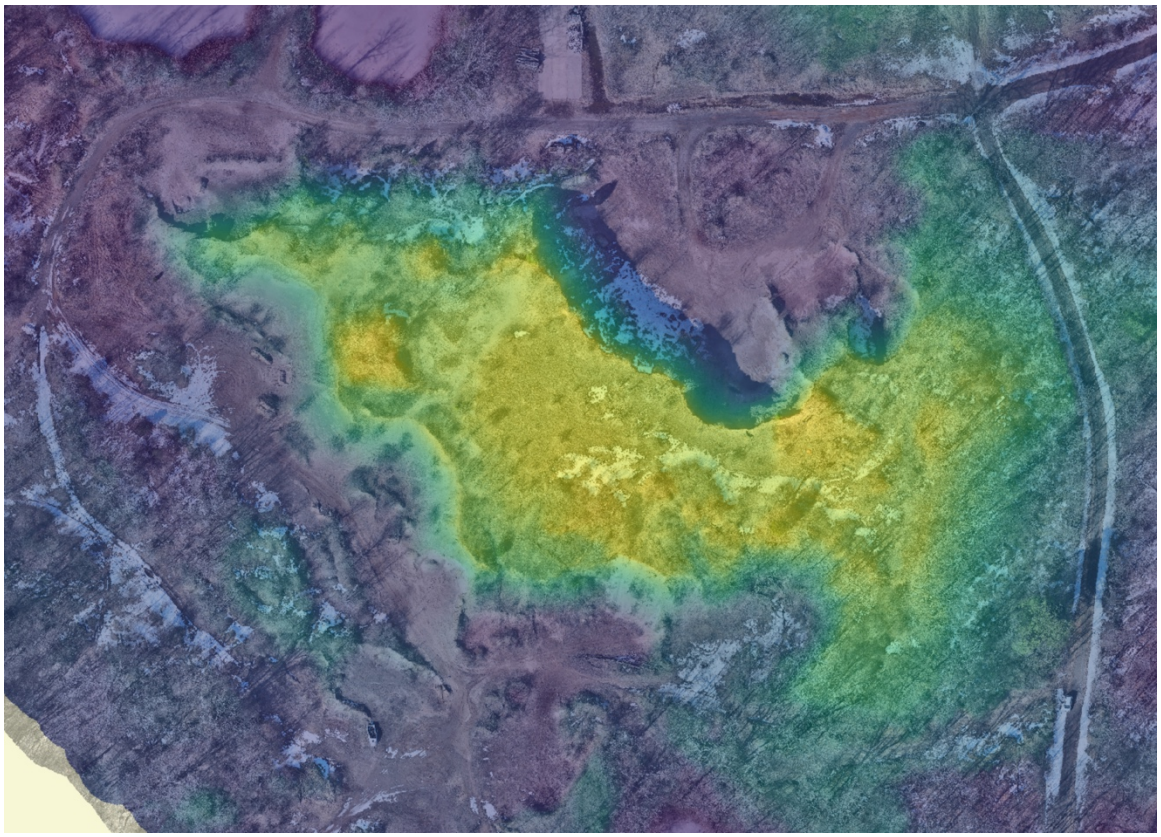


Pine Hill Sand Pit
Bulk Sand Volumetric & Analysis Reporting

68 Pine Hill Road, Spencerport, NY 14559
Phone: 585-303-2000 | Email: lorjack@frontiernet.net
Site Hours: Monday - Saturday, 7:00 AM - 6:00 PM

Pine Hill Sand Pit
Volumetric Report

Prepared by
Blue Lid LLC
(dba Blue Lid Aerial Photo & Video Services)

blue lid
Aerial Photo+Video Services

Pine Hill Sand Pit – Survey-Grade Volumetric Analysis Report

Prepared for: LL Huff Co Inc.
Data Collection & Analysis by: Blue Lid LLC

Summary

This report presents the volumetric analysis and site evaluation for the Pine Hill Sand Pit in Gates, NY, covering a 9.93-acre stockpile. The analysis utilizes high-resolution orthomosaic imagery, Digital Surface Models (DSM), and Digital Surface Terrain (DST) models to ensure accurate measurements. The collected data confirms a stockpile volume of 367,595 yd^3 and meets survey-grade standards, with a Ground Sample Distance (GSD) of 1.37 cm, exceeding the industry threshold of 3.048 cm (0.1 ft) for survey-grade accuracy.

1. Orthomosaic Imagery – High-Resolution Site Overview

The orthomosaic image provides a photorealistic top-down view of the site, offering a detailed representation of the sand pit and stockpile distribution. This dataset can enable site planning, excavation strategy, and logistical coordination.

2. Digital Surface Model (DSM) – Elevation & Stockpile Analysis

The DSM visualizes elevation variations across the site using a color gradient (blue to purple), where warmer colors indicate higher elevations. You will notice in this model the trees showing in yellow and slight organge colors. This is critical for:

- Understanding stockpile heights and terrain shifts.
- Evaluating excavation potential and optimal removal strategies.
- Detecting inconsistencies in material distribution.

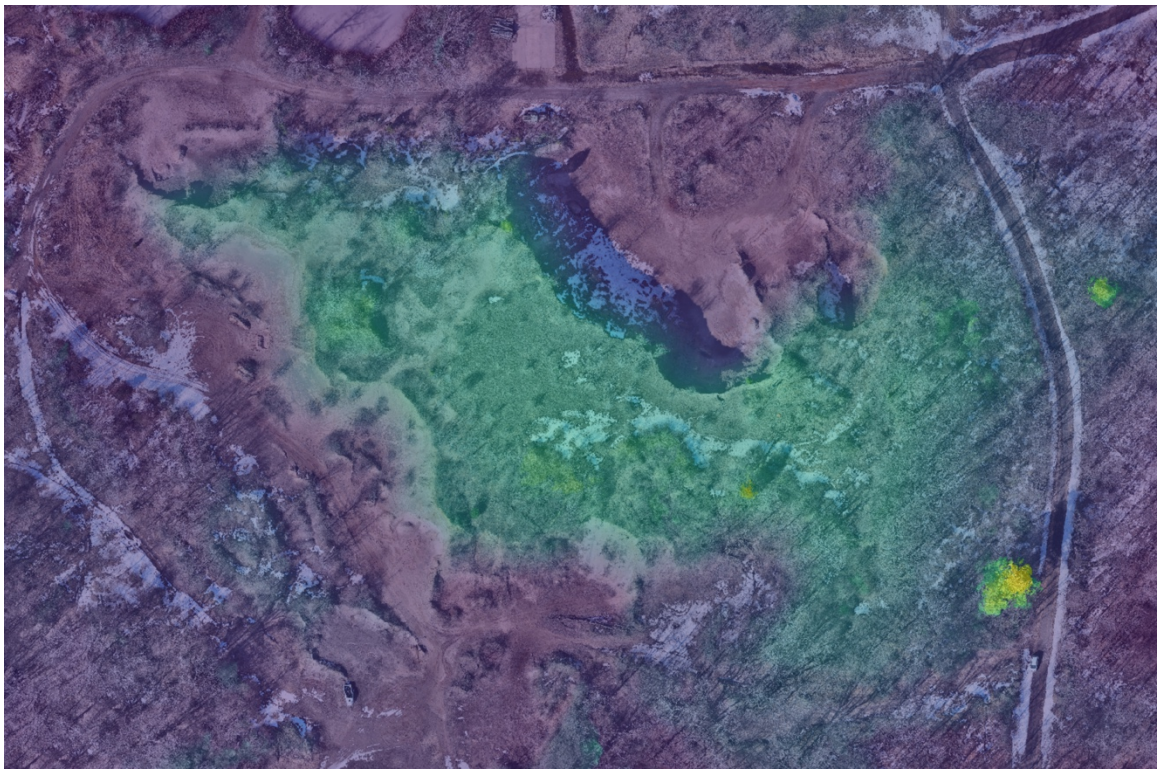


Figure 1-- The DSM visualizes elevation variations across the site using a color gradient (blue to purple)

3. Digital Terrain Model (DTM) – True Ground Representation

The DTM model removes above-ground objects (e.g., trees, shrubs) to provide an accurate ground-level terrain profile using or purple, to blue to yellow shading. This aids in:

- Establishing a baseline for volume calculations.
- Determining true elevation differentials.
- Planning efficient material transport routes.

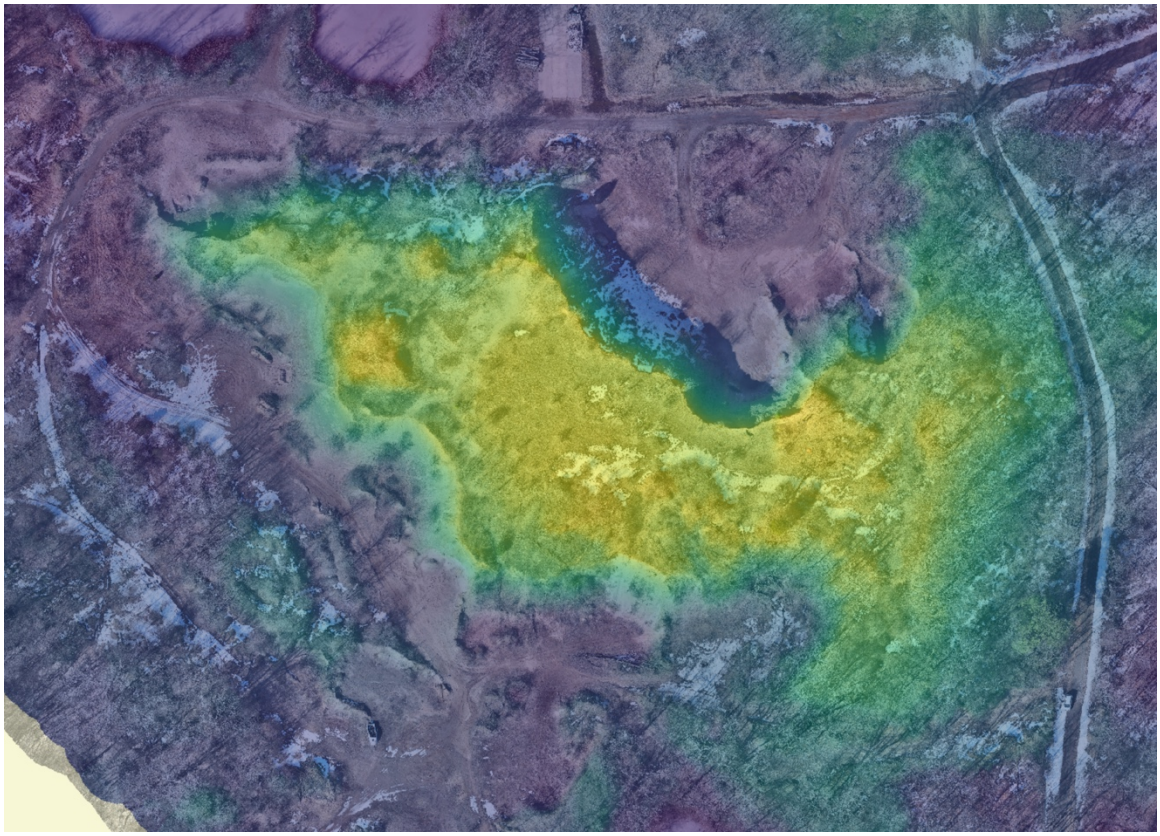


Figure 2-- This Digital Terrain Model (DTM) model removes all ground objects. Note the trees in the previous DSM model do not appear in this model.

4. Volumetric Calculation – 367,595 yd^3

This image combines the photo orthomosaic with DTM and DSM modeling overlays. Using survey-grade photogrammetry, the stockpile volume is calculated at 367,595 yd^3 with a margin of error within industry standards. This allows for:

- Accurate material inventory tracking.
- Data-backed excavation planning.
- Optimized logistics for buyers and contractors.

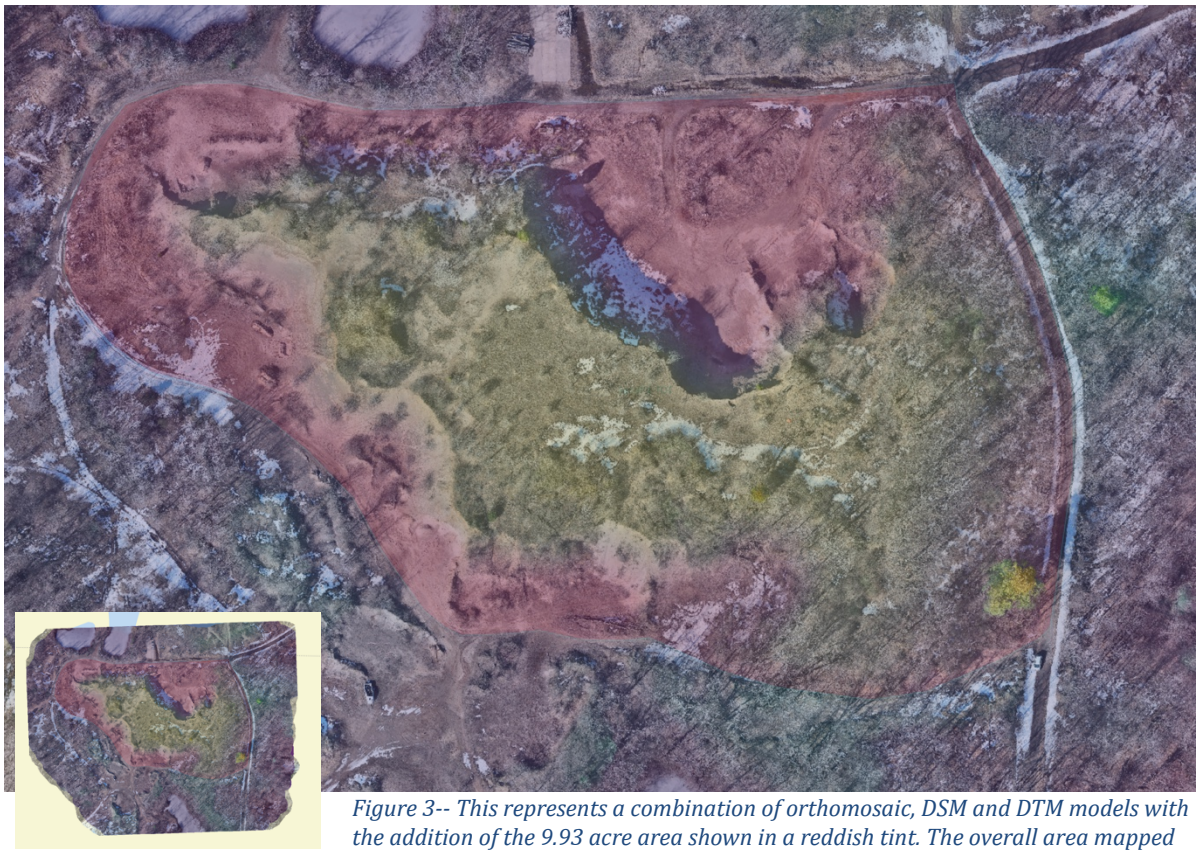


Figure 3-- This represents a combination of orthomosaic, DSM and DTM models with the addition of the 9.93 acre area shown in a reddish tint. The overall area mapped was over 26 acres, while the reddish area is just under 10 acres

Conclusion

This report confirms that the Pine Hill Sand Pit contains a large volume of sand that has already been mined and is easily accessible. The various modalities used in calculating the volume provide a high-confidence with a precisely measured 367,595 yd^3 of material. The use of orthomosaic, DSM, and DST models combined with a 1.37 cm GSD ensures engineering-grade accuracy, making this dataset fully reliable for excavation and commercial planning.

Dataset name	Dataset link	Project link	DEM	Reference layer	Reference feature	Method	Above level	Below level	Net	Unit
Gates-North Gates, United States_20250310_1540	Click this link for the data set	Click this link to see online project	dsm	Sand-Pit Total	SandPit-TOT	Lowest polygon vertex	367,994.13	398.94	-367,595.18	Cubic yard

This graphic shows the orthomosaic in context with the much wider geographic area.

This graphic shows the polygon which was used for the volumetric calculation in this report.

Pine Hill Sand Pit
Sand Analysis Reports

Prepared by
Terracon

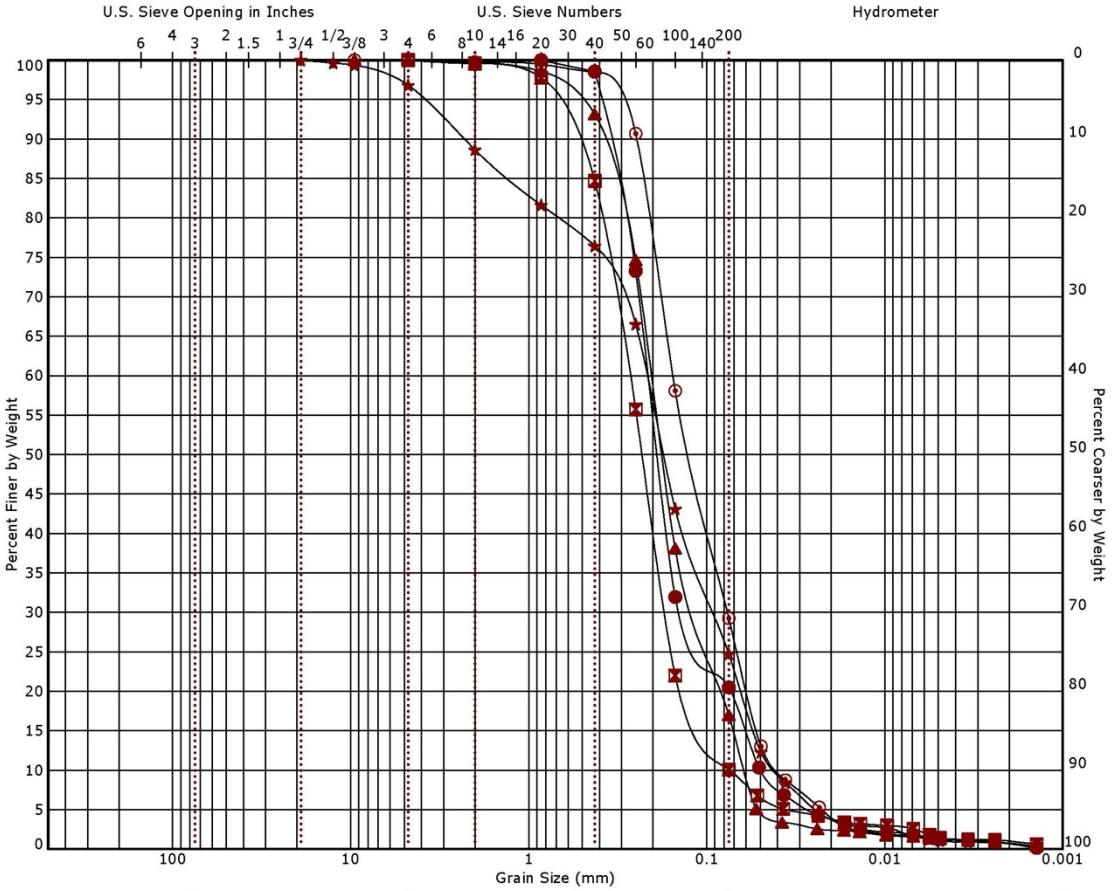
To facilitate the testing LL Huff provided five samples from different portions of the sand piles. The initial and subsequent reports from Terracon are shown in the subsequent pages of this Appendix.

Sand Testing - Loyal Nine Development Corp
Rochester, New York
Terracon Project No. J5251036

Terracon
70 Vantage Point Dr, Ste 1
Rochester, NY

Grain Size Distribution

ASTM D422 / ASTM C136 / AASHTO T27



Cobbles	Gravel		Sand			Silt or Clay
	coarse	fine	coarse	medium	fine	

Boring ID	Depth (Ft)	Description	USCS	LL	PL	PI	Cc	Cu
● Huff #1	0	SILTY SAND	SM	NP	NP	NP	1.70	4.31
⊠ Huff #2	0	POORLY GRADED SAND with SILT	SP-SM	NP	NP	NP	1.43	3.64
▲ Huff #3	0	SILTY SAND	SM	NP	NP	NP	1.07	3.34
★ Huff #4	0	SILTY SAND	SM	NP	NP	NP	0.94	5.28
⊙ Huff #5	0	SILTY SAND	SM	NP	NP	NP	0.95	3.90

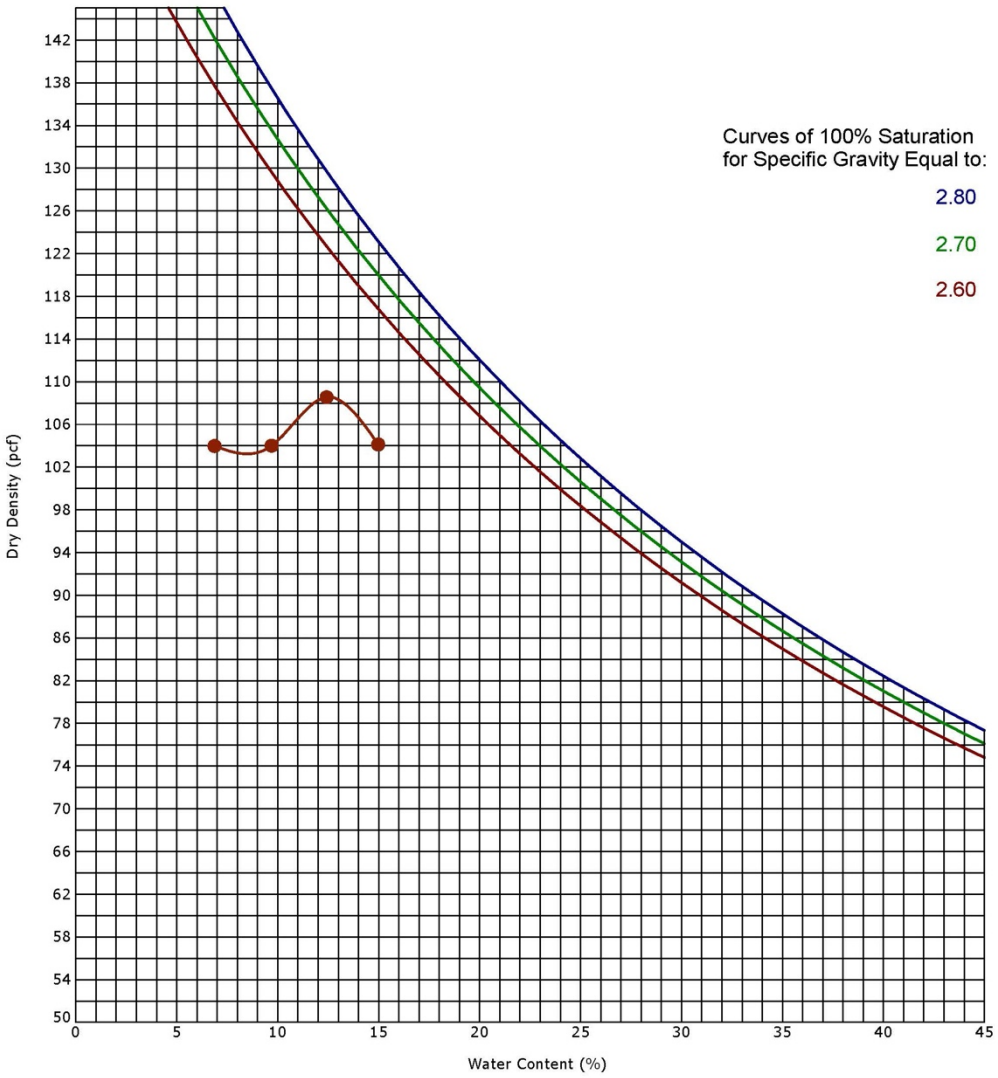
Boring ID	Depth (Ft)	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Fines	%Silt	%Clay
● Huff #1	0	0.85	0.212	0.133	0.049	0.0	0.0	79.5		19.2	1.3
⊠ Huff #2	0	4.75	0.27	0.169	0.074	0.0	0.0	89.9		8.6	1.5
▲ Huff #3	0	9.5	0.204	0.115	0.061	0.0	0.1	83.0		15.7	1.3
★ Huff #4	0	19	0.217	0.091	0.041	0.0	3.2	72.1		23.6	1.1
⊙ Huff #5	0	9.5	0.155	0.076	0.04	0.0	0.1	70.7		27.9	1.3

Sand Testing - Loyal Nine Development Corp
Rochester, New York
Terracon Project No. J5251036

70 Vantage Point Dr, Ste 1
Rochester, NY

Moisture-Density Relationship

ASTM D698-Method A



Boring ID	Depth (Ft)	Description of Materials
Huff #3		SILTY SAND(SM)

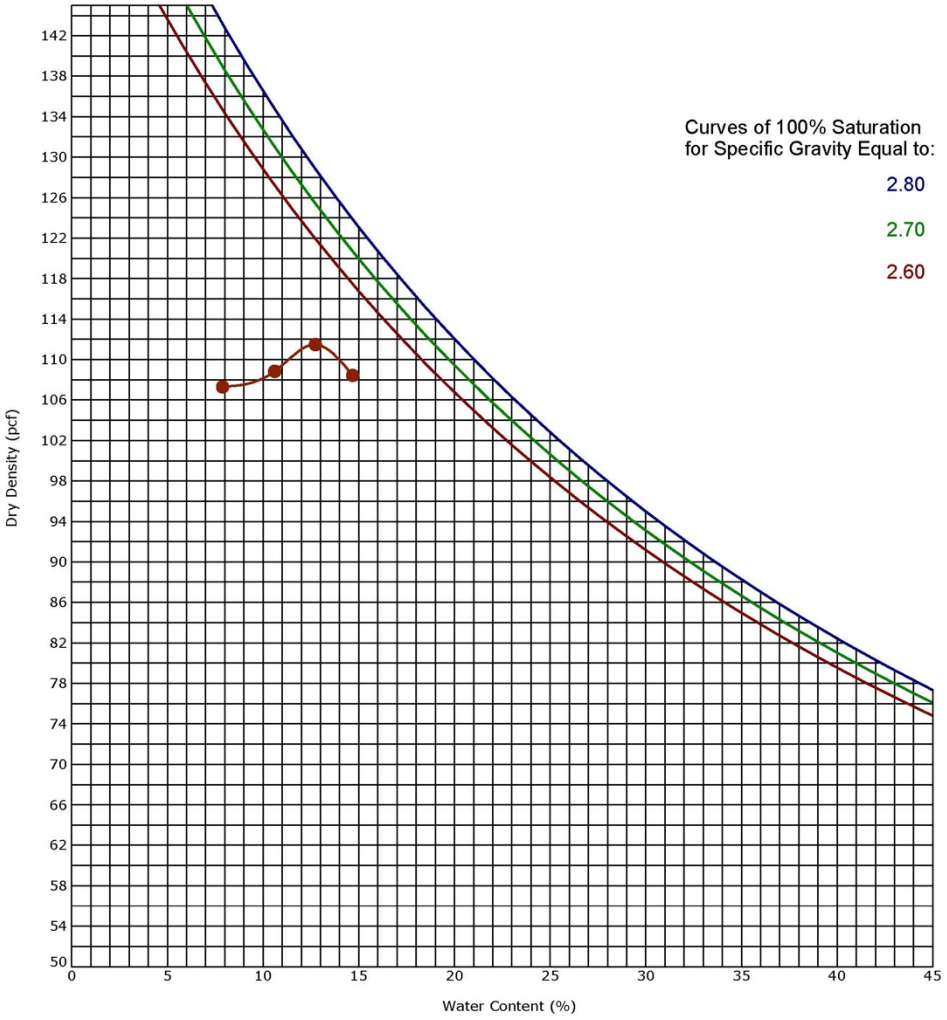
Fines (%)	Fraction > mm size	LL	PL	PI	Test Method	Maximum Dry Density (pcf)	Optimum Water Content (%)
17		NP	NP	NP	ASTM D698-Method A	108.6	12.6

Sand Testing - Loyal Nine Development Corp
Rochester, New York
Terracon Project No. J5251036

Terracon
70 Vantage Point Dr, Ste 1
Rochester, NY

Moisture-Density Relationship

ASTM D1557-Method A



Boring ID	Depth (Ft)	Description of Materials
Huff #3		SILTY SAND(SM)

Fines (%)	Fraction > mm size	LL	PL	PI	Test Method	Maximum Dry Density (pcf)	Optimum Water Content (%)
17		NP	NP	NP	ASTM D1557-Method A	111.5	12.7

Sand Testing - Loyal Nine Development Corp
Rochester, New York
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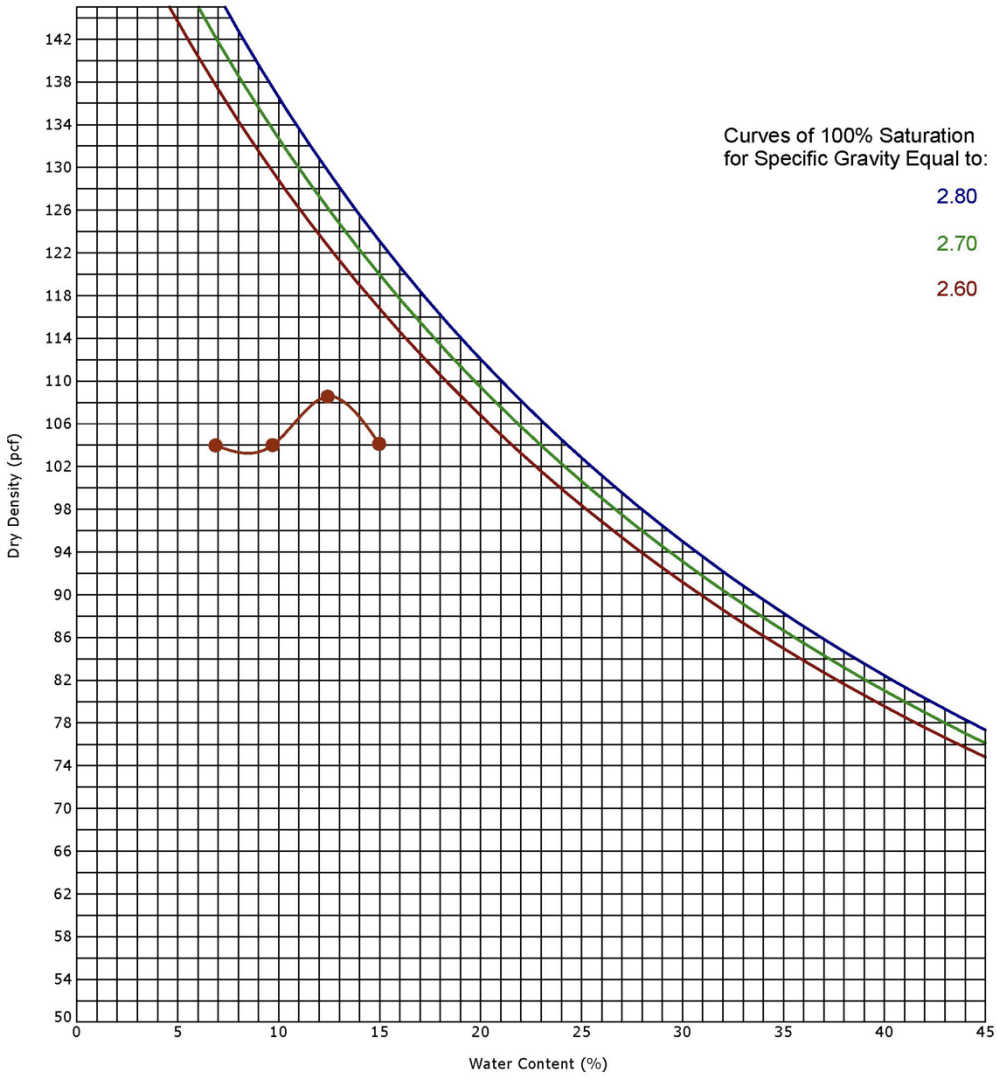
70 Vantage Point Dr, Ste 1
Rochester, NY

Moisture-Density Relationship

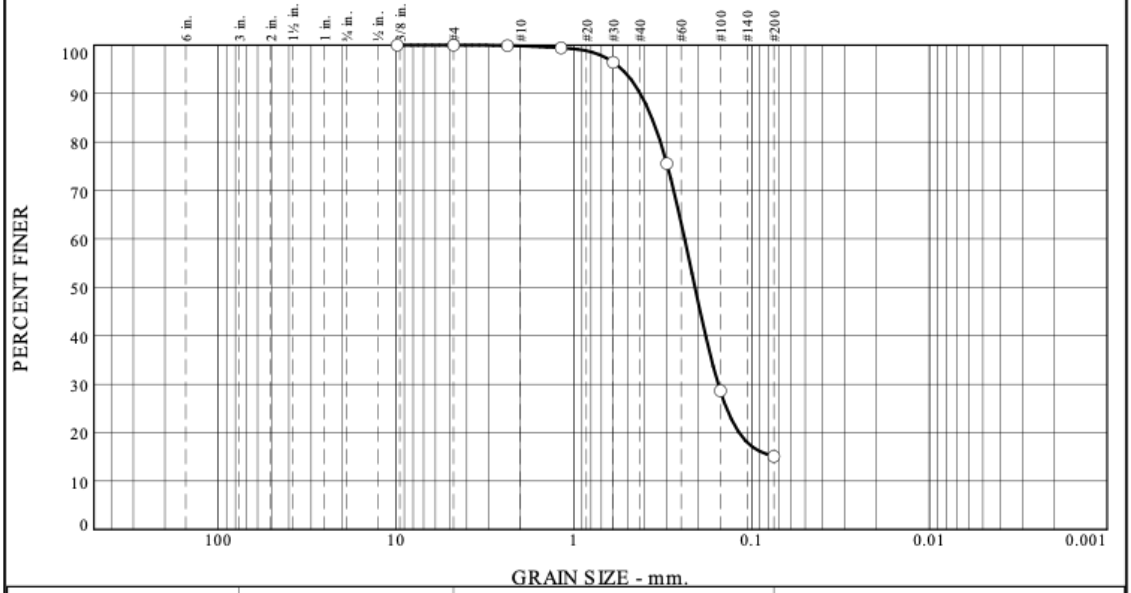
ASTM D698-Method A



Boring ID	Depth (Ft)	Description of Materials
Huff #3		SILTY SAND(SM)

Fines (%)	Fraction > mm size	LL	PL	PI	Test Method	Maximum Dry Density (pcf)	Optimum Water Content (%)
17		NP	NP	NP	ASTM D698-Method A	108.6	12.6

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	9.7	75.0	15.1	

Test Results (ASTM C 136 & ASTM C 117)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.3875	100.0		
#4	100.0		
#8	99.9		
#16	99.4		
#30	96.5		
#50	75.5		
#100	28.6		
#200	15.1		

* (no specification provided)

Material Description

Fine Sand

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= 0.4232 D_{85}= 0.3648 D_{60}= 0.2383
D_{50}= 0.2083 D_{30}= 0.1541 D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 3/29/2025 Date Tested: 4/7/2025

Tested By: Dave Roelker

Checked By: Lucas Eshbaugh

Title: Assistant Project Manager

Date Sampled: Unknown

Terracon, Inc.

Cincinnati, Ohio

Client: Loyal Nine Development Corp

Project: Sand Testing - Loyal Nine Development Corp

Project No: J5251036 Figure

611 Lunken Park Dr
Cincinnati, OH 45226-1813
513-321-5816

Client

Loyal Nine Development Corp
Attn: Michael Heacock
119 Garson Avenue
Rochester, NY 14609

Project

Sand Testing - Loyal Nine Development Corp
Manitou Road
Spencerport, NY 14599

Project No. J5251036

Standard Test Method for Resistance of Fine Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus, ASTM D7428

Material Information

Lab Number:	1976
Aggregate Source:	Huff #1 Stockpile
Aggregate Type:	Fine Sand
Nominal Size, In.:	#4
Number of Revolutions:	1500

Laboratory Test Data

Loss by Abrasion and Impact, %:	20.0

Grading Designation Table

Passing	#4	#8	#16	#30	#50	#100	Total Weight	Weight of Spheres	Number of Revolutions
Retained on	#8	#16	#30	#50	#100	#200			
(g)	50	125	125	100	75	25	500 ± 5 g	1250 ± g	100 rpm for 15mins or 1500 ± 10

Notes

Due to the nature of the material, there was insufficient material to run the Micro-Deval with the material retained on the #8 and #16. These results are for the material retained on the #30, #50, #100, and #200. The results reported may differ from results obtained from a test sample that follows the standard gradation requirements outlined in ASTM D7428, section 8.2.

611 Lunken Park Dr
Cincinnati, OH 45226-1813
513-321-5816

Client
Loyal Nine Development Corp
Attn: Michael Heacock
119 Garson Avenue
Rochester, NY 14609

Project
Sand Testing - Loyal Nine Development Corp
Manitou Road
Spencerport, NY 14599

Project No. J5251036

Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate, ASTM C88

Material Information

Lab Number:	1976
Aggregate Source:	Huff # 1 Stockpile
Aggregate Type:	Fine Sand
Nominal Size, In.:	# 4
Test Solution Type:	Sodium Sulfate

Laboratory Test Data

Sieve Size		Weight Before Test, g	Sieve Size After Testing	Percent Loss
Passing	Retained			
2 1/2"	2"	0.0	1 1/4"	0.000
2"	1 1/2"	0.0		0.000
1 1/2"	1"	0.0	5/8"	0.000
1"	3/4"	0.0		0.000
3/4"	1/2"	0.0	5/16	0.000
1/2"	3/8"	0.0		0.000
3/8"	# 4	0.0	# 4	0.000
# 4	# 8	0.0	# 8	0.00
# 8	# 16	0.0	# 16	0.00
# 16	# 30	0.0	# 30	0.00
# 30	# 50	100.6	# 50	4.010
			Total	4.010