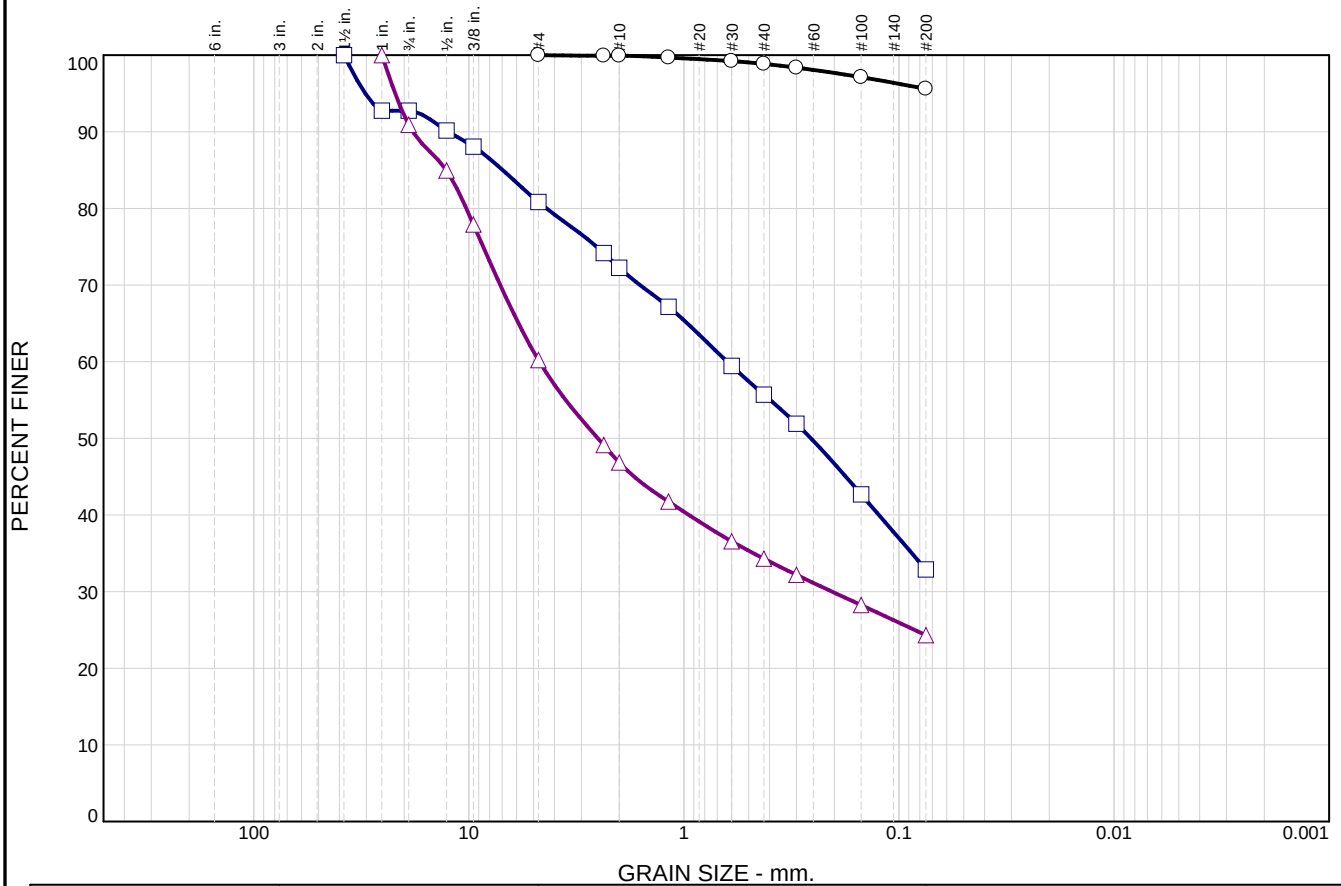


APPENDIX B

Particle Size Distribution Report



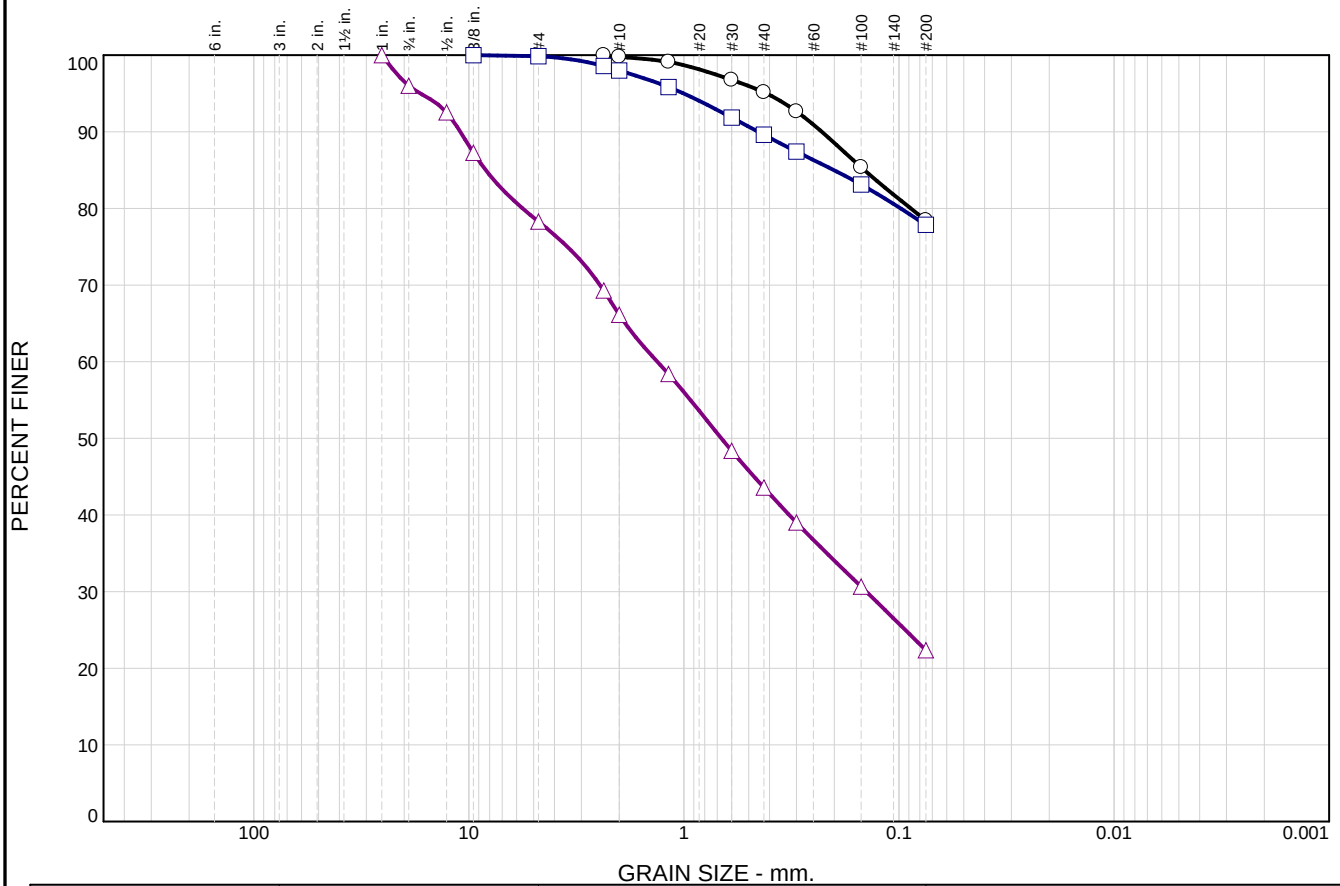
	% +3"		% Gravel		% Sand			% Fines		
			Coarse	Fine	Coarse	Medium	Fine	Silt		Clay
○	0.0		0.0	0.0	0.1	1.0	3.3	95.6		
□	0.0		7.2	12.0	8.5	16.6	22.8	32.9		
△	0.0		9.1	30.7	13.4	12.5	10.0	24.3		
×	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○	80	26								
□	34	14	6.9576	0.6295	0.2565					
△	29	16	12.7327	4.7004	2.5125	0.2048				

MATERIAL DESCRIPTION							TEST DATE	USCS	NM
○ fat clay (CH)								CH	
□ clayey sand with gravel (SC)								SC	
△ clayey gravel with sand (GC)								GC	

Project No. 1660		Client: TRUCKEE MEADOWS WATER AUTHORITY		Remarks: ○ Moisture Density: 75.7 pcf at 43.6% □ Received Moisture: 11.1% △ Received Moisture: 8.9%
Project: NORTH VALLEY ALIGNMENT				
○ Source of Sample: BORING 2	Depth: 5.0'-5.5'	Sample Number: 2C		
□ Source of Sample: BORING 2	Depth: 0.0'-1.5'	Sample Number: 2F		
△ Source of Sample: BORING 4	Depth: 0.0'-2.0'	Sample Number: 4F		
				Figure B-1a

Tested By: M. PONTONI Checked By: S. VINEIS

Particle Size Distribution Report



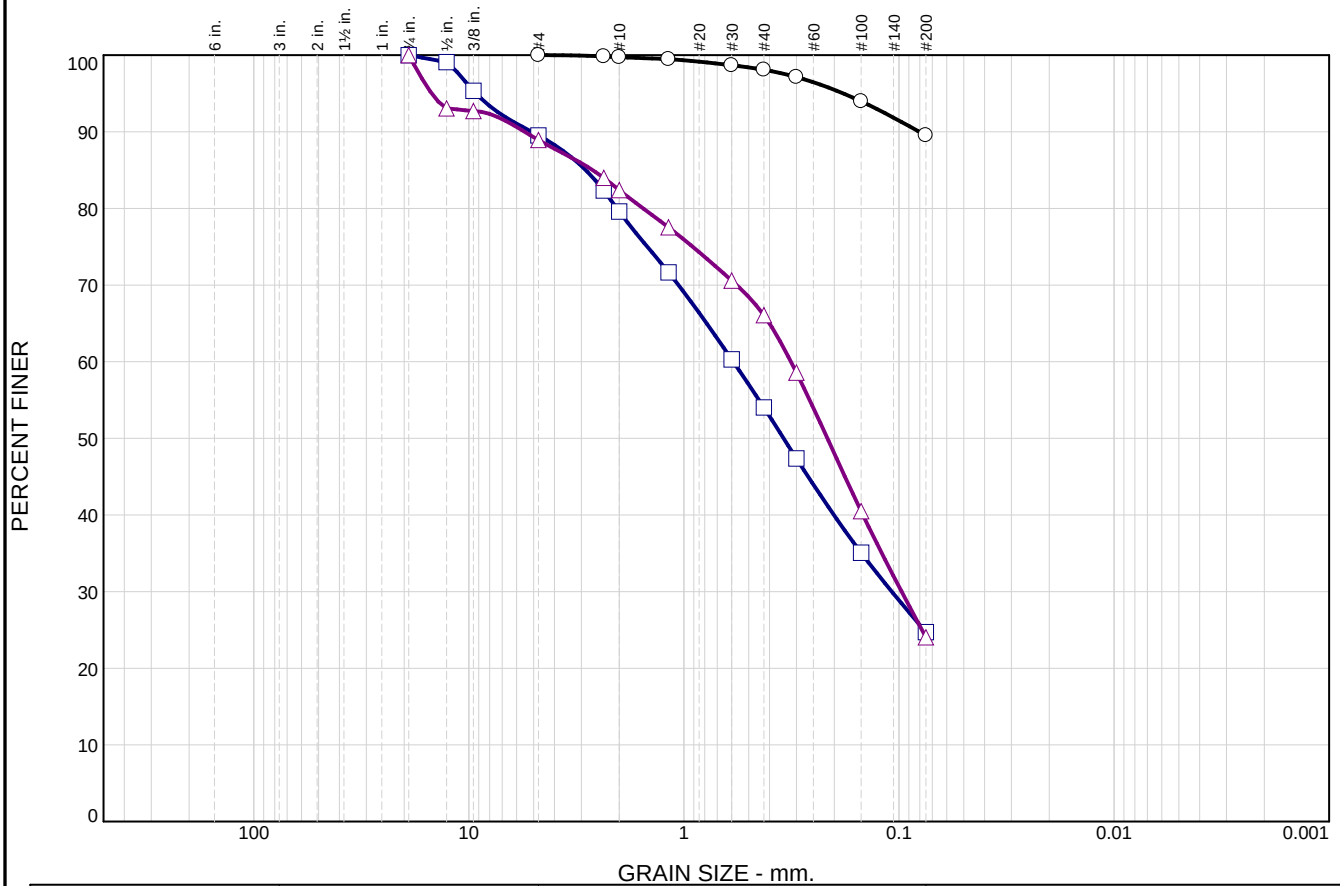
	% +3"		% Gravel		% Sand			% Fines		
			Coarse	Fine	Coarse	Medium	Fine	Silt		Clay
○	0.0		0.0	0.0	0.2	4.6	16.8	78.4		
□	0.0		0.0	0.1	1.9	8.4	11.7	77.9		
△	0.0		4.0	17.7	12.2	22.5	21.3	22.3		
⊗	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○	89	29	0.1449							
□	53	22	0.2009							
△	25	15	8.3498	1.3294	0.6699	0.1420				

MATERIAL DESCRIPTION							TEST DATE	USCS	NM
○ fat clay with sand (CH)								CH	
□ fat clay with sand (CH)								CH	
△ clayey sand with gravel (SC)								SC	

Project No. 1660		Client: TRUCKEE MEADOWS WATER AUTHORITY		Remarks: ○ Received Moisture: 44.0% □ Received Moisture: 28.7% △ Received Moisture: 6.7%
Project: NORTH VALLEY ALIGNMENT				
○ Source of Sample: BORING 5	Depth: 5.0'-6.5'	Sample Number: 5C		
□ Source of Sample: BORING 8	Depth: 2.5'-4.0'	Sample Number: 8B		
△ Source of Sample: BORING 10	Depth: 0.0'-1.5'	Sample Number: 10A		
				Figure B-1b

Tested By: ○ M. PONTONI □ S. HEIN △ S. HEIN Checked By: S. VINEIS

Particle Size Distribution Report



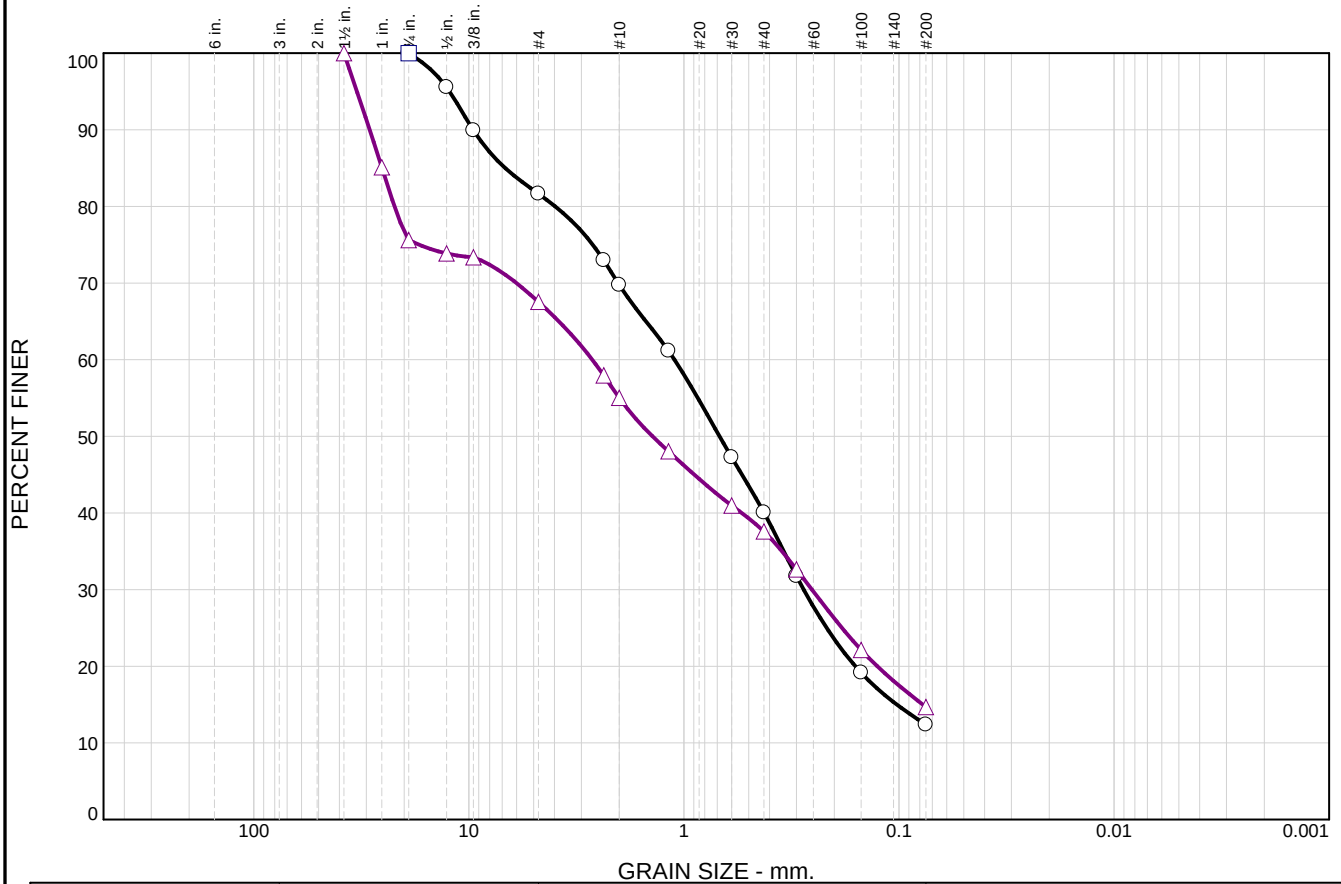
	% +3"		% Gravel		% Sand			% Fines		
			Coarse	Fine	Coarse	Medium	Fine	Silt		Clay
○	0.0		0.0	0.0	0.3	1.6	8.6	89.5		
□	0.0		0.0	10.5	9.9	25.6	29.3	24.7		
△	0.0		0.0	11.1	6.5	16.3	42.1	24.0		
×	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○	71	23								
□	18	14	2.8613	0.5899	0.3441	0.1080				
△	NV	NP	2.6566	0.3181	0.2153	0.0972				

MATERIAL DESCRIPTION							TEST DATE	USCS	NM
○ fat clay (CH)								CH	
□ silty, clayey sand (SC-SM)								SC-SM	
△ silty sand (SM)								SM	

Project No. 1660		Client: TRUCKEE MEADOWS WATER AUTHORITY		Remarks: ○ Received Moisture: 35.7% □ Received Moisture: 6.3% △ Received Moisture: 8.9%
Project: NORTH VALLEY ALIGNMENT				
○ Source of Sample: BORING 11	Depth: 2.5'-4.0'	Sample Number: 11B		
□ Source of Sample: BORING 15	Depth: 0.0'-1.5'	Sample Number: 15A		
△ Source of Sample: BORING 19	Depth: 2.5'-4.0'	Sample Number: 19B		
				Figure B-1c

Tested By: ○ M. PONTONI □ S. HEIN △ S. HEIN Checked By: S. VINEIS

Particle Size Distribution Report



GRAIN SIZE - mm.										
	% +3"		% Gravel		% Sand			% Fines		
			Coarse	Fine	Coarse	Medium	Fine	Silt		Clay
○	0.0		0.0	18.3	11.9	29.7	27.7	12.4		
□	0.0		0.0	100.0						
△	0.0		24.4	8.0	12.6	17.4	22.9	14.7		
×	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○	NV	NP	6.7719	1.1064	0.6830	0.2775	0.1023			
□										
△	20	18	25.3332	2.6676	1.3992	0.2540	0.0776			
MATERIAL DESCRIPTION								TEST DATE	USCS	NM
○ silty sand with gravel (SM)									SM	
□ DON'T USE										
△ silty sand with gravel (SM)									SM	
Project No. 1660 Client: TRUCKEE MEADOWS WATER AUTHORITY Project: NORTH VALLEY ALIGNMENT								Remarks: ○ Received Moisture: 7.8% □ Received Moisture: 7.8% △ Received Moisture: 7.2%		
○ Source of Sample: BORING 21 Depth: 2.5'-4.0' Sample Number: 21B										
□ Source of Sample: BORING 21 Depth: 2.5'-4.0' Sample Number: 21B										
△ Source of Sample: BORING 23 Depth: 2.5'-4.0' Sample Number: 23B										
								Figure B-1d		

Figure B-1d

Tested By: S. HEIN Checked By: S. VINEIS

PERCENT FINER



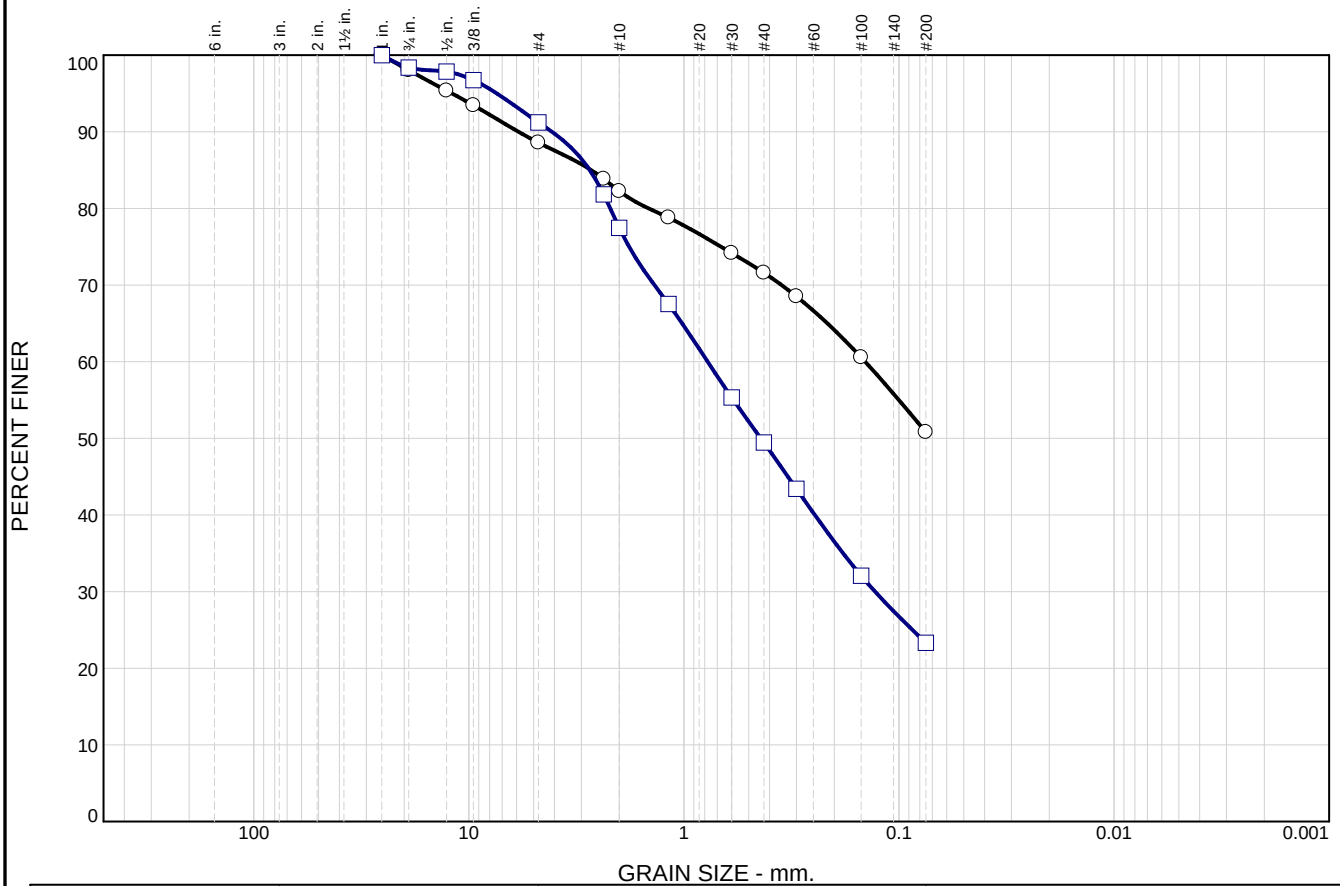
MATERIAL DESCRIPTION	TEST DATE	USCS	NM
○ sandy lean clay with gravel (CL)		CL	
□ silty, clayey sand (SC-SM)		SC-SM	
△ silty, clayey sand (SC-SM)		SC-SM	

Remarks:
 ○ RECEIVED 8/25/2014
 □ Moisture Density: 105.7 pcf at 8.3%
 △ Received Moisture: 10.9%



Tested By: S. HEIN **Checked By:** S. VINEIS

Particle Size Distribution Report



GRAIN SIZE - mm.									
	% +3"	% Gravel		% Sand			% Fines		
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay	
○	0.0	2.0	9.4	6.4	10.6	20.8	50.8		
□	0.0	1.6	7.2	13.7	28.0	26.2	23.3		
×	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c
○	36	17	2.6966	0.1436					
□	27	18	2.7396	0.7756	0.4390	0.1292			

MATERIAL DESCRIPTION							TEST DATE	USCS	NM
○ sandy lean clay (CL)								CL	
□ clayey sand (SC)								SC	

Project No. 1660 Client: TRUCKEE MEADOWS WATER AUTHORITY Project: NORTH VALLEY ALIGNMENT ○ Source of Sample: TPWL-1 Depth: 1.0'-4.0' Sample Number: 1B □ Source of Sample: TPWL-2 Depth: 0.0'-4.0' Sample Number: 2A	Remarks: ○ Received Moisture: 12.0% □ Received Moisture: 5.8%
	

Figure B-1f

Tested By: S. HEIN Checked By: S. VINEIS

Western Environmental Testing Laboratory Analytical Report

Construction Materials Engineers

6980 Sierra Center Parkway, Suite 90

Reno, NV 89511

Attn: Steve Vineis

Phone: (775) 851-8205 Fax: (775) 737-7615

PO\Project: TMWA North Valley Align./1660

Customer Sample ID: B-4 4B 2 1/2'-4'

Collect Date/Time: 8/4/2014

WETLAB Sample ID: 1408070-001

Receive Date: 8/4/2014 16:45

Analyte	Method	Results	Units	DF	RL	Analyzed	LabID
General Chemistry							
Sulfide	A21.5-99	Negative		1		8/12/2014	NV00925
Paste pH	SM 4500-H+ B	8.62	pH Units	1		8/5/2014	NV00925
Redox Potential	SM 2580B	320	mV	1		8/6/2014	NV00925
Resistivity	SM 2510B	640	ohms.cm	1	1.0	8/7/2014	NV00925
Anions by Ion Chromatography							
Sulfate	EPA 300.0	ND	mg/kg	15	15	8/8/2014	NV00925
Sample Preparation							
Saturated Paste Preparation	CSTPM S:1.0	Complete		1		8/6/2014	NV00925
3:1 DI Water Extraction	WL 3.0	Complete		1		8/5/2014	NV00925

Customer Sample ID: B-9 9B&9C Combined 2 1/2'-6'

Collect Date/Time: 8/4/2014

WETLAB Sample ID: 1408070-002

Receive Date: 8/4/2014 16:45

Analyte	Method	Results	Units	DF	RL	Analyzed	LabID
General Chemistry							
Sulfide	A21.5-99	Negative		1		8/12/2014	NV00925
Paste pH	SM 4500-H+ B	9.08	pH Units	1		8/5/2014	NV00925
Redox Potential	SM 2580B	330	mV	1		8/6/2014	NV00925
Resistivity	SM 2510B	490	ohms.cm	1	1.0	8/7/2014	NV00925
Anions by Ion Chromatography							
Sulfate	EPA 300.0	ND	mg/kg	30	30	8/8/2014	NV00925
Sample Preparation							
Saturated Paste Preparation	CSTPM S:1.0	Complete		1		8/6/2014	NV00925
3:1 DI Water Extraction	WL 3.0	Complete		1		8/5/2014	NV00925

Customer Sample ID: B-15 15B&15C Combined 2 1/2'-6'

Collect Date/Time: 8/4/2014

WETLAB Sample ID: 1408070-003

Receive Date: 8/4/2014 16:45

Analyte	Method	Results	Units	DF	RL	Analyzed	LabID
General Chemistry							
Sulfide	A21.5-99	Negative		1		8/12/2014	NV00925
Paste pH	SM 4500-H+ B	8.39	pH Units	1		8/5/2014	NV00925
Redox Potential	SM 2580B	320	mV	1		8/6/2014	NV00925
Resistivity	SM 2510B	1400	ohms.cm	1	1.0	8/7/2014	NV00925
Anions by Ion Chromatography							
Sulfate	EPA 300.0	23	mg/kg	15	15	8/8/2014	NV00925
Sample Preparation							
Saturated Paste Preparation	CSTPM S:1.0	Complete		1		8/6/2014	NV00925
3:1 DI Water Extraction	WL 3.0	Complete		1		8/5/2014	NV00925

CME CONSTRUCTION
MATERIALS
ENGINEERS INC.

6980 Sierra Center Parkway, Suite 90
Reno, NV 89511

TMWA
NORTH VALLEYS WATERLINE ALIGNMENT
CORROSION TEST RESULTS
LEMMON VALLEY

PROJECT NO.:1660

DATE: 11/4/2014

PLATE

B-2a

Western Environmental Testing Laboratory Analytical Report

Construction Materials Engineers

6980 Sierra Center Parkway, Suite 90

Reno, NV 89511

Attn: Steve Vineis

Phone: (775) 851-8205 Fax: (775) 737-7615

PO\Project: TMWA North Valley Align./1660

Customer Sample ID: Boring 26 26 A&B

Collect Date/Time: 8/25/2014

WETLAB Sample ID: 1408674-001

Receive Date: 8/26/2014 08:50

Analyte	Method	Results	Units	DF	RL	Analyzed	LabID
General Chemistry							
Paste pH	SW846 9045B	8.21	pH Units	1		8/28/2014	NV00925
Resistivity	SM 2510B	320	ohms.cm	1	1.0	8/29/2014	NV00925
Anions by Ion Chromatography							
Sulfate	EPA 300.0	200	mg/kg	15	15	8/27/2014	NV00925
Sample Preparation							
Saturated Paste Preparation	CSTPM S:1.0	Complete		1		8/28/2014	NV00925
3:1 DI Water Extraction	WL 3.0	Complete		1		8/26/2014	NV00925

Customer Sample ID: TPWL-1 1B 1-4'

Collect Date/Time: 9/8/2014

WETLAB Sample ID: 1409196-001

Receive Date: 9/8/2014 16:20

Analyte	Method	Results	Units	DF	RL	Analyzed	LabID
General Chemistry							
Sulfide	A21.5-99	Negative		1		9/9/2014	NV00925
Paste pH	SW846 9045D	6.74	pH Units	1		9/9/2014	NV00925
Redox Potential	SM 2580B	400	mV	1		9/11/2014	NV00925
Resistivity	SM 2510B	900	ohms.cm	1	1.0	9/11/2014	NV00925
Anions by Ion Chromatography							
Sulfate	EPA 300.0	ND	mg/kg	15	15	9/9/2014	NV00925
Sample Preparation							
Saturated Paste Preparation	CSTPM S:1.0	Complete		1		9/9/2014	NV00925
3:1 DI Water Extraction	WL 3.0	Complete		1		9/9/2014	NV00925

Customer Sample ID: B-20 20B&20C Combined 2 1/2'-6'

Collect Date/Time: 8/4/2014

WETLAB Sample ID: 1408070-004

Receive Date: 8/4/2014 16:45

Analyte	Method	Results	Units	DF	RL	Analyzed	LabID
General Chemistry							
Sulfide	A21.5-99	Negative		1		8/12/2014	NV00925
Paste pH	SM 4500-H+ B	7.09	pH Units	1		8/5/2014	NV00925
Redox Potential	SM 2580B	310	mV	1		8/6/2014	NV00925
Resistivity	SM 2510B	2000	ohms.cm	1	1.0	8/7/2014	NV00925
Anions by Ion Chromatography							
Sulfate	EPA 300.0	ND	mg/kg	15	15	8/8/2014	NV00925
Sample Preparation							
Saturated Paste Preparation	CSTPM S:1.0	Complete		1		8/6/2014	NV00925
3:1 DI Water Extraction	WL 3.0	Complete		1		8/5/2014	NV00925



**CONSTRUCTION
MATERIALS
ENGINEERS INC.**

6980 Sierra Center Parkway, Suite 90
Reno, NV 89511

TMWA
NORTH VALLEYS WATERLINE ALIGNMENT
CORROSION TEST RESULTS
LEMMON VALLEY

PROJECT NO.:1660

DATE: 11/4/2014

PLATE

B-2b