

Addendum F

Final Remedial Action Plan
DOE-EM/GJ1547

March 2024

Rock Source Data

Number	Title	Submitted
F1	Green River Remedial Action Plan, Appendix D, Addendum D4, 1988	1988
F2	Rock Durability Laboratory Results for Samples Collected in 2007 and 2008	2007/2008
F3	Green River, Utah Final Completion Report, Volume 2, Appendix E, Material Summary Report, 1991	1991
F4	Freemont Junction rock testing results submitted by TSJ Construction	2023
F5	Freemont Junction rock testing results sampled by North Wind Portage	2023

Addendum F, Document F4

Freemont Junction Rock Testing Results

TSJ Construction

2023

TSJ CONSTRUCTION - GENERAL TESTING

Cleveland, Utah

AGGREGATE PROPERTIES

Date 8/24/2022 Wednesday
Location Various (see Sample ID)
Report By L. Price, S. Neil, B. Darby
Weather NA

TEST	WINDY PIT
Bulk Specific Gravity (ASTM C-127) (dry)	2.611
% Absorption (ASTM C-127)	1.5%
Clay Lumps and Friable Particles (ASTM C-142)	0%
Flat and Elongates Particles (5:1 ratio) (ASTM D-4791)	0.3%
L.A. Abrasion % Loss (ASTM C-131/C-535) 100 Revolutions	6%
L.A. Abrasion % Loss (ASTM C-131) 500 Revolutions	27%
L.A. Abrasion % Loss (ASTM C-535) 1000 Revolutions	NA
Sodium Soundness (ASTM C-88) % Loss	0.6%
Unit Weight (ASTM C-29) (pcf-dry)	101
Schmidt Hammer (ASTM D-5873)	NT

Date Printed 9/15/2022
Principal
Lab Manager
Client TSJ Construction, LLC
P.O. Box 453
Cleveland UT 84518

KEY
CL Centerline
L Left
R Right
H Hold

DISTRIBUTION

STAKER PARSON - FREMONT JUNCTION

Fremont Junction, Utah

Purchase Order 100-473921

SCHMIDT HAMMER TEST

Date 8/18/2022 Thursday
Location Fremont Junction
Report By L. Price
Weather Sunny, 80's to 90's

ITEM	RESULT
Number of specimens tested	6
Average HR of all 6 test specimens	40
Mode HR of all 6 test specimens	40
Range HR of all 6 test specimens	24
Median HR of all 6 test specimens	42

REMARKS

Tests performed in general compliance with ASTM D 5873, Determination of Rock Hardness by Rebound Hammer Method (Schmidt Hammer).

Material Type: Basalt Rock

Technician drove to Fremont Jct. When he was 45 min. away, he called Bobby. When he arrived, he waited for a little bit for Bobby to arrive. They then drove to the pit. Bobby helped him load 6 buckets of various types of rocks. The technician then drove back to the lab. Total time was 5 hrs.

Date Printed 8/23/2022
Principal Robert Johnson, P.E.
Lab Manager Jacob Boone
Client Staker Parson Companies
2350 S 1900 W Ste 100
Ogden UT 84401

KEY
CL Centerline
L Left
R Right
H Hold

DISTRIBUTION
bobby.peirce@nielsonconstruction.com
terry.martin@stakerparson.com

Addendum F, Document F5

Freemont Junction Rock Testing Results

North Wind Portage

2023

LABORATORY SERVICES REPORT

Report Number: 65231089.0001
Service Date: 05/02/23
Report Date: 05/22/23
Task:



4685 S Ash Ave, Ste H-4
Tempe, AZ 85282-6767
480-897-8200

Client

North Wind Portage Inc
Attn: Don Janz
0.15 County Road 223
(HC 11 Box 40046)
Thompson, UT 84540

Project

MOAB UMTRA Rock Durability Testing
4685 South Ash Ave, Suite H-4
Tempe, AZ 85282

Project No. 65231089

Material Description: Riprap
Sample Location: Moab, Utah
Lab Number: 5649

Sample Source: Moab, Utah

SPECIFIC GRAVITY AND ABSORPTION OF COARSE AGGREGATE (ASTM-C127)

SPECIFIC GRAVITY OF COARSE AGGREGATE

Wgt. oven dry sample in air (g)	9103.4	g
Wgt. S.S.D. sample in air (g)	9234.2	g
Wgt. of saturated sample (g)	5673.1	g
Bulk specific gravity	2.556	
Bulk specific gravity (S.S.D)	2.593	
Apparent specific gravity	2.654	
Percent absorption	1.44%	

Services:

Terracon Rep: Kiele Mahan

Reported To:

Contractor:

Report Distribution

(1) North Wind Portage Inc, Don Janz

Reviewed By:

Paul Ploughe

Laboratory Supervisor

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

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Thompson, UT 84540

Project

MOAB UMTRA Rock Durability Testing
4685 South Ash Ave, Suite H-4
Tempe, AZ 85282

Project No. 65151158

Material Description: Riprap
Sample Location: Moab, Utah
Lab Number: 5649

Sodium Sulfate Soundness of Aggregate (ASTM C88)

Passing	Retained	Percent Grading Before Test	Weight before testing (g)	Weight after testing (g)	Tested Percent loss	Corrected percent loss
COARSE						
2 in / 50mm	1 1/2 in / 37.5mm		3229.4	3224.5	0.2	
1 1/2 in / 37.5mm	3/4 in / 19mm					
3/4 in / 19mm	3/8 in / 9.5mm					
3/8 in / 9.5mm	#4					
Minus #4						
					Total:	0.2

Services:

Terracon Rep: Kiele Mahan

Reported To:

Contractor:

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Laboratory Supervisor

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Tempe, AZ 85282-6767
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Client

North Wind Portage Inc
Attn: Don Janz
0.15 County Road 223
(HC 11 Box 40046)
Thompson, UT 84540

Project

MOAB UMTRA Rock Durability Testing MOAB UMTRA Rock Testi
4685 South Ash Ave, Suite H-4
Tempe, AZ 85282

Project No. 65231089

Material Description: Riprap
Sample Location: Moab, Utah
Lab Number: 5649

RESISTANCE TO DEGRADATION OF LARGE-SIZE COARSE AGGREGATE BY ABRASION AND IMPACT IN THE LOS ANGELES MACHINE (ASTM C535)

GRADING

0

200
REVOLUTIONS

1000
REVOLUTIONS

Total Starting Weight
Weight retained on + #12

10073
9665.5

10073
8456

PERCENT LOSS:

4

16

Services:

Terracon Rep: Kiele Mahan

Reported To:

Contractor:

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Paul P. Sanghe
Laboratory Supervisor

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Client

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Project

MOAB UMTRA Rock Durability Testing
4685 South Ash Ave, Suite H-4
Tempe, AZ 85282

Project No. 65231089

Rebound Number of Aggregate

Method ASTM C805

Type		Investigated			Investigated			Investigated			Investigated				
Testing Data															
Hammer ID		H-2987			H-2987			H-2987			H-2987				
Time and Date		5/17/2023			5/17/2023			5/17/2023			5/17/2023				
Operator		KM			KM			KM			KM				
Temperature		25° C			25° C			25° C			25° C				
Orientation		Downward			Downward			Downward			Downward				
Testing Results															
Specimen ID:		1			2			3			4			5	
Readings	1	54			60			46			38			34	
	2	52			54			40			36			36	
	3	54			62			42			44			32	
	4	52			59			44			38			34	
	5	50			58			47			34			34	
	6	49			58			48			40			34	
	7	50			64			42			38			36	
	8	48			64			54			34			34	
	9	52			62			47			34			30	
	#	48			60			48			36			30	
Adjusted Average		51			60			46			37			33	
Specification		70	65	60	54	47	40	32	24	16	8	0			
Rock Quality		Good			Fair						Poor				
Specification: Per Table 1. NRC Table of Scoring Criteria for Rock Quality, Derived from Tables 6.2, 6.5, and 6.7 of NUREG/CR-2642, Long -Term Survivability of Riprap for Armoring Uranium Mill Tailings and Covers: A Literature Review, 1982.															

Services:

Terracon Rep: Kiele Mahan

Reported To:

Contractor:

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Time and Date		5/17/2023			5/17/2023			5/17/2023			5/17/2023				
Operator		KM			KM			KM			KM				
Temperature		25° C			25° C			25° C			25° C				
Orientation		Downward			Downward			Downward			Downward				
Testing Results															
Specimen ID:		6			7			8			9			10	
Readings	1	26			42			58			52			18	
	2	24			46			58			52			20	
	3	24			42			62			52			18	
	4	22			52			62			50			24	
	5	22			50			62			48			22	
	6	28			38			56			48			18	
	7	44			42			60			54			18	
	8	34			40			60			52			20	
	9	20			46			58			52			14	
	#	30			48			60			52			16	
Adjusted Average		27			45			60			51			19	
Specification		70	65	60	54	47	40	32	24	16	8	0			
Rock Quality		Good			Fair					Poor					
Specification: Per Table 1. NRC Table of Scoring Criteria for Rock Quality, Derived from Tables 6.2, 6.5, and 6.7 of NUREG/CR-2642, Long -Term Survivability of Riprap for Armoring Uranium Mill Tailings and Covers: A Literature Review, 1982.															

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