STATE OF COLORADO

Simmons - DNR, Leigh <leigh.simmons@state.co.us>

CDRMS Permit C-1981-022 third quarter Pond Inspection and Coal Mine Refuse Pile Inspection Reports

Doug Smith <Doug.Smith@oxbow.com> Wed, Oct 3, 2018 at 10:18 AM
To: "leigh.simmons@state.co.us" <leigh.simmons@state.co.us>
Cc: Mike Ludlow <Mike.Ludlow@oxbow.com>

Leigh,

Please find the attached pdf copy of the 3rd quarter reports for the Elk Creek Mine Pond and Refuse Pile Inspections.

Thanks,

Doug Smith

Oxbow Mining, LLC

(970) 929-6034

2018 EC 3rd Quarter Pond and Gob reports.pdf
5236K

OXBOW MINING, LLC

3737 Hwy 133 P.O. Box 535 Somerset, Colorado 81434 USA Tel (970)929-5122 Fax (970)929-5177

October 3, 2018

Mr. Leigh Simmons
Environmental Protection Specialist
Colorado Division of Reclamation, Mining and Safety
1313 Sherman Street, Room 215
Denver, Colorado 80203

Re: Oxbow Mining, LLC., CDRMS Permit C-1981-022,
3rd Quarter 2018 Pond Inspection Report and 3rd Quarter 2018 Coal Mine Refuse Pile Inspection Report.

Dear Mr. Simmons:

Enclosed are copies of the 3rd Quarter 2018 Pond Inspection Report, and the 3rd Quarter 2018 Coal Mine Refuse Report for the Division's records. Note that the reports indicate no issues or major concerns with these regulated facilities.

Please also note that the West Valley and II West Refuse piles were both completed in connection with our continuing reclamation activities. The refuse piles were capped with topsoil, drainages were completed and the disturbed areas were seeded during the quarter.

Please call me at 970-929-6034 if you have any comments or questions.

Sincerely,

Doug A. Smith
Chief Engineer

Attachments
Xc: Mike Ludlow (OMLLC)
Files

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THIRD QUARTER 2018 POND INSPECTION REPORT
Pond Inspection Date: September 28, 2018

OPERATOR:	Oxbow Mining, LLC.		
MINE:	Elk Creek Mine and Surface Facilities		
POND IDENTIFICATION:	**Hubbard**	**Substation #3**	**Pond D**
CDPS NUMBER:	007	013	016
TYPE OF POND:	Sediment	Sediment	Sediment
APPROXIMATE WATER LEVEL:	0.0'	0.0'	0.0'
SEDIMENT (% total storage):	<5%	<5%	<5%
OUTFLOW:	None	None	None
FEATURES	PROBLEM	PROBLEM	PROBLEM
EROSIONAL			
Rills & Gullies	No	No	No
Inadequate Vegetation	No	No	No
Outlet Channel Erosion	No	No	No
Burrows	No	No	No
Other	No	No	No
STRUCTURAL			
Differential Settling	No	No	No
Cracks or Slides	No	No	No
Seepage	No	No	No
Other	No	No	No
APPURTENANT STRUCTURES			
Defective Spillways	No	No	No
Dewatering Devices Clogged	No	No	No
Faulty Gates, Etc.	No	No	No
Other	No	No	No
MAINTENANCE REQUIRED	No	No	No
REFERENCE DRAWINGS:	2.05-M5E	2.05-M5F	2.05-M5D

Inspected By: Doug A. Smith
Doug A. Smith

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THIRD QUARTER 2018 POND INSPECTION REPORT
Pond Inspection Date: September 28, 2018

OPERATOR:	Oxbow Mining, LLC.			
MINE:	Elk Creek Mine and Surface Facilities			
POND IDENTIFICATION:	**Pond A1**	**Pond B**	**Pond C**	**East Yard**
CDPS NUMBER	009	012	014	010
TYPE OF POND:	Sediment	Sediment	Sediment	Sediment
APPROXIMATE WATER LEVEL:	0.0'	0.0' (6060.0')	0.0'	0.0'
SEDIMENT (% total storage):	<5%	<5%	<5%	<5%
OUTFLOW:	None	None	None	None
FEATURES	PROBLEM	PROBLEM	PROBLEM	PROBLEM
EROSIONAL				
Rills & Gullies	No	No	No	No
Inadequate Vegetation	No	No	No	No
Outlet Channel Erosion	No	No	No	No
Burrows	No	No	No	No
Other	No	No	No	No
STRUCTURAL				
Differential Settling	No	No	No	No
Cracks or Slides	No	No	No	No
Seepage	No	No	No	No
Other	No	No	No	No
APPURTENANT STRUCTURES				
Defective Spillways	No	No	No	No
Dewatering Devices Clogged	No	No	No	No
Faulty Gates, Etc.	No	No	No	No
Other	No	No	No	No
MAINTENANCE REQUIRED	No	No	No	No
REFERENCE DRAWINGS:	2.05-M5A	2.05-M5B	2.05-M5C	2.05-M5E

Inspected By: Doug A. Smith
Doug A. Smith

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THIRD QUARTER 2018 POND INSPECTION REPORT
Pond Inspection Date: September 28, 2018

OPERATOR:	Oxbow Mining, LLC.	
MINE:	Elk Creek Mine and Surface Facilities	
POND IDENTIFICATION:	**Pond E**	**Pond F**
CDPS NUMBER	017	019
TYPE OF POND:	Sediment	Sediment
APPROXIMATE WATER LEVEL:	0.0'	0.0'
SEDIMENT (% total storage):	<5%	<5%
OUTFLOW:	None	None
FEATURES	PROBLEM	PROBLEM
EROSIONAL		
Rills & Gullies	No	No
Inadequate Vegetation	No	No
Outlet Channel Erosion	No	No
Burrows	No	No
Other	No	No
STRUCTURAL		
Differential Settling	No	No
Cracks or Slides	No	No
Seepage	No	No
Other	No	No
APPURTENANT STRUCTURES		
Defective Spillways	No	No
Dewatering Devices Clogged	No	No
Faulty Gates, Etc.	No	No
Other	No	No
MAINTENANCE REQUIRED	No	No
REFERENCE DRAWINGS:	2.05-M5I	2.05-M5J

Inspected By: Doug A. Smith
Doug A. Smith

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THIRD QUARTER 2018 POND INSPECTION REPORT
Pond Inspection Date: September 28, 2018

Miscellaneous Comments:

1. The SWMP control devices were inspected and all SWMP control devices were found to be in fair condition. Routine quarterly maintenance to sumps was conducted.

2. Sediment and Water Level Determination – When sediment enters a pond, it is deposited unevenly, usually collecting at the inlets rather than evenly across the bottom of the pond. Reported sediment levels are based upon the inspector's observations made throughout the quarter during routine inspections in combination with knowledge of the pond structure. The reported pond water level is also determined by observations relative to the various landmarks in the pond (depth to bottom, primary riser, etc.)

Notwithstanding comments above, ponds have been maintained as designed and in accordance with the approved plan.

Inspected By: _____
Doug A. Smith

Under Direction of: _____
Michael W. Ludlow
Colorado Registered Professional Engineer No. 24046

OXBOW MINING, LLC

THIRD QUARTER 2018 ENGINEERING INSPECTION
EAST YARD, WEST VALLEY FILL AND II WEST COAL MINE WASTE DISPOSAL PILES

The approved Oxbow Mining, LLC (OMLLC) Mine permit includes a requirement for quarterly inspections of coal mine waste piles for stability. The inspection is to be performed by a registered engineer or other qualified professional specialist, who is experienced in the construction of earth and rock fill embankments.

Visual inspections were performed on the, West Valley Fill, II West and East Yard coal mine waste disposal areas on September 28, 2018.

Compaction tests were conducted on both West Valley Fill and II West piles before capping with topsoil during the quarter.

EAST YARD - The East Yard disposal area has reached its design capacity, and no new waste material has been placed since June of 2001. The revegetated slope was inspected for signs of erosion or instability. No erosional features were noted on the slope. The covering of the waste pile is considered complete. Nothing was observed during the inspection that would indicate the pile has a potential for structural failure. Fill material from the reclamation activities on the Elk Creek Mine Middle Bench has been placed at the base of the waste pile per the reclamation plan.

WEST VALLEY FILL – No waste material was hauled to the West Valley Fill area dung this quarter, but was completed with topsoil and was seeded.

On August 3 of 2018, compaction tests were completed on the West Valley fill. The area was then capped with a minimum of 4' of topsoil. Drainage courses were completed during September and the area was seeded. Compaction test results are included with this report.

The refuse pile remains surveyed at the approximate 6228' elevation, not including the addition of the topsoil. As built elevations and maps will be provided as they become available. The active waste storage area is no longer available as an interim storage area for wet refuse re-handled later to II West and as a staging area for miscellaneous projects and material storage.

During the third quarter of 2015, a burning coal odor, dead vegetation and a warm surface indicated a zone of spontaneous combustion under the reclaimed surface located on the west end of the second bench at the approximate 6200' elevation. An MSHA remediation plan was submitted and approved. The work was completed on 10/15/2105 and was reseeded 10/27/2015. No heating was detected this quarter. Vegetation has covered the area well.

The revegetated out slope located between the fill slope toe to the approximate 6200' elevation was inspected for signs of erosion and instability. No erosional features were noted on the slope. The third bench (approximate 6220' elevation) setback remains established for the final lift of waste material and the ramp constructed on the waste pile to provide access to the II West Coal Refuse Facility light use road and haul road. These two roads continued to be utilized during the quarter. No springs or seeps were noted. Surface drainage control features are performing according to the plan. Nothing was observed during the inspection that would indicate the West Valley Fill has a potential for structural failure.

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II WEST – The II West disposal area received no new coal mine waste material during the quarter, but was completed with topsoil and was seeded.

On August 3 of 2018, compaction tests were completed on the II West fill. The area was then capped with a minimum of 4' of topsoil. Drainage courses were completed during September and the area was seeded. Compaction test results are included with this report.

II West waste remains at the approximate 6141' elevation, not including the addition of the topsoil. As built elevations and maps will be provided as they become available

The 2013 regraded out slope area seeded on November 7, 2013 remains stable upon finishing the third year growth of seeded species. Older seeded areas continue to perform according to the plan. No new areas were available for seeding since 2013. No springs or seeps were noted. Surface drainage control features are performing according to the plan. Nothing was observed during the inspection that would indicate the II West Valley Fill has a potential for structural failure.

Doug A. Smith

Inspected by Doug A. Smith

Michael W. Ludlow 10/3/18

Michael W. Ludlow Date

Colorado Licensed Professional Engineer No. 24046

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August 10, 2018

Doug Smith
Oxbow Mine LLC
3737 Highway 133
Somerset, CO, 81434

Transmitted via email: doug.smith@oxbow.com

Re: Laboratory and Field Moisture Density Testing
Oxbow Mine LLC, Somerset CO, 81434
Project 7141.74902.01 Final Report

Dear Doug,

In accordance with your request, DOWL provided an engineering technician to perform moisture density testing on the top of previously compacted mine waste fill piles, West Valley #1 and West Valley #2. The mine is closed and reclamation work is being performed, no mine waste is currently being placed and the areas are to be covered with topsoil. Samples 1 through 6 were collected at each density test location to determine in-situ moisture contents, rock correction and specific gravity of the +3/4" material. Standard Proctor (D-698) test was done on samples #1 and #6 to determine the moisture density relationship of the soil.

These tests do not certify the current or future stability of the waste fill piles. Density tests taken on top of the waste piles West Valley #1 and #2 by DOWL only indicate that relative densities of ≥95.0% are being obtained in relation to Standard Proctor tests #1 and #6 attached for the material tested.

Thank you for having DOWL perform this work for you.

Should you require additional information or have any questions, please contact us at 970-497-8889.

Sincerely,

Jeramy Harshman
Project Manager

Reviewed by:

Daniel Quigley, P.E.
Professional Engineer

COLORADO REGISTERED
DANIEL C. QUIGLEY
38334
8-13-18
PROFESSIONAL ENGINEER

Attachments: Standard Proctor Test results, sample Nos. 1 and 6
%Oversized Retained on ¾" Sieve, sample Nos. 1 through 6
In-Situ Moisture Content, sample Nos. 1 through 6
Specific Gravity and Absorption of Coarse Aggregate, sample Nos. 1 through 6
Moisture-Density Test results, Nos. 1 through 6

Project: Oxbow Mine Gob Pile Testing	DOWL www.dowl.com 222 South Park Avenue Montrose, Colorado 81401 970-249-6828	Client / On Site Rep: Oxbow Mine LLC/Doug Smith
		Contractor / Rep: Oxbow Mine LLC/Doug Smith
Project No: 7141.74902.01 / Date: 8/3/2018		Technician: Jeramy Harshman

DAILY COMPACTION REPORT

TEST NUMBER	LOCATION	GRADE ELEV	TEST TYPE NUC	TEST TYPE SAND	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE CONT. (%)	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	PERCENT COMPACTION	NOT WITHIN SPEC	SOIL TYPE	LAB SAMPLE NUMBER
1	West Valley #2 South end	Top	X		71.8	6.9	68.5	10.7	95.3		Gob	WV #2 RC @ 49.0%
2	West Valley #2 West end	Top	X		83.5	7.7	84.6	9.6	101.3		Gob	WV #2 RC @ 29.0%
3	West Valley #2 North end	Top	X		81.9	7.6	78.4	12.5	95.7		Gob	WV#2 RC @ 34.0%
4	West Valley #1 Southeast side	Top	X		99.7	8.6	98.7	5.3	99.0		Gob	WV#1 RC @13.0%
5	West Valley #1 Southwest side	Top	X		112.9	7.2	107.2	5.9	95.0		Gob	WV#1 RC @36.0%
6	West Valley #1 North side	Top	X		100.8	7.9	98.9	5.6	98.2		Gob	WV#1 RC @27.0%

MOISTURE / DENSITY SPECIFICATIONS

Specified Compaction Requirement:	95%	Cohesive Soils	
		Cohesionless Soils	X
Specified Moisture Requirement:	+/-2	Cohesive Soils	
		Cohesionless Soils	X
Laboratory Testing Procedure:	d698	Cohesive Soils	
		Cohesionless Soils	X

OBSERVATION / TESTING

Full Time:	
Part Time:	
Number of Site Visits/Day:	
Testing Only:	X

Requested By (Company Name): Oxbow Mine LLC

FIELD OBSERVATIONS

Date:

Day:	S	M	T	W	Th	F	S
						X	
Weather:	Sun	Clear	Overcast			Rain	Snow
			X				
Temp:	To 32	32-50	50-70	70-85	85 Up		
			X				
Wind:	Still		Mod		High		
	X						
Humidity:	Dry		Mod		Humid		
			X				

Compaction Equipment Used:

Sheepsfoot:	
Smooth Drum Roller:	
Vibratory:	
Other (List Below):	

DENSITY / COMPACTION TESTING WAS NOT PERFORMED ON THIS DATE FOR THE FOLLOWING REASONS:

Insufficient amount of material placed.

Contractor Not Working Due To:

Inclement Weather:		The Contractor Is:	
Equipment Malfunction:		Stripping and/or Grubbing:	
Unknown:		Stockpiling Fill:	
		Processing Frozen Material:	
		Processing Wet Material:	
		Moisture Conditioning Dry Mat'l:	
		Removing Unsuitable Mat'l:	

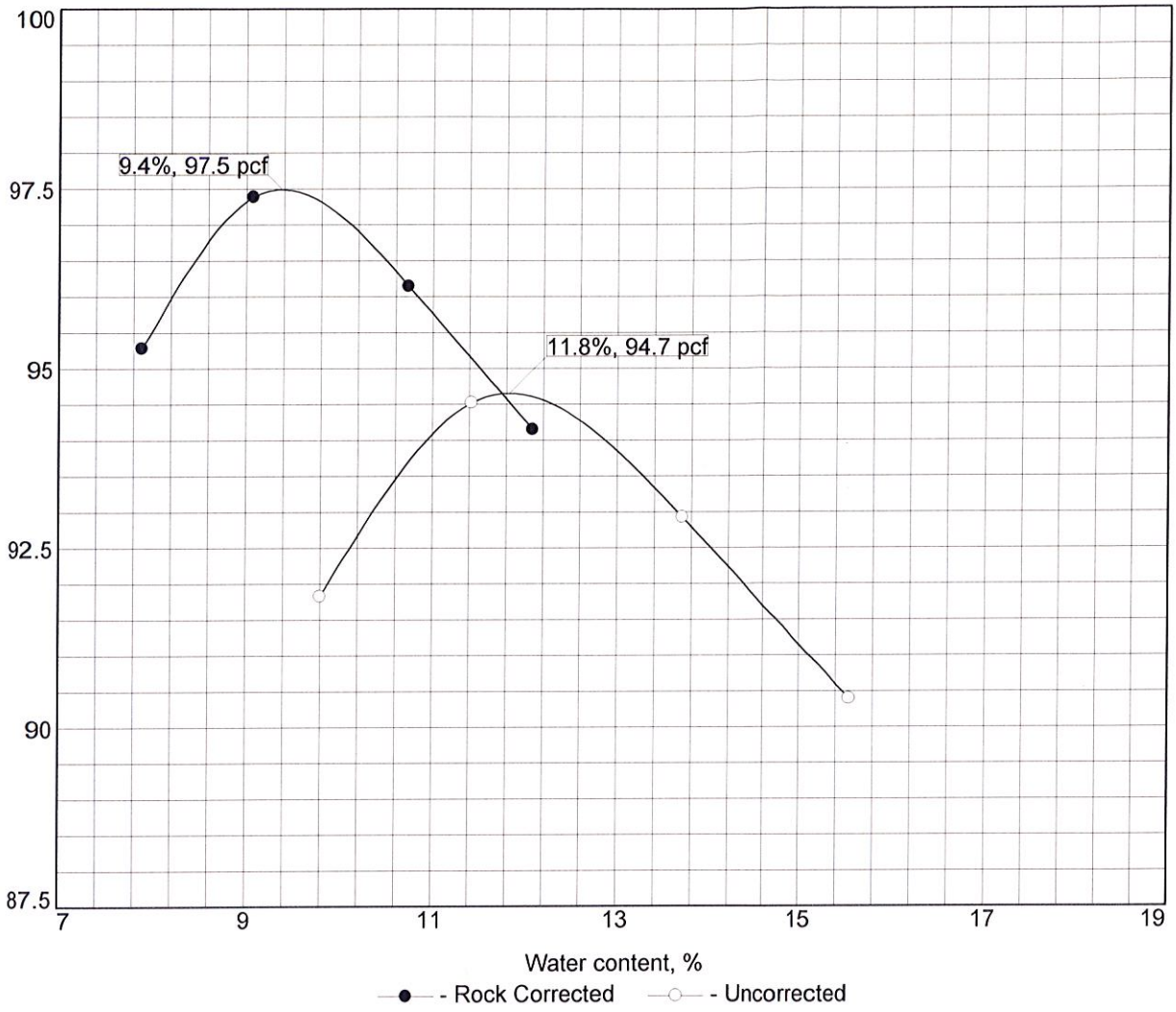
Informed (Rep of Company) of Test Results: Doug Smith

Field Copies Given To:

Contractor: _____
Client: _____
CM/GM: _____
Other: _____

Buckhorn was not informed prior to our arrival on site that the contractor would not be working on this date.

MOISTURE-DENSITY RELATIONSHIP



Test specification: ASTM D 698-12 Method C Standard
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
northside							26.9	

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 97.5 pcf	94.7 pcf	gray to black clayey COAL TAILINGS with some sand and gravel (ASTM D2488)
Optimum moisture = 9.4 %	11.8 %	

Project No. 7141.74902.01 **Client:** Oxbow Mine
Project: Oxbow Mine Gob Testing
Somerset, CO
Source of Sample: West Valley 1 - Top **Sample Number:** 6

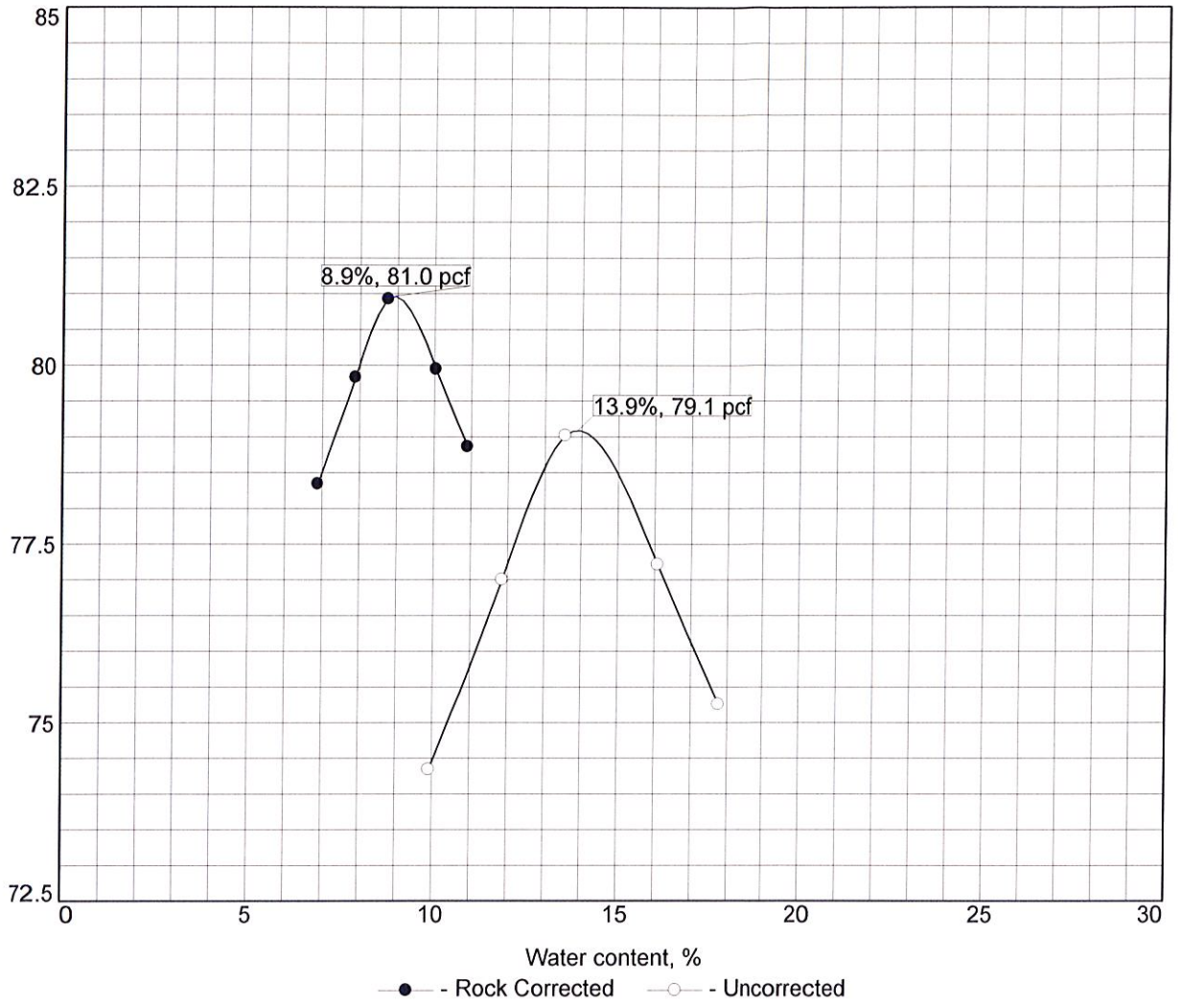
Remarks:

DOWL

Tested By: SJ **Checked By:** JLH

Results are for the exclusive use of the client and apply only to the samples tested and are not indicative of apparently identical samples.

MOISTURE-DENSITY RELATIONSHIP



Test specification: ASTM D 698-12 Method C Standard
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
southside							48.8	

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 81.0 pcf	79.1 pcf	black sandy COAL TAILINGS with gravel (ASTM D2488)
Optimum moisture = 8.9 %	13.9 %	

Project No. 7141.74902.01 **Client:** Oxbow Mine
Project: Oxbow Mine Gob Testing
Somerset, CO
Source of Sample: West Valley 2 - Top **Sample Number:** 1

Remarks:

DOWL

Tested By: JLH **Checked By:** SJ

Results are for the exclusive use of the client and apply only to the samples tested and are not indicative of apparently identical samples.

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% Oversized Retained on 3/4" Sieve

Project Name: Oxbow Mine Gob Testing
Project Location: Somerset, CO
Client: Oxbow Mine

Date: 8/8/2018
Project #: 7141.74902.01
Test by: SJ
Test for: JLH

Sample #	Test Location	Soil Description (ASTM D2488)	Initial Wt.(g) of Sample	Wt.(g) retained on 3/4"	% Oversize
1 - southside	West Valley 2 - Top	black sandy COAL TAILINGS with gravel	60383.2	29465.9	48.8%
2 - westside	West Valley 2 - Top	black sandy COAL TAILINGS with some gravel	18724.6	5339.9	28.5%
3 - northside	West Valley 2 - Top	black sandy COAL TAILINGS with very little gravel	18053.3	6117.5	33.9%
4 - southeast corner	West Valley 1 - Top	gray to black clayey COAL TAILINGS with some gravel	22689.1	3036.7	13.4%
5 - southwest corner	West Valley 1 - Top	gray to black clayey COAL TAILINGS with some sand and gravel	21292.0	7575.1	35.6%
6 - northside	West Valley 1 - Top	gray to black clayey COAL TAILINGS with some sand and gravel	52926.1	14234.0	26.9%

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Specific Gravity and Absorption of Coarse Aggregate

ASTM C127-12

Project Name	Oxbow Mine Gob Testing	Date	8/8/2018
Project Location	Somerset, CO	Project #	7141.74902.01
Client	Oxbow Mine	Test by	JLH
Sample Location	West Valley 2 - Top	Test for	JLH
Sample #	1 - southside		
Soil Description	black sandy COAL TAILINGS with gravel (ASTM D2488)		

Specific Gravity (OD):	**1.33**	
Specific Gravity (SSD):	**1.40**	
Apparent Specific Gravity:	**1.43**	
Density (OD):	**83.10**	**lb/ft^3**
Density (SSD):	**87.10**	**lb/ft^3**
Apparent Density:	**88.80**	**lb/ft^3**
Absorption:	**4.8**	**%**

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Specific Gravity and Absorption of Coarse Aggregate

ASTM C127-12

Project Name	Oxbow Mine Gob Testing	Date	8/8/2018
Project Location	Somerset, CO	Project #	7141.74902.01
Client	Oxbow Mine	Test by	JLH
Sample Location	West Valley 2 - Top	Test for	JLH
Sample #	2 - westside		
Soil Description	black sandy COAL TAILINGS with some gravel	(ASTM D2488)	

Specific Gravity (OD):	**1.34**	
Specific Gravity (SSD):	**1.41**	
Apparent Specific Gravity:	**1.44**	
Density (OD):	**83.53**	**lb/ft^3**
Density (SSD):	**87.60**	**lb/ft^3**
Apparent Density:	**89.37**	**lb/ft^3**
Absorption:	**4.9**	**%**

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Specific Gravity and Absorption of Coarse Aggregate

ASTM C127-12

Project Name	Oxbow Mine Gob Testing	Date	8/8/2018
Project Location	Somerset, CO	Project #	7141.74902.01
Client	Oxbow Mine	Test by	JLH
Sample Location	West Valley 2 - Top	Test for	JLH
Sample #	3 - northside		
Soil Description	black sandy COAL TAILINGS with very little gravel	(ASTM D2488)	

Specific Gravity (OD):	**1.26**	
Specific Gravity (SSD):	**1.32**	
Apparent Specific Gravity:	**1.34**	
Density (OD):	**78.44**	**lb/ft^3**
Density (SSD):	**82.33**	**lb/ft^3**
Apparent Density:	**83.66**	**lb/ft^3**
Absorption:	**5.0**	**%**

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Specific Gravity and Absorption of Coarse Aggregate

ASTM C127-12

Project Name	Oxbow Mine Gob Testing	Date	8/8/2018
Project Location	Somerset, CO	Project #	7141.74902.01
Client	Oxbow Mine	Test by	JLH
Sample Location	West Valley 1 - Top	Test for	JLH
Sample #	4 - southeast corner		
Soil Description	gray to black clayey COAL TAILINGS with some gravel	(ASTM D2488)	

Specific Gravity (OD):	**1.78**	
Specific Gravity (SSD):	**1.84**	
Apparent Specific Gravity:	**1.89**	
Density (OD):	**110.53**	**lb/ft^3**
Density (SSD):	**114.39**	**lb/ft^3**
Apparent Density:	**117.83**	**lb/ft^3**
Absorption:	**3.5**	**%**

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Specific Gravity and Absorption of Coarse Aggregate

ASTM C127-12

Project Name	Oxbow Mine Gob Testing	Date	8/8/2018
Project Location	Somerset, CO	Project #	7141.74902.01
Client	Oxbow Mine	Test by	JLH
Sample Location	West Valley 1 - Top	Test for	JLH
Sample #	5 - southwest corner		
Soil Description	gray to black clayey COAL TAILINGS with some sand and gravel	(ASTM D2488)	

Specific Gravity (OD):	**2.18**	
Specific Gravity (SSD):	**2.25**	
Apparent Specific Gravity:	**2.35**	
Density (OD):	**135.63**	**lb/ft^3**
Density (SSD):	**140.18**	**lb/ft^3**
Apparent Density:	**146.33**	**lb/ft^3**
Absorption:	**3.4**	**%**

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Specific Gravity and Absorption of Coarse Aggregate

ASTM C127-12

Project Name	Oxbow Mine Gob Testing	Date	8/8/2018
Project Location	Somerset, CO	Project #	7141.74902.01
Client	Oxbow Mine	Test by	JLH
Sample Location	West Valley 1 - Top	Test for	JLH
Sample #	6 - northside		
Soil Description	gray to black clayey COAL TAILINGS with some sand and gravel	(ASTM D2488)	

Specific Gravity (OD):	**1.70**	
Specific Gravity (SSD):	**1.76**	
Apparent Specific Gravity:	**1.81**	
Density (OD):	**105.56**	**lb/ft^3**
Density (SSD):	**109.62**	**lb/ft^3**
Apparent Density:	**112.92**	**lb/ft^3**
Absorption:	**3.8**	**%**

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Laboratory Data Sheet: In-Situ Moisture Content

ASTM D-2216

Project Name	Oxbow Mine Gob Testing	Date	8/3/2018
Project Location	Somerset, CO	Project #	7141.74902.01
Client	Oxbow Mine	Test By	JLH
		Test for	JLH

Sample #	Sample Location		Soil Description	
1 - southside	West Valley 2 - Top		black sandy COAL TAILINGS with gravel (ASTM D2488)	
	Tare (g)	**Tare + wet (g)**	**Tare + dry (g)**	**% Moisture**
	84.4	1023.1	932.4	10.7%

Sample #	Sample Location		Soil Description	
2 - westside	West Valley 2 - Top		black sandy COAL TAILINGS with some gravel (ASTM D2488)	
	Tare (g)	**Tare + wet (g)**	**Tare + dry (g)**	**% Moisture**
	84.4	1040.2	956.8	9.6%

Sample #	Sample Location		Soil Description	
3 - northside	West Valley 2 - Top		black sandy COAL TAILINGS with very little gravel (ASTM D2488)	
	Tare (g)	**Tare + wet (g)**	**Tare + dry (g)**	**% Moisture**
	85.5	1050.3	943.4	12.5%

Sample #	Sample Location		Soil Description	
4 - southeast corner	West Valley 1 - Top		gray to black clayey COAL TAILINGS with gravel (ASTM D2488)	
	Tare (g)	**Tare + wet (g)**	**Tare + dry (g)**	**% Moisture**
	85.3	1197.1	1141.1	5.3%

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Laboratory Data Sheet: In-Situ Moisture Content

ASTM D-2216

Project Name	Oxbow Mine Gob Testing	Date	8/3/2018
Project Location	Somerset, CO	Project #	7141.74902.01
Client	Oxbow Mine	Test By	JLH
		Test for	JLH

Sample #	Sample Location		Soil Description	
5 - southwest corner	West Valley 1 - Top		gray to black clayey COAL TAILINGS with some sand and gravel (ASTM D2488)	
	Tare (g)	**Tare + wet (g)**	**Tare + dry (g)**	**% Moisture**
	83.5	1011.7	959.8	5.9%

Sample #	Sample Location		Soil Description	
6 - northside	West Valley 1 - Top		gray to black clayey COAL TAILINGS with some sand and gravel (ASTM D2488)	
	Tare (g)	**Tare + wet (g)**	**Tare + dry (g)**	**% Moisture**
	85.1	1269.0	1205.9	5.6%