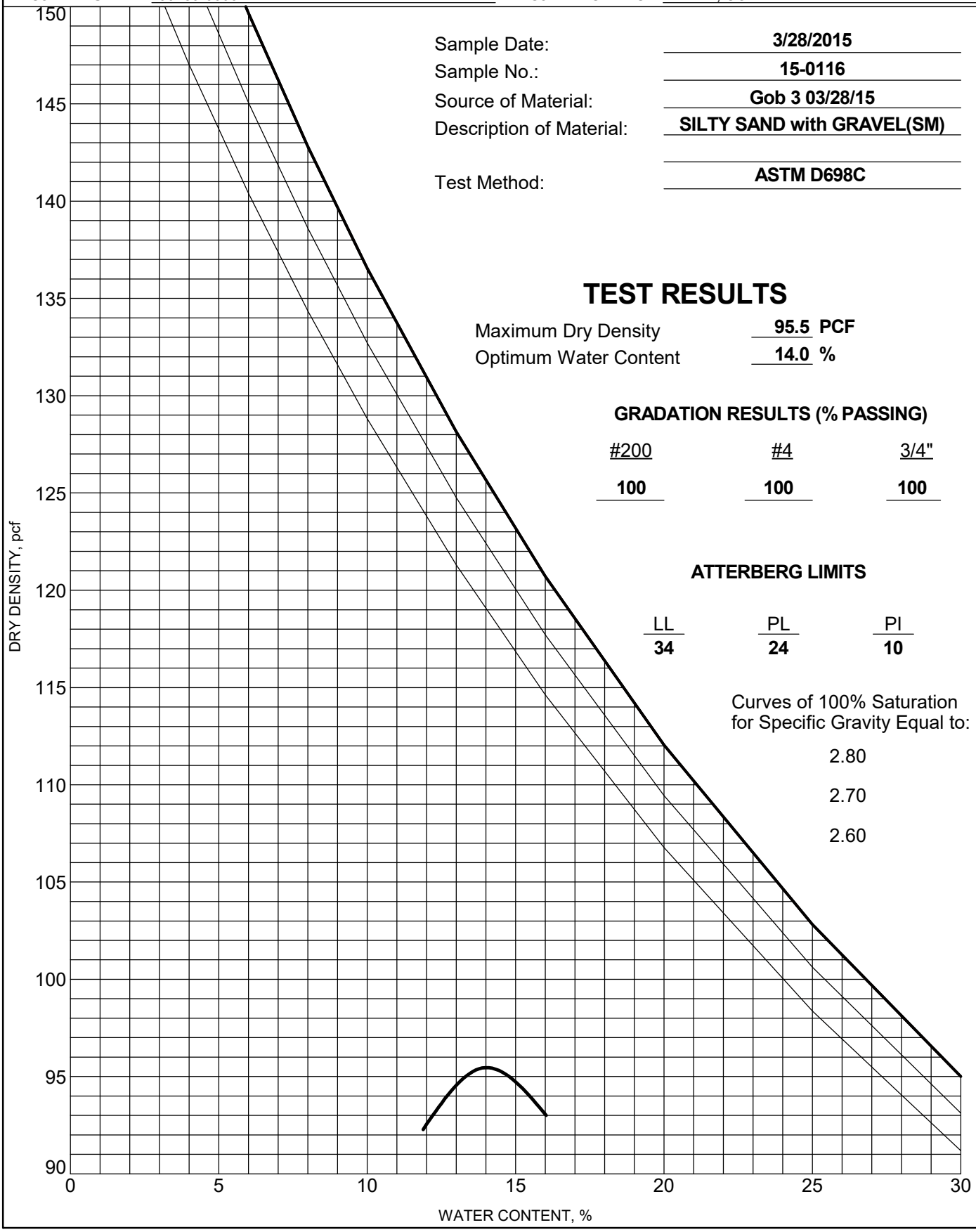
MOISTURE-DENSITY RELATIONSHIP

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)

#200	#4	3/4"
100	100	100

ATTERBERG LIMITS

LL	PL	PI
34	24	10

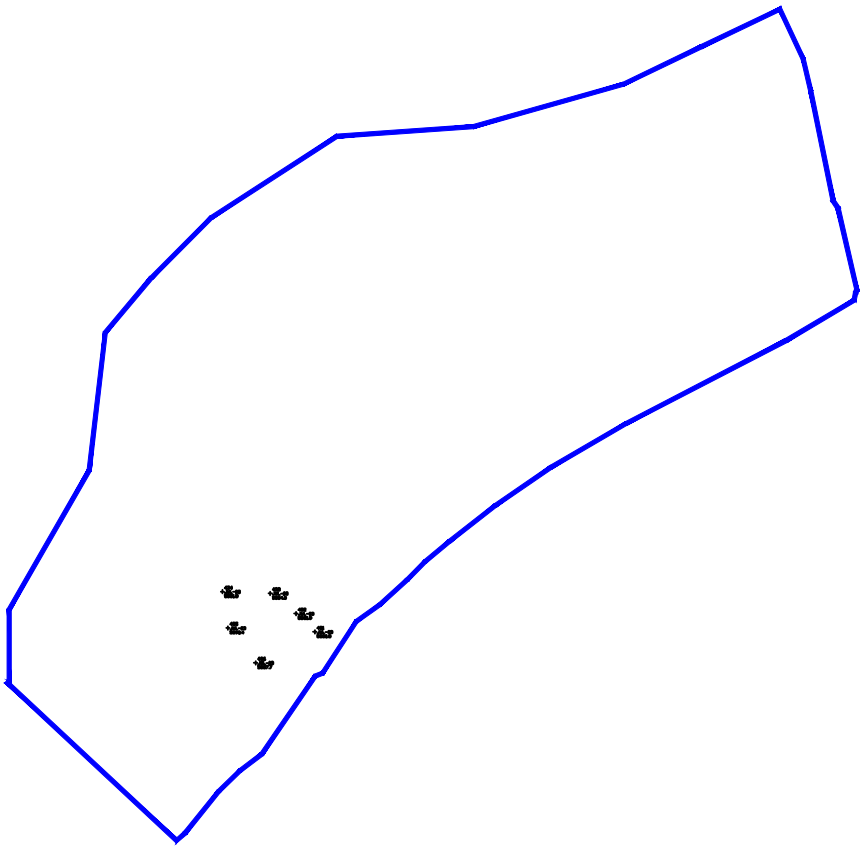
Curves of 100% Saturation for Specific Gravity Equal to:

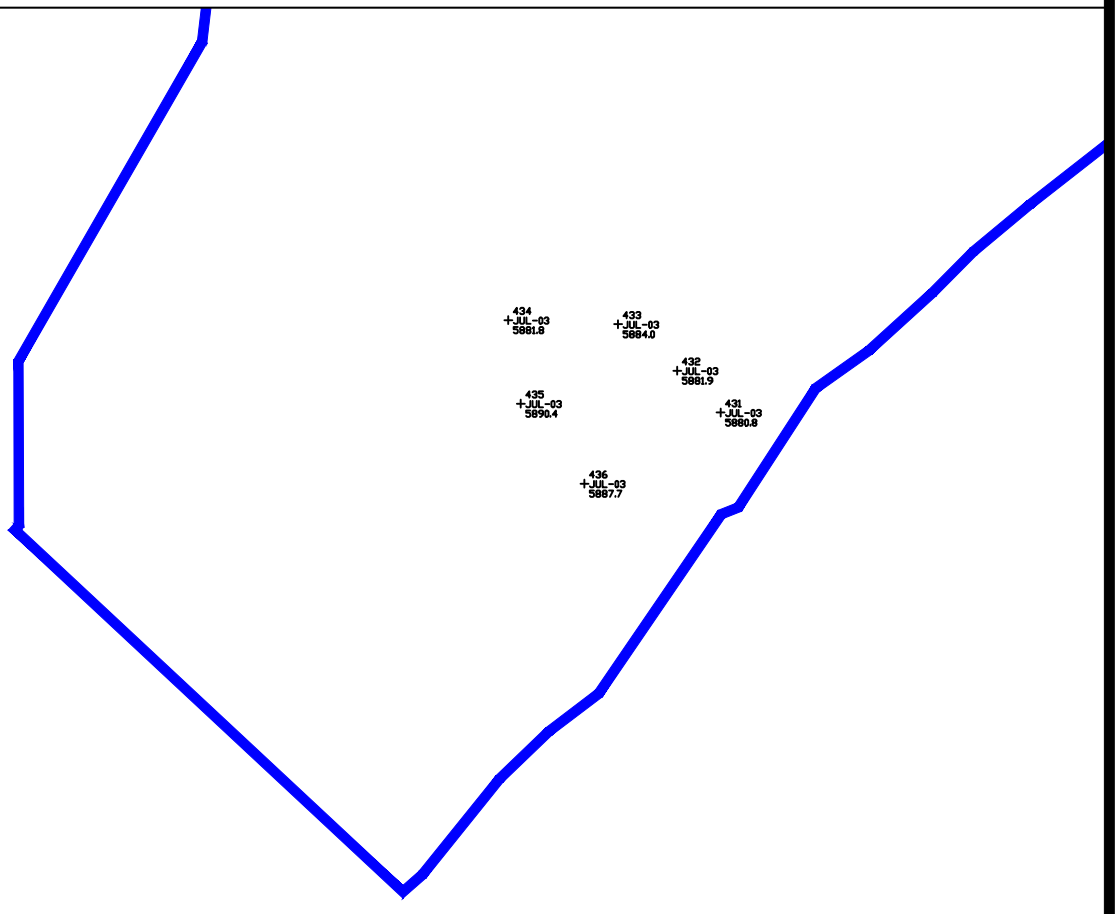
2.80

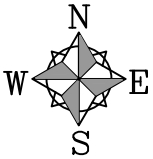
2.70

2.60

COMPACTION BOWIE MINE.GPJ GINT US LAB.GDT 10/11/17







GOB PILE #3
COMPACTION TEST LOCATIONS

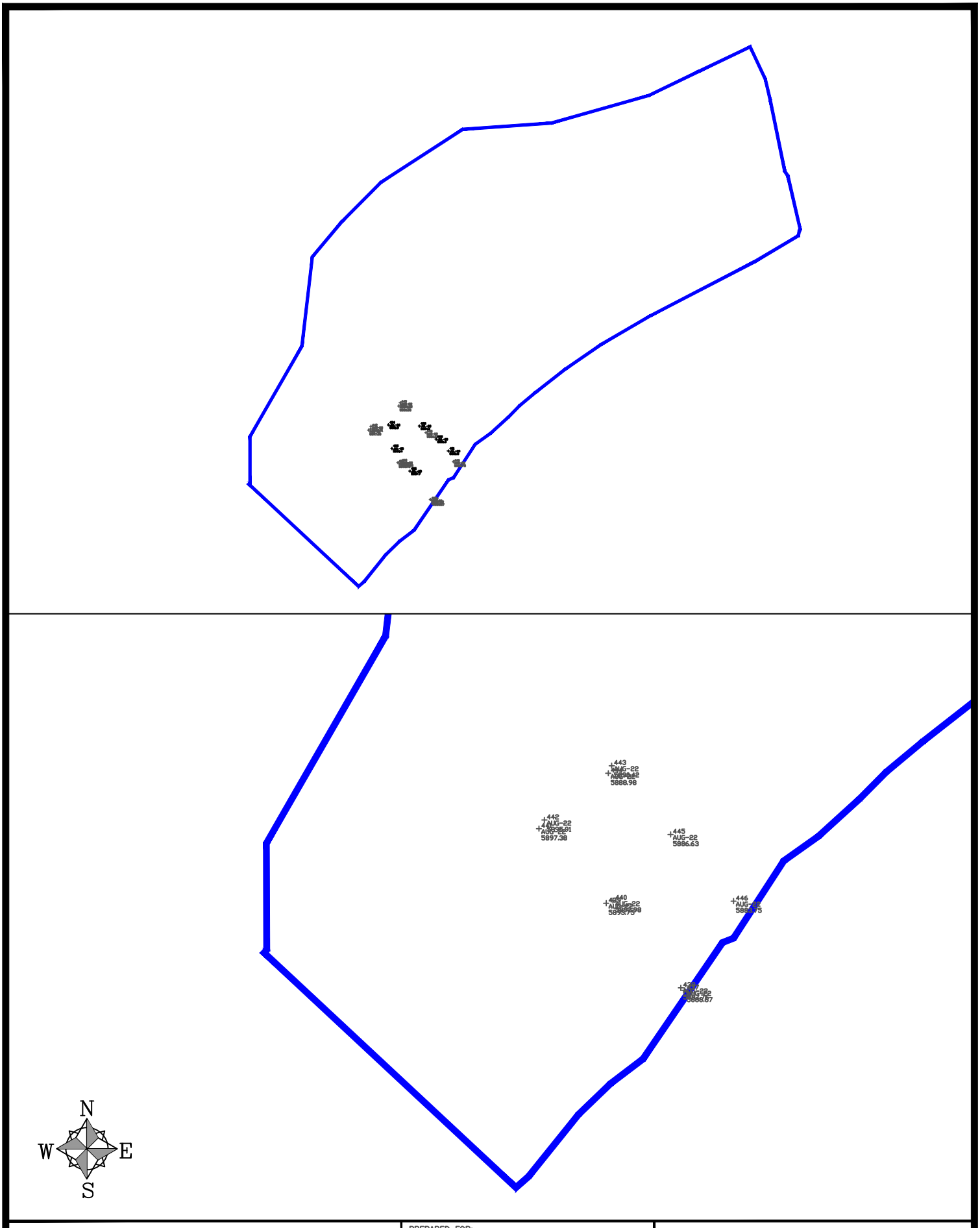
PREPARED FOR:

BOWIE RESOURCES, LLC
BOWIE NO. 2 MINE
P.O. BOX 483
PAONIA, COLORADO 81428

J. E. STOVER & ASSOCIATES, INC.
2356 N 7th St. Unit B
Grand Jct., CO 81501

GOB PILE #3
07/03/19

DESIGN BY:		DATE:	10/05/19
DRAWN BY:	J.E.S.	CHK'D BY:	
SCALE:	NONE		
DIRECTORY:	D:\BOWIE	DWG. NAME:	



GOB PILE #3
COMPACTION TEST LOCATIONS

PREPARED FOR:

BOWIE RESOURCES, LLC
BOWIE NO. 2 MINE
P.O. BOX 483
PAONIA, COLORADO 81428

J. E. STOVER & ASSOCIATES, INC.
2356 N 7th St. Unit B
Grand Jct., CO 81501

GOB PILE #3
08/22/19

DESIGN BY:		DATE:	10/05/19
DRAWN BY:	J.E.S.	CHK'D BY:	
SCALE:	NONE		
DIRECTORY:	D:\BOWIE	DWG. NAME:	