Engineering Analytics, Inc.
Now Part of MacKay Sposito

1600 Specht Point Road, Suite 209, Fort Collins, CO, 80525
(970) 488-3111

Technical Memorandum

To:	Kevin Raabe, RGR	From:	Jason Andrews, P.E.
Company:	Engineering Analytics, Inc.	Date:	November 26, 2025
EA No.:	111360		
Re:	2025 Borrow Source Investigation		

1.0 INTRODUCTION

Engineering Analytics, Inc. (EA) was tasked by Rio Grande Resources (RGR) to provide a design for the expansion of the existing disposal cell at the Mt. Taylor Uranium Mine, located in Cibola County, New Mexico. In doing so, EA has completed an investigation of the borrow source material available on site for the disposal cell and other site reclamation activities. This Technical Memorandum provides an overview of that borrow source material, including the field investigation and laboratory testing done.

2.0 Current Site Conditions

2.1 Results of January 2025 Field Investigation

Engineering Analytics completed a field investigation that consisted of excavating 22 test pits and collecting samples from three proposed borrow locations. The samples were collected for characterization of the proposed clay borrow to use for the cover of disposal cell and other site reclamation activities. The test pit logs are provided in Attachment A

The field investigation of the clay borrow source, conducted by EA, included excavation of 22 exploratory test pits (A-1 through A-6, B-1 through B-5, and C-1 through C-12) in January of 2025. The test pits were excavated using a CAT backhoe. All test pits were excavated to an approximate depth of 6 feet. The locations of the test pits are presented in Figure 1. The subsurface conditions consisted of:

Clayey Gravel:
Clayey gravel was observed from 0 to 3 inches in test pit EA-TP1. The soil was medium dense with some quarter-inch gravel up to 8-inch diameter cobbles.

Clay and Silty Clay/Clayey Silt:
Clay and silty clay were encountered at or just below the surface in the test pits. The thickness of the clay and silty clay was approximately 0.6 to greater than 7 feet thick. Clayey silt was encountered in test pit EA-TP2 from a depth of 6 inches to 2 feet.

Weather Claystone, Claystone, and Shale:
The clay/silty clay is underlain by claystone, weathered claystone, and shale. The thickness of the underlying claystone, weathered claystone, and shale is approximately 0.5 to 6.5 feet thick.

Sandstone:
Sandstone was encountered in test pits EA-TP3 and EA-TP4 from 2 feet below the ground surface. Refusal in the sandstone was encountered between 3.5 feet and 6 feet.

EA also collected bulk samples of sand and pediment soils from proposed borrow sources at the Facility. Laboratory testing was performed on selected samples from the test pits and bulk samples to determine geotechnical engineering properties of the subsurface materials. This laboratory testing is discussed in Section 2.2.

2.2 Laboratory Testing Completed in 2025

Laboratory testing was conducted on selected material samples to characterize their physical and geotechnical properties for use in the disposal cell expansion design or other site reclamation uses. Material samples were obtained from Borrow Source's A, B, and C (see Figure 1). Laboratory testing of materials sampled included measurements of water content, Atterberg limits, standard Proctor compaction testing, and soil water characteristic testing. The laboratory testing was performed by Engineering Analytics and is summarized below and included as Attachment B.

Water Content and Dry Density:
Measurements of water content and dry density were conducted on selected samples in accordance with ASTM test methods D2216 and D2937, respectively. The water content of the samples of clay and silty clay that were tested ranged from 14.1 to 32.0 percent. The values of dry density for the samples of clay and silty clay that were tested ranged from 79.0 to 101.9 pounds per cubic foot (pcf).

Atterberg Limits:
Atterberg limits were measured on selected samples in accordance with ASTM test method D4318. The Atterberg limits were used to aid in classifying the soil. According to the Unified Soil Classification System (USCS), four samples were classified as low plasticity clay (CL), four samples were classified as high plasticity clays (CH), the aeolian sand and pediment samples were classified as non-plastic sand and silty sands (SM).

Grain Size:
Grain size analyses were conducted on selected samples in accordance with ASTM test method D6913. The sample of aeolian sand was 14% fines, 85% sand, and 1% gravel. The sample of pediment was 24% fines, 68% sand, and 8% gravel.

Standard Proctor Compaction Tests:

Six standard Proctor compaction tests were performed in accordance with ASTM test method D698. For the clay to silty clay the maximum dry density values ranged from 92.6 and 113.6 pcf with optimum water contents ranging from 15.11% to 30.2%. For the aeolian sand, the maximum dry density value was 114.6 pcf with an optimum water content of 10.8% and for pediment borrow source the maximum dry density value was 119.3 pcf with an optimum water content of 11.1%.

3.0 REFERENCES

ASTM International. (2019). *ASTM D2216-19: Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass.* ASTM International.

ASTM International. (2024). *ASTM D2937-17E2: Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method.* ASTM International.

ASTM International. (2018). *ASTM D4318-17: Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.* ASTM International.

ASTM International. (2025). *ASTM D2487-17R25: Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).* ASTM International.

ASTM International. (2025). *ASTM D6913_D6913M-17*: *Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis.* ASTM International.

ASTM International. (2021). *ASTM D698-12R21: Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3)).* ASTM International.

Engineering Analytics, Inc. (2025). *Expanded Disposal Cell Design Mt. Taylor Mine Existing Permit No. CI002RE.* October 15.

FIGURE

LEGEND:
- MINE SITE AREA
- ROADWAY
- FENCE
- EXISTING TOPOGRAPHY
- DRAINAGE PATHWAYS
- TEST PIT LOCATION

NORTH

SCALE IN FEET
0 300'

McKINLEY CO.

CIBOLA CO.

C-1 C-2 C-3 C-4 C-5 C-6 C-7 C-8 C-9 C-10 C-11 C-12 C-13

BORROW AREA "C"

UNDISTURBED AREA

BORROW AREA "A"

A-1 A-2 A-3 A-4 A-5 A-6

Marquez

Arroyo

MINE RD.

POND 8

POND 4

POND 5

POND 3

POND 1

POND 2

PONDS 6&7

ORE PAD

SUBSTATION

BORROW AREA "B"

B-1 B-2 B-3 B-4 B-5

SAN MATEO MAIN STREET

UNDISTURBED AREA

7240 7250 7260 7270 7280 7290 7300 7320 7340 7350 7400 7450 7500

T:\111360 Mt. Taylor\Boring Locations.dwg SAVED:8/21/25 PRINTED:11/21/25

Project No. 111360

November 2025

Engineering Analytics, Inc.

FIGURE 1
TEST PIT LOCATION MAP
MT. TAYLOR MINE

ATTACHMENT A
Test Pit Logs

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE: date

TEST PIT NO.: A-1

PROJECT INFORMATION

PROJECT: MT. TAYLOR

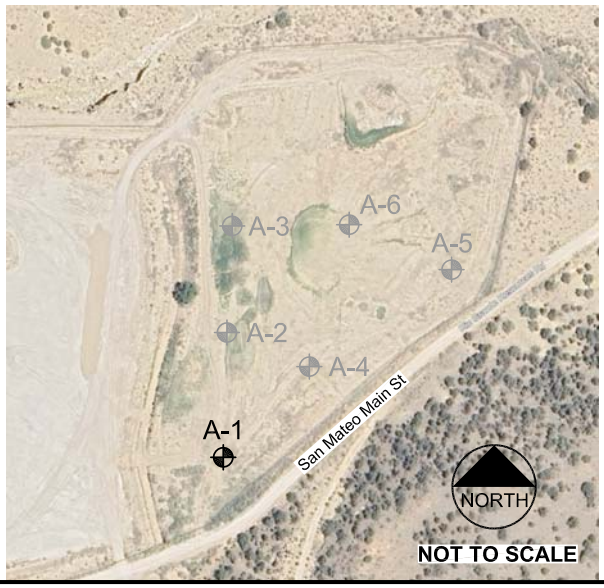
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER:

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

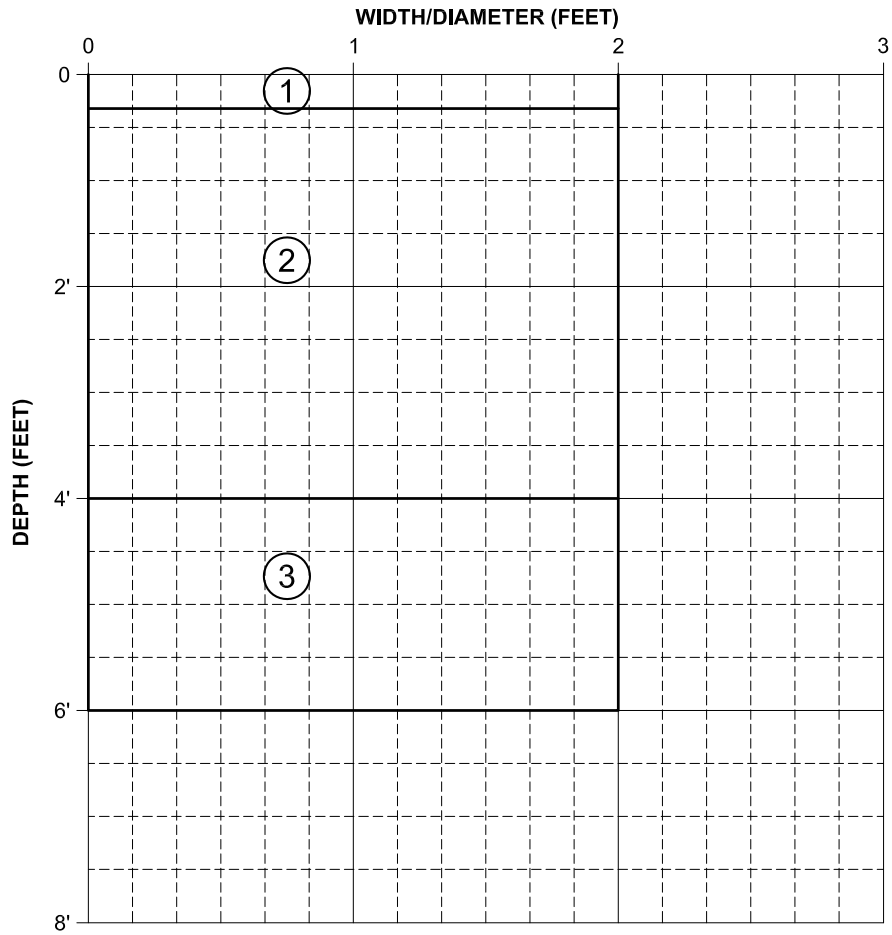
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: A-1



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	A1	BKT
4'	A1C	CA
6'	A1	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 2"	VEGETATION, SAND, DRY, (2.5Y, 5/3), LOOSE
2	2" - 4'	SAND, DRY (2.5Y, 5/3), LOOSE, NON-FROZEN BITS, FROZEN
3	4'-E.O.B.	VERY SANDY CLAY, DRY, TAN/ BROWN (2.5Y, 4/3), CHUNKY, BRITTLE, FROZEN

NOTES: HARD TO TELL, GROUND IS FROZEN, MAY BE CLAYEY SAND SILT

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: A-2

PROJECT INFORMATION

PROJECT: MT. TAYLOR

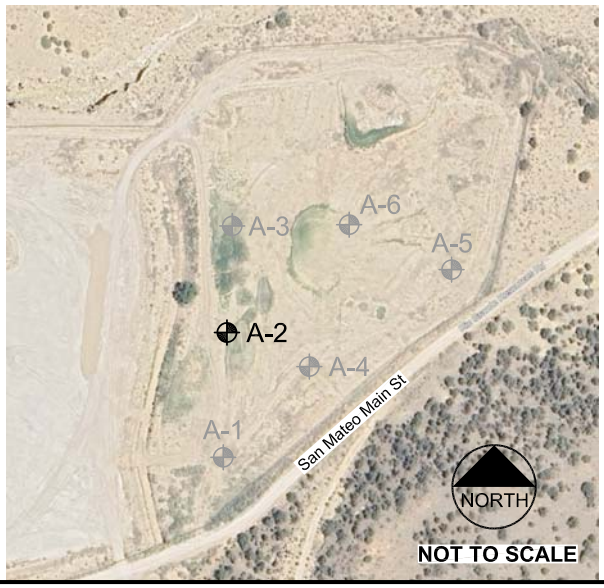
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER:

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

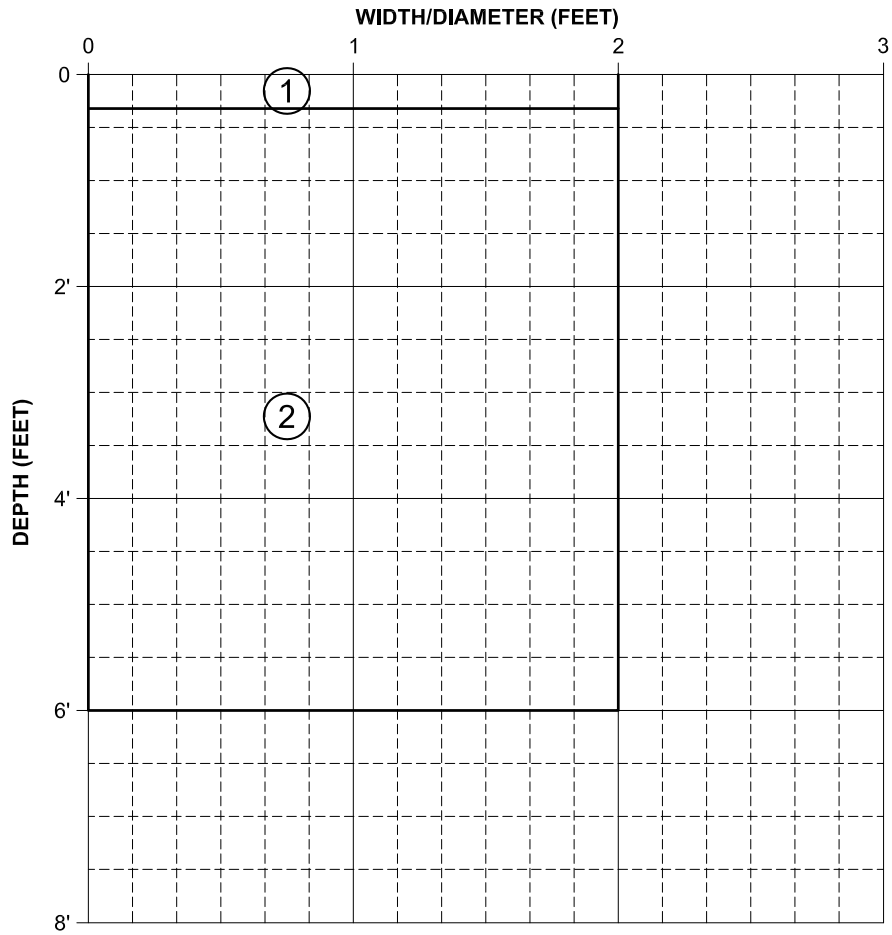
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: A-2



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	A2	BKT
6'	A2	BKT
NR	---	CA

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 2"	VEGETATION, SAND, DRY, (2.5Y, 5/3), LOOSE
2	2" - E.O.B.	SAND, DRY, (TAN 2.5Y, 5/3), VERY LOOSE, NO PLASTICITY
		NO CLAY

NOTES:

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: A-3

PROJECT INFORMATION

PROJECT: MT. TAYLOR

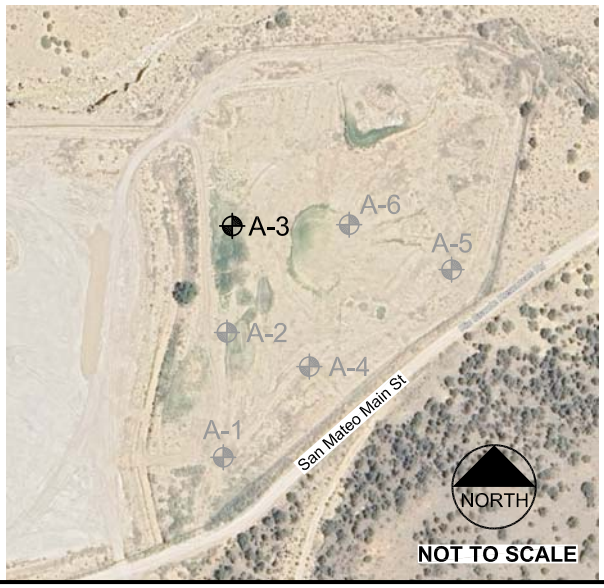
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER:

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

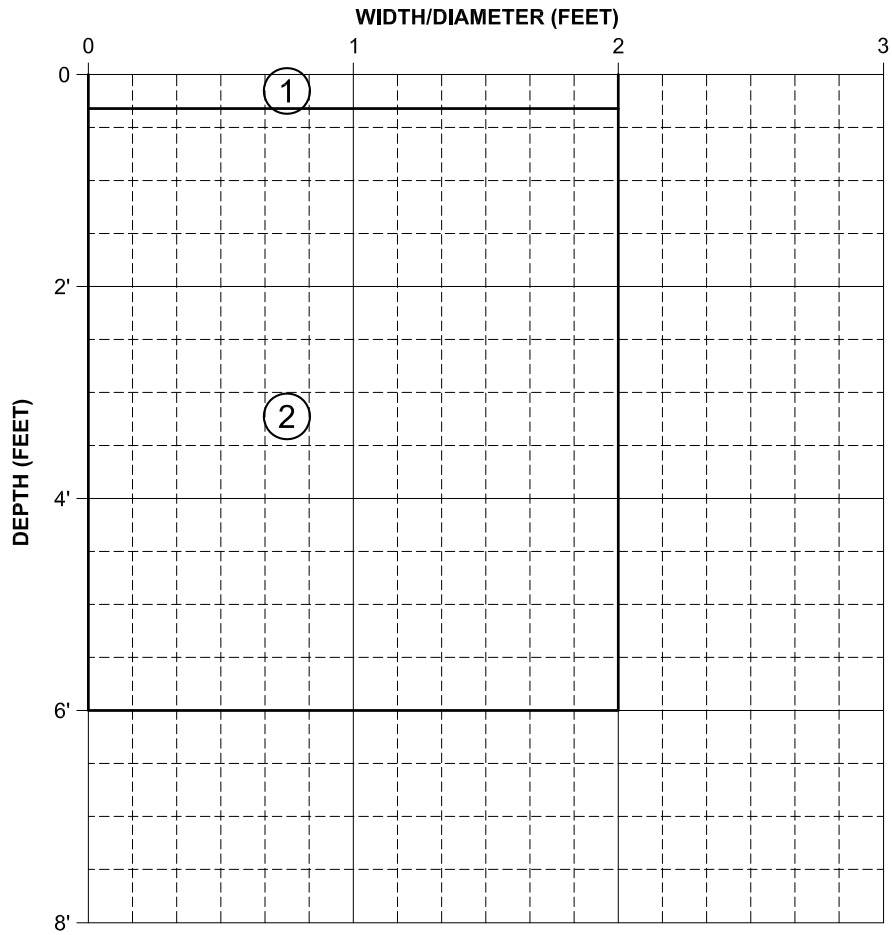
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: A-3



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	A3	BKT
6'	A3	BKT
NR	---	CA

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 3"	VEGETATION, SAND, DRY, (2.5Y, 5/3), LOOSE, NO PLASTICITY
2	3" - E.O.B.	SAND, FROZEN, (2.5Y, 5/3), LOOSE BITS, NO PLASTICITY

NOTES: NO CLAY

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: A-4

PROJECT INFORMATION

PROJECT: MT. TAYLOR

PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION

FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER:

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

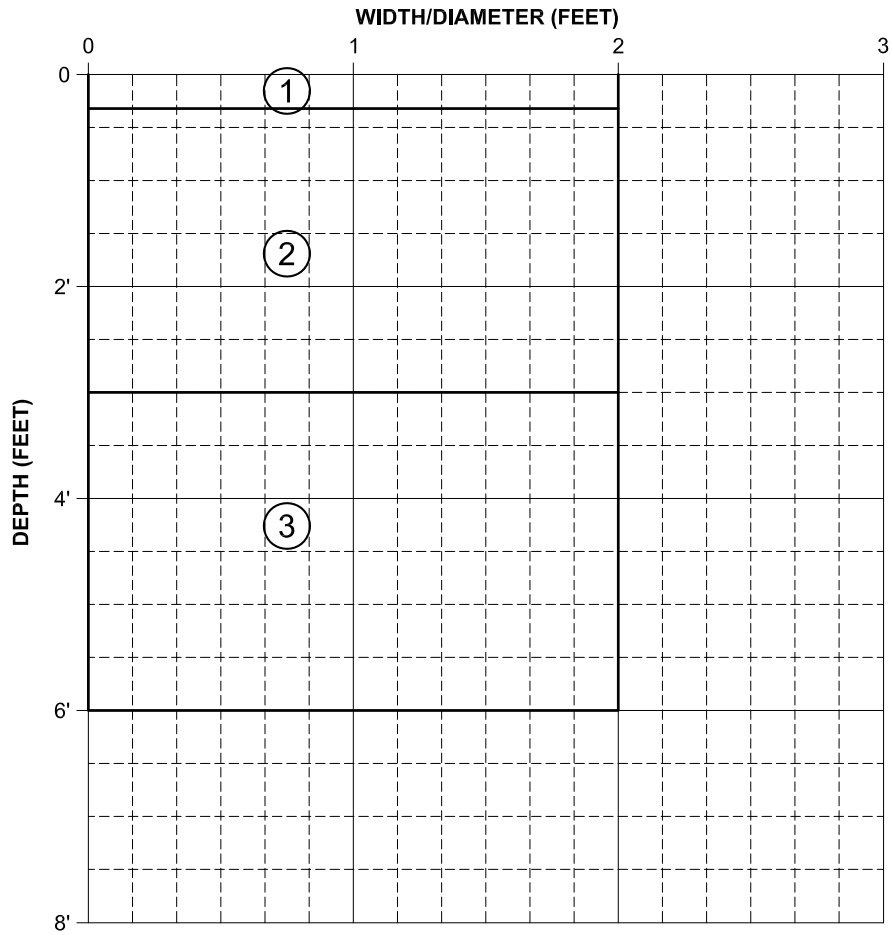
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: A-4



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	A4C	CA
3'	A4	BKT
6'	A4	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 2"	VEGETATION, SAND, DRY, (2.5Y, 5/3), LOOSE
2	2" -3'	SAND, FROZEN, (2.5Y, 5/3), NO PLASTICITY, CAME OFF IN BLOCKS, ROOTS
3	3' - E.O.B.	VERY SANDY CLAY, (TAN/ BROWN 2.5Y, 5/3), CHUNKY, BRITTLE
		E.O.T.P. = 6'

NOTES: HARD TO DISTINGUISH CLAY FROM FROZEN SAND.

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: A-5

PROJECT INFORMATION

PROJECT: MT. TAYLOR

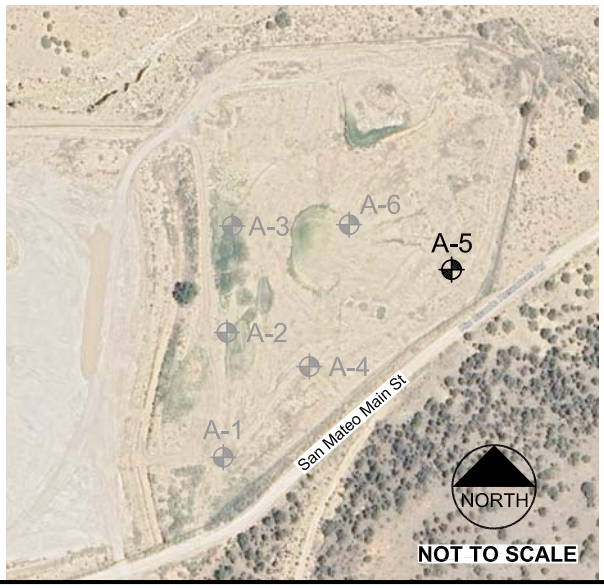
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER:

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

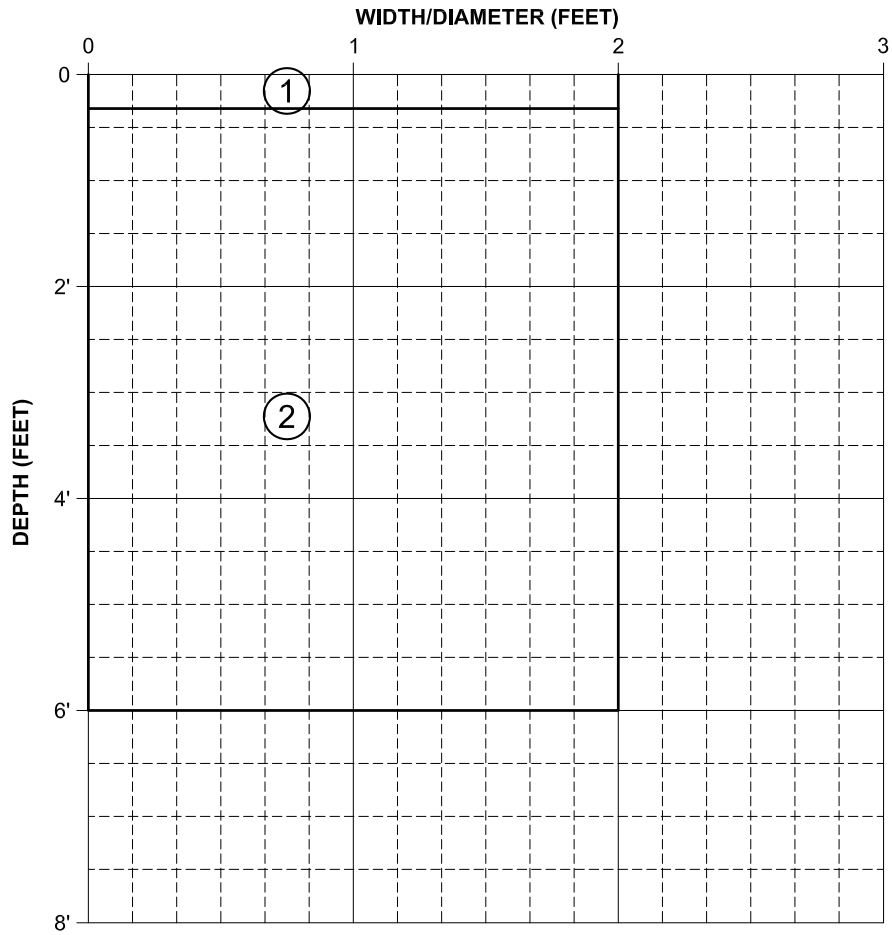
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: A-5



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	A5	BKT
6'	A5	BKT
NR	---	CA

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 2"	VEGETATION, SAND, DRY, (2.5Y, 5/3), NO PLASTICITY
2	2" - E.O.B.	SAND, (2.5Y, 5/3), VERY LOOSE, VERY FINE, CHUNKS THAT ARE BRITTLE
		E.O.T.P. = 6'

NOTES: NO CLAY

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: A-6

PROJECT INFORMATION

PROJECT: MT. TAYLOR

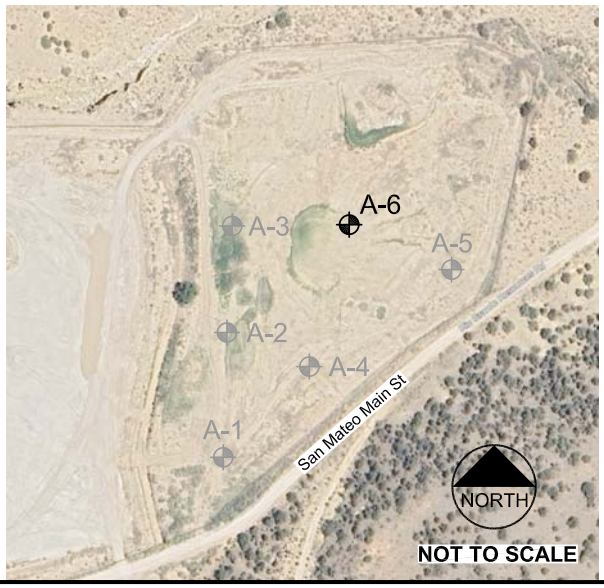
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER:

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

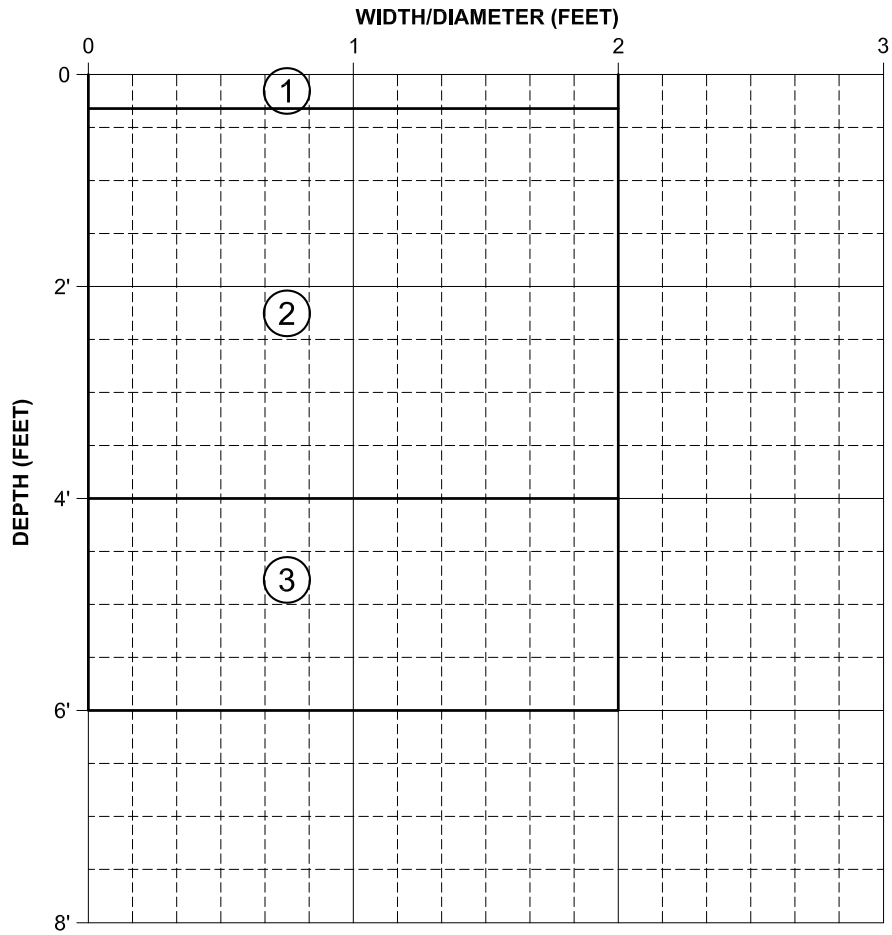
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: A-6



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	A6	BKT
5'	A6	BKT
NR	---	CA

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 2"	VEGETATION, SAND, DRY, (2.5Y, 5/3), LOOSE, NO PLASTICITY
2	2" - 4'	SILTY SAND, SLIGHTLY MOIST, (2.5Y, 5/3), LOOSE, VERY FINE, NO PLASTICITY
3	4' - E.O.B.	SILTSTONE, DRY, GRAY (2.5Y, 7/1), FINE, THIN FRAGMENTS AND SILT, NO PLASTICITY
		E.O.T.P. = 6'

NOTES:

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: **B-1**

PROJECT INFORMATION

PROJECT: MT. TAYLOR

PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

FIELD INFORMATION

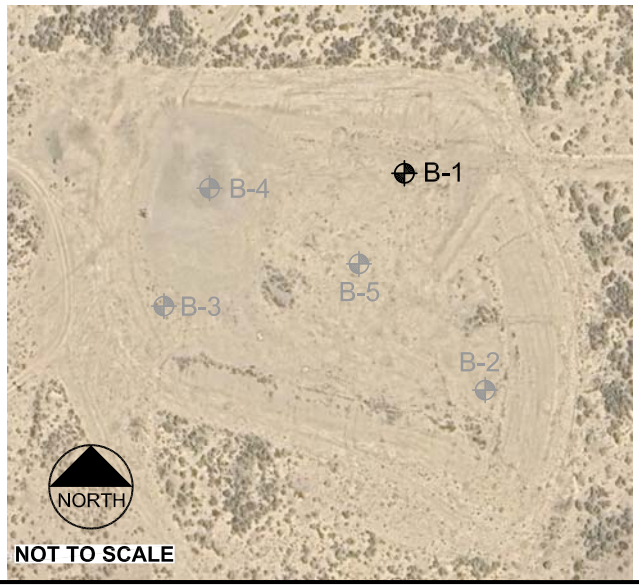
DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

TEST PIT LOCATION



NOT TO SCALE

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 5 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

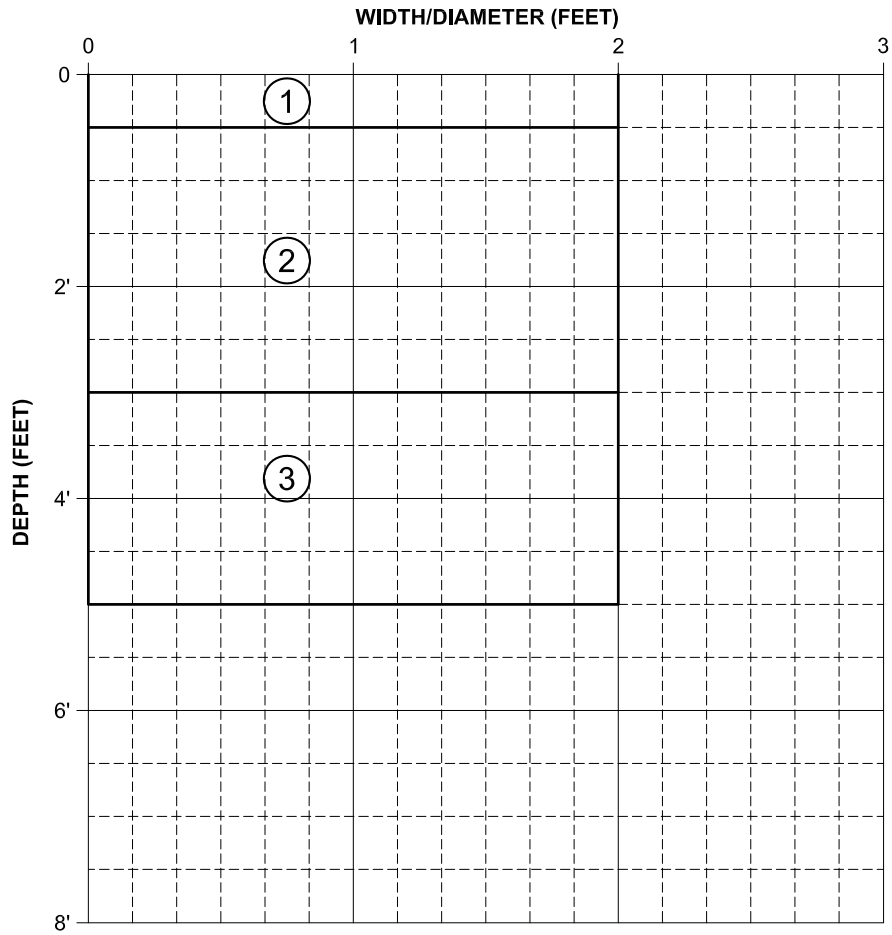
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: B-1



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	BK1-3	BKT
5'	BK1-5	BKT
2'	NR	CA
3'	NR	CA
5'	NR	CA

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 6"	VEGETATION AND TOPSOIL (MOSTLY VEGETATION), SAND
2	6" - 3'	SAND WITH GRAVEL, DRY, LOOSE SAND WITH GRAVEL UP TO 1.5", BROWN/TAN (2.5Y 5/3), NON PLASTIC
3	3' - E.O.B.	SANDY CLAY, BROWN/ BLACK (2.5Y, 2.5/1), VERY STIFF, MIXED, INTERBEDDED, CLAY LAYER VERY STIFF AT BOTTOM
		E.O.T.P. = 5'

NOTES: HARD CLAY LAYERS AT 3FT, BACKHOE STRUGGLING, REFUSAL AT 5'.

NO CAL RECOVERY (SAND IN 2FT CAL, 3FT & 5FT 100 BLOWS).

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: **B-2**

PROJECT INFORMATION

PROJECT: MT. TAYLOR

PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

FIELD INFORMATION

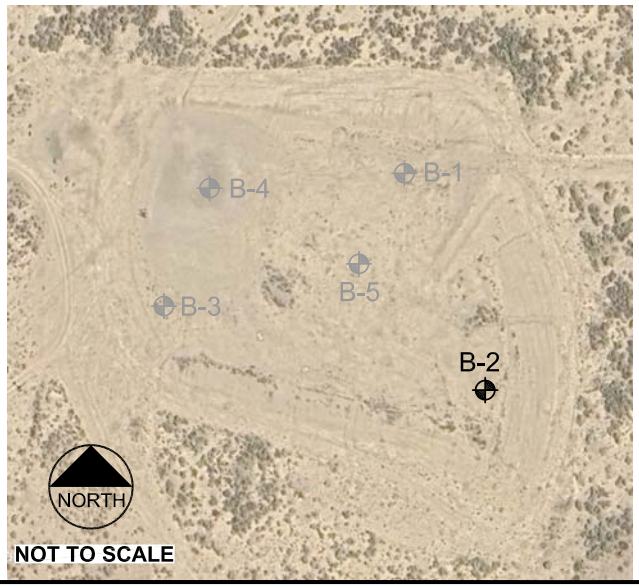
DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

TEST PIT LOCATION



NOT TO SCALE

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

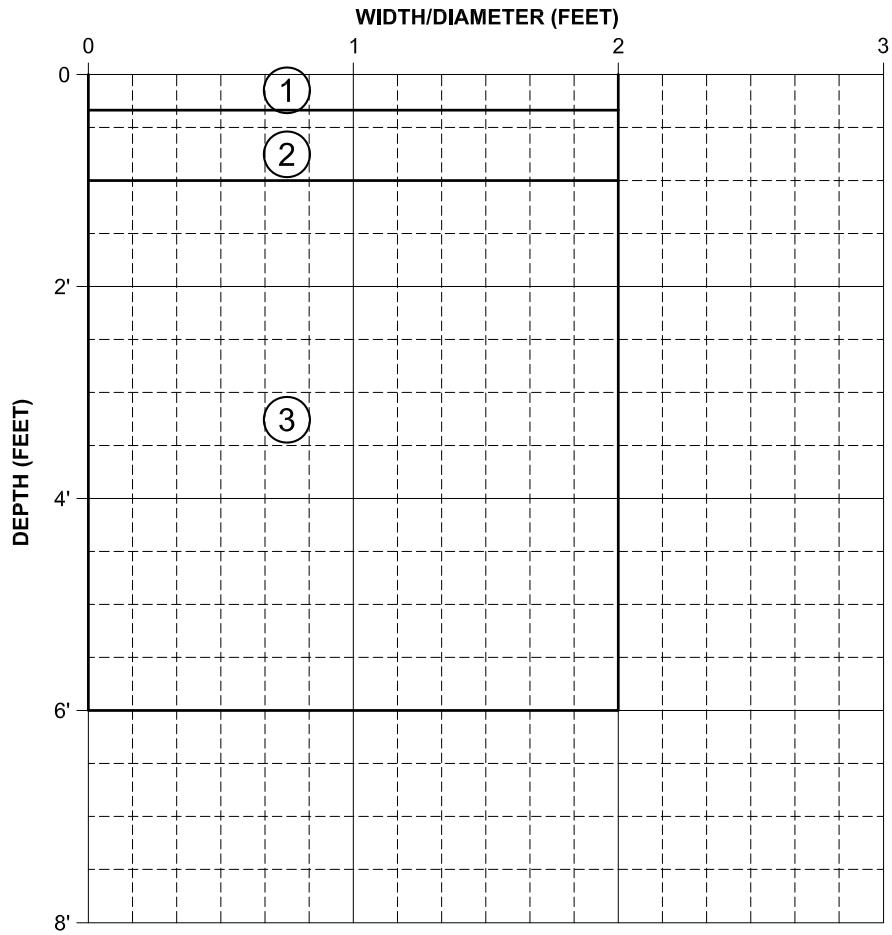
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: B-2



DEPTH	SAMPLE I.D.	SAMPLE TYPE
8"	B2	BKT
5'	B2	BKT
1'	NR	CA
4'	B-2C	CA

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 4"	OVERBURDEN, VEGETATION, LOOSE SAND
2	4" - 1'	CLAY, BROWN (2.5Y 2.5/1), STIFF, PLASTIC, MOISTURE PRESENT BUT FROZEN
3	1' - E.O.B.	SAND, DRY, TAN/ BROWN (2.5Y, 2.5/1), VERY LOOSE, NO PLASTICITY
		E.O.T.P. = 6'

NOTES: CAL BARREL ON CLAY LAYER IS FROZEN, 0/ 100

TRYING WITH HAND DRIVE BUT NOT WORKING

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: **B-3**

PROJECT INFORMATION

PROJECT: MT. TAYLOR

PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

FIELD INFORMATION

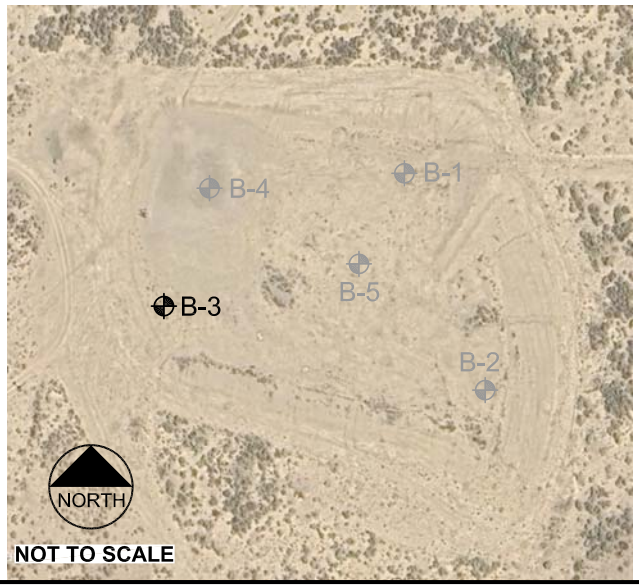
DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

TEST PIT LOCATION



NOT TO SCALE

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

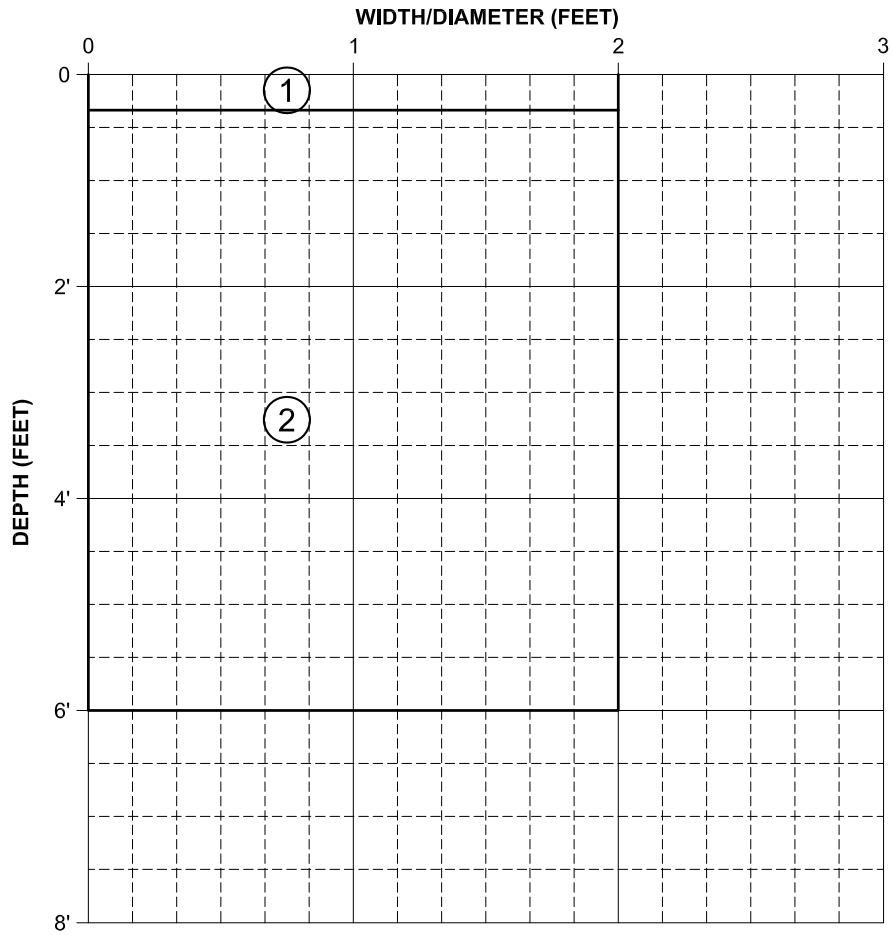
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: B-3



DEPTH	SAMPLE I.D.	SAMPLE TYPE
2'	B3-C	CA
4'	B3	BKT
6'	B3	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 4"	OVERBURDEN, VEGETATION, LOOSE SAND
2	4" - E.O.B.	SAND, TAN/ BROWN (2.5Y, 2.5/3), VERY LOOSE, NO PLASTICITY
		E.O.T.P. = 6'

NOTES: NO CLAY IN HOLE AT ALL

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: **B-4**

PROJECT INFORMATION

PROJECT: MT. TAYLOR

PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

FIELD INFORMATION

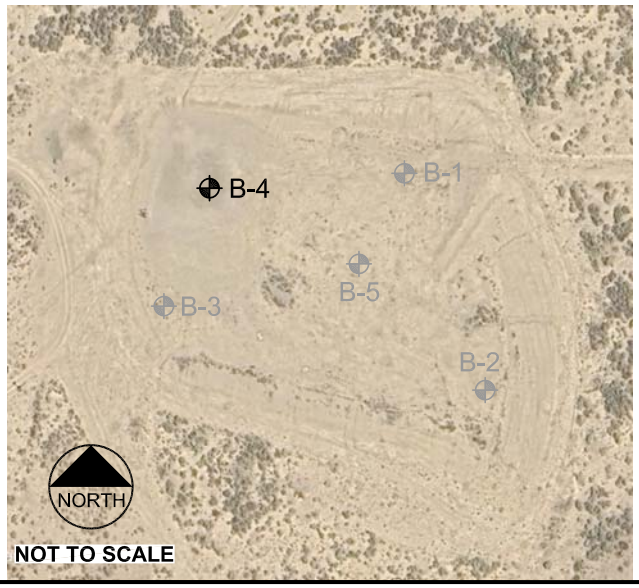
DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

TEST PIT LOCATION



NOT TO SCALE

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

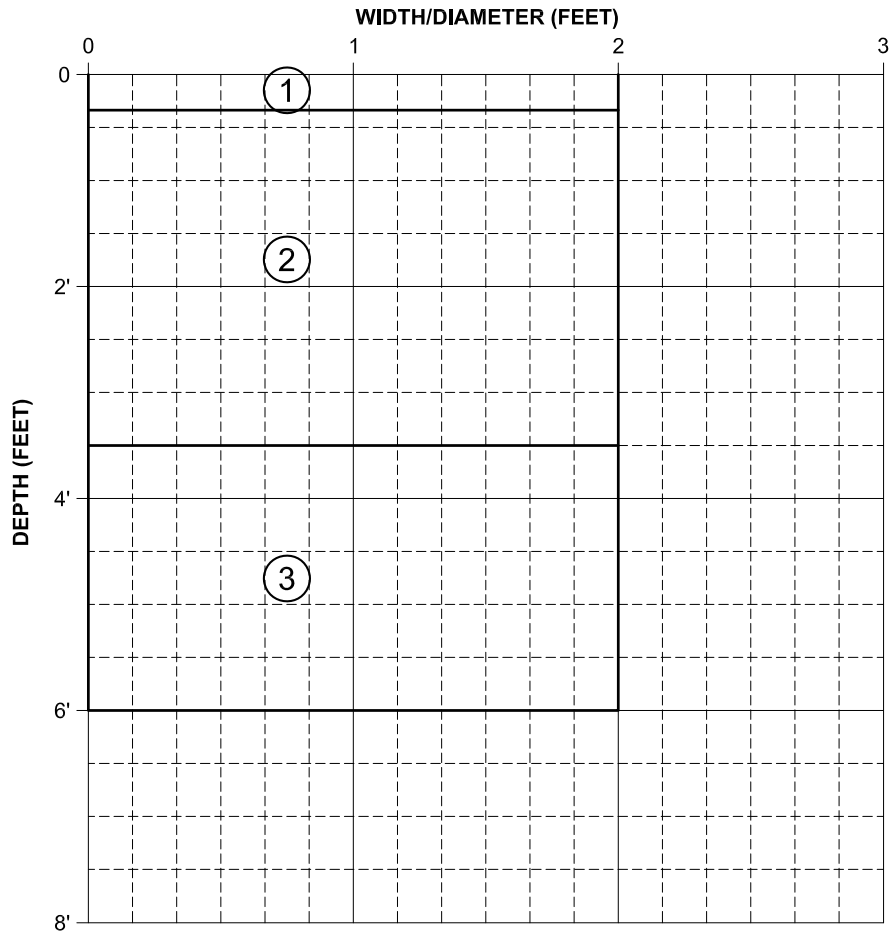
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: B-4



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	B4	BKT
5'	B4	BKT
5'	B4-C	CA

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 4"	VEGETATION, DRY, LOOSE SAND
2	4" - 3.5'	SAND, DRY, TAN/ BROWN (2.5Y, 2.5/3), VERY LOOSE, NO PLASTICITY
3	3.5' - E.O.B.	CLAY WITH SAND, DARK BROWN (2.5Y, 2.5/1), STIFF, PLASTIC
		E.O.T.P. = 6'

NOTES: 100 DRIVES

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: B-5

PROJECT INFORMATION

PROJECT: MT. TAYLOR

PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

FIELD INFORMATION

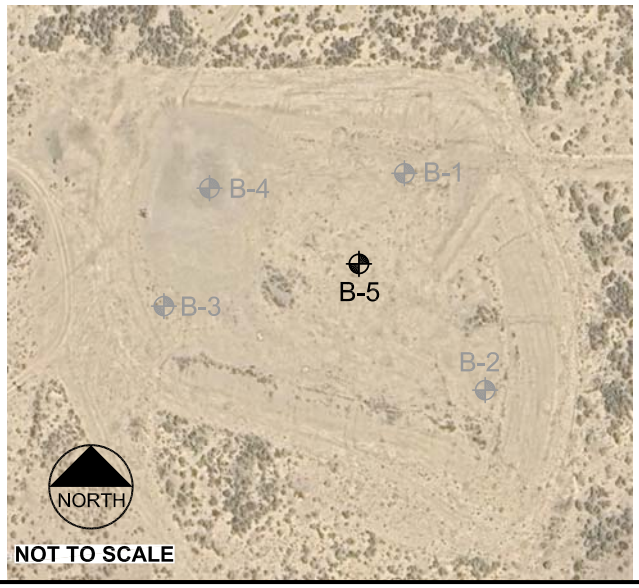
DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

TEST PIT LOCATION



EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT

TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME:

COMPLETE TIME:

INSTRUMENTATION:

BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE:

TIME LEFT SITE:

NOTES:

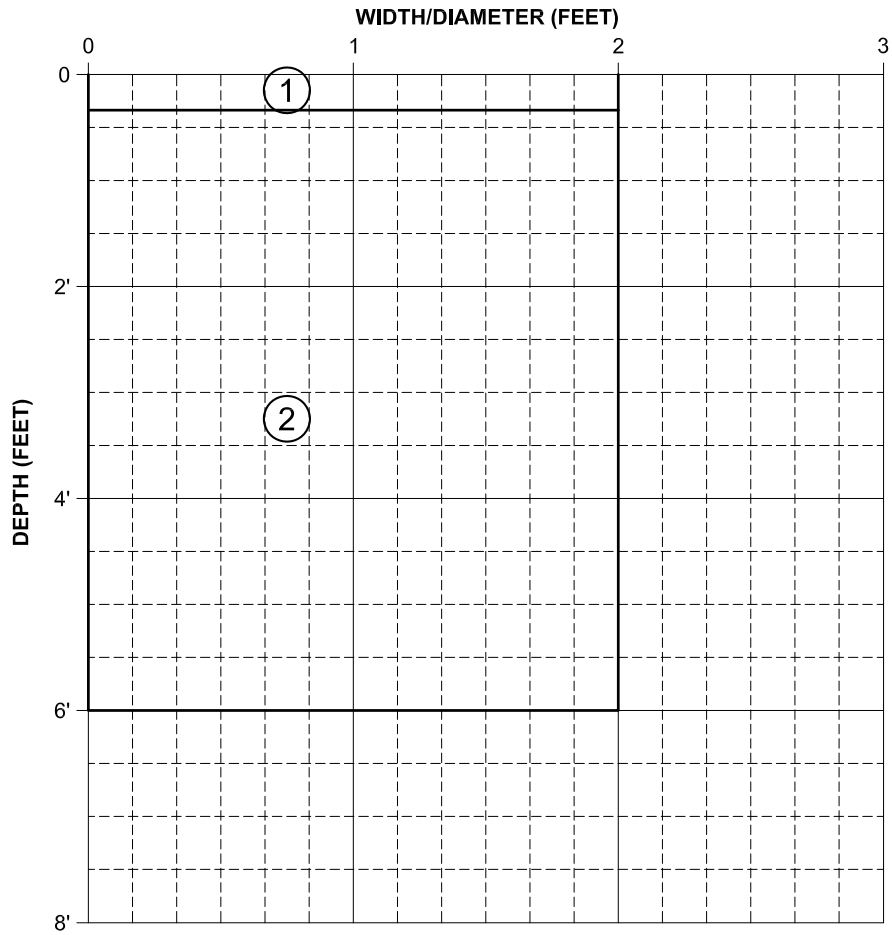
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: B-5



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	B5	BKT
6'	B5	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 4"	VEGETATION, DRY, LOOSE SAND
2	4" - E.O.B.	SAND, DRY, BROWN/ TAN (2.5Y, 5/3), VERY LOOSE, NO PLASTICITY
		E.O.T.P. = 6'

NOTES: NO CLAY TO 7'

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: C-1

PROJECT INFORMATION

PROJECT: MT. TAYLOR

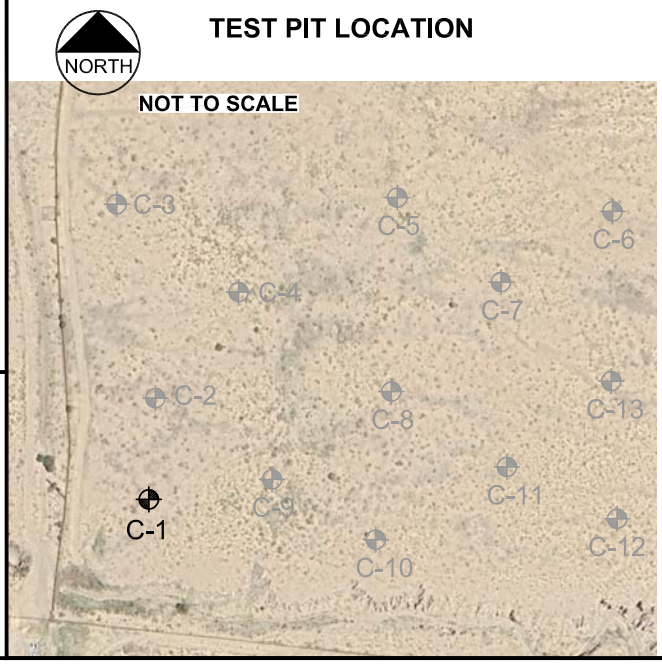
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 5 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

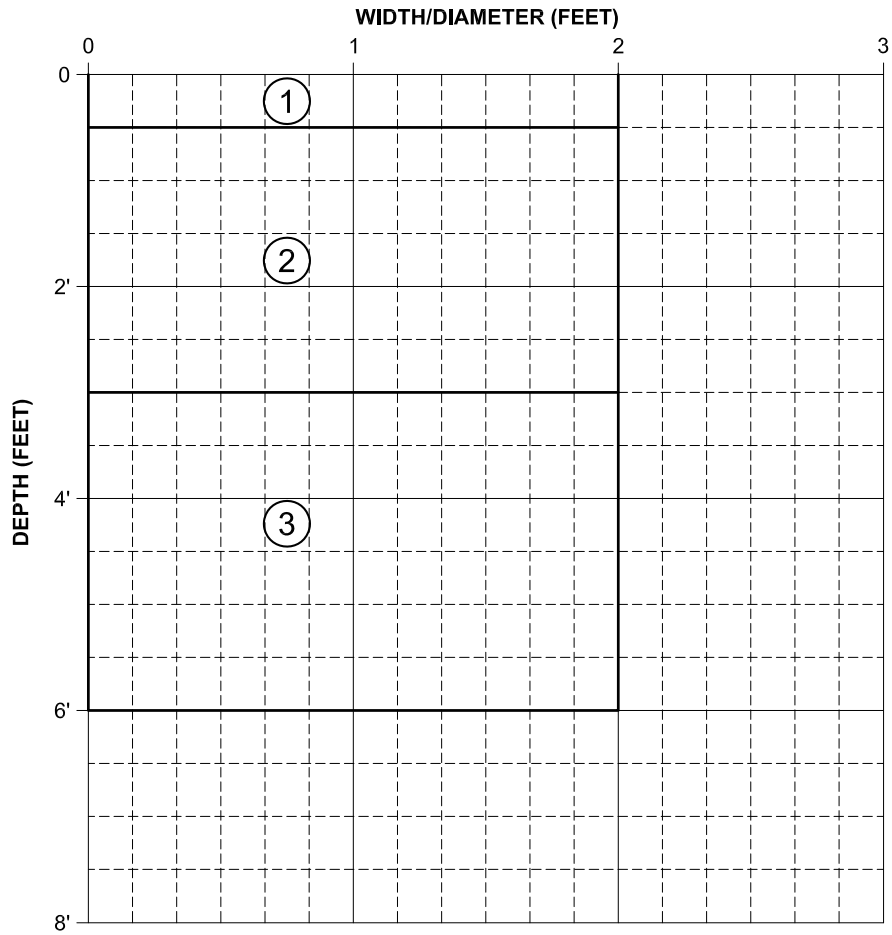
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: C-1



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	C-1C	CA
2'	C-1	BKT
5'	C-1	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 6"	SAND WITH VEGETATION, DRY, TAN/ BROWN (2.5Y, 5/3), LOOSE
2	6" - 3'	VERY LOOSE SAND, DRY, TAN/ BROWN (2.5Y, 5/3), NO PLASTICITY
3	3' - E.O.B.	SANDY CLAY WITH SAND, MOTTLED BROWN (5YR, 3/1), BRITTLE, CALCITE
		E.O.T.P. = 6'

NOTES:

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: C-2

PROJECT INFORMATION

PROJECT: MT. TAYLOR

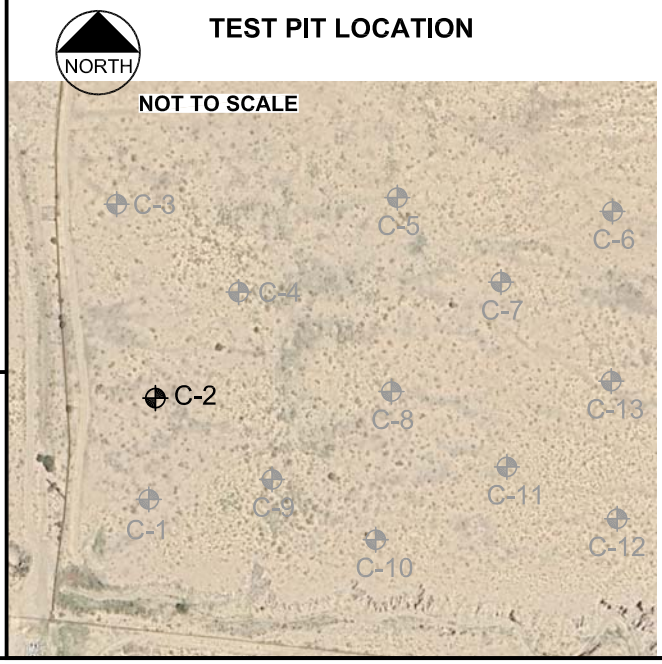
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 5 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

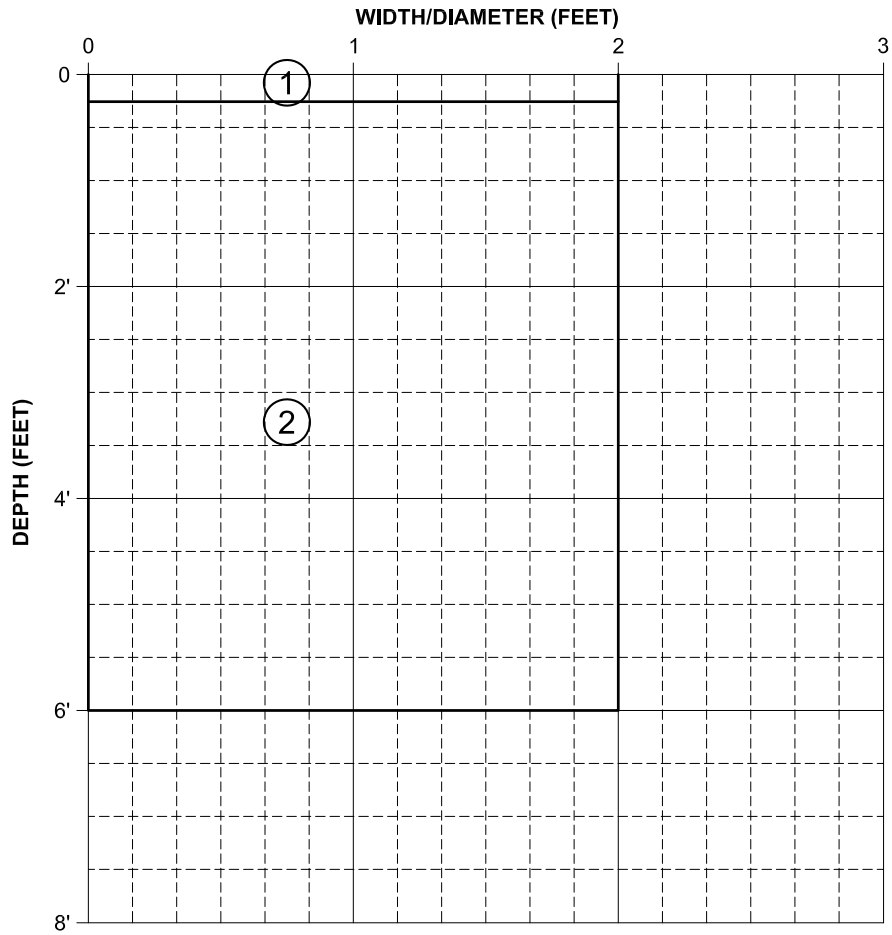
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: C-2



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	C-2C	CA
2'	C-2	BKT
5'	C-2	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 3"	SANDY VEGETATION, TAN (2.5Y, 5/3)
2	3" - E.O.B.	SANDY CLAY, DRY, BROWN (5YR, 3/1), BRITTLE, LOOSE/ CHUNKS, CALCITE
	4'	MORE SAND
		E.O.T.P. = 6'

NOTES:

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: C-3

PROJECT INFORMATION

PROJECT: MT. TAYLOR

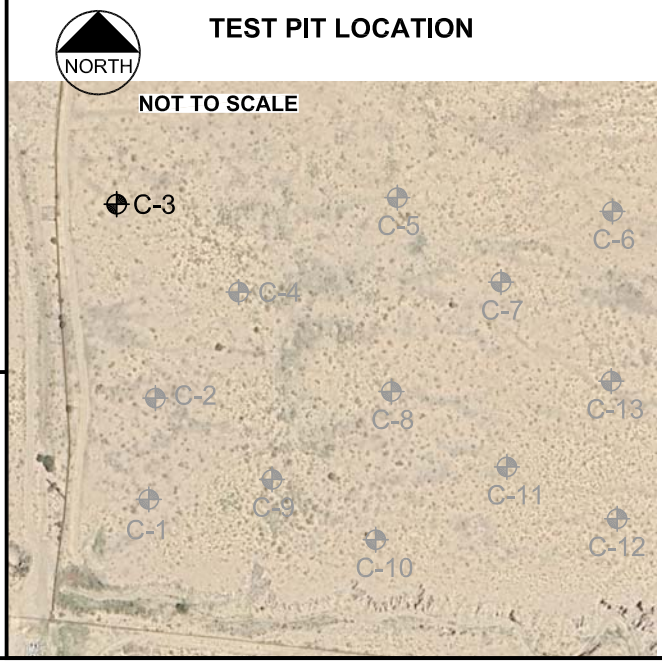
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

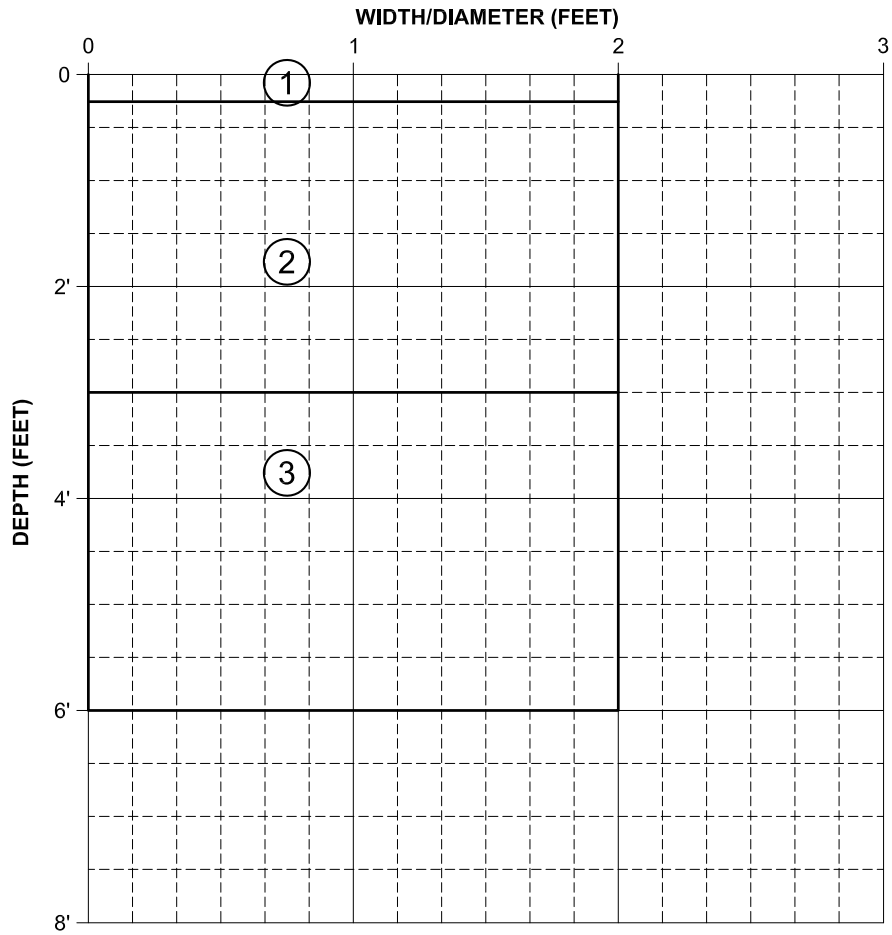
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: C-3



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	C-3C	CA
2'	C-3	BKT
5'	C-3	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 6"	SAND, LOTS OF VEGETATION, TAN (2.5Y, 5/3)
2	6" - 3'	VERY LOOSE SAND, DRY, TAN/ BROWN (2.5Y, 5/3), NO PLASTICITY
3	3' - E.O.B.	SANDY CLAY, DRY, MOTTLED BROWN (5YR, 3/1), BRITTLE
		E.O.T.P. = 6'

NOTES: ISSUES WITH HAND SAMPLER

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: C-4

PROJECT INFORMATION

PROJECT: MT. TAYLOR

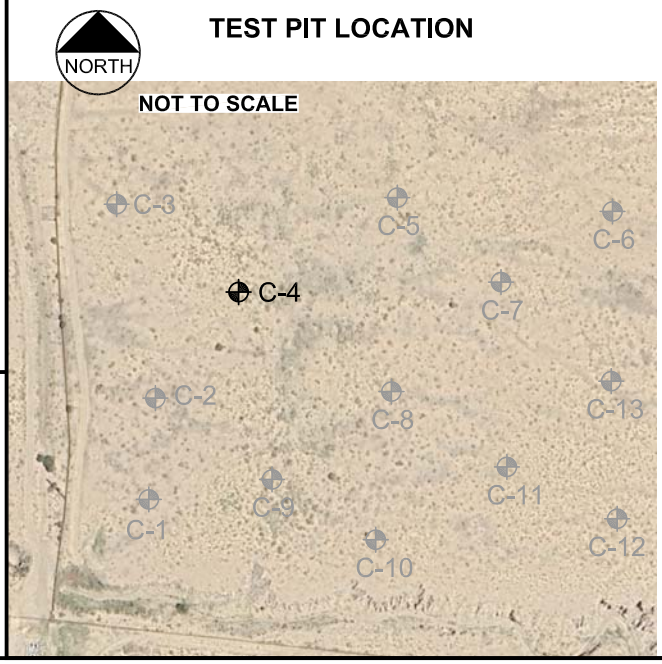
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

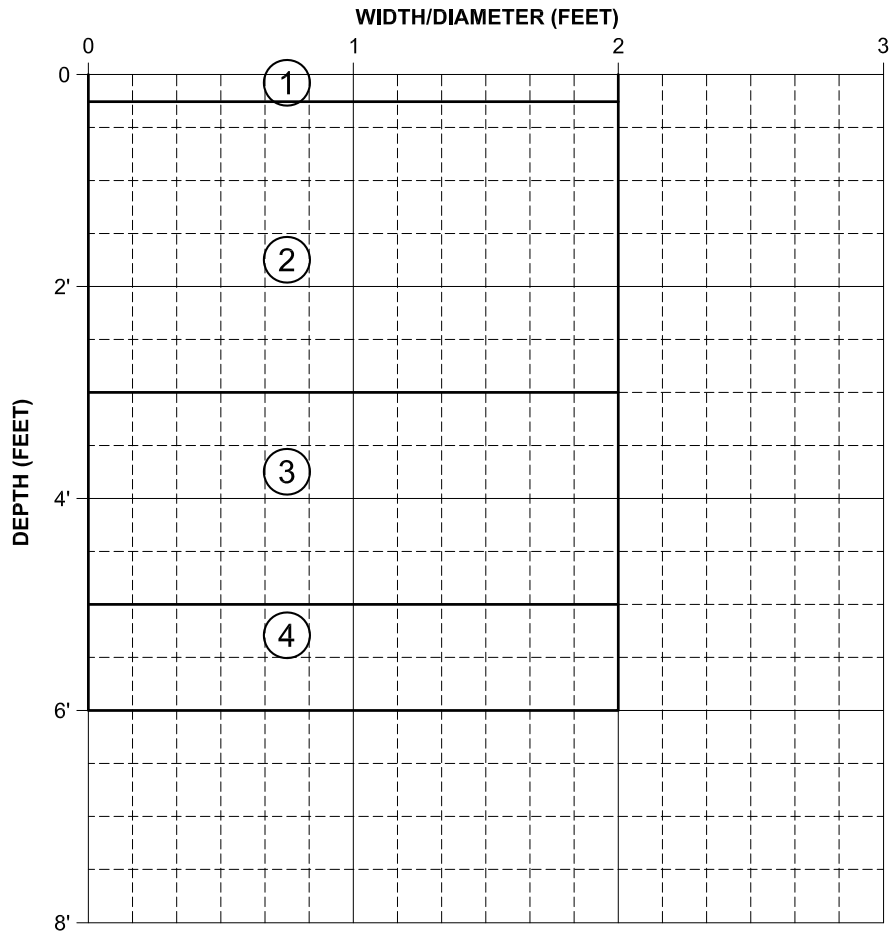
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: C-4



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	C-4C	CA
4'	C-4	BKT
6'	C-4	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 3"	VEGETATION, SAND, LOOSE
2	3" - 3'	VERY LOOSE SAND, DRY, TAN/ BROWN (2.5Y, 5/3), NO PLASTICITY
3	3' - 5'	SANDY CLAY, DRY, BROWN (5YR, 3/1), BRITTLE, CLUMPY
4	5' - E.O.B.	VERY LOOSE SAND, DRY, TAN/ BROWN (2.5Y, 5/3), NO PLASTICITY
		E.O.T.P. = 6'

NOTES: TEST PIT IN OLD WASHOUT FEATURE

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: C-5

PROJECT INFORMATION

PROJECT: MT. TAYLOR

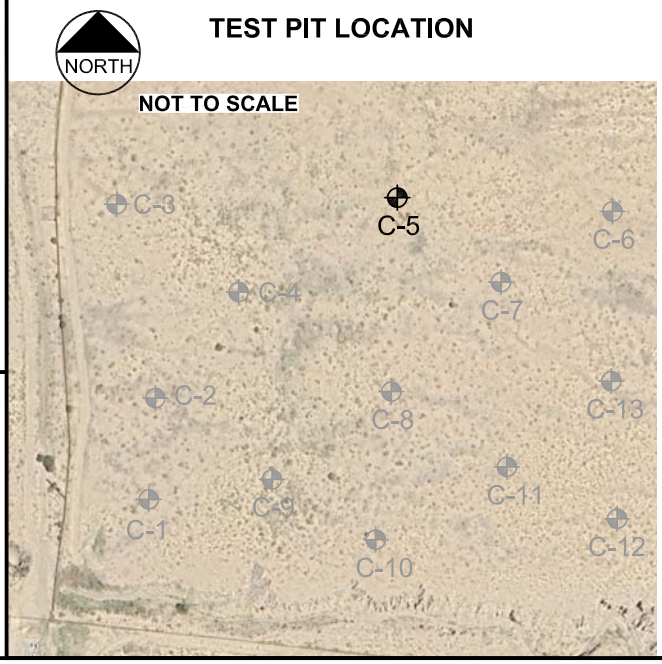
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 5 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

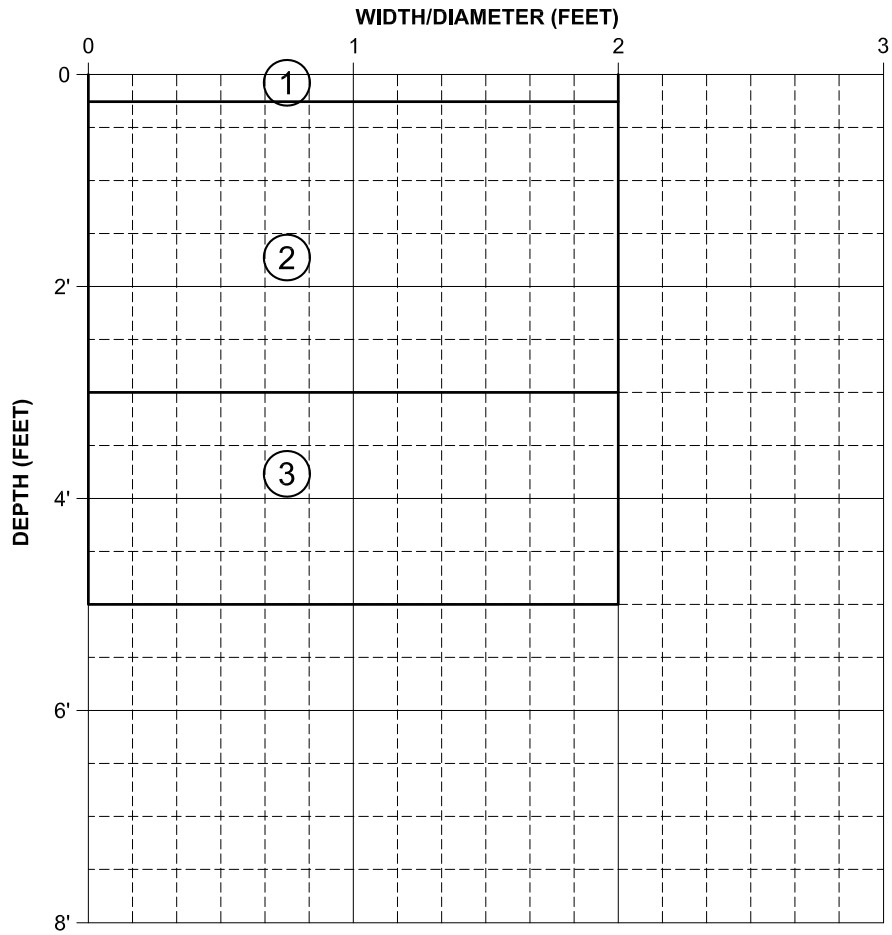
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: C-5



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	C-5C	CA
2'	C-5	BKT
5'	C-5	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 3"	VEGETATION, DRY, LOOSE SAND
2	3" - 3'	VERY LOOSE SAND, DRY, TAN/ BROWN (2.5Y, 5/3), NO PLASTICITY
3	3' - E.O.B.	SANDY CLAY, DRY, MOTTLED BROWN (5YR, 3/1), BRITTLE, LOOSE, CHUNKY, CALCITE
	5'	VERY FIRM, MOTTLED CLAY
		E.O.T.P. = 5'

NOTES: REFUSAL AT 5'

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: C-6

PROJECT INFORMATION

PROJECT: MT. TAYLOR

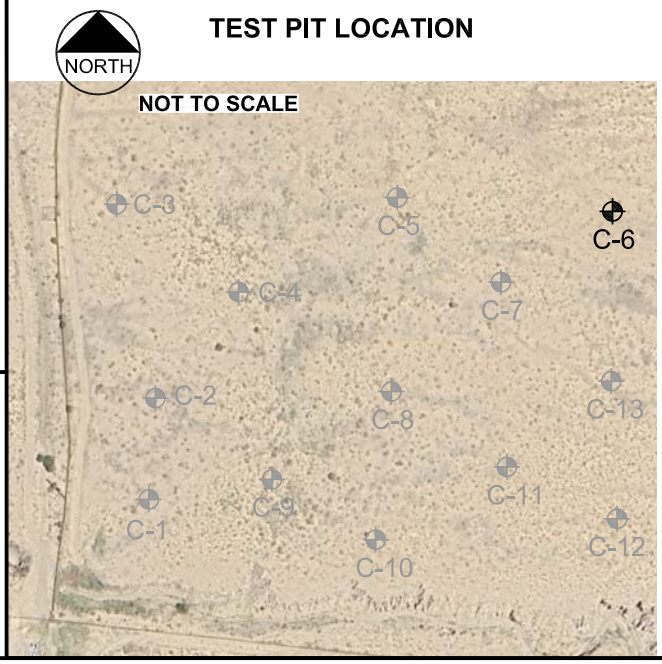
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

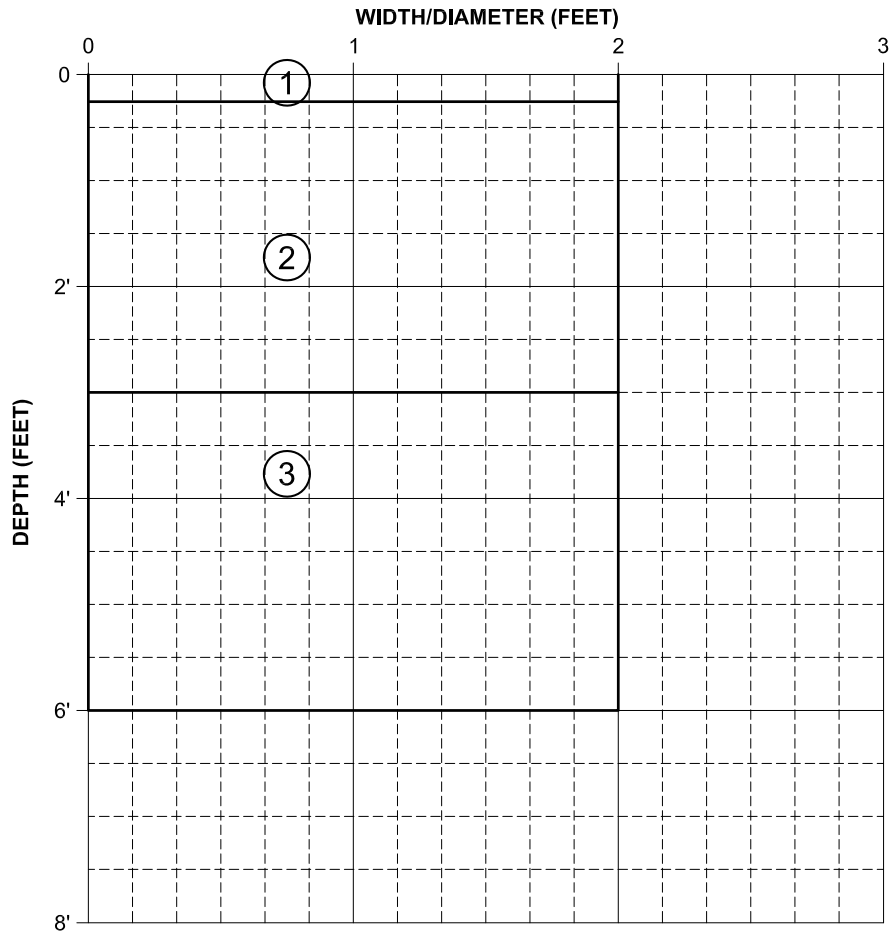
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: C-6



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	C-6C	CA
2'	C-6	BKT
5'	C-6	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 3"	VEGETATION, DRY, TAN (2.5Y, 5/3), SAND, NO PLASTICITY
2	3" - 3'	VERY LOOSE SAND, DRY, TAN/ BROWN (2.5Y, 5/3), NO PLASTICITY
3	3' - E.O.B.	SANDY CLAY, DRY, MOTTLED BROWN (5YR, 3/1), BRITTLE, CHUNKY, CALCITE
		E.O.T.P. = 6'

NOTES:

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: C-7

PROJECT INFORMATION

PROJECT: MT. TAYLOR

PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

FIELD INFORMATION

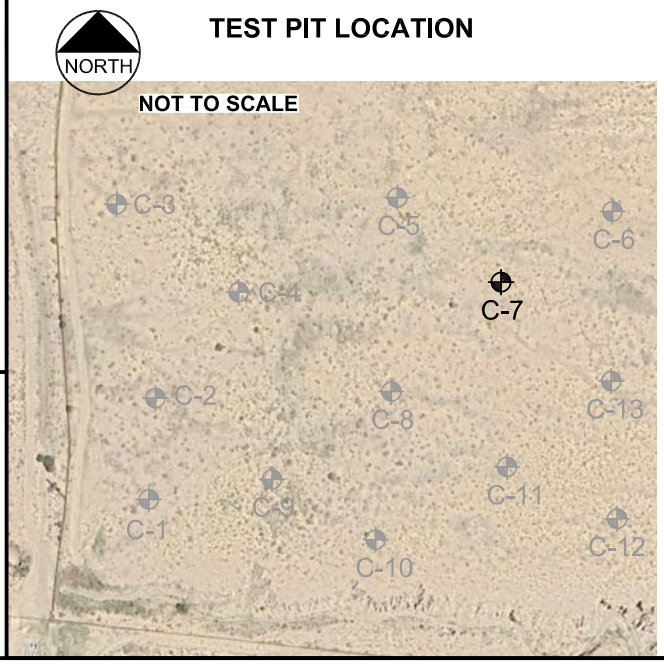
DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

TEST PIT LOCATION



EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT

TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME:

COMPLETE TIME:

INSTRUMENTATION:

BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE:

TIME LEFT SITE:

NOTES:

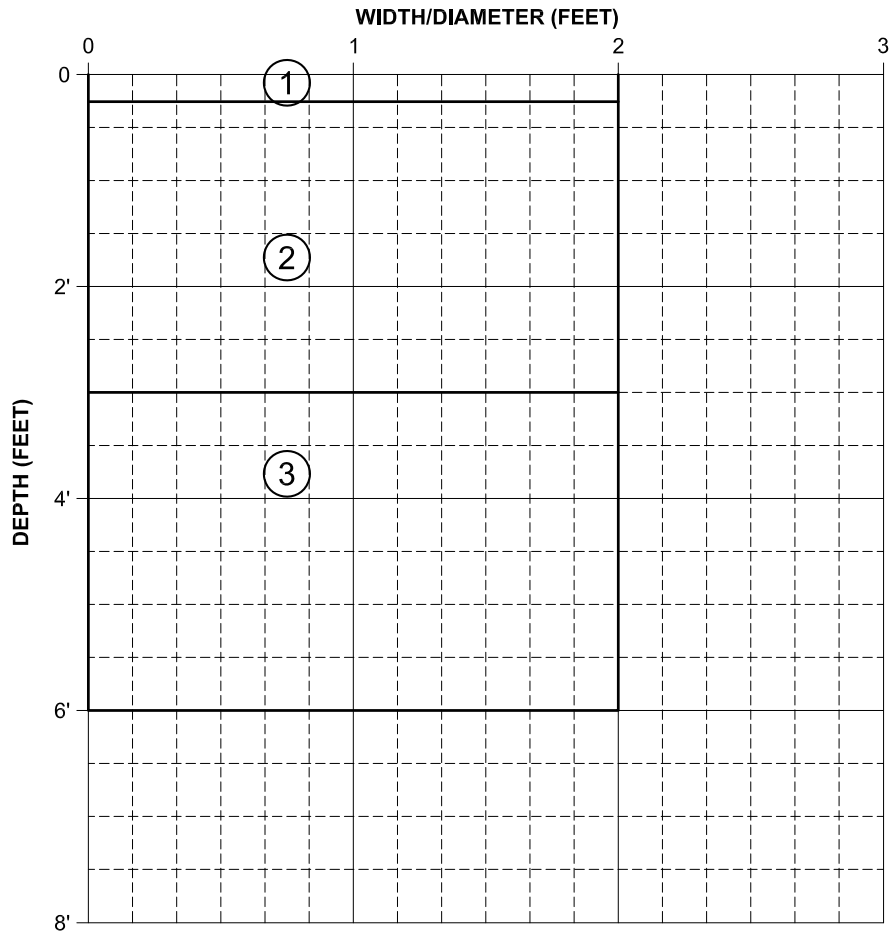
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: C-7



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	C-7C	CA
2'	C-7	BKT
6'	C-7	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 3"	VEGETATION, SAND, DRY, (2.5Y, 5/3)
2	3" - 3'	VERY LOOSE SAND, DRY, TAN/ BROWN (2.5Y, 5/3), NO PLASTICITY
3	3' - E.O.B.	SANDY CLAY, DRY, MOTTLED BROWN (5YR, 3/1), BRITTLE, CHUNKY
		E.O.T.P. = 6'

NOTES: RECOVERY WITH CAL SAMPLER HAS BEEN POOR

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: C-8

PROJECT INFORMATION

PROJECT: MT. TAYLOR

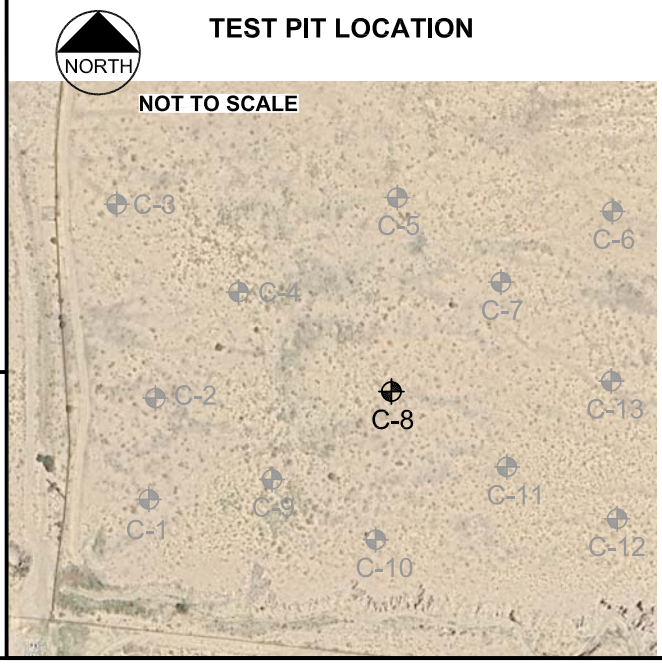
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

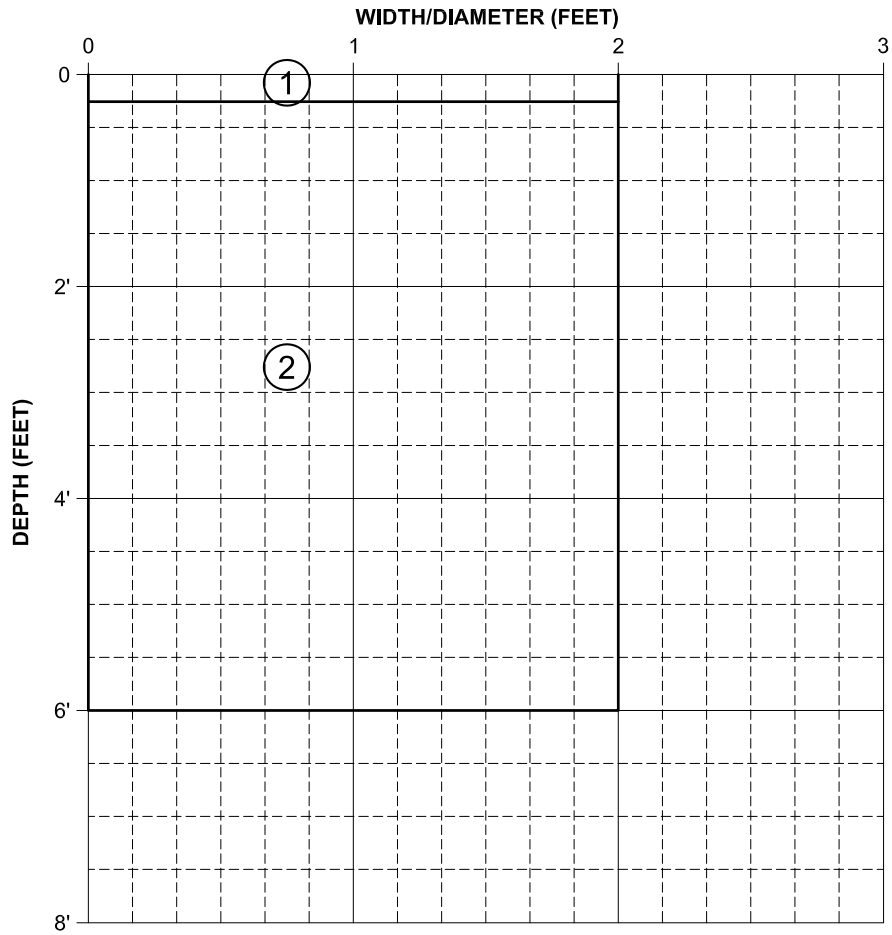
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: C-8



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	C-8C	CA
2'	C-8	BKT
5'	C-8	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 3"	VEGETATION, SAND, DRY, (2.5Y, 5/3), LOOSE
2	3" - E.O.B.	SANDY CLAY, DRY, BROWN (5YR, 3/1), BRITTLE, CHUNKY
	5'	SAND INCREASES
		E.O.T.P. = 6'

NOTES:

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: C-9

PROJECT INFORMATION

PROJECT: MT. TAYLOR

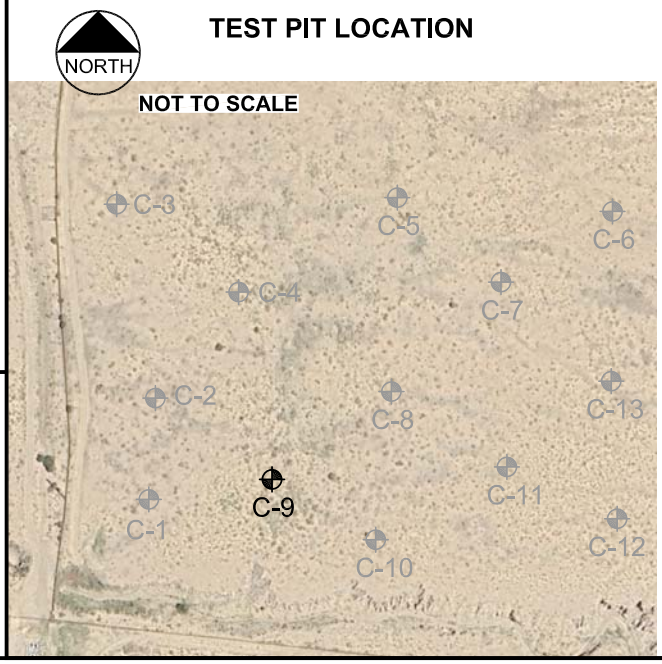
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

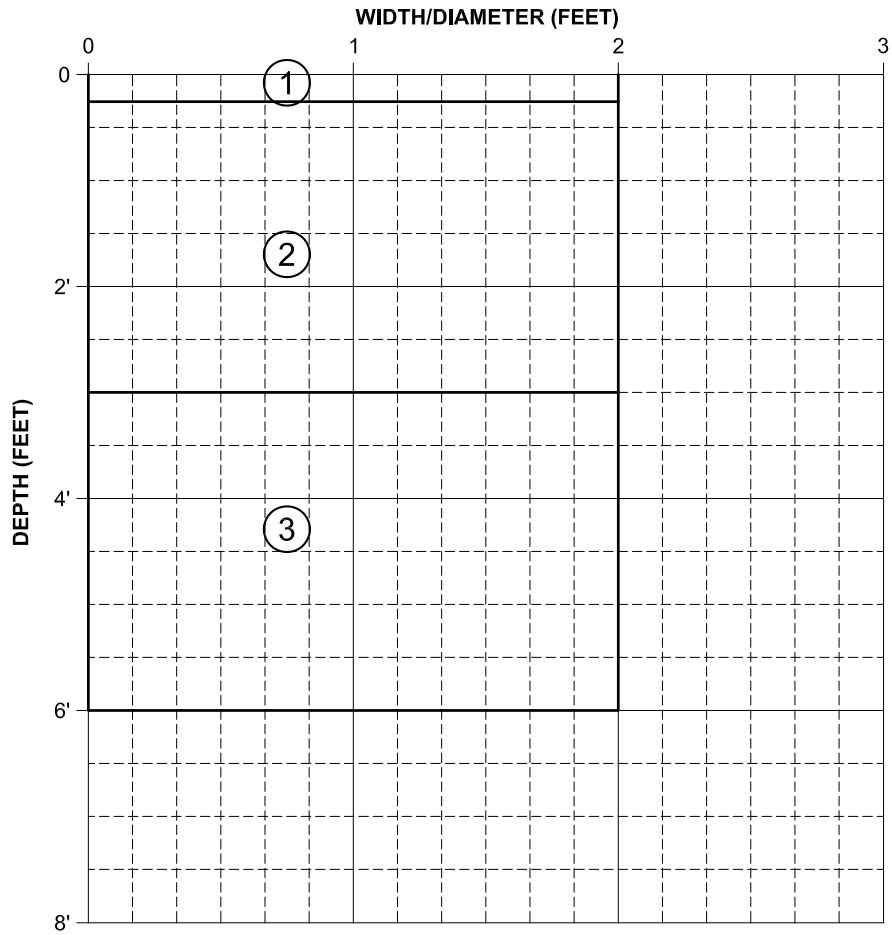
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: C-9



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	C-9C	CA
2'	C-9	BKT
5'	C-9	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 3"	VEGETATION, SAND, DRY, TAN (2.5Y, 5/3)
2	6" - 3'	VERY LOOSE SAND, DRY, TAN/ BROWN (2.5Y, 5/3), NO PLASTICITY
3	3' - E.O.B.	SANDY CLAY, DRY, MOTTLED BROWN (5YR, 3/1), CHUNKY, BRITTLE
		E.O.T.P. = 6'

NOTES: GROUND FROZEN

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: C-10

PROJECT INFORMATION

PROJECT: MT. TAYLOR

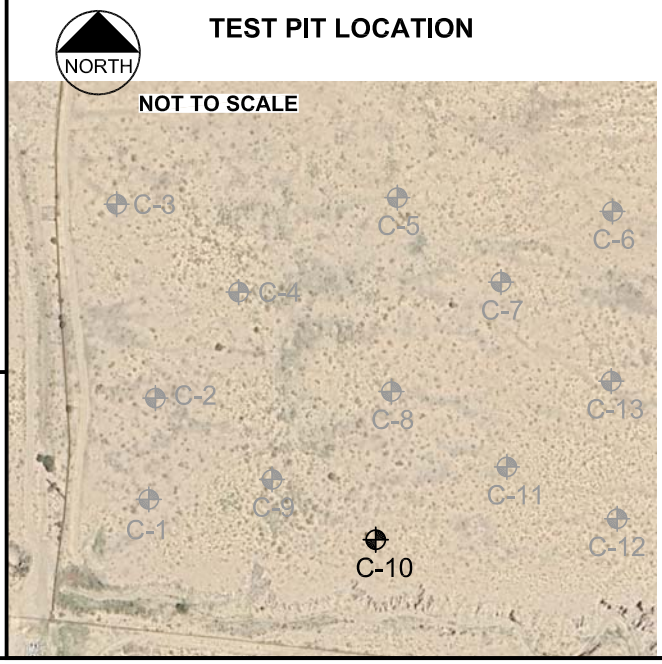
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

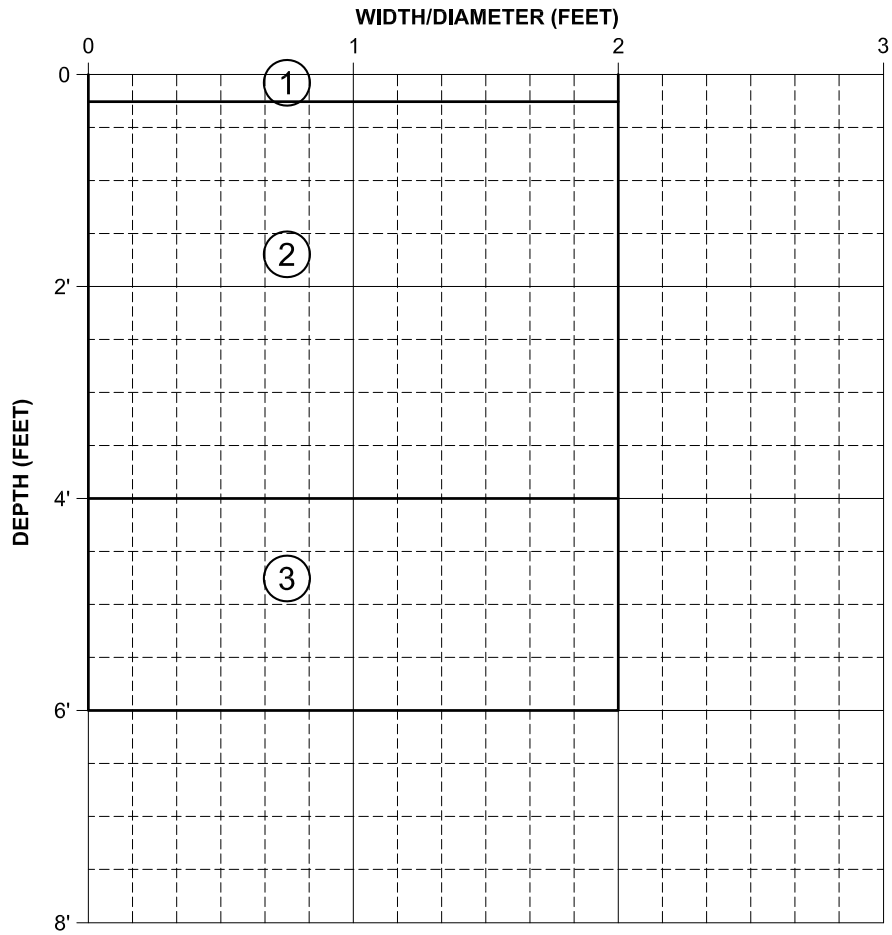
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: C-10



DEPTH	SAMPLE I.D.	SAMPLE TYPE
4'	C-10C	CA
3'	C-10	BKT
6'	C-10	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 3"	VEGETATION, SAND, DRY, TAN (2.5Y, 5/3), NO PLASTICITY
2	6" - 4'	VERY LOOSE SAND, DRY, TAN (2.5Y, 5/3), NO PLASTICITY
3	4' - E.O.B.	SANDY CLAY, DRY, MOTTLED BROWN (5YR, 3/1), CHUNKY, BRITTLE MORE SAND
		E.O.T.P. = 6'

NOTES:

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: C-11

PROJECT INFORMATION

PROJECT: MT. TAYLOR

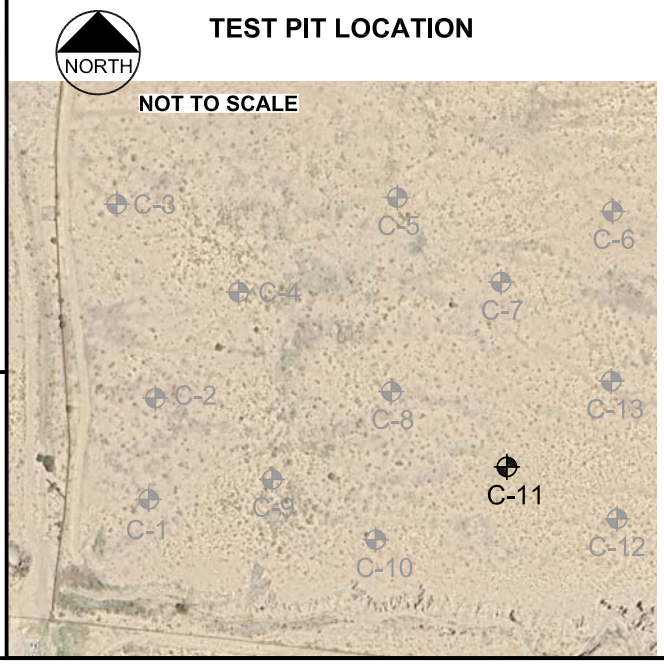
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

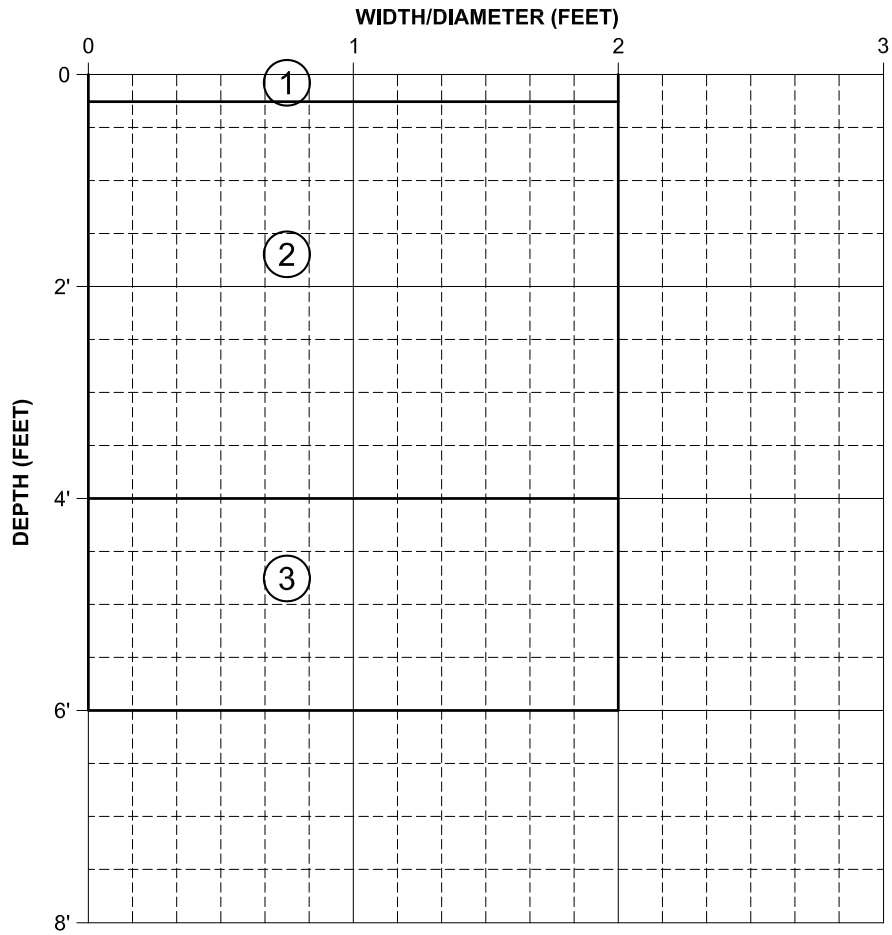
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: C-11



DEPTH	SAMPLE I.D.	SAMPLE TYPE
4'	C-11C	CA
3'	C-11	BKT
5'	C-11	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 3"	VEGETATION, SAND, DRY, TAN (2.5Y, 5/3)
2	6" - 4'	VERY LOOSE SAND, DRY, TAN (2.5Y, 5/3), NO PLASTICITY
3	4' - E.O.B.	SANDY CLAY, DRY, MOTTLED BROWN (5YR, 3/1), CHUNKY, BRITTLE
		E.O.T.P. = 6'

NOTES:

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: C-12

PROJECT INFORMATION

PROJECT: MT. TAYLOR

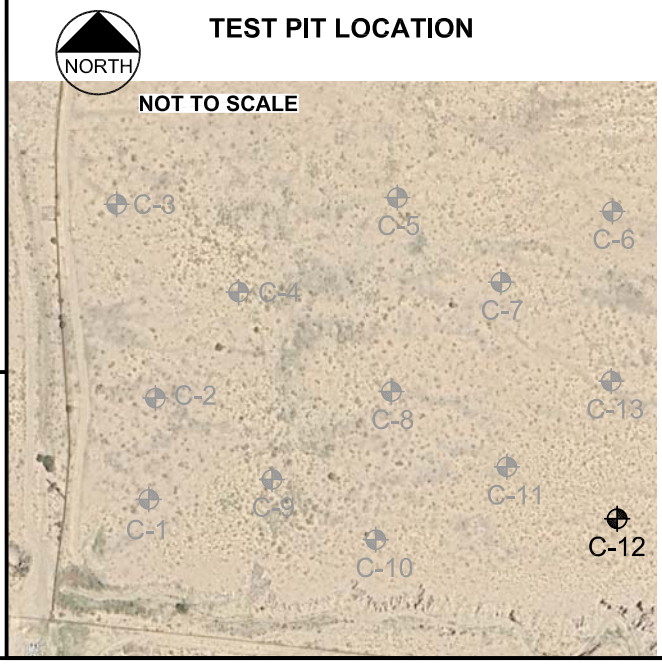
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

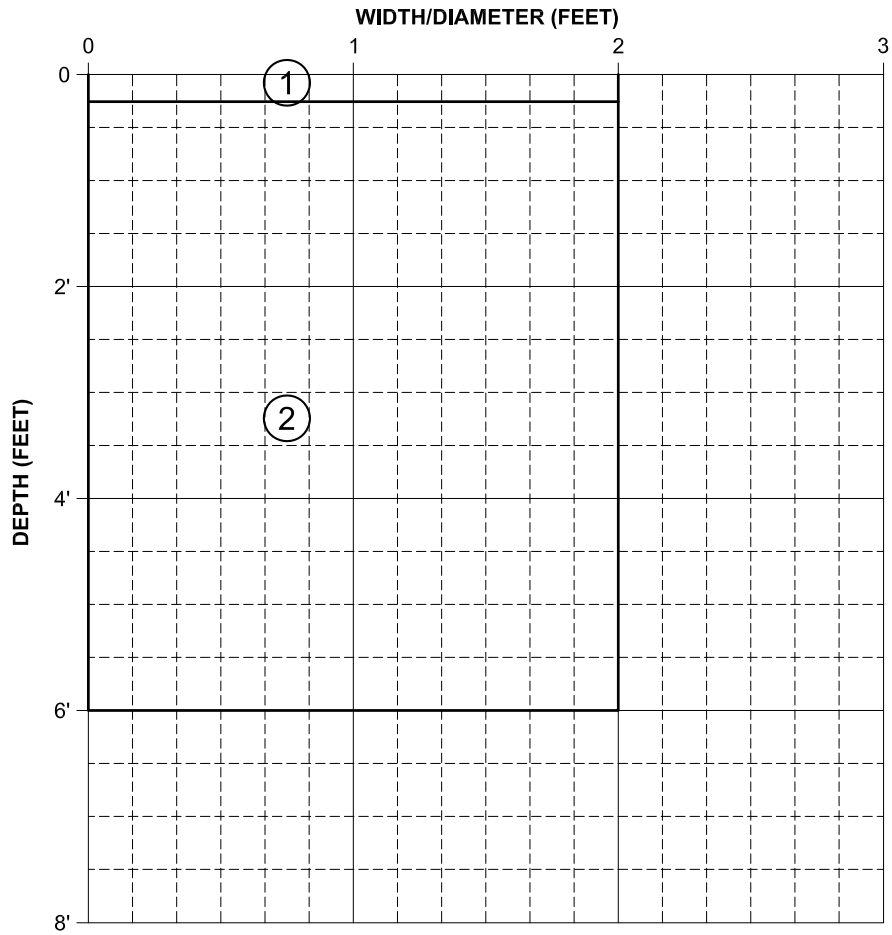
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: C-12



DEPTH	SAMPLE I.D.	SAMPLE TYPE
N/R	N/R	CA
3'	C-12	BKT
6'	C-12	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 3"	VEGETATION, SAND, DRY, TAN (2.5Y, 5/3), NO PLASTICITY
2	3" - E.O.B.	VERY LOOSE SAND, DRY, TAN (2.5Y, 5/3), NO PLASTICITY
		E.O.T.P. = 6'

NOTES: NO CLAY

Engineering Analytics, Inc.

TEST PIT LOG

PAGE: 1 of 2

DATE:

TEST PIT NO.: C-13

PROJECT INFORMATION

PROJECT: MT. TAYLOR

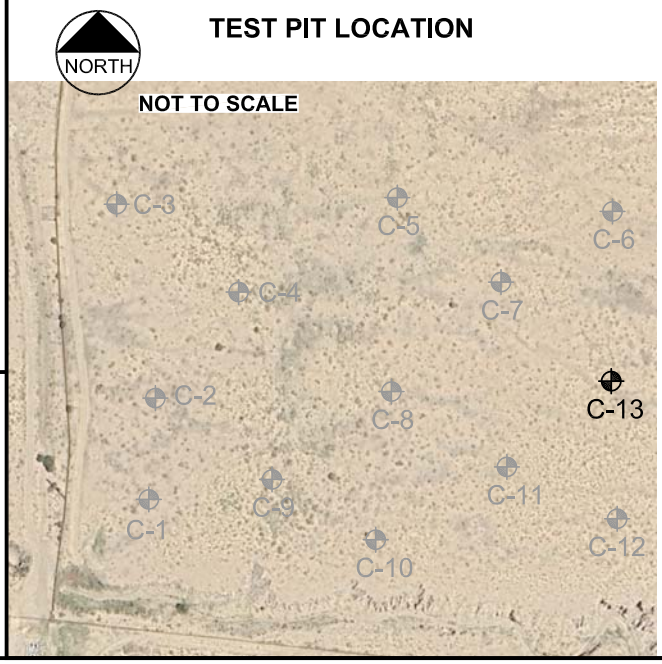
PROJECT NO.: 111360

CLIENT: MT. TAYLOR

OWNER:

LOCATION: GRANTS, NEW MEXICO

TEST PIT LOCATION



FIELD INFORMATION

DATE & TIME ARRIVED:

TEST PIT LOGGED BY: JBB

VISITORS:

WEATHER: VERY COLD

EXCAVATION INFORMATION

EXCAVATION COMPANY: RGR

START TIME:

TEST PIT DEPTH: 6 FT TEST PIT DIA.: 2 FT

EXCAVATION METHOD:

SAMPLING METHOD:

TIME EXCAVATION COMPLETE:

TEST PIT COMPLETION / ABANDONMENT INFORMATION

START TIME: COMPLETE TIME:

INSTRUMENTATION: BACKFILL:

GROUNDWATER CONDITIONS

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: TIME LEFT SITE:

NOTES:

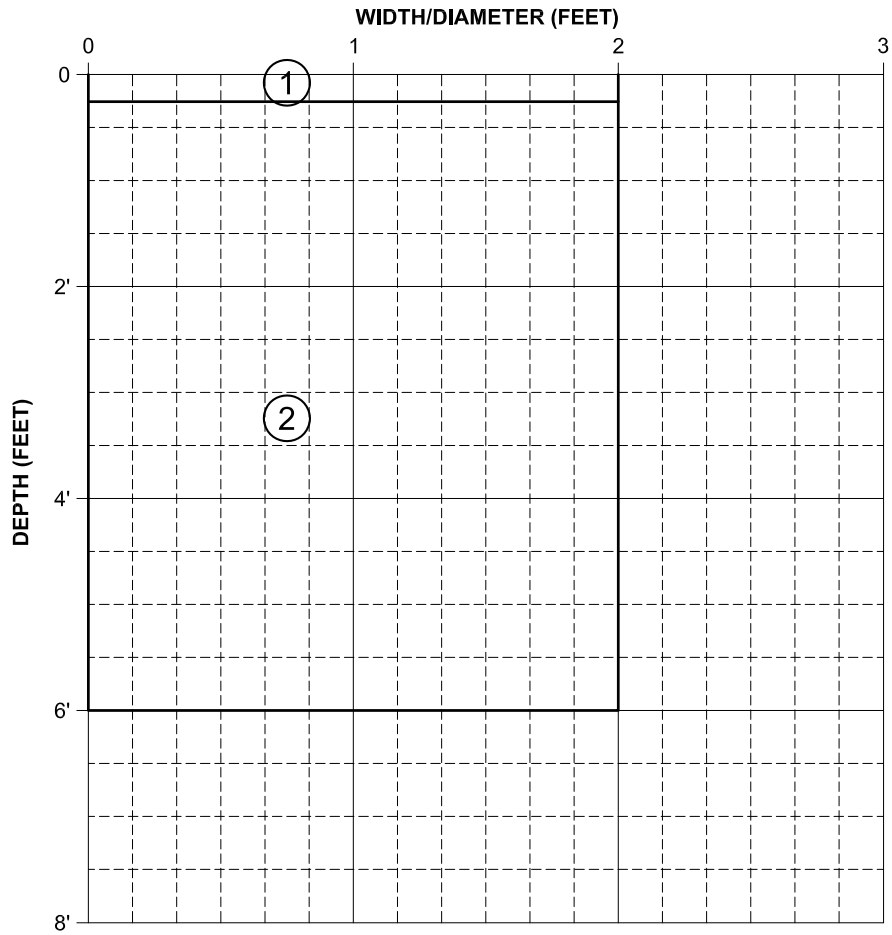
Engineering Analytics, Inc.

TEST PIT LOG

PROJECT: MT. TAYLOR **PAGE:** 2 OF 2

PROJECT NO.: 111360 **DATE:**

TEST PIT NO.: C-13



DEPTH	SAMPLE I.D.	SAMPLE TYPE
3'	C-13C	CA
3'	C-13	BKT
6'	C-13	BKT

SOIL TYPE	SOIL DEPTH	SOIL DESCRIPTION AND EXCAVATION NOTES
1	0 - 3"	VEGETATION, SAND, DRY, TAN (2.5Y, 5/3)
2	3" - E.O.B.	VERY SANDY CLAY, DRY, MOTTLED BROWN (2.5Y, 3/1), BRITTLE, CHUNKY
		CLAY AND SAND ALMOST 1/2 & 1/2
		E.O.T.P. = 6'

NOTES:

ATTACHMENT B
Laboratory Test Report

Geotechnical Laboratory Test Report
Mt. Taylor Mine

Prepared for:

Rio Grand Resources

750 W Pender Street, Suite 250,
Vancouver, BC, V6C 2T7,
Canada

Prepared by:

Engineering Analytics, Inc.

1600 Specht Point Road, Suite 209
Fort Collins, Colorado 80525
(970) 488-3111
Fax (970) 488-3112

Project No. 111360

November 2025

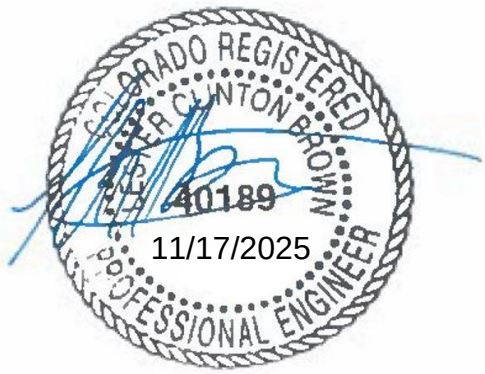


Table of Contents

1.0 Summary

This report presents the results of laboratory testing conducted on soil samples provided by Engineering Analytics of Fort Collins, Colorado. The sample selection and testing parameters were designated by personnel from Engineering Analytics. All laboratory analyses were performed by Engineering Analytics under the direct supervision of a Professional Engineer licensed in the State of Colorado.

The testing procedures adhered to the standards outlined by the American Society of Testing and Materials (ASTM). Where ASTM standards were not applicable, established industry standards were employed. Any deviations from standard procedures are explicitly noted within this report the table below lists ASTM procedures used in this investigation. The results of the laboratory tests, including relevant graphical representations, are presented in the following sections.

Test Performed	ASTM Test Method	No. of Tests Performed
Moisture Determination	D2216	48
Percent Passing No. 200	D1140	48
Atterberg Limits	D4318	48
Flexible Wall Permeability	D5084	2
Soil Water Characteristic Curve	D6836	7
Standard Proctor Compaction	D698	8
Consolidated Undrained Triaxial Shear	D4767	1

2.0 Summary of Test Results

Engineering Analytics, Inc.

					Project Name: Mt. Taylor Mine		**Project No.** 111360		**Date:** 02/21/2025		**Date:**
Hole ID	**Sample ID**	**Sampling Depth (ft)**		**Sample Type**	**Moisture Content (%)**	**Percent Passing #200 (ASTM D1140)**	**Atterberg Limits (ASTM D4318) (LL / PL / PI)**	**Flexible Wall Permeability (ASTM D5084)**	**Soil Water Characteristic Curve (SWCC)**	**Standard Proctor Compaction (ASTM D698)**	Triaxial (CUPP), 3-stage (ASTM D4767)
		From	**To**								
TOTAL NUMBER OF COMPLETED TESTS					**48**	**48**	**48**	**2**	**7**	**8**	**1**
EA-BSA01	EA-BSA01 A	2.0	3.0	BKT	9.7%	76.4%	40 / 20 / 20				
	EA-BSA01 B	5.0	6.0	BKT	12.4%	78.8%	38 / 19 / 19				
EA-BSA02	EA-BSA02 A	2.0	3.0	BKT	9.5%	66.5%	26 / 20 / 6				
	EA-BSA02 B	5.0	6.0	BKT	8.9%	65.1%	25 / 20 / 5				
EA-BSA03	EA-BSA03 A	2.0	3.0	BKT	7.0%	46.1%	NV / NP / NP				
	EA-BSA03 B	5.0	6.0	BKT	6.8%	40.8%	NV / NP / NP				
EA-BSA04	EA-BSA04 A	2.0	3.0	BKT	13.2%	56.5%	28 / 18 / 10				
	EA-BSA04 B	5.0	6.0	BKT	6.9%	51.2%	25 / 18 / 7				
EA-BSA05	EA-BSA05 A	2.0	3.0	BKT	6.2%	41.8%	25 / 20 / 5		(1)	111.1 @ 13.9%	
	EA-BSA05 B	5.0	6.0	BKT	6.5%	43.0%	25 / 20 / 5				
EA-BSA06	EA-BSA06 A	2.0	3.0	BKT	12.8%	51.9%	23 / 20 / 3				
	EA-BSA06 B	5.0	6.0	BKT	8.6%	28.9%	NV / NP / NP		(1)	117.6 @ 12.2%	
EA-BSB01	EA-BSB01 A	2.0	3.0	BKT	18.9%	81.1%	39 / 16 / 23				
	EA-BSB01 B	5.0	6.0	BKT	8.1%	39.0%	NV / NP / NP				
EA-BSB02	EA-BSB02 A	2.0	3.0	BKT	16.8%	68.0%	35 / 16 / 19				
	EA-BSB02 B	5.0	6.0	BKT	7.9%	55.0%	22 / 20 / 2		(1)	110.3 @ 16.2%	
EA-BSB03	EA-BSB03 A	2.0	3.0	BKT	14.6%	71.1%	26 / 19 / 7				
	EA-BSB03 B	5.0	6.0	BKT	11.6%	45.6%	NV / NP / NP				
EA-BSB04	EA-BSB04 A	2.0	3.0	BKT	6.1%	30.0%	NV / NP / NP		(1)	112.5 @ 15.0%	
	EA-BSB04 B	5.0	6.0	BKT	24.1%	90.1%	51 / 17 / 34				
EA-BSB05	EA-BSB05 A	2.0	3.0	BKT	10.4%	65.1%	31 / 19 / 12				
	EA-BSB05 B	5.0	6.0	BKT	4.6%	30.9%	NV / NP / NP				
EA-BSC01	EA-BSC01 A	2.0	3.0	BKT	9.7%	60.6%	31 / 16 / 15				
	EA-BSC01 B	5.0	6.0	BKT	11.9%	78.8%	42 / 17 / 25				
EA-BSC02	EA-BSC02 A	2.0	3.0	BKT	12.7%	87.6%	50 / 17 / 33				
	EA-BSC02 B	5.0	6.0	BKT	12.6%	80.7%	38 / 18 / 20				
EA-BSC03	EA-BSC03 A	2.0	3.0	BKT	9.6%	61.2%	29 / 15 / 14		(1)	108.2 @ 16.8%	
	EA-BSC03 B	5.0	6.0	BKT	11.7%	79.1%	39 / 18 / 21				
EA-BSC04	EA-BSC04 A	2.0	3.0	BKT	12.1%	80.0%	39 / 16 / 13				
	EA-BSC04 B	5.0	6.0	BKT	10.7%	68.9%	34 / 16 / 8				
EA-BSC05	EA-BSC05 A	2.0	3.0	BKT	8.6%	57.0%	23 / 18 / 5				
	EA-BSC05 B	5.0	6.0	BKT	13.8%	90.2%	56 / 16 / 40				
EA-BSC06	EA-BSC06 A	2.0	3.0	BKT	7.9%	58.5%	30 / 17 / 13				
	EA-BSC06 B	5.0	6.0	BKT	17.2%	95.3%	65 / 23 / 42			89.8 @ 26.6%	(1)
EA-BSC07	EA-BSC07 A	2.0	3.0	BKT	10.1%	77.7%	35 / 19 / 16				
	EA-BSC07 B	5.0	6.0	BKT	10.4%	71.9%	35 / 17 / 18				
EA-BSC08	EA-BSC08 A	2.0	3.0	BKT	11.2%	77.2%	44 / 17 / 27				
	EA-BSC08 B	5.0	6.0	BKT	11.7%	86.5%	49 / 24 / 25				
EA-BSC09	EA-BSC09 A	2.0	3.0	BKT	6.8%	50.0%	26 / 18 / 8	7.9E-06	(1)	110.4 @ 16.1%	
	EA-BSC09 B	5.0	6.0	BKT	14.7%	96.9%	60 / 27 / 33				
EA-BSC10	EA-BSC10 A	2.0	3.0	BKT	9.0%	69.4%	39 / 16 / 23				
	EA-BSC10 B	5.0	6.0	BKT	12.0%	69.6%	33 / 18 / 15				
EA-BSC11	EA-BSC11 A	2.0	3.0	BKT	10.0%	63.5%	30 / 19 / 11				
	EA-BSC11 B	5.0	6.0	BKT	12.7%	69.1%	42 / 18 / 24				
EA-BSC12	EA-BSC12 A	2.0	3.0	BKT	7.3%	52.7%	NV / NP / NP	1.2E-04	(1)	109.3 @ 16.4%	
	EA-BSC12 B	5.0	6.0	BKT	8.2%	49.0%	23 / 20 / 3				
EA-BSC13	EA-BSC13 A	2.0	3.0	BKT	9.5%	75.8%	38 / 17 / 21				
	EA-BSC13 B	5.0	6.0	BKT	13.3%	81.4%	45 / 23 / 22				

MCS = Modified California Sample, BKT = Bucket

3.0 Moisture Content

The natural moisture content of 48 soil samples was determined in accordance with ASTM D2216, "Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass."

This test yields the gravimetric moisture content, expressed as a percentage, which represents the ratio of the mass of water to the mass of dry soil within the sample.

A summary of the natural moisture content results are presented in Section 2.0 of this report.

4.0 Percent Passing No. 200

A selection of 48 soil samples was tested in general accordance with ASTM D1140, "Standard Test Methods for Determining the Amount of Material Finer than 75-µm (No. 200) Sieve in Soils by Washing."

- A selection of soil samples was tested in general accordance with ASTM D1140, "Standard Test Methods for Determining the Amount of Material Finer than 75-µm (No. 200) Sieve in Soils by Washing."
- The testing procedure involved oven-drying the samples, recording their initial dry weight, and then washing them through a 75-µm (No. 200) sieve.
- The material retained on the sieve was recovered, oven-dried, and weighed.
- The percentage of material passing the No. 200 sieve was calculated using the initial total dry weight of the sample and the dry weight of the material retained on the sieve.

A summary of the percent finer than No. 200 sieve results is presented in Section 2.0 of this report.

5.0 Atterberg Limits

The Atterberg Limits, specifically the liquid limit (LL) and plastic limit (PL), were determined on 48 soil samples in accordance with ASTM D4318, "Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils."

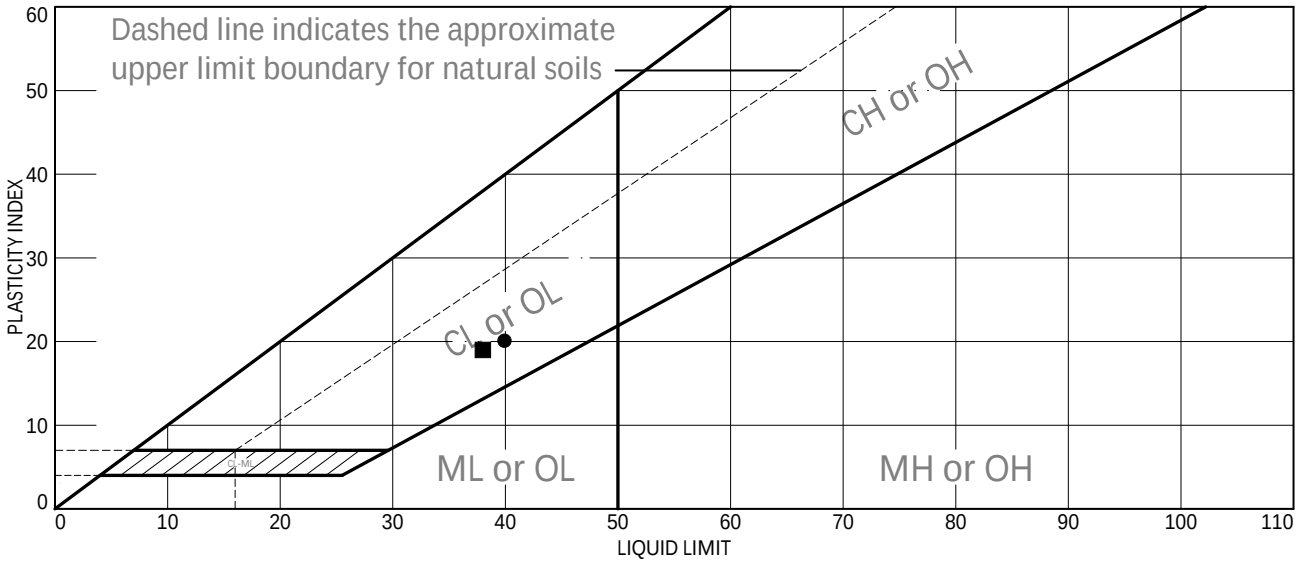
- Sample Preparation:
    - The soil sample is processed to pass the 0.425 mm (No. 40) sieve.
    - A representative portion of this fine-grained material is used for the tests.
- Liquid Limit (LL):
    - A soil paste is prepared with distilled water.
    - The paste is placed in a Casagrande cup, and a groove is made in the soil.
    - The cup is repeatedly dropped from a specified height.
    - The liquid limit is determined as the moisture content at which the groove closes over a distance of 12.7 mm (0.5 inches) after 25 blows.
- Plastic Limit (PL):
    - A soil thread is rolled out on a flat surface.
    - The plastic limit is determined as the moisture content at which the soil thread crumbles when rolled to a diameter of 3.2 mm (1/8 inch).
- Plasticity Index (PI):
    - The plasticity index is calculated by subtracting the plastic limit from the liquid limit (PI = LL - PL).

A summary of the Atterberg Limits test results is presented in Section 2.0 of this report.

A graph depicting the Plasticity Index versus the Liquid Limit is included on the following pages.

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSA01 Depth: 2' - 3' Sample Number: A			02/21/2025	CF
■	Source of Sample: EA-BSA01 Depth: 5' - 6' Sample Number: B			02/20/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		40	20	20		
■	Clay		38	19	19		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

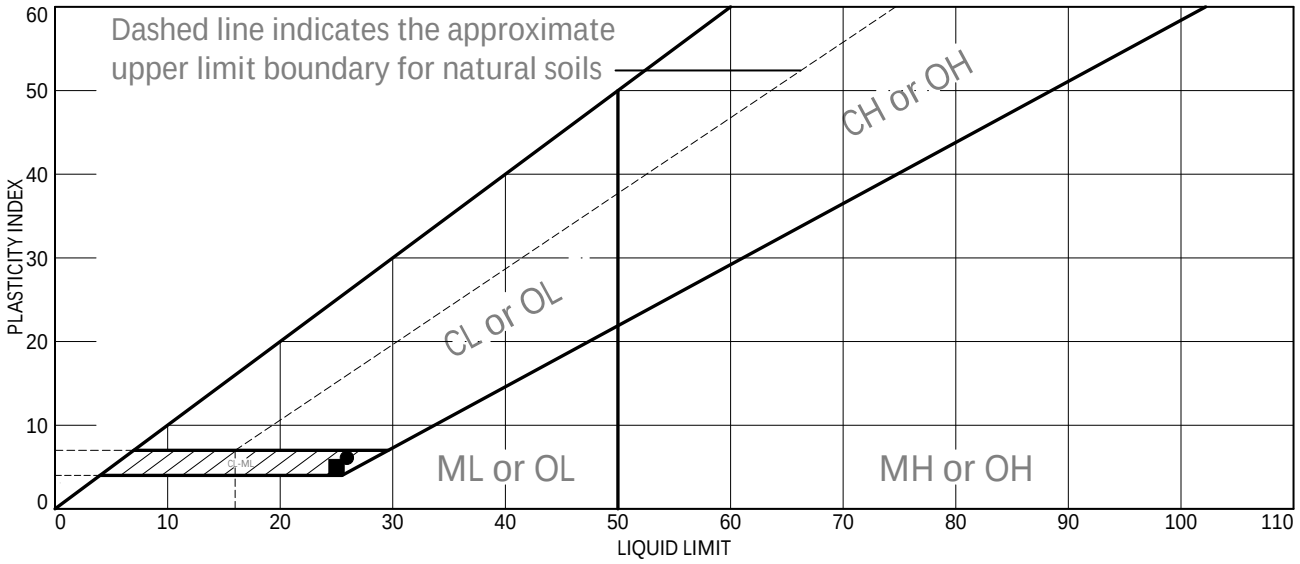
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSA02 Depth: 2' - 3' Sample Number: A			02/18/2025	CF
■	Source of Sample: EA-BSA02 Depth: 5' - 6' Sample Number: B			02/20/2025	SY

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		26	20	6		
■	Sandy Clay		25	20	5		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

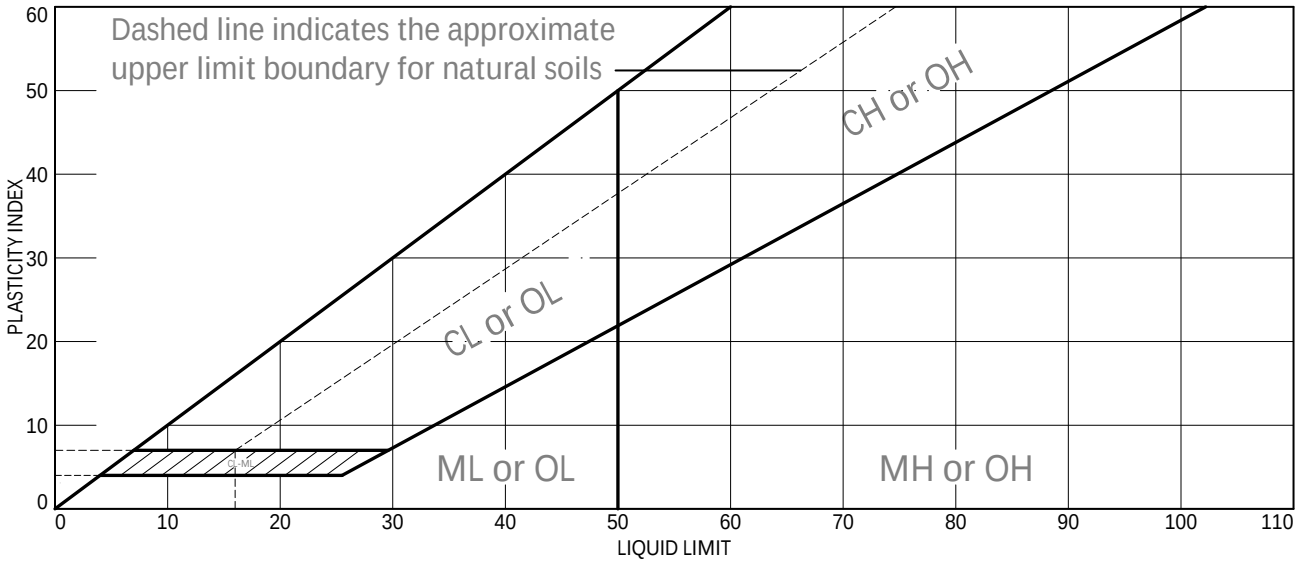
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSA03 Depth: 2' - 3' Sample Number: A			02/20/2025	SY
■	Source of Sample: EA-BSA03 Depth: 5' - 6' Sample Number: B			02/20/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Sand		NV	NP	NP		
■	Sandy Clay		NV	NP	NP		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

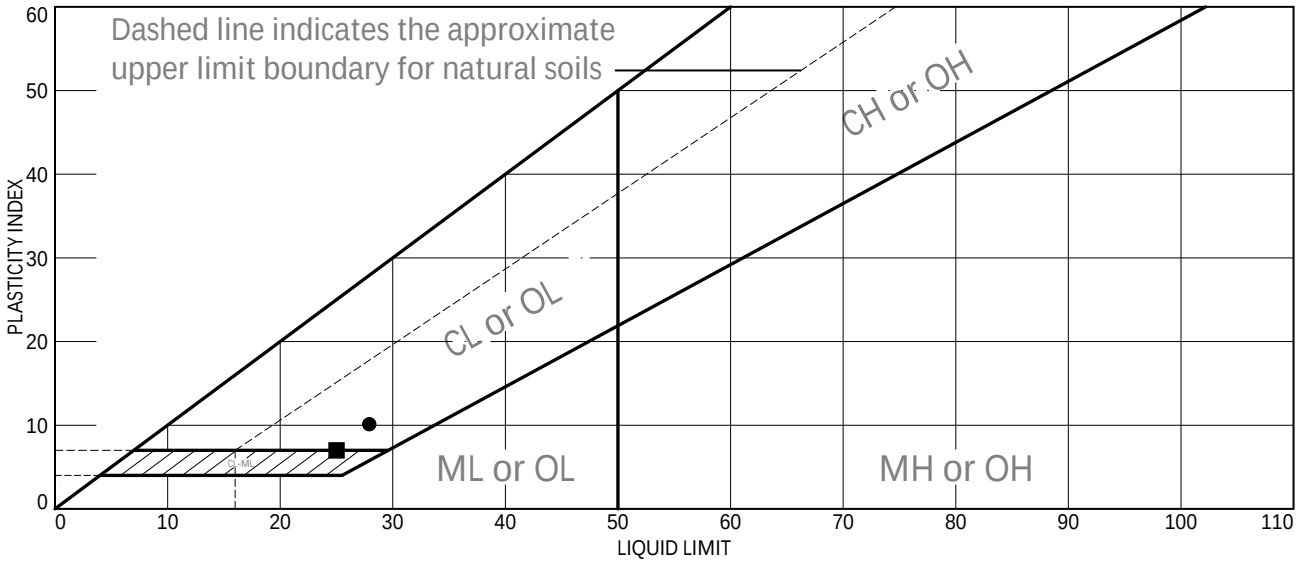
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSA04 Depth: 2' - 3' Sample Number: A			02/21/2025	CF
■	Source of Sample: EA-BSA04 Depth: 5' - 6' Sample Number: B			02/19/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		28	18	10		
■	Silty Clay		25	18	7		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

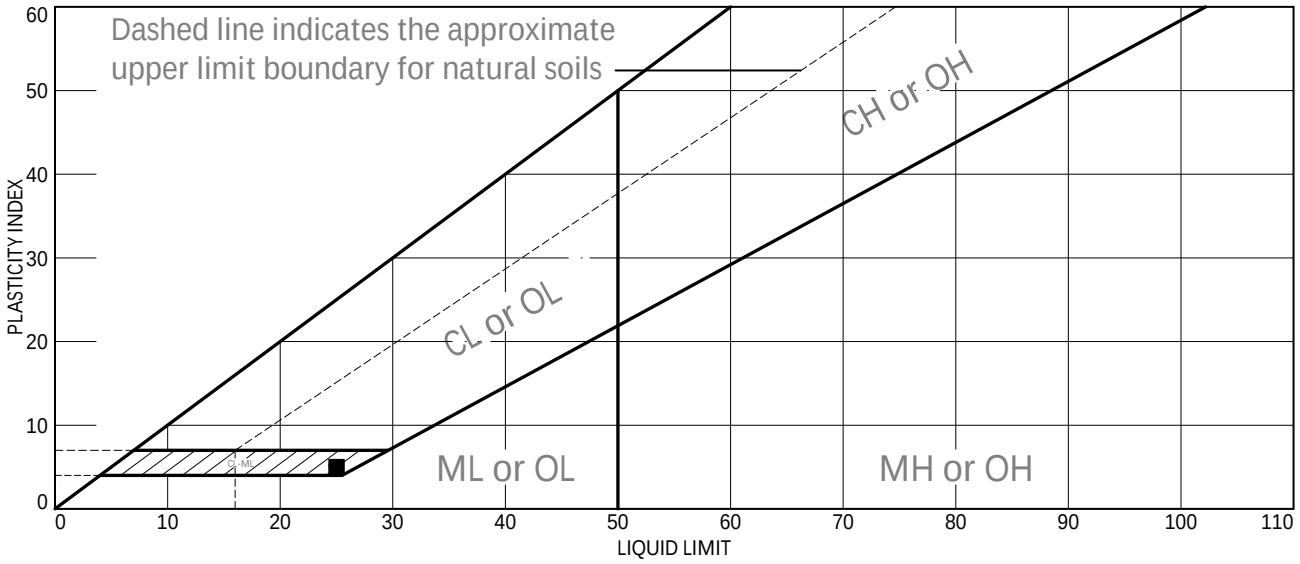
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSA05 Depth: 2' - 3' Sample Number: A			02/20/2025	SY
■	Source of Sample: EA-BSA05 Depth: 5' - 6' Sample Number: B			02/20/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Sand		25	20	5		
■	Clayey Sand		25	20	5		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

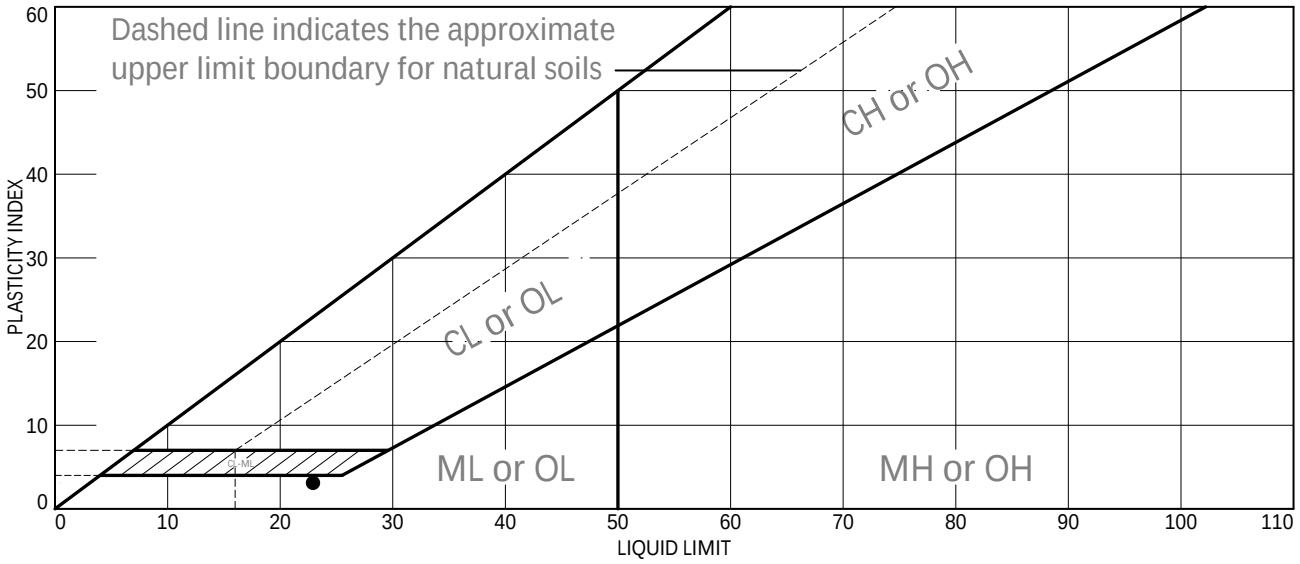
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSA06 Depth: 2' - 3' Sample Number: A			02/20/2025	CF
■	Source of Sample: EA-BSA06 Depth: 5' - 6' Sample Number: B			2/21/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		23	20	3		
■	Sand		NV	NP	NP		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

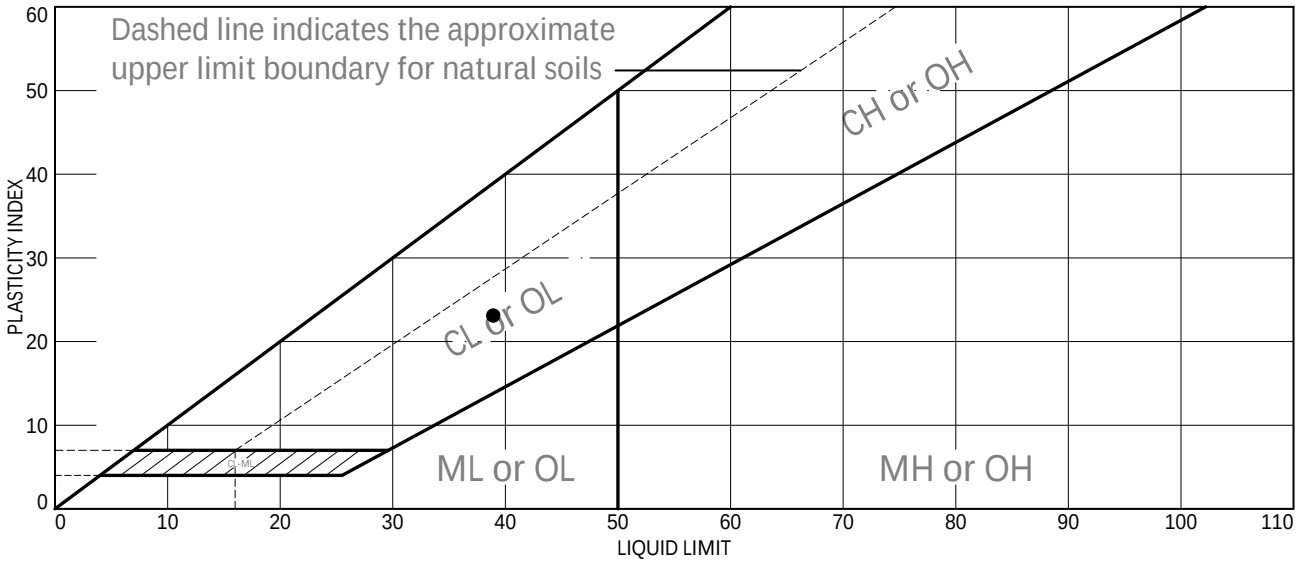
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSB01 Depth: 2' - 3' Sample Number: A			02/21/2025	CF
■	Source of Sample: EA-BSB01 Depth: 5' - 6' Sample Number: B			02/20/2025	SY

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		39	16	23		
■	Sand		NV	NP	NP		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

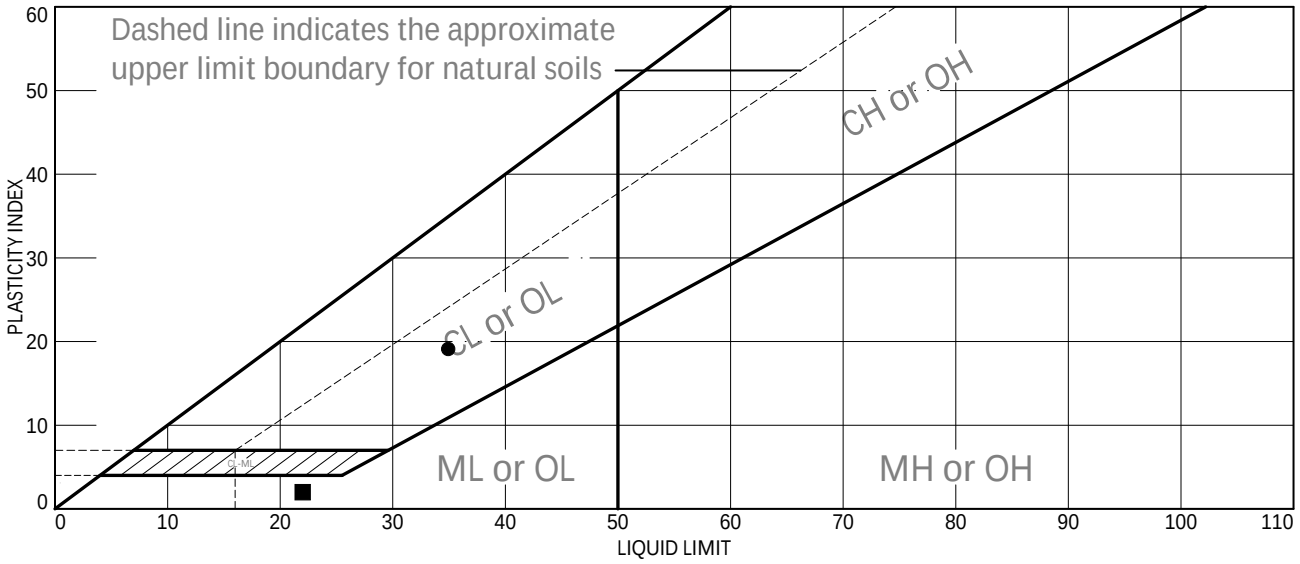
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSB02 Depth: 2' - 3' Sample Number: A			02/24/2025	CF
■	Source of Sample: EA-BSB02 Depth: 5' - 6' Sample Number: B			02/20/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		35	16	19		
■	Silty Clay		22	20	2		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

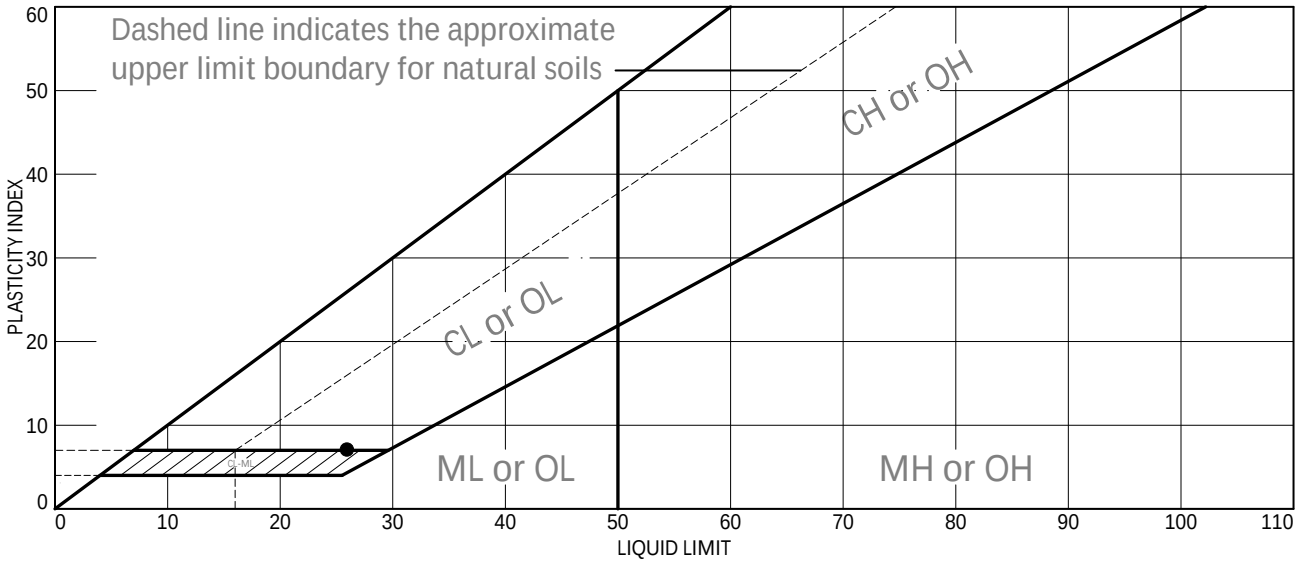
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSB03 Depth: 2' - 3' Sample Number: A			02/20/2025	CF
■	Source of Sample: EA-BSB03 Depth: 5' - 6' Sample Number: B			02/20/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		26	19	7		
■	Sand		NV	NP	NP		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

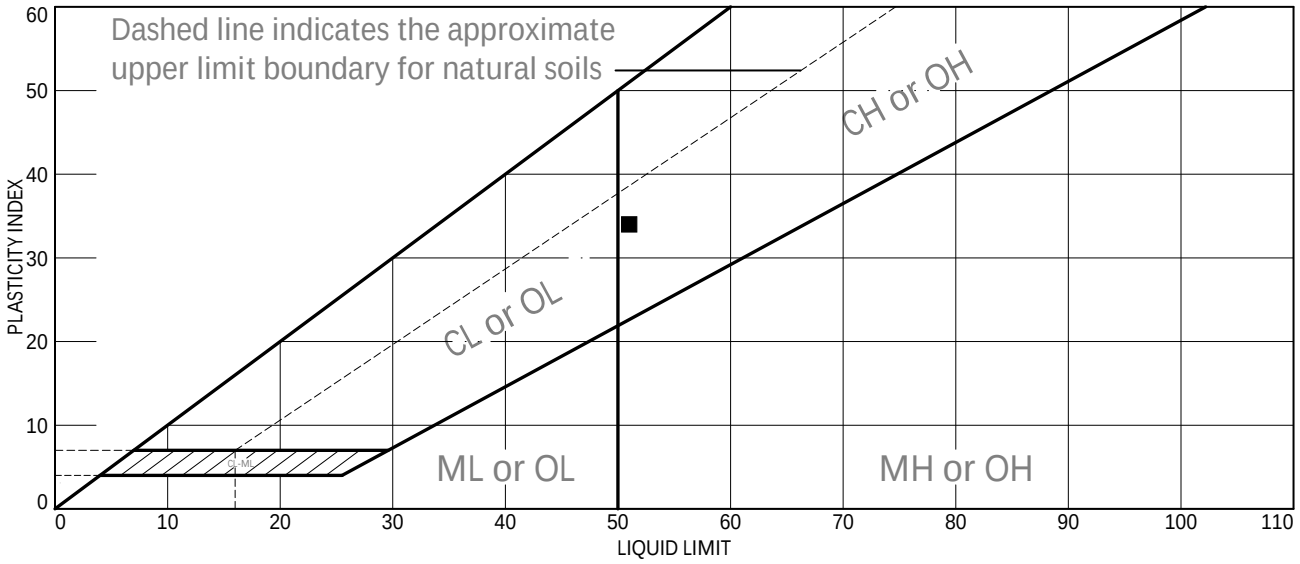
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSB04 Depth: 2' - 3' Sample Number: A			02/20/2025	SY
■	Source of Sample: EA-BSB04 Depth: 5' - 6' Sample Number: B			02/21/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Sand		NV	NP	NP		
■	Silty Clay		51	17	34		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

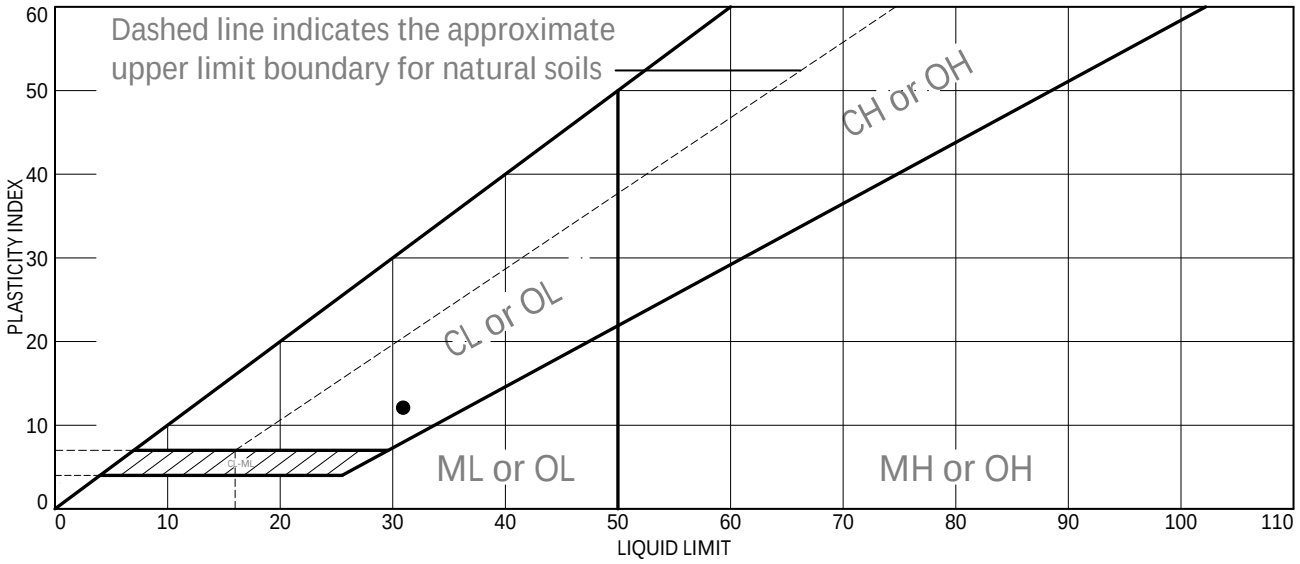
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSB05 Depth: 2' - 3' Sample Number: A			02/19/2025	CF
■	Source of Sample: EA-BSB05 Depth: 5' - 6' Sample Number: B			02/20/2025	SY

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		31	19	12		
■	Sand		NV	NP	NP		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

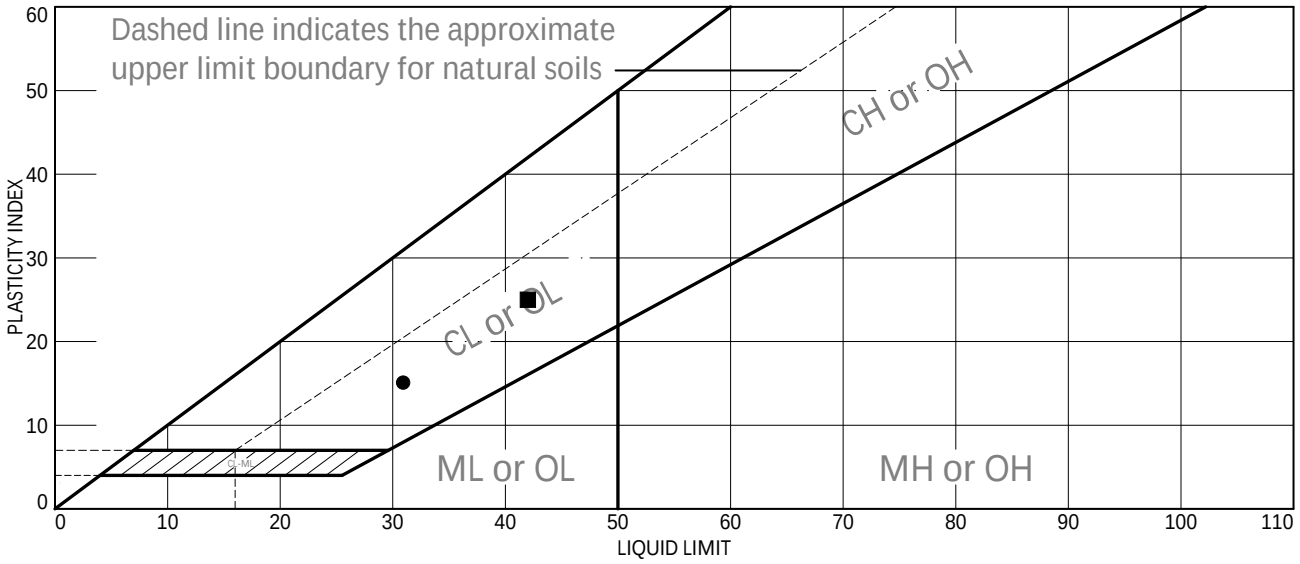
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSC01 Depth: 2' - 3' Sample Number: A			02/06/2025	CF
■	Source of Sample: EA-BSC01 Depth: 5' - 6' Sample Number: B			02/06/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		31	16	15		
■	Silty Clay		42	17	25		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

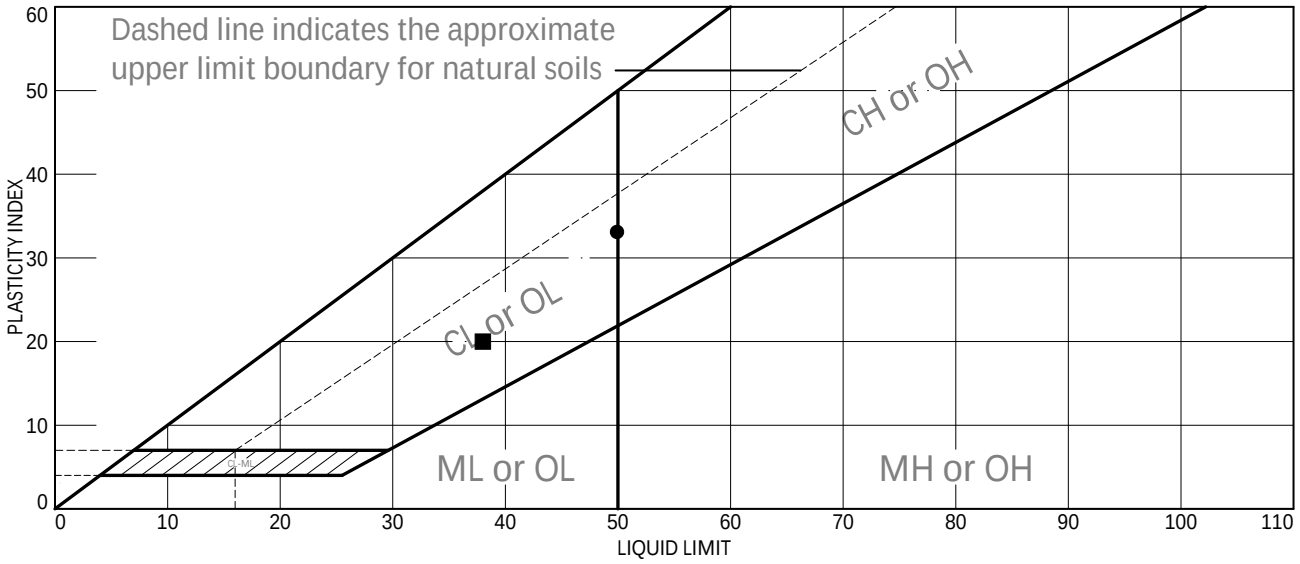
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSC02 Depth: 2' - 3' Sample Number: A			02/07/2025	EH
■	Source of Sample: EA-BSC02 Depth: 5' - 6' Sample Number: B				02/06/2025

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Clay		50	17	33		
■	Silty Clay		38	18	20		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

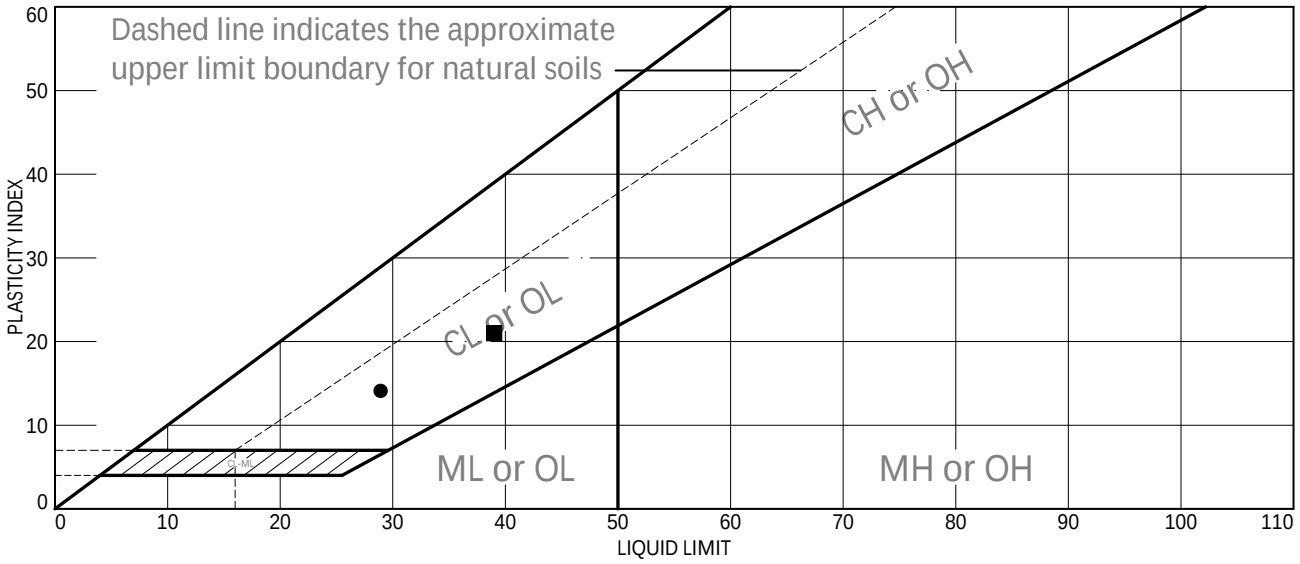
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSC03 Depth: 2' - 3' Sample Number: A			02/06/2025	CF
■	Source of Sample: EA-BSC03 Depth: 5' - 6' Sample Number: B			02/05/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		29	15	14		
■	Silty Clay		39	18	21		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

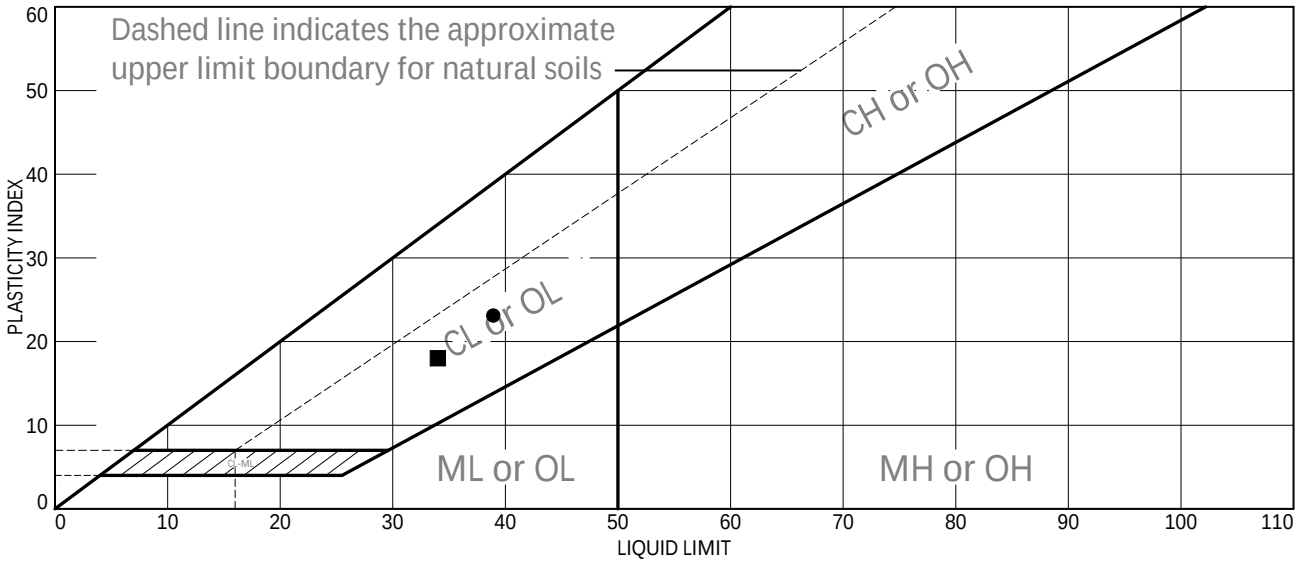
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSC04 Depth: 2' - 3' Sample Number: A			02/19/2025	CF
■	Source of Sample: EA-BSC04 Depth: 5' - 6' Sample Number: B			02/13/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Clay		39	16	23		
■	Silty Clay		34	16	18		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

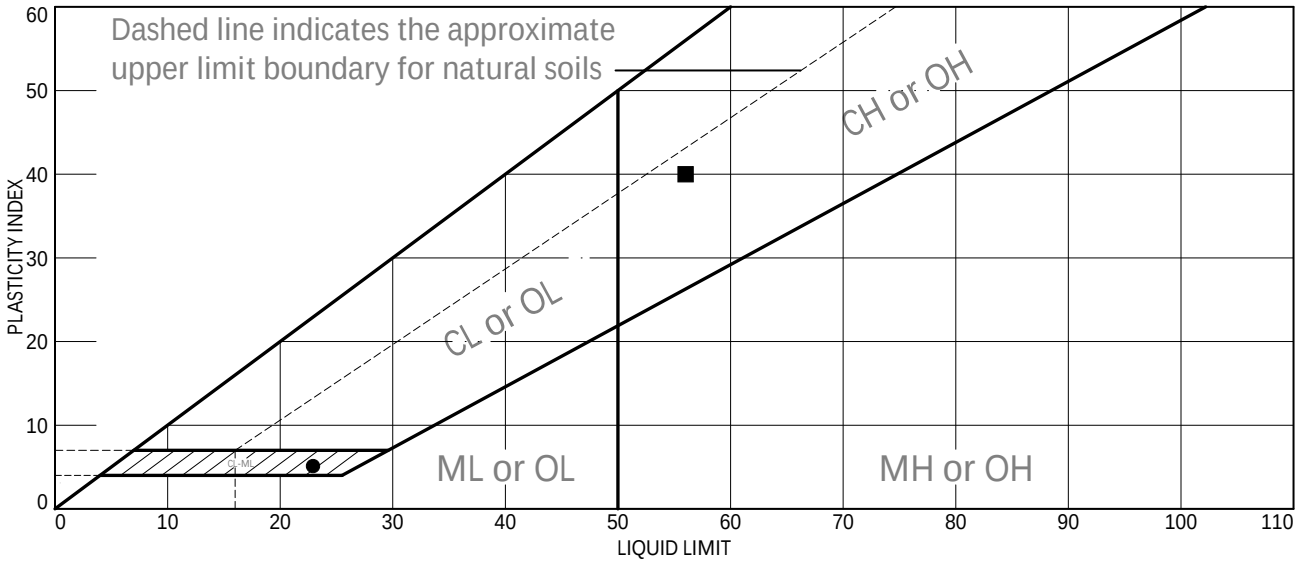
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSC05 Depth: 2' - 3' Sample Number: A			02/11/2025	CF
■	Source of Sample: EA-BSC05 Depth: 5' - 6' Sample Number: B			2/07/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Sandy Clay		23	18	5		
■	Silty Clay		56	16	40		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

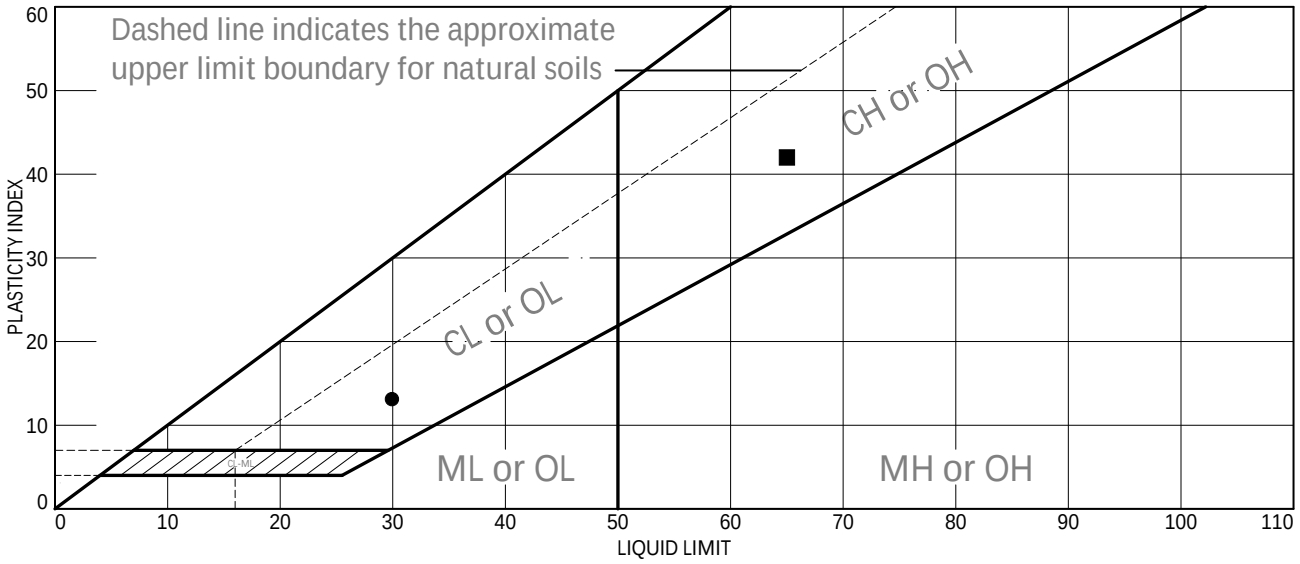
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSC06 Depth: 2' - 3' Sample Number: A			02/20/2025	CF
■	Source of Sample: EA-BSC06 Depth: 5' - 6' Sample Number: B			02/15/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		30	17	13		
■	Clay		65	23	42		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

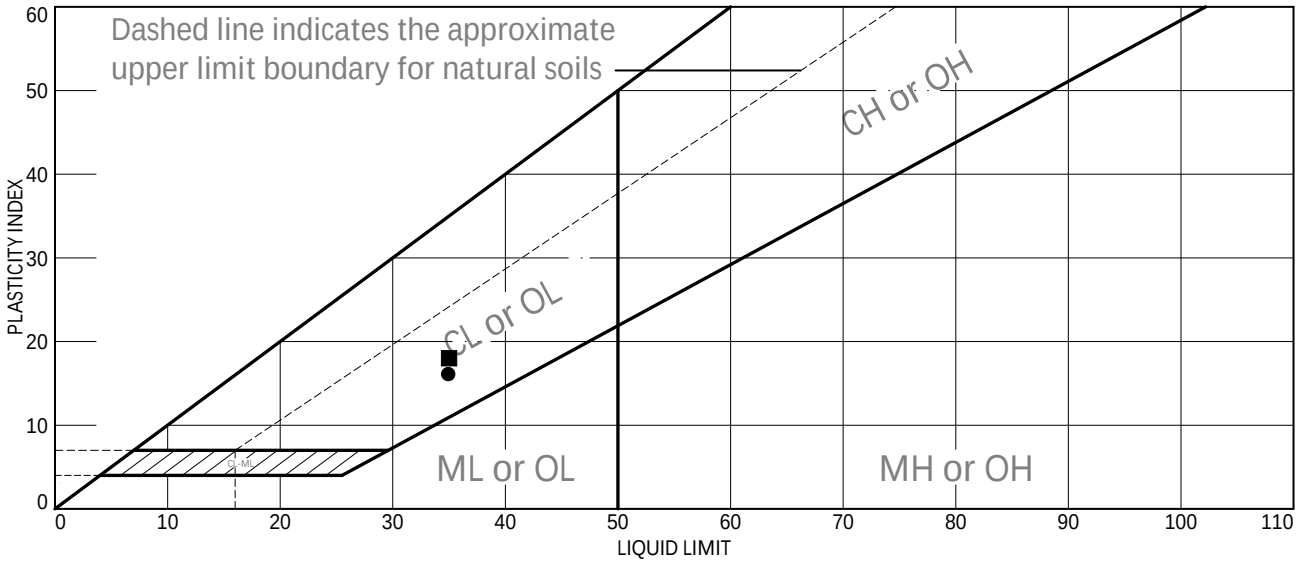
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSC07 Depth: 2' - 3' Sample Number: A			02/11/2025	SY
■	Source of Sample: EA-BSC07 Depth: 5' - 6' Sample Number: B			02/12/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	SAndy Clay		35	19	16		
■	Silty Clay		35	17	18		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

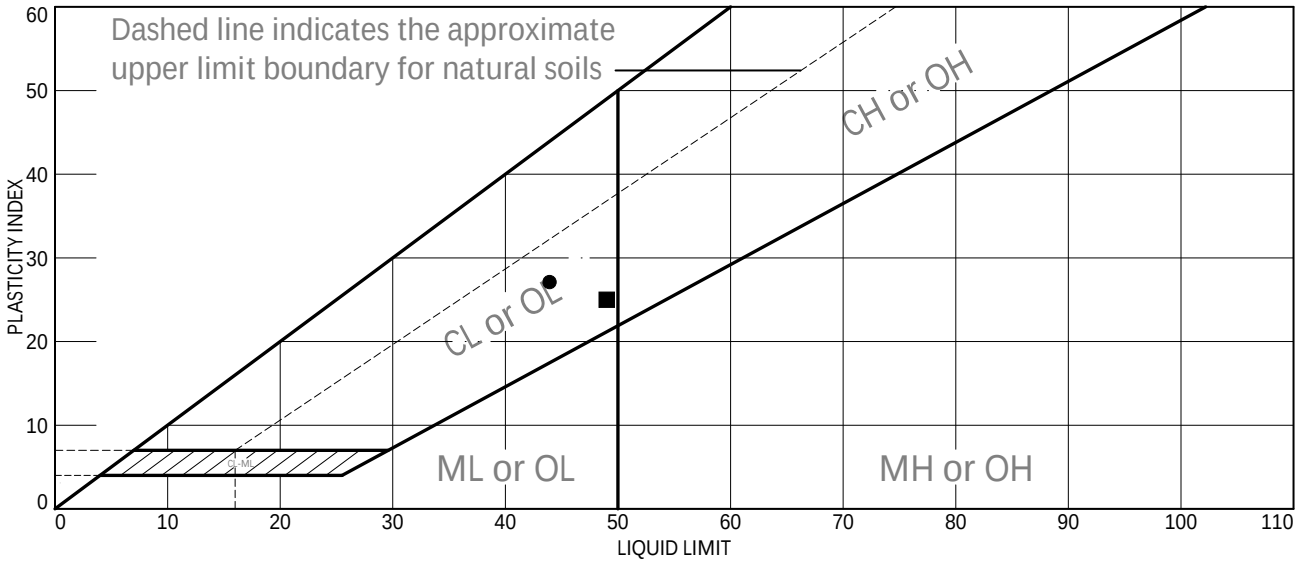
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSC08 Depth: 2' - 3' Sample Number: A			2/13/2025	CF
■	Source of Sample: EA-BSC08 Depth: 5' - 6' Sample Number: B			02/18/2025	SY

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		44	17	27		
■	Sandy Clay		49	24	25		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

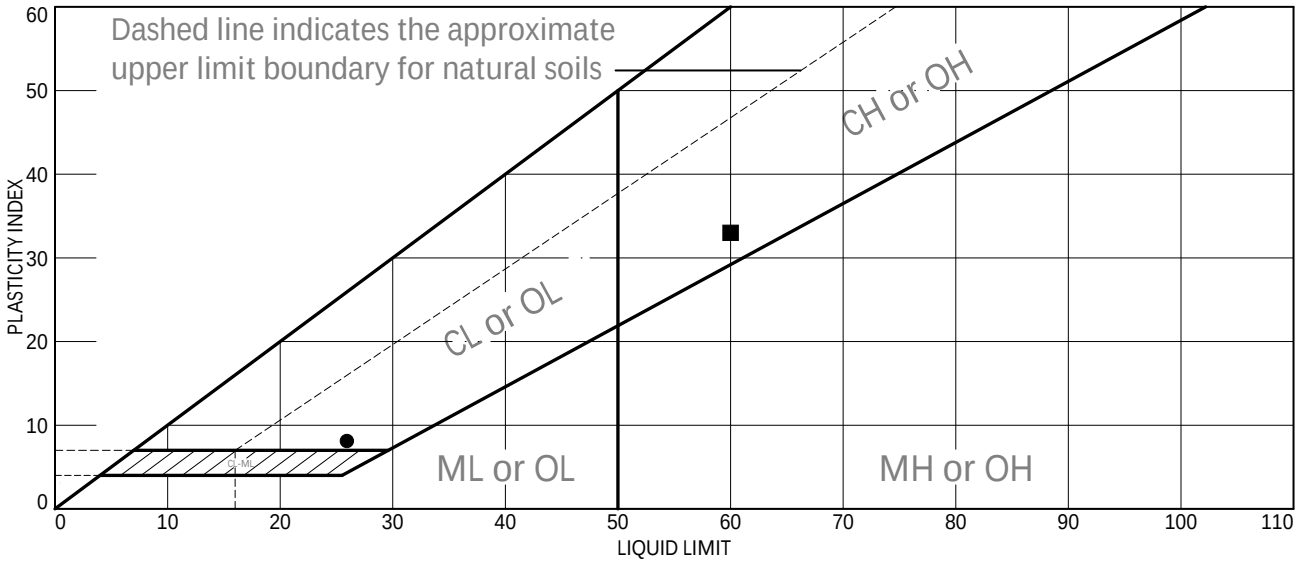
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSC09 Depth: 2' - 3' Sample Number: A			02/18/2025	CF
■	Source of Sample: EA-BSC09 Depth: 5' - 6' Sample Number: B			02/19/2025	AW

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		26	18	8		
■	Clay		60	27	33		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

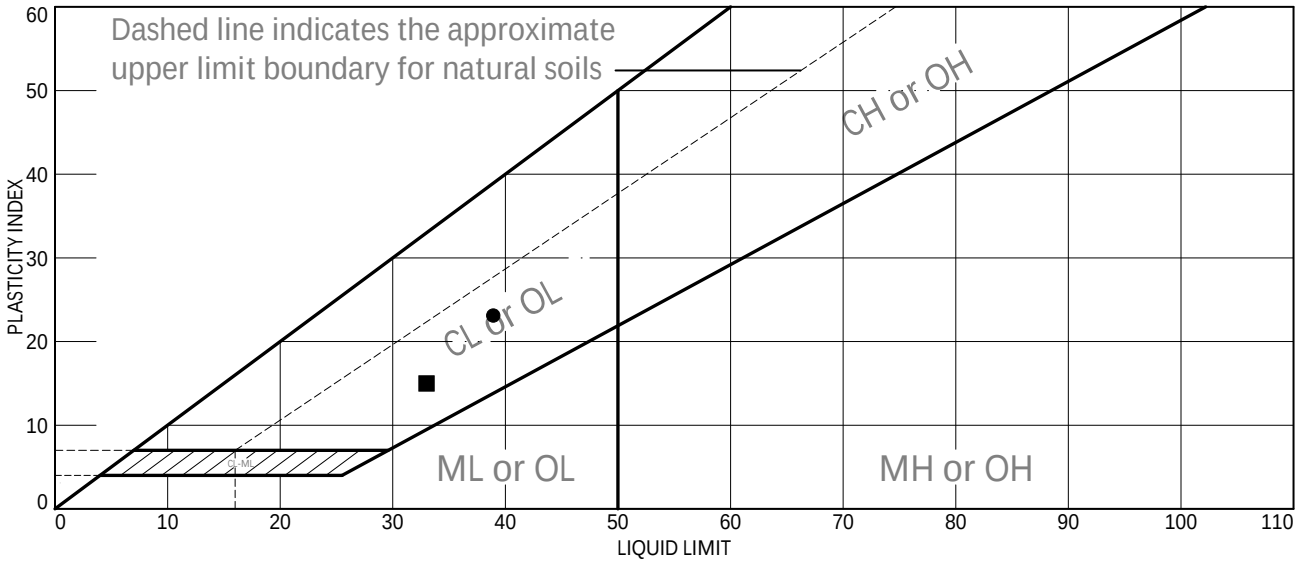
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSC10 Depth: 2' - 3' Sample Number: A			02/10/2025	CF
■	Source of Sample: EA-BSC10 Depth: 5' - 6' Sample Number: B			02/18/2025	SY

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		39	16	23		
■	Sandy Clay		33	18	15		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

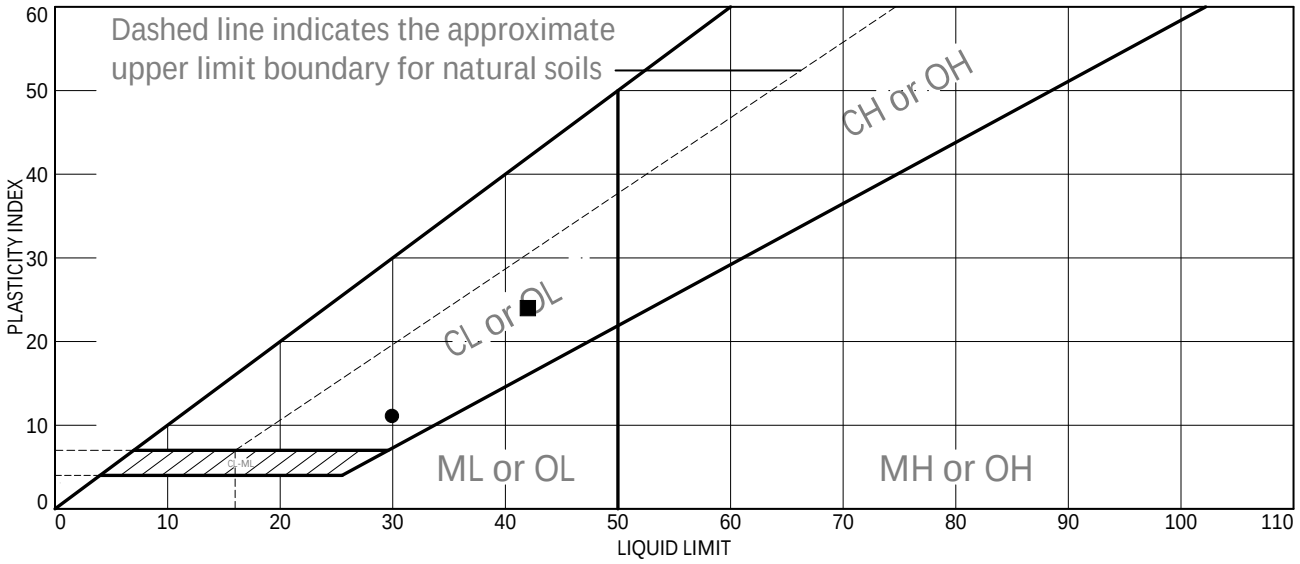
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSC11 Depth: 2' - 3' Sample Number: A			02/10/2025	CF
■	Source of Sample: EA-BSC11 Depth: 5' - 6' Sample Number: B			02/12/2025	CF

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		30	19	11		
■	Silty Clay		42	18	24		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

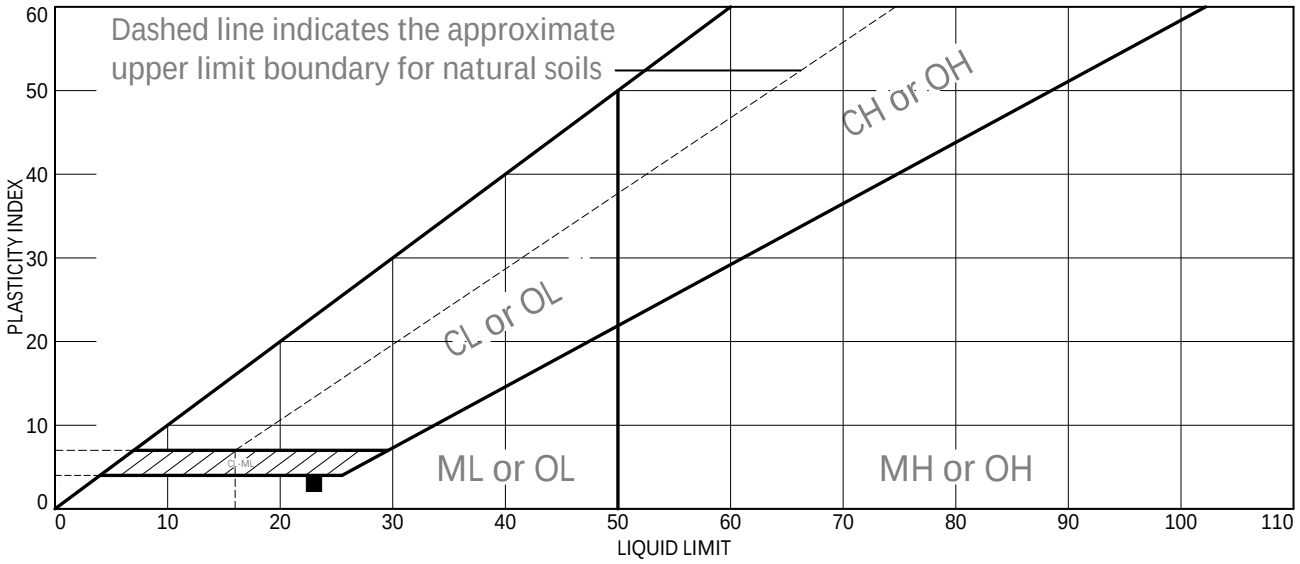
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSC12 Depth: 2' - 3' Sample Number: A			02/11/2025	CF
■	Source of Sample: EA-BSC12 Depth: 5' - 6' Sample Number: B				02/07/2025

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Sandy Clay		NV	NP	NP		
■	Sandy Clay		23	20	3		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

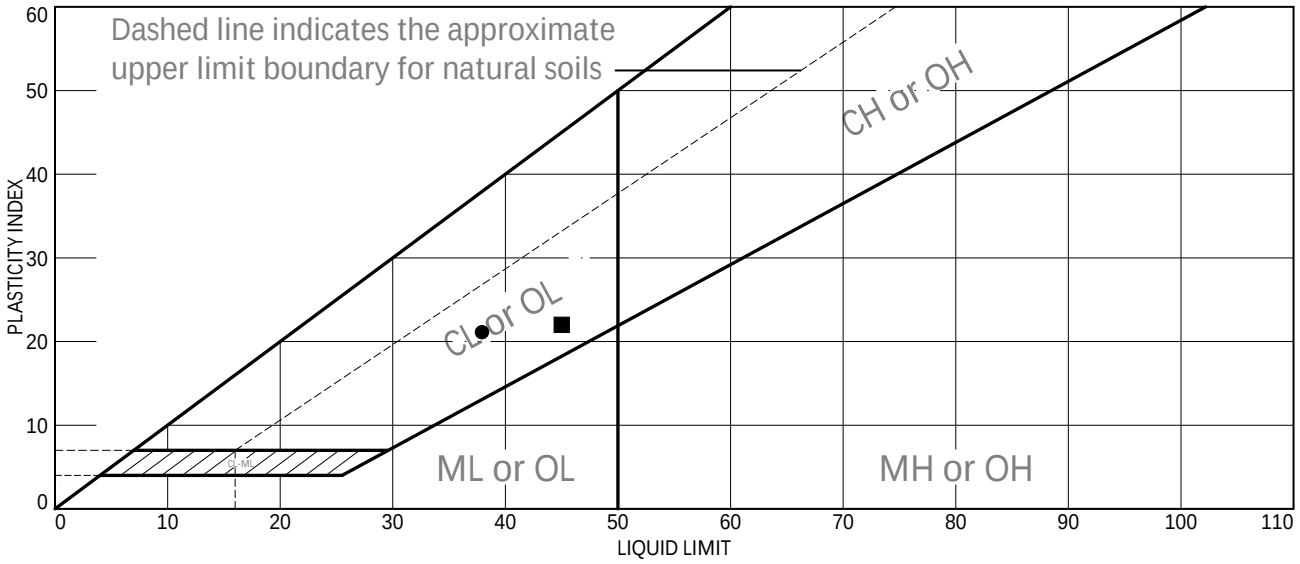
Title:

ENGINEERING ANALYTICS, INC.

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

ASTM D4318



	Sample Identification	Sampled	Received	Tested	Technician
●	Source of Sample: EA-BSC13 Depth: 2' - 3' Sample Number: A			02/14/2025	CF
■	Source of Sample: EA-BSC13 Depth: 5' - 6' Sample Number: B			02/11/2025	SY

	Material Description	USCS	LL	PL	PI	NM	%<#40
●	Silty Clay		38	17	21		
■	Clay		45	23	22		

	PL Rolling Method	LL Device	Grooving Tool	Test Remarks
●	Hand rolled	Manual	Metal	
■	Hand rolled	Manual	Metal	

Project No. 111360 Client: Rio Grand Resources

Project: Mt.Taylor

Checked by: KG

Title:

ENGINEERING ANALYTICS, INC.

Figure

6.0 Flexible Wall Permeability

The hydraulic conductivity (coefficient of permeability) of saturated porous material was determined on 2 soil samples using a flexible wall permeameter in accordance with ASTM D5084, "Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall[1] Permeameter (Method C: Falling Head Test)."

- Soil samples were trimmed, encased within a flexible rubber membrane, and placed within a triaxial test cell.
- An initial effective stress of 1-3 psi was applied to each sample to facilitate saturation.
- Following saturation, each sample was consolidated to the effective stress specified by the project engineer.
- After a 24-hour consolidation period, a hydraulic gradient was established by applying differential pressures to the top and bottom of the samples. The magnitude of the gradient was determined based on the soil classification.
- The outflow of water from the top of the sample was measured at predetermined time intervals to determine the flow rate and, subsequently, the hydraulic conductivity.

The results of the hydraulic conductivity are presented on the following pages

Flexible Wall Permeability Test

Mt. Taylor - 111360

EA-BSC 9 @ 2'-3' Remolded

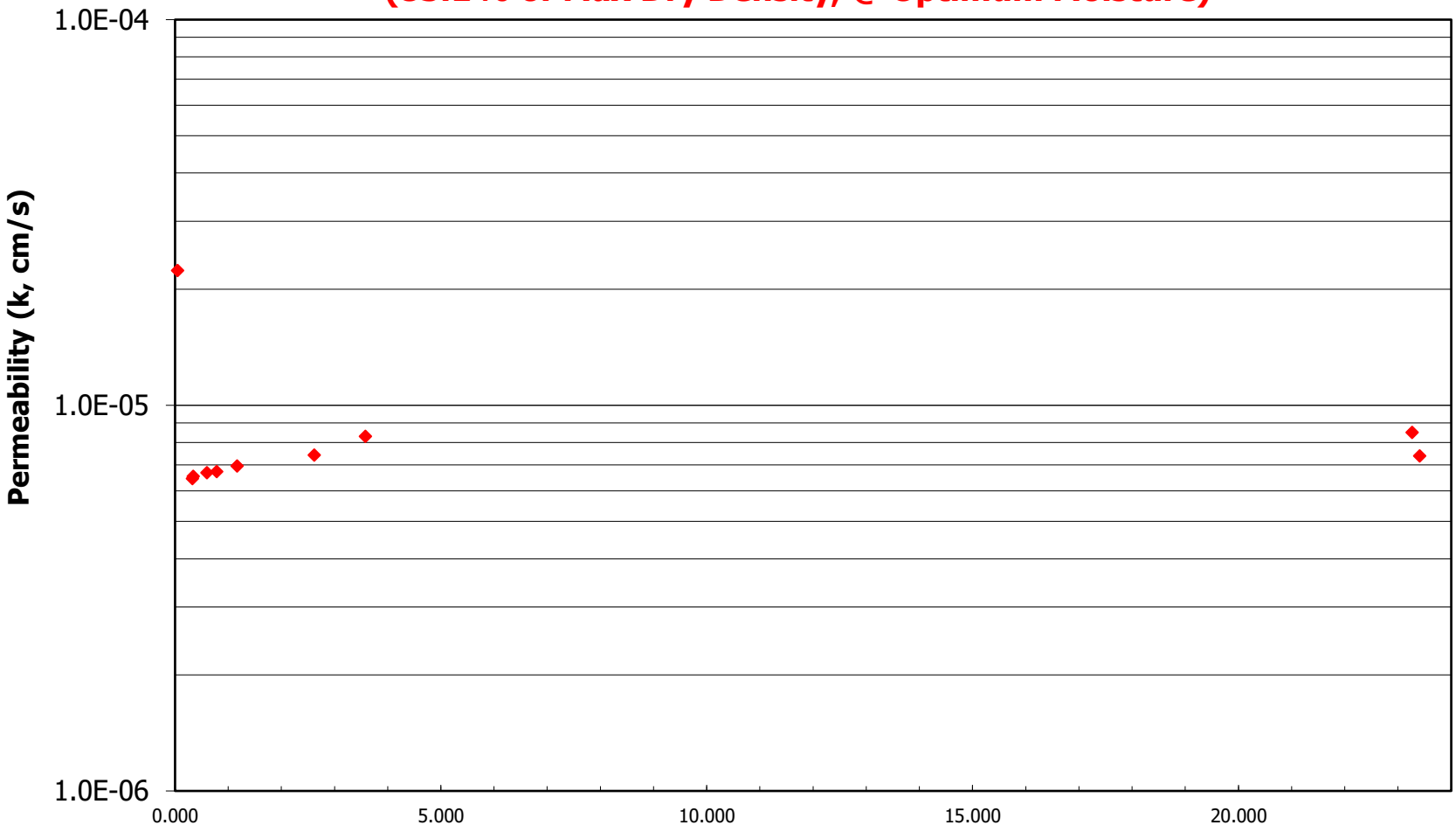
Length of sample	L	7.52	cm	2.960 in
Area of sample	A	29.50	cm^2	2.413 in
Area of standpipe	a	0.713	cm^2	0.375 in

Cell Pressure	85.00	psi		
Upper Cap Pressure	79.79	psi		
Lower Cap Pressure	80.00	psi		
Dry Density	93.9		% Remold @	85.1 %
% of Moisture	16.1 %		Water content ±	0 %
Gradiant	1.96		Remold Dry Density	93.9
Consolidation (psi)	5.00 psi		Remold % of Moisture	16.1 %
Consolidation (psf)	720 psf			

Date & Time	E.T . (s)	Reading Lower (cc)	Reading Upper (cc)	k(cm/s)
10/28/25 10:45 AM		11.000	49.300	
10/28/25 10:48 AM	180	12.000	48.000	2.2E-05
10/28/25 10:48 AM		12.000	48.000	
10/28/25 11:05 AM	1050	13.800	46.100	6.5E-06
10/28/25 11:05 AM		13.800	46.100	
10/28/25 11:07 AM	120	14.000	45.900	6.5E-06
10/28/25 11:07 AM		14.000	45.900	
10/28/25 11:21 AM	810	15.300	44.500	6.7E-06
10/28/25 11:21 AM		15.300	44.500	
10/28/25 11:32 AM	660	16.400	43.500	6.7E-06
10/28/25 11:32 AM		16.400	43.500	
10/28/25 11:55 AM	1380	18.500	41.400	7.0E-06
10/28/25 11:55 AM		18.500	41.400	
10/28/25 1:22 PM	5220	25.000	34.800	7.4E-06
10/28/25 1:22 PM		25.000	34.800	
10/28/25 2:20 PM	3480	28.500	31.600	8.3E-06
10/29/25 9:59 AM		19.600	49.600	
10/29/25 10:01 AM	120	19.800	49.300	8.5E-06
10/29/25 10:01 AM		19.800	49.300	
10/29/25 10:09 AM	510	20.700	48.400	7.4E-06
10/29/25 10:09 AM		20.700	48.400	
10/29/25 10:25 AM	930	22.200	46.800	7.4E-06
		Average k=	7.9E-06	

Flexwall Permeability Test

Mt. Taylor - 111360
EA-BSC09 @ 2' - 3'
Remolded to 93.9 @ 16.1%
(85.1% of Max Dry Density, @ Optimum Moisture)



Average Permeability k = 7.9E-06cm/s

Flexible Wall Permeability Test

Mt. Taylor - 111360

EA-BSC 12A @ 2'-3'

Length of sample	L	6.24	cm	2.456	in
Area of sample	A	29.50	cm^2	2.413	in
Area of standpipe	a	0.713	cm^2	0.375	in

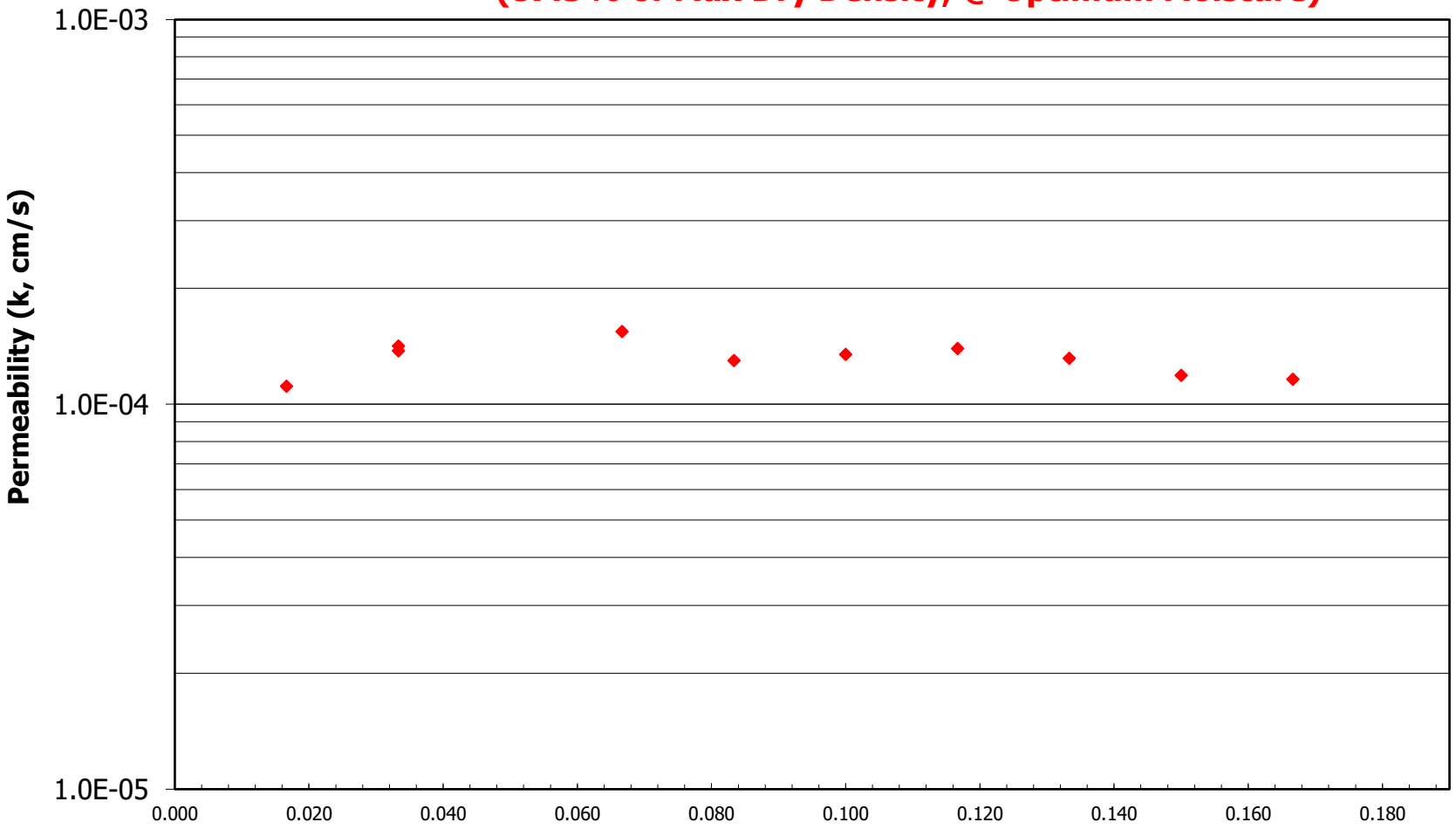
Cell Pressure	90.00	psi
Upper Cap Pressure	84.82	psi
Lower Cap Pressure	85.00	psi
Dry Density	95.4	
% of Moisture	16.4	%
Gradiant	2.03	
Consolidation (psi)	5.00	psi
Consolidation (psf)	720	psf

% Remold @	87.3	%
Water content ±	0	%
Remold Dry Density	95.4	
Remold % of Moisture	16.4	%

Date & Time	E.T . (s)	Reading Lower (cc)	Reading Upper (cc)	k(cm/s)
10/28/25 10:58 AM		25.500	36.400	
10/28/25 10:59 AM	60	26.500	35.400	1.1E-04
10/28/25 10:59 AM		26.500	35.400	
10/28/25 11:00 AM	60	27.700	34.300	1.4E-04
10/28/25 11:00 AM		27.700	34.300	
10/28/25 11:01 AM	60	28.800	33.400	1.4E-04
10/28/25 11:01 AM		28.800	33.400	
10/28/25 11:02 AM	60	29.700	32.300	1.5E-04
10/28/25 11:02 AM		29.700	32.300	
10/28/25 11:03 AM	60	30.500	31.600	1.3E-04
10/28/25 11:03 AM		30.500	31.600	
10/28/25 11:04 AM	60	31.100	30.800	1.3E-04
10/28/25 11:04 AM		31.100	30.800	
10/28/25 11:05 AM	60	31.800	30.200	1.4E-04
10/28/25 11:05 AM		31.800	30.200	
10/28/25 11:06 AM	60	32.300	29.600	1.3E-04
10/28/25 11:06 AM		32.300	29.600	
10/28/25 11:07 AM	60	32.800	29.200	1.2E-04
10/28/25 11:07 AM		32.800	29.200	
10/28/25 11:08 AM	60	33.200	28.800	1.2E-04
10/28/25 11:08 AM		33.200	28.800	
10/28/25 11:09 AM	60	33.600	28.400	1.3E-04
		Average k=	1.2E-04	

Flexwall Permeability Test

Mt. Taylor - 111360
EA-BSC 12A @ 2'-3'
Remolded to 95.4 @ 16.4%
(87.3% of Max Dry Density, @ Optimum Moisture)



Average Permeability k = 1.2E-04cm/s

7.0 Soil Water Characteristic Curve

The moisture-retention curve (also known as the soil-water characteristic curve) was determined on 7 soil samples in accordance with ASTM D6836, "Standard Test Methods for Determination of the Soil Water Characteristic Curve for Soil and Rock by the Pressure Plate Method." This test establishes the relationship between the water content of a soil and the applied suction or negative matric potential (soil water potential).

To create a full-range curve, a combination of two methods was employed:

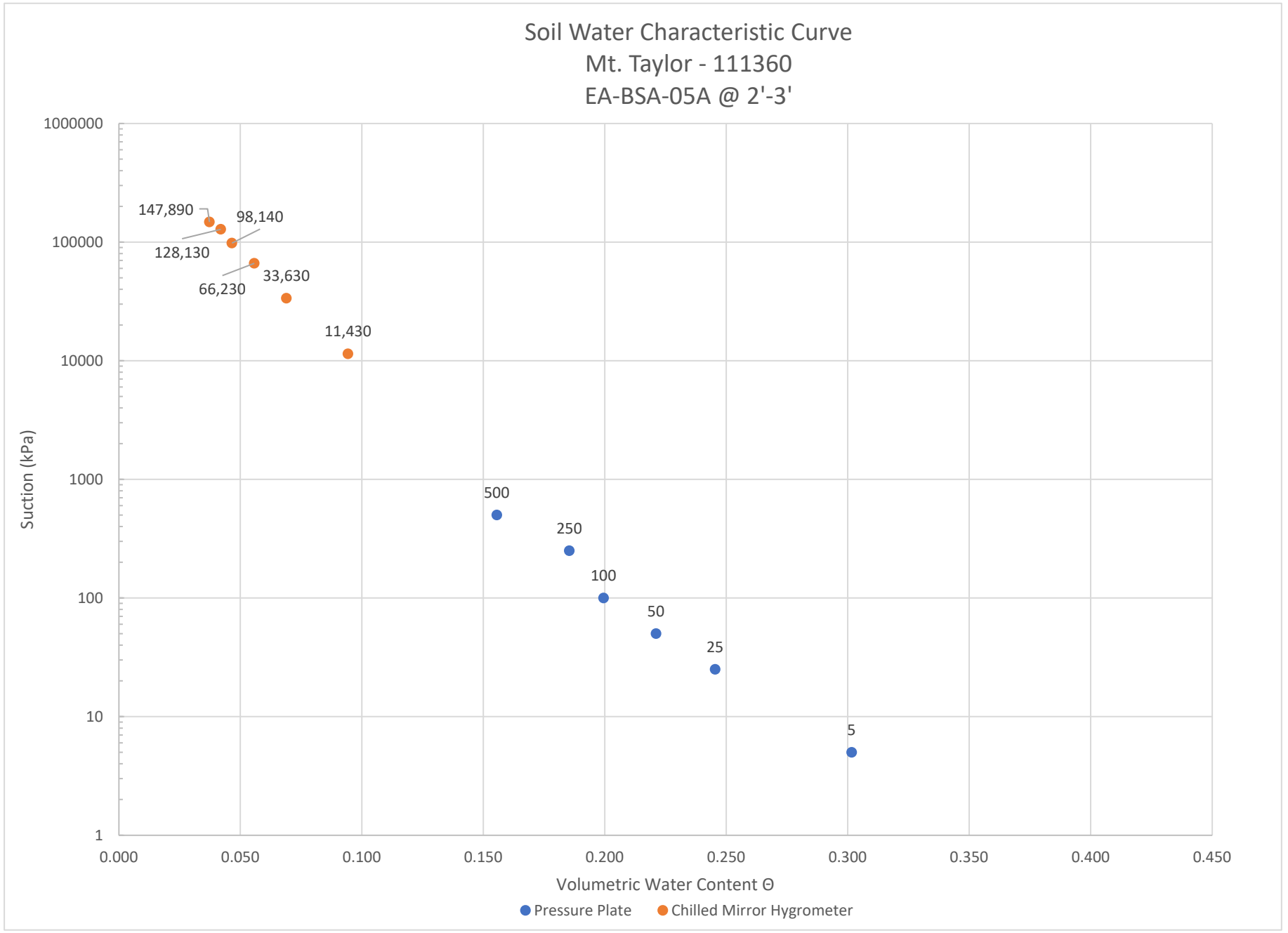
- Low Suction Range (Method C - Pressure Plate): Used to determine the water content at low suctions (0 kPa to 500 kPa).
- High Suction Range (Method D - Chilled Mirror Hygrometer): Used to determine the water content at high suctions (500 kPa to 250,000 kPa or more).

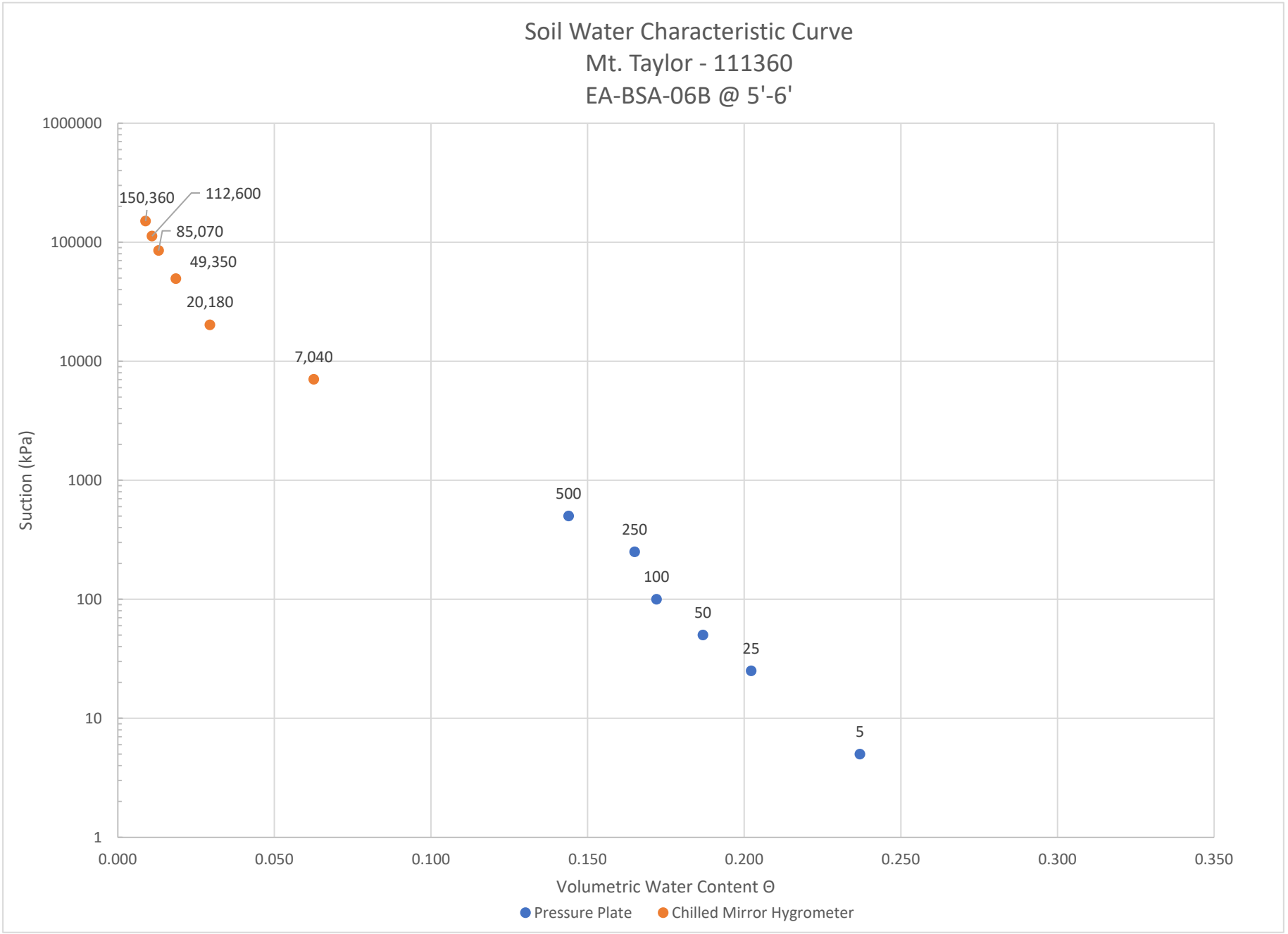
Combined Test Procedure

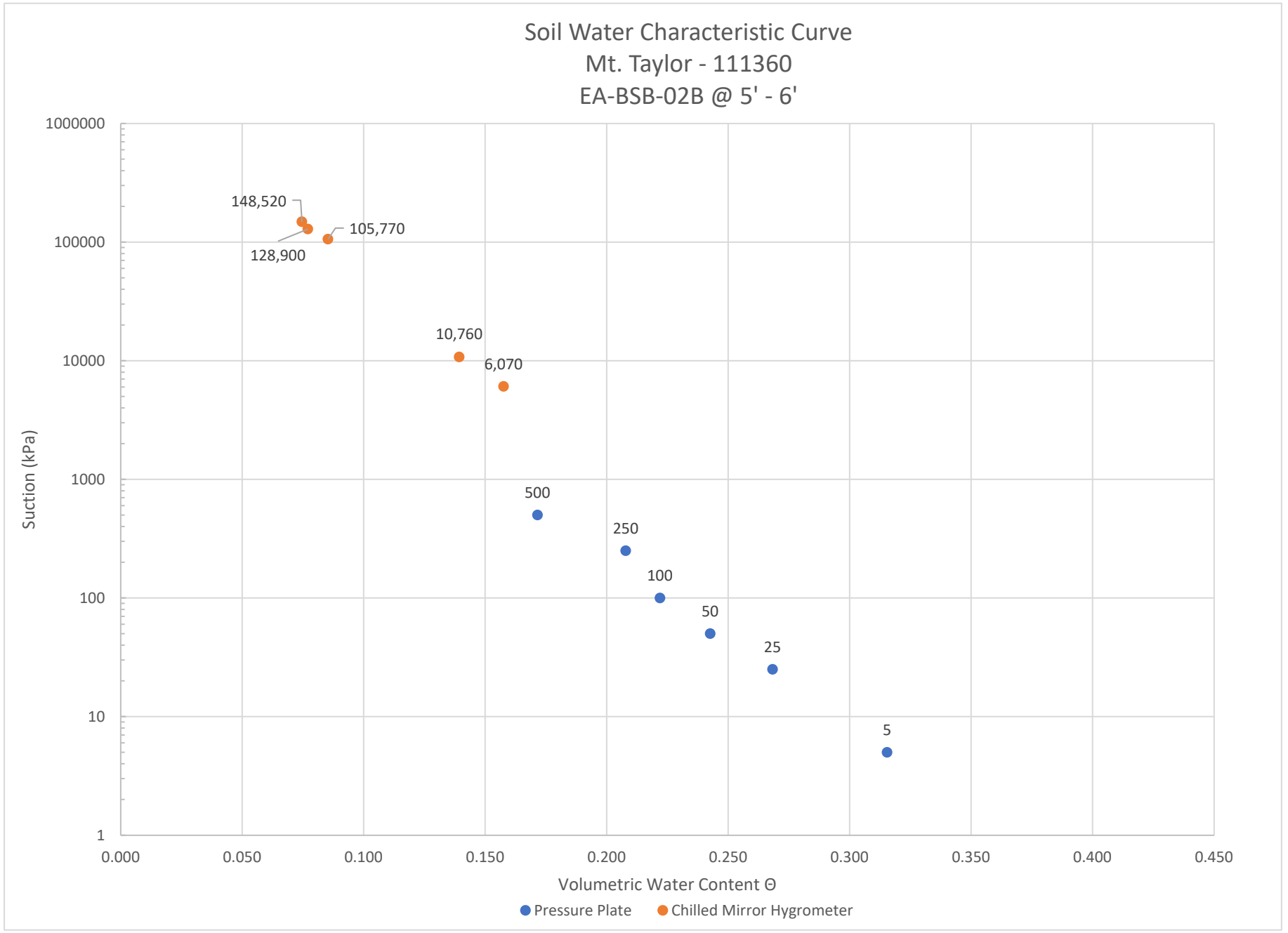
1. Sample Preparation (Method C): Representative soil specimens were prepared and placed on ceramic plates of appropriate air-entry values within a pressure chamber.
2. Saturation: The specimens were saturated by submerging them in water, allowing them to reach equilibrium.
3. Low Suction Application (Method C): The pressure chamber was subjected to a series of low, incremental air pressures (suctions), typically up to 1500 kPa. At each pressure step, the system was allowed to reach hydraulic equilibrium (i.e., water stopped flowing out of the samples). The water outflow was measured and recorded.
4. High Suction Application (Method D): After the final low-suction step, or on a separate subset of samples, the soil was tested using the Chilled Mirror Hygrometer technique.
    - A small, representative portion of the soil was placed in the hygrometer's sample chamber.
    - The instrument measured the relative humidity in equilibrium with the soil water potential (suction) above the sample.
    - This measurement was taken by chilling a mirror surface until dew condensation occurred. The measured dew point temperature was used to calculate the corresponding high soil suction.
5. Moisture Content Determination: For both methods, the water content corresponding to each suction step was determined, by determining the gravimetric moisture content of the tested specimen.

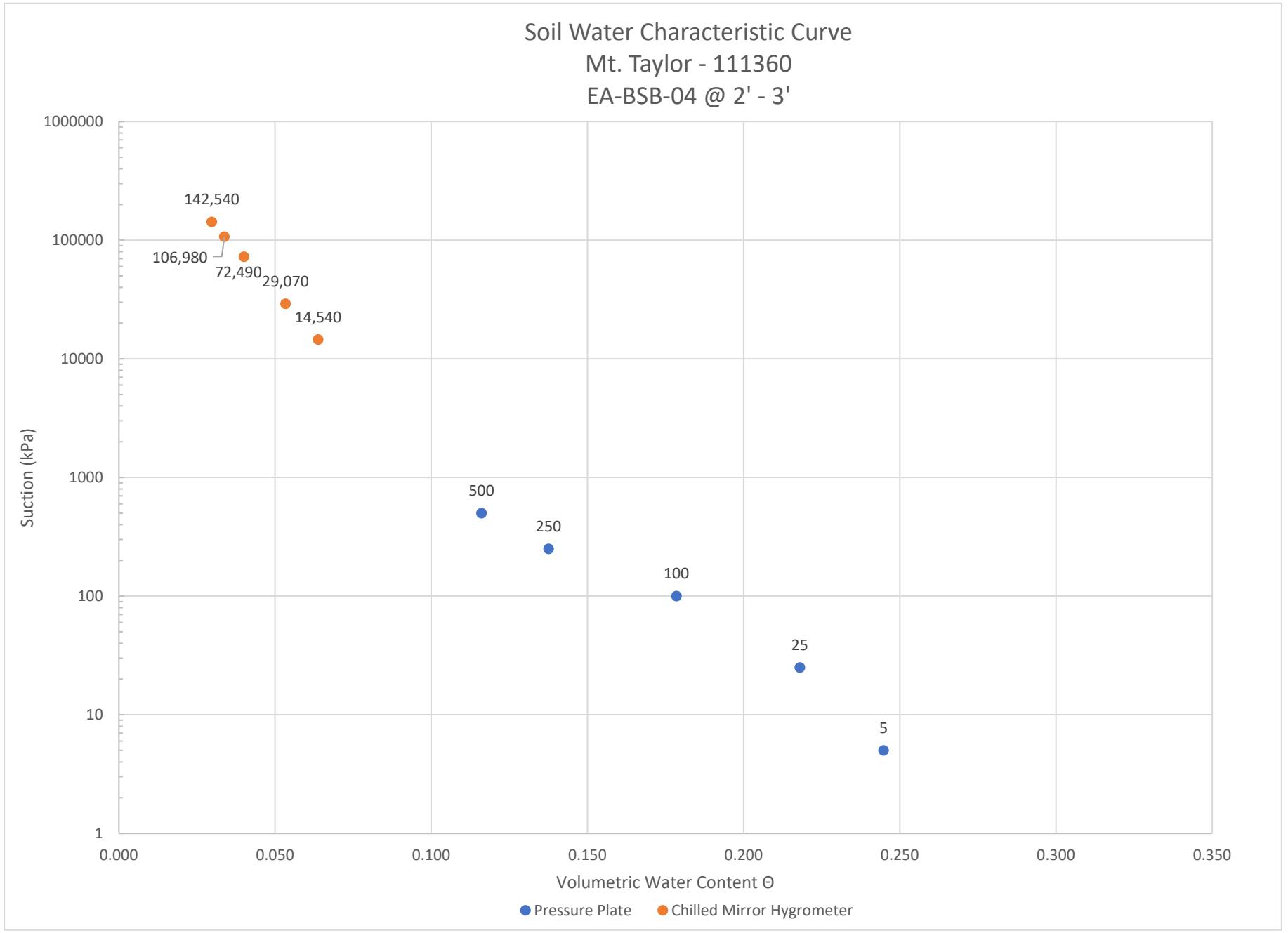
By combining the data from the Pressure Plate (low suction) and the Chilled Mirror Hygrometer (high suction), a complete moisture-retention curve was generated, spanning the full range of suction required for engineering analysis.

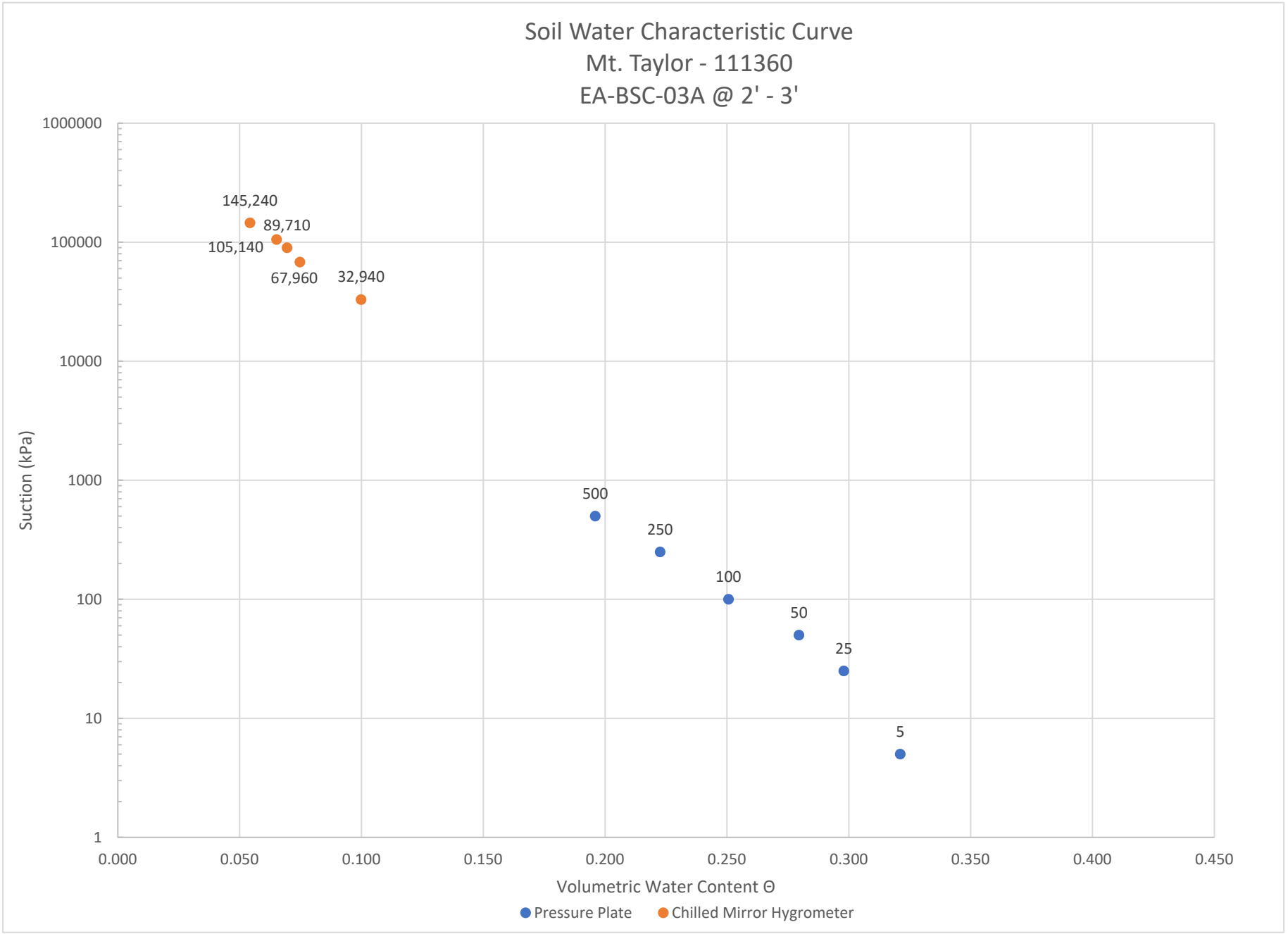
The results of the Soil Water Characteristic Curves are presented on the following pages.

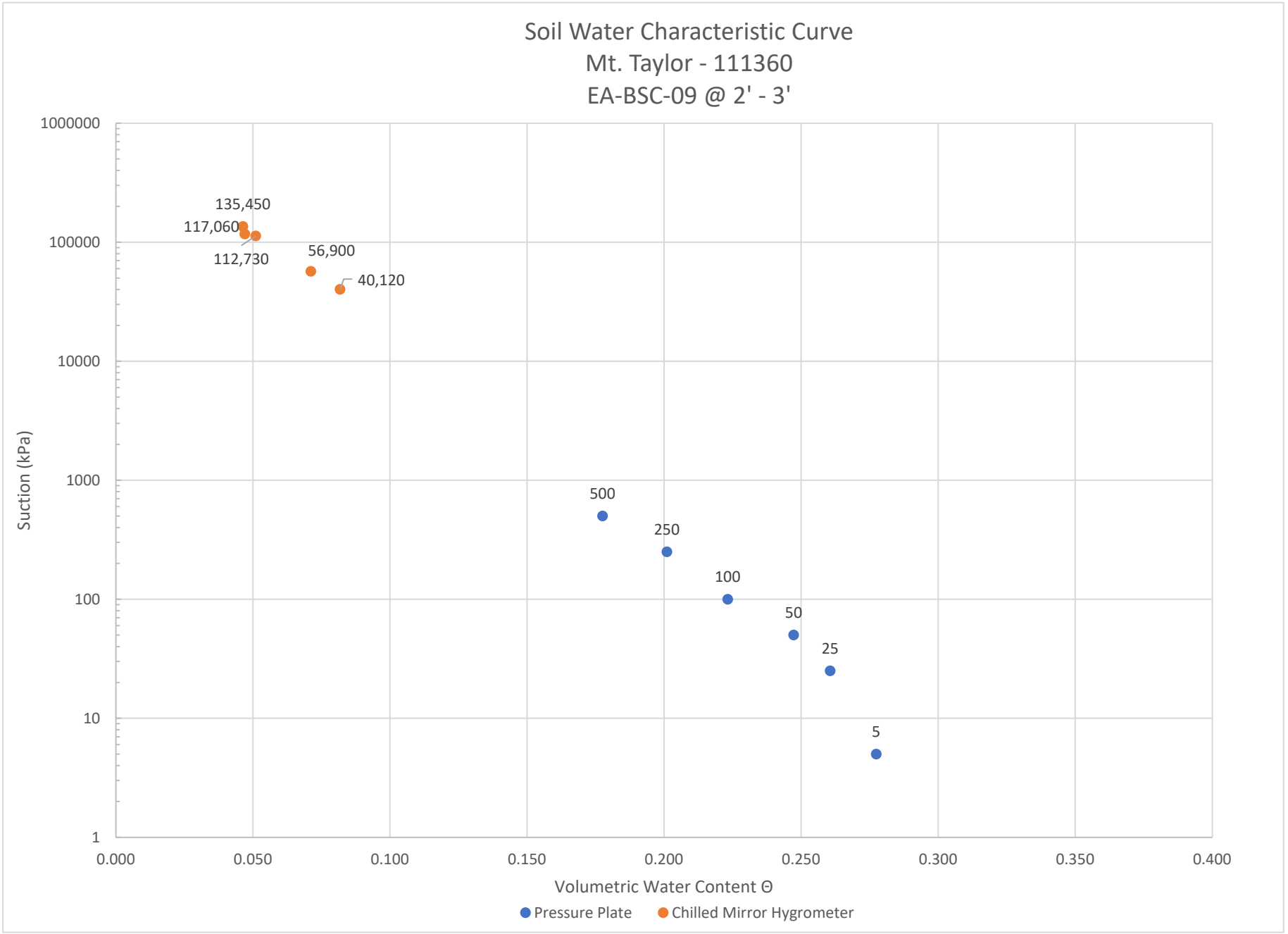

Soil Water Characteristic Curve
Mt. Taylor - 111360
EA-BSA-05A @ 2'-3'
Suction (kPa)
1000000
100000
10000
1000
100
10
1
147,890
98,140
128,130
33,630
66,230
11,430
500
250
100
50
25
5
0.000
0.050
0.100
0.150
0.200
0.250
0.300
0.350
0.400
0.450
Volumetric Water Content Θ
Pressure Plate
Chilled Mirror Hygrometer

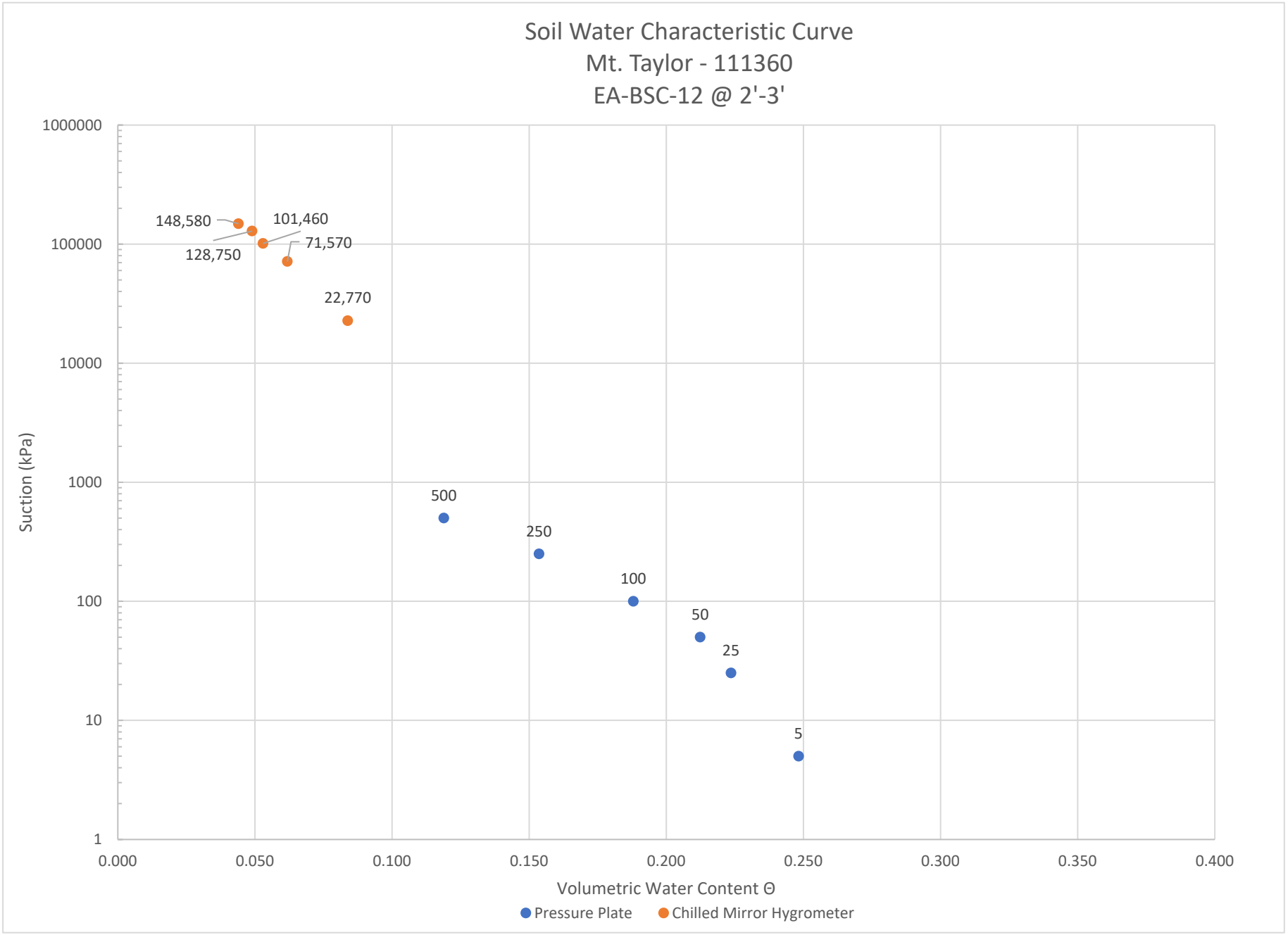

Soil Water Characteristic Curve
Mt. Taylor - 111360
EA-BSA-06B @ 5'-6'
Suction (kPa)
1000000
100000
10000
1000
100
10
1
150,360
112,600
85,070
49,350
20,180
7,040
500
250
100
50
25
5
0.000
0.050
0.100
0.150
0.200
0.250
0.300
0.350
Volumetric Water Content Θ
Pressure Plate
Chilled Mirror Hygrometer


Soil Water Characteristic Curve
Mt. Taylor - 111360
EA-BSB-02B @ 5' - 6'
Suction (kPa)
1000000
100000
10000
1000
100
10
1
148,520
105,770
128,900
10,760
6,070
500
250
100
50
25
5
0.000
0.050
0.100
0.150
0.200
0.250
0.300
0.350
0.400
0.450
Volumetric Water Content Θ
Pressure Plate
Chilled Mirror Hygrometer


Soil Water Characteristic Curve
Mt. Taylor - 111360
EA-BSB-04 @ 2' - 3'
Suction (kPa)
1000000
100000
10000
1000
100
10
1
142,540
106,980
72,490
29,070
14,540
500
250
100
25
5
0.000
0.050
0.100
0.150
0.200
0.250
0.300
0.350
Volumetric Water Content Θ
Pressure Plate
Chilled Mirror Hygrometer


Soil Water Characteristic Curve
Mt. Taylor - 111360
EA-BSC-03A @ 2' - 3'
Suction (kPa)
1000000
100000
10000
1000
100
10
1
145,240
89,710
105,140
67,960
32,940
500
250
100
50
25
5
0.000
0.050
0.100
0.150
0.200
0.250
0.300
0.350
0.400
0.450
Volumetric Water Content Θ
Pressure Plate
Chilled Mirror Hygrometer


Soil Water Characteristic Curve
Mt. Taylor - 111360
EA-BSC-09 @ 2' - 3'
Suction (kPa)
1000000
100000
10000
1000
100
10
1
0.000
0.050
0.100
0.150
0.200
0.250
0.300
0.350
0.400
Volumetric Water Content Θ
135,450
117,060
112,730
56,900
40,120
500
250
100
50
25
5
Pressure Plate
Chilled Mirror Hygrometer


Soil Water Characteristic Curve
Mt. Taylor - 111360
EA-BSC-12 @ 2'-3'
Suction (kPa)
1000000
100000
10000
1000
100
10
1
148,580
101,460
128,750
71,570
22,770
500
250
100
50
25
5
0.000
0.050
0.100
0.150
0.200
0.250
0.300
0.350
0.400
Volumetric Water Content Θ
Pressure Plate
Chilled Mirror Hygrometer

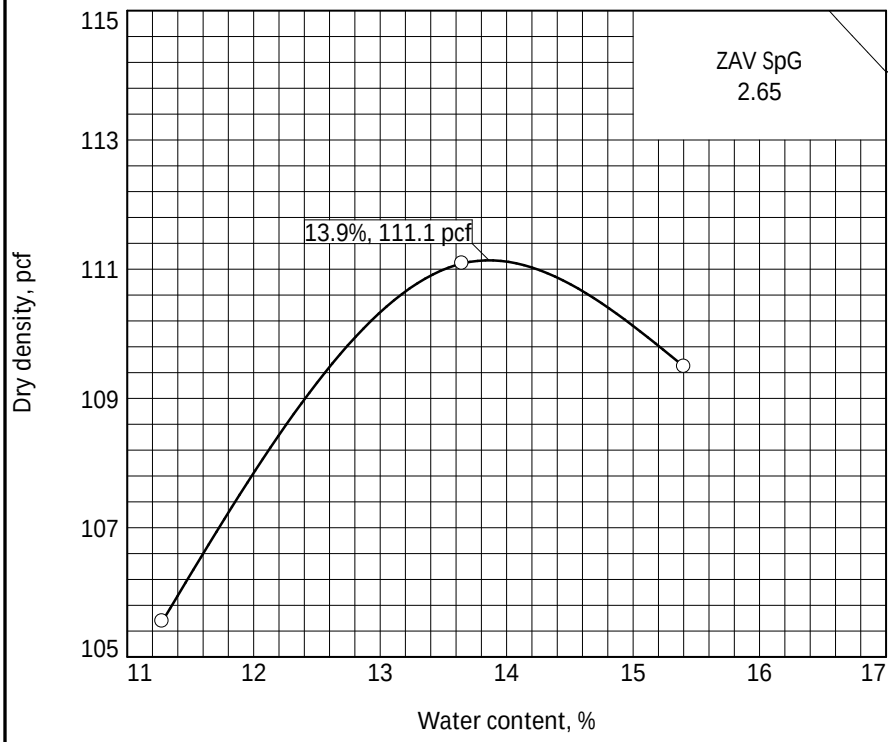
8.0 Standard Proctor Compaction

Standard Proctor Compaction tests were performed on 8 selected soil samples in accordance with ASTM D698, “Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort.”

- For each test, soil at a predetermined moisture content was placed in three equal layers into a cylindrical mold of specified dimensions. Each layer was compacted by 25 blows from a 5.5-pound (2.49 kg) hammer dropped from a height of 12 inches (305 mm) for Methods A and B of the standard. For Method C, a larger mold and 56 blows per layer were used. The specific method employed is noted in the results section.
- Following compaction, the wet unit weight of the soil in the mold was determined by measuring the mass of the compacted soil and the known volume of the mold.
- The moisture content of a representative portion of the compacted soil was determined, and the dry unit weight was subsequently calculated.
- This procedure was repeated for each soil sample with four or more different moisture contents to establish the moisture-density relationship (compaction curve) for the soil.

Graphs illustrating the moisture-density relationships (Proctor curves) for each tested soil sample are shown on the following pages.

COMPACTION TEST REPORT



Curve No.
2

Test Specification:
ASTM D 698-12 Method A Standard

Preparation Method: Moist
Hammer Wt.: 5.5 lb.
Hammer Drop: 12 in.
Hammer Type: Manual
Layers: three Blows/Layer: 25
Mold Size: 0.03333 cu. ft.

Test Performed on Material
Passing: #4 Sieve

NM: LL: 25 PI: 5
Sp.G. (Assumed): 2.650
%>#4: %<No.200:
USCS: AASHTO:
Date Sampled:
Date Received:
Date Tested: 3/07/2025
Tested By: SY

TESTING DATA	1	2	3	4	5	6
WM + WS	6161.5	6159.9	6026.9			
WM	4251.2	4251.2	4251.2			
WW + T #1	1309.6	1466.2	1581.9			
WD + T #1	1189.6	1338.5	1462.3			
TARE #1	410.5	402.9	401.8			
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	15.4	13.6	11.3			
DRY DENSITY	109.5	111.1	105.6			

TEST RESULTS

Maximum dry density = 111.1 pcf

Optimum moisture = 13.9 %

Material Description: Sand

Remarks:

Project No.: 111360 Client: Rio Grand Resources
Project: Mt.Taylor

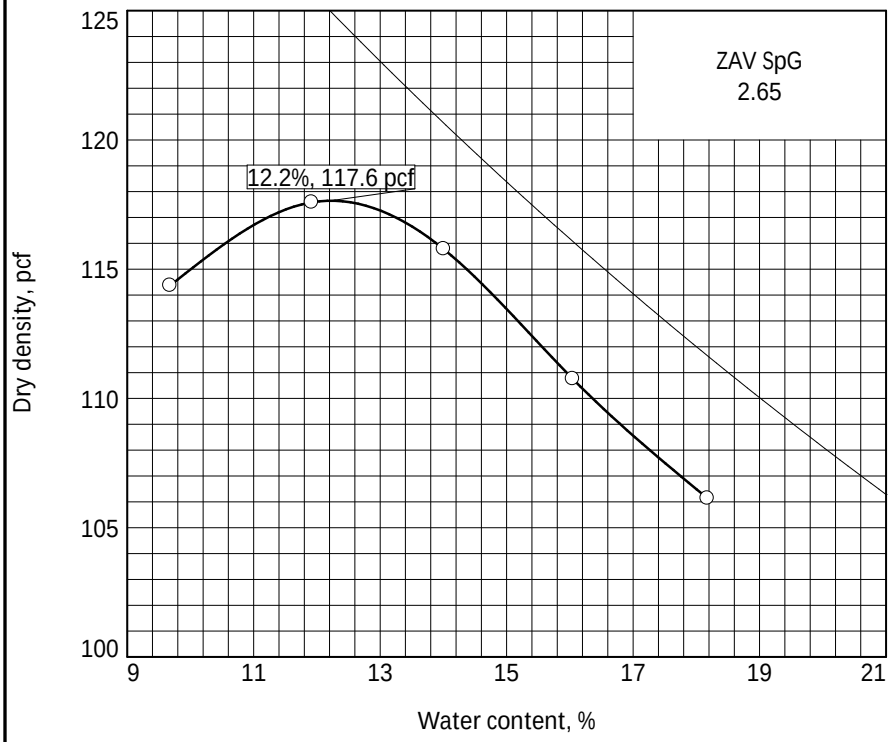
○ Source of Sample: EA-BSA05 Depth: 2' - 3' Sample Number: A

Checked by: KG
Title:

ENGINEERING ANALYTICS, INC.

Figure

COMPACTION TEST REPORT



Curve No.
3

Test Specification:
ASTM D 698-12 Method A Standard

Preparation Method	Moist
Hammer Wt.	5.5 lb.
Hammer Drop	12 in.
Hammer Type:	Manual
Layers	three
Blows/Layer	25
Mold Size	0.03333 cu. ft.

Test Performed on Material
Passing #4 Sieve

NM _____ LL NV PI NP
Sp.G. (Assumed): 2.650
%>#4 _____ %<No.200 _____
USCS _____ AASHTO _____
Date Sampled _____
Date Received _____
Date Tested 3/11/2025
Tested By SY

TESTING DATA	1	2	3	4	5	6
WM + WS	6241.2	6247.1	6194.7	6147.9	6147.9	
WM	4251.6	4251.6	4251.6	4251.6	4251.6	
WW + T #1	1459.3	1369.9	1341.9	1156.3	1297.7	
WD + T #1	1346.8	1250.9	1211.9	1040.2	1218.6	
TARE #1	402.9	401.2	401.7	401.5	401.8	
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	11.9	14.0	16.0	18.2	9.7	
DRY DENSITY	117.6	115.8	110.8	106.1	114.4	

TEST RESULTS

Maximum dry density = 117.6 pcf

Optimum moisture = 12.2 %

Material Description

Sand

Remarks:

Project No.: 111360 Client: Rio Grand Resources
Project: Mt.Taylor

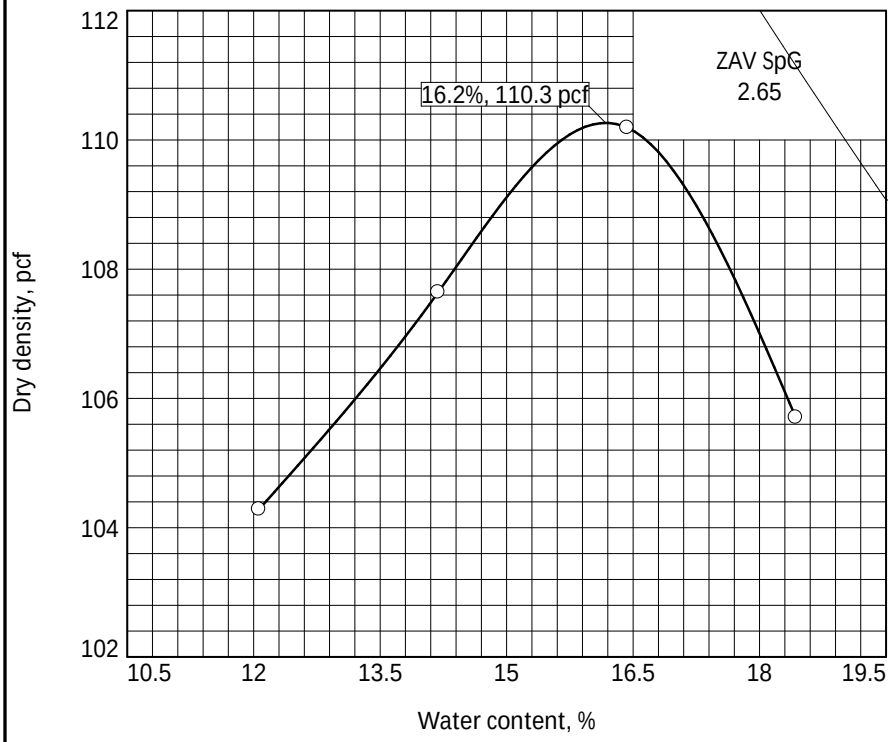
○ Source of Sample: EA-BSA06 Depth: 5' - 6' Sample Number: B

Checked by: KG
Title:

Figure

ENGINEERING ANALYTICS, INC.

COMPACTION TEST REPORT



Curve No.
1

Test Specification:
ASTM D 698-12 Method A Standard

Preparation Method	Moist
Hammer Wt.	5.5 lb.
Hammer Drop	12 in.
Hammer Type:	Manual
Layers	three
Blows/Layer	25
Mold Size	0.03333 cu. ft.

Test Performed on Material
Passing #4 Sieve

NM LL 22 PI 2
Sp.G. (Assumed): 2.650
%>#4 %<No.200
USCS AASHTO
Date Sampled
Date Received
Date Tested 3/11/2025
Tested By SY

TESTING DATA	1	2	3	4	5	6
WM + WS	6018.4	6109.9	6191.2	6144.2		
WM	4251.6	4251.6	4251.6	4251.6		
WW + T #1	1413.6	1345.8	1353.8	1326.2		
WD + T #1	1304.8	1228.5	1223.3	1182.4		
TARE #1	402.9	401.8	429.1	402.1		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	12.1	14.2	16.4	18.4		
DRY DENSITY	104.3	107.6	110.2	105.7		

TEST RESULTS

Maximum dry density = 110.3 pcf

Optimum moisture = 16.2 %

Material Description

Silty Clay

Remarks:

Project No.: 111360 Client: Rio Grand Resources
Project: Mt.Taylor

○ Source of Sample: EA-BSB02 Depth: 5' - 6' Sample Number: B

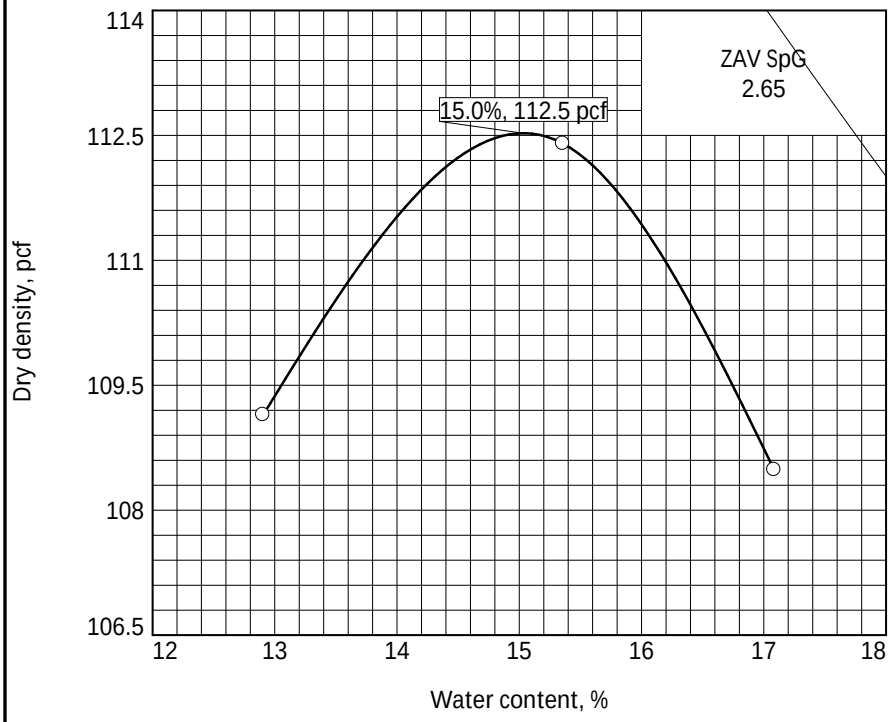
Checked by: KG
Title:

ENGINEERING ANALYTICS, INC.

Figure

COMPACTION TEST REPORT

Curve No.



Test Specification:
ASTM D 698-12 Method A Standard

Preparation Method: Moist
Hammer Wt.: 5.5 lb.
Hammer Drop: 12 in.
Hammer Type: Manual
Layers: three Blows/Layer: 25
Mold Size: 0.03333 cu. ft.
Test Performed on Material Passing: #4 Sieve

NM: LL: NV PI: NP
Sp.G. (Assumed): 2.65
%>#4: %<No.200:
USCS: AASHTO:
Date Sampled:
Date Received:
Date Tested: 4/16/25
Tested By: SY

TESTING DATA	1	2	3	4	5	6
WM + WS	6114.4	6211.7	6171.7			
WM	4251.4	4251.4	4251.4			
WW + T #1	1015.2	1106.6	897.9			
WD + T #1	933.6	1009.1	810.6			
TARE #1	301.0	374.0	299.9			
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	12.9	15.4	17.1			
DRY DENSITY	109.1	112.4	108.5			

TEST RESULTS

Maximum dry density = 112.5 pcf

Optimum moisture = 15.0 %

Material Description: Sand

Remarks:

Project No.: 111360 Client: Rio Grand Resources
Project: Mt.Taylor

○ Source of Sample: EA-BSB04 Depth: 2' - 3' Sample Number: A

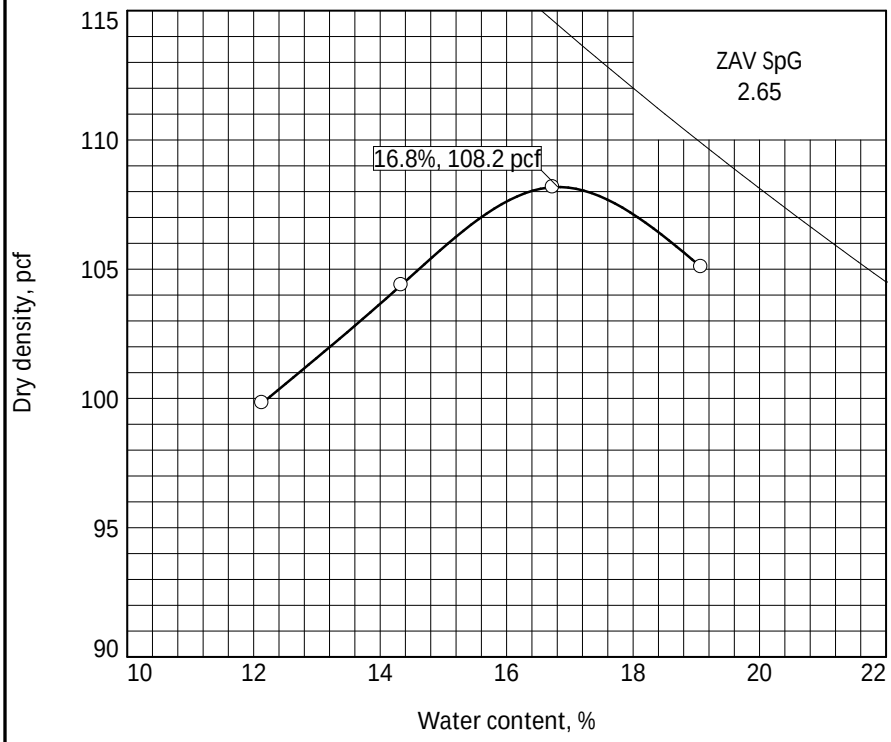
Checked by: AW
Title:

ENGINEERING ANALYTICS, INC.

Figure

COMPACTION TEST REPORT

Curve No.



Test Specification:
ASTM D 698-12 Method A Standard

Preparation Method
Hammer Wt. 5.5 lb.
Hammer Drop 12 in.
Hammer Type:
Layers three Blows/Layer 25
Mold Size 0.03333 cu. ft.

Test Performed on Material
Passing #4 Sieve

NM LL 29 PI 14
Sp.G. (D854): 2.65
%>#4 %<No.200
USCS AASHTO
Date Sampled
Date Received
Date Tested
Tested By

TESTING DATA	1	2	3	4	5	6
WM + WS	5943.1	6055.2	6159.8	6142.6		
WM	4250.8	4250.8	4250.8	4250.8		
WW + T #1	1096.2	1043.8	1092.9	1088.9		
WD + T #1	1022.0	963.8	996.6	973.7		
TARE #1	410.5	405.5	420.8	369.7		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	12.1	14.3	16.7	19.1		
DRY DENSITY	99.8	104.4	108.2	105.1		

TEST RESULTS

Maximum dry density = 108.2 pcf

Optimum moisture = 16.8 %

Material Description

Silty Clay

Remarks:

Project No.: 111360 Client: Rio Grand Resources
Project: Mt.Taylor

○ Source of Sample: EA-BSC03 Depth: 2' - 3' Sample Number: A

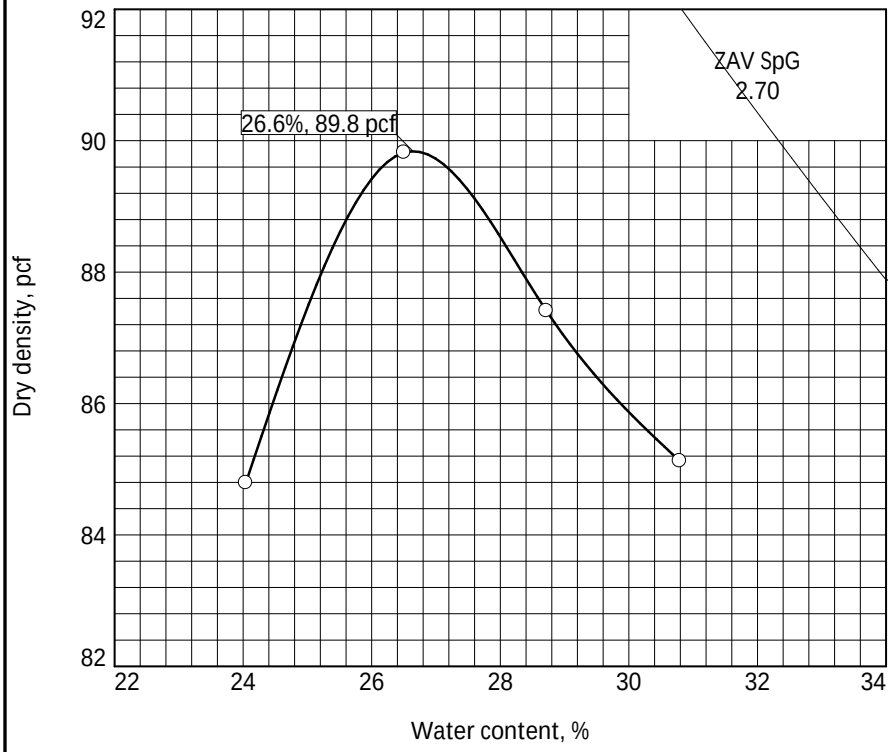
Checked by:
Title:

ENGINEERING ANALYTICS, INC.

Figure

COMPACTION TEST REPORT

Curve No.



Test Specification:
ASTM D 698-12 Method A Standard

Preparation Method: Moist
Hammer Wt.: 5.5 lb.
Hammer Drop: 12 in.
Hammer Type: Manual
Layers: three Blows/Layer: 25
Mold Size: 0.03333 cu. ft.

Test Performed on Material
Passing: #4 Sieve

NM: LL: PI:
Sp.G. (Assumed): 2.700
%>#4: %<No.200:
USCS: AASHTO:
Date Sampled:
Date Received:
Date Tested: 10/09/2025
Tested By: LR

TESTING DATA	1	2	3	4	5	6
WM + WS	5840.6	5968.3	5951.5	5933.7		
WM	4250.5	4250.5	4250.5	4250.5		
WW + T #1	706.1	886.9	883.8	827.1		
WD + T #1	647.1	785.5	779.2	727.3		
TARE #1	401.7	403.1	415.1	403.3		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	24.0	26.5	28.7	30.8		
DRY DENSITY	84.8	89.8	87.4	85.1		

TEST RESULTS

Maximum dry density = 89.8 pcf

Optimum moisture = 26.6 %

Material Description: Clay

Remarks:

Project No.: 111360 Client: Rio Grand Resources
Project: Mt.Taylor

○ Source of Sample: EA-BSC06/09 Combined

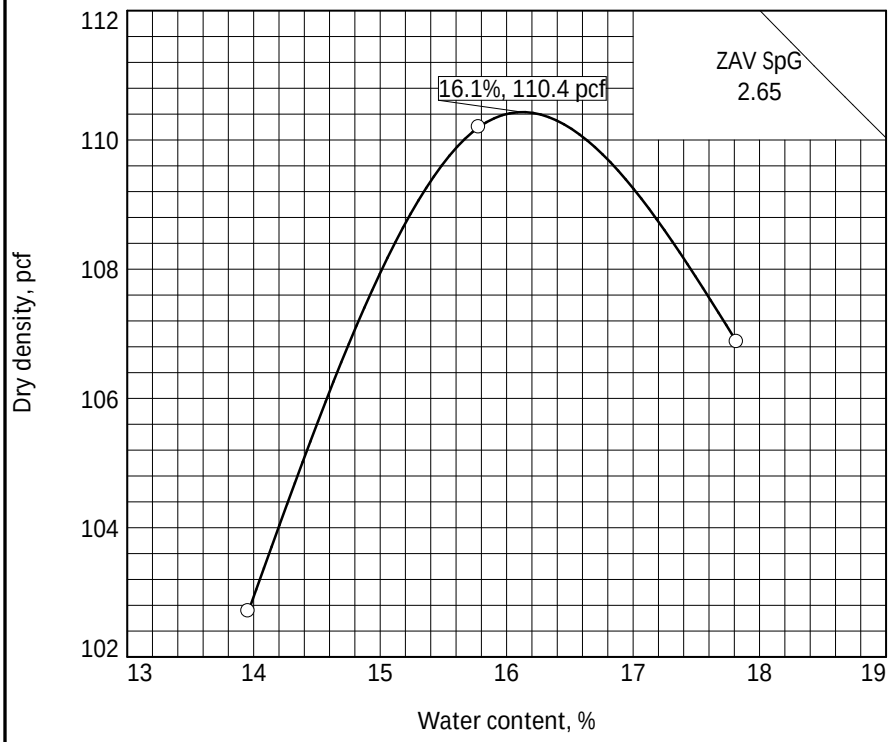
Checked by: KG
Title:

ENGINEERING ANALYTICS, INC.

Figure

COMPACTION TEST REPORT

Curve No.



Test Specification:
ASTM D 698-12 Method A Standard

Preparation Method: Moist
Hammer Wt.: 5.5 lb.
Hammer Drop: 12 in.
Hammer Type: Manual
Layers: three Blows/Layer: 25
Mold Size: 0.03333 cu. ft.

Test Performed on Material
Passing: #4 Sieve

NM: LL: 26 PI: 8
Sp.G. (Assumed): 2.65
%>#4: %<No.200:
USCS: AASHTO:
Date Sampled:
Date Received:
Date Tested: 4/16/2025
Tested By: SY

TESTING DATA	1	2	3	4	5	6
WM + WS	6020.3	6179.7	6154.5			
WM	4250.8	4250.8	4250.8			
WW + T #1	1243.0	1130.4	1178.8			
WD + T #1	1136.1	1027.5	1056.4			
TARE #1	370.5	375.5	369.7			
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	14.0	15.8	17.8			
DRY DENSITY	102.7	110.2	106.9			

TEST RESULTS

Maximum dry density = 110.4 pcf

Optimum moisture = 16.1 %

Material Description: Silty Clay

Remarks:

Project No.: 111360 Client: Rio Grand Resources
Project: Mt.Taylor

○ Source of Sample: EA-BSC09 Depth: 2' - 3' Sample Number: A

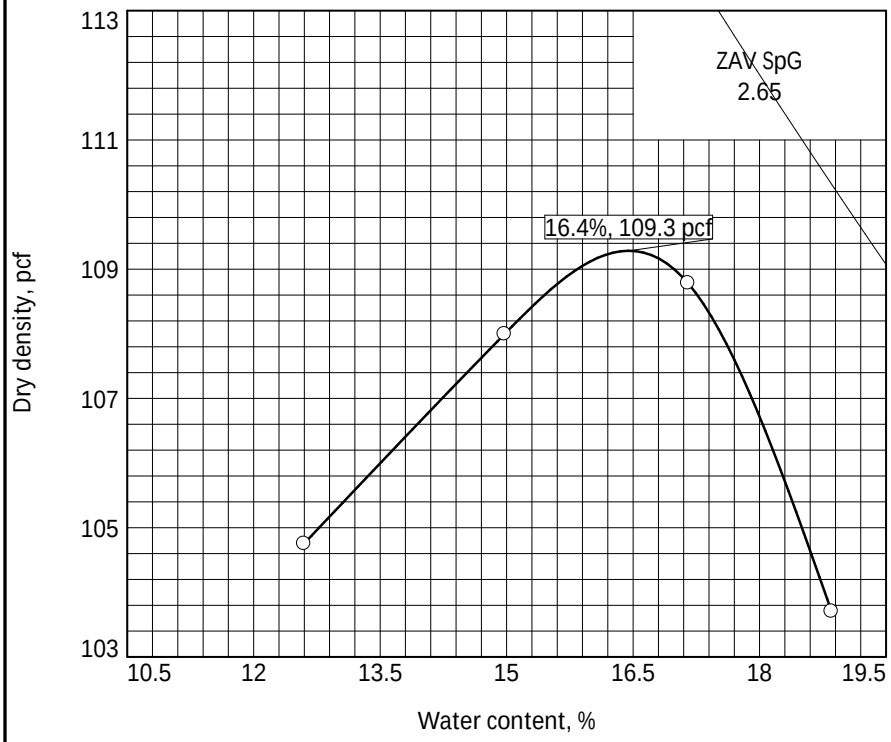
Checked by: KG
Title:

ENGINEERING ANALYTICS, INC.

Figure

COMPACTION TEST REPORT

Curve No.



Test Specification:
ASTM D 698-12 Method A Standard

Preparation Method: Moist
Hammer Wt.: 5.5 lb.
Hammer Drop: 12 in.
Hammer Type: Manual
Layers: three Blows/Layer: 25
Mold Size: 0.03333 cu. ft.

Test Performed on Material
Passing: #4 Sieve

NM: LL: NV PI: NP
Sp.G. (Assumed): 2.65
%>#4: %<No.200:
USCS: AASHTO:
Date Sampled:
Date Received:
Date Tested: 4/10/25
Tested By: SY

TESTING DATA	1	2	3	4	5	6
WM + WS	6033.2	6176.7	6127.2	6113.4		
WM	4250.0	4250.0	4250.0	4250.0		
WW + T #1	1060.2	1080.7	1199.7	864.2		
WD + T #1	986.7	981.3	1095.7	774.7		
TARE #1	402.9	402.0	400.9	299.8		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	12.6	17.2	15.0	18.9		
DRY DENSITY	104.8	108.8	108.0	103.7		

TEST RESULTS

Maximum dry density = 109.3 pcf

Optimum moisture = 16.4 %

Material Description: Sandy Clay

Remarks:

Project No.: 111360 Client: Rio Grand Resources
Project: Mt.Taylor

○ Source of Sample: EA-BSC12 Depth: 2' - 3' Sample Number: A

Checked by: AW
Title:

ENGINEERING ANALYTICS, INC.

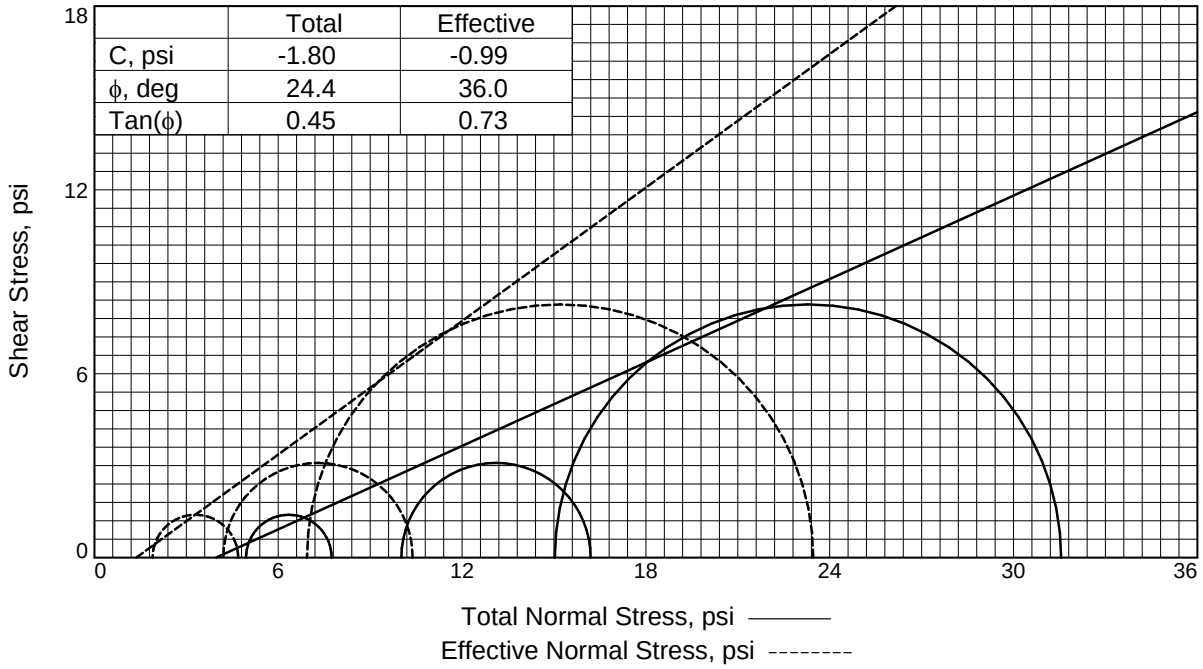
Figure

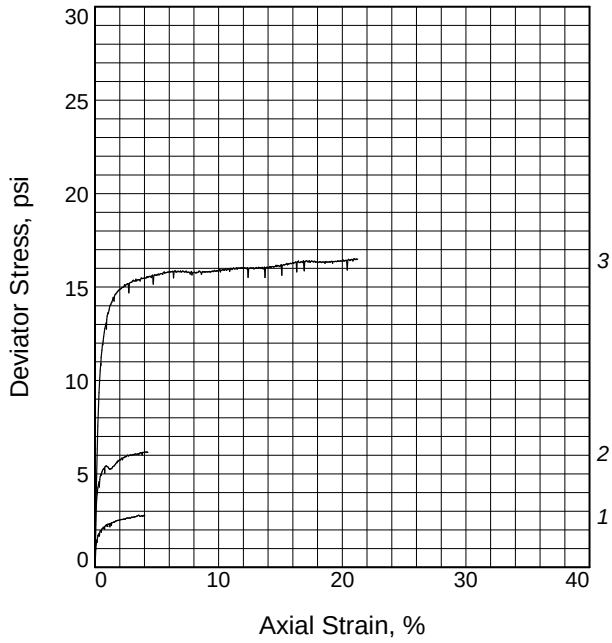
9.0 Consolidated Undrained Triaxial Shear

Consolidated undrained (CU) triaxial shear tests were performed on 1 soil samples in accordance with ASTM D4767, "Standard Test Method for Consolidated Undrained Triaxial Compression Test for Cohesive Soils."

- Soil samples were trimmed, encased in a rubber membrane, and installed in the triaxial test cell.
- An initial effective stress of 1-3 psi was applied to facilitate saturation.
- Specimens were saturated to ≥ 95%.
- Following saturation, samples tested using the three-load method were consolidated to the effective stress specified by the project engineer. Samples tested using the three-stage method were consolidated to the effective stresses designated prior to each stage of testing.
- During the consolidation phase, drainage was permitted, allowing for volume changes.
- After a 24-hour consolidation period, the triaxial load cell was engaged, drainage was closed, and axial loading was initiated.
- Axial load, deformation, and pore-water pressure were measured to determine total stresses and axial compression.
- Each sample was sheared, and axial strain was recorded.
- Strength envelopes (total stress Mohr circles) were developed based on the test data.
- Strength envelopes were determined using either the three-load or three-stage method, as specified by the project engineer.
    - The three-load method utilizes data from three distinct samples, each consolidated under a different effective stress.
    - The three-stage method utilizes one sample, which is consolidated to differing effective stresses for each stage of the test.

The results of the CU tests are presented on the following pages.





Sample No.		1	2	3
Initial	Water Content, %	26.2	26.2	26.2
	Dry Density, pcf	74.6	74.6	74.6
	Saturation, %	57.0	57.0	57.0
	Void Ratio	1.2186	1.2186	1.2186
	Diameter, in.	2.39	2.39	2.39
	Height, in.	5.20	5.20	5.20
At Test	Water Content, %	40.3	37.1	35.1
	Dry Density, pcf	78.8	82.2	84.4
	Saturation, %	97.3	97.1	96.9
	Void Ratio	1.0988	1.0136	0.9597
	Diameter, in.	2.34	2.34	2.36
	Height, in.	5.16	4.93	4.71
Strain rate, in./min.		0.005	0.005	0.005
Eff. Cell Pressure, psi		5.0	10.0	15.0
Fail. Stress, psi		2.8	6.2	16.5
Total Pore Pr., psi		83.0	85.8	88.1
Strain, %		3.5	4.2	20.9
Ult. Stress, psi				
Total Pore Pr., psi				
Strain, %				
$\bar{\sigma}_1$ Failure, psi		4.7	10.4	23.5
$\bar{\sigma}_3$ Failure, psi		1.9	4.2	6.9

Type of Test:
CU with Pore Pressures

Sample Type: Remolded

Description: Clay

Specific Gravity= 2.650

Remarks: While the test followed the ASTM D4767 Staged Method, the resulting data indicates the sample should be re-tested using the Three-Load Method for improved accuracy and reliability.

Figure _____

Client: Rio Grand Resources

Project: Mt.Taylor

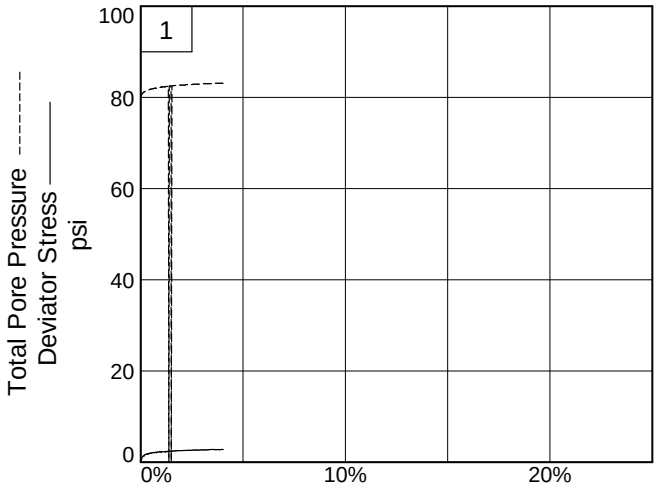
Source of Sample: EA-BSC06/09 Combined

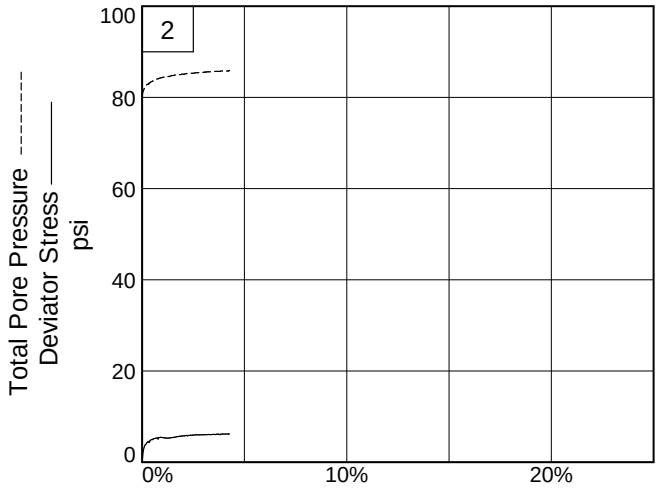
Proj. No.: 111360 **Date Sampled:**

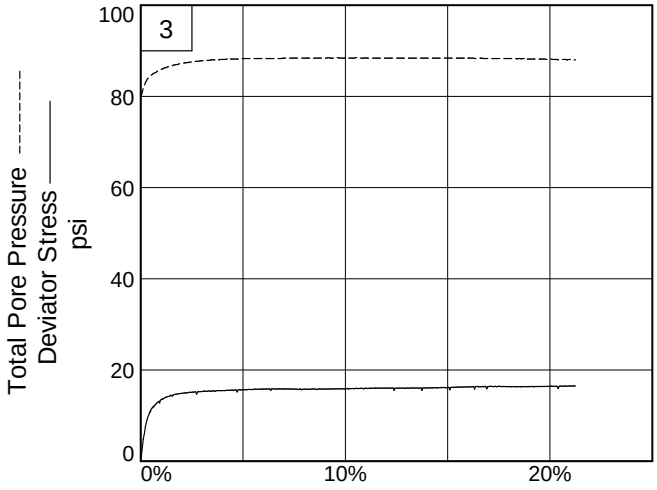
TRIAXIAL SHEAR TEST REPORT

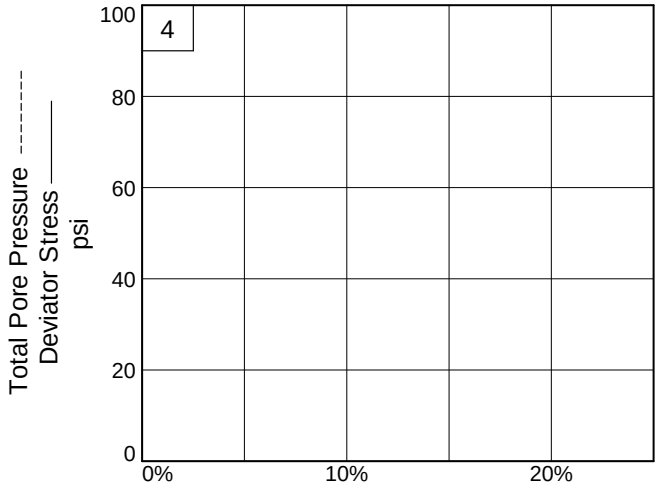
ENGINEERING ANALYTICS, INC.

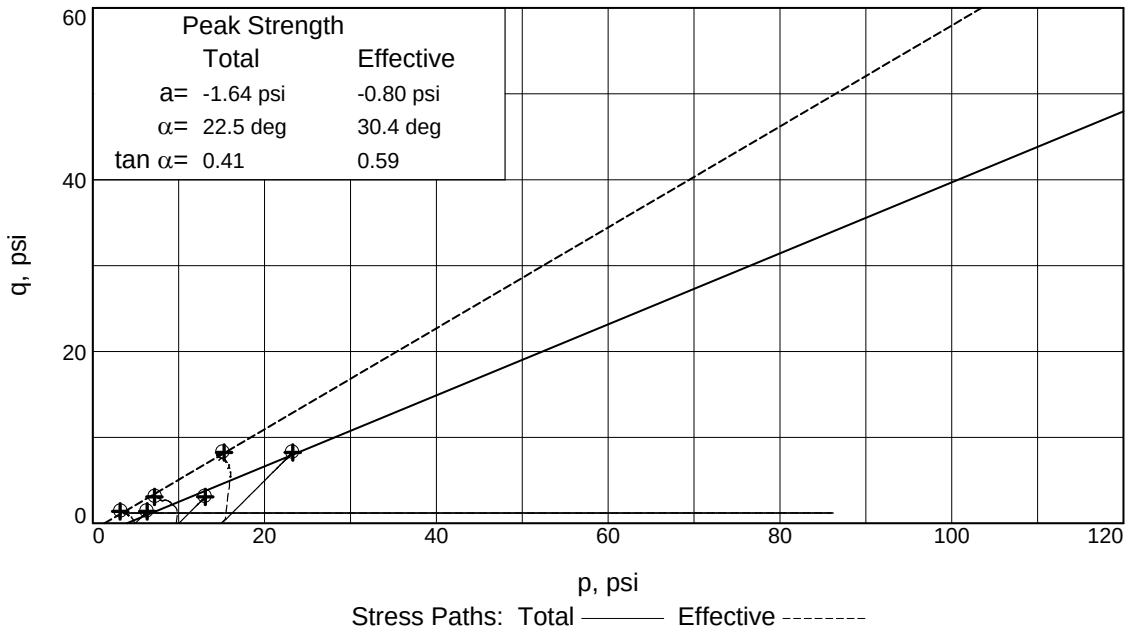
Tested By: AW **Checked By:** KG









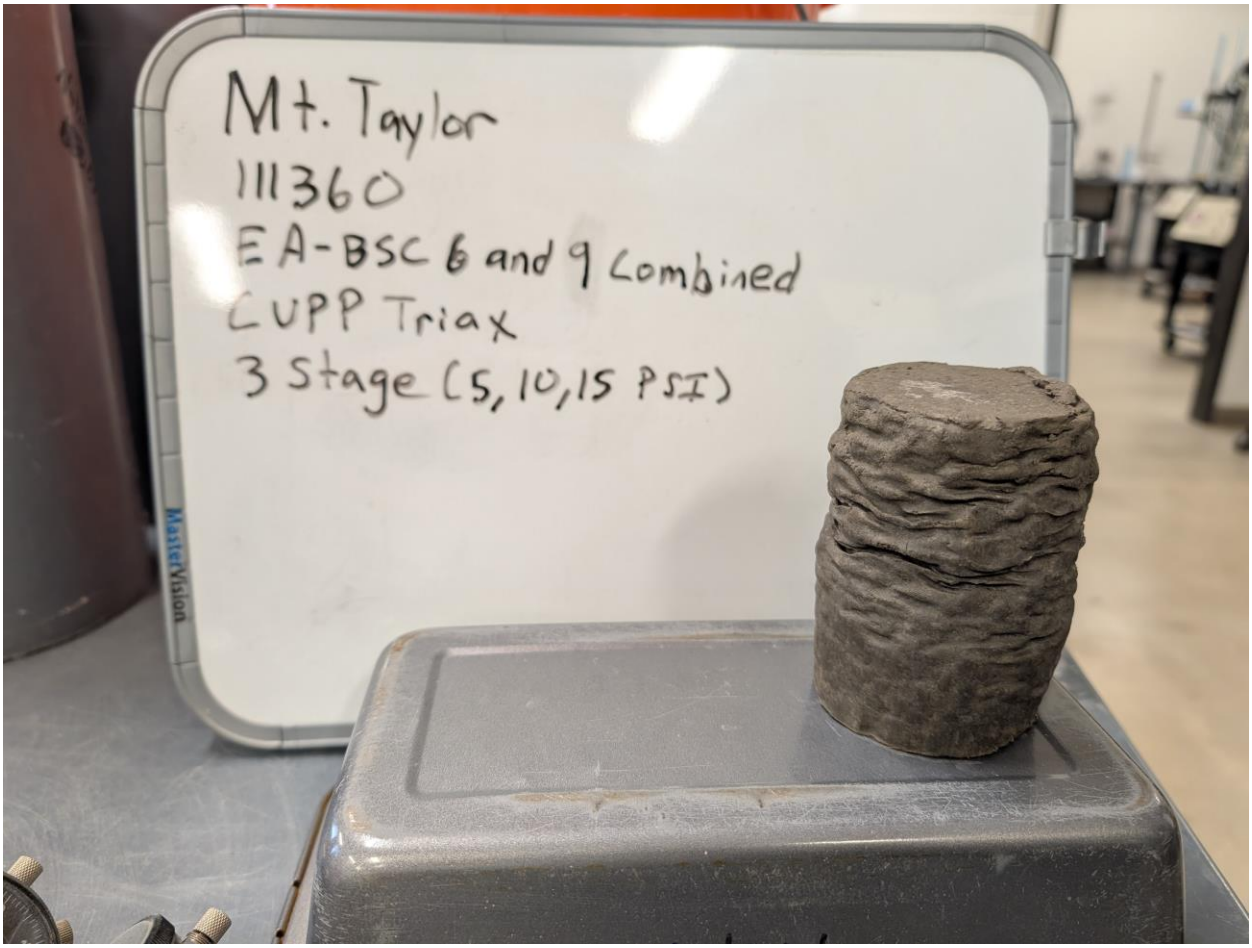


Client: Rio Grand Resources
Project: Mt.Taylor
Source of Sample: EA-BSC06/09 Combined
Project No.: 111360

Figure _____

ENGINEERING ANALYTICS, INC.

Tested By: AW **Checked By:** KG


Mt. Taylor
111360
EA-BSC 6 and 9 Combined
CUPP Triax
3 Stage (5, 10, 15 PSI)
MasterVision