

**SITE LOCATION**

Copper Pins Area Geotechnical Survey ■ Playas, New Mexico  
January 11, 2021 ■ Terracon Project No. 66205155

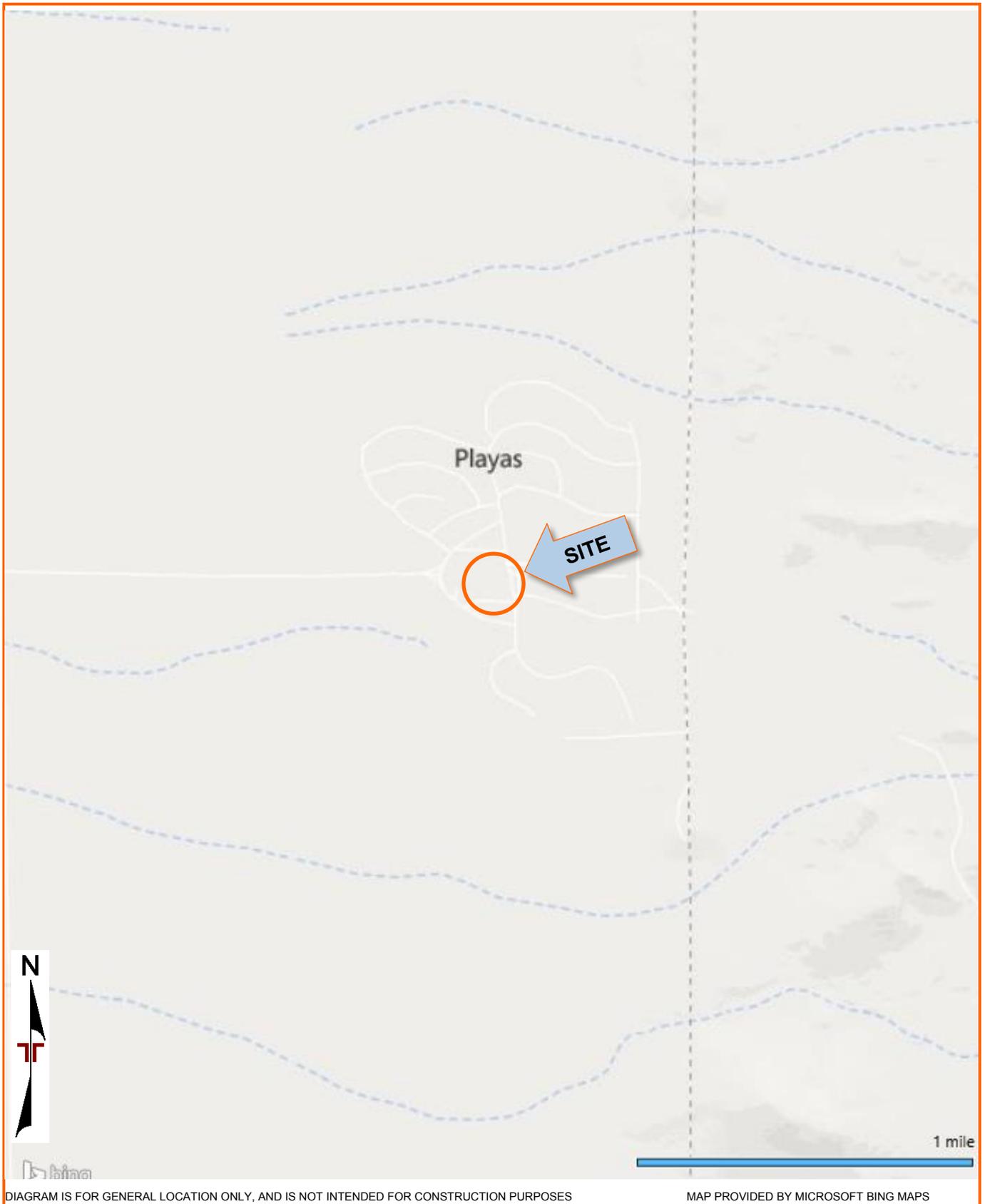


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

**EXPLORATION PLAN**

Copper Pins Area Geotechnical Survey ■ Playas, New Mexico  
January 11, 2021 ■ Terracon Project No. 66205155



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

# BORING LOG NO. B-01

**PROJECT:** Copper Pins Training and Research Center

**CLIENT:** New Mexico Tech  
Socorro, NM

**SITE:** One Nugget Place  
Playas, NM

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 31.9132° Longitude: -108.5353°  Surface Elev.: 4491 (Ft.) ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	SWELL (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS		PERCENT FINES
										DEPTH	ELEVATION (Ft.)	
2		<b>SILTY SAND WITH GRAVEL (SM)</b> , brown, loose to dense	5			12-11-12 N=23		3.6			NP	35
			10			6-10-18 N=28		4.3				
			15			12-20-23 N=43		6.1				
			20			4-2-3 N=5		5.4				
		18.0	20			15-28-43 N=71	-1.27 @ 500psf	4.4	105			
3		<b>CLAYEY GRAVEL WITH SAND (GC)</b> , brown, dense to very dense	25			21-22-25 N=47		6.8				
		26.5	<b>Boring Terminated at 26.5 Feet</b>									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
7" Hollow Stem Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

**WATER LEVEL OBSERVATIONS**

Groundwater not encountered



Boring Started: 11-12-2020

Boring Completed: 11-12-2020

Drill Rig: CME 55

Driller: Terracon EP

Project No.: 66205155

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_66205155 COPPER PINS TRAIN.GPJ TERRACON\_DATATEMPLATE.GDT 1/11/21



# BORING LOG NO. B-03

**PROJECT:** Copper Pins Training and Research Center

**CLIENT:** New Mexico Tech  
Socorro, NM

**SITE:** One Nugget Place  
Playas, NM

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 31.9131° Longitude: -108.5346°	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	SWELL (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS		PERCENT FINES
												LL-PL-PI		
1		<b>ASPHALT CONCRETE</b>	0.1	4495										
2		<b>SILTY GRAVEL WITH SAND (GM)</b> , brown, loose to medium dense			5			3-4-4 N=8		5.8			NP	19
								21-26	-0.08 @ 500psf	3.4	115			
3		<b>CLAYEY SAND WITH GRAVEL (SC)</b> , brown, medium dense to very dense	8.0	4487	10			17-13-7 N=20		2.8				
					15			3-4-6 N=10		13.2				
								18-18-26 N=44		6.3				
		<b>Auger Refusal at 18 Feet</b>	18.0	4477				50/0"						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
7" Hollow Stem Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:  
Borings backfilled with soil cuttings upon completion.  
Sealed with bituminous cold patch at surface.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

**WATER LEVEL OBSERVATIONS**

Groundwater not encountered



Boring Started: 11-12-2020

Boring Completed: 11-12-2020

Drill Rig: CME 55

Driller: Terracon EP

Project No.: 66205155

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# BORING LOG NO. B-04

**PROJECT:** Copper Pins Training and Research Center

**CLIENT:** New Mexico Tech  
Socorro, NM

**SITE:** One Nugget Place  
Playas, NM

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 31.9128° Longitude: -108.5345°  Surface Elev.: 4495 (Ft.) ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	SWELL (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS		PERCENT FINES
										LL-PL-PI		
	2	<b>POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM)</b> , brown with red tint, dense	4.0		X	24-35		10.4	96	NP	11	
		<b>SILTY GRAVEL WITH SAND (GM)</b> , brown, medium dense to dense	4491		X	12-17-12 N=29		2.9				
			5		X	27-28-18 N=46		2.8				
			10		X	14-11-10 N=21		4.4				
		<b>CLAYEY GRAVEL WITH SAND (GC)</b> , brown, very dense	13.0		X	12-37-31 N=68		7.3				
	3	<b>CLAYEY SAND WITH GRAVEL (SC)</b> , brown, very dense	18.0		X	13-26-34 N=60		4.9				
		<b>Boring Terminated at 21.5 Feet</b>	21.5									
			4477									
			4482									
			4473.5									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
7" Hollow Stem Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

**WATER LEVEL OBSERVATIONS**

Groundwater not encountered



Boring Started: 11-12-2020

Boring Completed: 11-12-2020

Drill Rig: CME 55

Driller: Terracon EP

Project No.: 66205155

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# BORING LOG NO. B-05

**PROJECT:** Copper Pins Training and Research Center

**CLIENT:** New Mexico Tech  
Socorro, NM

**SITE:** One Nugget Place  
Playas, NM

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 31.9126° Longitude: -108.5345°	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	SWELL (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS		PERCENT FINES	
												LL-PL-PI			
2		<b>SILTY SAND WITH GRAVEL (SM)</b> , light brown, medium dense	0	4495	0										
			4.5	4490.5	5		11-13-13 N=26	3.5							
			7.0	4488	5		31-20	1.3	124	22-17-5	12				
3		<b>CLAYEY SAND WITH GRAVEL (SC)</b> , brown, medium dense to very dense	7.0	4488	10		7-12-13 N=25	5.2							
					10		9-6-11 N=17	8.3							
					15		27-38-38 N=76	4.1							
					20		27-32-15 N=47	9.1							
					25		29-30-50/5"	3.2							
		26.4	4468.5												
<b>Boring Terminated at 26.42 Feet</b>															

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
7" Hollow Stem Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

**WATER LEVEL OBSERVATIONS**

Groundwater not encountered



Boring Started: 11-12-2020

Boring Completed: 11-12-2020

Drill Rig: CME 55

Driller: Terracon EP

Project No.: 66205155

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# BORING LOG NO. P-01

**PROJECT:** Copper Pins Training and Research Center

**CLIENT:** New Mexico Tech  
Socorro, NM

**SITE:** One Nugget Place  
Playas, NM

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 31.9129° Longitude: -108.5357°  Surface Elev.: 4488 (Ft.) ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	SWELL (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
2		<b>SILTY CLAYEY SAND (SC-SM)</b> , trace gravel, brown, medium dense  <i>Boring Terminated at 1.5 Feet</i>	1.5 4486.5		X	9-11-9 N=20		3.4		21-14-7	35

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
7" Hollow Stem Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

**WATER LEVEL OBSERVATIONS**

*Groundwater not encountered*



Boring Started: 11-12-2020

Boring Completed: 11-12-2020

Drill Rig: CME 55

Driller: Terracon EP

Project No.: 66205155

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# BORING LOG NO. P-02

**PROJECT:** Copper Pins Training and Research Center

**CLIENT:** New Mexico Tech  
Socorro, NM

**SITE:** One Nugget Place  
Playas, NM

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 31.9127° Longitude: -108.5352°  Surface Elev.: 4488 (Ft.) ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	SWELL (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
3		<b>SILTY GRAVEL WITH SAND (GM)</b> , brown, very dense  DEPTH: 1.5 ELEVATION (Ft.): 4486.5	1.5		X	15-28-30 N=58		1.7		NP	16
<b>Boring Terminated at 1.5 Feet</b>											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
7" Hollow Stem Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

**WATER LEVEL OBSERVATIONS**

*Groundwater not encountered*



Boring Started: 11-12-2020

Boring Completed: 11-12-2020

Drill Rig: CME 55

Driller: Terracon EP

Project No.: 66205155

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# BORING LOG NO. P-03

**PROJECT:** Copper Pins Training and Research Center

**CLIENT:** New Mexico Tech  
Socorro, NM

**SITE:** One Nugget Place  
Playas, NM

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 31.9126° Longitude: -108.5338°  Surface Elev.: 4501 (Ft.) ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	SWELL (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES	
2		<b>SILTY GRAVEL WITH SAND (GM)</b> , brown, dense	4.5		X	7-14-17 N=31		3.2		NP	15	
		<b>SILTY SAND WITH GRAVEL (SM)</b> , brown, medium dense	6.0		X	11-20		4.7	96			
		<b>Boring Terminated at 6 Feet</b>										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
7" Hollow Stem Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

**WATER LEVEL OBSERVATIONS**

*Groundwater not encountered*



Boring Started: 11-12-2020

Boring Completed: 11-12-2020

Drill Rig: CME 55

Driller: Terracon EP

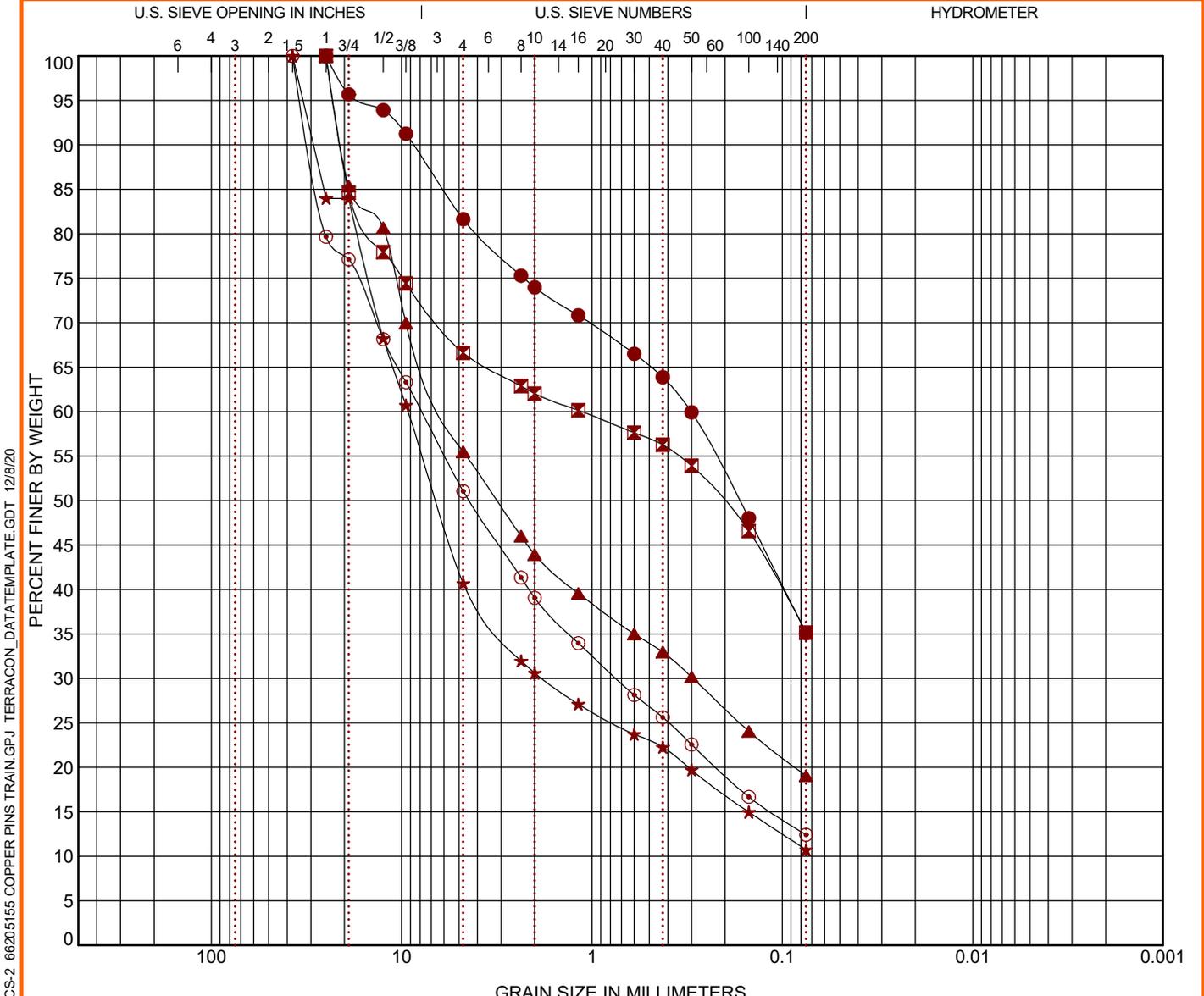
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# GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY			
	coarse	fine	coarse	medium	fine				

Boring ID	Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
● B-01	2.5 - 4	SILTY SAND with GRAVEL (SM)	3.6	NP	NP	NP		
⊠ B-02	5 - 6.5	SILTY, CLAYEY GRAVEL with SAND (GC-GM)	3.6	22	16	6		
▲ B-03	2.5 - 4	SILTY GRAVEL with SAND (GM)	5.8	21	NP	21		
★ B-04	2.5 - 3.5	POORLY GRADED GRAVEL with SILT and SAND (GP-GM)	10.4	NP	NP	NP	5.41	139.46
⊙ B-05	5 - 6	SILTY, CLAYEY GRAVEL with SAND (GC-GM)	1.3	22	17	5	1.39	155.70

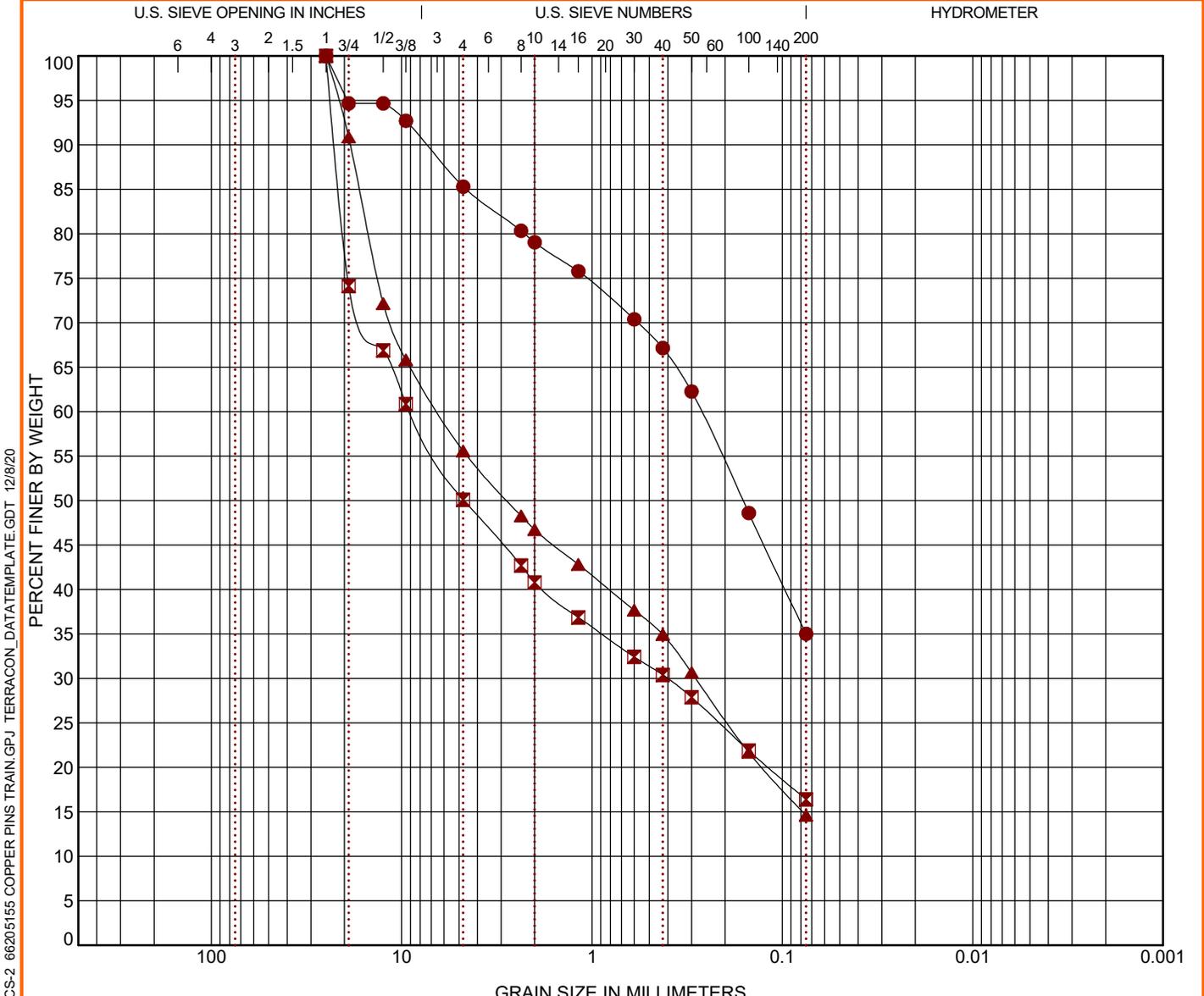
Boring ID	Depth	D <sub>100</sub>	D <sub>60</sub>	D <sub>30</sub>	D <sub>10</sub>	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
● B-01	2.5 - 4	25	0.302			0.0	18.4	46.5		35.1	
⊠ B-02	5 - 6.5	25	1.133			0.0	33.4	31.4		35.2	
▲ B-03	2.5 - 4	25	5.898	0.294		0.0	44.5	36.4		19.0	
★ B-04	2.5 - 3.5	37.5	9.262	1.824		0.0	59.3	30.0		10.7	
⊙ B-05	5 - 6	37.5	7.879	0.745		0.0	48.9	38.6		12.4	

PROJECT: Copper Pins Training and Research Center  SITE: One Nugget Place Playas, NM	<p style="font-size: 0.8em; color: #800000;">6805 Academy Pkwy West NE Albuquerque, NM</p>	PROJECT NUMBER: 66205155  CLIENT: New Mexico Tech Socorro, NM
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LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 66205155 COPPER PINS TRAIN.GPJ TERRACON\_DATATEMPLATE.GDT 12/8/20

# GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 66205155 COPPER PINS TRAIN.GPJ TERRACON\_DATATEMPLATE.GDT 12/8/20

Boring ID	Depth	USCS Classification				WC (%)	LL	PL	PI	Cc	Cu
● P-01	0 - 1.5	SILTY, CLAYEY SAND (SC-SM)				3.4	21	14	7		
☒ P-02	0 - 1.5	SILTY GRAVEL with SAND (GM)				1.7	NP	NP	NP		
▲ P-03	2.5 - 4	SILTY GRAVEL with SAND (GM)				3.2	NP	NP	NP		
Boring ID	Depth	D <sub>100</sub>	D <sub>60</sub>	D <sub>30</sub>	D <sub>10</sub>	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
● P-01	0 - 1.5	25	0.267			0.0	14.7	50.3		35.0	
☒ P-02	0 - 1.5	25	8.995	0.402		0.0	49.9	33.7		16.4	
▲ P-03	2.5 - 4	25	6.411	0.285		0.0	44.4	41.0		14.6	

PROJECT: Copper Pins Training and Research Center	6805 Academy Pkwy West NE Albuquerque, NM	PROJECT NUMBER: 66205155
SITE: One Nugget Place Playas, NM		CLIENT: New Mexico Tech Socorro, NM