APPENDIX G – LABORATORY TEST RESULTS

APPENDIX G.1 – OWNER PLACED STRUCTURAL FILL LABORATORY TEST RESULTS

APPENDIX G.2 – STRUCTURAL FILL LABORATORY TEST RESULTS

APPENDIX G.3 – SELECT STRUCTURAL FILL LABORATORY TEST RESULTS

APPENDIX G.4 – LEAK DETECTION FILL LABORATORY TEST RESULTS APPENDIX

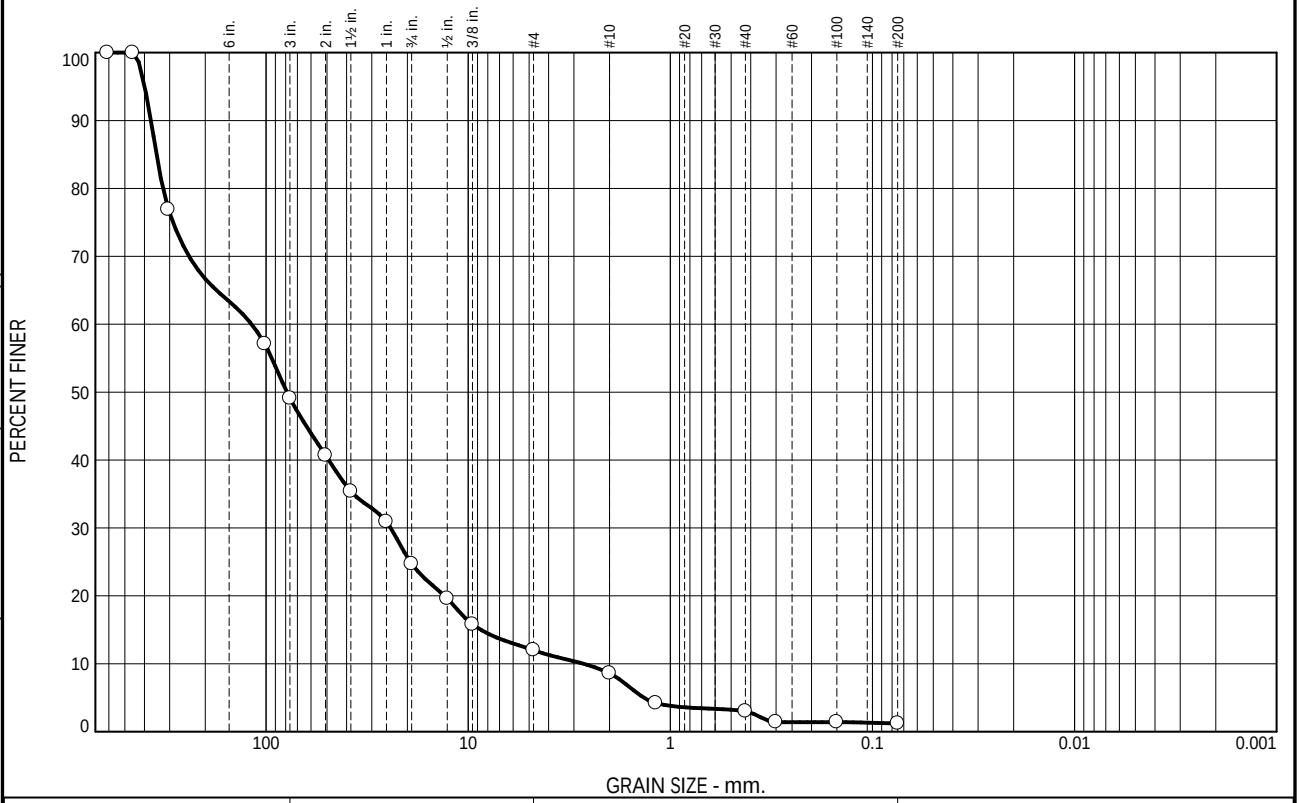
G.5 – SOIL LINER FILL LABORATORY TEST RESULTS

APPENDIX G.6 – DRAIN COVER FILL (CRUSHED ORE) LABORATORY TEST RESULTS

APPENDIX G.1 – OWNER PLACED STRUCTURAL FILL LABORATORY TEST RESULTS

Particle Size Distribution Report

ASTM D422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
50.9	24.4	12.7	3.4	5.6	1.8	1.2	

Test Results (ASTM D422)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
24"	100.0			
18"	100.0			
12"	76.9			
4"	57.1			
3"	49.1			
2"	40.7			
1.5"	35.4			
1"	30.9			
.75"	24.7			
.5"	19.6			
.375"	15.8			
#4	12.0			
#10	8.6			
#16	4.2			
#40	3.0			
#50	1.4			
#100	1.4			
#200	1.2			

* Structural Fill (HCBF)

Material Description

Brown well-graded gravel with sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 371.5911 D_{85}= 348.2597 D_{60}= 117.9973
D_{50}= 78.9264 D_{30}= 24.1981 D_{15}= 8.6638
D_{10}= 2.6928 C_u= 43.82 C_c= 1.84

Classification

USCS= GW AASHTO= A-1-a

Test Remarks

Location: N 59,230 E 36,200
Sample Number: HCBF-22-R Depth: 10,010 Sample Date: 02/08/2022

NewFields

Client: Newmont CC&V Gold Company
Project: VLF2 P3 Stage A

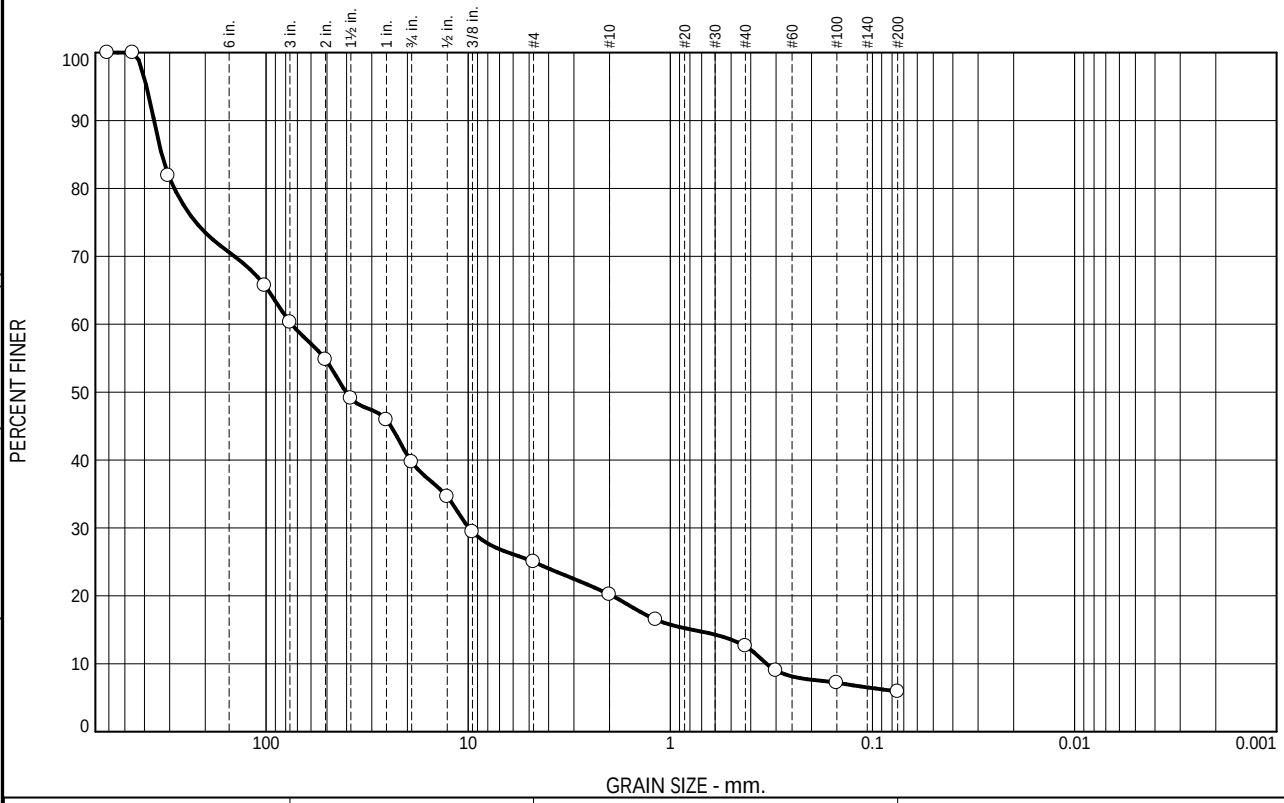
Project No: 475.0106.053 Figure HCBF-22-

Tested By: TW Checked By: TW

The results included in this report relate only to the items inspected or tested. This report shall not be reproduced, without prior written approval of NewFields.

Particle Size Distribution Report

ASTM D422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
39.7	20.6	14.7	4.8	7.6	6.7	5.9	

Test Results (ASTM D422)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
24"	100.0			
18"	100.0			
12"	81.9			
4"	65.7			
3"	60.3			
2"	54.8			
1.5"	49.1			
1"	45.9			
.75"	39.7			
.5"	34.6			
.375"	29.4			
#4	25.0			
#10	20.2			
#16	16.5			
#40	12.6			
#50	9.0			
#100	7.2			
#200	5.9			

* Structural Fill (HCBF)

Material Description

Reddish brown poorly graded gravel with clay and sand

Atterberg Limits

PL= 21 LL= 31 PI= 10

Coefficients

D_{90}= 358.4401 D_{85}= 328.4872 D_{60}= 74.7659
D_{50}= 40.2502 D_{30}= 9.9376 D_{15}= 0.7769
D_{10}= 0.3344 C_u= 223.56 C_c= 3.95

Classification

USCS= GP-GC AASHTO= A-2-4(0)

Test Remarks

Location: N 59,520 E 36,100
Sample Number: HCBF-24-R Depth: 10,045 Sample Date: 04/01/2022

NewFields

Client: Newmont CC&V Gold Company
Project: VLF2 P3 Stage A
Project No: 475.0106.053 Figure HCBF-24-

Tested By: TW Checked By: TW

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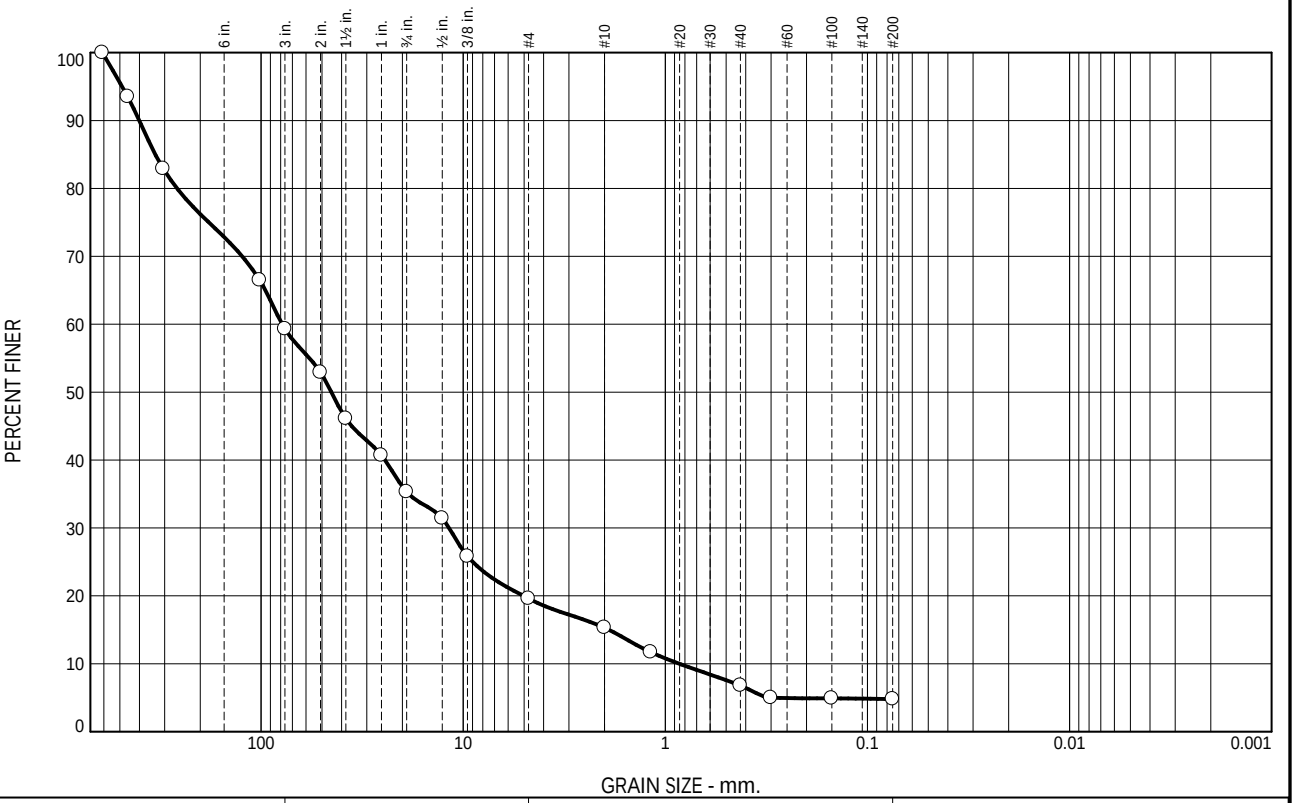
Particle Size Distribution Report

ASTM D422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
40.7	24.0	15.7	4.3	8.5	2.0	4.8	

Test Results (ASTM D422)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
24"	100.0			
18"	93.5			
12"	82.9			
4"	66.5			
3"	59.3			
2"	52.9			
1.5"	46.1			
1"	40.7			
.75"	35.3			
.5"	31.4			
.375"	25.8			
#4	19.6			
#10	15.3			
#16	11.7			
#40	6.8			
#50	5.0			
#100	4.9			
#200	4.8			

* Structural Fill (HCBF)

Material Description

Gray well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 400.7611 D_{85}= 333.8358 D_{60}= 78.6777
D_{50}= 44.9283 D_{30}= 11.7446 D_{15}= 1.9047
D_{10}= 0.8525 C_u= 92.29 C_c= 2.06

Classification

USCS= GW-GM AASHTO= A-1-a

Test Remarks

Location: N 58,960 E 36,400
Sample Number: HCBF-25-R Depth: 10,095 Sample Date: 04/01/2022

NewFields

Client: Newmont CC&V Gold Company
Project: VLF2 P3 Stage A
Project No: 475.0106.053 Figure HCBF-25-

Tested By: TW Checked By: TW

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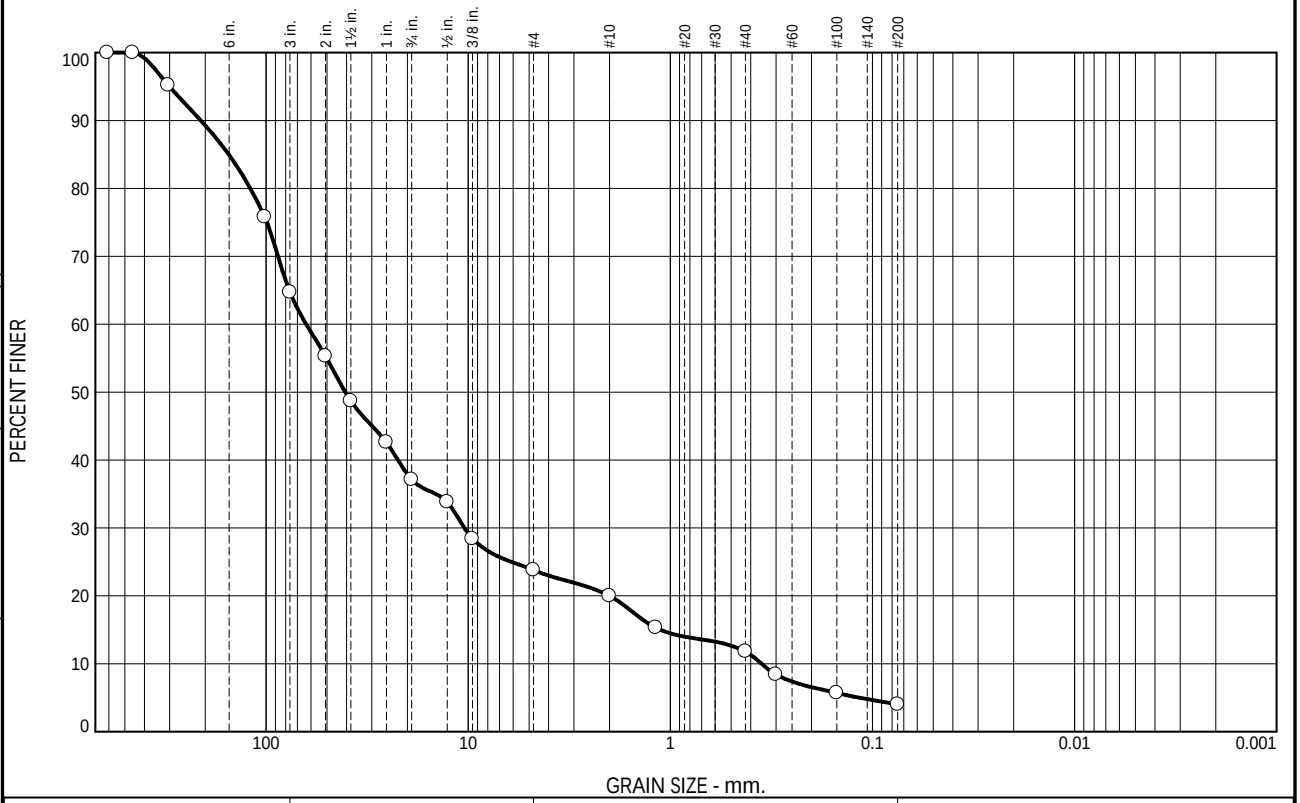
Particle Size Distribution Report

ASTM D422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
35.3	27.6	13.3	3.8	8.2	7.8	4.0	

Test Results (ASTM D422)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
24"	100.0			
18"	100.0			
12"	95.2			
4"	75.8			
3"	64.7			
2"	55.3			
1.5"	48.7			
1"	42.6			
.75"	37.1			
.5"	33.8			
.375"	28.4			
#4	23.8			
#10	20.0			
#16	15.3			
#40	11.8			
#50	8.4			
#100	5.7			
#200	4.0			

* Structural Fill (HCBF)

Material Description

Brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 210.4675 D_{85}= 153.0540 D_{60}= 63.3758
D_{50}= 40.5918 D_{30}= 10.4559 D_{15}= 1.1199
D_{10}= 0.3536 C_u= 179.23 C_c= 4.88

Classification

USCS= GP-GM AASHTO= A-1-a

Test Remarks

Location: N 58,780 E 36,025
Sample Number: HCBF-26-R Depth: 10,060 Sample Date: 04/26/2022

NewFields

Client: Newmont CC&V Gold Company
Project: VLF2 P3 Stage A

Project No: 475.0106.053 Figure HCBF-26-

Tested By: TW Checked By: TW

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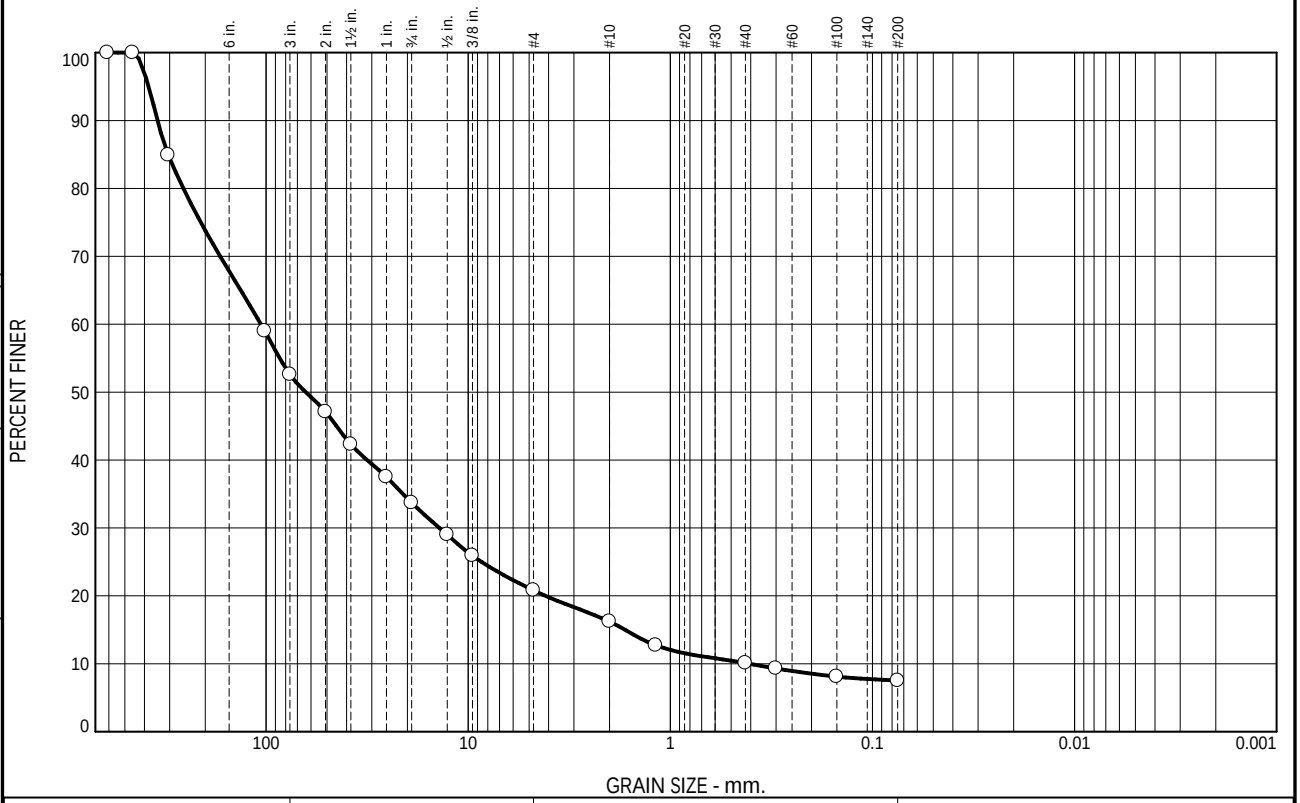
Particle Size Distribution Report

ASTM D422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
47.4	18.9	12.9	4.6	6.1	2.6	7.5	

Test Results (ASTM D422)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
24"	100.0			
18"	100.0			
12"	84.9			
4"	59.0			
3"	52.6			
2"	47.1			
1.5"	42.3			
1"	37.5			
.75"	33.7			
.5"	29.0			
.375"	25.9			
#4	20.8			
#10	16.2			
#16	12.7			
#40	10.1			
#50	9.3			
#100	8.1			
#200	7.5			

* Structural Fill (HCBF)

Material Description

Light brown silty gravel with sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 344.4072 D_{85}= 305.7908 D_{60}= 106.1758
D_{50}= 63.7196 D_{30}= 13.8856 D_{15}= 1.6763
D_{10}= 0.4078 C_u= 260.35 C_c= 4.45

Classification

USCS= GM AASHTO= A-1-a

Test Remarks

Location: N 58,750 E 36,100
Sample Number: HCBF-27-R Depth: 10,070 Sample Date: 04/28/2022

NewFields

Client: Newmont CC&V Gold Company
Project: VLF2 P3 Stage A

Project No: 475.0106.053 Figure HCBF-27-

Tested By: TW Checked By: TW

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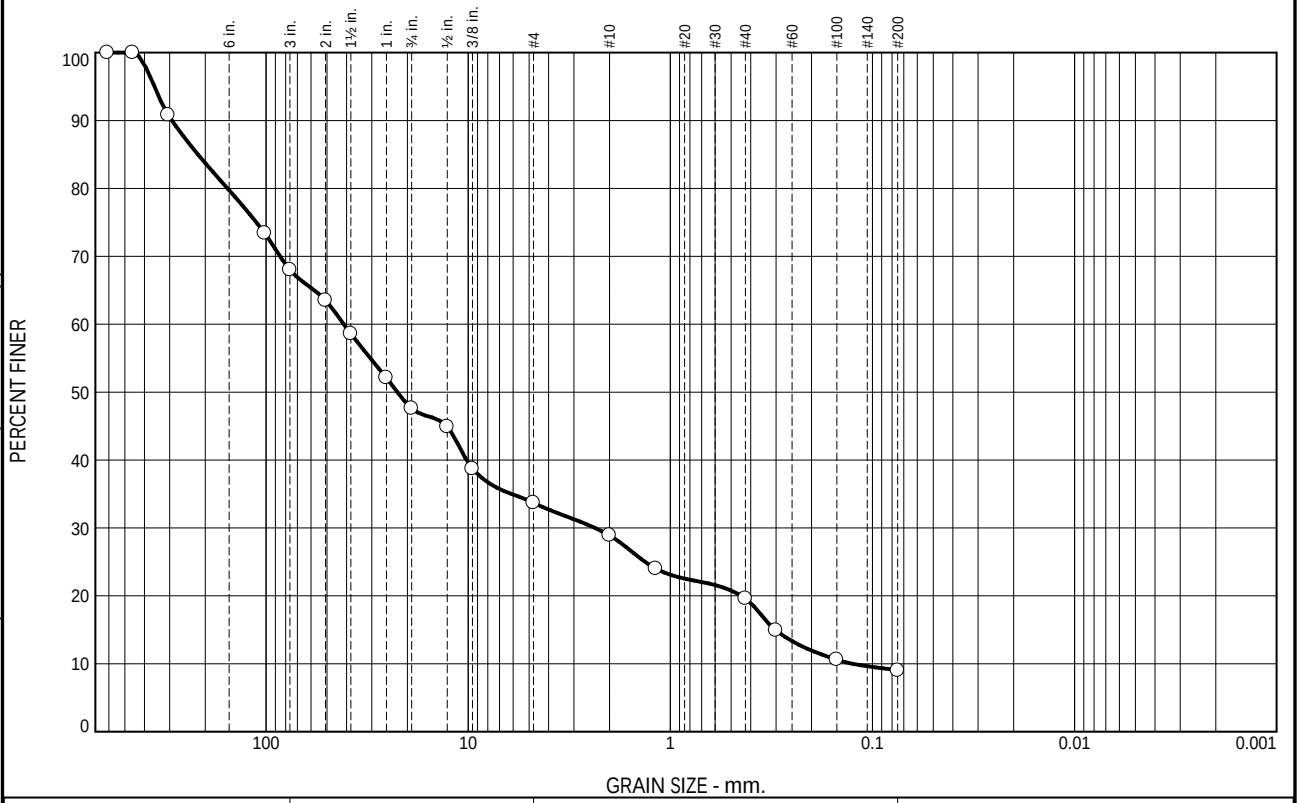
Particle Size Distribution Report

ASTM D422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
32.0	20.4	13.9	4.8	9.3	10.6	9.0	

Test Results (ASTM D422)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
24"	100.0			
18"	100.0			
12"	90.8			
4"	73.4			
3"	68.0			
2"	63.5			
1.5"	58.6			
1"	52.1			
.75"	47.6			
.5"	44.9			
.375"	38.7			
#4	33.7			
#10	28.9			
#16	24.0			
#40	19.6			
#50	14.9			
#100	10.6			
#200	9.0			

* Structural Fill (HCBF)

Material Description

Brown silty gravel with sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 292.2014 D_{85}= 217.4209 D_{60}= 41.2977
D_{50}= 22.4168 D_{30}= 2.3601 D_{15}= 0.3030
D_{10}= 0.1257 C_u= 328.66 C_c= 1.07

Classification

USCS= GM AASHTO= A-1-a

Test Remarks

Location: N 58,725 E 36,200
Sample Number: HCBF-28-R Depth: 10,105 Sample Date: 05/18/2022

NewFields

Client: Newmont CC&V Gold Company
Project: VLF2 P3 Stage A
Project No: 475.0106.053 Figure HCBF-28-

Tested By: TW Checked By: TW

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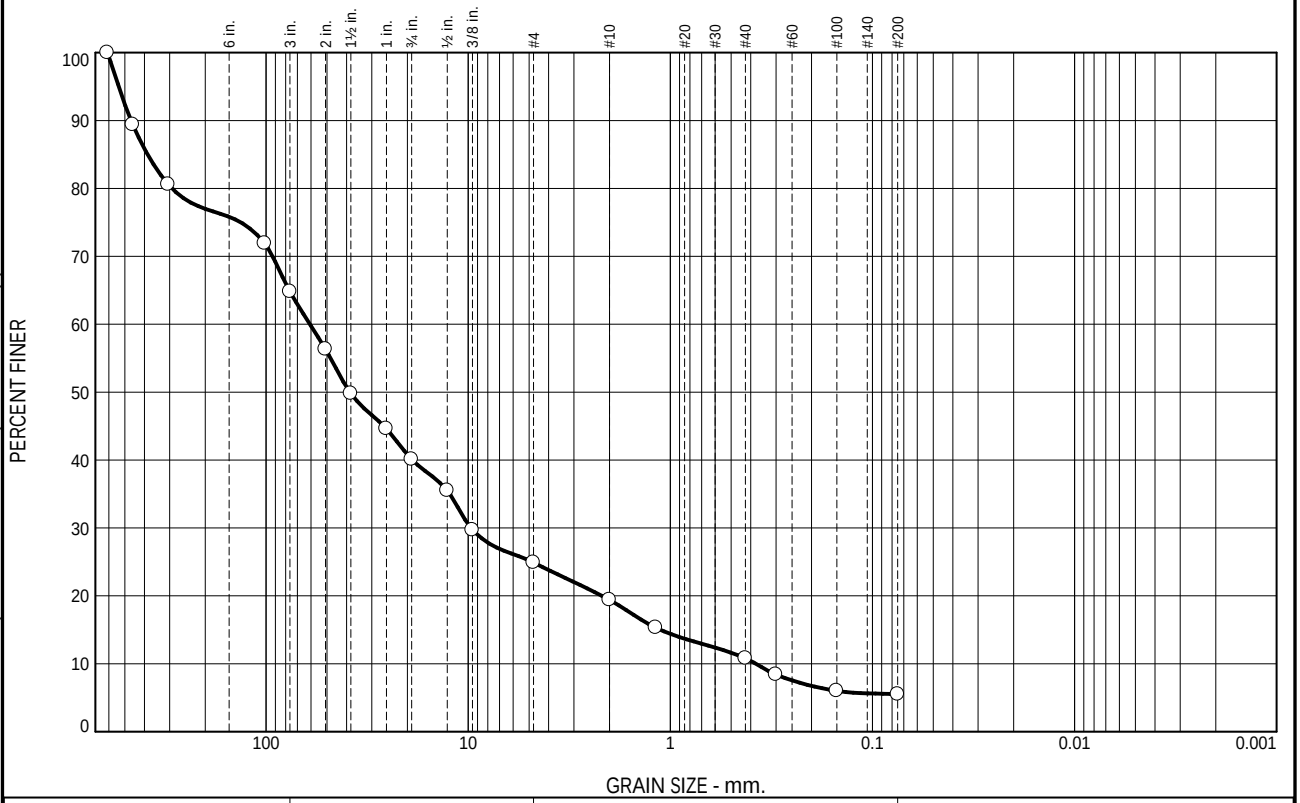
Particle Size Distribution Report

ASTM D422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
35.2	24.7	15.2	5.5	8.6	5.3	5.5	

Test Results (ASTM D422)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
24"	100.0			
18"	89.4			
12"	80.6			
4"	71.9			
3"	64.8			
2"	56.3			
1.5"	49.8			
1"	44.6			
.75"	40.1			
.5"	35.5			
.375"	29.7			
#4	24.9			
#10	19.4			
#16	15.3			
#40	10.8			
#50	8.4			
#100	6.0			
#200	5.5			

* Structural Fill (HCBF)

Material Description

Brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 466.3492 D_{85}= 385.8756 D_{60}= 60.7099
D_{50}= 38.5231 D_{30}= 9.7210 D_{15}= 1.1212
D_{10}= 0.3774 C_u= 160.86 C_c= 4.12

Classification

USCS= GP-GM AASHTO= A-1-a

Test Remarks

Location: N 58,680 E 36,320
Sample Number: HCBF-29-R Depth: 10,115 Sample Date: 05/24/2022

NewFields

Client: Newmont CC&V Gold Company
Project: VLF2 P3 Stage A

Project No: 475.0106.053 Figure HCBF-29-

Tested By: TW Checked By: TW

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APPENDIX G.2 – STRUCTURAL FILL LABORATORY TEST RESULTS

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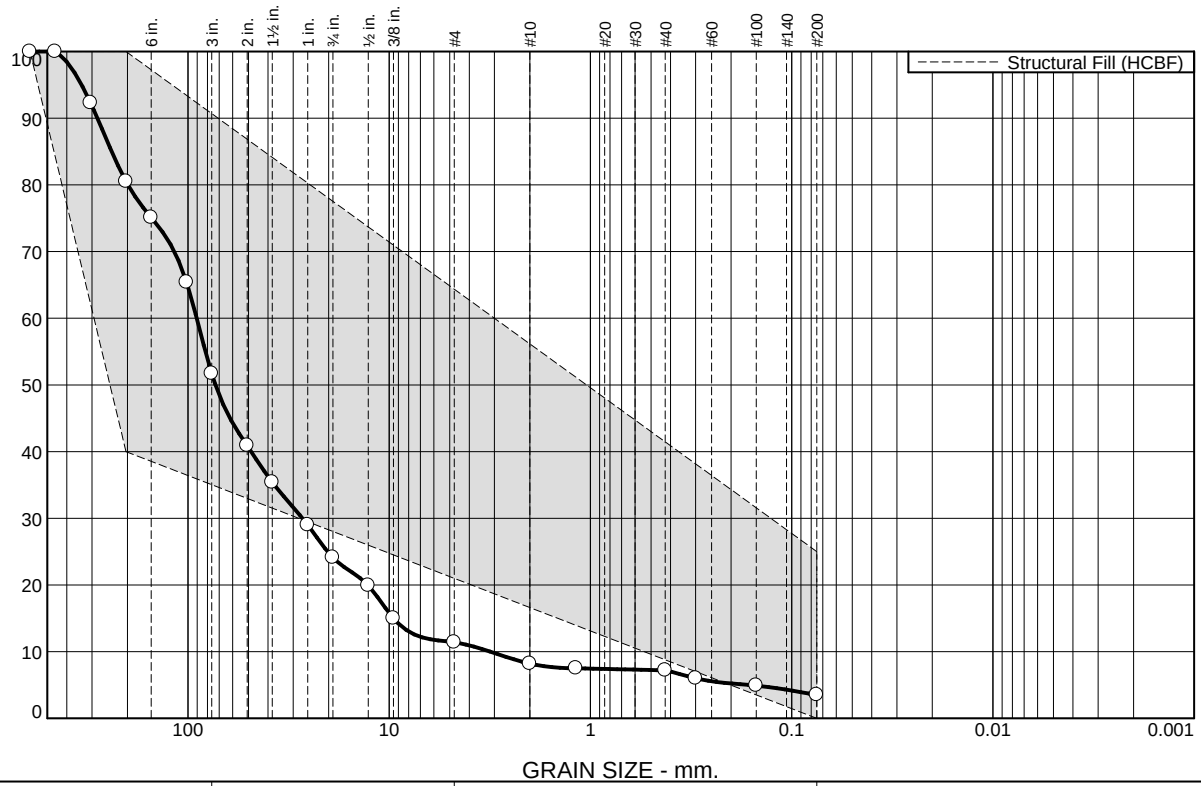
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
48.3	27.6	12.7	3.2	1.0	3.7	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	92.3		
8"	80.5	40.0 - 100.0	
6"	75.1		
4"	65.4		
3	51.7		
2	40.9		
1.5	35.4		
1	29.0		
.75	24.1		
0.5	19.9		
.375	15.0		
#4	11.4		
#10	8.2		
#16	7.5		
#40	7.2		
#50	6.0		
#100	4.9		
#200	3.5	0.0 - 25.0	

* Structural Fill (HCBF)

Material Description

Grayish brown well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 281.8370 D_{85}= 239.3104 D_{60}= 90.4712
D_{50}= 73.0189 D_{30}= 26.9709 D_{15}= 9.5250
D_{10}= 3.1471 C_u= 28.75 C_c= 2.55

Classification

USCS= GW-GM AASHTO= A-1-a

Remarks

Location: N 59,229 E 36,587
Sample Number: SF-1-R **Depth:** 2' BFG **Date:** 04/24/2023

NewFields

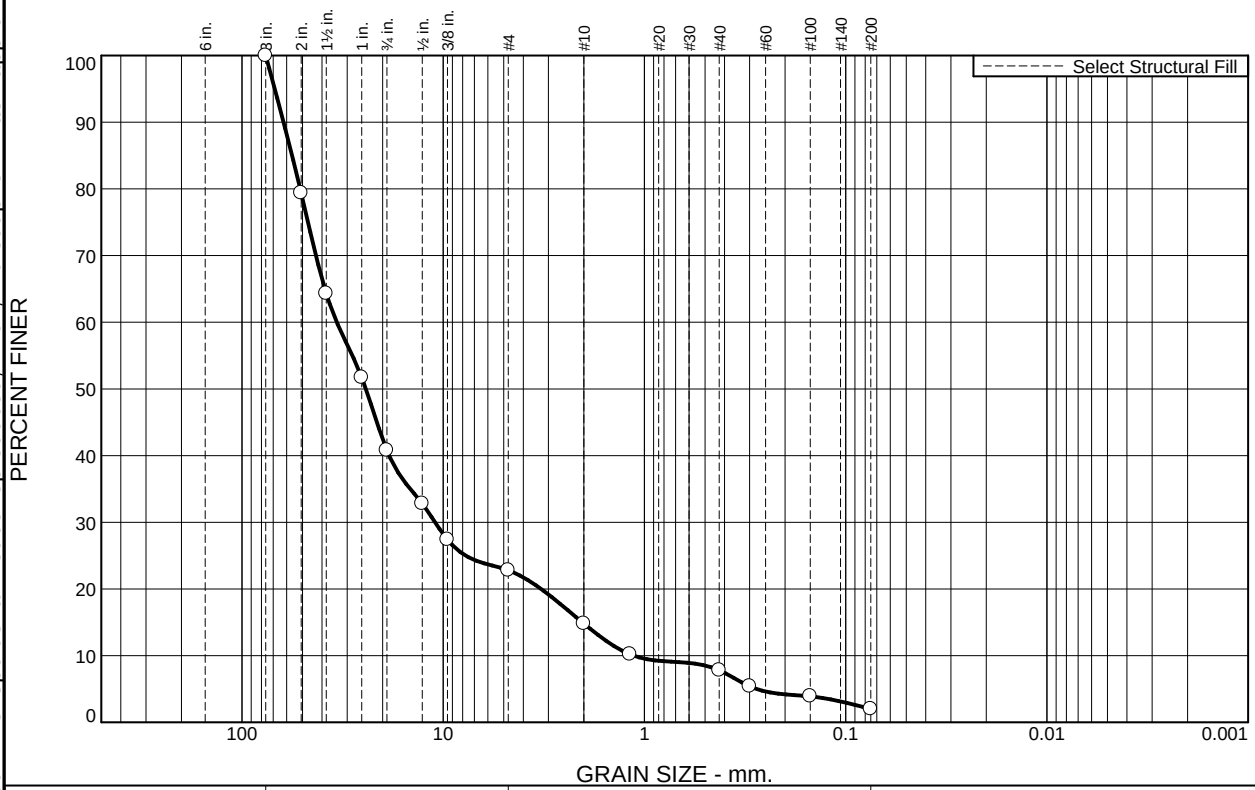
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** SF-1-R

Tested By: TW/DK **Checked By:** TW

APPENDIX G.3 – SELECT STRUCTURAL FILL LABORATORY TEST RESULTS

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	59.2	18.0	8.0	7.0	5.8	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0	100.0	
2	79.4		
1.5	64.3		
1	51.7		
.75	40.8		
0.5	32.8		
.375	27.4		
#4	22.8		
#10	14.8		
#16	10.2		
#40	7.8		
#50	5.4		
#100	3.9		
#200	2.0		

* Select Structural Fill

Material Description

Gray poorly graded gravel with sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 62.1645 D_{85}= 56.3812 D_{60}= 33.7857
D_{50}= 24.2407 D_{30}= 10.9746 D_{15}= 2.0372
D_{10}= 1.1330 C_u= 29.82 C_c= 3.15

Classification

USCS= GP AASHTO= A-1-a

Remarks

Location: N 58,538 E 36,521
Sample Number: SSF-1-R **Depth:** 1st Mat **Date:** 02/22/2023

NewFields

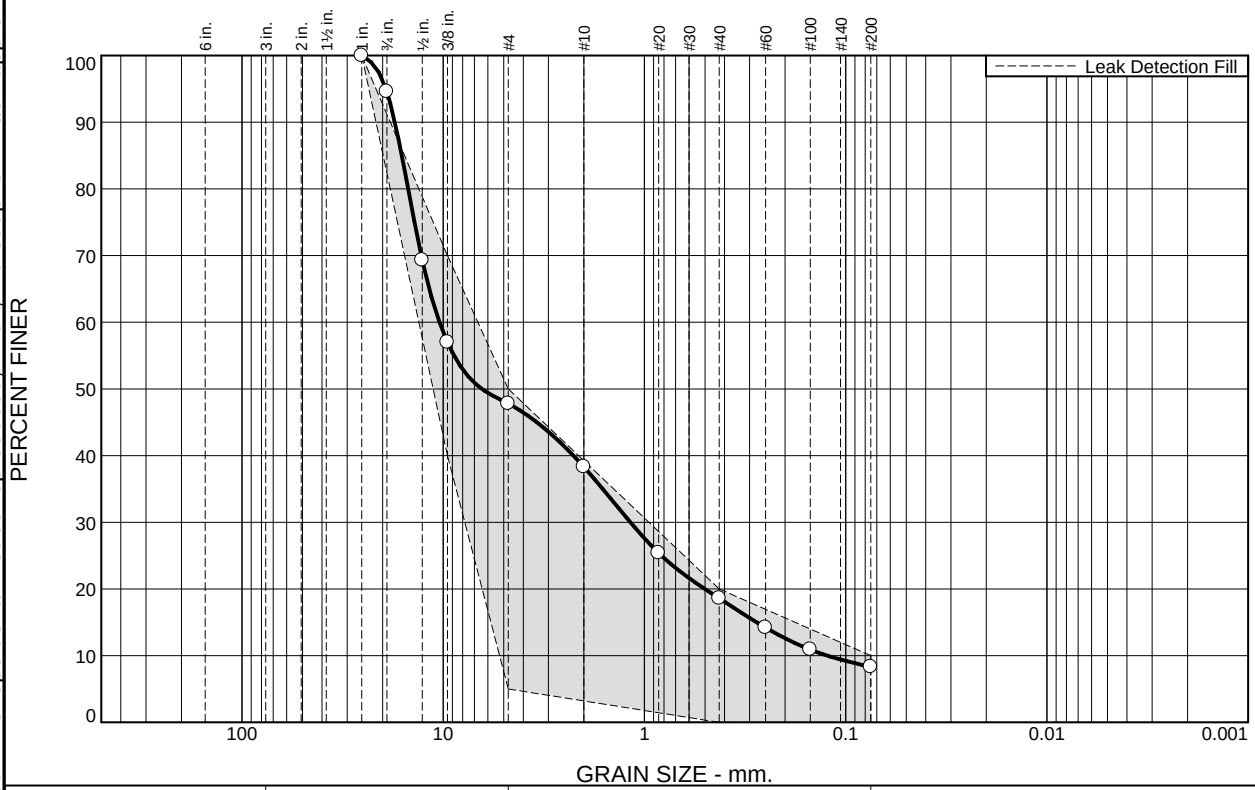
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** SSF-1-R

Tested By: TW **Checked By:** TW

APPENDIX G.4 – LEAK DETECTION FILL LABORATORY TEST RESULTS

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.4	46.8	9.5	19.7	10.3	8.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0	100.0	
.75	94.6		
0.5	69.3		
.375	57.0	40.0 - 70.0	
#4	47.8	5.0 - 50.0	
#10	38.3		
#20	25.4		
#40	18.6	0.0 - 20.0	
#60	14.2		
#100	10.9		
#200	8.3	0.0 - 10.0	

* Leak Detection Fill

Material Description

Tan well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 17.3746 D_{85}= 16.0450 D_{60}= 10.4369
D_{50}= 6.4180 D_{30}= 1.1745 D_{15}= 0.2769
D_{10}= 0.1233 C_u= 84.65 C_c= 1.07

Classification

USCS= GW-GM AASHTO= A-1-a

Remarks

Location: N 58,891 E 35,888
Sample Number: LDF-01-R **Depth:** FG **Date:** 05/04/2023

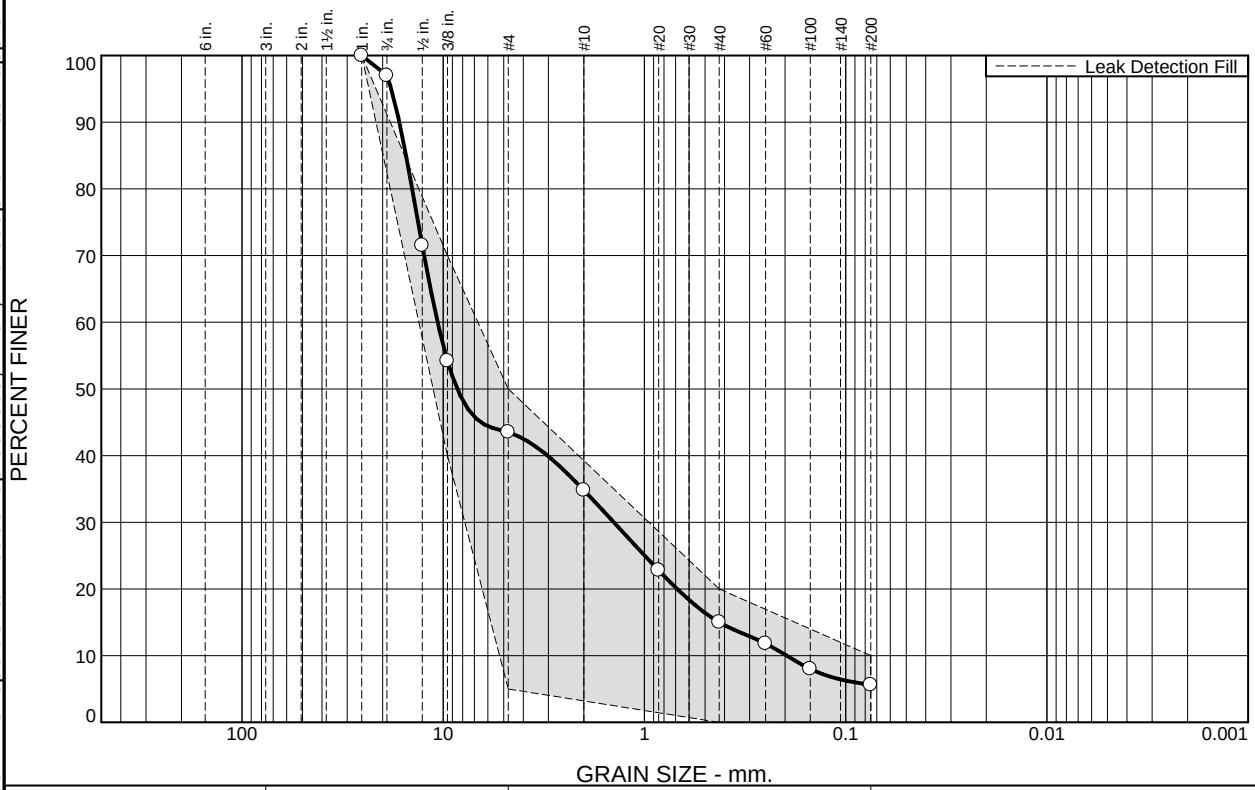
NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** LDF-01-R

Tested By: TW **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.0	53.5	8.7	19.8	9.4	5.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0	100.0	
.75	97.0		
0.5	71.5		
.375	54.2	40.0 - 70.0	
#4	43.5	5.0 - 50.0	
#10	34.8		
#20	22.8		
#40	15.0	0.0 - 20.0	
#60	11.8		
#100	8.0		
#200	5.6	0.0 - 10.0	

* Leak Detection Fill

Material Description

Tan poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 16.4990 D_{85}= 15.2886 D_{60}= 10.6593
D_{50}= 8.5133 D_{30}= 1.4191 D_{15}= 0.4250
D_{10}= 0.1967 C_u= 54.19 C_c= 0.96

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Location: N 58,875 E 37,008
Sample Number: LDF-02-R **Depth:** FG **Date:** 06/12/2023

NewFields

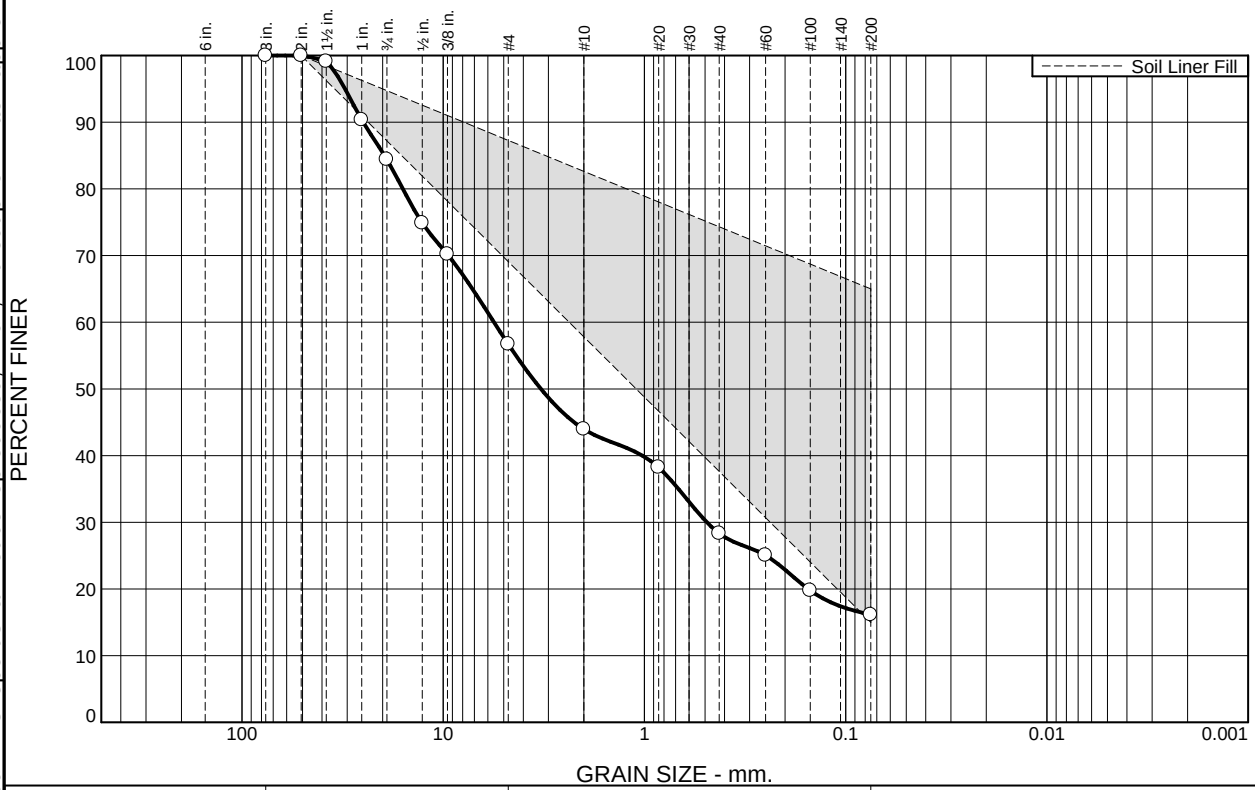
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** LDF-02-R

Tested By: TW **Checked By:** TW

APPENDIX G.5 – SOIL LINER FILL LABORATORY TEST RESULTS

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	15.6	27.7	12.7	15.7	12.2	16.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
2	100.0	100.0	
1.5	99.1		
1	90.4		
.75	84.4		
0.5	74.9		
.375	70.2		
#4	56.7		
#10	44.0		
#20	38.2		
#40	28.3		
#60	25.0		
#100	19.8		
#200	16.1	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey gravel with sand

Atterberg Limits

PL= 15 LL= 34 PI= 19

Coefficients

D_{90}= 24.9988 D_{85}= 19.5818 D_{60}= 5.5925
D_{50}= 3.2677 D_{30}= 0.4895 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= GC AASHTO= A-2-6(0)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-14-C

Date: 6/9/2022

NewFields

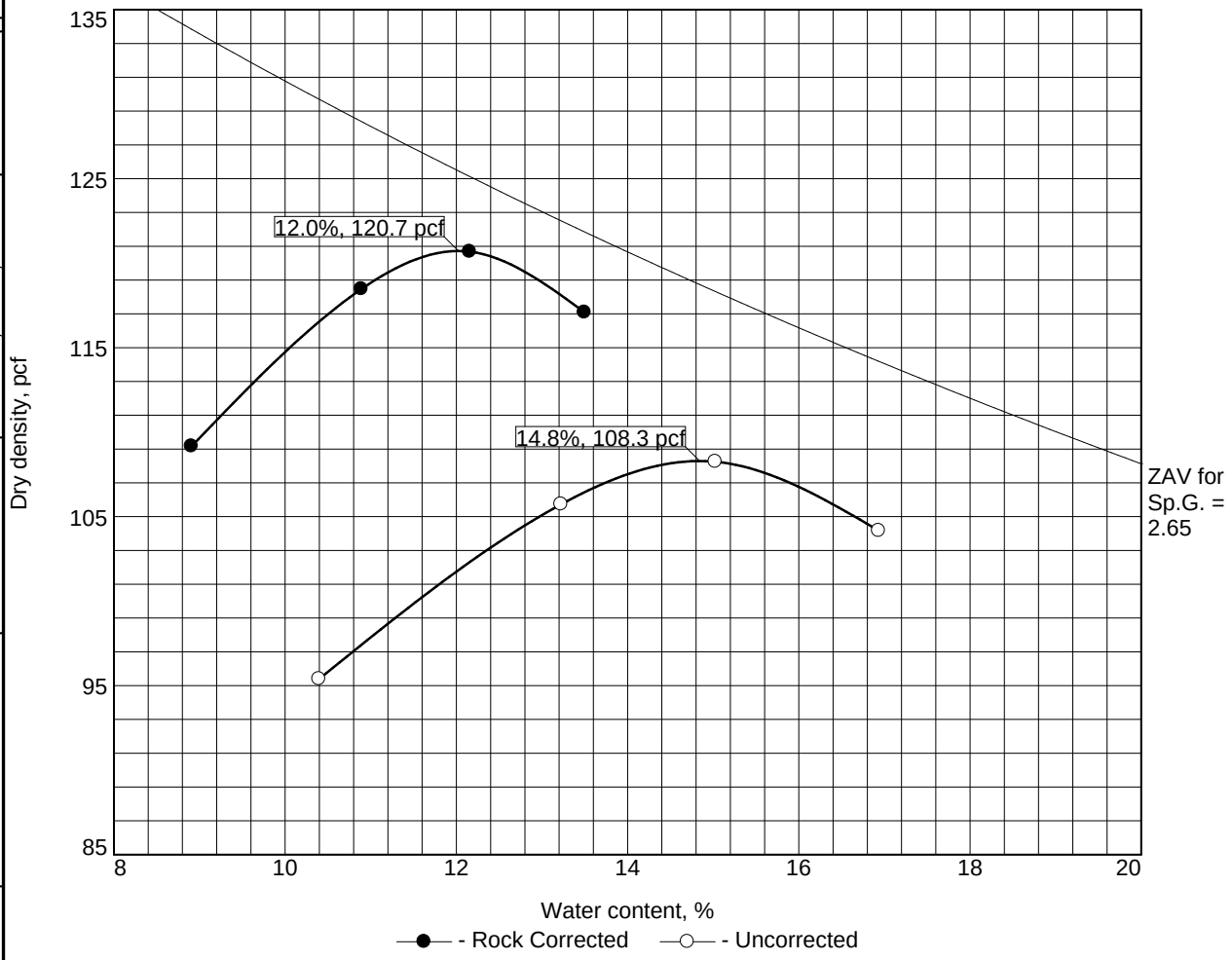
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-14-C

Tested By: GF/MM **Checked By:** GF

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	GC	A-2-6(0)		2.65	34	19	29.8	16.1

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 120.7 pcf	108.3 pcf	Brown clayey gravel with sand
Optimum moisture = 12.0 %	14.8 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 06/06/22
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-14-C

Remarks:

NewFields

Figure SLF-14-C

Tested By: BV **Checked By:** GF

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Crrek and Victor Gold Mines	Lab Sample No.:	SLF-14-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	RL	Tested By:	TW
Test Started:	7/27/2022	Checked By:	TW
Test Finished:	8/9/2022	Sample Description:	Brown clayey gravel with sand

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	40
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	616.79		556.30
Dry Soil + Tare (g)	551.41		495.80
Tare (g)	0.00		119.40
Wt. of Water (g)	65.38		60.50
Dry Soil (g)	551.41		376.40
Moisture Content (%)	11.9		16.1
Sample Volume (ft^3)	0.01049	0.01050	
Dry Density (pcf)	115.7	115.6	
Wet Density (pcf)	129.6	134.3	
Saturation (%)	74.1	100.0	
Percent Compaction	95.9	95.8	
Height (in)	3.016	3.018	
Diameter (in)	2.767	2.769	
Area (in^2)	6.012	6.020	
Est. Moisture Content after Consolidation (%)		16.3%	
Est. Void Ratio after Consolidation		0.433	
Specific Gravity*	2.65		

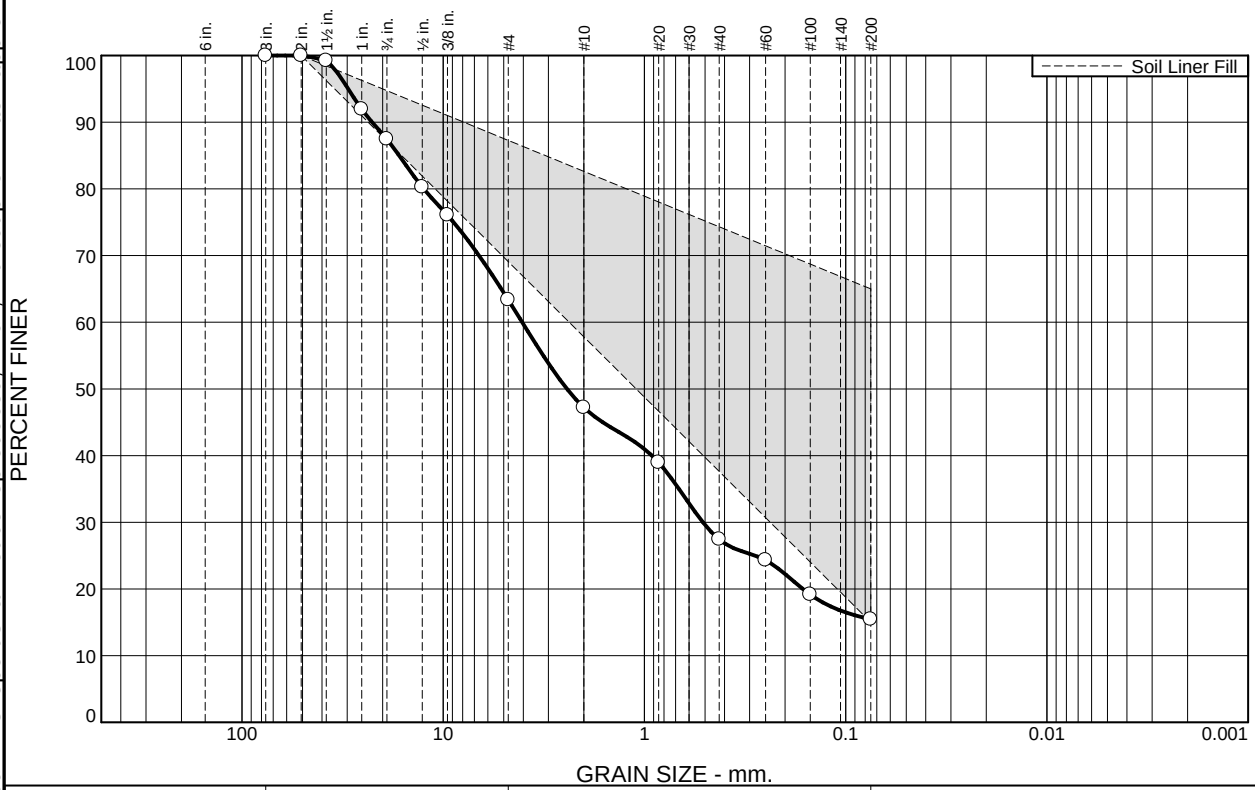
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	120.7
Initial Remolded Dry Density (pcf):	115.7
Initial Percent Compaction:	96%
Initial Void Ratio:	0.429
Optimum Moisture Content(%):	12.0
Initial Water Content (%):	11.9
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**1.5E-07**
Gradient Range (h/L):	1.2 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	12.5	24.1	16.2	19.8	12.0	15.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
2	100.0	100.0	
1.5	99.2		
1	91.9		
.75	87.5		
0.5	80.3		
.375	76.1		
#4	63.4		
#10	47.2		
#20	39.0		
#40	27.4		
#60	24.3		
#100	19.2		
#200	15.4	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 12 LL= 39 PI= 27

Coefficients

D_{90}= 22.5698 D_{85}= 16.5396 D_{60}= 4.0502
D_{50}= 2.4252 D_{30}= 0.5118 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(0)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-15-C

Date: 6/9/2022

NewFields

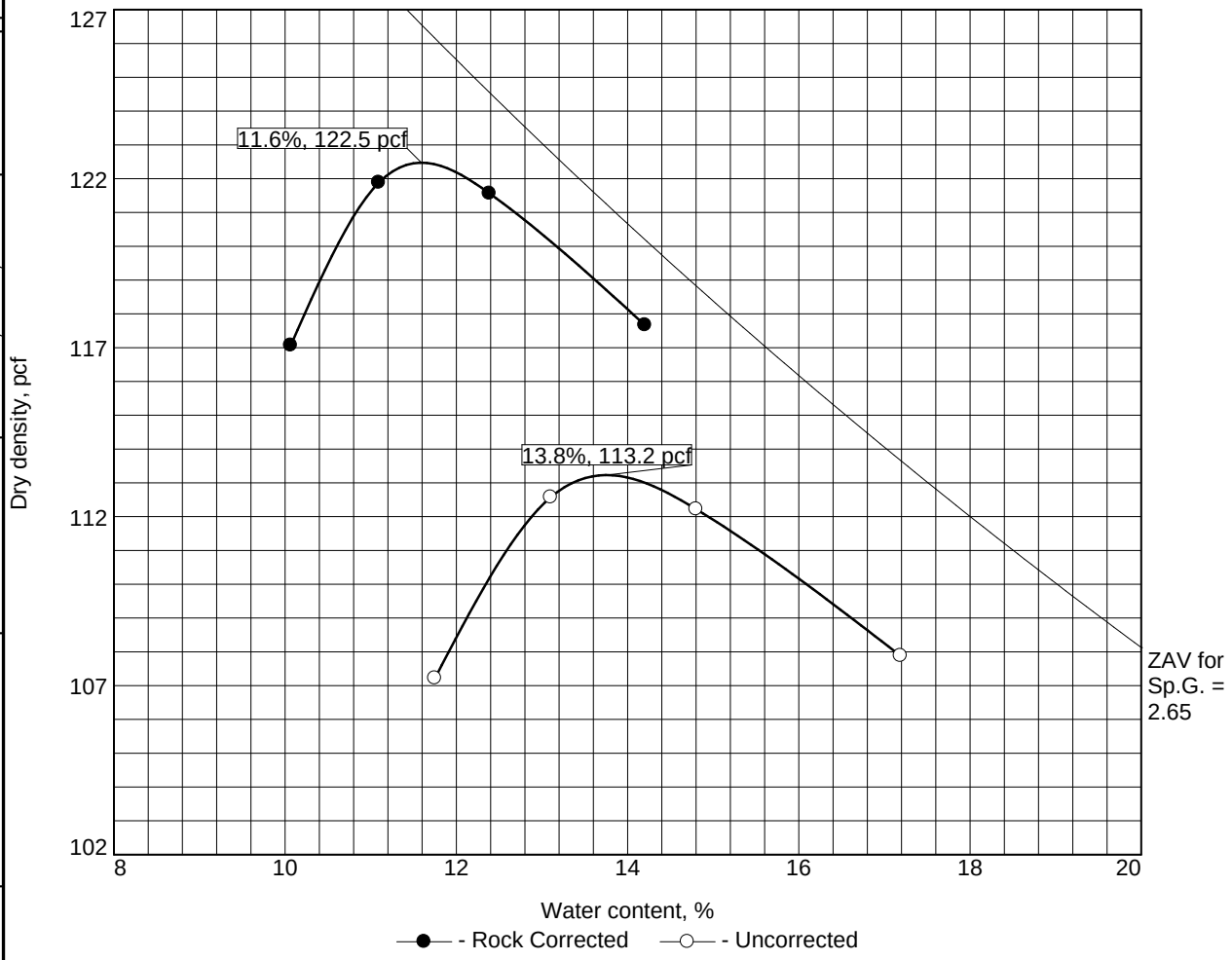
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-15-C

Tested By: GF/MM **Checked By:** GF

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method B Standard
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(0)		2.65	39	27	23.9	15.4

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 122.5 pcf	113.2 pcf	Brown clayey sand with gravel
Optimum moisture = 11.6 %	13.8 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 06/24/22
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-15-C

Remarks:

NewFields

Figure SLF-15-C

Tested By: GF **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-15-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	RL	Tested By:	TW
Test Started:	8/9/2022	Checked By:	TW
Test Finished:	8/16/2022	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	40
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	623.9		590.50
Dry Soil + Tare (g)	559.64		525.00
Tare (g)	0.00		119.50
Wt. of Water (g)	64.26		65.50
Dry Soil (g)	559.64		405.50
Moisture Content (%)	11.5		16.2
Sample Volume (ft^3)	0.01065	0.01067	
Dry Density (pcf)	115.7	115.5	
Wet Density (pcf)	129.1	134.2	
Saturation (%)	71.6	100.0	
Percent Compaction	94.5	94.3	
Height (in)	3.018	3.021	
Diameter (in)	2.787	2.790	
Area (in^2)	6.099	6.112	
Est. Moisture Content after Consolidation (%)		16.4%	
Est. Void Ratio after Consolidation		0.434	
Specific Gravity*	2.65		

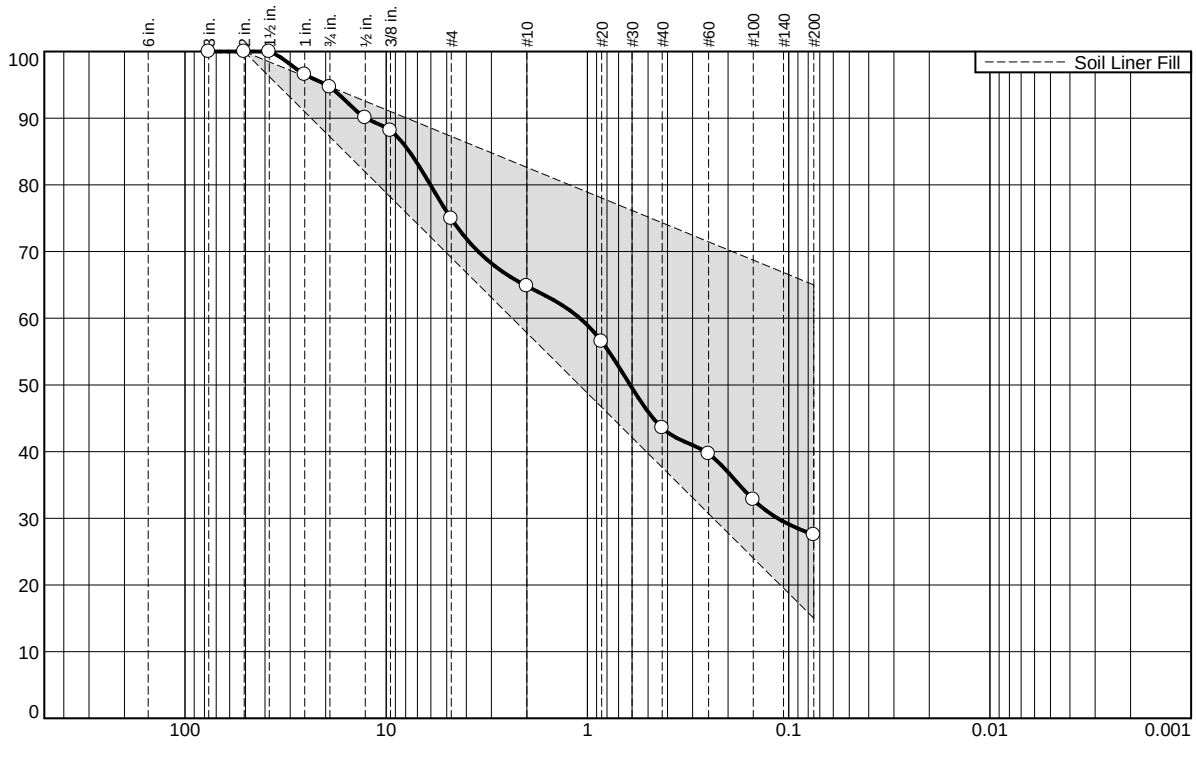
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	122.5
Initial Remolded Dry Density (pcf):	115.7
Initial Percent Compaction:	94%
Initial Void Ratio:	0.429
Optimum Moisture Content(%):	11.6
Initial Water Content (%):	11.5
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**4.8E-07**
Gradient Range (h/L):	1.1 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.3	19.8	10.1	21.3	16.0	27.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
2	100.0	100.0	
1.5	100.0		
1	96.6		
.75	94.7		
0.5	90.1		
.375	88.1		
#4	74.9		
#10	64.8		
#20	56.5		
#40	43.5		
#60	39.7		
#100	32.8		
#200	27.5	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 18 LL= 38 PI= 20

Coefficients

D_{90}= 12.5776 D_{85}= 7.6663 D_{60}= 1.0895
D_{50}= 0.6132 D_{30}= 0.1134 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(1)

Remarks

Location: Lower Dump 1 Stockpile
Sample Number: SLF-17-C

Date: 6/17/2022

NewFields

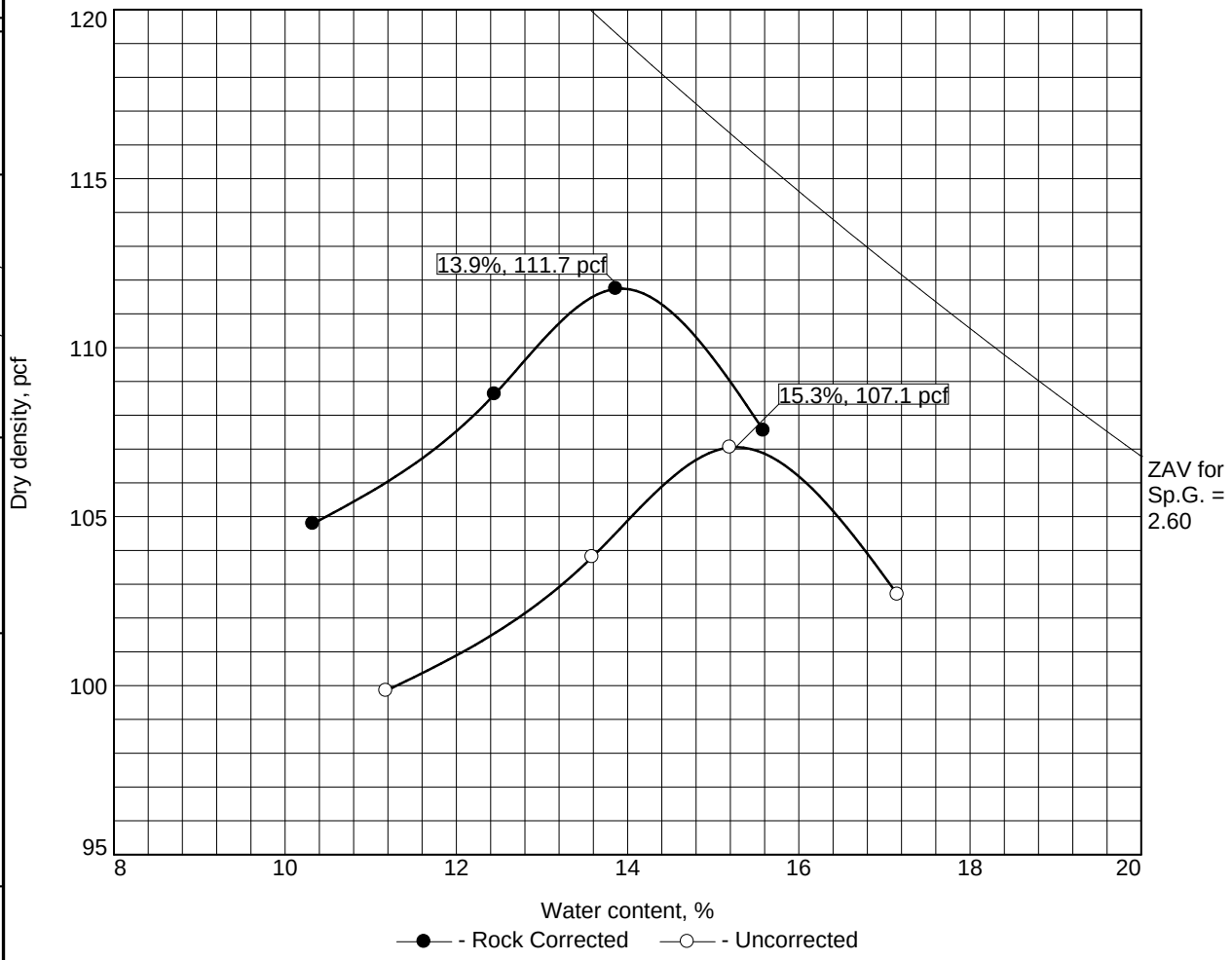
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-17-C

Tested By: BV **Checked By:** GF

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(1)		2.65	38	20	11.9	27.5

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 111.7 pcf	107.1 pcf	Brown clayey sand with gravel
Optimum moisture = 13.9 %	15.3 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 06/17/22
Location: Lower Dump 1 Stockpile **Sample Number:** SLF-17-C

Remarks:

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Figure SLF-17-C

Tested By: GF **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-17-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	RL	Tested By:	TW
Test Started:	8/18/2022	Checked By:	TW
Test Finished:	8/26/2022	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	46
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	581		600.50
Dry Soil + Tare (g)	510.70		518.40
Tare (g)	0.00		119.50
Wt. of Water (g)	70.30		82.10
Dry Soil (g)	510.70		398.90
Moisture Content (%)	13.8		20.6
Sample Volume (ft^3)	0.01055	0.01053	
Dry Density (pcf)	106.7	106.8	
Wet Density (pcf)	121.4	128.9	
Saturation (%)	66.5	100.0	
Percent Compaction	95.5	95.6	
Height (in)	3.018	3.017	
Diameter (in)	2.773	2.772	
Area (in^2)	6.041	6.037	
Est. Moisture Content after Consolidation (%)		20.7%	
Est. Void Ratio after Consolidation		0.549	
Specific Gravity*	2.65		

*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	111.7
Initial Remolded Dry Density (pcf):	106.7
Initial Percent Compaction:	96%
Initial Void Ratio:	0.550
Optimum Moisture Content(%):	13.8
Initial Water Content (%):	13.8
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**1.7E-07**
Gradient Range (h/L):	9.9 10.5

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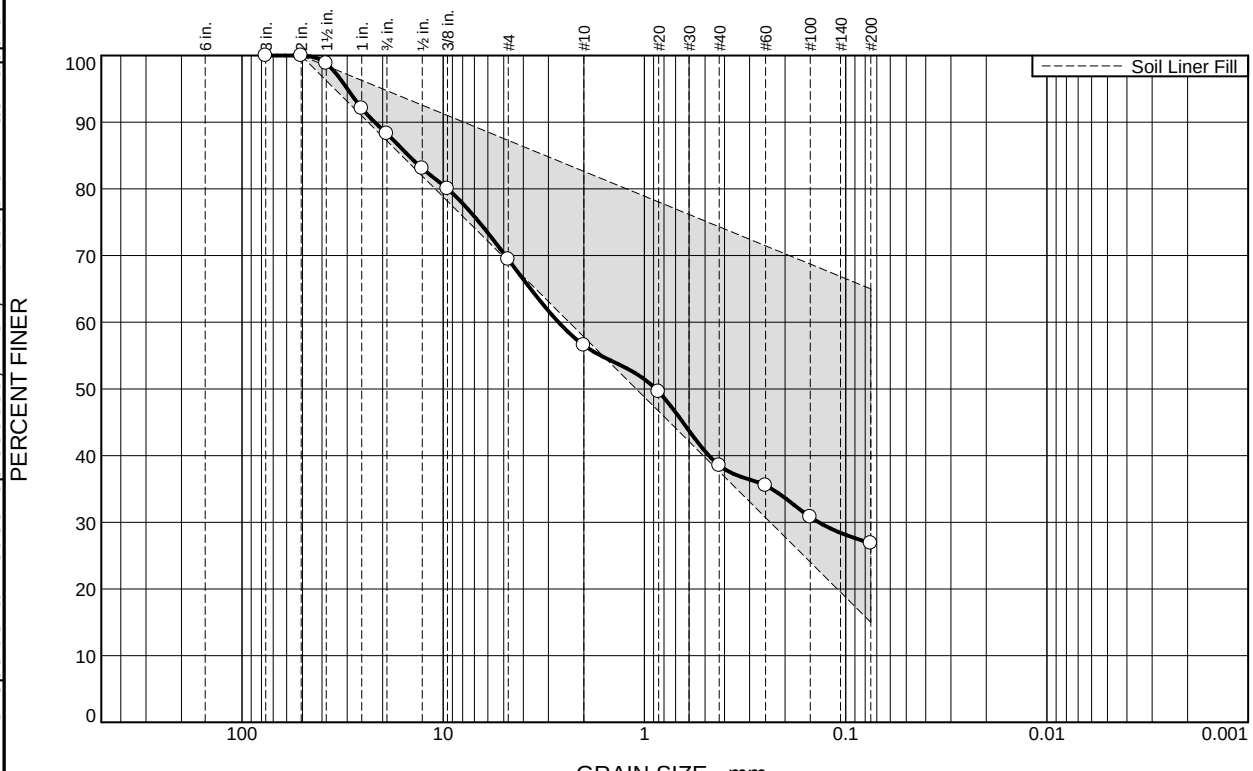
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.7	18.9	12.9	18.0	11.6	26.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
2	100.0	100.0	
1.5	98.8		
1	92.1		
.75	88.3		
0.5	83.1		
.375	80.0		
#4	69.4		
#10	56.5		
#20	49.6		
#40	38.5		
#60	35.5		
#100	30.8		
#200	26.9	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 15 LL= 42 PI= 27

Coefficients

D_{90}= 21.9048 D_{85}= 14.8513 D_{60}= 2.6726
D_{50}= 0.8777 D_{30}= 0.1361 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-7(2)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-18-C

Date: 6/21/2022

NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-18-C

Tested By: BV **Checked By:** GF

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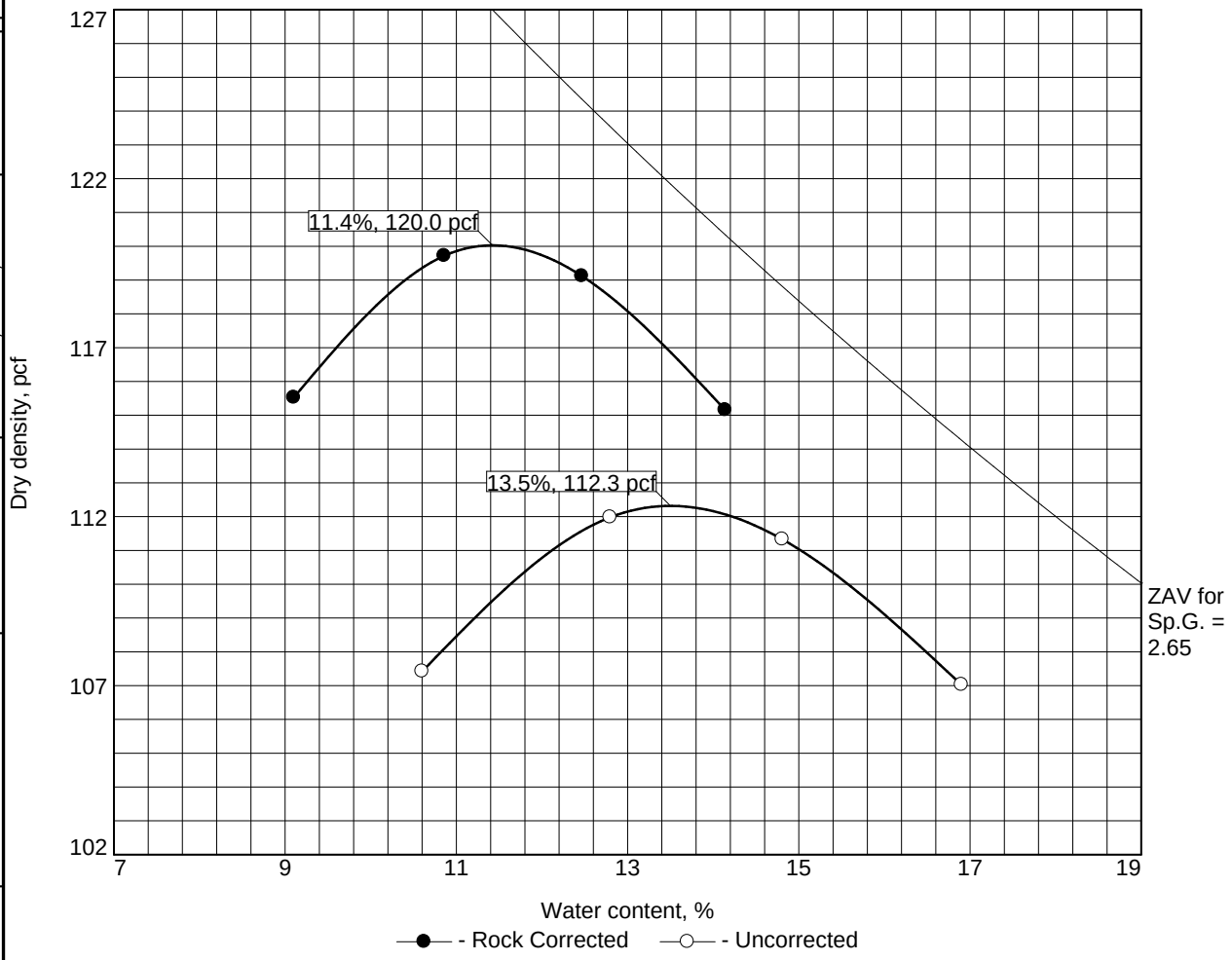
COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method B Standard
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-7(2)		2.65	42	27	20.0	26.9

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 120.0 pcf	112.3 pcf	Brown clayey sand with gravel
Optimum moisture = 11.4 %	13.5 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 06/21/22
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-18-C

Remarks:

NewFields

Figure SLF-18-C

Tested By: BV **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-18-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	RL	Tested By:	TW
Test Started:	8/18/2022	Checked By:	TW
Test Finished:	8/26/2022	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	610.6		588.90
Dry Soil + Tare (g)	547.71		523.40
Tare (g)	0.00		119.50
Wt. of Water (g)	62.89		65.50
Dry Soil (g)	547.71		403.90
Moisture Content (%)	11.5		16.2
Sample Volume (ft^3)	0.01057	0.01054	
Dry Density (pcf)	114.3	114.4	
Wet Density (pcf)	127.3	133.7	
Saturation (%)	67.6	100.0	
Percent Compaction	95.2	95.3	
Height (in)	3.017	3.016	
Diameter (in)	2.777	2.775	
Area (in^2)	6.055	6.049	
Est. Moisture Content after Consolidation (%)		16.8%	
Est. Void Ratio after Consolidation		0.445	
Specific Gravity*	2.65		

*Specific gravity is assumed

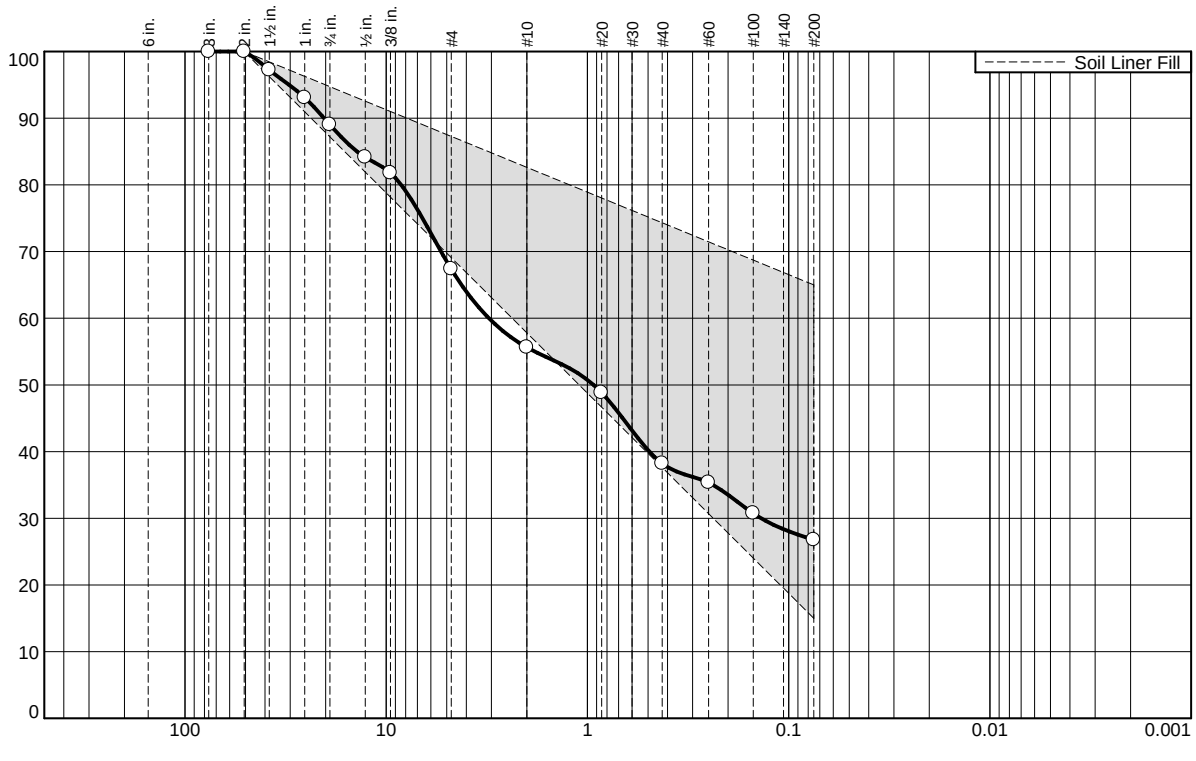
Maximum Dry Density:

ASTM D 698

Maximum Dry Density (pcf):	120
Initial Remolded Dry Density (pcf):	114.3
Initial Percent Compaction:	95%
Initial Void Ratio:	0.447
Optimum Moisture Content(%):	11.4
Initial Water Content (%):	11.5
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**5.3E-07**
Gradient Range (h/L):	1.9 2.2

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.0	21.6	11.8	17.4	11.4	26.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
2	100.0	100.0	
1.5	97.2		
1	93.1		
.75	89.0		
0.5	84.1		
.375	81.8		
#4	67.4		
#10	55.6		
#20	48.8		
#40	38.2		
#60	35.3		
#100	30.7		
#200	26.8	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 13 LL= 39 PI= 26

Coefficients

D_{90}= 20.3542 D_{85}= 13.9368 D_{60}= 3.0873
D_{50}= 0.9323 D_{30}= 0.1370 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(2)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-19-C

Date: 6/21/2022

NewFields

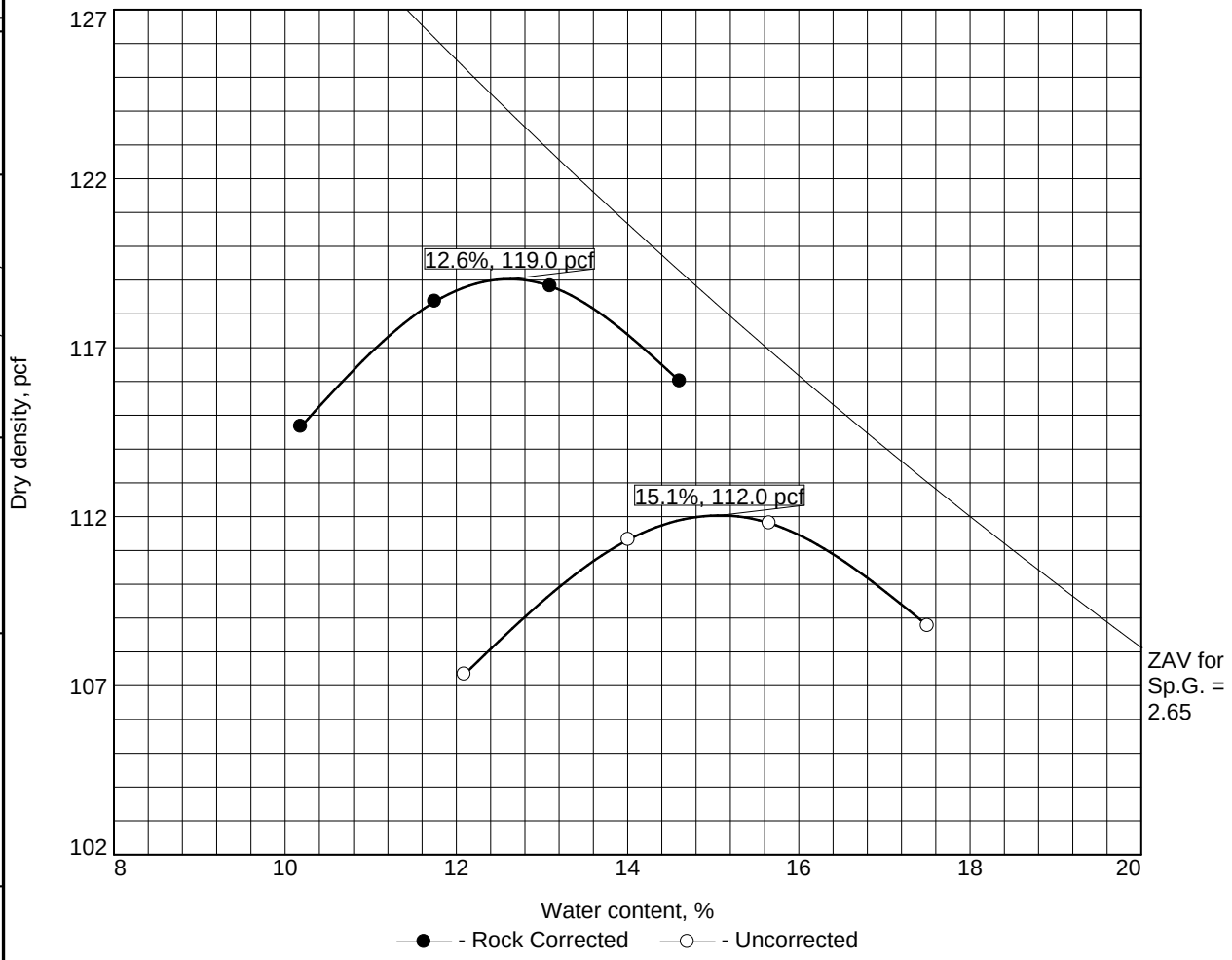
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-19-C

Tested By: BV **Checked By:** GF

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method B Standard
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(2)		2.65	39	26	18.2	26.8

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 119.0 pcf	112.0 pcf	Brown clayey sand with gravel
Optimum moisture = 12.6 %	15.1 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 06/21/22
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-19-C

Remarks:

NewFields

Figure SLF-19-C

Tested By: GF **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-19-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	RL	Tested By:	TW
Test Started:	8/30/2022	Checked By:	TW
Test Finished:	9/9/2022	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	611.8		558.00
Dry Soil + Tare (g)	543.89		494.00
Tare (g)	0.00		119.50
Wt. of Water (g)	67.91		64.00
Dry Soil (g)	543.89		374.50
Moisture Content (%)	12.5		17.1
Sample Volume (ft^3)	0.01057	0.01055	
Dry Density (pcf)	113.3	113.4	
Wet Density (pcf)	127.6	133.1	
Saturation (%)	72.6	100.0	
Percent Compaction	95.2	95.3	
Height (in)	3.017	3.016	
Diameter (in)	2.777	2.775	
Area (in^2)	6.055	6.050	
Est. Moisture Content after Consolidation (%)		17.3%	
Est. Void Ratio after Consolidation		0.458	
Specific Gravity*	2.65		

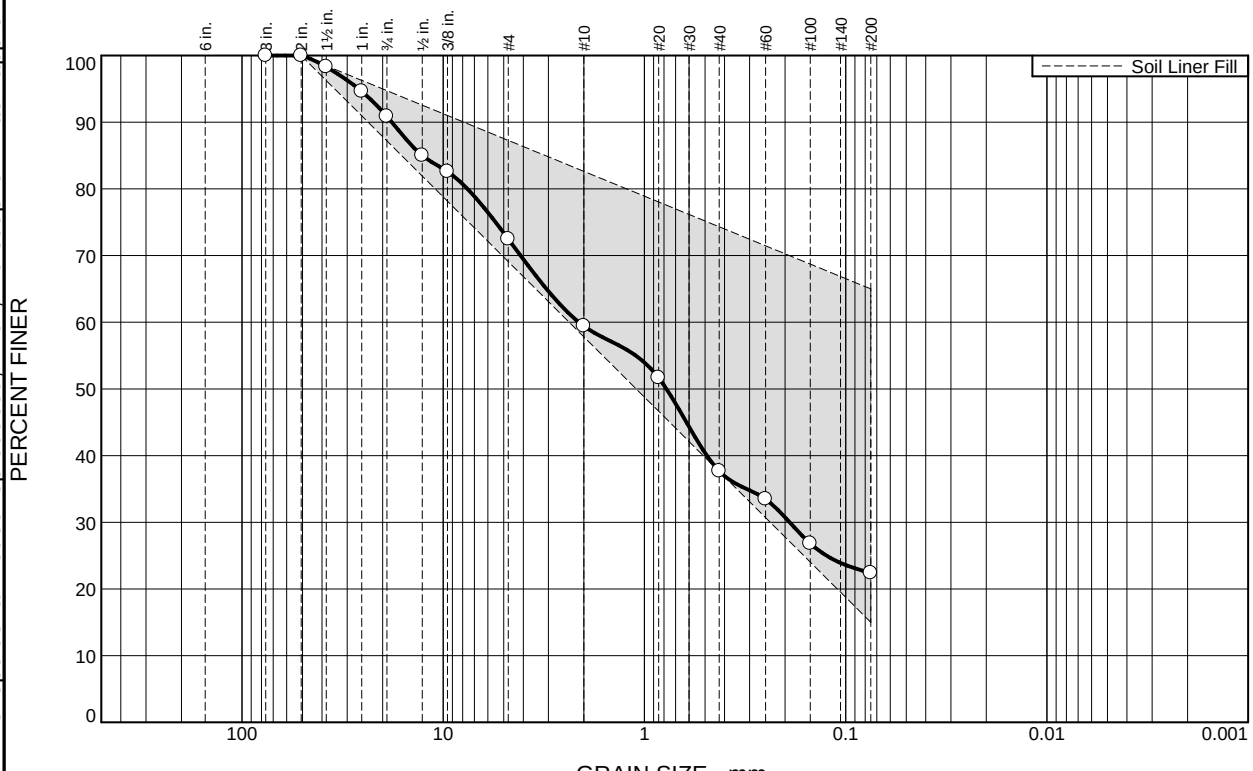
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	119
Initial Remolded Dry Density (pcf):	113.3
Initial Percent Compaction:	95%
Initial Void Ratio:	0.460
Optimum Moisture Content(%):	12.6
Initial Water Content (%):	12.5
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**5.1E-07**
Gradient Range (h/L):	1.1 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.1	18.4	13.1	21.7	15.3	22.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
2	100.0	100.0	
1.5	98.3		
1	94.6		
.75	90.9		
0.5	85.0		
.375	82.6		
#4	72.5		
#10	59.4		
#20	51.7		
#40	37.7		
#60	33.5		
#100	26.8		
#200	22.4	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 19 LL= 36 PI= 17

Coefficients

D_{90}= 17.9906 D_{85}= 12.6936 D_{60}= 2.1181
D_{50}= 0.7769 D_{30}= 0.1898 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(0)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-21-C

Date: 6/28/2022

NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-21-C

Tested By: MM **Checked By:** GF

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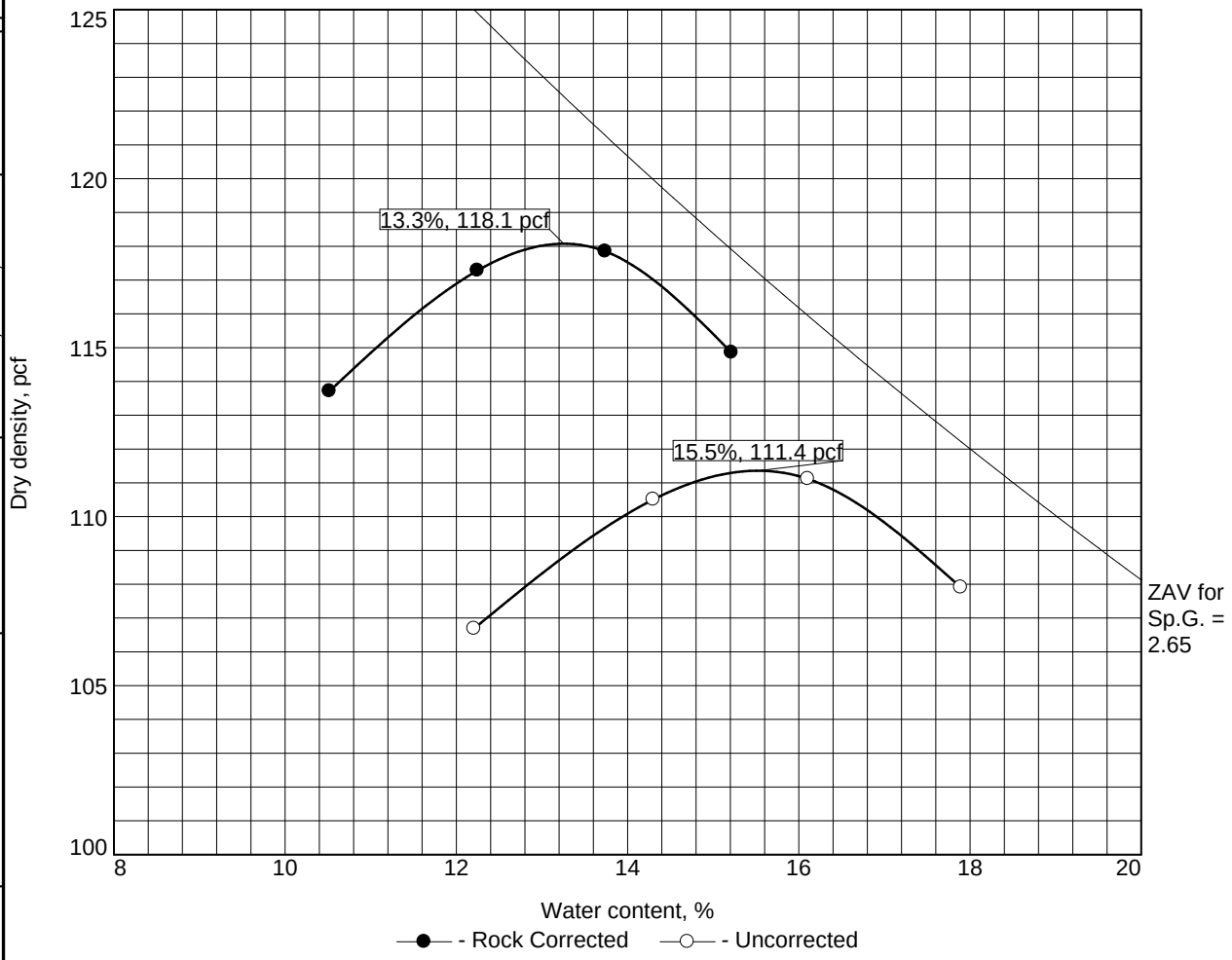
COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(0)		2.65	36	17	17.4	22.4

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 118.1 pcf	111.4 pcf	Brown clayey sand with gravel
Optimum moisture = 13.3 %	15.5 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 06/28/22
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-21-C

Remarks:

NewFields

Figure SLF-21-C

Tested By: GF **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-21-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	RL	Tested By:	TW
Test Started:	10/19/2022	Checked By:	TW
Test Finished:	10/26/2023	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	611.8		574.60
Dry Soil + Tare (g)	540.22		508.40
Tare (g)	0.00		119.50
Wt. of Water (g)	71.58		66.20
Dry Soil (g)	540.22		388.90
Moisture Content (%)	13.3		17.0
Sample Volume (ft^3)	0.01057	0.01053	
Dry Density (pcf)	112.6	112.7	
Wet Density (pcf)	127.6	132.7	
Saturation (%)	75.2	100.0	
Percent Compaction	95.3	95.5	
Height (in)	3.017	3.015	
Diameter (in)	2.777	2.774	
Area (in^2)	6.055	6.045	
Est. Moisture Content after Consolidation (%)		17.6%	
Est. Void Ratio after Consolidation		0.465	
Specific Gravity*	2.65		

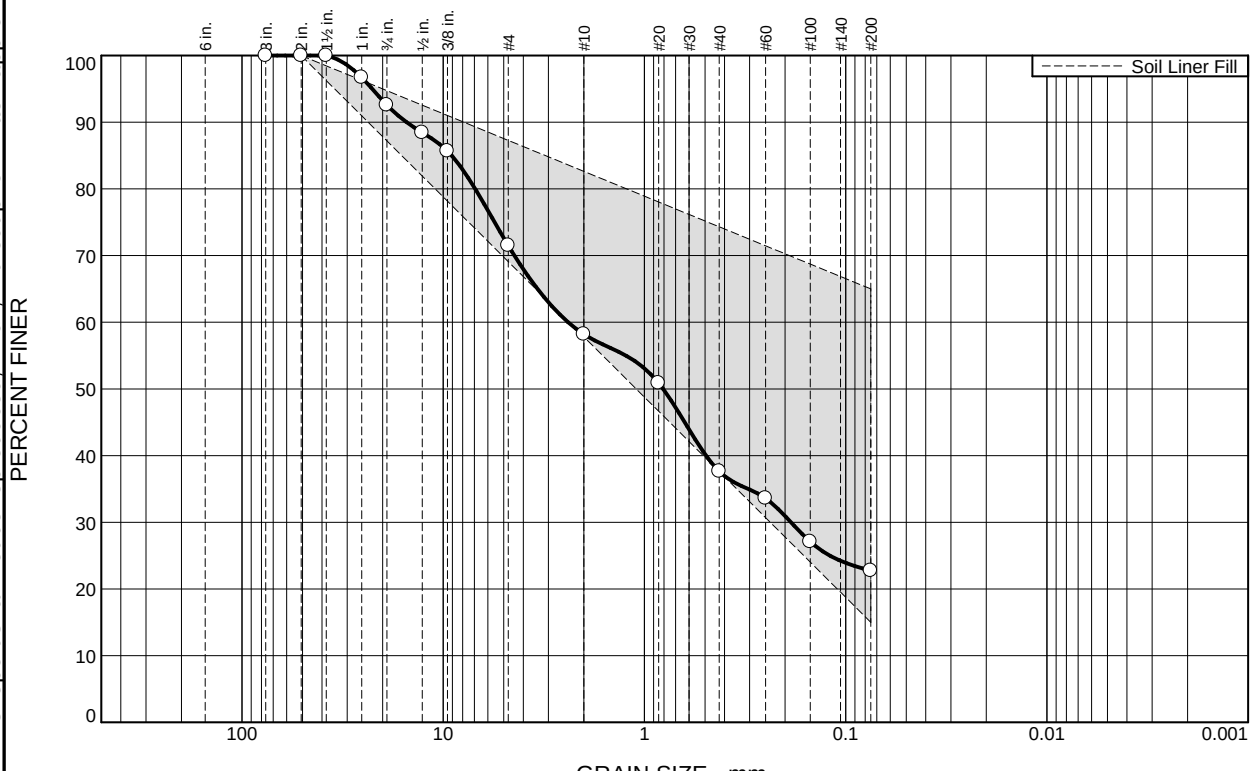
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	118.1
Initial Remolded Dry Density (pcf):	112.6
Initial Percent Compaction:	95%
Initial Void Ratio:	0.469
Optimum Moisture Content(%):	13.3
Initial Water Content (%):	13.3
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**3.4E-07**
Gradient Range (h/L):	1.1 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.4	21.1	13.3	20.6	14.9	22.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
2	100.0	100.0	
1.5	100.0		
1	96.7		
.75	92.6		
0.5	88.4		
.375	85.7		
#4	71.5		
#10	58.2		
#20	50.9		
#40	37.6		
#60	33.6		
#100	27.1		
#200	22.7	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 19 LL= 34 PI= 15

Coefficients

D_{90}= 15.1823 D_{85}= 9.0702 D_{60}= 2.3943
D_{50}= 0.8072 D_{30}= 0.1870 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(0)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-22-C

Date: 6/28/2022

NewFields

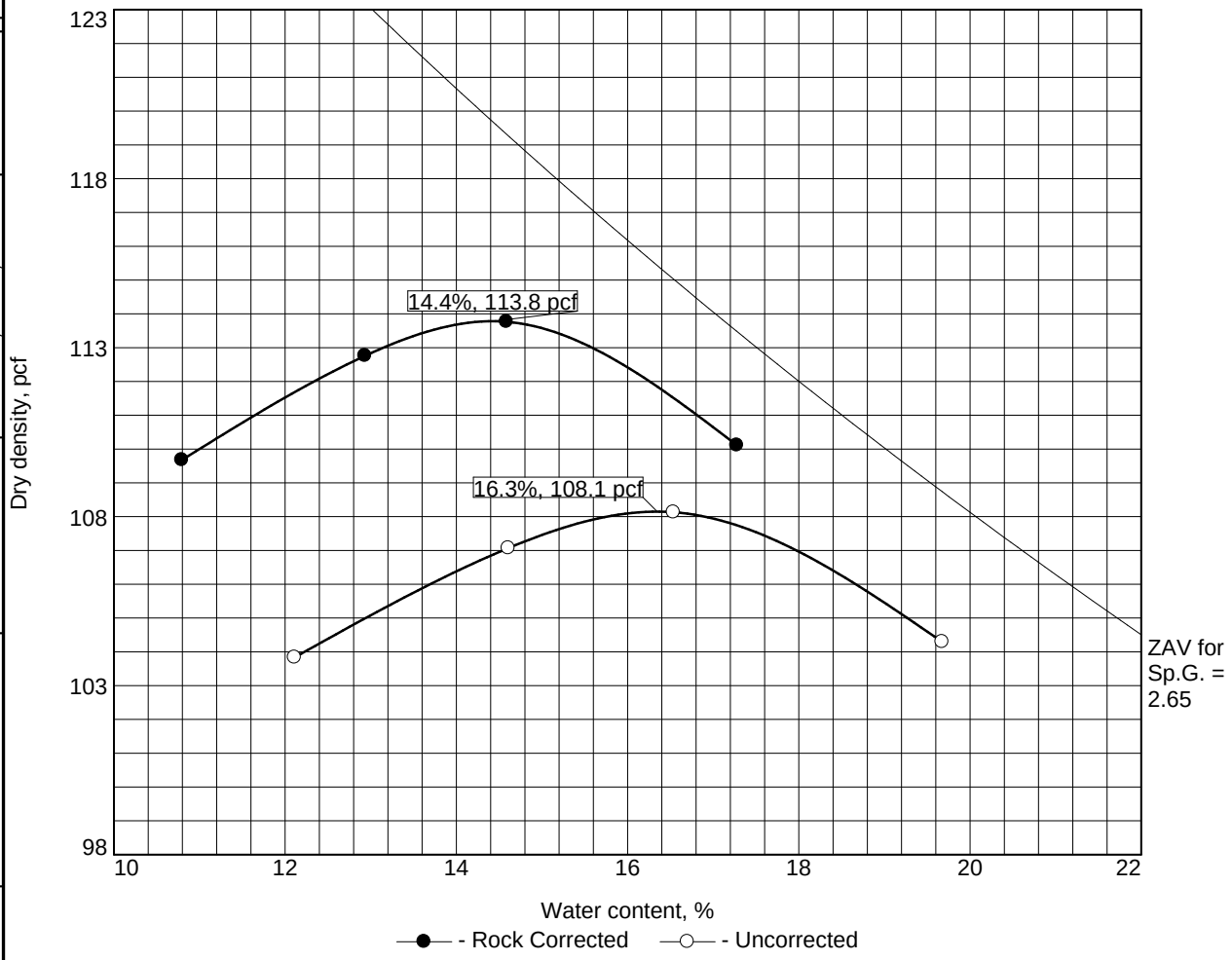
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-22-C

Tested By: MM **Checked By:** GF

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(0)		2.65	34	15	14.3	22.7

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 113.8 pcf	108.1 pcf	Brown clayey sand with gravel
Optimum moisture = 14.4 %	16.3 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 06/28/22
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-22-C

Remarks:

NewFields

Figure SLF-22-C

Tested By: BV **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-22-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	RL	Tested By:	TW
Test Started:	10/19/2022	Checked By:	TW
Test Finished:	10/26/2022	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	594.68		585.90
Dry Soil + Tare (g)	520.35		507.40
Tare (g)	0.00		119.50
Wt. of Water (g)	74.33		78.50
Dry Soil (g)	520.35		387.90
Moisture Content (%)	14.3		20.2
Sample Volume (ft^3)	0.01057	0.01057	
Dry Density (pcf)	108.4	108.3	
Wet Density (pcf)	124.0	129.9	
Saturation (%)	72.6	100.0	
Percent Compaction	95.2	95.2	
Height (in)	3.017	3.018	
Diameter (in)	2.777	2.777	
Area (in^2)	6.055	6.058	
Est. Moisture Content after Consolidation (%)		19.9%	
Est. Void Ratio after Consolidation		0.527	
Specific Gravity*	2.65		

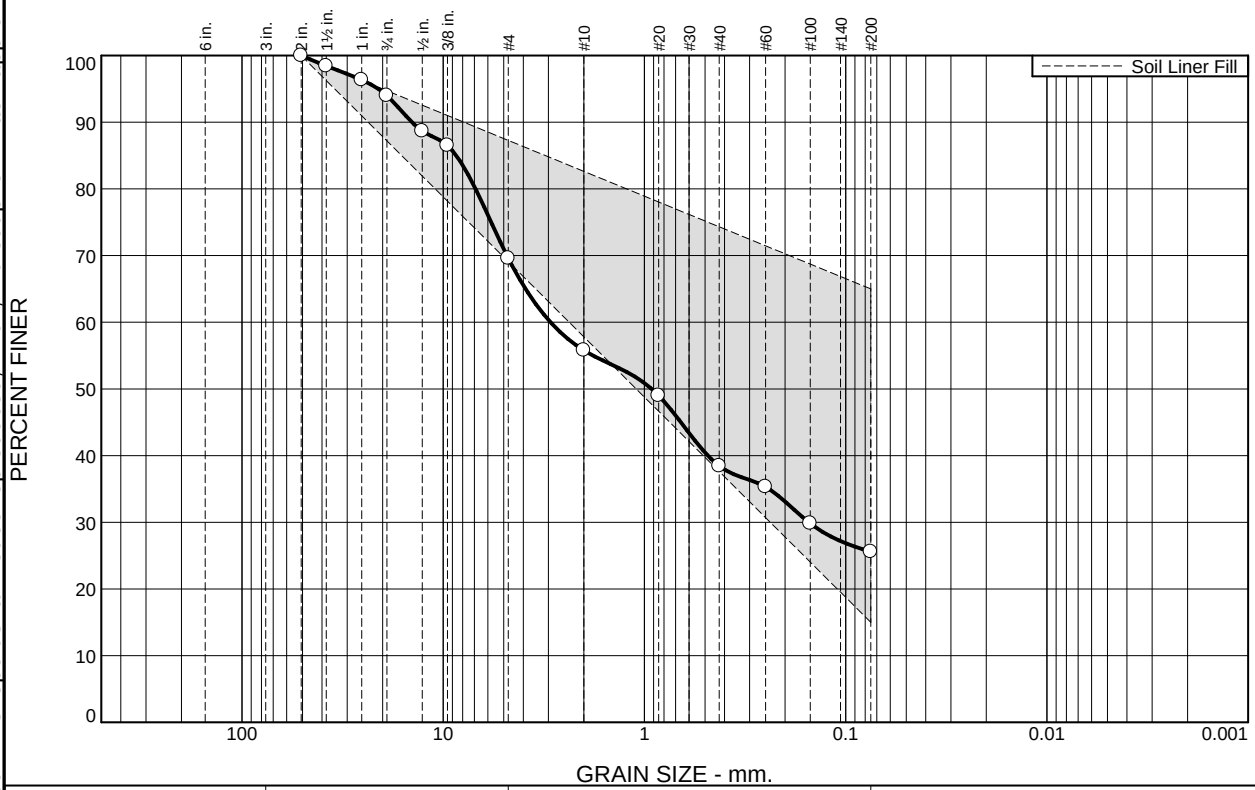
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	113.8
Initial Remolded Dry Density (pcf):	108.4
Initial Percent Compaction:	95%
Initial Void Ratio:	0.526
Optimum Moisture Content(%):	14.4
Initial Water Content (%):	14.3
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**1.2E-07**
Gradient Range (h/L):	1.2 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.0	24.4	13.8	17.4	12.8	25.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	98.4		
1	96.3		
.75	94.0		
0.5	88.7		
.375	86.5		
#4	69.6		
#10	55.8		
#20	49.0		
#40	38.4		
#60	35.3		
#100	29.8		
#200	25.6	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 17 LL= 31 PI= 14

Coefficients

D_{90}= 14.2944 D_{85}= 8.6039 D_{60}= 2.9279
D_{50}= 0.9210 D_{30}= 0.1525 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(0)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-23-C

Date: 7/6/2022

NewFields

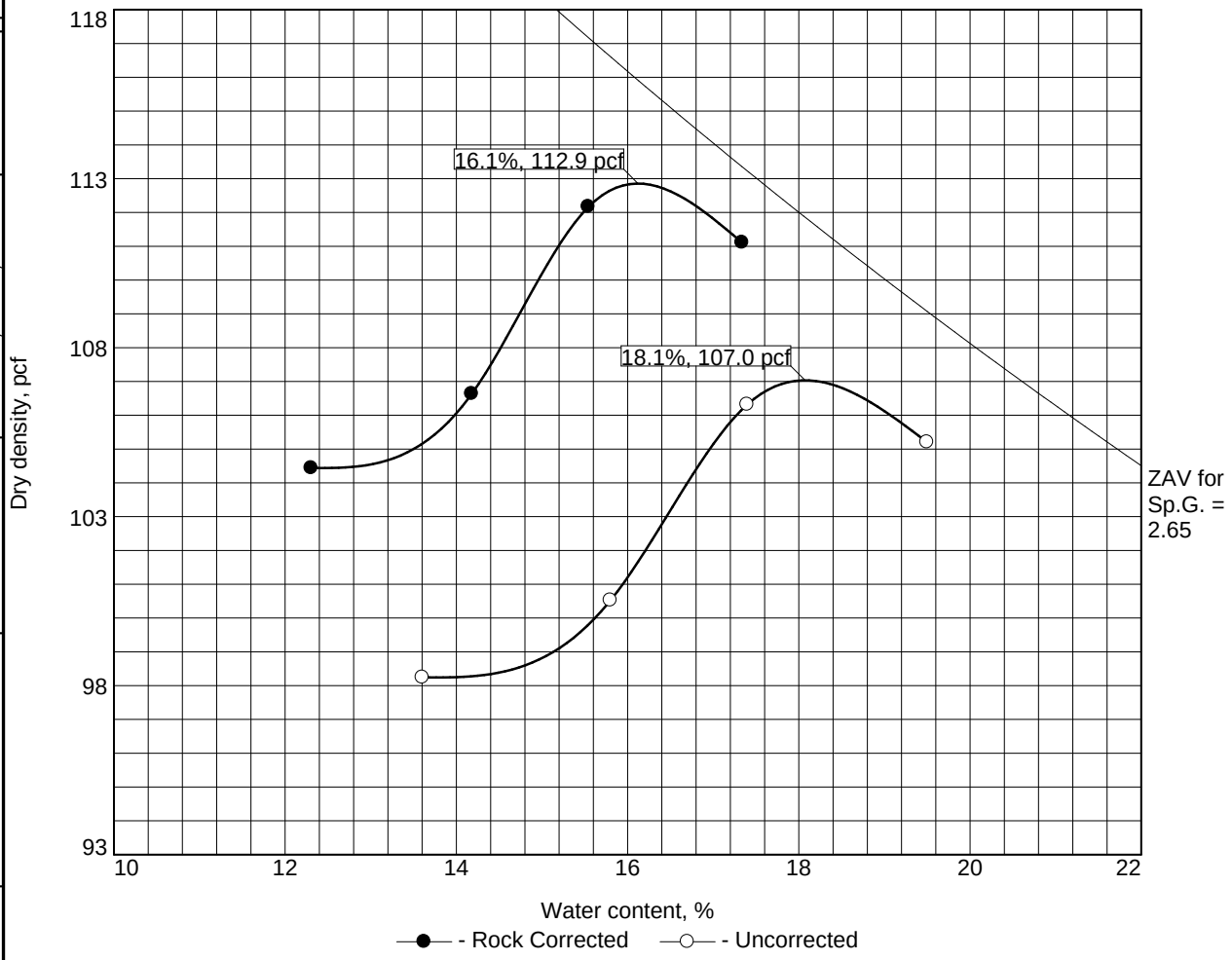
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-23-C

Tested By: BV **Checked By:** GF

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-6(3)		2.65	37	21	14.6	37.8

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 112.9 pcf	107.0 pcf	Brown clayey sand with gravel
Optimum moisture = 16.1 %	18.1 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 08/10/22
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-30-C

Remarks:

NewFields

Figure SLF-30-C

Tested By: AB **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-23-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	RL	Tested By:	TW
Test Started:	12/5/2022	Checked By:	TW
Test Finished:	10/26/2022	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	593.6		576.40
Dry Soil + Tare (g)	521.18		502.00
Tare (g)	0.00		119.50
Wt. of Water (g)	72.42		74.40
Dry Soil (g)	521.18		382.50
Moisture Content (%)	13.9		19.5
Sample Volume (ft^3)	0.01057	0.01057	
Dry Density (pcf)	108.6	108.5	
Wet Density (pcf)	123.8	130.0	
Saturation (%)	70.9	100.0	
Percent Compaction	95.2	95.2	
Height (in)	3.018	3.018	
Diameter (in)	2.777	2.777	
Area (in^2)	6.055	6.058	
Est. Moisture Content after Consolidation (%)		19.8%	
Est. Void Ratio after Consolidation		0.525	
Specific Gravity*	2.65		

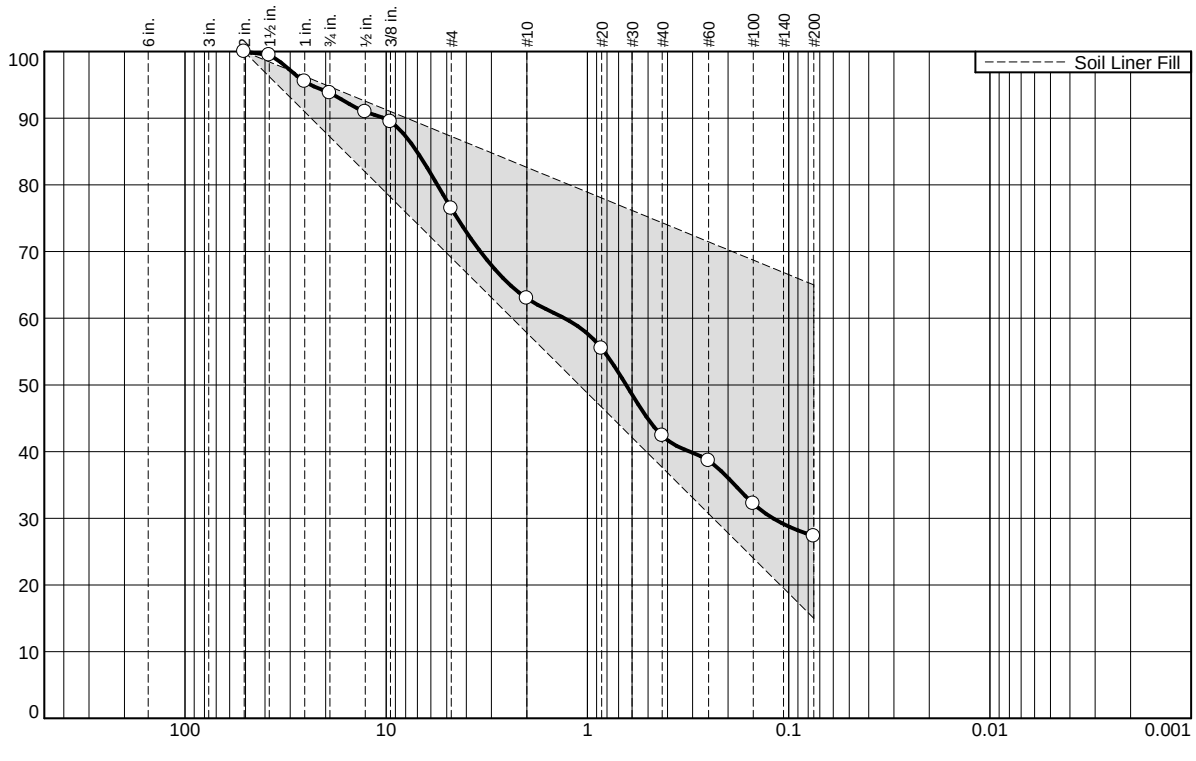
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	114
Initial Remolded Dry Density (pcf):	108.6
Initial Percent Compaction:	95%
Initial Void Ratio:	0.523
Optimum Moisture Content(%):	14.0
Initial Water Content (%):	13.9
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**2.0E-07**
Gradient Range (h/L):	1.2 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.2	17.3	13.5	20.6	15.1	27.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	99.5		
1	95.5		
.75	93.8		
0.5	90.9		
.375	89.5		
#4	76.5		
#10	63.0		
#20	55.5		
#40	42.4		
#60	38.6		
#100	32.2		
#200	27.3	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 17 LL= 31 PI= 14

Coefficients

D_{90}= 10.2547 D_{85}= 7.0351 D_{60}= 1.2992
D_{50}= 0.6420 D_{30}= 0.1196 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(0)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-24-C

Date: 7/6/2022

NewFields

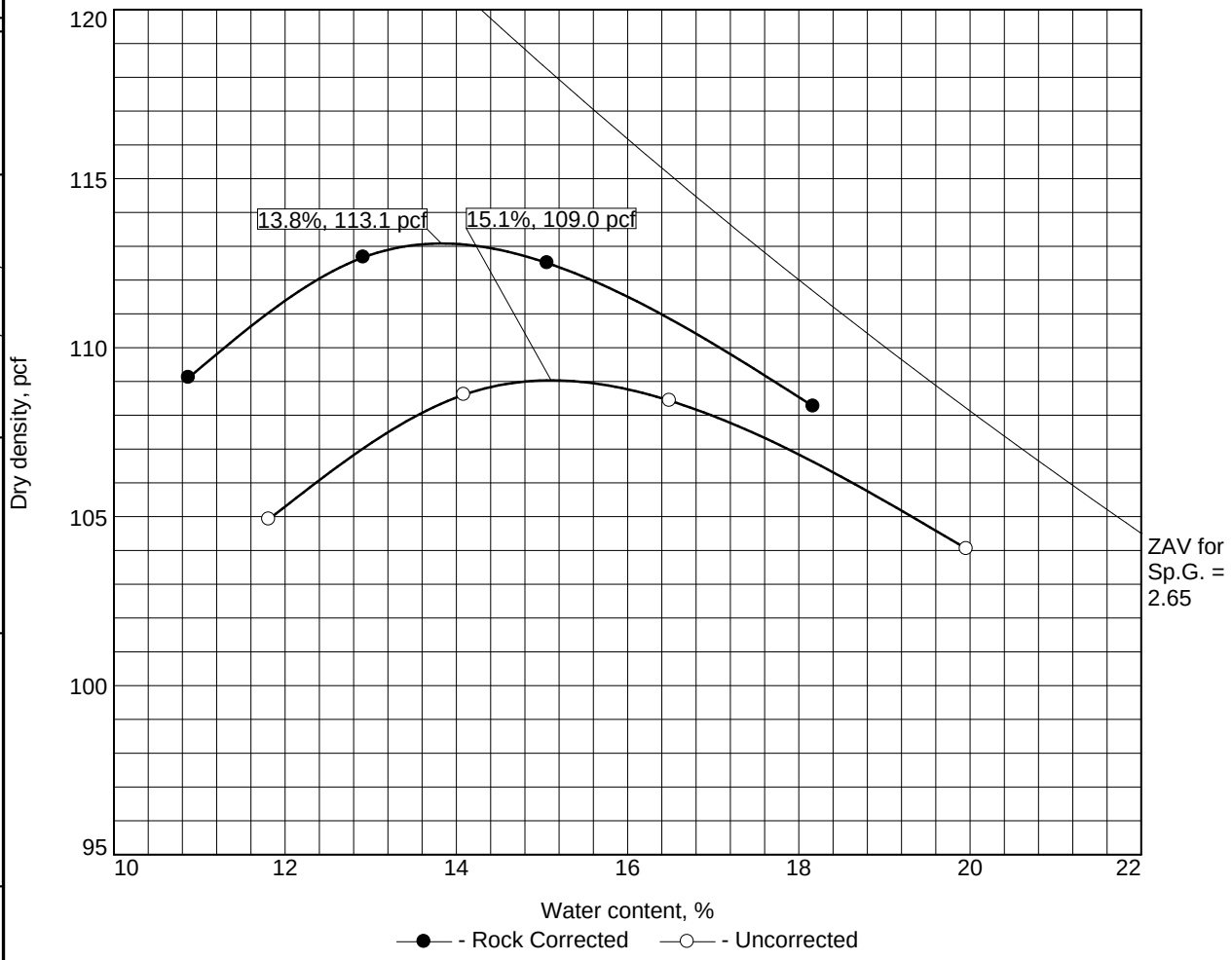
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-24-C

Tested By: BV **Checked By:** GF

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(0)		2.65	31	14	10.5	27.3

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 113.1 pcf	109.0 pcf	Brown clayey sand with gravel
Optimum moisture = 13.8 %	15.1 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 07/06/22
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-24-C

Remarks:

NewFields

Figure SLF-24-C

Tested By: BV **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-24-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	12/5/2022	Checked By:	TW
Test Finished:	12/13/2022	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	587.1		568.50
Dry Soil + Tare (g)	515.47		496.30
Tare (g)	0.00		119.50
Wt. of Water (g)	71.63		72.20
Dry Soil (g)	515.47		376.80
Moisture Content (%)	13.9		19.2
Sample Volume (ft^3)	0.01057	0.01055	
Dry Density (pcf)	107.6	107.6	
Wet Density (pcf)	122.4	129.5	
Saturation (%)	68.0	100.0	
Percent Compaction	95.1	95.2	
Height (in)	3.018	3.016	
Diameter (in)	2.777	2.775	
Area (in^2)	6.055	6.050	
Est. Moisture Content after Consolidation (%)		20.2%	
Est. Void Ratio after Consolidation		0.536	
Specific Gravity*	2.65		

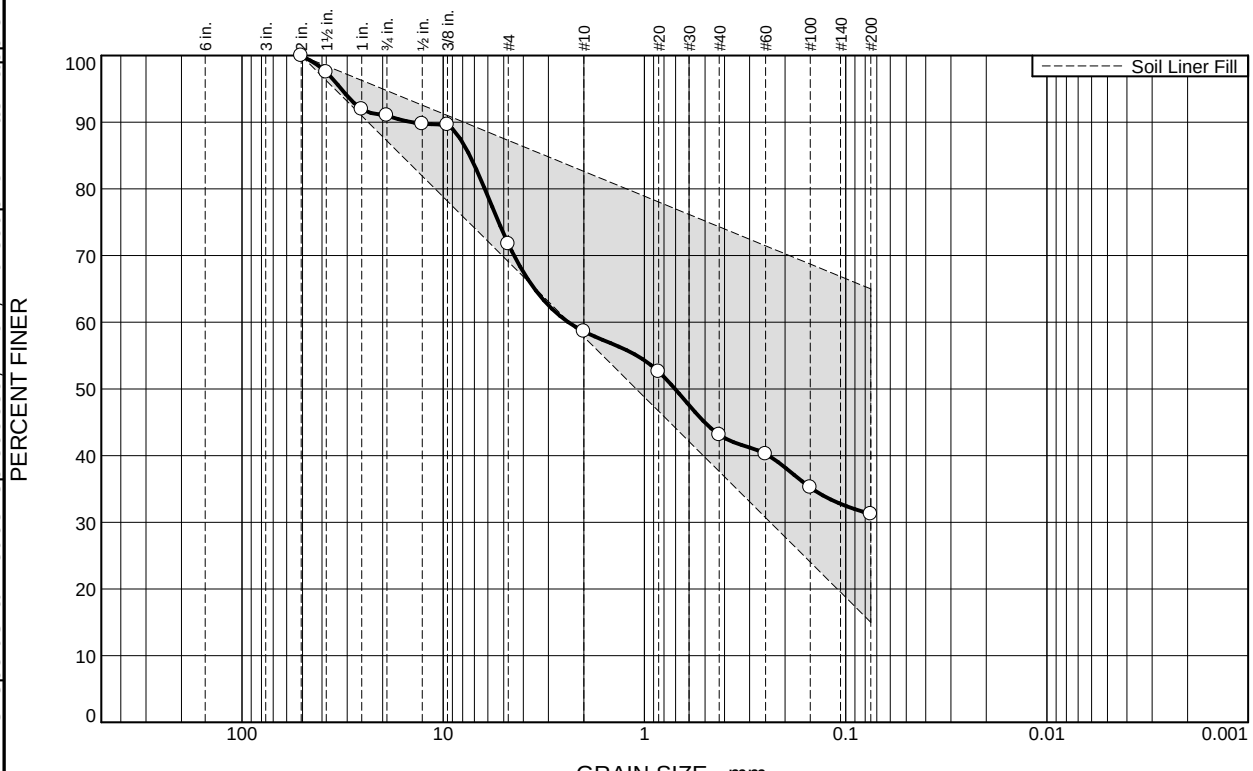
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	113.1
Initial Remolded Dry Density (pcf):	107.6
Initial Percent Compaction:	95%
Initial Void Ratio:	0.537
Optimum Moisture Content(%):	13.8
Initial Water Content (%):	13.9
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**4.0E-07**
Gradient Range (h/L):	0.8 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.0	19.2	13.2	15.5	11.9	31.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	97.5		
1	92.0		
.75	91.0		
0.5	89.8		
.375	89.6		
#4	71.8		
#10	58.6		
#20	52.6		
#40	43.1		
#60	40.2		
#100	35.2		
#200	31.2	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 15 LL= 32 PI= 17

Coefficients

D_{90}= 14.2997 D_{85}= 7.3774 D_{60}= 2.3868
D_{50}= 0.7041 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(1)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-27-C

Date: 7/13/2022

NewFields

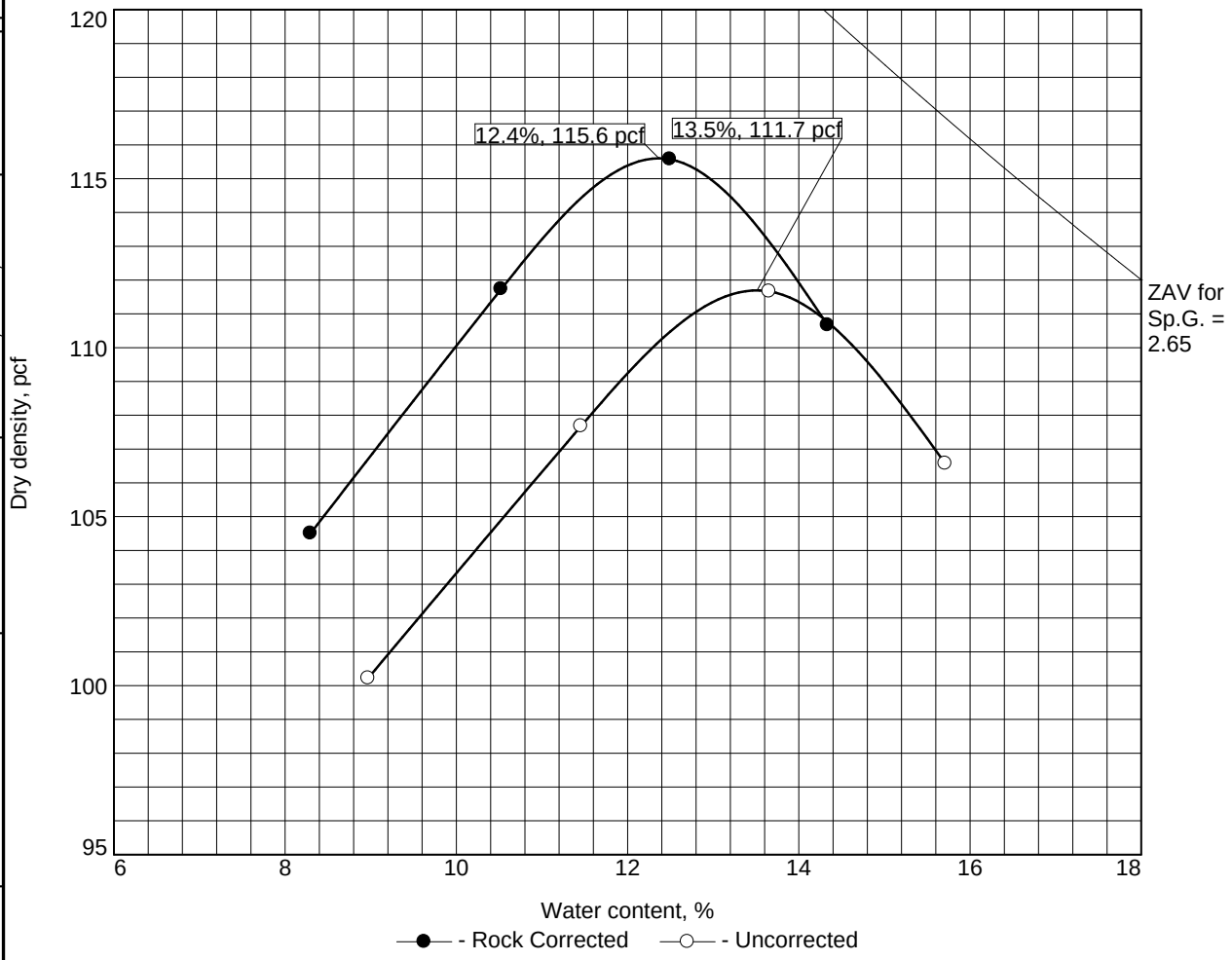
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-27-C

Tested By: BV **Checked By:** GF

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(1)		2.65	32	17	10.4	31.2

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 115.6 pcf	111.7 pcf	Brown clayey sand with gravel
Optimum moisture = 12.4 %	13.5 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 07/13/22
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-27-C

Remarks:

NewFields

Figure SLF-27-C

Tested By: BV **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-27-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	12/5/2022	Checked By:	TW
Test Finished:	12/16/2022	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	46
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	590.2		584.20
Dry Soil + Tare (g)	524.10		512.50
Tare (g)	0.00		119.50
Wt. of Water (g)	66.10		71.70
Dry Soil (g)	524.10		393.00
Moisture Content (%)	12.6		18.2
Sample Volume (ft^3)	0.01057	0.01058	
Dry Density (pcf)	109.1	109.0	
Wet Density (pcf)	123.0	130.2	
Saturation (%)	65.7	100.0	
Percent Compaction	95.0	94.9	
Height (in)	3.018	3.019	
Diameter (in)	2.777	2.778	
Area (in^2)	6.055	6.062	
Est. Moisture Content after Consolidation (%)		19.6%	
Est. Void Ratio after Consolidation		0.519	
Specific Gravity*	2.65		

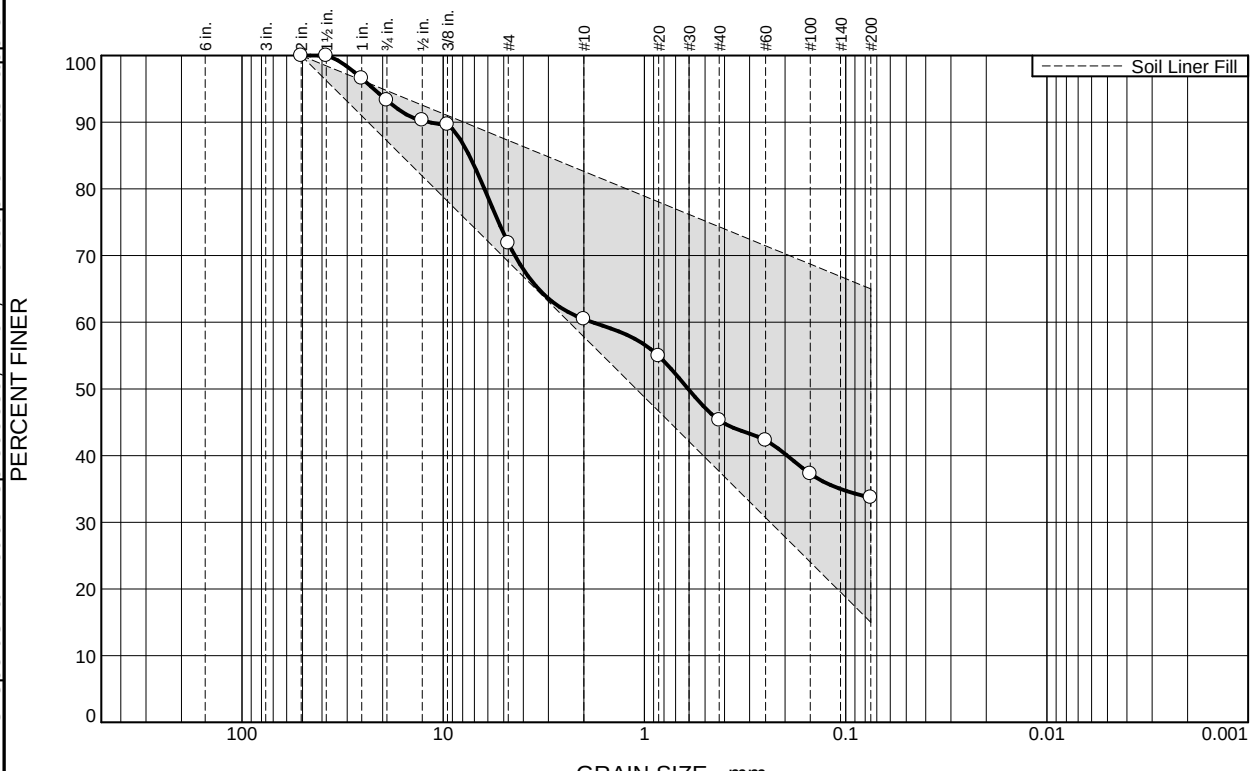
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	114.8
Initial Remolded Dry Density (pcf):	109.1
Initial Percent Compaction:	95%
Initial Void Ratio:	0.516
Optimum Moisture Content(%):	12.8
Initial Water Content (%):	12.6
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**1.5E-07**
Gradient Range (h/L):	9.2 10.5

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.7	21.4	11.4	15.2	11.6	33.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	100.0		
1	96.6		
.75	93.3		
0.5	90.3		
.375	89.7		
#4	71.9		
#10	60.5		
#20	54.9		
#40	45.3		
#60	42.3		
#100	37.3		
#200	33.7	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 14 LL= 37 PI= 23

Coefficients

D_{90}= 11.7305 D_{85}= 7.4169 D_{60}= 1.8110
D_{50}= 0.6060 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(2)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-28-C

Date: 7/27/2022

NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-28-C

Tested By: BV **Checked By:** GF

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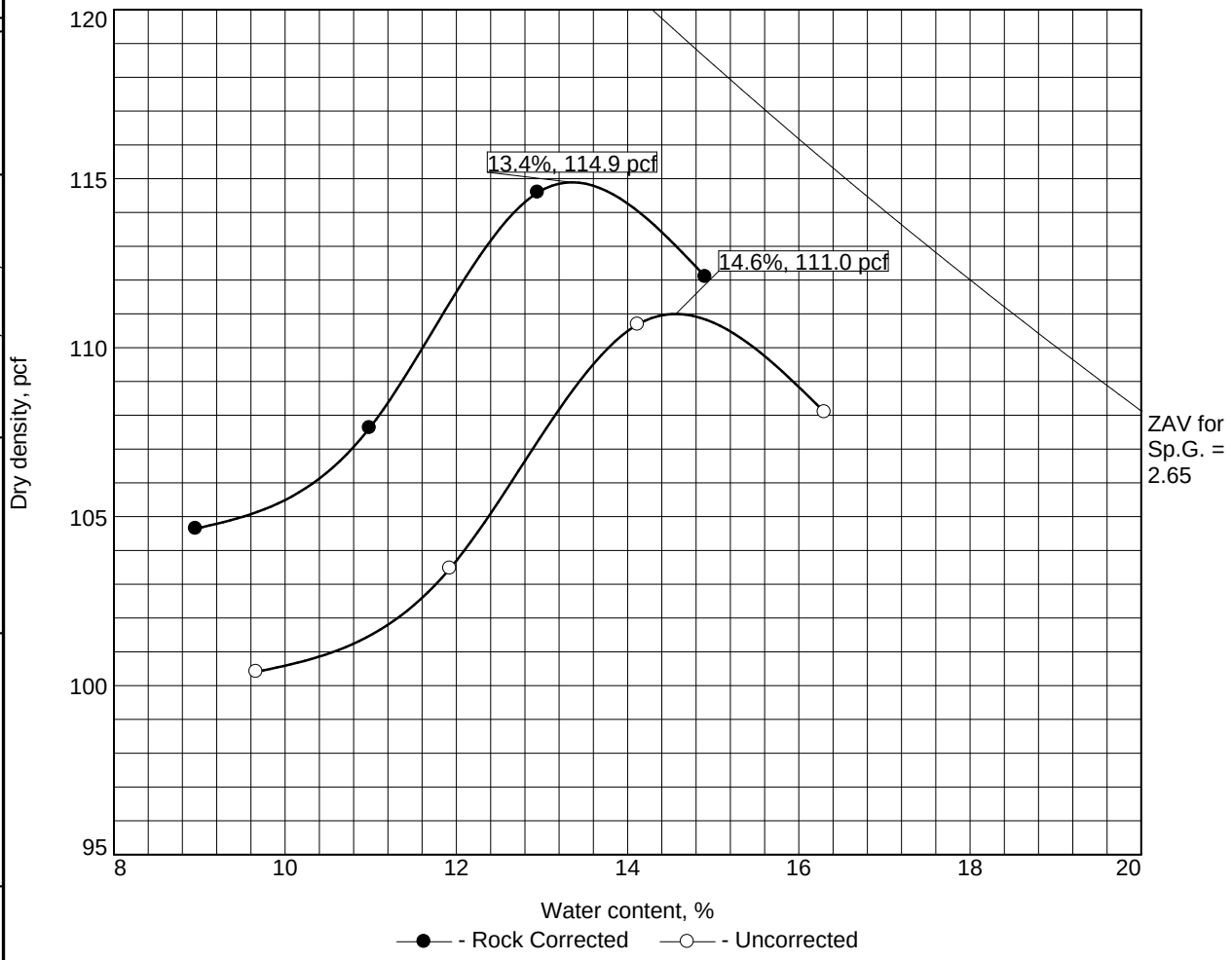
COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(2)		2.65	37	23	10.3	33.7

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 114.9 pcf	111.0 pcf	Brown clayey sand with gravel
Optimum moisture = 13.4 %	14.6 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 07/27/22
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-28-C

Remarks:

NewFields

Figure SLF-28-C

Tested By: BV **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-28-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	12/14/2022	Checked By:	TW
Test Finished:	12/21/2022	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	46
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	592.2		576.30
Dry Soil + Tare (g)	523.50		501.00
Tare (g)	0.00		119.50
Wt. of Water (g)	68.70		75.30
Dry Soil (g)	523.50		381.50
Moisture Content (%)	13.1		19.7
Sample Volume (ft^3)	0.01063	0.01060	
Dry Density (pcf)	108.3	108.4	
Wet Density (pcf)	122.9	130.0	
Saturation (%)	67.5	100.0	
Percent Compaction	94.3	94.4	
Height (in)	3.018	3.016	
Diameter (in)	2.783	2.782	
Area (in^2)	6.084	6.078	
Est. Moisture Content after Consolidation (%)		19.8%	
Est. Void Ratio after Consolidation		0.524	
Specific Gravity*	2.65		

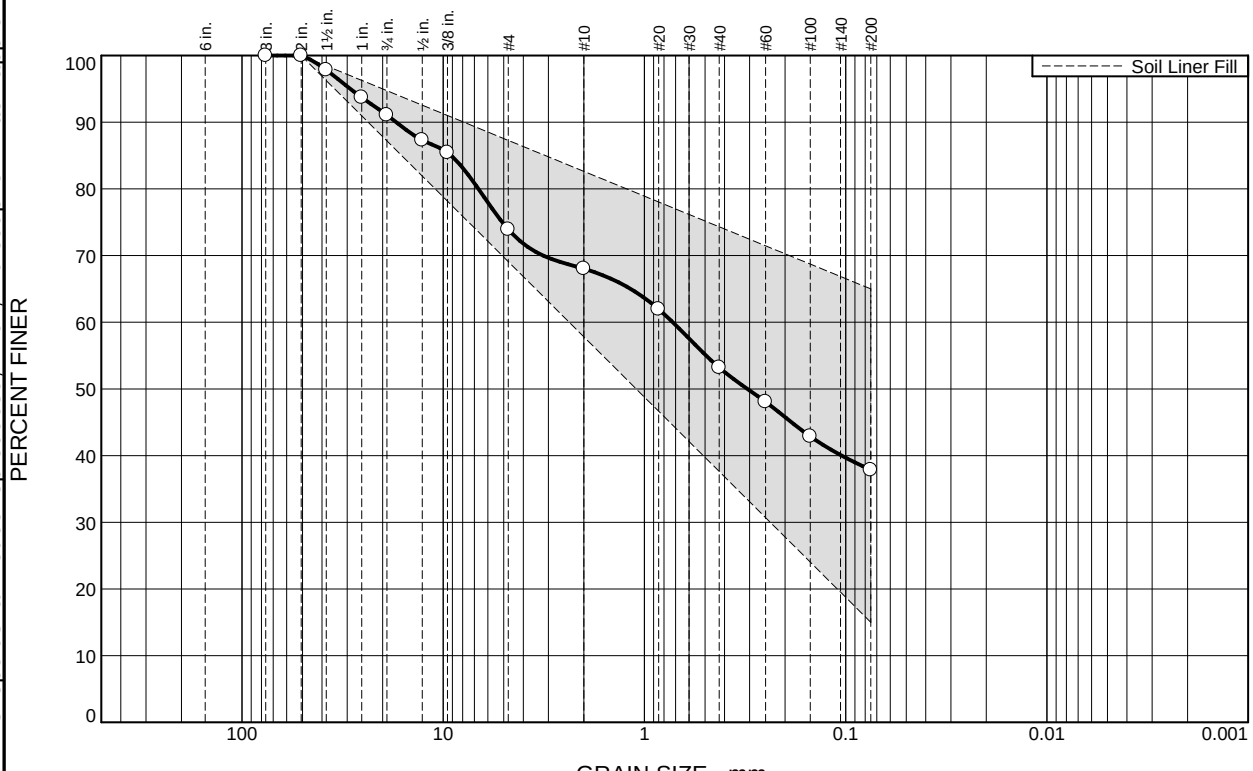
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	114.9
Initial Remolded Dry Density (pcf):	108.3
Initial Percent Compaction:	94%
Initial Void Ratio:	0.526
Optimum Moisture Content(%):	13.4
Initial Water Content (%):	13.1
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**5.8E-07**
Gradient Range (h/L):	5.3 5.9

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.9	17.2	5.9	14.8	15.4	37.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
2	100.0	100.0	
1.5	97.8		
1	93.7		
.75	91.1		
0.5	87.3		
.375	85.4		
#4	73.9		
#10	68.0		
#20	62.0		
#40	53.2		
#60	48.1		
#100	42.9		
#200	37.8	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 16 LL= 37 PI= 21

Coefficients

D_{90}= 17.1034 D_{85}= 9.1401 D_{60}= 0.7224
D_{50}= 0.3078 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-6(3)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-30-C

Date: 8/10/2022

NewFields

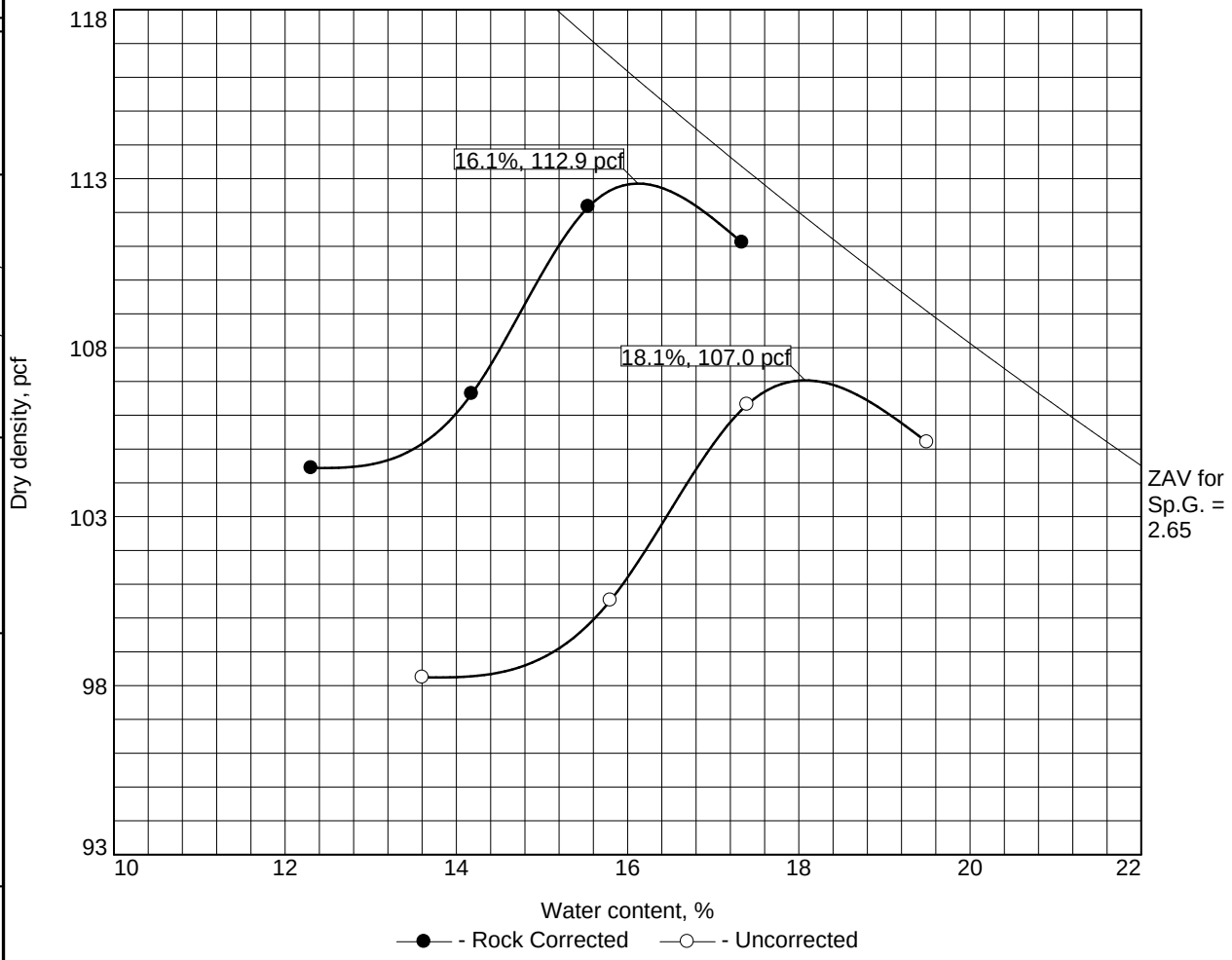
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-30-C

Tested By: AB **Checked By:** GF

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-6(3)		2.65	37	21	14.6	37.8

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 112.9 pcf	107.0 pcf	Brown clayey sand with gravel
Optimum moisture = 16.1 %	18.1 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 08/10/22
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-30-C

Remarks:

NewFields

Figure SLF-30-C

Tested By: AB **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-30-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	1/9/2023	Checked By:	TW
Test Finished:	1/18/2023	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	46
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	597.6		594.10
Dry Soil + Tare (g)	515.73		510.80
Tare (g)	0.00		119.50
Wt. of Water (g)	81.87		83.30
Dry Soil (g)	515.73		391.30
Moisture Content (%)	15.9		21.3
Sample Volume (ft^3)	0.01063	0.01067	
Dry Density (pcf)	106.8	106.5	
Wet Density (pcf)	124.0	128.5	
Saturation (%)	77.8	100.0	
Percent Compaction	94.6	94.3	
Height (in)	3.018	3.024	
Diameter (in)	2.783	2.789	
Area (in^2)	6.084	6.107	
Est. Moisture Content after Consolidation (%)		21.1%	
Est. Void Ratio after Consolidation		0.558	
Specific Gravity*	2.65		

*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	112.9
Initial Remolded Dry Density (pcf):	106.8
Initial Percent Compaction:	95%
Initial Void Ratio:	0.549
Optimum Moisture Content(%):	16.1
Initial Water Content (%):	15.9
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**2.2E-07**
Gradient Range (h/L):	5.5 5.9

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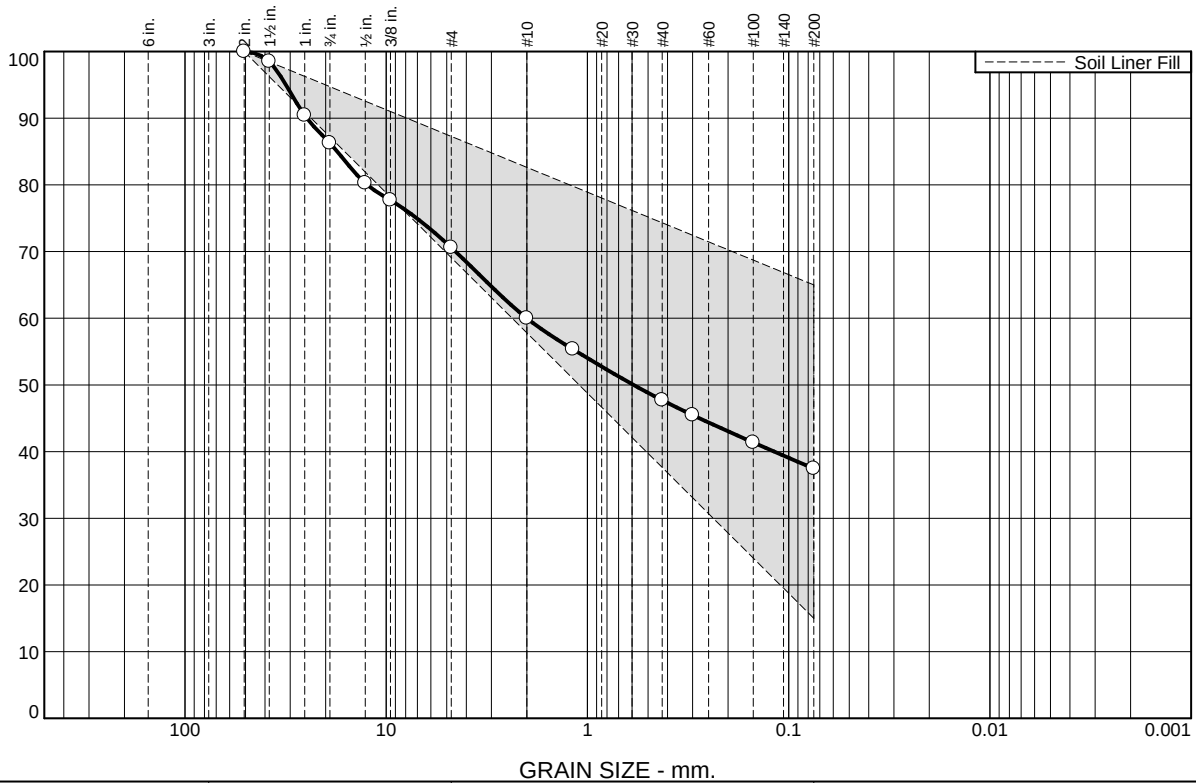
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	13.7	15.7	10.6	12.3	10.2	37.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	98.5		
1	90.4		
.75	86.3		
0.5	80.3		
.375	77.7		
#4	70.6		
#10	60.0		
#16	55.3		
#40	47.7		
#50	45.5		
#100	41.4		
#200	37.5	15.0 - 65.0	

* Soil Liner Fill

Material Description

Dark brown clayey sand with gravel

Atterberg Limits

PL= 13 LL= 37 PI= 24

Coefficients

D_{90}= 24.8027 D_{85}= 17.4969 D_{60}= 2.0004
D_{50}= 0.5894 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-6(4)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-31-C

Date: 11/30/2022

NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-31-C

Tested By: DK **Checked By:** TW

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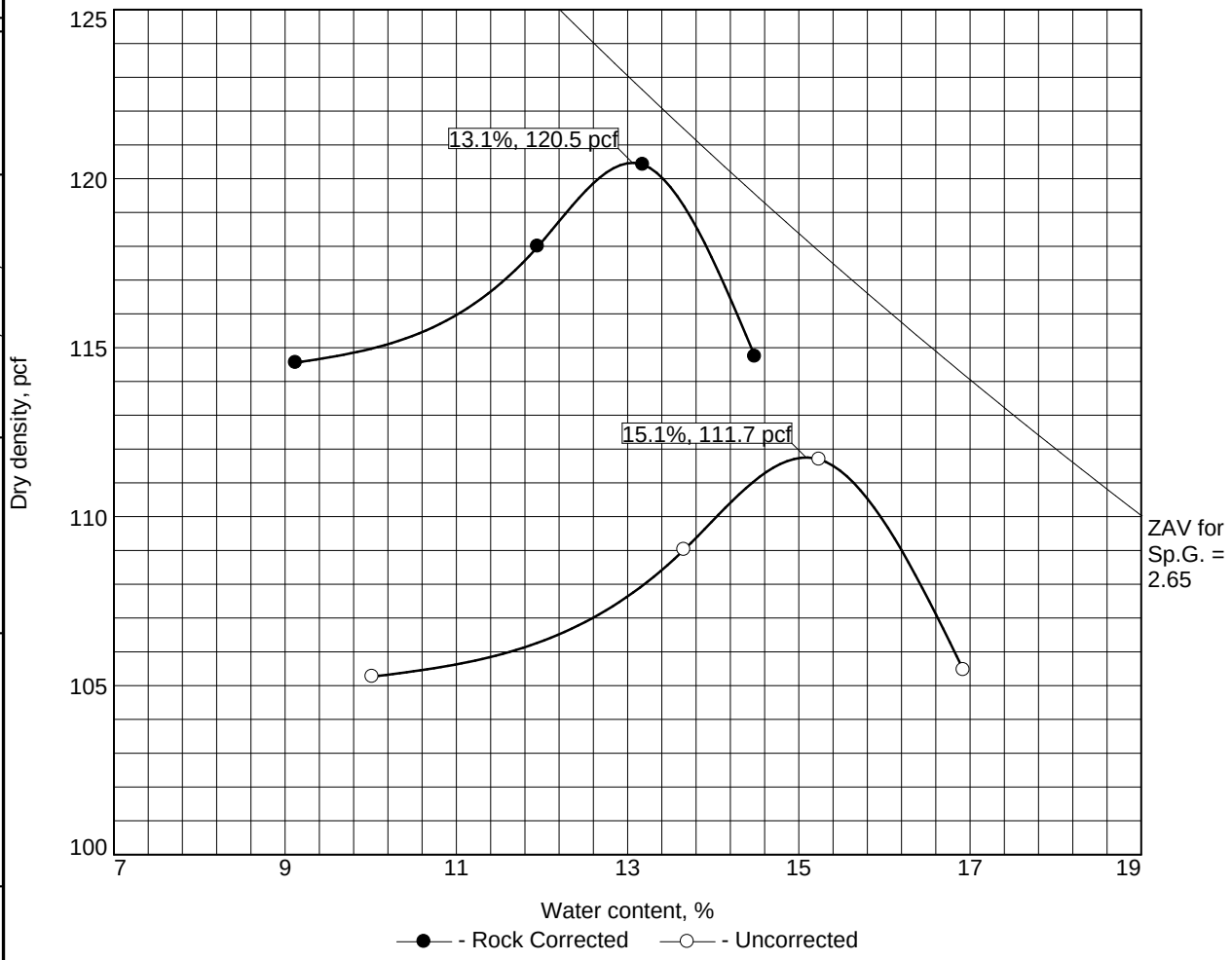
COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-6(4)		2.65	37	24	22.3	37.5

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 120.5 pcf	111.7 pcf	Dark brown clayey sand with gravel
Optimum moisture = 13.1 %	15.1 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 11/30/22
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-31-C

Remarks:

NewFields

Figure SLF-31-C

Tested By: DK **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-31-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	1/9/2023	Checked By:	TW
Test Finished:	1/18/2023	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	622.4		584.60
Dry Soil + Tare (g)	550.20		515.90
Tare (g)	0.00		119.50
Wt. of Water (g)	72.20		68.70
Dry Soil (g)	550.20		396.40
Moisture Content (%)	13.1		17.3
Sample Volume (ft^3)	0.01065	0.01065	
Dry Density (pcf)	113.9	113.9	
Wet Density (pcf)	128.8	133.3	
Saturation (%)	76.8	100.0	
Percent Compaction	94.5	94.5	
Height (in)	3.019	3.019	
Diameter (in)	2.787	2.787	
Area (in^2)	6.099	6.100	
Est. Moisture Content after Consolidation (%)		17.1%	
Est. Void Ratio after Consolidation		0.453	
Specific Gravity*	2.65		

*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	120.5
Initial Remolded Dry Density (pcf):	113.9
Initial Percent Compaction:	94%
Initial Void Ratio:	0.452
Optimum Moisture Content(%):	13.1
Initial Water Content (%):	13.1
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**6.4E-07**
Gradient Range (h/L):	1.1 1.3

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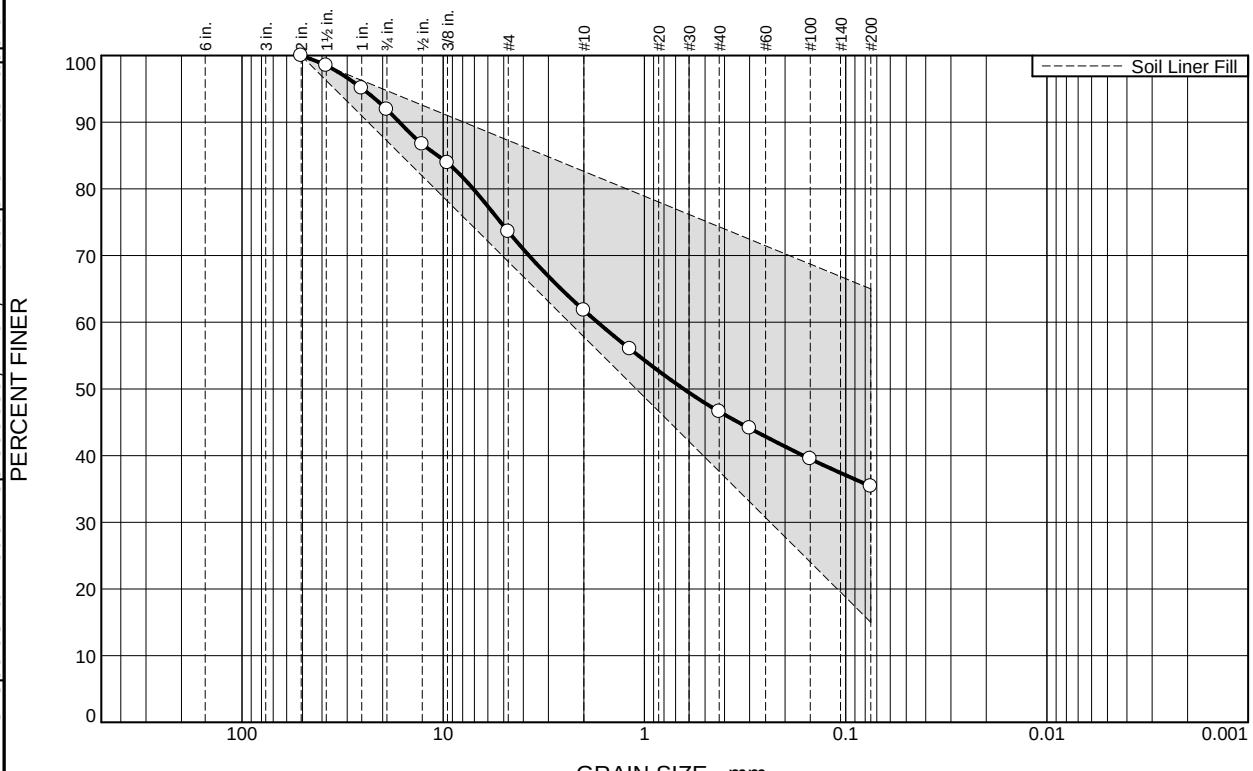
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.1	18.3	11.8	15.2	11.2	35.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	98.5		
1	95.1		
.75	91.9		
0.5	86.7		
.375	83.9		
#4	73.6		
#10	61.8		
#16	56.0		
#40	46.6		
#50	44.1		
#100	39.5		
#200	35.4	15.0 - 65.0	

* Soil Liner Fill

Material Description

Dark brown clayey sand with gravel

Atterberg Limits

PL= 16 LL= 38 PI= 22

Coefficients

D_{90}= 16.4950 D_{85}= 10.6514 D_{60}= 1.7102
D_{50}= 0.6385 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(2)

Remarks

Material discarded before Proctor

Location: Upper Dump 1 Stockpile
Sample Number: SLF-32-C

Date: 12/15/2022

NewFields

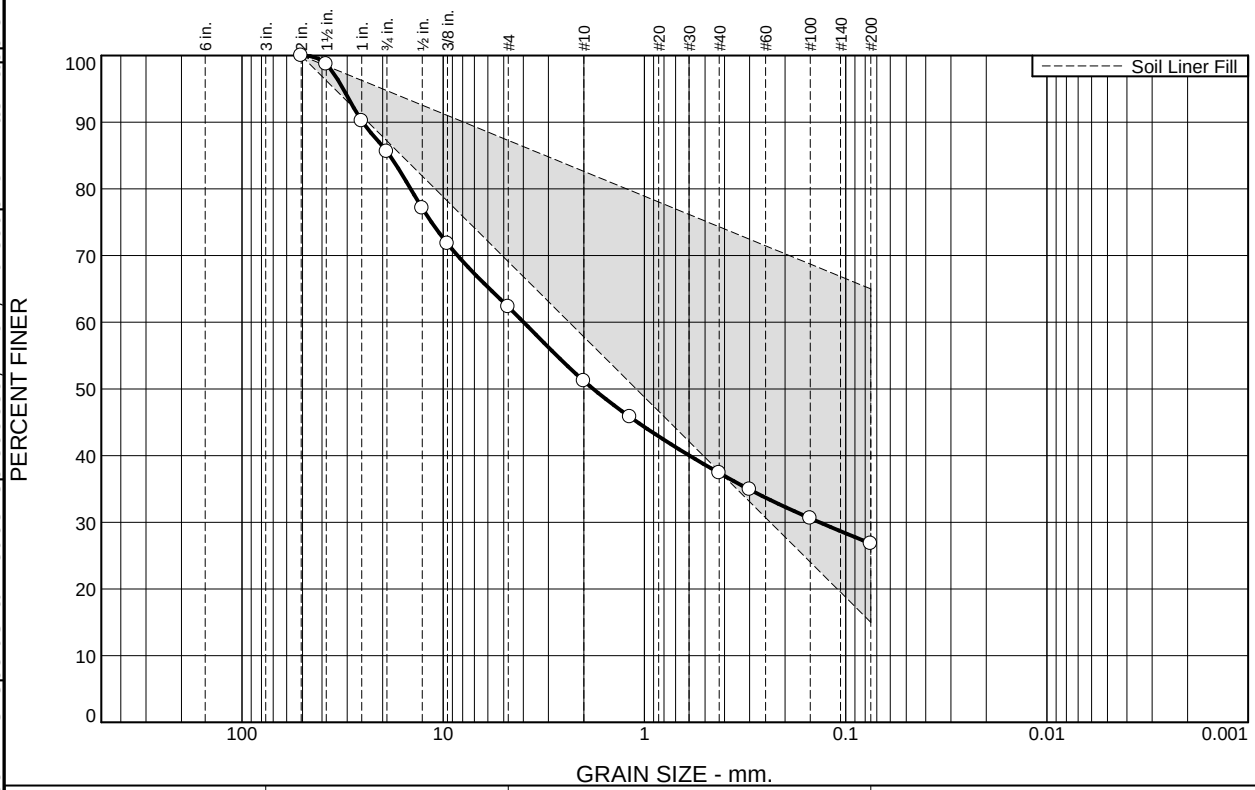
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-32-C

Tested By: DK **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	14.4	23.3	11.1	13.8	10.6	26.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	98.7		
1	90.2		
.75	85.6		
0.5	77.1		
.375	71.8		
#4	62.3		
#10	51.2		
#16	45.8		
#40	37.4		
#50	34.9		
#100	30.6		
#200	26.8	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey gravel with sand

Atterberg Limits

PL= 14 LL= 38 PI= 24

Coefficients

D_{90}= 25.1359 D_{85}= 18.4147 D_{60}= 3.9831
D_{50}= 1.7969 D_{30}= 0.1349 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= GC AASHTO= A-2-6(2)

Remarks

Material discarded before Proctor

Location: Upper Dump 1 Stockpile
Sample Number: SLF-33-C

Date: 12/15/2022

NewFields

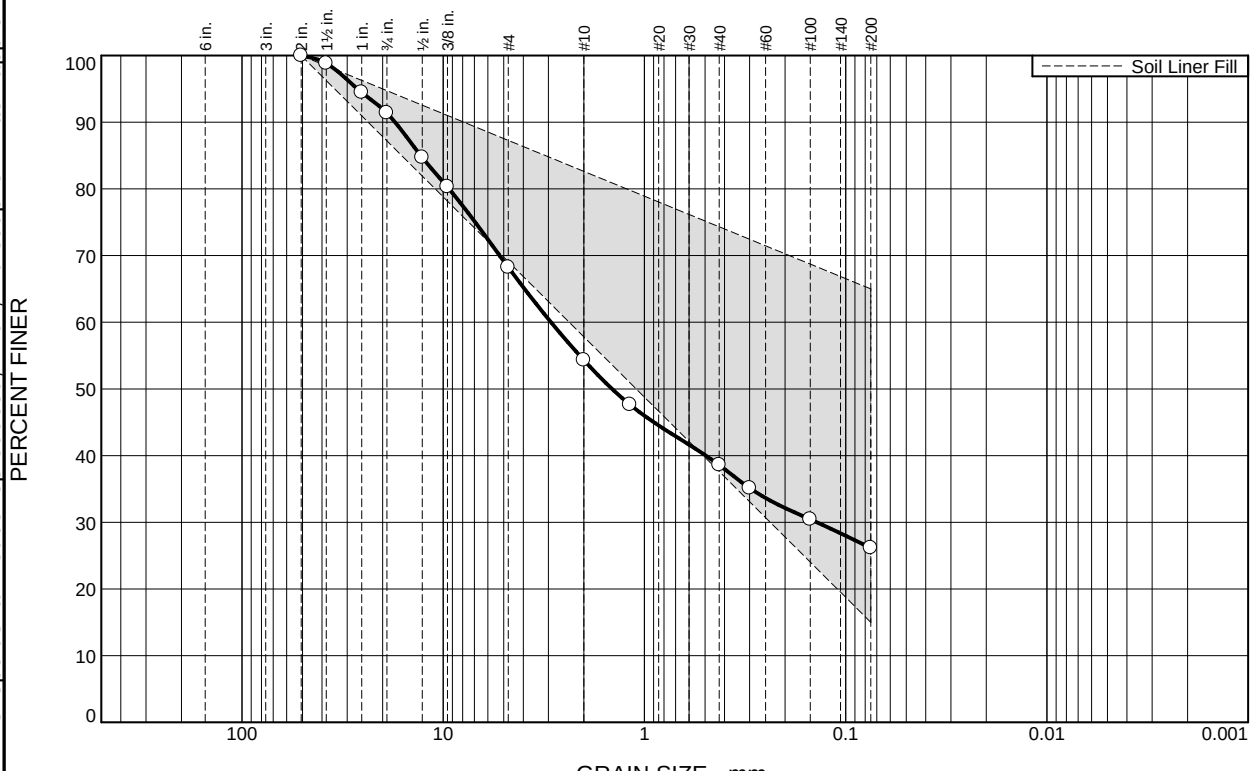
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-33-C

Tested By: DK **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.6	23.2	13.9	15.7	12.4	26.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	98.8		
1	94.5		
.75	91.4		
0.5	84.7		
.375	80.3		
#4	68.2		
#10	54.3		
#16	47.6		
#40	38.6		
#50	35.1		
#100	30.4		
#200	26.2	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 18 LL= 38 PI= 20

Coefficients

D_{90}= 17.3135 D_{85}= 12.9354 D_{60}= 2.9126
D_{50}= 1.4482 D_{30}= 0.1391 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(1)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-34-C

Date: 04/04/2023

NewFields

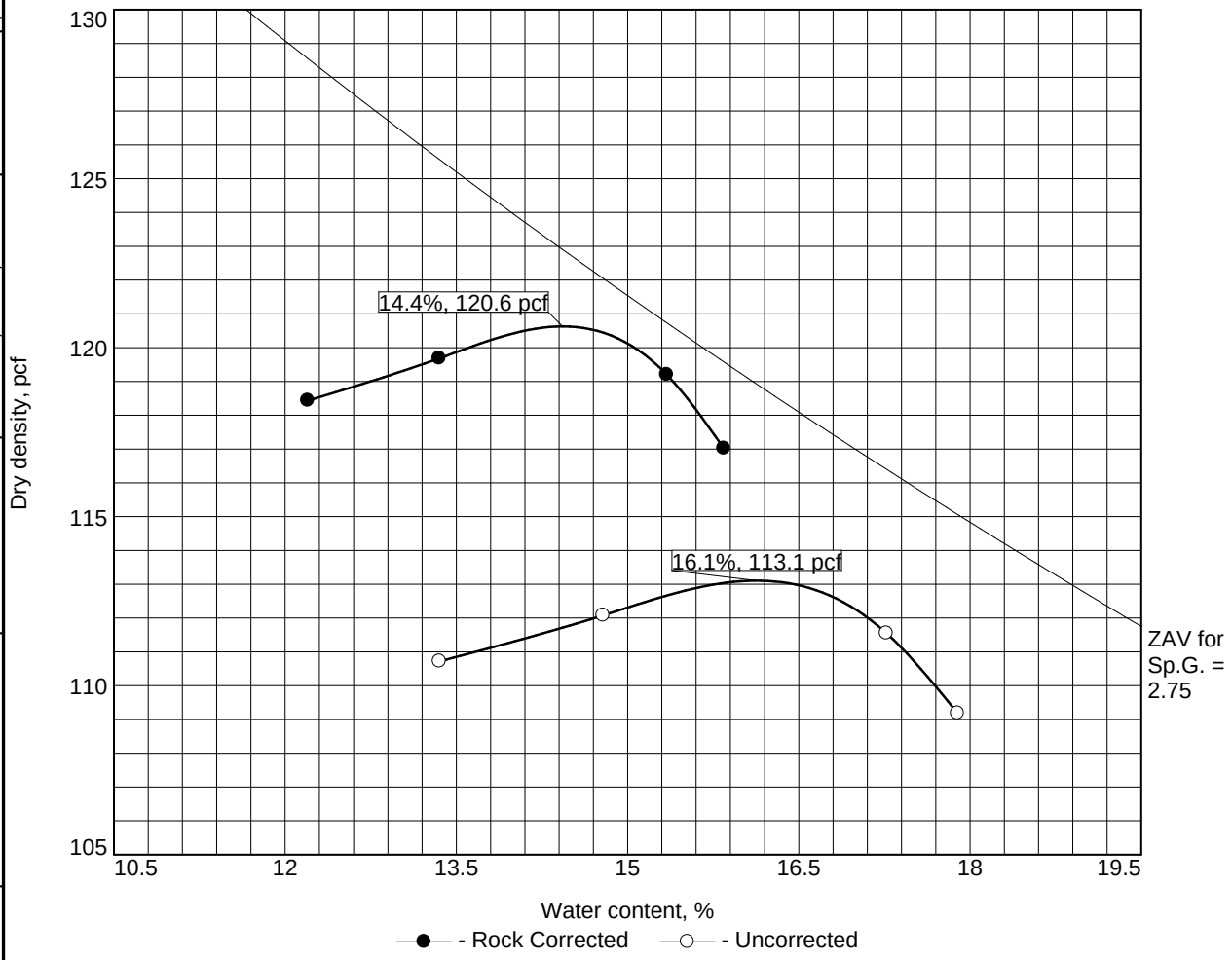
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-34-C

Tested By: DK **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(1)		2.65	38	20	19.7	26.2

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 120.6 pcf	113.1 pcf	Brown clayey sand with gravel
Optimum moisture = 14.4 %	16.1 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 04/04/23
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-34-C

Remarks:

NewFields

Figure SLF-34-C

Tested By: DK **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-34-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	4/18/2023	Checked By:	TW
Test Finished:	4/26/2023	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	630.1		594.10
Dry Soil + Tare (g)	550.71		524.50
Tare (g)	0.00		119.50
Wt. of Water (g)	79.39		69.60
Dry Soil (g)	550.71		405.00
Moisture Content (%)	14.4		17.2
Sample Volume (ft^3)	0.01063	0.01059	
Dry Density (pcf)	114.3	114.4	
Wet Density (pcf)	130.7	133.8	
Saturation (%)	85.3	100.0	
Percent Compaction	94.7	94.9	
Height (in)	3.018	3.016	
Diameter (in)	2.783	2.781	
Area (in^2)	6.084	6.074	
Est. Moisture Content after Consolidation (%)		16.8%	
Est. Void Ratio after Consolidation		0.444	
Specific Gravity*	2.65		

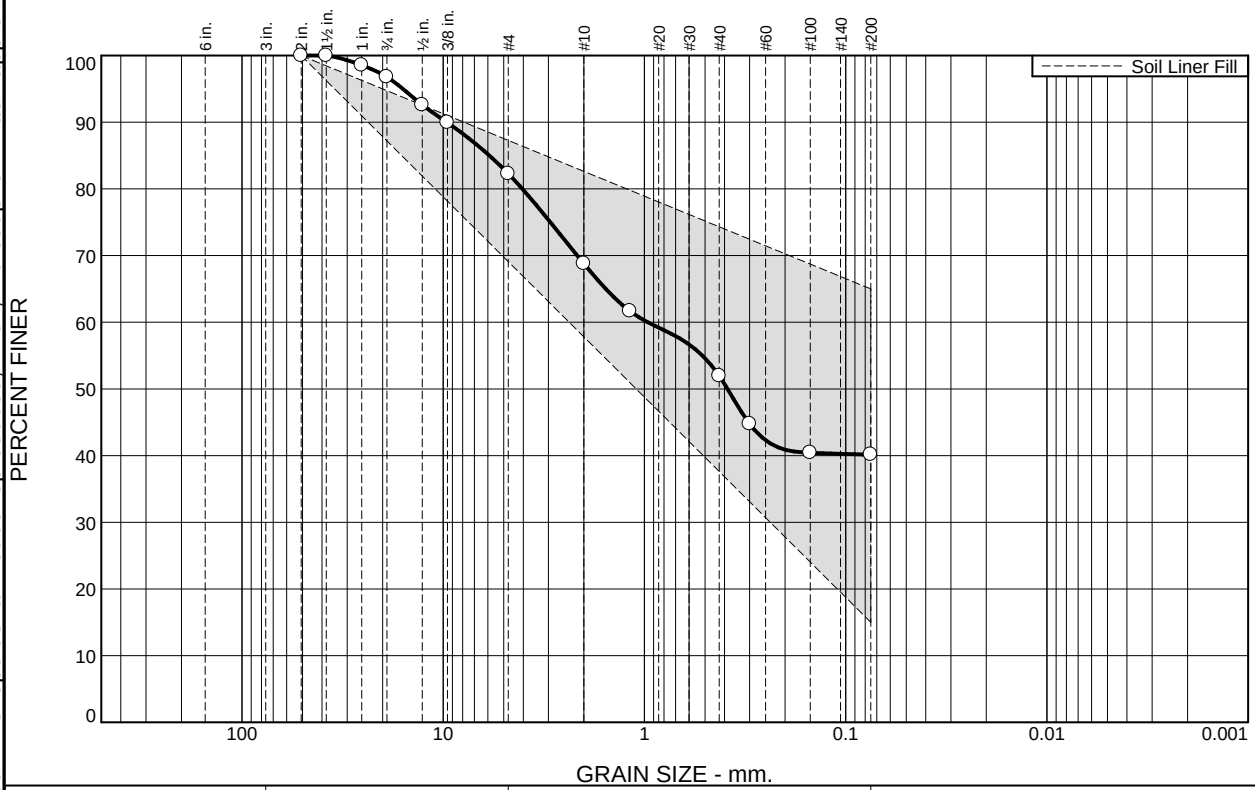
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	120.6
Initial Remolded Dry Density (pcf):	114.3
Initial Percent Compaction:	95%
Initial Void Ratio:	0.447
Optimum Moisture Content(%):	14.4
Initial Water Content (%):	14.4
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**2.2E-07**
Gradient Range (h/L):	1.2 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.2	14.5	13.5	16.8	11.9	40.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	100.0		
1	98.5		
.75	96.8		
0.5	92.6		
.375	89.9		
#4	82.3		
#10	68.8		
#16	61.7		
#40	52.0		
#50	44.7		
#100	40.4		
#200	40.1	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 17 LL= 36 PI= 19

Coefficients

D_{90}= 9.5980 D_{85}= 5.8922 D_{60}= 0.9611
D_{50}= 0.3862 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-6(3)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-35-C

Date: 04/10/2023

NewFields

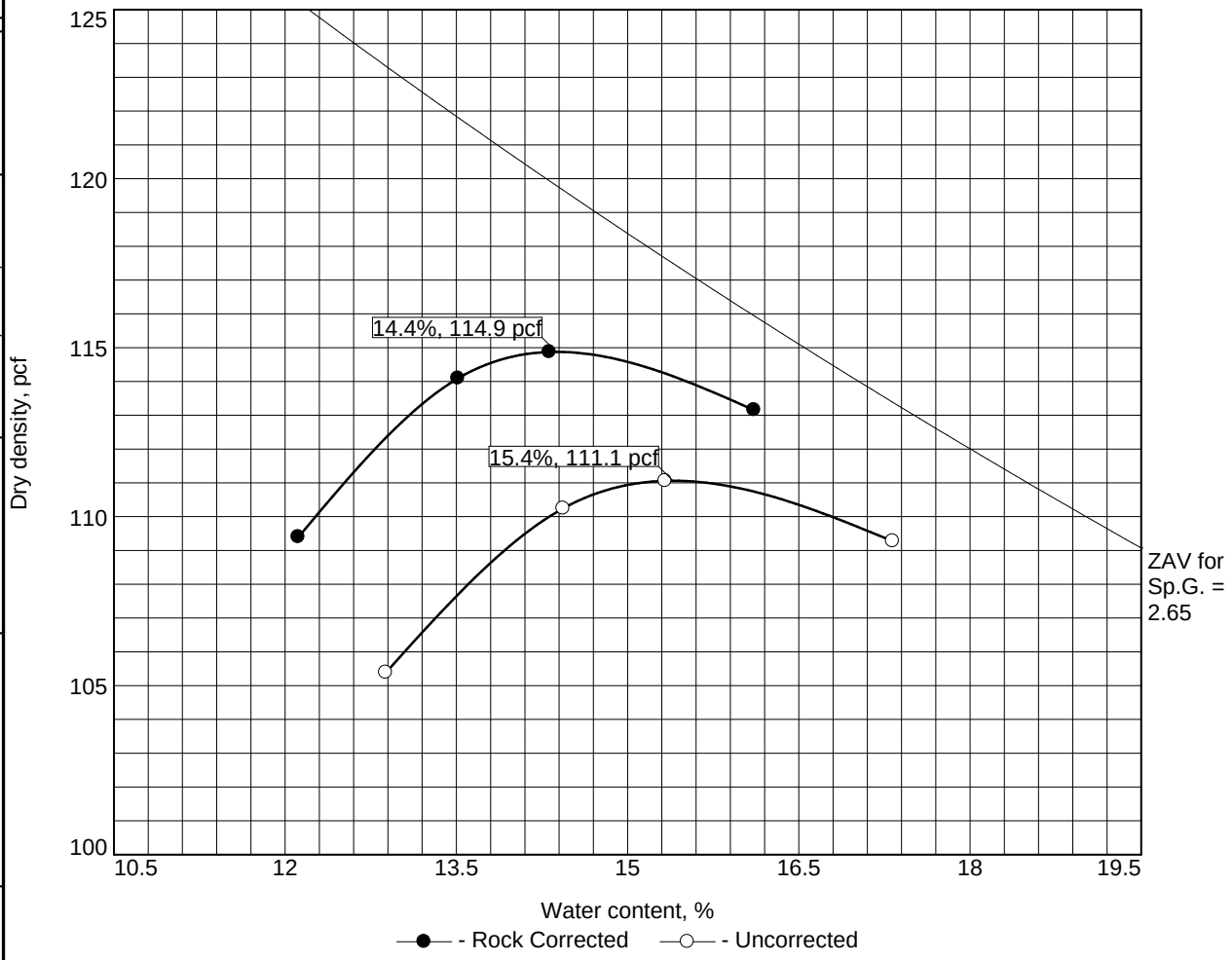
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-35-C

Tested By: DK

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-6(3)		2.65	36	19	10.1	40.1

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 114.9 pcf	111.1 pcf	Brown Clayey Sand With Gravel
Optimum moisture = 14.4 %	15.4 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 04/10/23
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-35-C

Remarks:

NewFields

Figure SLF-35-C

Tested By: DK **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-35-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	4/18/2023	Checked By:	TW
Test Finished:	4/26/2023	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	600.52		594.10
Dry Soil + Tare (g)	524.85		520.00
Tare (g)	0.00		119.50
Wt. of Water (g)	75.67		74.10
Dry Soil (g)	524.85		400.50
Moisture Content (%)	14.4		18.5
Sample Volume (ft^3)	0.01060	0.01059	
Dry Density (pcf)	109.2	109.1	
Wet Density (pcf)	124.9	130.4	
Saturation (%)	74.2	100.0	
Percent Compaction	95.0	95.0	
Height (in)	3.018	3.018	
Diameter (in)	2.780	2.781	
Area (in^2)	6.070	6.073	
Est. Moisture Content after Consolidation (%)		19.5%	
Est. Void Ratio after Consolidation		0.516	
Specific Gravity*	2.65		

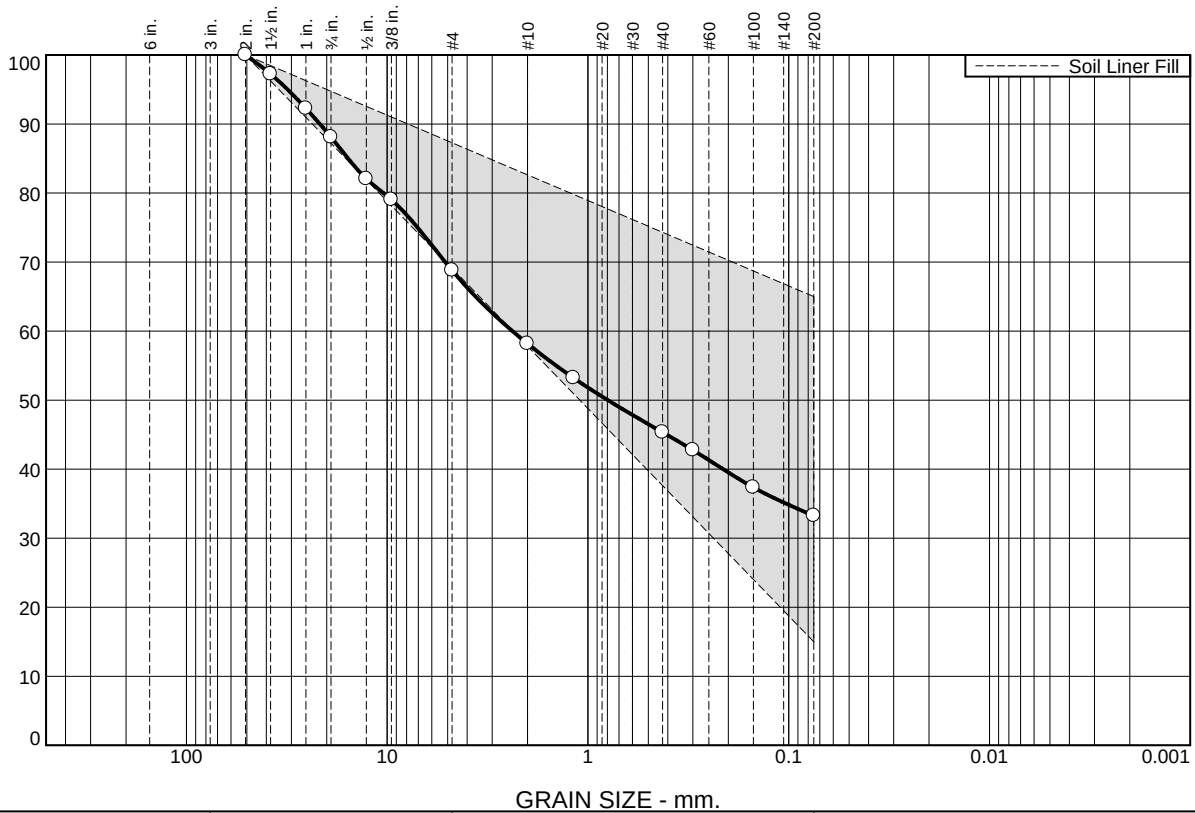
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	114.9
Initial Remolded Dry Density (pcf):	109.2
Initial Percent Compaction:	95%
Initial Void Ratio:	0.515
Optimum Moisture Content(%):	14.4
Initial Water Content (%):	14.4
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**5.1E-07**
Gradient Range (h/L):	1.1 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.9	19.3	10.6	12.9	12.0	33.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	97.2		
1	92.3		
.75	88.1		
0.5	82.1		
.375	79.0		
#4	68.8		
#10	58.2		
#16	53.2		
#40	45.3		
#50	42.8		
#100	37.4		
#200	33.3	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 17 LL= 42 PI= 25

Coefficients

D_{90}= 21.6211 D_{85}= 15.6587 D_{60}= 2.3773
D_{50}= 0.7962 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-7(3)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-36-C

Date: 04/12/2022

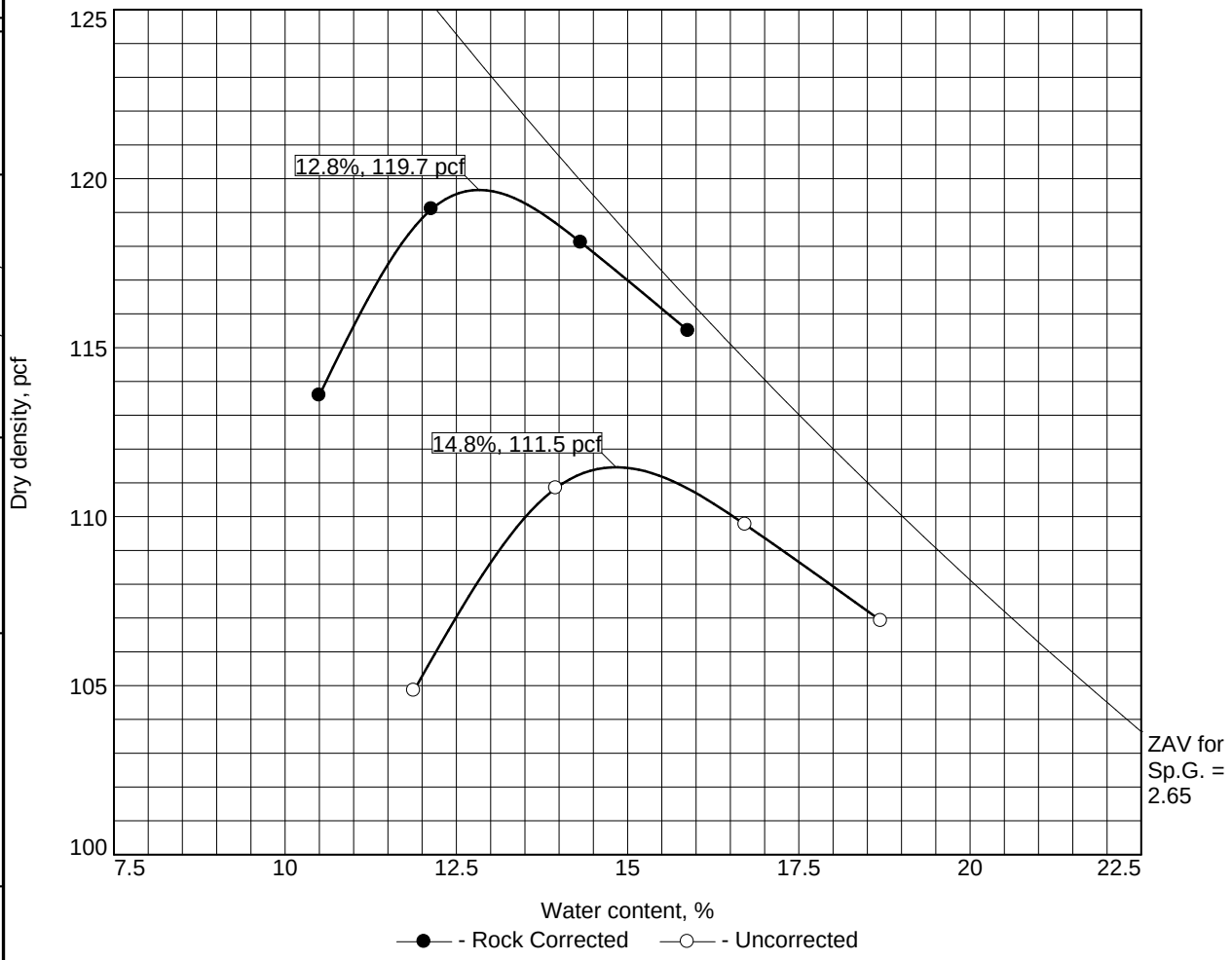
NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-36-C

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-7(3)		2.65	42	25	21.0	33.3

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 119.7 pcf	111.5 pcf	Brown Clayey Sand With Gravel
Optimum moisture = 12.8 %	14.8 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 04/12/23
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-36-C

Remarks:

NewFields

Figure SLF-36-C

Tested By: DK **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-36-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	4/29/2023	Checked By:	TW
Test Finished:	5/9/2023	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	616.7		588.30
Dry Soil + Tare (g)	546.40		519.00
Tare (g)	0.00		119.50
Wt. of Water (g)	70.30		69.30
Dry Soil (g)	546.40		399.50
Moisture Content (%)	12.9		17.3
Sample Volume (ft^3)	0.01060	0.01055	
Dry Density (pcf)	113.7	113.9	
Wet Density (pcf)	128.3	133.5	
Saturation (%)	74.7	100.0	
Percent Compaction	95.0	95.2	
Height (in)	3.018	3.014	
Diameter (in)	2.780	2.777	
Area (in^2)	6.070	6.056	
Est. Moisture Content after Consolidation (%)		17.0%	
Est. Void Ratio after Consolidation		0.450	
Specific Gravity*	2.65		

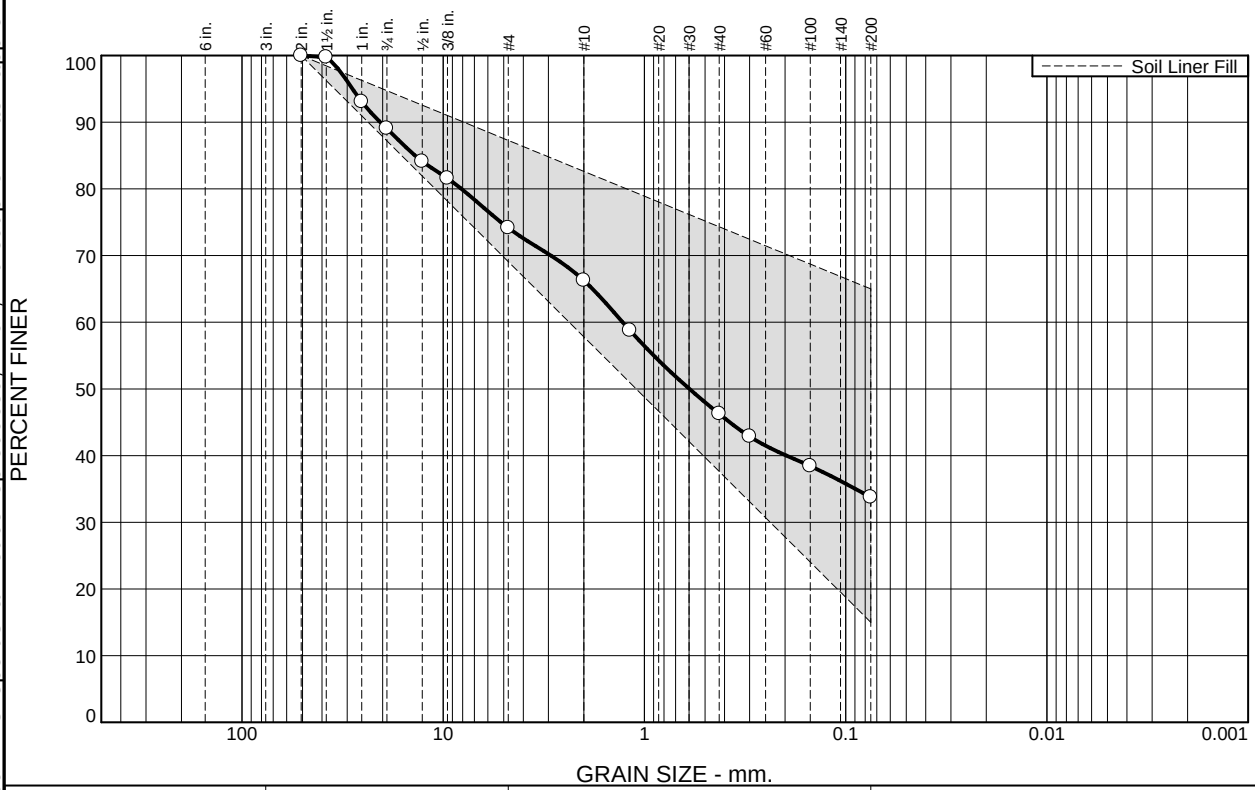
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	119.7
Initial Remolded Dry Density (pcf):	113.7
Initial Percent Compaction:	95%
Initial Void Ratio:	0.454
Optimum Moisture Content(%):	12.8
Initial Water Content (%):	12.9
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**2.3E-07**
Gradient Range (h/L):	1.2 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.0	14.8	7.9	20.0	12.6	33.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	99.7		
1	93.1		
.75	89.0		
0.5	84.1		
.375	81.6		
#4	74.2		
#10	66.3		
#16	58.8		
#40	46.3		
#50	42.9		
#100	38.4		
#200	33.7	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown Clayey Sand With Gravel

Atterberg Limits

PL= 18 LL= 44 PI= 26

Coefficients

D_{90}= 20.5331 D_{85}= 13.7859 D_{60}= 1.2828
D_{50}= 0.5971 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-7(3)

Remarks

Location: Lower Dump 1 Stockpile (JHL)
Sample Number: SLF-37-C

Date: 4-27-23

NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-37-C

Tested By: DK

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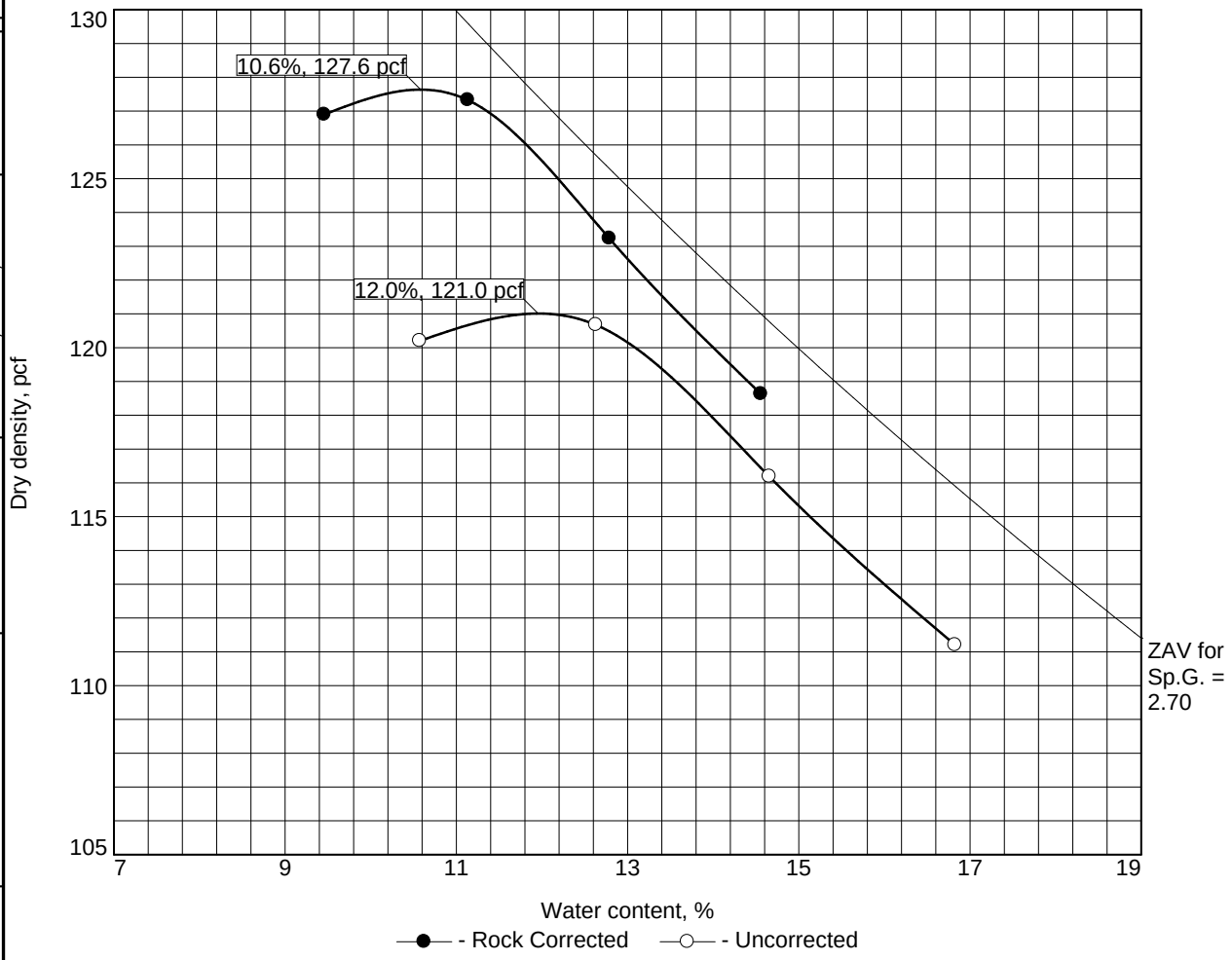
COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC-SM	A-2-4(0)		2.65	24	6	18.4	33.7

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 127.6 pcf	121.0 pcf	Brown Clayey Sand With Gravel
Optimum moisture = 10.6 %	12.0 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 04/27/23
Location: Lower Dump 1 Stockpile (JHL) **Sample Number:** SLF-37-C

Remarks:

NewFields

Figure SLF-37-C

Tested By: DK **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-37-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Lower SLF Dump 1 Stockpile (JHL)
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	4/29/2023	Checked By:	TW
Test Finished:	5/9/2023	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	644		600.80
Dry Soil + Tare (g)	583.46		543.90
Tare (g)	0.00		119.50
Wt. of Water (g)	60.54		56.90
Dry Soil (g)	583.46		424.40
Moisture Content (%)	10.4		13.4
Sample Volume (ft^3)	0.01063	0.01061	
Dry Density (pcf)	120.8	120.8	
Wet Density (pcf)	133.6	137.7	
Saturation (%)	76.1	100.0	
Percent Compaction	94.7	94.7	
Height (in)	3.018	3.018	
Diameter (in)	2.783	2.783	
Area (in^2)	6.084	6.082	
Est. Moisture Content after Consolidation (%)		13.9%	
Est. Void Ratio after Consolidation		0.369	
Specific Gravity*	2.65		

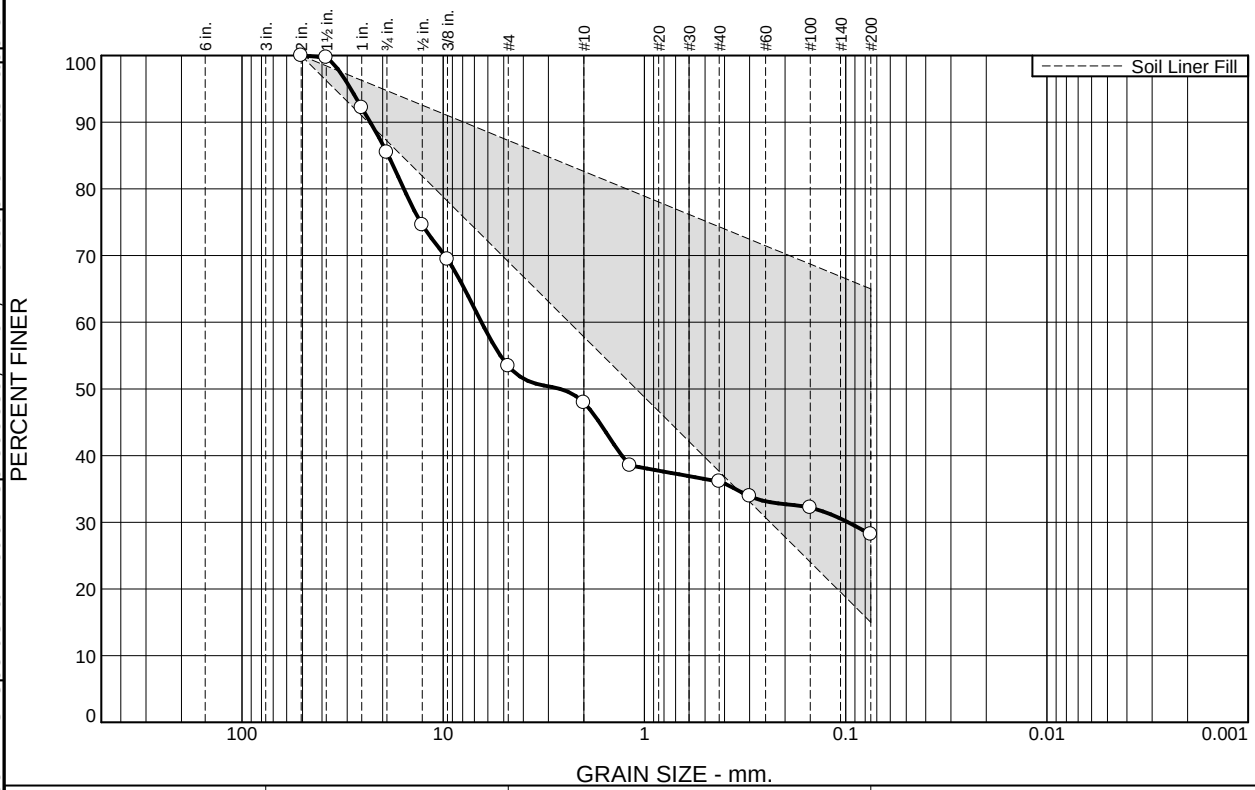
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	127.6
Initial Remolded Dry Density (pcf):	120.8
Initial Percent Compaction:	95%
Initial Void Ratio:	0.369
Optimum Moisture Content(%):	10.6
Initial Water Content (%):	10.4
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**6.3E-07**
Gradient Range (h/L):	1.0 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	14.5	32.1	5.5	11.8	7.9	28.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	99.7		
1	92.2		
.75	85.5		
0.5	74.6		
.375	69.4		
#4	53.4		
#10	47.9		
#16	38.5		
#40	36.1		
#50	33.9		
#100	32.2		
#200	28.2	15.0 - 65.0	

* Soil Liner Fill

Material Description

Red-Brown clayey gravel with sand

Atterberg Limits

PL= 17 LL= 36 PI= 9

Coefficients

D_{90}= 23.0583 D_{85}= 18.7208 D_{60}= 6.4544
D_{50}= 2.6234 D_{30}= 0.0973 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= GC AASHTO= A-2-6(1)

Remarks

Location: Lower Dump 1 Stockpile (JHL)
Sample Number: SLF-38-C

Date: 5/5/2023

NewFields

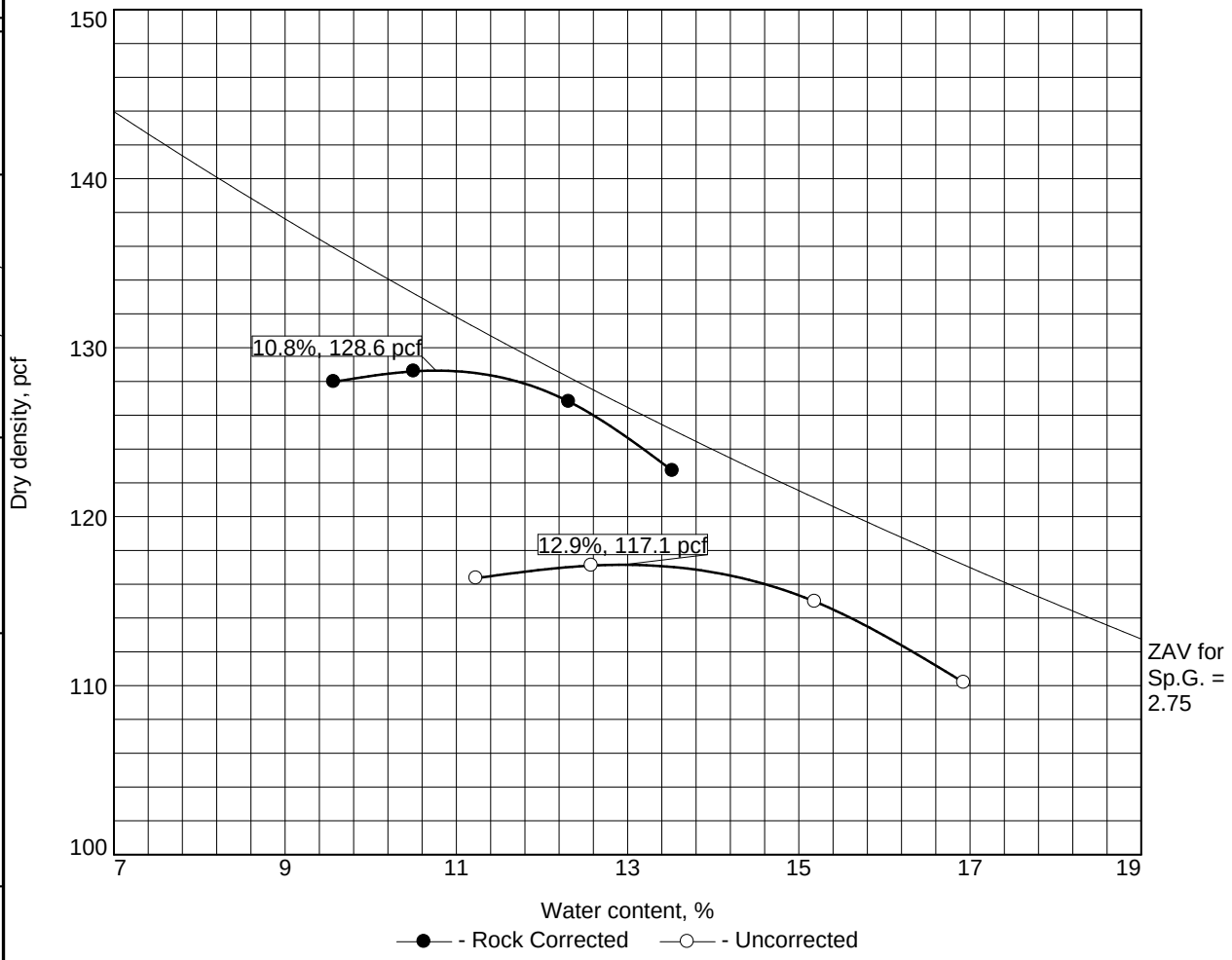
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-38-C

Tested By: DK

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	GC	A-2-4(0)		2.65	26	9	30.6	28.2

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 128.6 pcf	117.1 pcf	Red-Brown Clayey sand With Gravel
Optimum moisture = 10.8 %	12.9 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 05/05/23
Location: Lower Dump 1 Stockpile (JHL) **Sample Number:** SLF-38-C

Remarks:

NewFields

Figure SLF-38-C

Tested By: DK **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-38-C
Project:	VLF2 PH3	Field Sample No.:	SLF-38-C
Project No.:	475.0106.056	Location:	Lower SLF Dump 1 Stockpile (JHL
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	5/31/2023	Checked By:	TW
Test Finished:	6/7/2023	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 2: Effective Stress (psi)	20
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	648.9		604.20
Dry Soil + Tare (g)	585.96		546.00
Tare (g)	0.00		119.50
Wt. of Water (g)	62.94		58.20
Dry Soil (g)	585.96		426.50
Moisture Content (%)	10.7		13.6
Sample Volume (ft^3)	0.01062	0.01053	
Dry Density (pcf)	121.3	122.5	
Wet Density (pcf)	138.0	138.7	
Saturation (%)	100.0%	100.0	
Percent Compaction	94.3	95.2	
Height (in)	3.008	2.998	
Diameter (in)	2.777	2.768	
Area (in^2)	6.057	6.016	
Est. Moisture Content after Consolidation (%)		13.2%	
Est. Void Ratio after Consolidation		0.351	
Specific Gravity*	2.65		

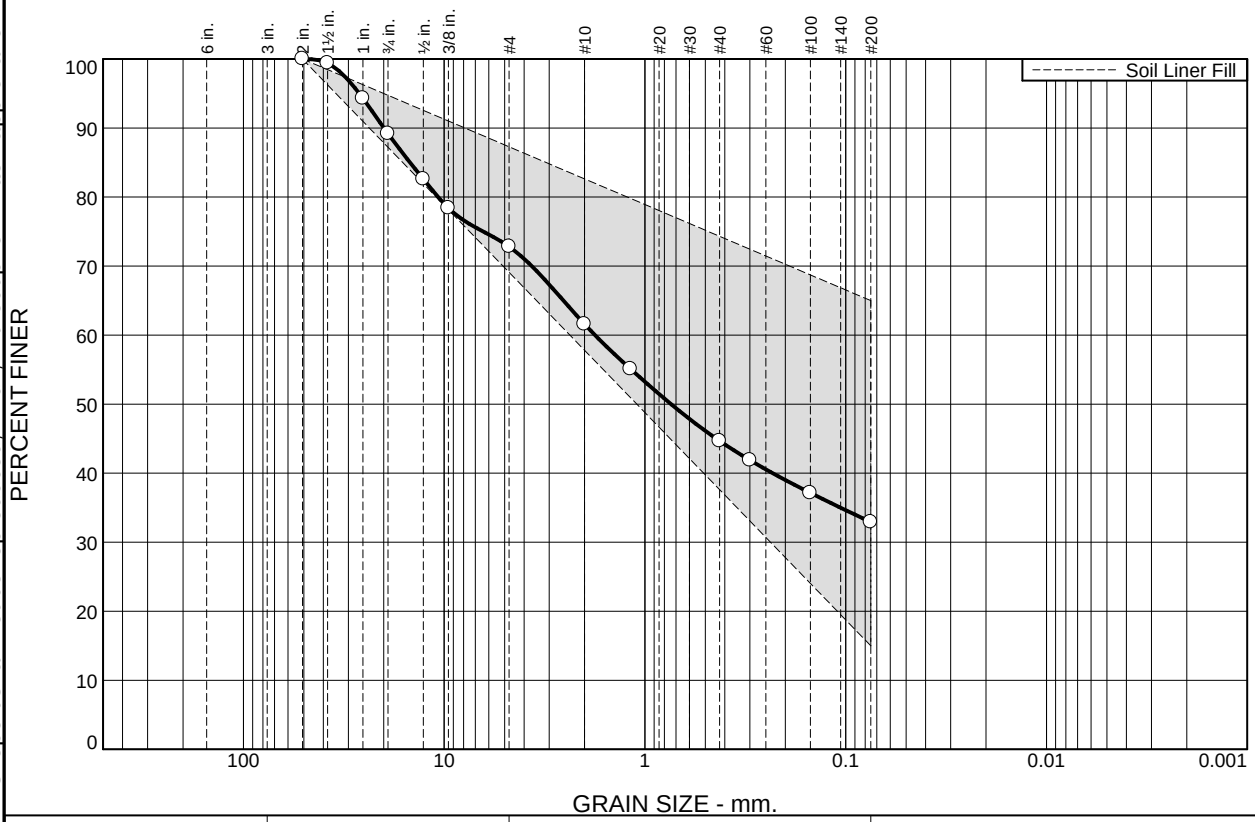
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	128.6
Initial Remolded Dry Density (pcf):	121.2
Initial Percent Compaction:	94%
Initial Void Ratio:	0.364
Optimum Moisture Content(%):	10.8
Initial Water Content (%):	10.7
Confining Pressure (psi):	20.0
Hydraulic Conductivity, k_{20} (cm/s):	**8.6E-07**
Gradient Range (h/L):	0.8 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	10.8	16.4	11.2	16.9	11.8	32.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	99.4		
1	94.3		
.75	89.2		
0.5	82.6		
.375	78.4		
#4	72.8		
#10	61.6		
#16	55.1		
#40	44.7		
#50	41.9		
#100	37.1		
#200	32.9	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 15 LL= 34 PI= 19

Coefficients

D_{90}= 19.9544 D_{85}= 14.7827 D_{60}= 1.7730
D_{50}= 0.7408 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(2)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-39-C

Date: 05/05/2023

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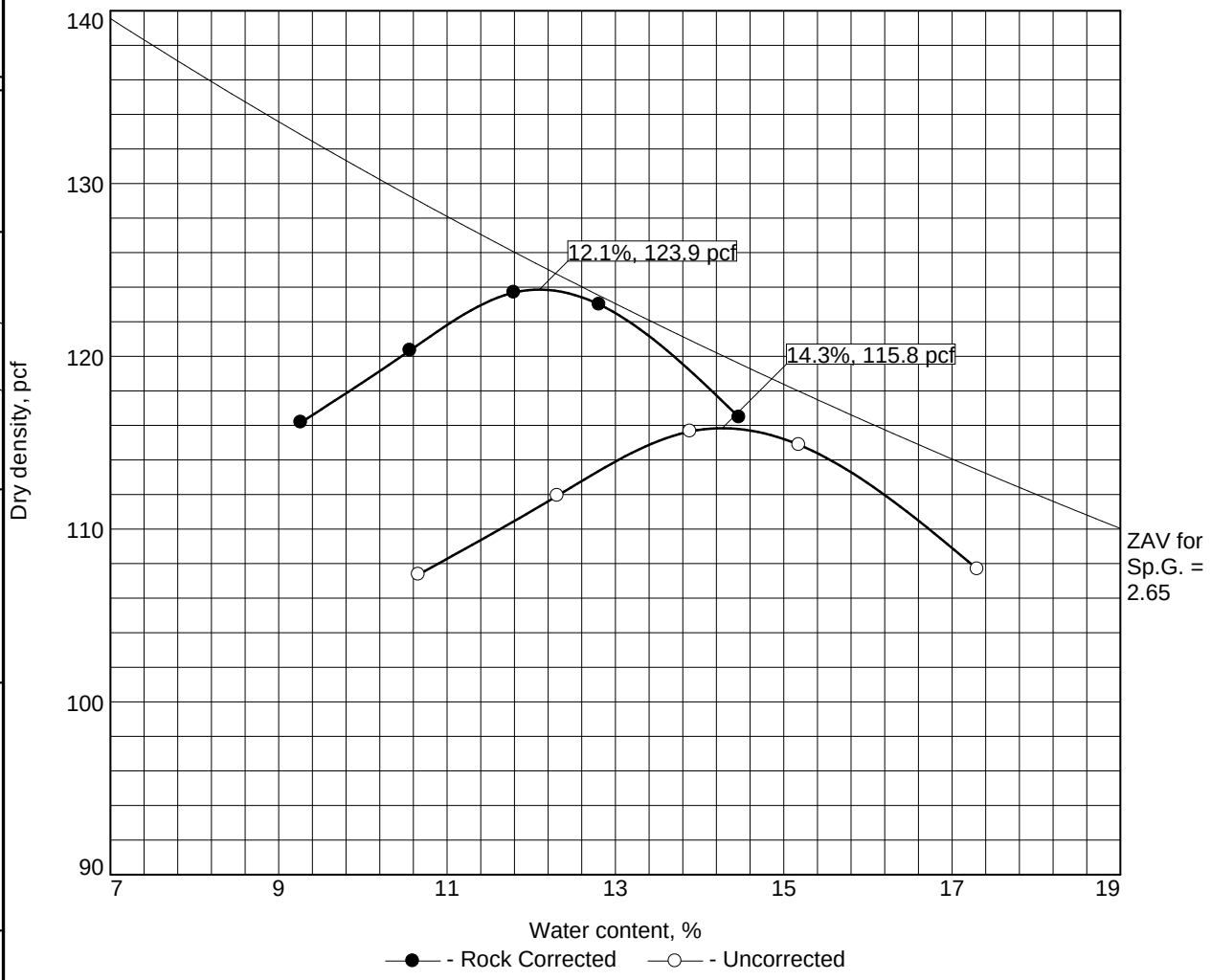
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-39-C

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification USCS	Classification AASHTO	Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	SC	A-2-6(2)		2.65	34	19	21.6	32.9

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 123.9 pcf	115.8 pcf	Brown Clayey Sand with Gravel
Optimum moisture = 12.1 %	14.3 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date:
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-39-C

Remarks:

NewFields

Figure SLF-39-C

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-39-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	6/12/2023	Checked By:	TW
Test Finished:	6/23/2023	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	634.61		588.40
Dry Soil + Tare (g)	566.07		526.00
Tare (g)	0.00		119.50
Wt. of Water (g)	68.54		62.40
Dry Soil (g)	566.07		406.50
Moisture Content (%)	12.1		15.4
Sample Volume (ft^3)	0.01058	0.01057	
Dry Density (pcf)	118.0	118.0	
Wet Density (pcf)	132.3	135.9	
Saturation (%)	79.9	100.0	
Percent Compaction	95.2	95.2	
Height (in)	3.018	3.019	
Diameter (in)	2.777	2.777	
Area (in^2)	6.055	6.058	
Est. Moisture Content after Consolidation (%)		15.2%	
Est. Void Ratio after Consolidation		0.403	
Specific Gravity*	2.65		

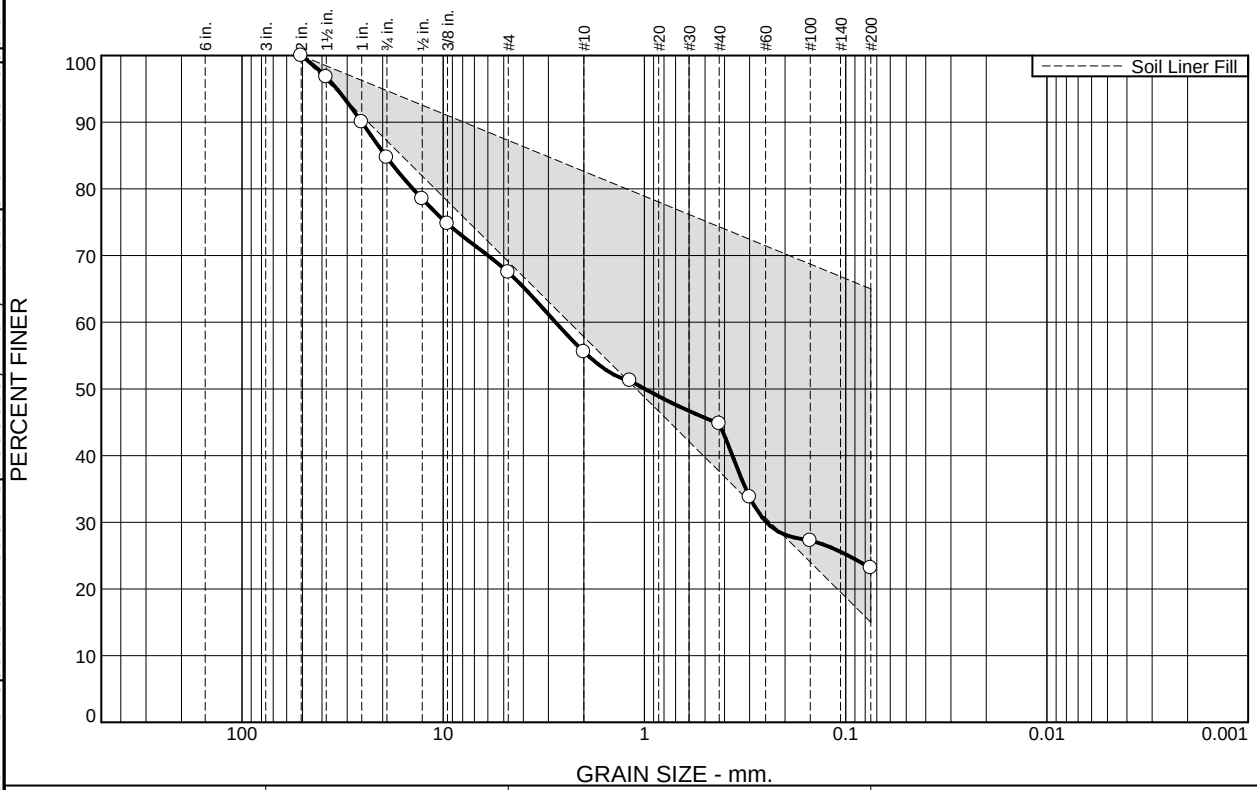
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	123.9
Initial Remolded Dry Density (pcf):	118.0
Initial Percent Compaction:	95%
Initial Void Ratio:	0.401
Optimum Moisture Content(%):	12.1
Initial Water Content (%):	12.1
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**1.6E-07**
Gradient Range (h/L):	1.1 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	15.3	17.2	11.9	10.8	21.6	23.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	96.8		
1	90.0		
.75	84.7		
0.5	78.5		
.375	74.8		
#4	67.5		
#10	55.6		
#16	51.2		
#40	44.8		
#50	33.8		
#100	27.2		
#200	23.2	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 17 LL= 37 PI= 20

Coefficients

D_{90}= 25.3890 D_{85}= 19.3581 D_{60}= 2.7655
D_{50}= 0.9953 D_{30}= 0.2478 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(1)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-40-C

Date: 5/8/23

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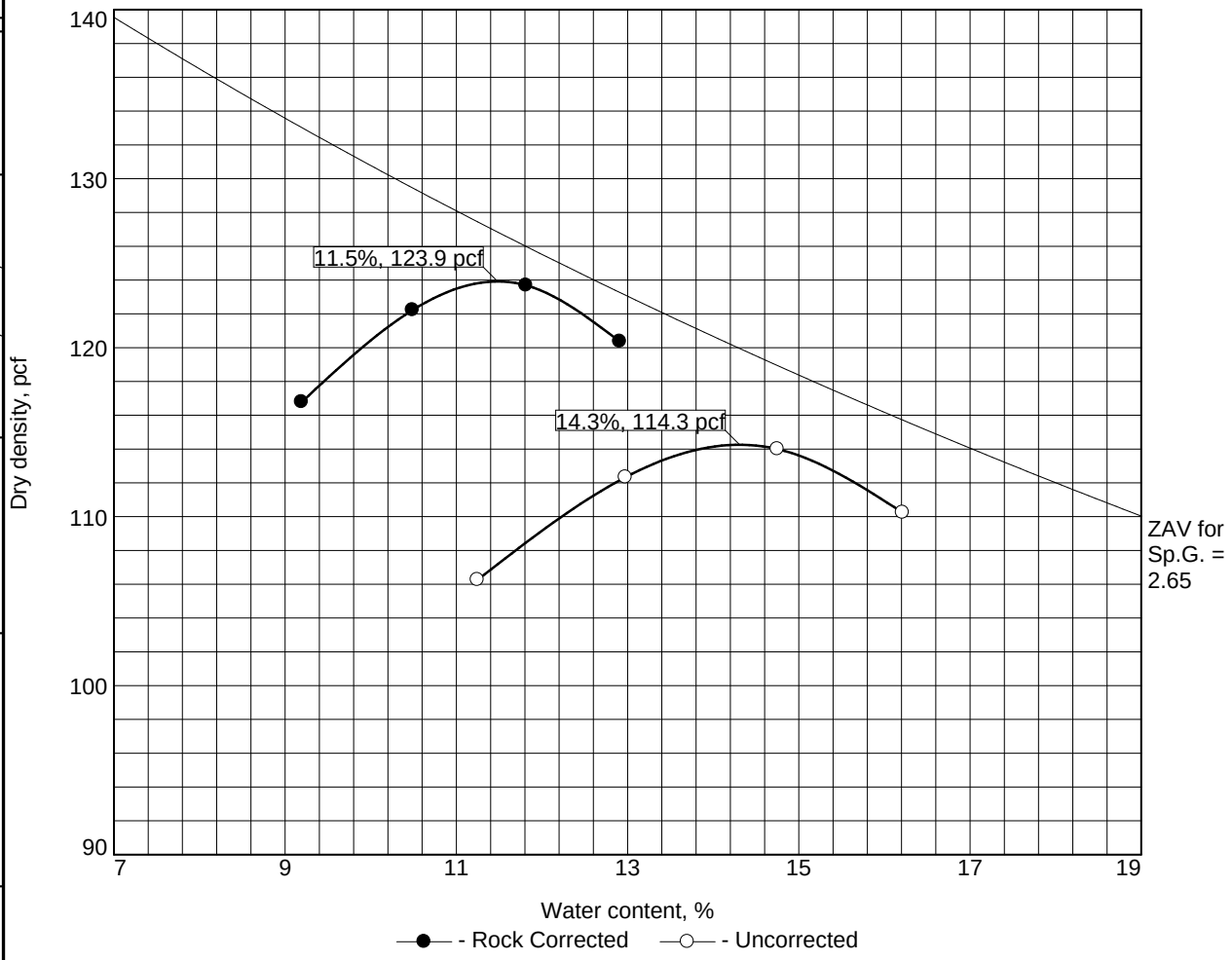
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-40-C

Tested By: DK **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(1)		2.65	37	20	25.2	23.2

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 123.9 pcf	114.3 pcf	Brown Clayey Sand with Gravel
Optimum moisture = 11.5 %	14.3 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 05/05/23
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-40-C

Remarks:

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Figure SLF-40-C

Tested By: DK **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-40-C
Project:	VLF2 PH3		
Project No.:	475.0106.056	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	6/28/2023	Checked By:	TW
Test Finished:	7/10/2023	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	631.8		594.30
Dry Soil + Tare (g)	566.09		534.00
Tare (g)	0.00		119.50
Wt. of Water (g)	65.71		60.30
Dry Soil (g)	566.09		414.50
Moisture Content (%)	11.6		14.5
Sample Volume (ft^3)	0.01055	0.01052	
Dry Density (pcf)	118.4	118.5	
Wet Density (pcf)	132.0	136.3	
Saturation (%)	76.9	100.0	
Percent Compaction	95.6	95.6	
Height (in)	3.018	3.016	
Diameter (in)	2.773	2.772	
Area (in^2)	6.041	6.035	
Est. Moisture Content after Consolidation (%)		14.9%	
Est. Void Ratio after Consolidation		0.395	
Specific Gravity*	2.65		

*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	123.9
Initial Remolded Dry Density (pcf):	118.4
Initial Percent Compaction:	96%
Initial Void Ratio:	0.396
Optimum Moisture Content(%):	11.5
Initial Water Content (%):	11.6
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**7.7E-07**
Gradient Range (h/L):	0.9 1.3

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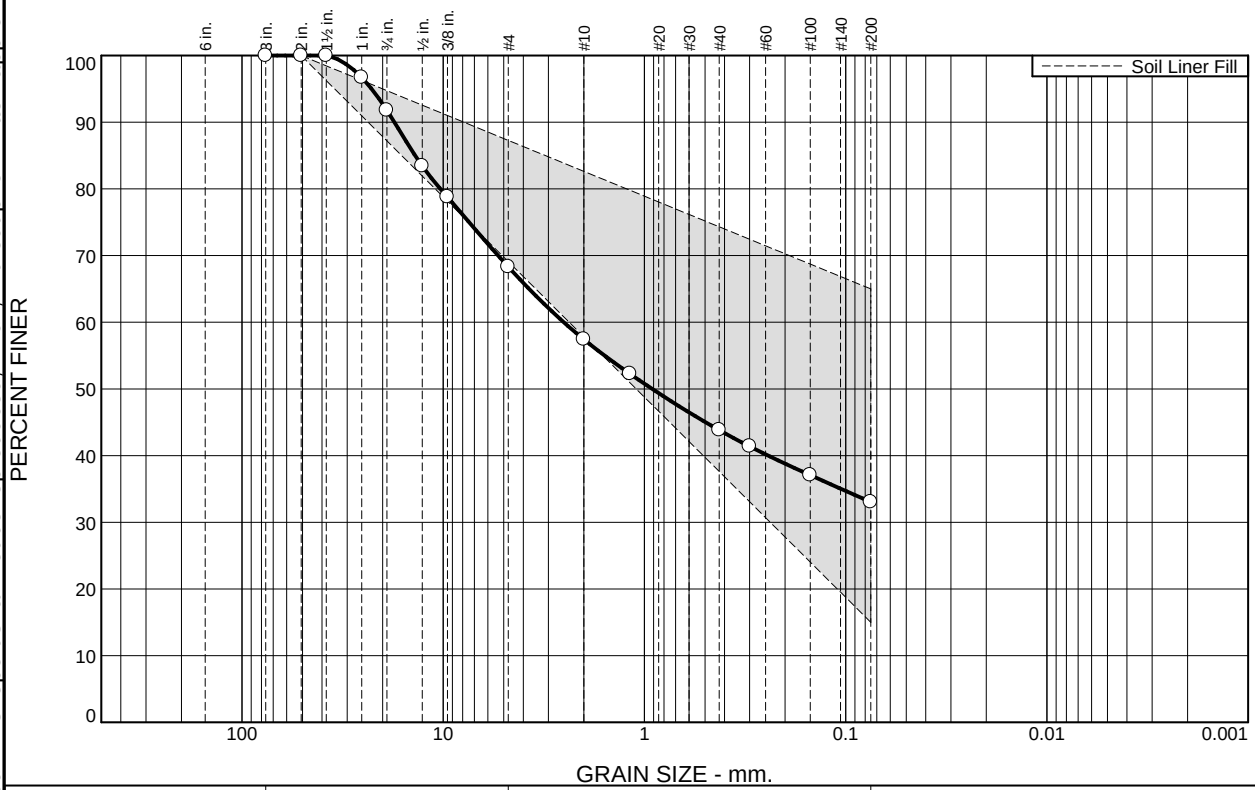
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.2	23.5	10.9	13.6	10.8	33.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
2	100.0	100.0	
1.5	100.0		
1	96.7		
.75	91.8		
0.5	83.4		
.375	78.8		
#4	68.3		
#10	57.4		
#16	52.3		
#40	43.8		
#50	41.4		
#100	37.1		
#200	33.0	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 16 LL= 39 PI= 23

Coefficients

D_{90}= 17.4728 D_{85}= 13.7811 D_{60}= 2.5159
D_{50}= 0.9142 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(2)

Remarks

Location: Lower Dump 1 Stockpile (JHL)
Sample Number: SLF-41-C **Date:** 5/16/23

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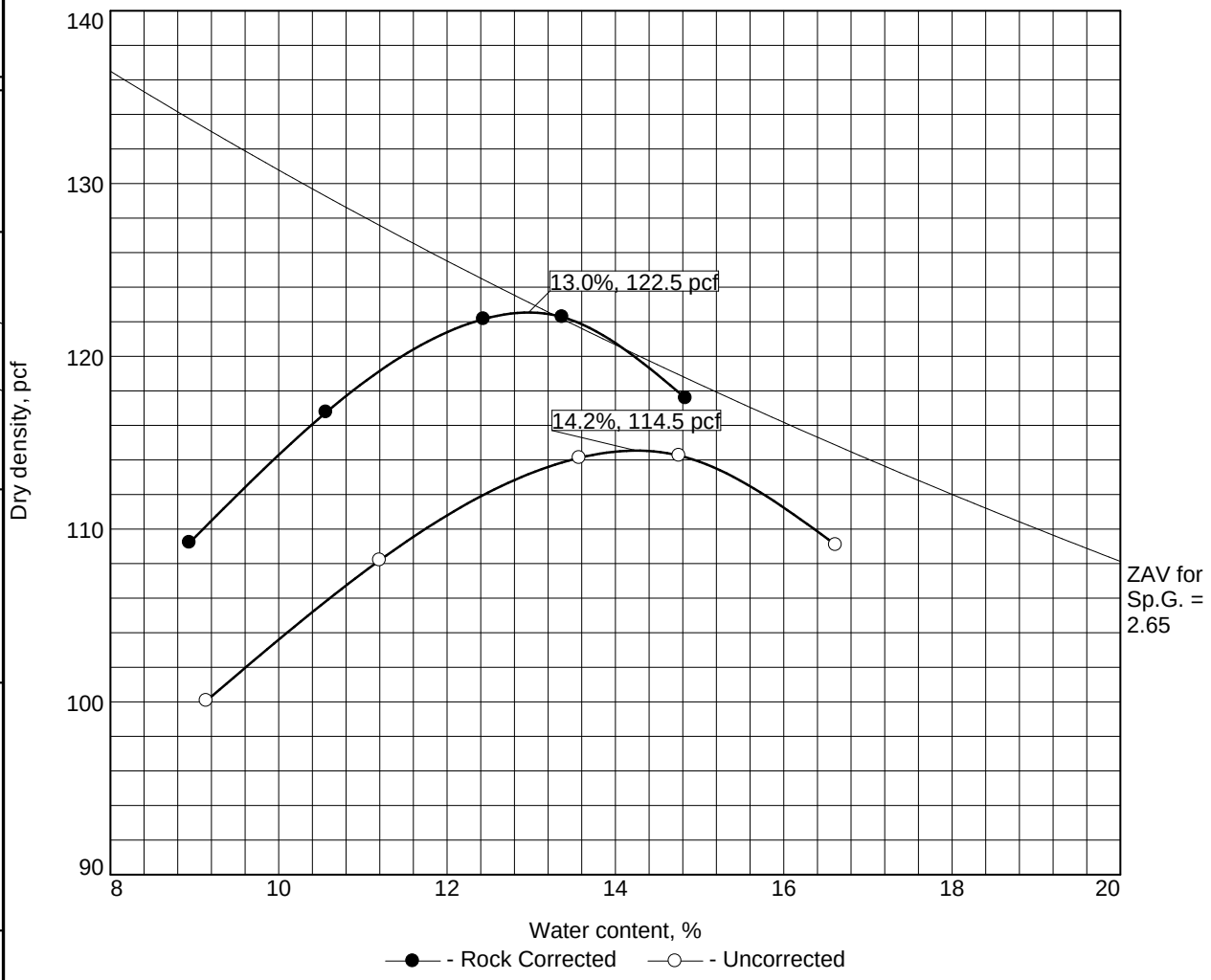
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** SLF-41-C

Tested By: HW **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(2)		2.65	39	23	21.2	33.0

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 122.5 pcf	114.5 pcf	Brown clayey sand with gravel
Optimum moisture = 13.0 %	14.2 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date:
Loc.: Lower Dump 1 Stockpile (JHL) **Sample No.:** SLF-41-C

Remarks:

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Figure SLF-41-C

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-41-C
Project:	VLF2 PH3		
Project No.:	475.0106.060	Location:	Lower SLF Dump 1 Stockpile (JHL)
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	6/28/2023	Checked By:	TW
Test Finished:	7/10/2023	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	632.4		578.90
Dry Soil + Tare (g)	559.67		517.00
Tare (g)	0.00		119.50
Wt. of Water (g)	72.73		61.90
Dry Soil (g)	559.67		397.50
Moisture Content (%)	13.0		15.6
Sample Volume (ft^3)	0.01058	0.01055	
Dry Density (pcf)	116.7	116.7	
Wet Density (pcf)	131.8	135.2	
Saturation (%)	82.5	100.0	
Percent Compaction	95.2	95.3	
Height (in)	3.018	3.017	
Diameter (in)	2.777	2.775	
Area (in^2)	6.055	6.050	
Est. Moisture Content after Consolidation (%)		15.7%	
Est. Void Ratio after Consolidation		0.416	
Specific Gravity*	2.65		

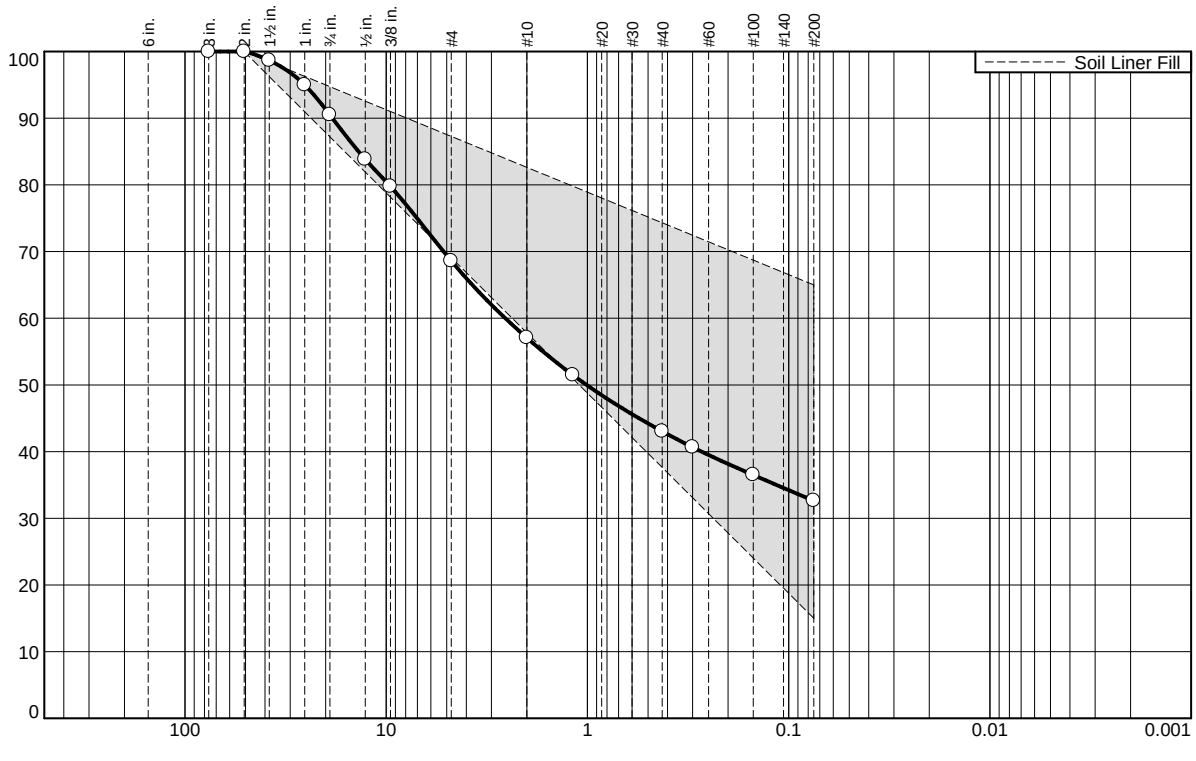
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	122.5
Initial Remolded Dry Density (pcf):	116.7
Initial Percent Compaction:	95%
Initial Void Ratio:	0.417
Optimum Moisture Content(%):	13.0
Initial Water Content (%):	13.0
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**5.7E-07**
Gradient Range (h/L):	1.0 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.5	21.9	11.5	14.1	10.4	32.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
2	100.0	100.0	
1.5	98.7		
1	95.0		
.75	90.5		
0.5	83.8		
.375	79.8		
#4	68.6		
#10	57.1		
#16	51.5		
#40	43.0		
#50	40.7		
#100	36.5		
#200	32.6	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown Clayey Sand with Gravel

Atterberg Limits

PL= 13 LL= 39 PI= 26

Coefficients

D_{90}= 18.5036 D_{85}= 13.7087 D_{60}= 2.5587
D_{50}= 1.0095 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(3)

Remarks

Location: Upper Dump 1 Stockpile
Sample Number: SLF-42-C

Date: 5/16/23

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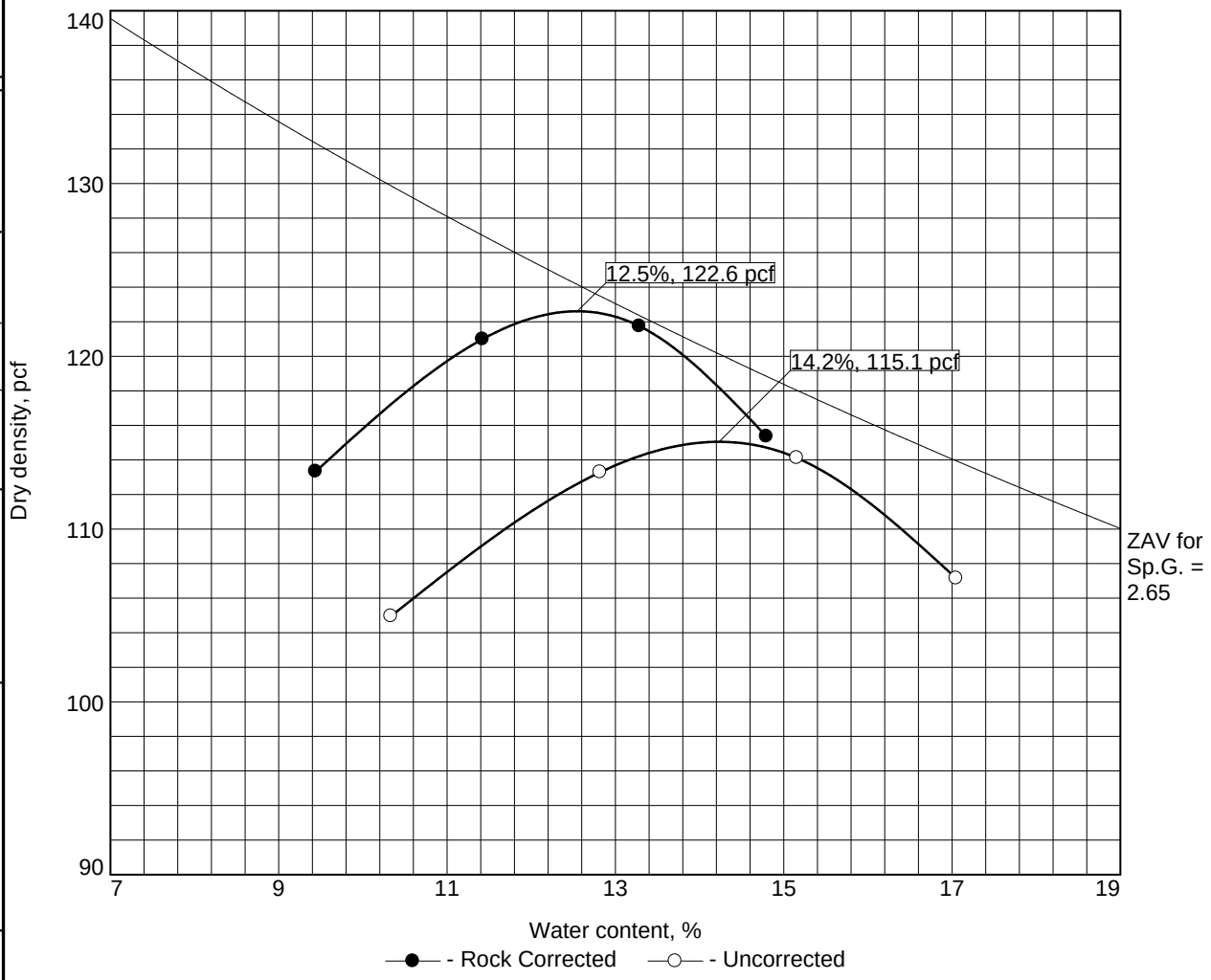
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-42-C

Tested By: HW **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification USCS	Classification AASHTO	Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	SC	A-2-6(3)		2.65	39	26	20.2	32.6

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 122.6 pcf	115.1 pcf	Brown Clayey Sand with Gravel
Optimum moisture = 12.5 %	14.2 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date:
Location: Upper Dump 1 Stockpile **Sample Number:** SLF-42-C

Remarks:

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Figure SLF-42-C

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-42-C
Project:	VLF2 PH3		
Project No.:	475.0106.060	Location:	Upper SLF Dump 1 Stockpile
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	7/10/2023	Checked By:	TW
Test Finished:	7/20/2023	Sample Description:	Brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	46
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	630.1		586.40
Dry Soil + Tare (g)	560.79		520.90
Tare (g)	0.00		119.50
Wt. of Water (g)	69.31		65.50
Dry Soil (g)	560.79		401.40
Moisture Content (%)	12.4		16.3
Sample Volume (ft^3)	0.01078	0.01079	
Dry Density (pcf)	114.6	114.4	
Wet Density (pcf)	128.9	133.6	
Saturation (%)	74.7	100.0	
Percent Compaction	93.4	93.3	
Height (in)	3.069	3.071	
Diameter (in)	2.780	2.782	
Area (in^2)	6.070	6.080	
Est. Moisture Content after Consolidation (%)		16.9%	
Est. Void Ratio after Consolidation		0.448	
Specific Gravity*	2.65		

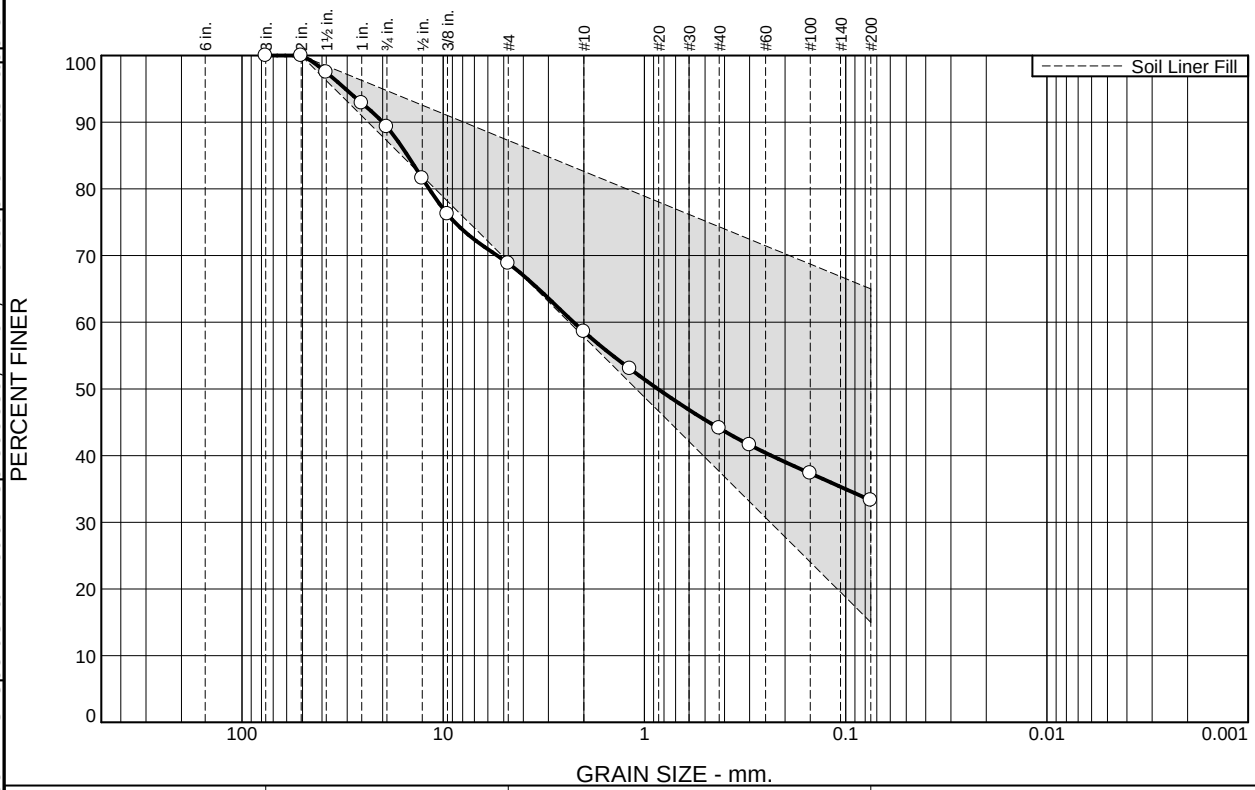
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	122.6
Initial Remolded Dry Density (pcf):	114.6
Initial Percent Compaction:	93%
Initial Void Ratio:	0.444
Optimum Moisture Content(%):	12.5
Initial Water Content (%):	12.4
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**1.4E-07**
Gradient Range (h/L):	9.6 10.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	10.7	20.5	10.2	14.5	10.8	33.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
2	100.0	100.0	
1.5	97.5		
1	92.9		
.75	89.3		
0.5	81.6		
.375	76.2		
#4	68.8		
#10	58.6		
#16	53.0		
#40	44.1		
#50	41.6		
#100	37.3		
#200	33.3	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown Clayey Sand with Gravel

Atterberg Limits

PL= 14 LL= 34 PI= 20

Coefficients

D_{90}= 19.9696 D_{85}= 15.0064 D_{60}= 2.2476
D_{50}= 0.8576 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(2)

Remarks

Location: Lower Dump 1 Stockpile (JHL)
Sample Number: SLF-43-C

Date: 5/17/23

NewFields

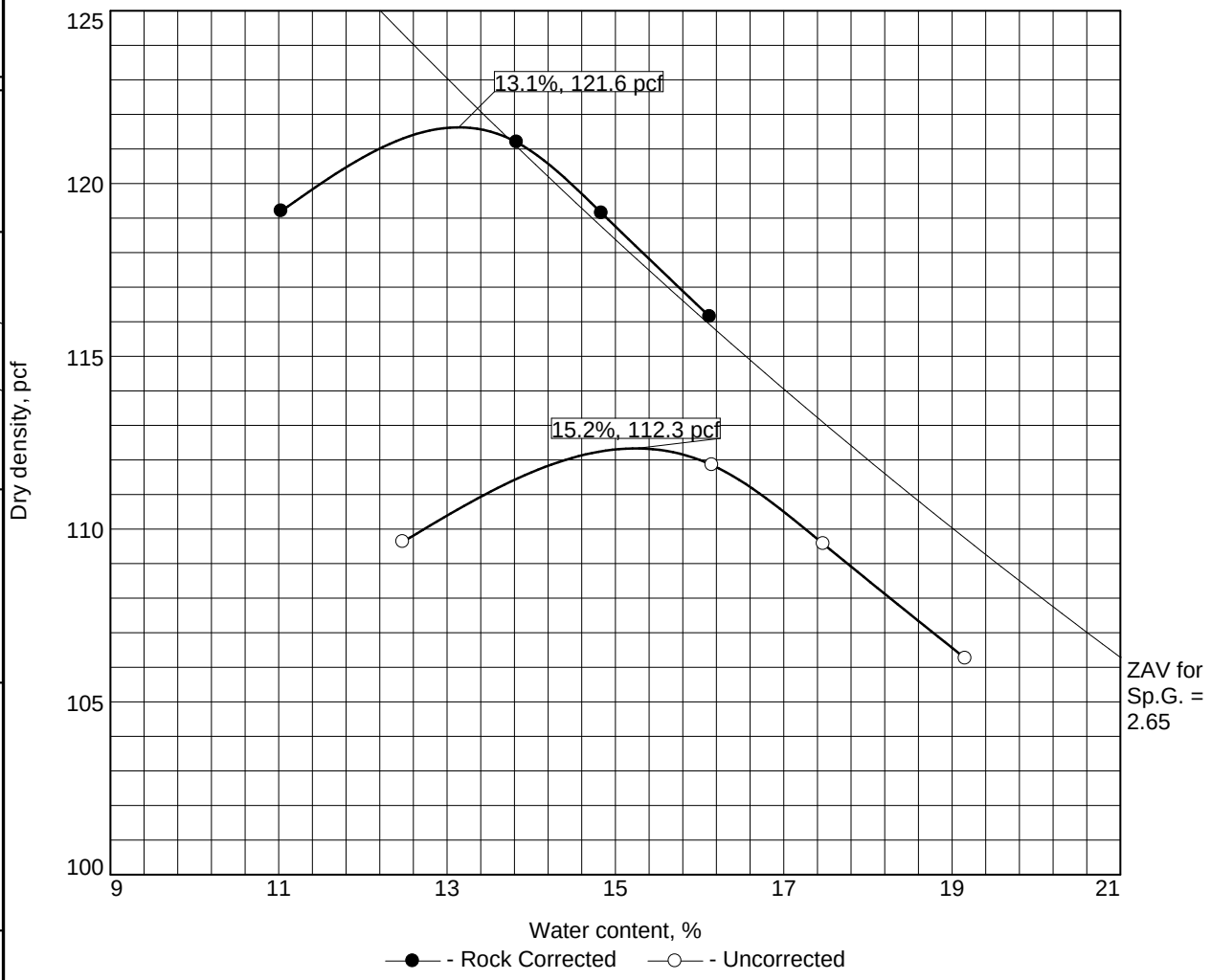
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-43-C

Tested By: HW **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification USCS	Classification AASHTO	Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	SC	A-2-6(2)		2.65	34	20	23.8	33.3

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 121.6 pcf	112.3 pcf	Brown Clayey Sand with Gravel
Optimum moisture = 13.1 %	15.2 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date:
Loc.: Lower Dump 1 Stockpile (JHL) **Sample No.:** SLF-43-C

Remarks:

NewFields

Figure SLF-43-C

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-43-C
Project:	VLF2 PH3		
Project No.:	475.0106.060	Location:	Lower SLF Dump 1 Stockpile (JHL)
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	7/10/2023	Checked By:	TW
Test Finished:	7/20/2023	Sample Description:	Red brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	628		591.90
Dry Soil + Tare (g)	555.15		524.00
Tare (g)	0.00		119.50
Wt. of Water (g)	72.85		67.90
Dry Soil (g)	555.15		404.50
Moisture Content (%)	13.1		16.8
Sample Volume (ft^3)	0.01063	0.01062	
Dry Density (pcf)	115.2	115.2	
Wet Density (pcf)	130.3	134.1	
Saturation (%)	79.7	100.0	
Percent Compaction	94.7	94.7	
Height (in)	3.018	3.018	
Diameter (in)	2.783	2.784	
Area (in^2)	6.084	6.086	
Est. Moisture Content after Consolidation (%)		16.5%	
Est. Void Ratio after Consolidation		0.436	
Specific Gravity*	2.65		

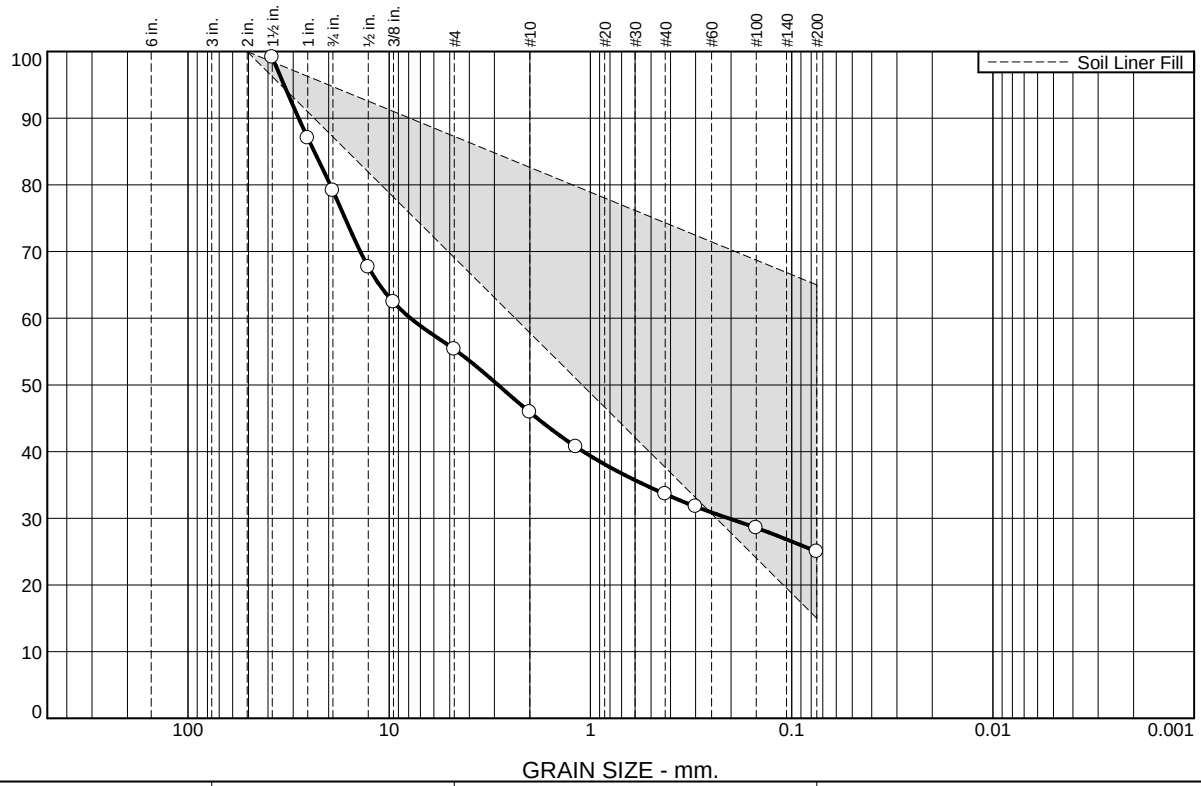
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	121.6
Initial Remolded Dry Density (pcf):	115.2
Initial Percent Compaction:	95%
Initial Void Ratio:	0.435
Optimum Moisture Content(%):	13.1
Initial Water Content (%):	13.1
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**9.2E-07**
Gradient Range (h/L):	0.9 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
		23.7	9.5	12.3	8.6	25.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	99.1		
1	87.0		
.75	79.1		
0.5	67.7		
.375	62.4		
#4	55.4		
#10	45.9		
#16	40.7		
#40	33.6		
#50	31.7		
#100	28.6		
#200	25.0	15.0 - 65.0	

* Soil Liner Fill

Material Description

Red-Brown Clayey Sand With Gravel

Atterberg Limits

PL= 15 LL= 28 PI= 13

Coefficients

D_{90}= 28.1780 D_{85}= 23.5832 D_{60}= 7.8359
D_{50}= 2.8780 D_{30}= 0.2060 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= GC AASHTO= A-2-6(0)

Remarks

Location: Lower Dump 1 Stockpile (JHL)
Sample Number: SLF-44-C

Date: 5-24-2023

NewFields

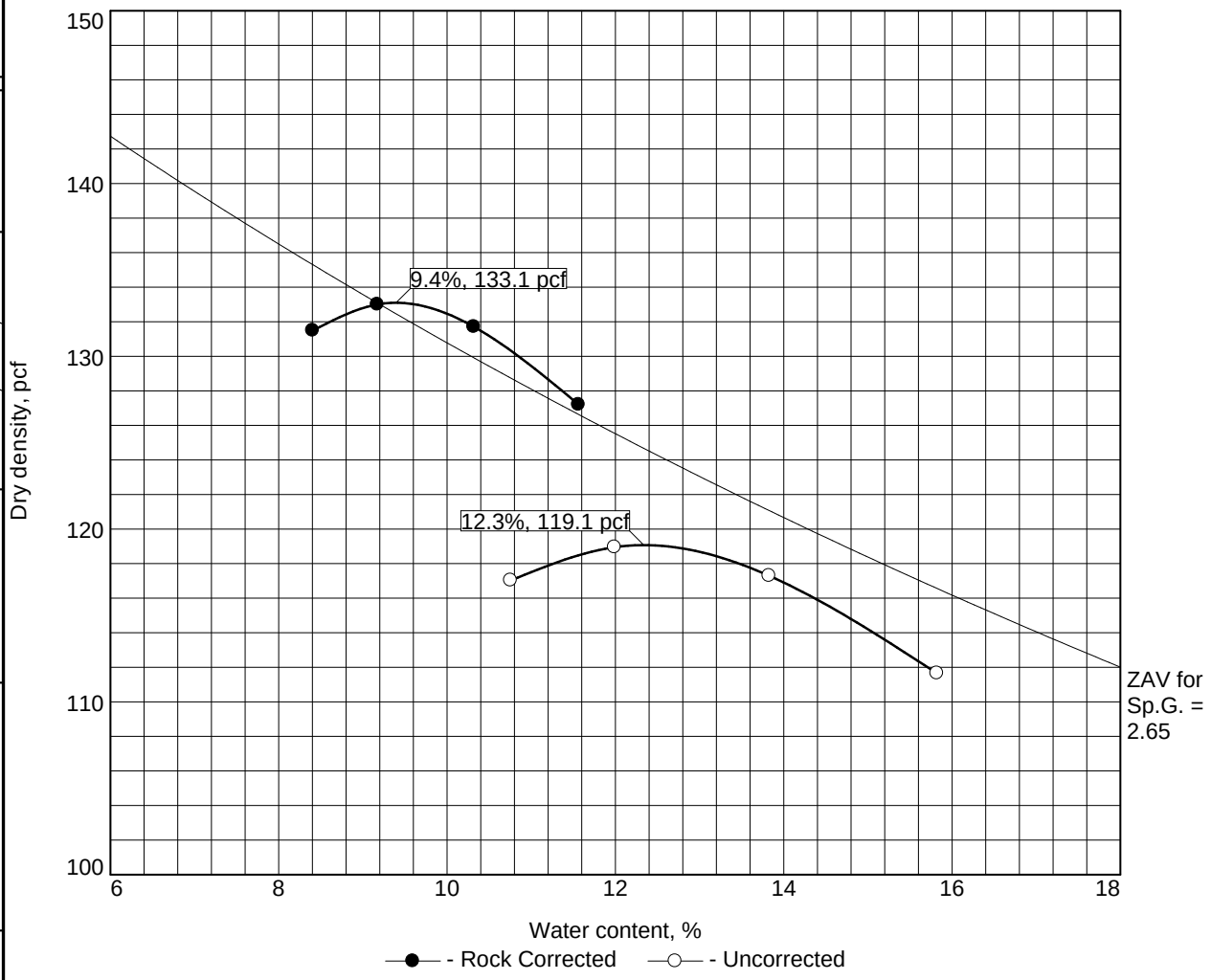
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-44-C

Tested By: HW **Checked By:** DK

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	GC	A-2-6(0)		2.65	28	13	37.6	25.0

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 133.1 pcf	119.1 pcf	Red-Brown Clayey Sand With Gravel
Optimum moisture = 9.4 %	12.3 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date:
Loc.: Lower Dump 1 Stockpile (JHL) **Sample No.:** SLF-44-C

Remarks:

NewFields

Figure SLF-44-C

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-44-C
Project:	VLF2 PH3	Field Sample No.:	SLF-44-C
Project No.:	475.0106.060	Location:	Lower SLF Dump 1 Stockpile (JHL
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	7/21/2023	Checked By:	TW
Test Finished:	7/27/2023	Sample Description:	Red brown clayey gravel with sand

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 2: Effective Stress (psi)	20
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	664.1		612.90
Dry Soil + Tare (g)	606.99		558.60
Tare (g)	0.00		119.50
Wt. of Water (g)	57.11		54.30
Dry Soil (g)	606.99		439.10
Moisture Content (%)	9.4		12.4
Sample Volume (ft^3)	0.01064	0.01060	
Dry Density (pcf)	125.6	126.1	
Wet Density (pcf)	140.6	141.0	
Saturation (%)	100.0%	100.0	
Percent Compaction	94.4	94.8	
Height (in)	3.014	3.004	
Diameter (in)	2.783	2.774	
Area (in^2)	6.083	6.042	
Est. Moisture Content after Consolidation (%)		11.8%	
Est. Void Ratio after Consolidation		0.312	
Specific Gravity*	2.65		

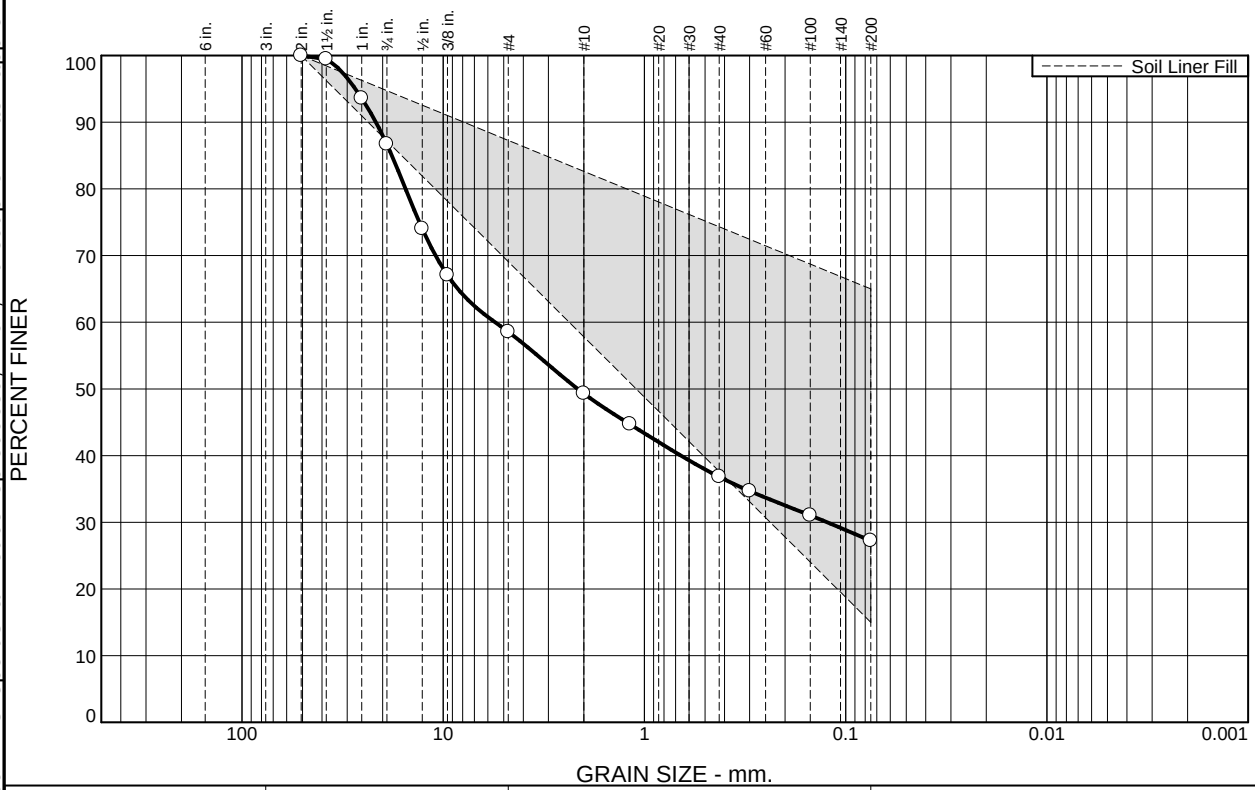
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	133.1
Initial Remolded Dry Density (pcf):	125.6
Initial Percent Compaction:	94%
Initial Void Ratio:	0.316
Optimum Moisture Content(%):	9.4
Initial Water Content (%):	9.4
Confining Pressure (psi):	20.0
Hydraulic Conductivity, k_{20} (cm/s):	**3.4E-07**
Gradient Range (h/L):	0.5 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	13.3	28.1	9.3	12.5	9.6	27.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	99.4		
1	93.6		
.75	86.7		
0.5	74.0		
.375	67.1		
#4	58.6		
#10	49.3		
#16	44.7		
#40	36.8		
#50	34.7		
#100	31.0		
#200	27.2	15.0 - 65.0	

* Soil Liner Fill

Material Description

Red-Brown Clayey Sand WIth Gravel

Atterberg Limits

PL= 14 LL= 29 PI= 15

Coefficients

D_{90}= 21.6057 D_{85}= 17.9859 D_{60}= 5.5205
D_{50}= 2.1455 D_{30}= 0.1236 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= GC AASHTO= A-2-6(1)

Remarks

Location: Lower Dump 1 Stockpile (JHL)
Sample Number: SLF-45-C

Date: 5-24-2023

NewFields

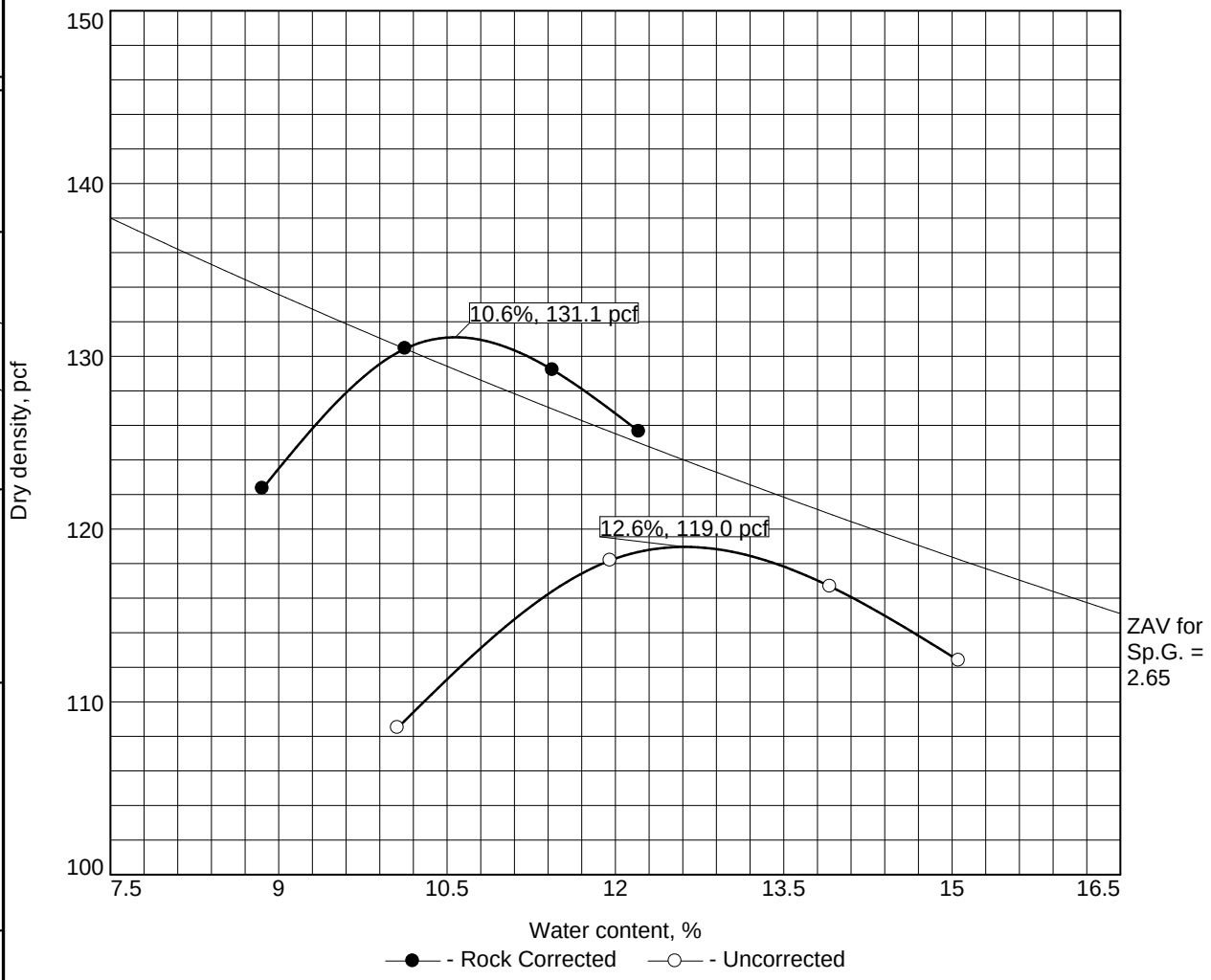
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-45-C

Tested By: HW **Checked By:** DK

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	GC	A-2-6(1)		2.65	29	15	32.9	27.2

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 131.1 pcf	119.0 pcf	Red-Brown Clayey Sand WIth Gravel
Optimum moisture = 10.6 %	12.6 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date:
Loc.: Lower Dump 1 Stockpile (JHL) **Sample No.:** SLF-45-C

Remarks:

NewFields

Figure SLF-45-C

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-45-C
Project:	VLF2 PH3		
Project No.:	475.0106.060	Location:	Lower SLF Dump 1 Stockpile (JHL)
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	7/21/2023	Checked By:	TW
Test Finished:	7/27/2023	Sample Description:	Red brown clayey gravel with sand

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	661.8		604.80
Dry Soil + Tare (g)	598.27		550.90
Tare (g)	0.00		119.50
Wt. of Water (g)	63.53		53.90
Dry Soil (g)	598.27		431.40
Moisture Content (%)	10.6		12.5
Sample Volume (ft^3)	0.01065	0.01064	
Dry Density (pcf)	123.8	123.8	
Wet Density (pcf)	137.0	139.5	
Saturation (%)	83.8	100.0	
Percent Compaction	94.5	94.4	
Height (in)	3.018	3.018	
Diameter (in)	2.787	2.787	
Area (in^2)	6.099	6.100	
Est. Moisture Content after Consolidation (%)		12.7%	
Est. Void Ratio after Consolidation		0.336	
Specific Gravity*	2.65		

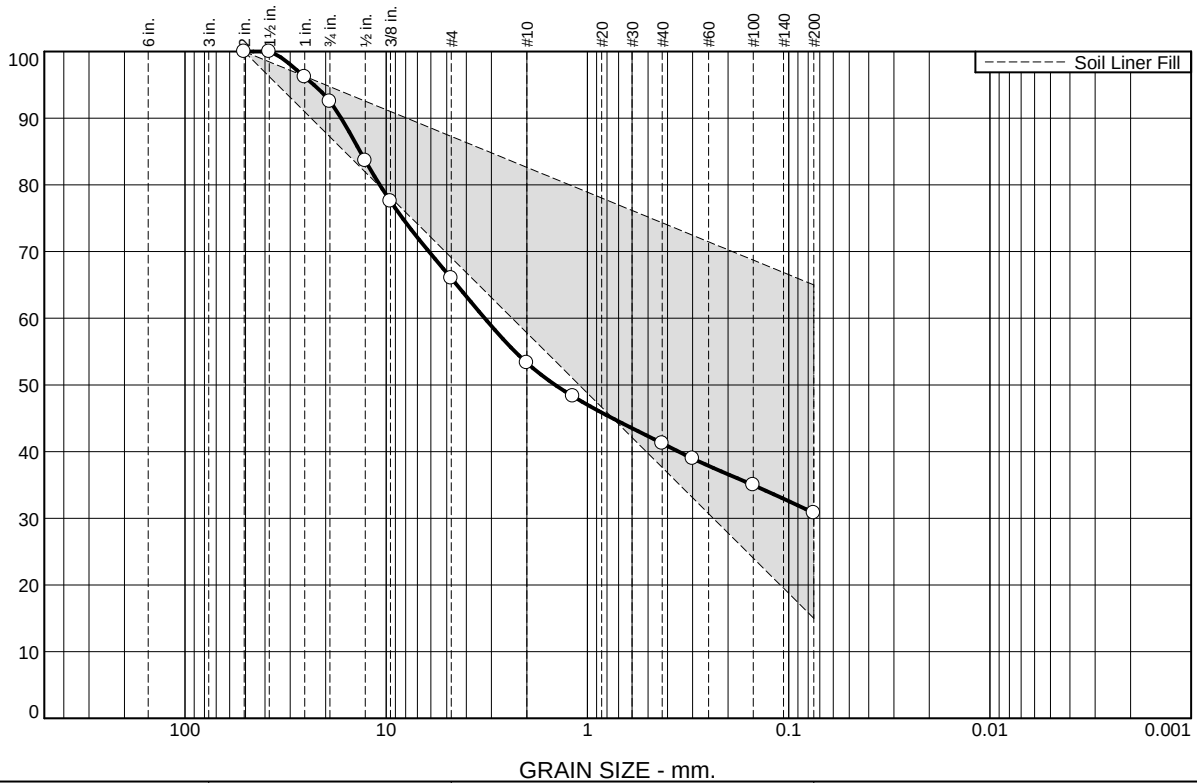
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	131.1
Initial Remolded Dry Density (pcf):	123.8
Initial Percent Compaction:	94%
Initial Void Ratio:	0.335
Optimum Moisture Content(%):	10.6
Initial Water Content (%):	10.6
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**9.5E-07**
Gradient Range (h/L):	0.8 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.5	26.5	12.7	12.1	10.4	30.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	100.0		
1	96.2		
.75	92.5		
0.5	83.6		
.375	77.6		
#4	66.0		
#10	53.3		
#16	48.3		
#40	41.2		
#50	39.0		
#100	35.0		
#200	30.8	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown Clayey Sand With Gravel

Atterberg Limits

PL= 12 LL= 27 PI= 15

Coefficients

D_{90}= 16.7196 D_{85}= 13.4676 D_{60}= 3.2399
D_{50}= 1.4460 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(1)

Remarks

Location: Lower Dump 1 Stockpile (JHL)
Sample Number: SLF-46-C

Date: 5-25-23

NewFields

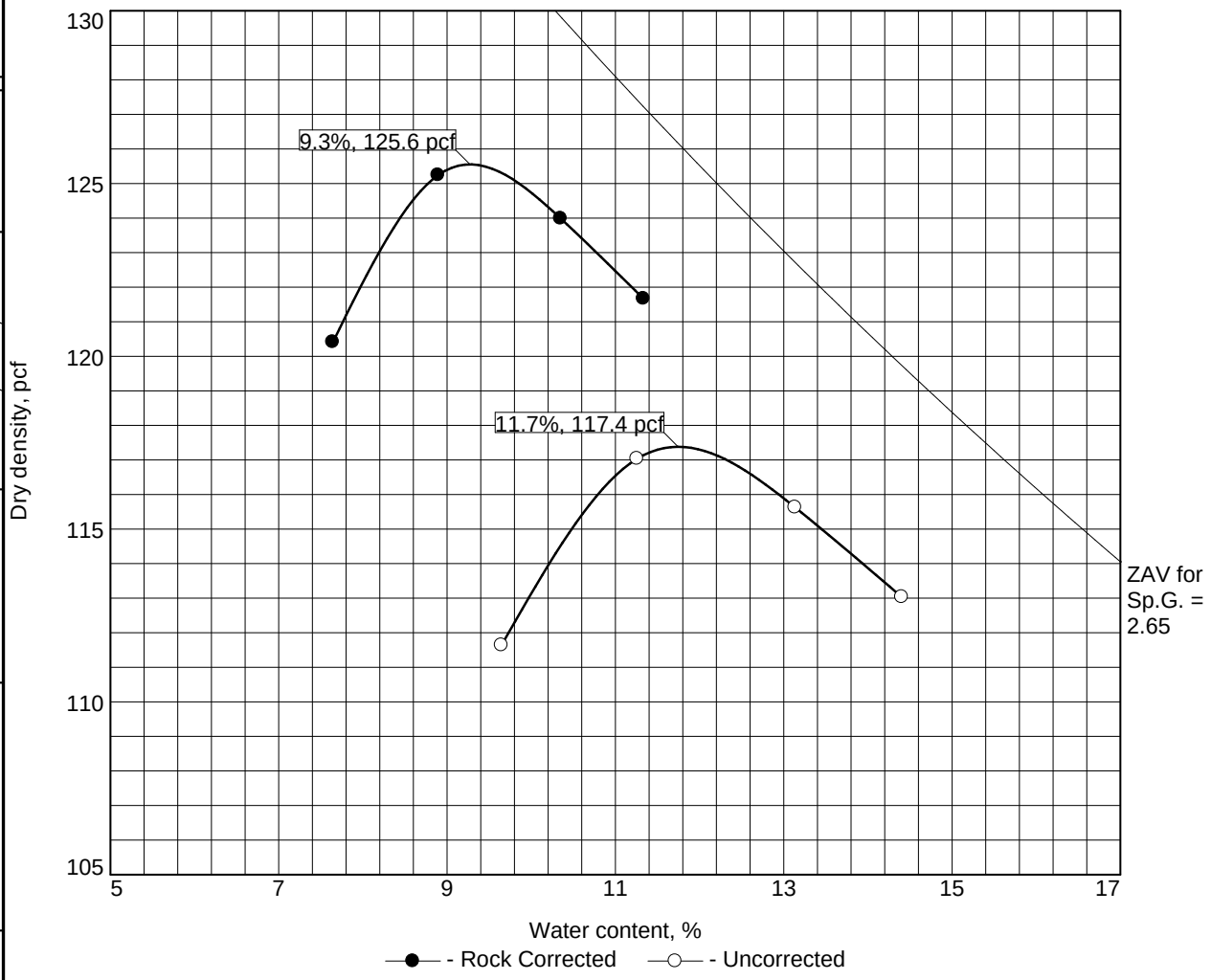
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-46-C

Tested By: HW/KE/MW **Checked By:** DK

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification USCS	Classification AASHTO	Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	SC	A-2-6(1)		2.65	27	15	22.4	30.8

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 125.6 pcf	117.4 pcf	Brown Clayey Sand With Gravel
Optimum moisture = 9.3 %	11.7 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date:
Loc.: Lower Dump 1 Stockpile (JHL) **Sample No.:** SLF-46-C

Remarks:

NewFields

Figure SLF-46-C

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-46-C
Project:	VLF2 PH3	Field Sample No.:	SLF-46-C
Project No.:	475.0106.060	Location:	Upper SLF Dump 1 Stockpile (JHL
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	7/30/2023	Checked By:	TW
Test Finished:	8/8/2023	Sample Description:	Red brown clayey gravel with sand

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 2: Effective Stress (psi)	20
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	626.8		612.20
Dry Soil + Tare (g)	572.90		550.30
Tare (g)	0.00		119.50
Wt. of Water (g)	53.90		61.90
Dry Soil (g)	572.90		430.80
Moisture Content (%)	9.4		14.4
Sample Volume (ft^3)	0.01060	0.01054	
Dry Density (pcf)	119.1	119.8	
Wet Density (pcf)	136.6	137.0	
Saturation (%)	100.0%	100.0	
Percent Compaction	94.8	95.4	
Height (in)	3.011	3.001	
Diameter (in)	2.777	2.768	
Area (in^2)	6.057	6.017	
Est. Moisture Content after Consolidation (%)		14.4%	
Est. Void Ratio after Consolidation		0.381	
Specific Gravity*	2.65		

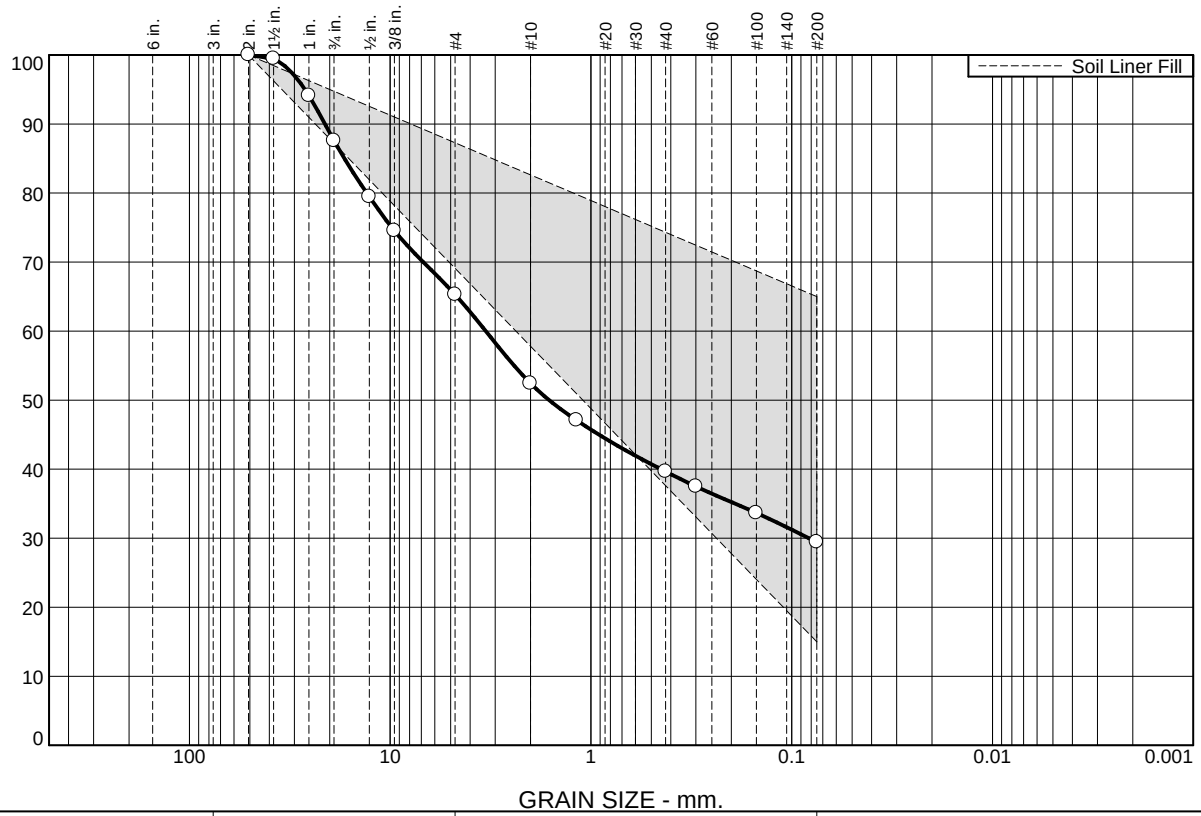
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	125.6
Initial Remolded Dry Density (pcf):	119.0
Initial Percent Compaction:	95%
Initial Void Ratio:	0.390
Optimum Moisture Content(%):	9.3
Initial Water Content (%):	9.4
Confining Pressure (psi):	20.0
Hydraulic Conductivity, k_{20} (cm/s):	**6.7E-07**
Gradient Range (h/L):	0.8 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	12.4	22.3	12.9	12.7	10.3	29.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	99.5		
1	94.1		
.75	87.6		
0.5	79.5		
.375	74.5		
#4	65.3		
#10	52.4		
#16	47.1		
#40	39.7		
#50	37.5		
#100	33.7		
#200	29.4	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown CLayey Sand With Gravel

Atterberg Limits

PL= 14 LL= 29 PI= 15

Coefficients

D_{90}= 21.1317 D_{85}= 16.9066 D_{60}= 3.3427
D_{50}= 1.6152 D_{30}= 0.0821 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(1)

Remarks

Location: Lower Dump 1 Stockpile (JHL)
Sample Number: SLF-47-C

Date: 5/30/2023

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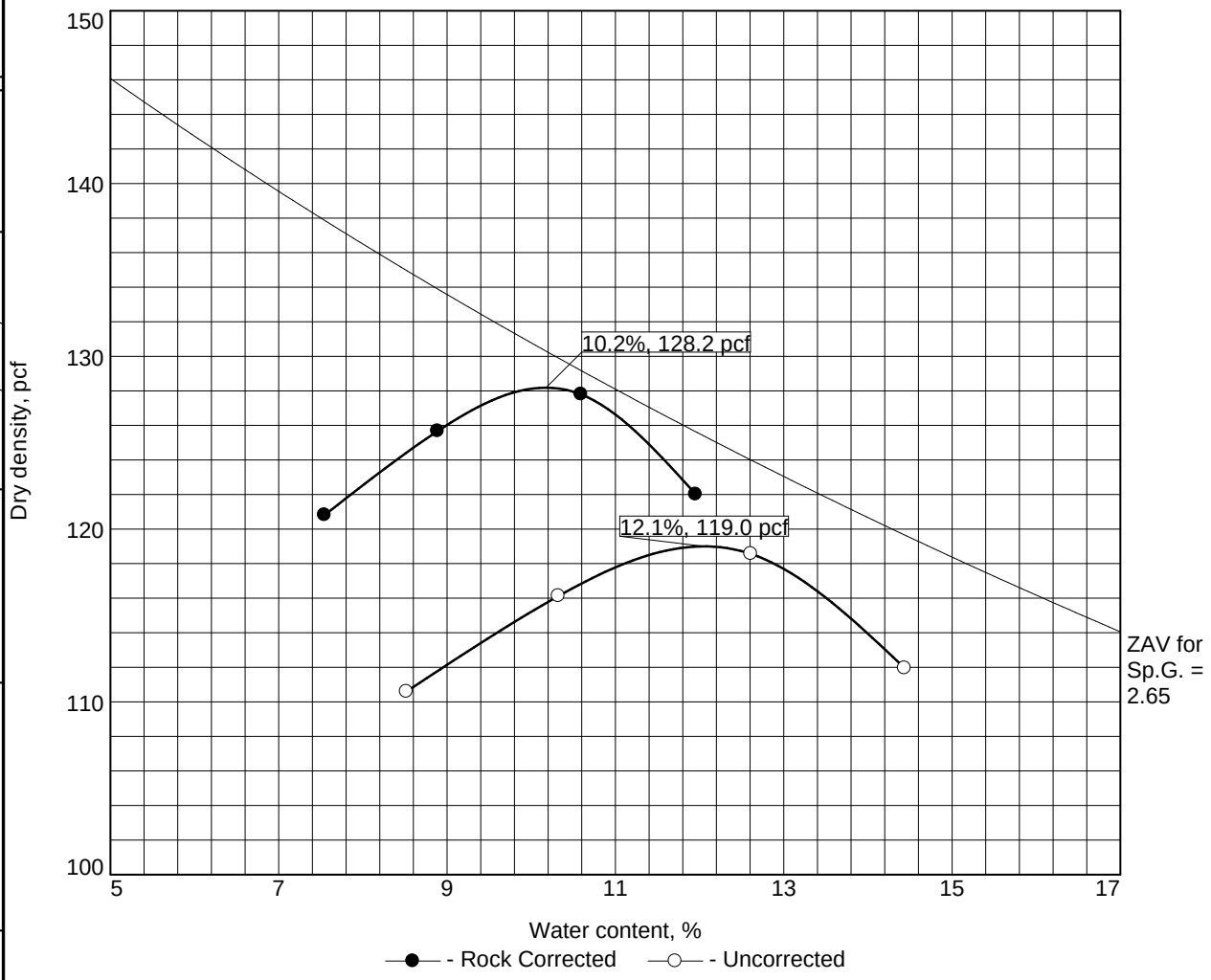
Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3

Project No: 475.0106.056 **Figure** SLF-47-C

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification USCS	Classification AASHTO	Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	SC	A-2-6(1)		2.65	29	15	25.5	29.4

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 128.2 pcf	119.0 pcf	Brown CLayey Sand With Gravel
Optimum moisture = 10.2 %	12.1 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date:
Loc.: Lower Dump 1 Stockpile (JHL) **Sample No.:** SLF-47-C

Remarks:

NewFields

Figure SLF-47-C

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-47-C
Project:	VLF2 PH3		
Project No.:	475.0106.060	Location:	Upper SLF Dump 1 Stockpile (JHL)
Phase:	A	Elevation/Depth:	Stockpile
Requested By:	TW	Tested By:	TW
Test Started:	8/14/2023	Checked By:	TW
Test Finished:	8/20/2023	Sample Description:	Red brown clayey gravel with sand

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	645.3		604.90
Dry Soil + Tare (g)	585.93		546.50
Tare (g)	0.00		119.50
Wt. of Water (g)	59.37		58.40
Dry Soil (g)	585.93		427.00
Moisture Content (%)	10.1		13.7
Sample Volume (ft^3)	0.01063	0.01057	
Dry Density (pcf)	121.5	121.8	
Wet Density (pcf)	133.9	138.4	
Saturation (%)	74.8	100.0	
Percent Compaction	94.8	95.0	
Height (in)	3.018	3.014	
Diameter (in)	2.783	2.780	
Area (in^2)	6.084	6.068	
Est. Moisture Content after Consolidation (%)		13.4%	
Est. Void Ratio after Consolidation		0.356	
Specific Gravity*	2.65		

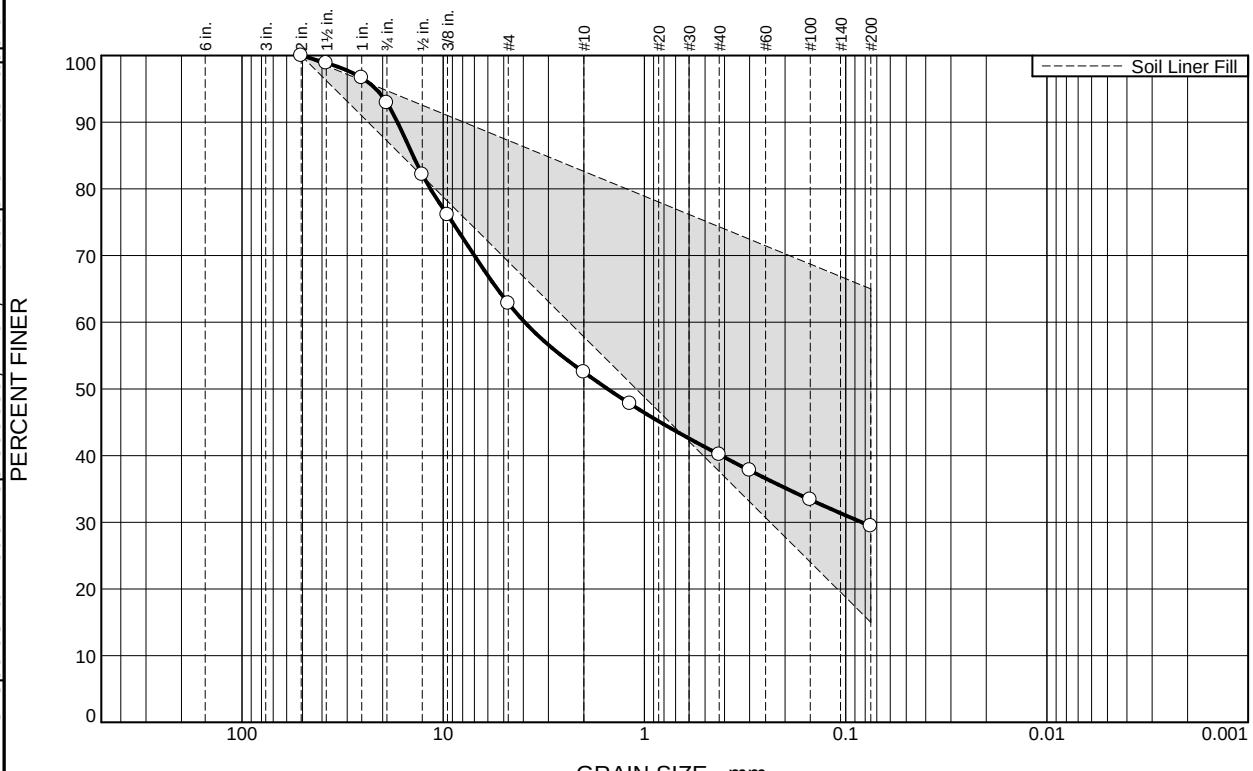
*Specific gravity is assumed

Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	128.2
Initial Remolded Dry Density (pcf):	121.5
Initial Percent Compaction:	95%
Initial Void Ratio:	0.361
Optimum Moisture Content(%):	10.2
Initial Water Content (%):	10.1
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**5.3E-07**
Gradient Range (h/L):	1.0 1.3

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.1	30.1	10.3	12.3	10.8	29.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	98.9		
1	96.6		
.75	92.9		
0.5	82.1		
.375	76.1		
#4	62.8		
#10	52.5		
#16	47.8		
#40	40.2		
#50	37.8		
#100	33.4		
#200	29.4	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown-Red clayey gravel with sand

Atterberg Limits

PL= 16 LL= 36 PI= 20

Coefficients

D_{90}= 16.8607 D_{85}= 14.1219 D_{60}= 3.9354
D_{50}= 1.5234 D_{30}= 0.0832 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= GC AASHTO= A-2-6(1)

Remarks

Material discarded before Proctor

Location: N58,693.7 E35505.8
Sample Number: SLF-48-R **Depth:** 10,055' **Date:** 6/1/2023

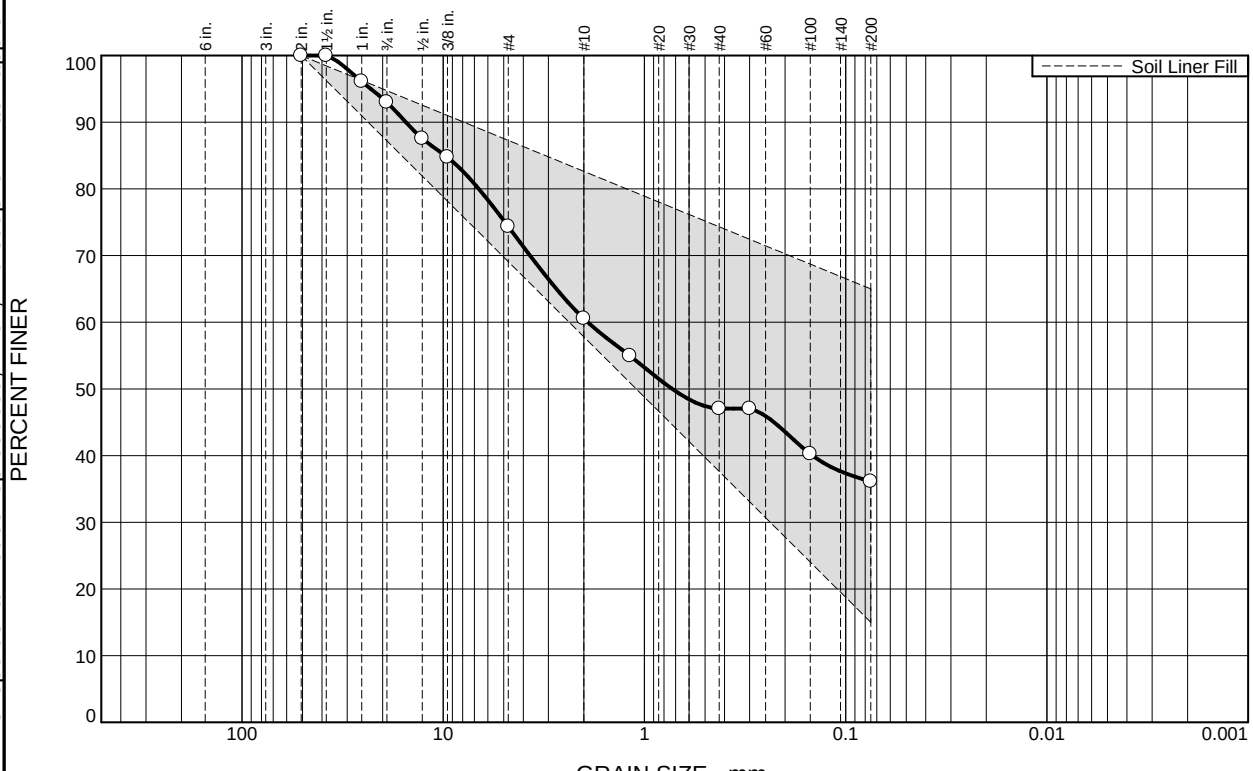
NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** SLF-48-R

Tested By: HW/KE/MW **Checked By:** DK

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.0	18.7	13.8	13.5	10.9	36.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	100.0	
1.5	100.0		
1	96.1		
.75	93.0		
0.5	87.6		
.375	84.7		
#4	74.3		
#10	60.5		
#16	55.0		
#40	47.0		
#50	47.0		
#100	40.3		
#200	36.1	15.0 - 65.0	

* Soil Liner Fill

Material Description

Brown-red clayey sand with gravel

Atterberg Limits

PL= 12 LL= 36 PI= 24

Coefficients

D_{90}= 15.3158 D_{85}= 9.7650 D_{60}= 1.9128
D_{50}= 0.7270 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-6(3)

Remarks

Location: N58,927.2 E36,260.9
Sample Number: SLF-49-R **Depth:** 10,059' **Date:** 6/8/2023

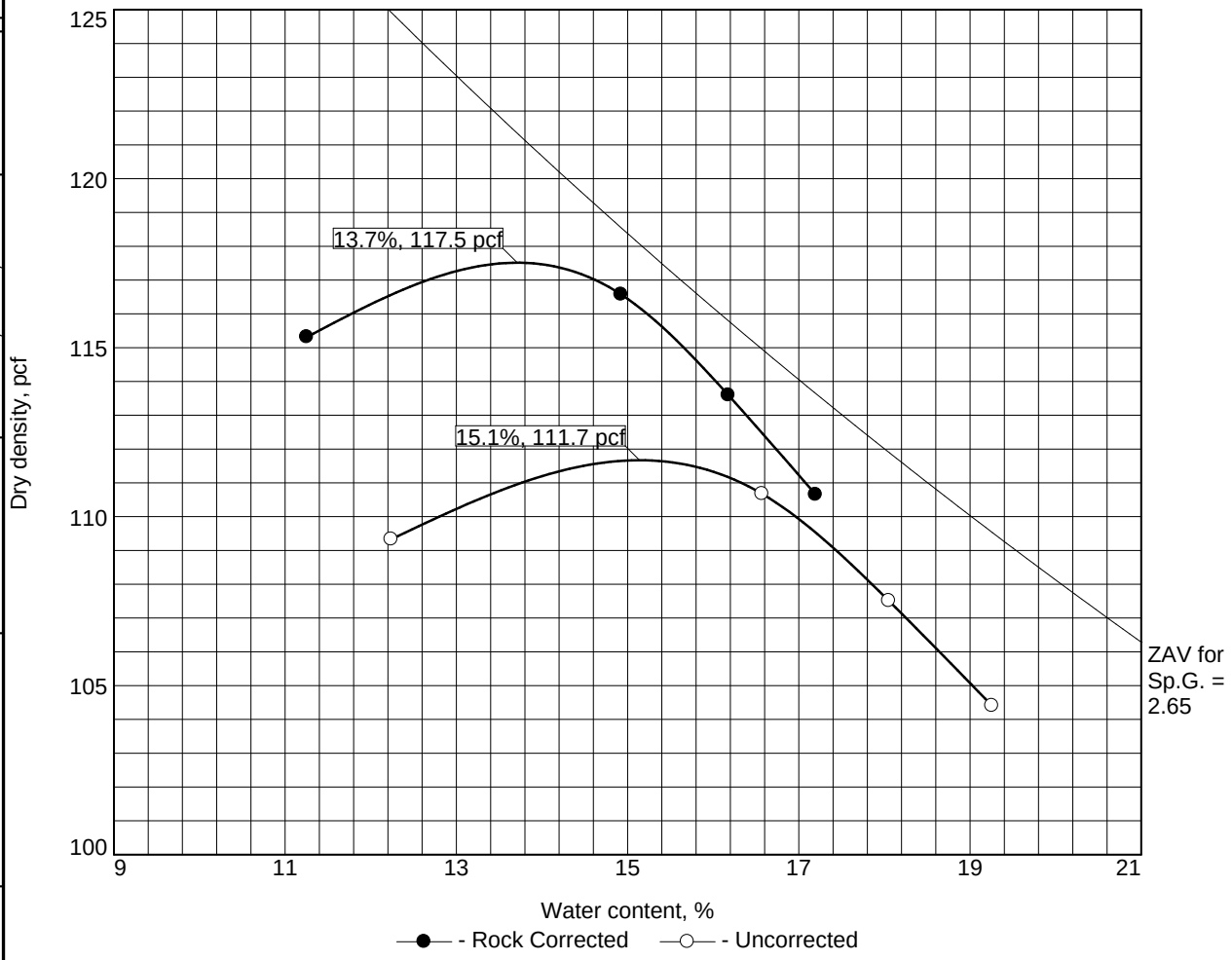
NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** SLF-49-R

Tested By: MW/KE **Checked By:** DK

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
10,059'	SC	A-6(3)		2.65	36	24	15.3	36.1

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 117.5 pcf	111.7 pcf	Brown-red clayey sand with gravel
Optimum moisture = 13.7 %	15.1 %	

Project No. 475.0106.056 **Client:** Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Date: 06/12/23
Location: N58,927.2 E36,260.9 **Sample Number:** SLF-49-R

Remarks:

NewFields

Figure SLF-49-R

Tested By: DK **Checked By:** TW

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Cripple Creek and Victor Gold Mines	Lab Sample No.:	SLF-49-R
Project:	VLF2 PH3		
Project No.:	475.0106.060	Location:	N 58,927 E 36,261
Phase:	A	Elevation/Depth:	FG
Requested By:	TW	Tested By:	TW
Test Started:	8/14/2023	Checked By:	TW
Test Finished:	8/20/2023	Sample Description:	Red brown clayey sand with gravel

Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	45
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	610.3		586.90
Dry Soil + Tare (g)	537.06		513.40
Tare (g)	0.00		119.50
Wt. of Water (g)	73.24		73.50
Dry Soil (g)	537.06		393.90
Moisture Content (%)	13.6		18.7
Sample Volume (ft^3)	0.01057	0.01057	
Dry Density (pcf)	111.9	111.9	
Wet Density (pcf)	127.3	132.0	
Saturation (%)	76.0	100.0	
Percent Compaction	95.2	95.2	
Height (in)	3.017	3.018	
Diameter (in)	2.777	2.778	
Area (in^2)	6.055	6.059	
Est. Moisture Content after Consolidation (%)		18.1%	
Est. Void Ratio after Consolidation		0.480	
Specific Gravity*	2.65		

*Specific gravity is assumed

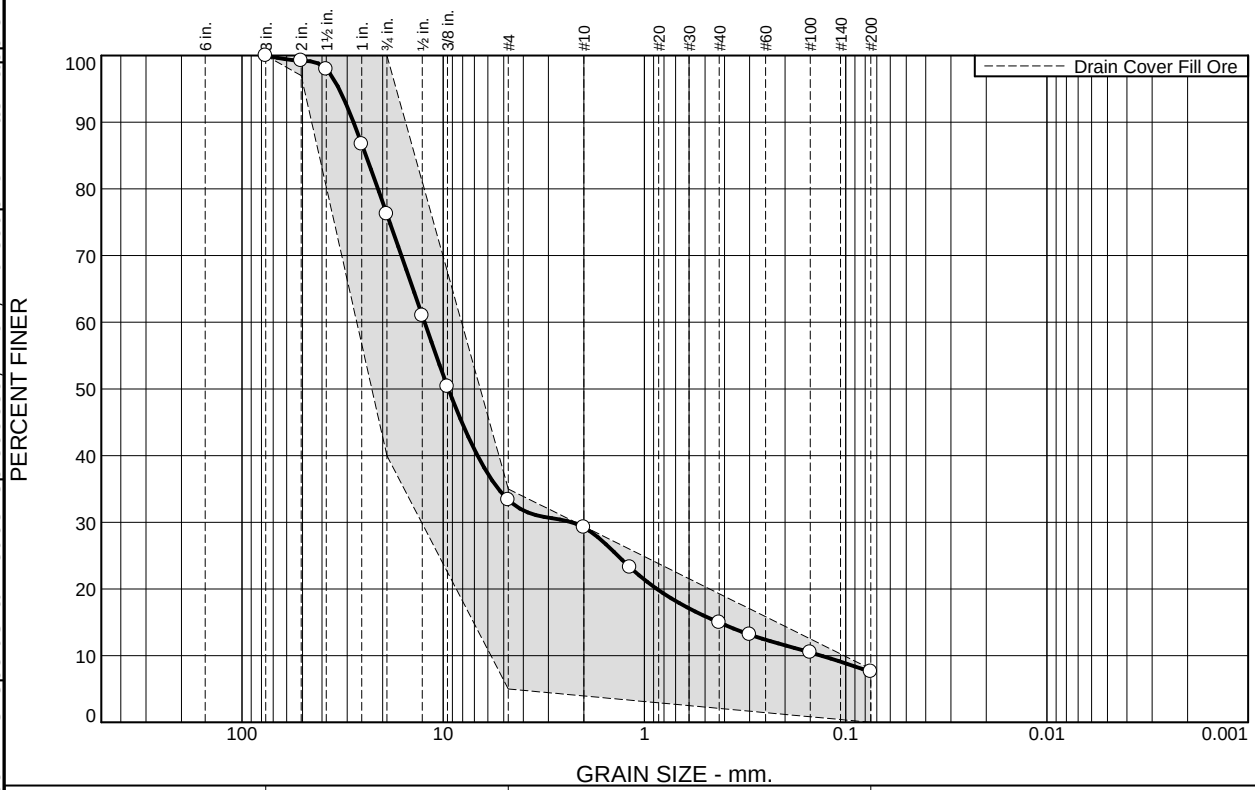
Maximum Dry Density:
ASTM D 698

Maximum Dry Density (pcf):	117.5
Initial Remolded Dry Density (pcf):	111.9
Initial Percent Compaction:	95%
Initial Void Ratio:	0.478
Optimum Moisture Content(%):	13.7
Initial Water Content (%):	13.6
Confining Pressure (psi):	5.0
Hydraulic Conductivity, k_{20} (cm/s):	**1.5E-07**
Gradient Range (h/L):	1.2 1.3

APPENDIX G.6 – DRAIN COVER FILL (CRUSHED ORE) LABORATORY TEST RESULTS

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	23.8	42.8	4.2	14.2	7.4	7.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0	100.0	
2	99.2	97.0 - 100.0	
1.5	98.0		
1	86.7		
.75	76.2	40.0 - 100.0	
0.5	61.0		
.375	50.4		
#4	33.4	5.0 - 35.0	
#10	29.2		
#16	23.2		
#40	15.0		
#50	13.2		
#100	10.5		
#200	7.6	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Red silty gravel with sand

Atterberg Limits

PL= 23 LL= 27 PI= 4

Coefficients

D_{90}= 27.9027 D_{85}= 24.2095 D_{60}= 12.3683
D_{50}= 9.4257 D_{30}= 2.3004 D_{15}= 0.4280
D_{10}= 0.1324 C_u= 93.43 C_c= 3.23

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Location: P-4508
Sample Number: DCFO-1-R **Date:** 8/17/2023

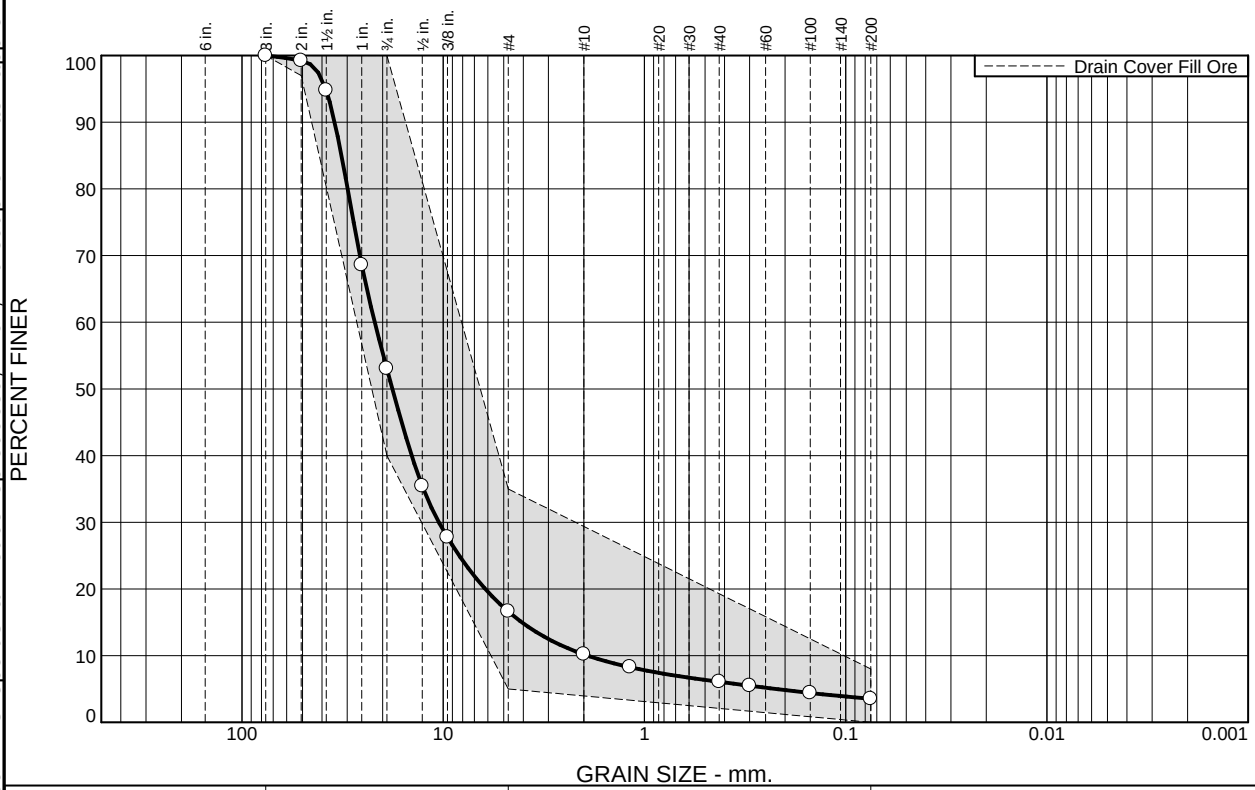
NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** DCFO-1-R

Tested By: HW/CU/SM **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	46.9	36.5	6.4	4.1	2.6	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0	100.0	
2	99.2	97.0 - 100.0	
1.5	94.8		
1	68.6		
.75	53.1	40.0 - 100.0	
0.5	35.4		
.375	27.8		
#4	16.6	5.0 - 35.0	
#10	10.2		
#16	8.3		
#40	6.1		
#50	5.5		
#100	4.4		
#200	3.5	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Light brown well-graded gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 34.6139 D_{85}= 32.0150 D_{60}= 21.9095
D_{50}= 17.8797 D_{30}= 10.5122 D_{15}= 4.0653
D_{10}= 1.9190 C_u= 11.42 C_c= 2.63

Classification

USCS= GW AASHTO= A-1-a

Remarks

Location: P-4524
Sample Number: DCFO-2-R **Date:** 09/06/2023

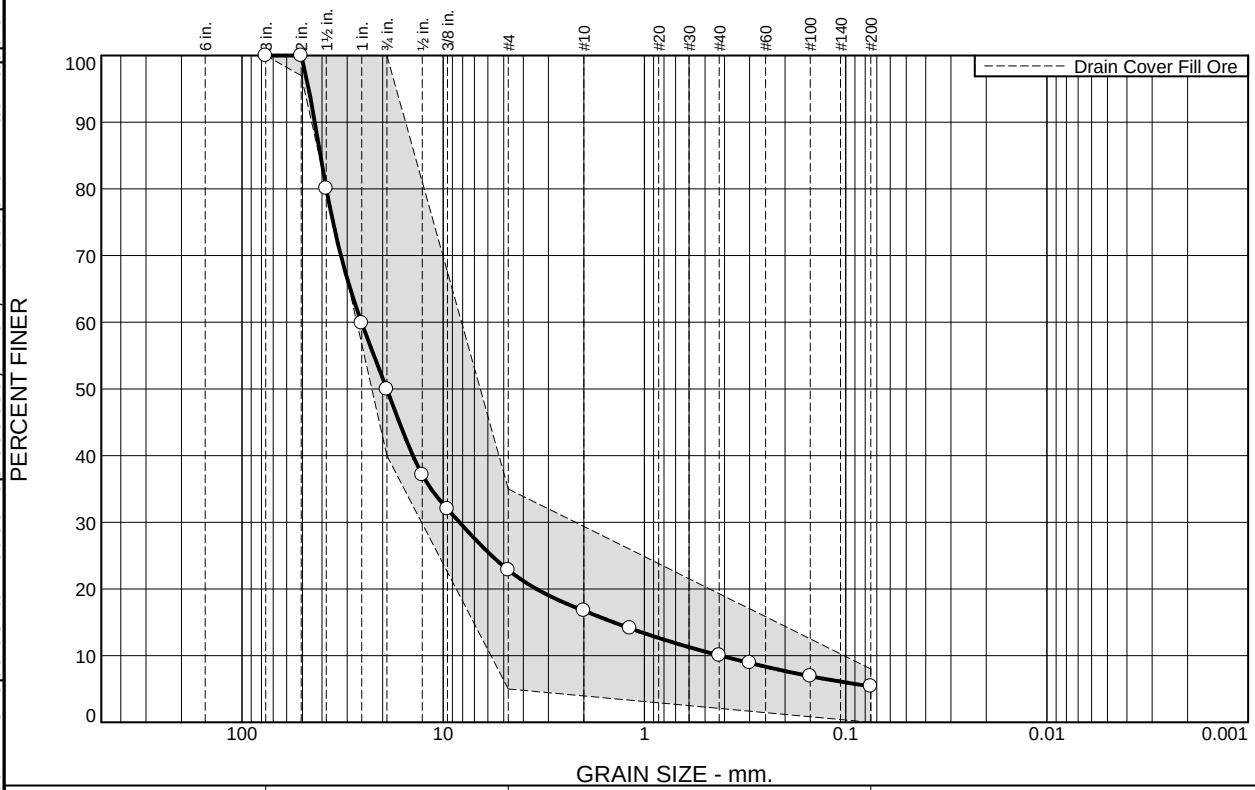
NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** DCFO-2-R

Tested By: SCM **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	50.1	27.1	6.1	6.7	4.6	5.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0	100.0	
2	100.0	97.0 - 100.0	
1.5	80.1		
1	59.9		
.75	49.9	40.0 - 100.0	
0.5	37.1		
.375	32.0		
#4	22.8	5.0 - 35.0	
#10	16.7		
#16	14.1		
#40	10.0		
#50	8.9		
#100	6.9		
#200	5.4	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Gray brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 43.4265 D_{85}= 40.7042 D_{60}= 25.4840
D_{50}= 19.0788 D_{30}= 8.3045 D_{15}= 1.4217
D_{10}= 0.4200 C_u= 60.68 C_c= 6.44

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Location: P-4651
Sample Number: DCFO-3-R **Date:** 09/14/2023

NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** DCFO-3-R

Tested By: CU & SCM **Checked By:** TW

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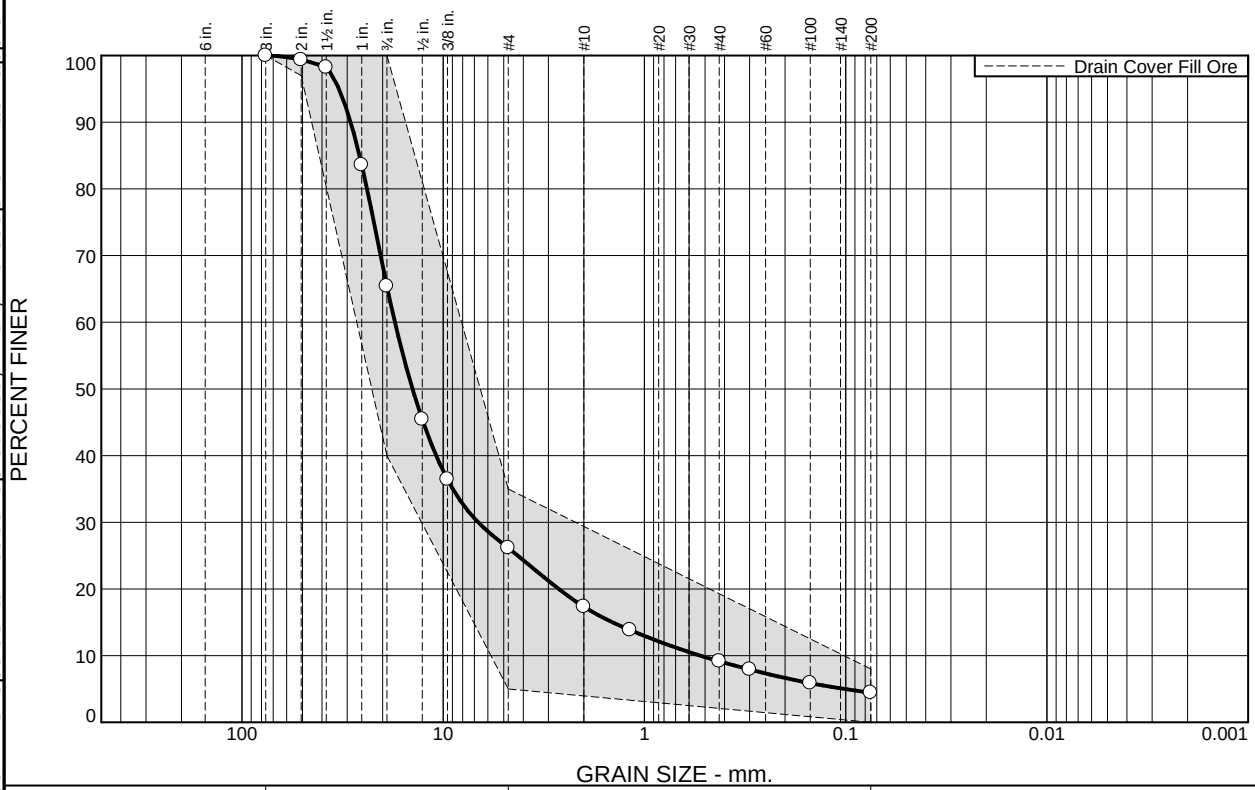
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	34.6	39.3	8.8	8.2	4.7	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0	100.0	
2	99.4	97.0 - 100.0	
1.5	98.2		
1	83.6		
.75	65.4	40.0 - 100.0	
0.5	45.4		
.375	36.4		
#4	26.1	5.0 - 35.0	
#10	17.3		
#16	13.8		
#40	9.1		
#50	7.9		
#100	5.9		
#200	4.4	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Gray brown poorly graded gravel with sand

Atterberg Limits

PL= NP LL= PI=

Coefficients

D_{90}= 28.8207 D_{85}= 26.0471 D_{60}= 17.3707
D_{50}= 14.2022 D_{30}= 6.7040 D_{15}= 1.4392
D_{10}= 0.5281 C_u= 32.89 C_c= 4.90

Classification

USCS= GP AASHTO=

Remarks

Location: P-4564
Sample Number: DCFO-4-R **Date:** 09/15/2023

NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** DCFO-4-R

Tested By: CU & SCM **Checked By:** TW

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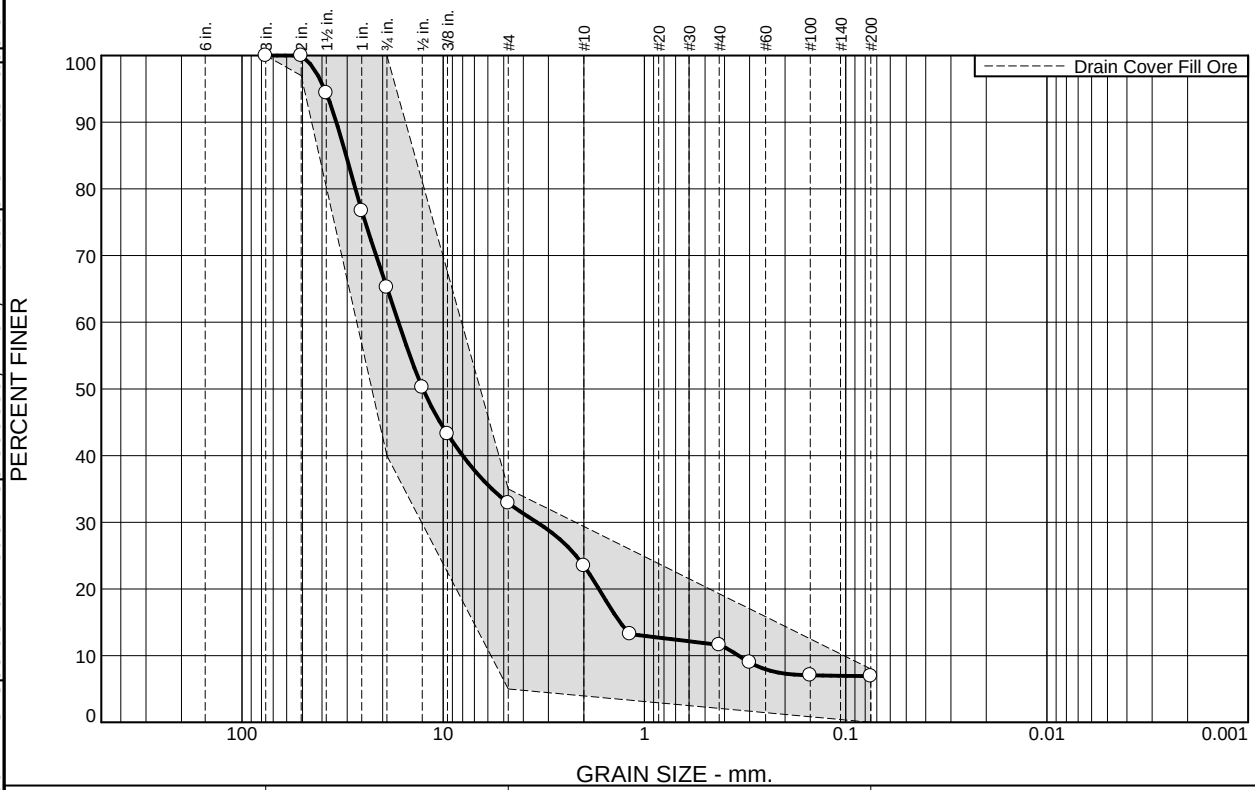
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	34.8	32.3	9.4	11.9	4.7	6.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0	100.0	
2	100.0	97.0 - 100.0	
1.5	94.4		
1	76.7		
.75	65.2	40.0 - 100.0	
0.5	50.2		
.375	43.3		
#4	32.9	5.0 - 35.0	
#10	23.5		
#16	13.2		
#40	11.6		
#50	9.0		
#100	7.1		
#200	6.9	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Gray brown well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 33.9364 D_{85}= 30.3623 D_{60}= 16.6786
D_{50}= 12.6080 D_{30}= 3.4224 D_{15}= 1.3209
D_{10}= 0.3402 C_u= 49.03 C_c= 2.06

Classification

USCS= GW-GM AASHTO= A-1-a

Remarks

Location: P-4271
Sample Number: DCFO-5-R
Date: 09/20/2023

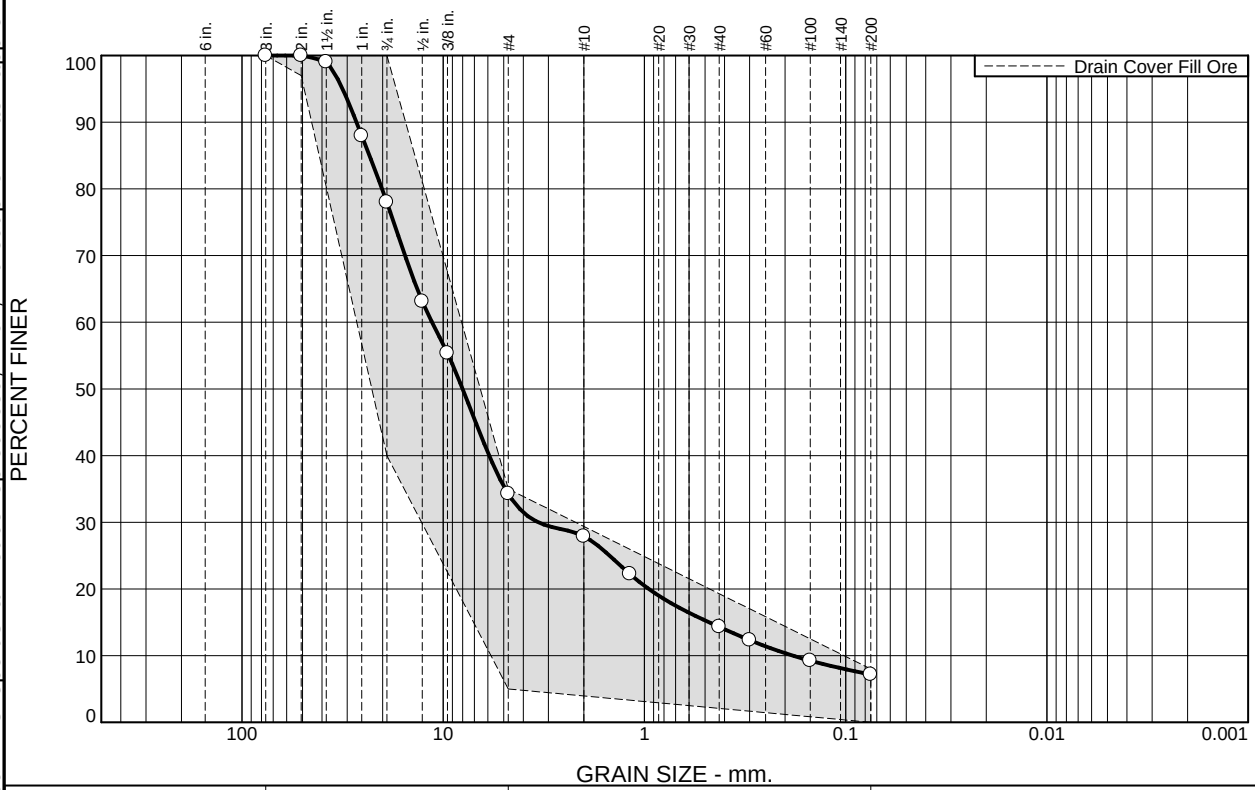
NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056
Figure DCFO-5-R

Tested By: SCM **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	22.0	43.7	6.4	13.6	7.1	7.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0	100.0	
2	100.0	97.0 - 100.0	
1.5	99.0		
1	88.0		
.75	78.0	40.0 - 100.0	
0.5	63.1		
.375	55.3		
#4	34.3	5.0 - 35.0	
#10	27.9		
#16	22.2		
#40	14.3		
#50	12.3		
#100	9.2		
#200	7.2	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Brownish red poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 26.9805 D_{85}= 23.2715 D_{60}= 11.3678
D_{50}= 8.0094 D_{30}= 3.3742 D_{15}= 0.4766
D_{10}= 0.1830 C_u= 62.14 C_c= 5.47

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Location: P-4574
Sample Number: DCFO-6-R **Date:** 09/20/2023

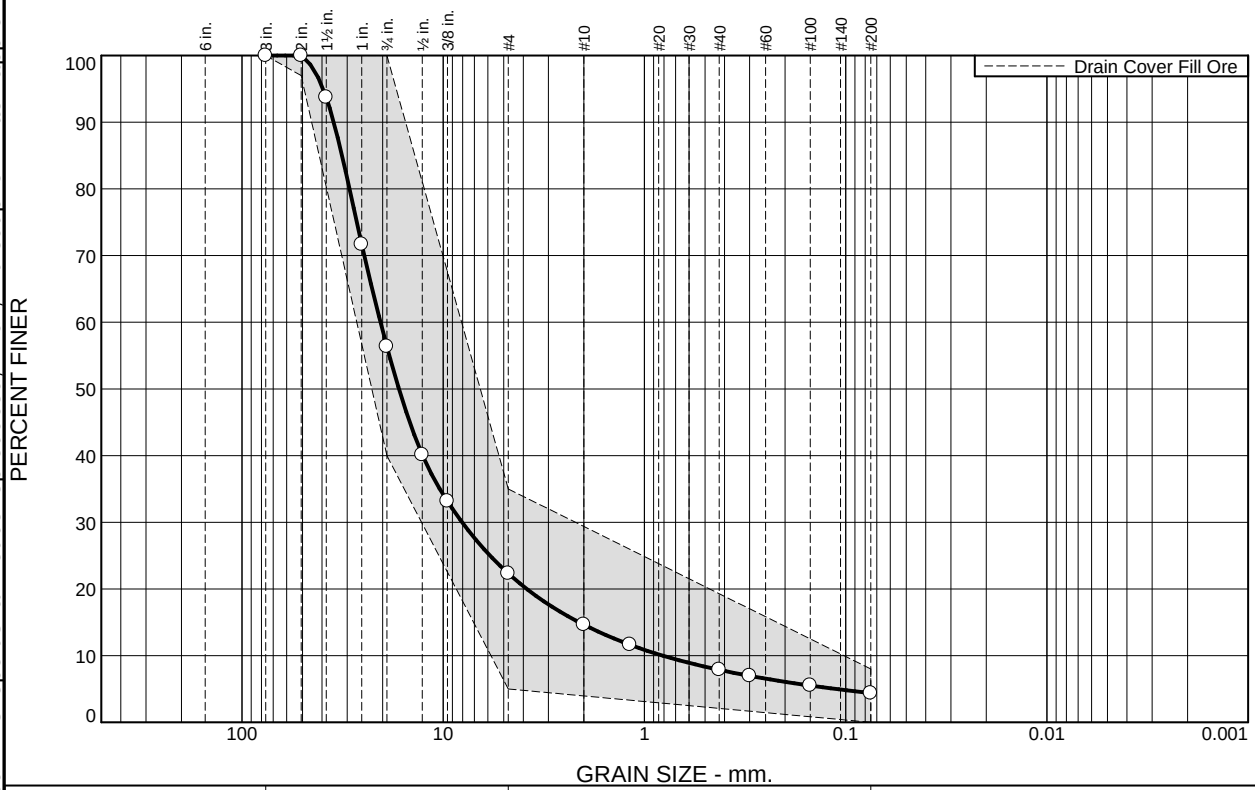
NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** DCFO-6-R

Tested By: SCM **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	43.6	34.1	7.7	6.7	3.5	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0	100.0	
2	100.0	97.0 - 100.0	
1.5	93.7		
1	71.7		
.75	56.4	40.0 - 100.0	
0.5	40.1		
.375	33.2		
#4	22.3	5.0 - 35.0	
#10	14.6		
#16	11.6		
#40	7.9		
#50	7.0		
#100	5.5		
#200	4.4	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Reddish brown poorly graded gravel with sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 34.9844 D_{85}= 31.8158 D_{60}= 20.5031
D_{50}= 16.5770 D_{30}= 8.0554 D_{15}= 2.1089
D_{10}= 0.8118 C_u= 25.26 C_c= 3.90

Classification

USCS= GP AASHTO= A-1-a

Remarks

Location: P-4444
Sample Number: DCFO-7-R **Date:** 09/20/2023

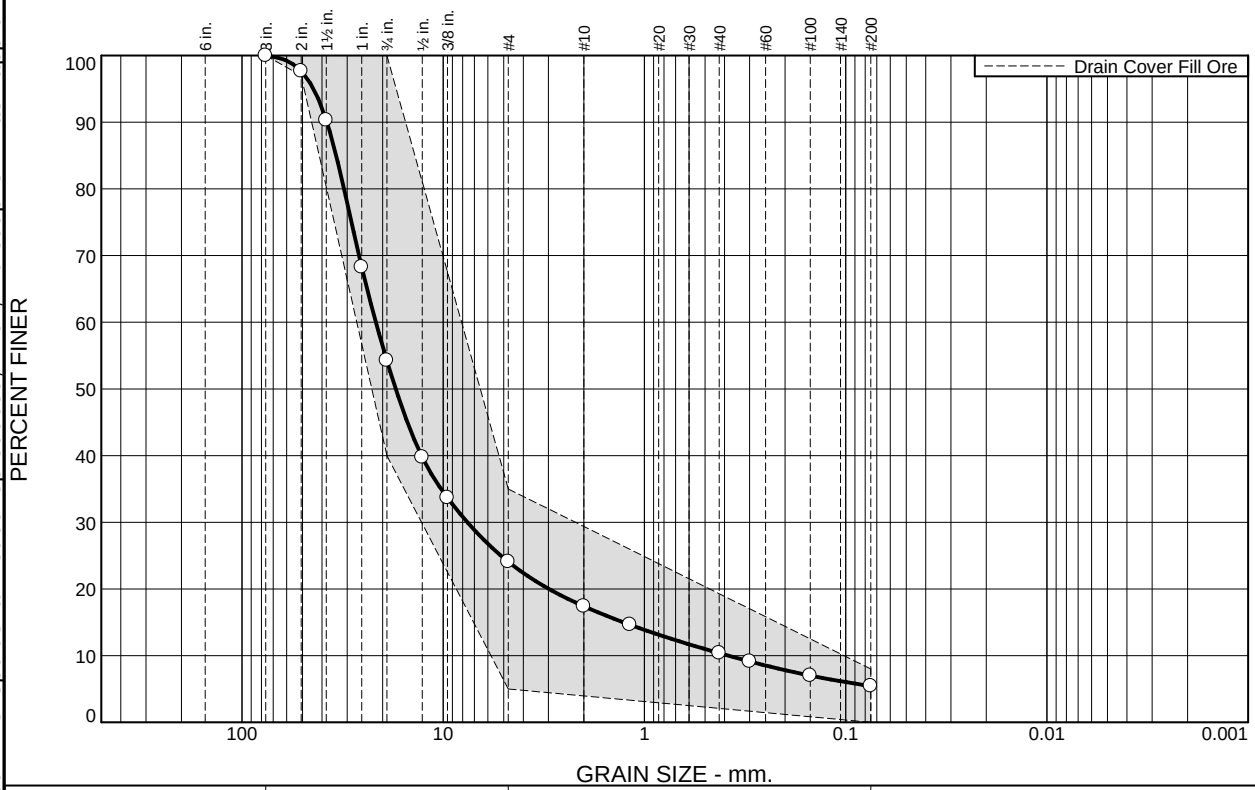
NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** DCFO-7-R

Tested By: SCM **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	45.7	30.2	6.7	7.0	5.0	5.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0	100.0	
2	97.7	97.0 - 100.0	
1.5	90.3		
1	68.3		
.75	54.3	40.0 - 100.0	
0.5	39.7		
.375	33.7		
#4	24.1	5.0 - 35.0	
#10	17.4		
#16	14.6		
#40	10.4		
#50	9.1		
#100	7.0		
#200	5.4	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Light tan poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 37.8102 D_{85}= 34.0328 D_{60}= 21.6265
D_{50}= 17.2008 D_{30}= 7.5823 D_{15}= 1.2731
D_{10}= 0.3834 C_u= 56.41 C_c= 6.93

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Location: P-4571
Sample Number: DCFO-8-R **Depth:** FG **Date:** 09/27/2023

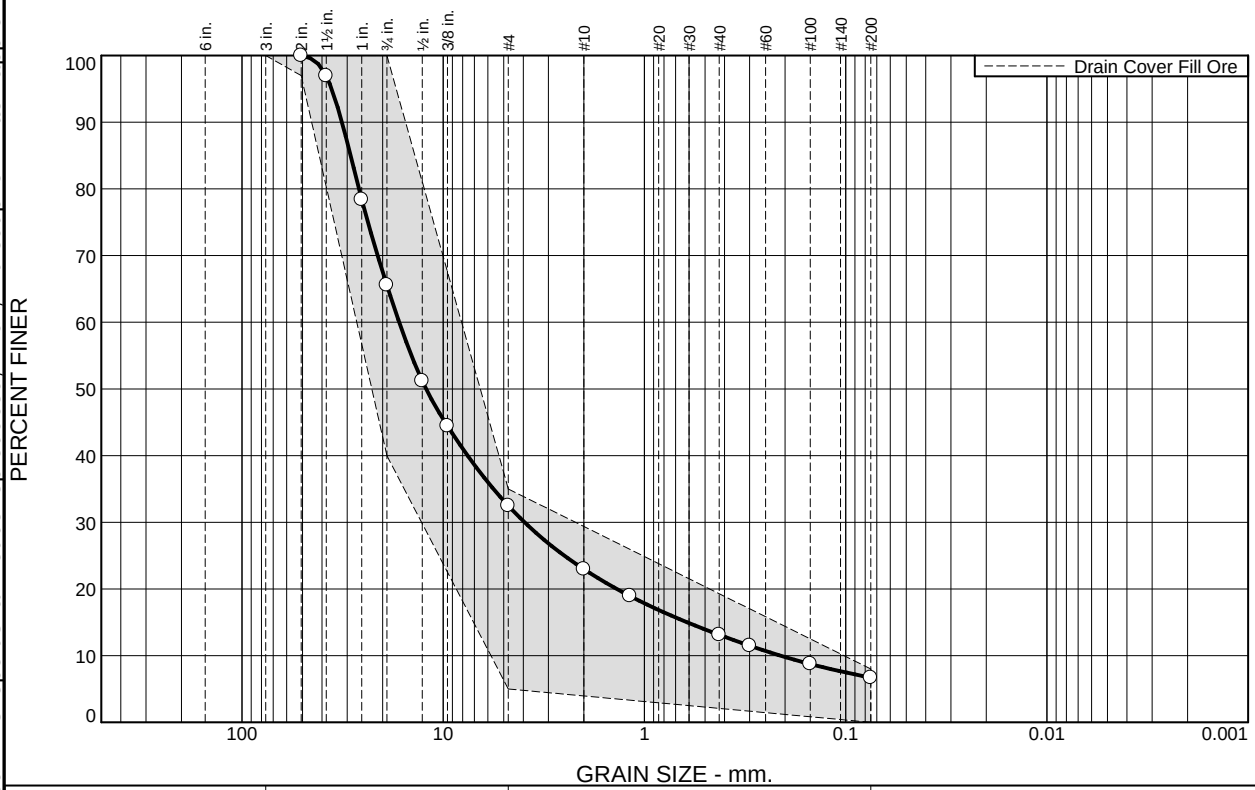
NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** DCFO-8-R

Tested By: KCM/SWC **Checked By:** TW

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	34.4	33.1	9.5	9.9	6.4	6.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	97.0 - 100.0	
1.5	96.9		
1	78.4		
.75	65.6	40.0 - 100.0	
0.5	51.2		
.375	44.4		
#4	32.5	5.0 - 35.0	
#10	23.0		
#16	18.9		
#40	13.1		
#50	11.5		
#100	8.7		
#200	6.7	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Gray tan poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 31.8421 D_{85}= 28.8414 D_{60}= 16.5357
D_{50}= 12.1635 D_{30}= 3.9428 D_{15}= 0.6133
D_{10}= 0.2110 C_u= 78.38 C_c= 4.46

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Location: P-4684
Sample Number: DCFO-9-R **Depth:** FG **Date:** 10/04/2023

NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** DCFO-9-R

Tested By: SCM/SWC **Checked By:** TW

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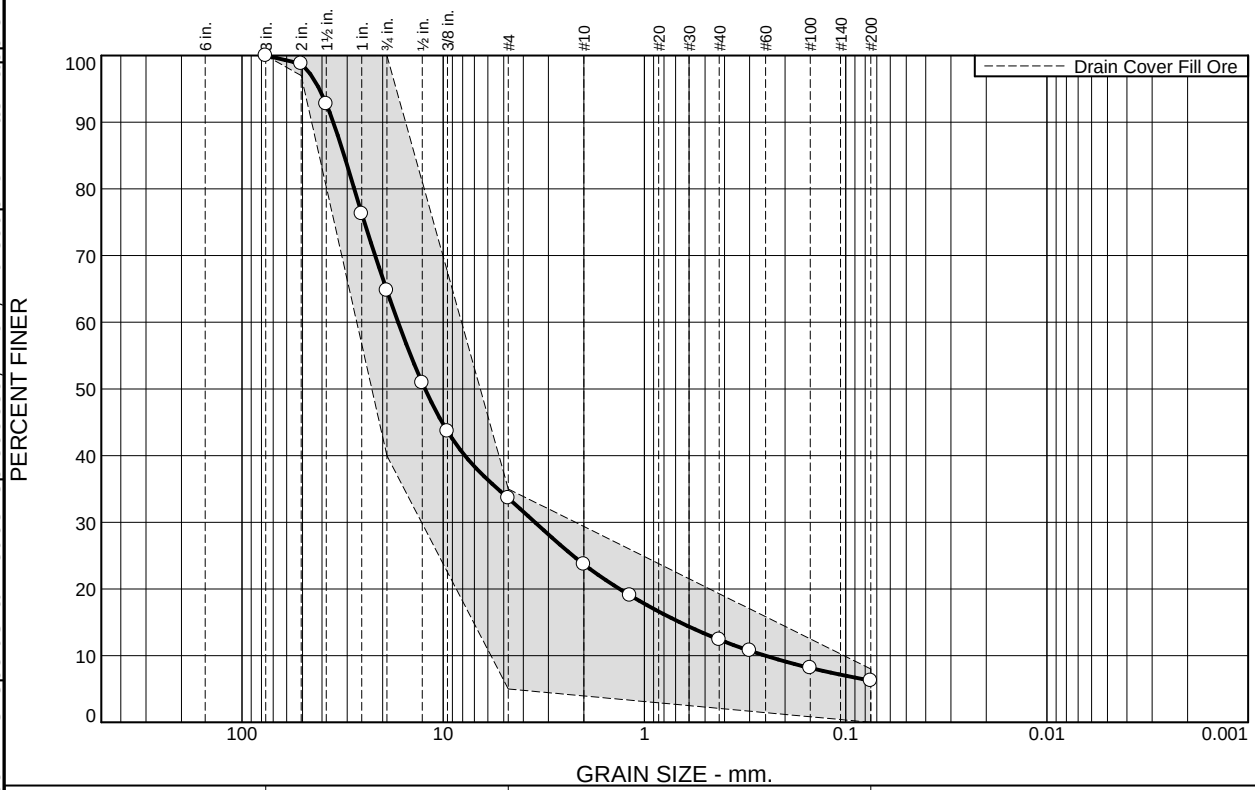
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	35.2	31.2	9.9	11.3	6.2	6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0	100.0	
2	98.8	97.0 - 100.0	
1.5	92.8		
1	76.3		
.75	64.8	40.0 - 100.0	
0.5	50.9		
.375	43.7		
#4	33.6	5.0 - 35.0	
#10	23.7		
#16	19.1		
#40	12.4		
#50	10.7		
#100	8.2		
#200	6.2	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Brown well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 35.1651 D_{85}= 31.0381 D_{60}= 16.7404
D_{50}= 12.3120 D_{30}= 3.4989 D_{15}= 0.6660
D_{10}= 0.2512 C_u= 66.63 C_c= 2.91

Classification

USCS= GW-GM AASHTO= A-1-a

Remarks

Location: P-4784
Sample Number: DCFO-10-R **Depth:** FG **Date:** 10/11/2023

NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** DCFO-10-R

Tested By: SCM/SWC **Checked By:** TW

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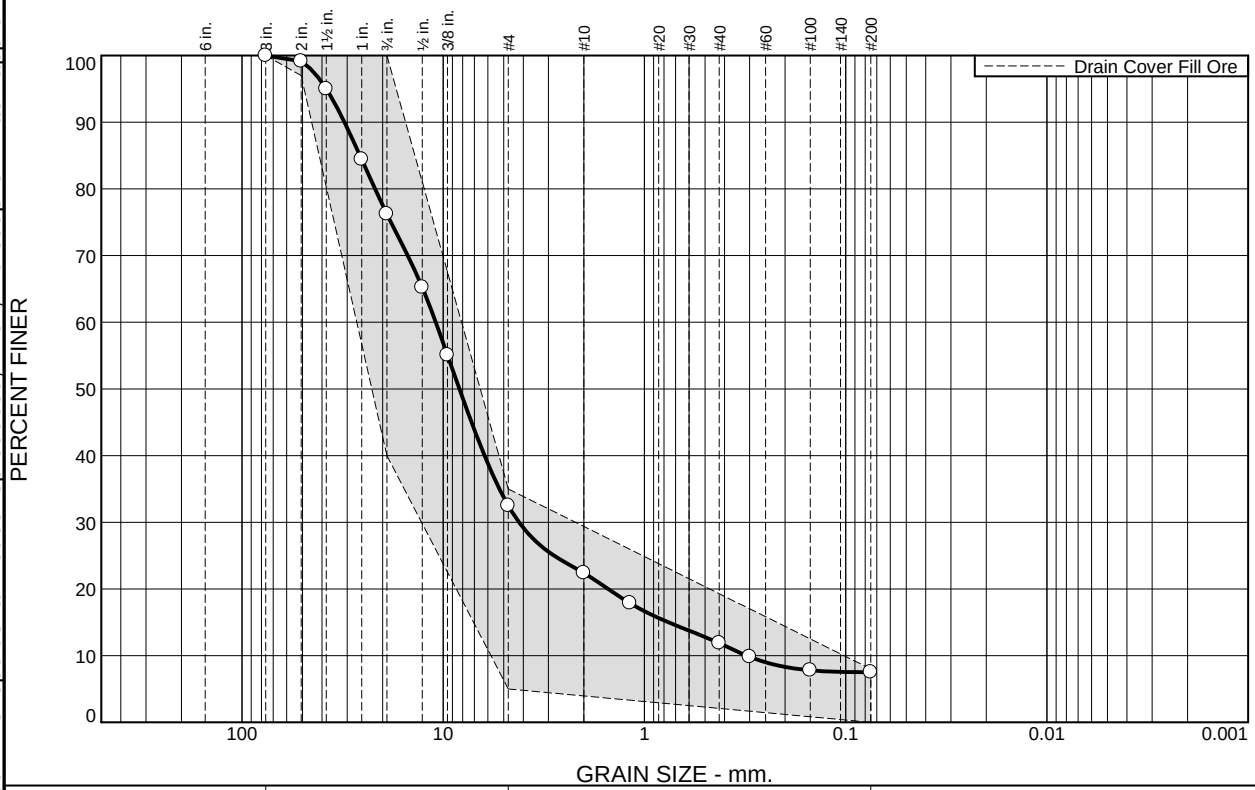
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	23.8	43.7	10.1	10.5	4.4	7.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0	100.0	
2	99.1	97.0 - 100.0	
1.5	95.0		
1	84.4		
.75	76.2	40.0 - 100.0	
0.5	65.2		
.375	55.1		
#4	32.5	5.0 - 35.0	
#10	22.4		
#16	17.9		
#40	11.9		
#50	9.8		
#100	7.8		
#200	7.5	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 30.9489 D_{85}= 25.9198 D_{60}= 10.8870
D_{50}= 8.3078 D_{30}= 4.1992 D_{15}= 0.7595
D_{10}= 0.3105 C_u= 35.06 C_c= 5.22

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Location: P-4820
Sample Number: DCFO-11-R **Depth:** FG **Date:** 10/18/2023

NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** DCFO-11-R

Tested By: SCM/SWC **Checked By:** TW

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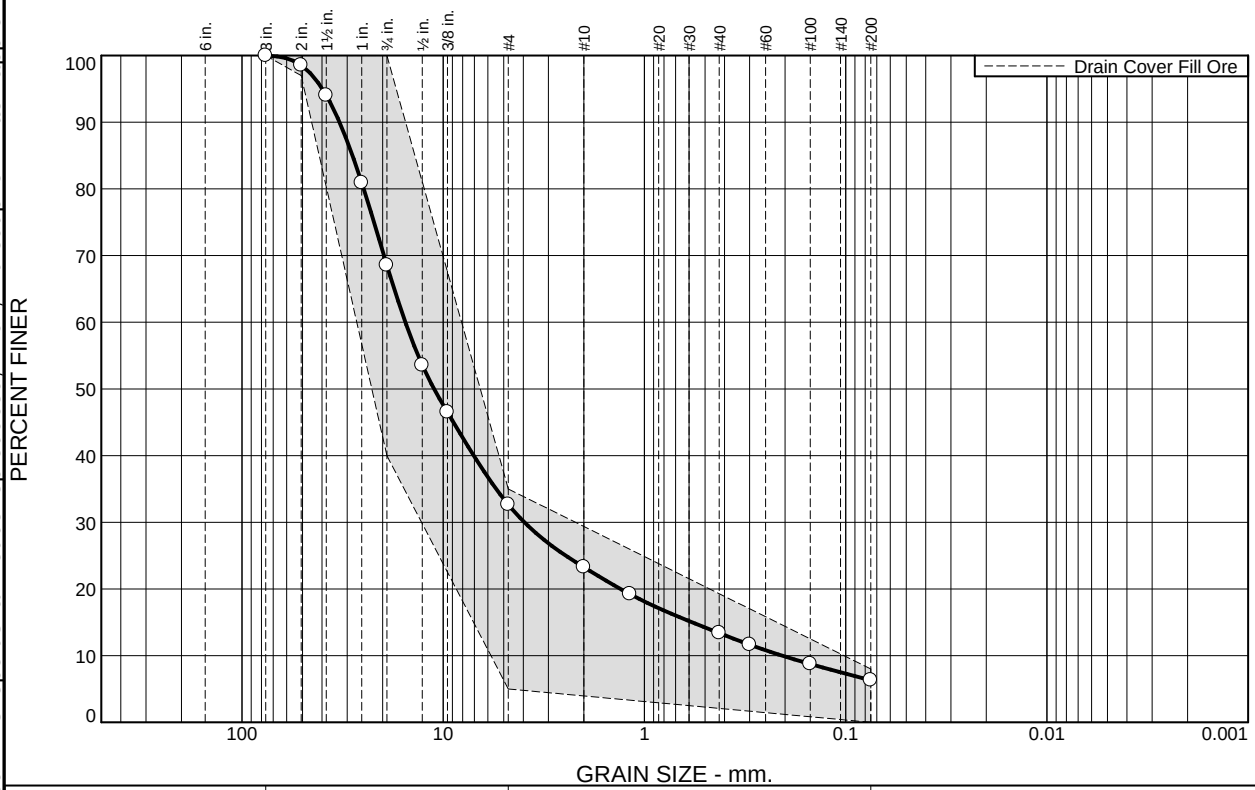
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	31.4	35.9	9.4	9.9	7.1	6.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0	100.0	
2	98.6	97.0 - 100.0	
1.5	94.0		
1	80.9		
.75	68.6	40.0 - 100.0	
0.5	53.6		
.375	46.5		
#4	32.7	5.0 - 35.0	
#10	23.3		
#16	19.2		
#40	13.4		
#50	11.6		
#100	8.7		
#200	6.3	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 32.7451 D_{85}= 28.2206 D_{60}= 15.4019
D_{50}= 11.1004 D_{30}= 3.9518 D_{15}= 0.5800
D_{10}= 0.2069 C_u= 74.43 C_c= 4.90

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Location: P-4909
Sample Number: DCFO-12-R **Depth:** FG **Date:** 10/18/2023

NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** DCFO-12-R

Tested By: SCM/SWC **Checked By:** TW

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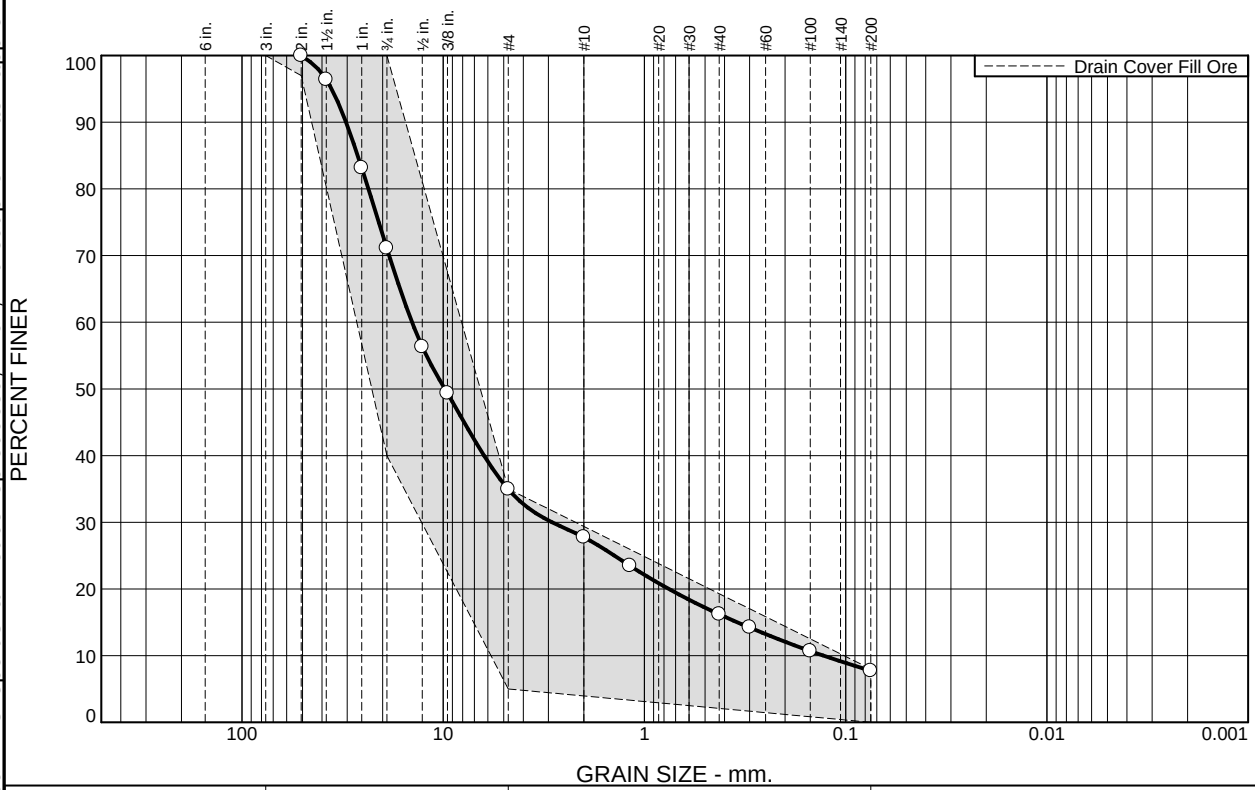
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	28.9	36.2	7.1	11.6	8.5	7.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	97.0 - 100.0	
1.5	96.4		
1	83.1		
.75	71.1	40.0 - 100.0	
0.5	56.3		
.375	49.3		
#4	34.9	5.0 - 35.0	
#10	27.8		
#16	23.5		
#40	16.2		
#50	14.2		
#100	10.7		
#200	7.7	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 30.4009 D_{85}= 26.6087 D_{60}= 14.2774
D_{50}= 9.8105 D_{30}= 2.8761 D_{15}= 0.3453
D_{10}= 0.1289 C_u= 110.77 C_c= 4.50

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Location: P-4918
Sample Number: DCFO-13-R **Depth:** FG **Date:** 10/23/2023

NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** DCFO-13-R

Tested By: SCM/SWC **Checked By:** TW

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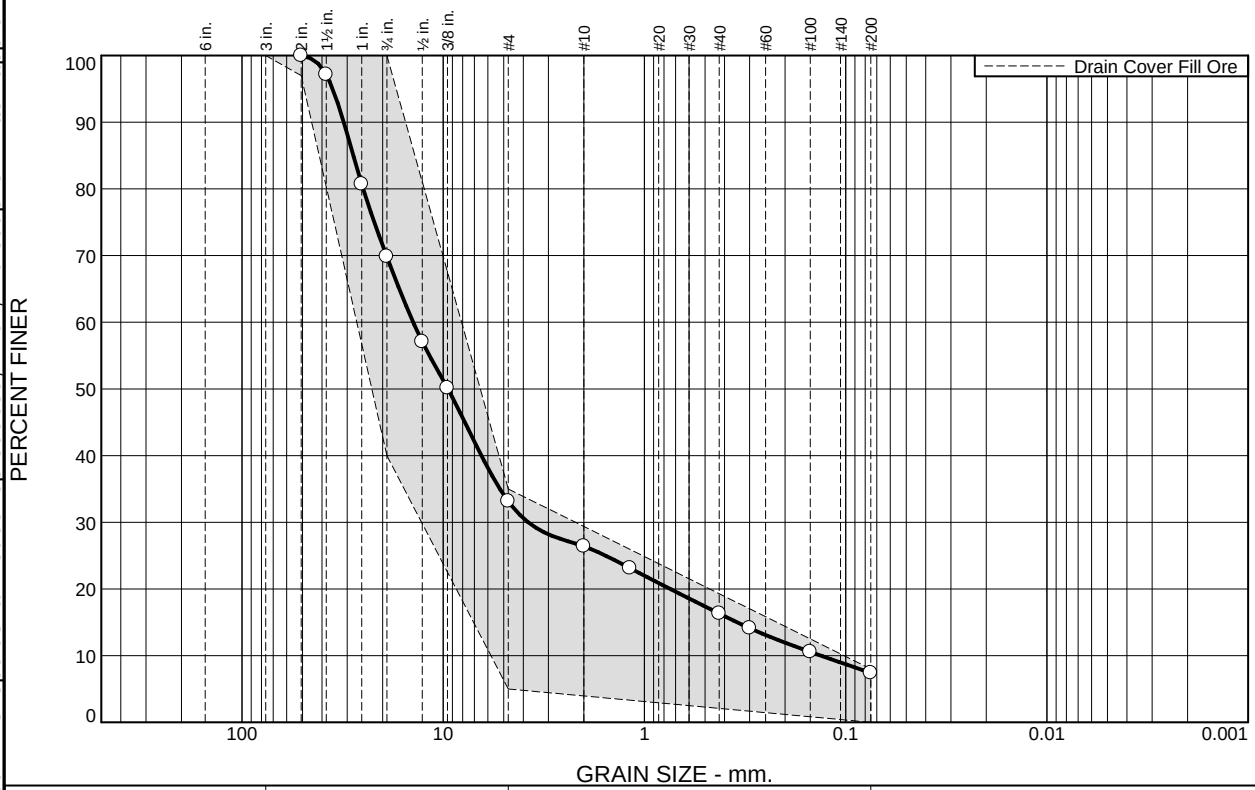
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	30.2	36.7	6.7	10.1	8.9	7.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0	97.0 - 100.0	
1.5	97.1		
1	80.7		
.75	69.8	40.0 - 100.0	
0.5	57.1		
.375	50.1		
#4	33.1	5.0 - 35.0	
#10	26.4		
#16	23.1		
#40	16.3		
#50	14.1		
#100	10.6		
#200	7.4	0.0 - 8.0	

* Drain Cover Fill Ore

Material Description

Gray poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 31.1966 D_{85}= 27.9482 D_{60}= 14.0917
D_{50}= 9.4748 D_{30}= 3.7818 D_{15}= 0.3464
D_{10}= 0.1327 C_u= 106.22 C_c= 7.65

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Location: P-4868
Sample Number: DCFO-14-R **Depth:** FG **Date:** 10/23/2023

NewFields

Client: Newmont-Cripple Creek & Victor Goldmine
Project: VLF2 Phase 3
Project No: 475.0106.056 **Figure** DCFO-14-R

Tested By: SWC/SCM **Checked By:** TW