US Army Corps of Engineers®

Charleston District

ATLANTIC INTRACOASTAL WATERWAY in SOUTH CAROLINA

APPENDIX H: SEDIMENT ANALYSIS

August 2023

SEDIMENT SAMPLING AND ANALYSIS FOR AIWW

Sediment Sampling and Analysis
Atlantic Intracoastal Waterway, SC

Contract No. W912HP-21-F-0002



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April 2023

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LIST OF ACRONYMS, ABBREVIATIONS, AND INITIALISMS

AET	apparent effects threshold
AIWW	Atlantic Intracoastal Waterway
ASTM	American Society for Testing and Materials
CCV	continuing calibration verification
CFR	Code of Federal Regulations
CMC	criteria maximum concentration
CQAR	Chemical Quality Assurance Report
DQCR	Daily Quality Control Report
EPA, USEPA	U.S. Environmental Protection Agency
ERL	effects range-low
GNSS	Global Navigation Satellite System
GPS	global positioning system
HMW	high molecular weight
HSP/APP	Health and Safety Plan/Accident Prevention Plan
ICP, ICP/MD	inductively coupled plasma; inductively coupled plasma/mass spectrometry
ITM	Inland Testing Manual (*Evaluation of Dredged Material for Discharge in Waters of the U.S. – Testing Manual*. EPA and USACE 1998)
LMW	low molecular weight
MB	method blank
MDL	method detection limit
MLW	mean low water
MRL	method reporting limit
NELAC	National Environmental Laboratory Accreditation Conference
NOAA	National Oceanic and Atmospheric Administration
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
SAP	Sampling and Analysis Plan
SCDHEC	South Carolina Department of Health and Environmental Control
SOW	Scope of Work
TEF	toxicity equivalency factor (TEF)
TEL	threshold effects level
TEQ	toxic equivalent
TOC	total organic carbon
TPH	total petroleum hydrocarbon
USACE	U.S. Army Corps of Engineers
USCS	Unified Soil Classification System

EXECUTIVE SUMMARY

This report details the field sampling, analysis, and results of sediment testing and analysis in support of maintenance dredging operations along the Atlantic Intracoastal Waterway (AIWW). Field operations took place from May 3 through May 7, 2021, and consisted of sediment and water sample collection for physical, sediment chemistry, and elutriate chemistry analysis.

Sampling Approach

The project area is divided into three geographic regions along the full span of the AIWW project area: Little River (near Myrtle Beach) to Winyah Bay (near Georgetown), Winyah Bay to Charleston, and Charleston to Port Royal (near Beaufort). The field sample collection effort involved collection of sediment grab samples from 58 sampling locations and site water from two locations. Sampling locations were selected by USACE based on shoaling depths according to recent bathymetric surveys and were distributed to provide adequate representation for each geographic area along the AIWW.

Twenty composite samples were analyzed. Two to six sediment subsamples were combined into each composite sample for physical, sediment chemistry, and elutriate chemistry analysis. All project sediment subsamples were collected by grab sampler.

Sediment Physical Results

Physical analysis was conducted for all project sediment composites and subsamples.

Little River to Winyah Bay

The three samples were collected in the Little River to Winyah Bay. All three samples were predominantly sand ranging from 96.7% to 98.9%.

Winyah Bay to Charleston

Ten samples were collected from south of Georgetown to Mt. Pleasant. Two of the samples, WC-11 and WC-12, were predominately sand with 93.2% and 61.8%, respectively. The rest of the samples from this area were predominately fine-grained with silt and clay ranging from 57.8% to 98.8%.

Charleston to Port Royal

Seven samples were collected from Charleston to Port Royal. Two of the samples, CP-14 and CP-18, were predominately sand with 64.4% to 94.5%, respectively. The rest of the samples from this area were predominately fine-grained with silt and clay ranging from 50.6% to 94.8%.

Sediment Chemistry Results

Full sediment chemistry analyses were performed on project composite samples LB-1 through LB-3 and CP-16. Limited sediment chemistry analyses (metals and PAHs only) were performed on the rest of the composite samples.

TOC and Total Solids

TOC concentrations ranged from <0.13% in sample LB-3 to 6.4% in sample CP-17. The results for TOC tended to follow the grain size characteristics, with TOC concentrations increasing with the proportion of silts and clays in the sediment.

Total solids ranged from 21.1% in sample WC-13 to 82.5% in sample LB-2. The results for total solids also tended to follow the grain size characteristics, with percent total solids increasing with the proportion of sand.

Metals and Tributyltin

Metals were analyzed in all twenty composite samples. Most metals were detected in concentrations greater than the MRL in all sediment samples, with the exception of mercury, selenium, and silver which were not detected above the MRL in any composite. Arsenic, copper, and nickel were detected in concentrations above the TEL and (or) ERL in some samples, as summarized below.

- Arsenic: WC-4, WC-5, WC-6, WC-7, WC-8, WC-9, WC-10, WC-12, WC-13, CP-15, CP-16, CP-17, CP-19, CP-20
- Copper: WC-10, WC-13
- Nickel: WC-10, WC-13

Tributyltin was analyzed in four composite samples (LB-1, LB-2, LB-3, and CP-16) and was not detected in concentrations greater than the TEL and (or) ERL in any sample tested.

PAHs

PAHs were analyzed in all 20 composite samples. The MDLs and MRLs in some samples were elevated due to samples requiring dilution prior to being analyzed. Naphthalene was detected in concentrations above the TEL and (or) ERL in some samples, as summarized below.

- Naphthalene: LB-1, LB-2

Pesticides

Pesticides were analyzed in four composite samples (LB-1, LB-2, LB-3, and CP-16). Methoxychlor was detected in concentrations greater than the MRL in samples LB-3 and CP-16. No other pesticides were detected in concentrations greater than the MRL in any sample. Total pesticides ranged from 1.9 µg/kg to 6.1 µg/kg.

PCBs

PCBs and Aroclors were analyzed in four composite samples (LB-1, LB-2, LB-3, and CP-16). None of the 26 congeners or seven Aroclors were detected above the MDL in any of the samples tested (U-qualified). Total NOAA PCBs in sample CP-16 exceeded the TEL and ERL.

Dioxins and Furans

Dioxins and furans were analyzed in four composite samples (LB-1, LB-2, LB-3, and CP-16). Total TEQs ranged from 0.189 ng/kg to 0.517 ng/kg in samples LB-1, LB-2, and LB-3. The total TEQ for sample CP-16 was 6.43 ng/kg, which exceeded the TEL and AET.

Elutriate and Site Water Chemistry

Full elutriate chemistry analyses were performed on project composite samples LB-1 through LB-3 and CP-16 and two site water samples. Limited elutriate chemistry analyses (metals and PAHs only) were performed on the rest of the composite samples.

Metals, TOC, and Total Suspended Solids

Total and dissolved metals were analyzed in all 20 composite elutriate samples and two site water samples. For all of the metals tested except mercury, the MRLs for the elutriate samples were elevated above the target detection limits and laboratory reporting limits in Table 2-6 of the SAP/QAPP due to matrix interference.

Total and/or dissolved antimony, arsenic, copper, chromium, lead, nickel, and zinc were detected in concentrations greater than the MRLs in some or all elutriate samples. Metals were detected in concentrations above the TEL and (or) ERL in some samples, as summarized below.

- Total Arsenic – WC-5, WC-6, WC-8
- Dissolved Copper – LB-3
- Total Copper – LB-3, WC-10, WC-11, WC-13

TOC was analyzed in all 20 composite elutriate samples and two site water samples. TOC concentrations ranged from 1.1 to 21 mg/L.

TSS was analyzed in all 20 composite elutriate samples and two site water samples. TSS concentrations ranged from 19 to 290 mg/L.

PAHs

Total and dissolved PAHs were analyzed in all 20 composite elutriate samples and two site water samples. None of the PAHs were detected in concentrations greater than the MRL in any elutriate or site water samples; all results were U or J-qualified. Total PAHs ranged from 1.1 µg/L to 5.1 µg/L. There are no screening criteria for PAHs to compare sample results against.

Tributyltin

Total and dissolved tributyltin were analyzed in four composite elutriate samples (LB-1, LB-2, LB-3, and CP-16) and two site water samples. Tributyltin was not detected in concentrations greater than the MDL in any elutriate or site water samples; all results were U-qualified.

Pesticides

Total and dissolved pesticides were analyzed in four composite elutriate samples (LB-1, LB-2, LB-3, and CP-16) and two site water samples. None of the pesticides were detected in concentrations greater than the MRL in any elutriate or site water samples; all results were U- or J-qualified. None of the pesticides were detected in concentrations greater than the CMC in any elutriate or site water samples. Total pesticides ranged from 0.063 µg/L to 0.067 µg/L.

PCBs

Total and dissolved PCBs and Aroclors were analyzed in four composite elutriate samples (LB-1, LB-2, LB-3, and CP-16) and two site water samples. None of the PCBs were detected in concentrations greater than the MRL in any elutriate or site water samples; all results were U- or J-qualified. Total EPA Region 4 PCBs for all samples were 15 ng/L. Total NOAA PCBs ranged from 20 ng/L to 21 ng/L. There are no screening criteria for PCBs or Aroclors to compare sample results against.

Dioxins and Furans

Total and dissolved dioxins were analyzed in four composite elutriate samples (LB-1, LB-2, LB-3, and CP-16) and two site water samples. None of the individual congeners were detected in

concentrations greater than the MRL except for OCDD total in CP-16. All of the other results were U- or J-qualified. The total TEQ was calculated as the sum of the individual congener TEQs and ranged from 0.309 pg/L in sample LB-2 Dissolved to 1.47 pg/L in sample CP-16 Total. There are no screening criteria to compare results against.

1 INTRODUCTION

1.1 Project Area Description

The U.S. Army Corps of Engineers, Charleston District (USACE) is responsible for performing maintenance dredging on the Atlantic Intracoastal Waterway (AIWW) between the North Carolina—South Carolina border and Port Royal Sound. The authorized project depth in the AIWW is -12 feet mean low water (MLW) with 1 foot of allowable overdepth dredging. The dredged material generated from channel maintenance is disposed of in numerous, small upland confined placement areas along the entire length of the AIWW and two open-water placement areas. USACE periodically samples and analyzes the dredge material by collecting sediment samples from within the AIWW channel to monitor the chemical and physical characteristics of the dredged material being disposed of in the various placement areas. This report summarizes the results from the sampling and analysis effort involving collection of sediment and elutriate samples from various locations within the AIWW federal navigation channel in Beaufort, Colleton, Charleston, Georgetown, and Horry counties, South Carolina. Map 1 provides an overview of the project area and the sampling locations.

1.2 Objectives

The objective of this sediment evaluation is to determine compliance with the *Evaluation of Dredged Material for Discharge in Waters of the U.S. – Testing Manual* (ITM) (EPA and USACE 1998) and the South Carolina Department of Health and Environmental Control (SCDHEC) quality control requirements. Specific objectives are to:

- Provide a detailed Sampling and Analysis Plan/Quality Assurance Project Plan (SAP/QAPP) for approval before sampling and analysis work begins.
- Collect the required number and volume of sediment samples from the project area that are representative of proposed dredge material and with sufficient positioning accuracy to ensure that samples are collected from within the dredging prism.
- Conduct sediment and elutriate analyses following the testing requirements set forth in the SAP/QAPP.
- Provide a report to USACE that describes the field sampling effort and presents the results of the physical/chemical analysis of sediment, elutriates, and site water. The report should provide the basis for a scientific recommendation regarding the management of these dredge materials.

Deliverables for this work include:

- Draft and Final SAP/QAPP
- Health and Safety Plan/Accident Prevention Plan (HSP/APP)
- Draft and Final Sediment Testing Report
- Laboratory data reports
- Chemical Quality Assurance Report (CQAR)
- Field paperwork to include the Daily Quality Control Reports (DQCRs)
- Photos of samples

ANAMAR coordinated and directed operations for this project and worked closely with USACE to develop a sampling and analysis scheme, schedule, and deliverables. ANAMAR also reviewed all data and produced this report summarizing the results of the physical and chemical testing of project sediment, elutriate, and site water samples. Exhibits 1-1 and 1-2 indicate the principal

users of data, the subcontractors, and their respective areas of responsibility associated with this evaluation.

Exhibit 1-1. Principal Data Users and Decisions Associated with This Project

Agency or Company	Area(s) of Responsibility
U.S. Army Corps of Engineers, Charleston District	Provide contracting support; provide technical input regarding the scope of work (SOW) and project deliverables
South Carolina Department of Health and Environmental Control, Bureau of Water	Issue water quality certification of dredged sediment for upland disposal per Section 401 of the Clean Water Act

Exhibit 1-2. Prime and Subcontractors and Responsibilities Associated with This Report

Company and Contact Information	Area(s) of Responsibility
Prime Contractor: ANAMAR Environmental Consulting, Inc Project Manager: Michelle Rau 2106 NW 67th Place, Suite 5 Gainesville, FL 32653 Phone: 352-318-5773 mrau@anamarinc.com	Prepare project deliverables, lead the field sampling effort, coordinate with the labs, manage the project
Vessel Operator: Athena Technologies Project Manager: Adam Freeze 1293 Graham Farm Road McClellanville, SC 29458 Phone: 843-887-3800 Email: adam_freeze@athenatechnologies.com	Provide vessel for sampling; provide crew to captain vessel and operate sampling equipment
Chemistry Laboratory: TestAmerica Project Manager: Carrie Gamber 301 Alpha Drive Pittsburgh, PA 15238 Phone: 412-963-2428 E-mail: Carrie.Gamber@testamericainc.com	Laboratory sample preparation and chemical analysis of sediment, site water, and elutriates; sample holding and archiving
Geotechnical Laboratory: Terracon Project Manager: Chris Martin, Sr. 8001 Baymeadows Way Jacksonville, FL 32256 Phone: 904-900-6494 Email: crmartin2@terracon.com	Laboratory sample preparation and physical analysis of sediment; sample holding and archiving

2 MATERIALS AND METHODS

2.1 Project Design and Rationale

A SAP/QAPP was prepared by ANAMAR and approved by USACE (Appendix A). The SAP/QAPP details the sampling design and rationale, analyses to be performed, and reporting requirements. The project area is divided into three geographic regions along the full span of the AIWW project area: Little River (near Myrtle Beach) to Winyah Bay (near Georgetown), Winyah Bay to Charleston, and Charleston to Port Royal (near Beaufort). The field sample collection efforts involved collection of sediment grab samples from 58 sampling locations and site water from two locations. Sampling locations were selected by USACE based on shoaling depths according to recent bathymetric surveys and were distributed to provide adequate representation for each geographic area along the AIWW.

Twenty composite samples were analyzed. Two to six sediment subsamples were combined into each composite sample for physical, sediment chemistry, and elutriate chemistry analysis. The sample IDs, compositing scheme, and general analytical requirements are summarized in Exhibit 2-1. Summaries of field sampling materials and methods and specific analytes of interest are provided in Exhibits 2-2 and 2-3, respectively. Coordinates of the sampled locations are provided in Tables 1 and 2, and the locations are shown in Maps 1 through 4.

Exhibit 2-1. Dredging Units, Volumes, Project Depths, and Rankings

Sample ID	Composite ID	Analytical Requirements (for composite samples)
Little River to Winyah Bay		
AIWW21-LB-1A	AIWW21-LB-1	**Physical plus full suite of chemical**
AIWW21-LB-1B		
AIWW21-LB-2A	AIWW21-LB-2	**Physical plus full suite of chemical**
AIWW21-LB-2B		
AIWW21-LB-3A	AIWW21-LB-3	**Physical plus full suite of chemical**
AIWW21-LB-3B		
Winyah Bay to Charleston		
AIWW21-WC-4A	AIWW21-WC-4	Physical plus metals and PAHs
AIWW21-WC-4B		
AIWW21-WC-4C		
AIWW21-WC-4D		
AIWW21-WC-4E		
AIWW21-WC-5A	AIWW21-WC-5	Physical plus metals and PAHs
AIWW21-WC-5B		
AIWW21-WC-5C		
AIWW21-WC-6A	AIWW21-WC-6	Physical plus metals and PAHs
AIWW21-WC-6B		
AIWW21-WC-7A	AIWW21-WC-7	Physical plus metals and PAHs
AIWW21-WC-7B		
AIWW21-WC-7C		
AIWW21-WC-8A	AIWW21-WC-8	Physical plus metals and PAHs
AIWW21-WC-8B		

Sample ID	Composite ID	Analytical Requirements (for composite samples)
AIWW21-WC-9A	AIWW21-WC-9	Physical plus metals and PAHs
AIWW21-WC-9B		
AIWW21-WC-9C		
AIWW21-WC-9D		
AIWW21-WC-9E		
AIWW21-WC-10A	AIWW21-WC-10	Physical plus metals and PAHs
AIWW21-WC-10B		
AIWW21-WC-11A	AIWW21-WC-11	Physical plus metals and PAHs
AIWW21-WC-11B		
AIWW21-WC-12A	AIWW21-WC-12	Physical plus metals and PAHs
AIWW21-WC-12B		
AIWW21-WC-12C		
AIWW21-WC-12D		
AIWW21-WC-12E		
AIWW21-WC-12F		
AIWW21-WC-13A	AIWW21-WC-13	Physical plus metals and PAHs
AIWW21-WC-13B		
Charleston to Port Royal		
AIWW21-CP-14A	AIWW21-CP-14	Physical plus metals and PAHs
AIWW21-CP-14B		
AIWW21-CP-15A	AIWW21-CP-15	Physical plus metals and PAHs
AIWW21-CP-15B		
AIWW21-CP-15C		
AIWW21-CP-16A	AIWW21-CP-16	**Physical plus full suite of chemical**
AIWW21-CP-16B		
AIWW21-CP-17A	AIWW21-CP-17	Physical plus metals and PAHs
AIWW21-CP-17B		
AIWW21-CP-17C		
AIWW21-CP-17D		
AIWW21-CP-17E		
AIWW21-CP-18A	AIWW21-CP-18	Physical plus metals and PAHs
AIWW21-CP-18B		
AIWW21-CP-19A	AIWW21-CP-19	Physical plus metals and PAHs
AIWW21-CP-19B		
AIWW21-CP-20A	AIWW21-CP-20	Physical plus metals and PAHs
AIWW21-CP-20B		
AIWW21-CP-20C		
AIWW21-CP-20D		
AIWW21-SW-1* (North)	N/A	See Exhibit 2-3
AIWW21-SW-2* (South)	N/A	See Exhibit 2-3

Note: All subsamples were also analyzed for physicals (grain size only)

* Two site water (SW) sample locations were chosen in the field for background water chemistry and elutriate generation. SW-1 was located near McClellanville and SW-2 was located near Charleston.

Exhibit 2-2. Summary of Field Sampling Materials and Methods

FIELD SAMPLE COLLECTION:

- 20 project sediment composites (composed of 2 to 6 samples each [*N* = 58])
- 2 site water samples for water chemistry and elutriate preparation

SAMPLING GEAR:

- Grab sediment samples collected with modified Petersen grab sampler
- Site water collected with pneumatic stainless steel pump

VESSEL:

- S/V *Artemis* (30-foot pontoon barge)
- 21-foot Parker

PRESERVATION:

- Sediment chemistry and water samples were kept at or below 4°C
- Water samples in various containers, with or without stabilizing agents, were kept at or below 4°C
- Holding-time requirements were analyte- and test-specific

IN SITU WATER COLUMN MEASUREMENTS:

- YSI multiprobe meter
- Hach 2100P turbidimeter

Exhibit 2-3. Analytical Scheme

Sample		Subsamples	AIWW21-LB Composites	AIWW21-WC Composites	AIWW21-CP-16	AIWW21-CP Composites (except CP-16)	Site Water Samples
Physical Analysis	Hydrometer Grain Size	--	Y	Y	Y	Y	--
	Grain Size without hydrometer	Y	--	--	--	--	--
	Specific Gravity	--	Y	Y	Y	Y	--
	Total Solids	--	Y	Y	Y	Y	--
	Atterberg Limits	--	Y	Y	Y	Y	--
	Settling Rates	--	Y	Y	Y	Y	--
Sediment Chemistry	TOC	--	Y	Y	Y	Y	
	Metals	--	Y	Y	Y	Y	--
	PAHs	--	Y	Y	Y	Y	--
	Pesticides	--	Y	--	Y	--	--
	PCBs (Congeners and Aroclors)	--	Y	--	Y	--	--
	Dioxins	--	Y	--	Y	--	--
	Butyltins	--	Y	--	Y	--	--
Elutriate/Water Chemistry*	TOC	--	Y	Y	Y	Y	Y
	Total Suspended Solids (only on total elutriates, not dissolved fraction)	--	Y	Y	Y	Y	Y
	Metals	--	Y	Y	Y	Y	Y
	PAHS	--	Y	Y	Y	Y	Y
	Pesticides	--	Y	--	Y	--	Y
	PCBs (Congeners and Aroclors)	--	Y	--	Y	--	Y
	Dioxins	--	Y	--	Y	--	Y
	Butyltins	--	Y	--	Y	--	Y

* Elutriates were prepared using the modified elutriate preparation method. Elutriates and background site water chemistry samples were analyzed for total and dissolved fractions.

2.2 Sample Collection Techniques

2.2.1 Field Effort

Mobilization, field sampling, and shipping took place from May 3 through May 10, 2021. Field personnel consisted of scientists from ANAMAR and Athena Technologies. Athena provided two vessels for the sampling effort: the S/V *Artemis* and a 21-foot Parker. The Parker was the primary sampling vessel for sediment grab sampling operations. The S/V *Artemis* was used for collection of background site water chemistry samples and water for elutriate generation. Given the distance between groups of sampling locations, the team mobilized from different boat ramps each day. Samples were stored on ice in coolers until they could be shipped to the laboratories for preparation and analysis. Exhibit 2-4 is a summary of the field mobilization, sampling, and shipping efforts. For more details, refer to the sampling logs and DQCRs in Appendix B.

Exhibit 2-4. Field Sampling Activities

Date	General Activity
3-May-2021	• Mobilize to Athena headquarters in McClellanville, SC • Organize sampling kits, load equipment into vehicles/boat • Review sampling plan and logistics with team
4-May-2021	• Mobilize to boat ramp in Myrtle Beach, SC • Collect samples AIWW21-LB-1, 2, 3 (Myrtle Beach area)
5-May-2021	• Mobilize to boat ramp in Georgetown, SC • Collect samples AIWW21-WC-4 through 13 (Georgetown to Mt Pleasant)
6-May-2021	• Mobilize to boat ramp in Charleston, SC • Collect samples AIWW21-CP-14 through 20 (Charleston to Beaufort) • Second team: Collect site water for background chemistry analysis and elutriate generation for all samples north of Charleston Harbor • Prepare for next day shipment
7-May-2021	• Ice samples and pack coolers for first shipment • Collect site water for background chemistry analysis and elutriate generation for all samples south of Charleston Harbor • Clean and pack up equipment
8-May-2021	• Ice and pack remaining samples for transport back to Gainesville • First shipment of samples arrives at laboratory • Travel back to Gainesville
10-May-2021	• Ice and pack coolers for second shipment
11-May-2021	• Second shipment of samples arrives at laboratory

2.2.2 Site Positioning

Sampling station locations were chosen by USACE to coincide with the dredging prism and were based on the most recent data from a bathymetric survey. Stations sampled are shown in Maps 1 through 4.

Target coordinates were uploaded to a Panasonic Toughbook computer and associated TKO Global Navigation Satellite System (GNSS) on Athena's vessels as well as on a Garmin Montana hand-held GPS (used as a backup unit). Uploaded coordinates in both GPS units were reviewed and compared with the original coordinates to verify positioning prior to field sampling. All

samples were taken within 50 feet of the target station. Navigation and positioning of the vessel was handled by a U.S. Coast Guard-certified captain under direction of the ANAMAR project manager or field team leader.

Coordinates of each station were recorded in the field. Tables 1 and 2 summarize field data as recorded on field sheets during sampling.

2.2.3 Decontamination Procedures

All equipment contacting sediment or water samples was cleaned and decontaminated as described below. Work surfaces on the sampling vessel were cleaned before the sampling day began and before leaving each station. All equipment contacting sediment or water samples was decontaminated between composite samples to prevent cross-contamination. Disposable nitrile gloves used at a given sampling station were replaced with new gloves prior to sampling at the next station.

Decontamination Procedures

- Wash and scrub using site water or tap water to remove gross contamination
- Wash/scrub with Liquinox detergent
- Rinse with site water
- Rinse with deionized water
- Rinse 2 times with pesticide-grade isopropanol
- Rinse 2 times with pesticide-grade hexane
- Rinse 3 times with deionized water
- Equipment not being used immediately was air-dried and stored wrapped in new, clean aluminum foil

Any derived waste was contained and disposed of in accordance with federal, state, and local laws.

2.2.4 Water Column Measurements

A YSI multiprobe meter and a Hach 2100P turbidimeter were used to measure water column parameters at the two site water stations. Meters were calibrated each day prior to use according to manufacturer's instructions. An end-of-day reading was also taken to document that the instrument remained calibrated within acceptance criteria. Measured water column parameters and associated data consisted of

- Time of reading
- Depth of measurement (feet)
- Water temperature (°C)
- pH (units)
- Salinity (parts per thousand [ppt])
- Conductivity (mS/cm)
- Dissolved oxygen (mg/L and percent saturation)
- Turbidity (NTU, near-surface only)

A turbidity reading was not taken at station AIWW21-SW1 because the meter was not working properly. Water depth measurements, tidal cycle, and weather observations were recorded on

water sampling logs and are summarized in Table 2. Water column measurements and instrument calibration logs are in Appendix B.

2.2.5 Sediment Sampling with Grab Sampler

Grab samples were collected with a custom stainless steel Petersen-style grab sampler (8.8-gallon capacity). Excess water was allowed to drain from the sampler prior to placing the sediment in the bin. When the volume of sediment required for analysis was collected, a photograph of the material was taken and notes on the sample's appearance and characteristics were recorded on a project-specific field log. Using decontaminated stainless steel utensils (e.g., spoons, scrapers) and disposable nitrile gloves, the sample was placed in pre-cleaned, labeled Teflon® bags and stored on ice. Upon return to the marina, the iced sample coolers were transferred to a refrigerated truck for preservation at or below 4°C.

Table 1 provides additional information on grab sampling. Copies of the field logs for grab sampling are provided in Appendix B.

2.2.6 Water Sampling

Site water for elutriate preparation was collected from two stations using a stainless steel and Teflon® pneumatic pump attached to a Nitrile®-lined hose. All equipment contacting sampled water was decontaminated prior to use. The suction hose was lowered through the water column. A stainless steel weight was attached to the end of the hose with stainless steel cable to allow the hose to hang approximately 3 feet above the sediment surface. Another section of Viton® hose was attached to the discharge nozzle of the pump. Pressurized air was allowed to enter the pump, which drove a diaphragm that pushed water through the tubing. An air-pressure valve was used to adjust flow.

Site water was containerized in decontaminated containers for elutriate chemical analysis. Using the same pump, an additional amount was collected from each station and was containerized in pre-cleaned, pre-preserved glass and plastic bottles provided by the laboratory. The pump and tubing were flushed with approximately 10 pump and tubing volumes of site water prior to collecting sample at each station.

All water samples were placed in ice-filled coolers for storage at or below 4°C. Water sampling locations are shown on the overview map. Water sampling dates and times, station coordinates, and related information are included in Table 2. Copies of water sampling logs are in Appendix B.

2.2.7 Sample Processing and Shipping

All compositing and homogenization activities were conducted by ANAMAR and Athena personnel as samples were collected in the field in accordance with the scheme presented in Subsection 2.1. Following compositing and homogenizing, appropriate volumes of each composite were divided and placed in method-specific, pre-cleaned, pre-labeled containers provided by the laboratory (for chemical analysis) or plastic bags (for physical analysis). Once composited, the samples were placed in coolers on ice.

The first set of samples was shipped from Athena headquarters in McClellanville, SC, to the Eurofins TestAmerica lab in Pittsburgh, PA, on May 7, 2021, for next day delivery. The second set of samples was shipped from ANAMAR headquarters in Gainesville, FL, to Eurofins TestAmerica lab in Pittsburgh, PA, on May 10, 2021, for next-day delivery. The physical samples were delivered by ANAMAR personnel to Terracon in Jacksonville, FL, on May 12, 2021. From

the time of collection to the time the samples arrived at the laboratory, sediment and site water chemistry samples were stored in coolers on ice. Ice was refreshed regularly, as needed, to ensure proper preservation.

Chain-of-custody records for each laboratory were completed to reflect the final sample names and to identify the analyses and analytical methods required. These chain-of-custody forms accompanied the samples during shipment to the laboratories. Copies of final signed chain-of-custody forms are included in the laboratory reports (Appendices C and D).

2.3 Physical and Chemical Analytical Procedures

2.3.1 Physical Procedures

Terracon performed physical analyses of all sediment samples. ANAMAR performed quality assurance/quality control (QA/QC) on sediment physical data and presented the data in summary tables.

2.3.1.1 Grain Size Distribution

Gradation tests were performed in general accordance with methods ASTM D-422 and ASTM D-1140. Each representative sample was air-dried and dry-prepped in accordance with method ASTM D-421, and results of the sieve analysis of material larger than a #10 sieve (2.00-mm mesh size) were determined. The minus #10 sieve material was then soaked in a dispersing agent. Following the soaking period, the sample was placed in a mechanical stirring apparatus and then in a sedimentation cylinder where hydrometer readings were taken over a 24-hour period. After the final hydrometer reading was taken, the sample was washed over a #200 sieve (0.075-mm mesh size), placed in an oven, and dried to a constant weight. After drying, the sample was sieved over a nest of sieves to determine the gradation of the material greater than #200 sieve size. Cumulative frequency percentages were graphed and presented by Terracon on USACE Form 2087 (Appendix C). ANAMAR tabulated and graphed the grain size distribution by sample and composite.

2.3.1.2 Atterberg Limits

Tests for liquid and plastic limits for the composites and the reference were performed in general accordance with ASTM D-4318, wet method, as follows. The minus #40 sieved material was mixed with a small amount of water and placed in a liquid limit device. A groove was cut using a flat grooving tool and the liquid limit was determined by the number of drops of the cup. When the number of drops was in the desired range, a moisture sample was obtained and placed in a 230°C oven and dried to a constant weight. This was repeated until three determinations had been obtained: one between 15 and 25 blows, one between 20 and 30 blows, and one between 25 and 35 blows. The reported value is the intersecting value at 25 blows when all three are plotted.

The plastic limit was determined by slowly air-drying a small sample left over from the liquid limit determination. The sample was rolled and air-dried until the thread became crumbly and lacked cohesion. When this point was reached, the sample was laced in a tare and weighed, and then placed in an oven and dried to a constant weight. The moisture content is the plastic limit.

2.3.1.3 Specific Gravity

Specific gravity was determined for the composites and the reference in general accordance with method ASTM D-854. Each sample was placed in a mechanical stirring device and deionized water was added to form a slurry. The slurry was then transferred to a pycnometer and was de-

aired by applying a vacuum. After vacuuming, the pycnometer with sample was allowed to reach thermal equilibrium. The water level was adjusted to a calibration mark and the pycnometer with sample was weighed. After the pycnometer with sample weight was recorded, the sample was emptied into a drying container and placed in an oven until a constant dry mass of sediment solids was obtained.

2.3.2 Chemical Analytical Procedures

Eurofins TestAmerica performed all chemical analyses of sediment, water, and elutriate, samples in accordance with published procedures. Analytical methods, preparation methods, target detection limits, and laboratory reporting limits for sediment, water, and tissue analyses are provided in Subsection 13.3 of the QAPP (Appendix A). Elutriates were generated using the modified elutriate preparation procedure described in *Environmental Effects of Dredging, Technical Notes EEDP-04-2* (USACE 1985). ANAMAR performed QA/QC on these data and presented the data in summary tables. Complete laboratory reports are provided in Appendix D. Exhibit 2-5 provides a summary of analytical methods.

Exhibit 2-5. Summary of Methods and Equipment Used during Sediment and Elutriate Analysis

EPA Method	Instrument/ Procedure	Methodology Summary
6020 (trace metals)	ICP and ICP/MS for trace metals	Inductively coupled plasma (ICP) with or without mass spectrometry (MS) is applicable to the determination of sub-µg/L concentrations of a large number of elements in water samples and in waste extracts or digests. Acid digestion prior to filtration and analysis is required for aqueous samples, sediments, and tissues for which total (acid-leachable) elements are required.
7470 (mercury in water)	Mercury Analyzer Cold Vapor Atomic Absorption (water)	Method 7470 is a cold-vapor atomic absorption procedure approved for determining the concentration of mercury in mobility-procedure extracts and aqueous wastes. All samples are subjected to an appropriate dissolution step before analysis.
7471 (mercury in sediment and tissues)	Mercury Analyzer Cold Vapor Atomic Absorption	Method 7471 is approved for measuring total mercury (organic and inorganic) in sediments and tissues. All samples are subjected to an appropriate dissolution step before analysis. If this dissolution procedure is not sufficient to dissolve a specific matrix type or sample, this method is not applicable for that matrix.
8081 (pesticides)	Gas Chromatograph	Method 8081 is used to determine the concentrations of various organochlorine pesticides in extracts from solid and liquid matrices using fused-silica, open-tubular capillary columns with electron capture detectors (ECD) or electrolytic conductivity detectors (ELCD). The compounds that can be run by this method may be determined by a single- or a dual-column analysis system.
8082 (PCB congeners)	Gas Chromatograph	Method 8082 is used to determine the concentrations of PCBs as individual PCB congeners in extracts from solid, tissue, and aqueous matrices using open-tubular capillary columns with ECD or ELCD. The target compounds may be determined by a single- or dual-column analysis system.

EPA Method	Instrument/ Procedure	Methodology Summary
8270 E (PAHs)	Gas Chromatograph/ Mass Spectrometer	This method is used to determine the concentration of semi-volatile/PAH organic compounds in extracts prepared from many types of solid matrices and water samples. Direct injection of a sample may be used in limited applications.
8290 (Dioxins and Furans)	High Resolution Mass Spectroscopy (HR/MS)	This method uses HR/MS to prepare and analyze sediment samples for dioxins and furans.
EPA 9060	Total Organic Carbon (TOC) Analyzer	Method EPA 9060 is used to determine the concentration of organic carbon in sediment by catalytic combustion or wet chemical oxidation. The carbon dioxide formed from this procedure is measured and is proportional to the TOC in the sample.
Krone et al. (1989)	Grignard Reaction/Gas Chromatograph/ Flame Photometric	This method refers to the Grignard reaction, gas chromatograph, and flame photometric detection of di-n-butyltin, n-butyltin, and tri-n-butyltin cations in sediment, elutriates, and tissues. All samples are subjected to an extraction phase prior to analysis, and the concentration is determined using standard organic protocols.
SM2540D (Total Suspended Solids)	Electronic scale and oven	Elutriate or site water is filtered through a glass fiber filter and heated to 105º C until dried. The filter is then weighed on an electronic scale. The difference between the initial reading prior to filtration and the post filtration mass is used to determine the total suspended solids.

2.4 Data Reduction and Applicable Technical Quality Standards

Raw field and laboratory data were summarized and compiled into tables. Maps 1 through 4 are used to associate the results spatially with respect to sampling locations.

2.4.1 Sediment Chemistry

Laboratory analytical results for sediment samples are compared to published sediment screening values as appropriate. These levels are the threshold effects level (TEL) and the effects range low (ERL). The TEL represents the concentration below which adverse effects are expected to occur only rarely. The ERL is the value at which toxicity may begin to be observed in sensitive species (Buchman 2008). Dioxin and furan results are compared to the TEL and the apparent effects threshold (AET). These comparisons are for reference use only and are not intended for regulatory decision-making.

2.4.2 Elutriate and Site Water Chemistry

Results of elutriate and water sample analyses were compared to the latest published water quality criteria of criteria maximum concentration (CMC [synonymous with 'acute']) established for both the U.S. Environmental Protection Agency (EPA) and the state of South Carolina. The CMC is an estimate of the highest concentration of a pollutant in saltwater to which an aquatic community can be exposed briefly without resulting in an unacceptable effect (USEPA 2015, Buchman 2008). Where applicable, the South Carolina criteria are either equal to or slightly higher than the national criteria.

2.5 Reporting Limits

The sediment chemical concentration, MDL, and method reporting limit (MRL) were reported on a dry weight basis. The chemical concentration, MDL, and MRL for water and elutriates were reported as a liquid. The MDL refers to the minimum concentration of a given analyte that can be measured and reported with a 99% confidence level that the analyte concentration is greater than zero (40 CFR Part 136 Appendix B). The MRL refers to the minimum concentration at which the laboratory will report analytical chemistry data with confidence in quantitative accuracy of a given datum. Common laboratory procedures for defining an MRL include assigning it to a fixed factor above the MDL or by using the lowest calibration standard. MRLs are often adjusted by the laboratory for sample-specific parameters such as sample weight, percent solids, or dilution.

3 RESULTS AND DISCUSSION

3.1 Field Data

Conditions during the May 3 through 10, 2021, field effort were acceptable for sampling. A summary of the grab sample collection is provided in Table 1. Water column parameters were recorded at two site water locations and are summarized in Table 2. At site water station, SW-1, a turbidity reading could not be collected due to issues with the meter.

3.2 Sediment Physical Results

Physical analysis was conducted for all project sediment composites and subsamples. Map 5 depicts grain size distributions of the composite samples along the AIWW project area. Exhibit 3-1 summarizes grain size distribution and Unified Soil Classification System (USCS) soil classifications. Complete results of physical testing for subsamples and composite samples are presented in Tables 3 and 4. The laboratory report of physical analytical results using USACE Form 2087 is provided in Appendix C.

Exhibit 3-1. Percent Grain Size Distribution, USCS Classification, and Total Solids

Project Area	Composite ID: AIWW21-	Grain Size Distribution[1] (percent by weight)			USCS Soil Class[2]	Total Solids (%)
		Gravel	Total Sand	Silt & Clay		
Little River to Winyah Bay	LB-1	0.6	96.7	2.7	SP	77.4
	LB-2	0.0	98.7	1.3	SP	82.5
	LB-3	0.0	98.9	1.1	SP	79.8
Winyah Bay to Charleston	WC-4	0.0	42.2	57.8	CH	32.9
	WC-5	0.0	5.3	94.7	CH	25.2
	WC-6	0.0	9.6	90.4	CH	31.1
	WC-7	0.0	10.2	89.8	CH	28.4
	WC-8	0.0	1.7	98.3	CH	24.8
	WC-9	0.0	2.9	97.1	MH	26.6
	WC-10	0.0	1.2	98.8	MH	21.4
	WC-11	0.0	93.2	6.8	SP-SM	70.7
	WC-12	0.0	61.8	38.2	SC	38.5
	WC-13	0.0	8.1	91.9	MH	21.1
Charleston to Port Royal	CP-14	0.0	94.5	5.5	SP-SM	75.0
	CP-15	0.0	49.4	50.6	CH	39.2
	CP-16	0.0	15.8	84.2	MH	30.0
	CP-17	0.0	5.2	94.8	CH	22.7
	CP-18	0.3	64.4	35.3	SC	45.0
	CP-19	0.0	42.0	58.0	CH	45.1
	CP-20	0.0	8.5	91.5	CH	26.3

[1] Particle sizes: gravel ≥4.750 mm, sand = 0.075–4.749 mm, silt & clay <0.075 mm.

[2] USCS classes defined: CH = clay of high plasticity; MH = silt of high plasticity, elastic silt; SC = clayey sand; SM = silty sand; SP = poorly graded sand.

See Tables 3 and 4 for complete physical analysis and total solids results for sediment composites.

Little River to Winyah Bay

The three samples collected in the Little River to Winyah Bay area are generally described as poorly graded sand (SP) with mostly medium- to fine-grained quartz, trace silt, and trace clay. Sand ranged from 96.7% to 98.9%, and silt/clay ranged from 1.1% to 2.7%.

Winyah Bay to Charleston

Ten samples were collected from south of Georgetown to Mt. Pleasant. Two of the samples, WC-11 and WC-12, were predominately sand with 61.8% to 93.2%, respectively. The rest of the samples from this reach were predominately fine-grained material with silt and clay ranging from 57.8% to 98.8%.

Samples WC-4 through WC-8, collected from Mt. Pleasant to south of McClellanville, are generally described as fat clay (CH) with some silt and trace medium to fine-grained quartz sand. Samples WC-9 and WC-10, collected near McClellanville, and sample WC-13, collected south of Georgetown, are generally described as elastic silt (MH) with some clay and trace medium- to fine-grained quartz sand. Samples WC-11 and WC-12, collected from north of McClellanville, are generally described as poorly graded sand/silty sand (SP-SM) or clayey sand (SC), respectively.

Charleston to Port Royal

Seven samples were collected from Charleston to Port Royal. Two of the samples, CP-14 and CP-18, were predominately sand with 64.4% to 94.5%, respectively. The rest of the samples from this area were predominately fine-grained material with silt and clay ranging from 50.6% to 94.8%.

Samples CP-14 and CP-18 are generally described as poorly graded sand/silty sand (SP-SM) or clayey sand (SC), respectively. Samples CP-15 and CP-19 are generally described as sandy fat clay (CH) with some medium- to fine-grained quartz sand. Sample CP-16 is generally described as elastic silt (MH) with some clay and little medium- to fine-grained quartz sand. Samples CP-17 and CP-20 are generally described as fat clay (CH) with little silt and few medium- to fine-grained quartz sand.

3.3 Sediment Chemistry

Analytical results for sediment chemistry are presented in Tables 5 through 9. Full sediment chemistry analyses were performed on project composite samples LB-1 through LB-3 and CP-16. Limited sediment chemistry (metals and PAHs only) analyses were performed on the rest of the composite samples. Analytical results were compared to published sediment screening criteria (i.e., TEL, ERL, AET), which are defined in Section 2.4.1. The laboratory report of sediment chemistry results is provided in Appendix D.

3.3.1 Total Organic Carbon and Total Solids

TOC concentrations ranged from <0.13% in sample LB-3 to 6.4% in sample CP-17. The results for TOC tended to follow the grain-size characteristics, with TOC concentrations increasing with the proportion of silts and clays in the sediment.

Total solids ranged from 21.1% in sample WC-13 to 82.5% in sample LB-2. The results for total solids also tended to follow the grain-size characteristics, with percent total solids increasing with the proportion of sand (Exhibit 3-1). In the five samples with >90% sand (LB-1, LB-2, LB-3, WC-11, and CP-14), total solids ranged from 70.7% to 82.5%. The rest of the samples had percent fines (sand and clay) ranging from 35.3% to 98.8%, and total solids in those samples ranged from

21.1% to 45.1%. Table 5 has complete results for TOC and total solids, including the laboratory MDLs and MRLs.

The relatively low total solids in several of the samples contributed to some of the MDL/MRLs being elevated above the target detection limits and laboratory reporting limits provided in Table 2-5 in the SAP/QAPP. A general discussion of elevated detection limits is provided in Section 4.4.4.3 for PAHs in sediment.

3.3.2 Metals and Tributyltin

Metals were analyzed in all 20 composite samples. Tributyltin was analyzed in samples from all three stations within the Little River to Winyah Bay reach (LB-1 through LB-3) and from one station within the Charleston to Port Royal reach (CP-16).

Most metals were detected in concentrations greater than the MRL in all sediment samples, with the exception of mercury, selenium, and silver which were not detected above the MRL in any composite. Arsenic, copper, and nickel were detected in concentrations above the TEL and (or) ERL in some samples, as summarized below and in Exhibit 3-2. Tributlytin was not detected in concentrations above the MDL in any sample tested. Table 5 has complete results, including the laboratory MDLs and MRLs.

Little River to Winyah Bay (LB-1 through LB-3)

None of the metals analyzed were detected in concentrations greater than the TEL and (or) ERL in any sample. Tributyltin was not detected in concentrations greater than the TEL and (or) ERL in any sample tested.

Winyah Bay to Charleston (WC-4 through WC-13)

Arsenic was detected in concentrations greater than the TEL and (or) ERL in all samples except WC-11. Copper and nickel were detected in concentrations greater than the TEL and (or) ERL in samples WC-10 and WC-13. Tributyltin was not analyzed in any samples in this reach.

Charleston to Port Royal (CP-14 through CP-20)

Arsenic was detected in concentrations greater than the TEL and (or) ERL in all samples except CP-14 and CP-18. One composite sample (CP-16) was analyzed for tributyltin. Tributyltin was not detected in concentrations greater than the TEL and (or) ERL in that sample.

Exhibit 3-2. Summary of Analytical Results for Metals in Sediment Composites

Analyte	Concentrations (mg/kg)																					
	LB-1	LB-2	LB-3	WC-4	WC-5	WC-6	WC-7	WC-8	WC-9	WC-10	WC-11	WC-12	WC-13	CP-14	CP-15	CP-16	CP-17	CP-18	CP-19	CP-20	TEL	ERL
Antimony	ND	ND	ND	0.12	0.13	0.11	0.12	0.17	0.13	0.19	ND	0.10	0.26	ND	0.087	0.10	0.15	0.057	0.060	0.11	x	x
Arsenic	0.79	0.43	0.094	**18**	**21**	**18**	**20**	**25**	**22**	**23**	1.9	**9.7**	**22**	0.92	**11**	**15**	**20**	7.0	**9.3**	**16**	7.24	8.2
Cadmium	0.032	0.011	ND	0.11	0.049	0.047	0.042	0.051	0.056	0.054	ND	0.039	0.079	0.011	0.098	0.14	0.21	0.081	0.090	0.16	0.676	1.2
Chromium	3.5	1.3	0.68	33	42	40	38	45	43	478	4.0	22	48	2.8	26	36	51	18	24	41	52.3	81
Copper	0.84	0.13	ND	9.9	12	11	12	14	15	**19**	0.91	8.2	**21**	0.46	6.2	8.9	12	3.7	4.4	8.4	18.7	34
Lead	1.8	1.3	0.48	13	17	17	17	19	19	21	1.7	10	23	1.3	10	14	22	7.0	9.1	16	30.24	46.7
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	0.043	ND	ND	0.031	0.065	ND	ND	0.039	0.060	ND	ND	0.048	0.13	0.15
Nickel	0.88	0.18	0.12	9.9	13	12	12	15	14	**16**	1.5	7.4	**17**	0.78	7.2	10	14	4.7	5.8	11	15.9	20.9
Selenium	ND	ND	ND	0.49	0.48	0.41	0.46	0.61	0.59	0.69	ND	0.34	0.72	ND	0.39	0.57	0.84	0.30	0.31	0.59	x	x
Silver	ND	ND	ND	0.047	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.074	ND	ND	ND	0.73	1
Zinc	10	1.5	0.71	42	53	51	51	58	58	67	7.7	31	83	2.3	31	44	65	21	29	49	124	150
TBT	ND	ND	ND	Not analyzed												ND	Not analyzed				x	x

Non-detect (ND) = The analyte was not detected at or above the MDL.
x = No TEL or ERL published for that parameter.
TBT = tributyltin
Bolded values exceed the TEL and (or) ERL.
See Table 5 for complete metals results for sediment composites.

3.3.3 PAHs

PAHs were analyzed in all 20 composite samples. Table 6 has complete results, including the laboratory MDLs and MRLs. As mentioned in Section 3.3.1 and in Table 2.6 of the SAP/QAPP, the MDLs/MRLs for several samples were elevated above the target detection limit and laboratory reporting limit of 3.3 µg/kg. Refer to Section 4.4.4.3 for a discussion of the elevated detection limits due to matrix interferences and low total solids content.

Little River to Winyah Bay (LB-1 through LB-3)

In sample LB-1, all PAH analytes were detected in concentrations greater than the MDL, and the concentration of naphthalene exceeded the TEL. In sample LB-2, nine of the PAH analytes were detected in concentrations greater than the MDL, and the concentration of naphthalene exceeded the TEL. In sample LB-3, one of the PAH analytes (naphthalene) was detected in concentrations greater than the MDL. The MDLs for these samples met the target detection limit of 3.3 µg/kg provided in the SAP/QAP. The results are summarized in Exhibit 3-3.

Exhibit 3-3. Summary of Analytical Results for PAHs in Sediment Composites – Little River to Winyah Bay

Analyte	Concentrations (µg/kg)				
	LB-1	LB-2	LB-3	TEL	ERL
1-Methylnaphthalene^{LMW}	3.1	2.9	<0.94	x	x
2-Methylnaphthalene^{LMW}	5.8	6.2	<0.99	20.2	70
Acenaphthene^{LMW}	3.1	2.3	<1.2	6.71	16
Acenaphthylene	1.0	<0.87	<0.90	5.87	44
Anthracene^{LMW}	1.6	<1.0	<1.1	46.9	85.3
Benzo(a)anthracene^{HMW}	11	<1.8	<1.9	74.8	261
Benzo(a)pyrene^{HMW}	16	<1.7	<1.8	88.8	430
Benzo(b)fluoranthene	22	1.9	<1.0	x	x
Benzo(g,h,i)perylene	18	<0.86	<0.89	x	x
Benzo(k)fluoranthene	7.8	<1.2	<1.2	x	x
Chrysene^{HMW}	17	<2.2	<2.3	108	384
Dibenzo(a,h)anthracene^{HMW}	4.0	<2.5	<2.6	6.22	63.4
Fluoranthene^{HMW}	33	4.8	<1.1	113	600
Fluorene^{LMW}	2.1	1.6	<0.81	21.2	19
Indeno(1,2,3-cd)pyrene	15	<2.0	<2.1	x	x
Naphthalene^{LMW}	**47**	**56**	6.4	34.6	160
Phenanthrene^{LMW}	16	5.7	<1.1	86.7	240
Pyrene^{HMW}	25	3.9	<0.98	153	665
Total LMW PAHs	79	76	13	312	552
Total HMW PAHs	106	17	11	655	1700
Total PAHs	249	99	29	1684	4022

"<" less-than symbol indicates the analyte concentration was less than the MDL (U-qualified; value indicates the MDL)
x = No TEL or ERL published for that parameter.
Bolded values exceed the TEL and (or) ERL.
HMW = high molecular weight; LMW = low molecular weight
See Table 6 for complete PAH results for sediment composites.

Winyah Bay to Charleston (WC-4 through WC-13)

With the exception of naphthalene in sample WC-4, none of the PAHs were detected above the MRL in any sample (U or J-qualified). However, the MDLs and MRLs in these samples were elevated above the target detection limit and laboratory reporting limit of 3.3 µg/kg due to samples being diluted prior to being analyzed. See Section 4.4.4.3 for more information. In some samples, a few PAH analytes (acenaphthene, acenaphthylene, and dibenzo(a,h)anthracene) had U-qualified results with an MDL that exceeded the TEL and (or) ERL. The results are summarized in Exhibit 3-4.

Exhibit 3-4. Summary of Analytical Results for PAHs in Sediment Composites – Winyah Bay to Charleston

Analyte	Concentrations (µg/kg)											
	WC-4	WC-5	WC-6	WC-7	WC-8	WC-9	WC-10	WC-11	WC-12	WC-13	TEL	ERL
1-Methylnaphthalene^{LMW}	<4.6	<5.9	<4.8	<5.3	<6.1	<5.6	<7.1	<2.1	<4.0	<7.2	x	x
2-Methylnaphthalene^{LMW}	<4.8	<6.3	<5.1	<5.6	<6.4	<5.9	<7.4	<2.2	<4.2	<7.5	20.2	70
Acenaphthene^{LMW}	<5.8	<7.5	<6.1	<6.7	<7.7	<7.1	<8.9	<2.7	<5.0	<9.1	6.71	16
Acenaphthylene	<4.4	<5.7	<4.7	<5.1	<5.8	<5.4	<6.8	<2.0	<3.8	<6.9	5.87	44
Anthracene^{LMW}	<5.2	<6.8	<5.5	<6.0	<6.9	<6.4	<8.0	<2.4	<4.5	<8.2	46.9	85.3
Benzo(a)anthracene^{HMW}	<9.1	<12	<9.6	<11	<12	<11	<14	<4.2	<7.8	<14	74.8	261
Benzo(a)pyrene^{HMW}	<8.8	<11	<9.2	<10	<12	<11	<13	<4.0	<7.5	<14	88.8	430
Benzo(b)fluoranthene	<5.0	<6.4	<5.2	<5.7	<6.6	<6.1	<7.6	<2.3	<4.3	<7.7	x	x
Benzo(g,h,i)perylene	<4.4	<5.6	<4.6	<5.0	<5.8	<5.3	<6.7	<2.0	<3.7	<6.8	x	x
Benzo(k)fluoranthene	<6.1	<7.8	<6.4	<7.0	<8.0	<7.4	<9.3	<2.8	<5.2	<9.4	x	x
Chrysene^{HMW}	<11	<14	<12	<13	<15	<14	<17	<5.2	<9.6	<17	108	384
Dibenzo(a,h)anthracene^{HMW}	<13	<17	<14	<15	<17	<16	20	<6.0	<11	<20	6.22	63.4
Fluoranthene^{HMW}	7.7	<6.9	<5.6	<6.2	<7.0	<6.5	9.9	<2.5	<4.6	<8.3	113	600
Fluorene^{LMW}	<4.0	<5.1	<4.2	<4.6	<5.2	<4.9	<6.1	<1.8	<3.4	<6.2	21.2	19
Indeno(1,2,3-cd)pyrene	<10	<13	<11	<12	<13	<12	<15	<4.6	<8.6	<16	x	x
Naphthalene^{LMW}	23	24	11	22	18	<4.8	<6.0	<1.8	<3.4	<6.1	34.6	160
Phenanthrene^{LMW}	<5.4	<7.0	<5.7	<6.3	<7.2	<6.6	<8.3	<2.5	<4.7	<8.4	86.7	240
Pyrene^{HMW}	5.8	<6.2	<5.0	<5.5	<6.3	<5.9	9.2	<2.2	<4.1	<7.5	153	665
Total LMW PAHs	79	63	42	57	58	41	52	16	29	53	312	552
Total HMW PAHs	106	67	55	61	69	64	83	24	45	81	655	1700
Total PAHs	249	168	130	152	166	142	180	53	99	180	1684	4022

"<" less-than symbol indicates the analyte concentration was less than the MDL (U-qualified; value indicates the MDL)
x = No TEL or ERL published for that parameter.
Underlined values – MDL exceeds the TEL and (or) ERL.
See Table 6 for complete PAH results for sediment composites.

Charleston to Port Royal (CP-14 through CP-20)

None of the PAHs were detected above the MRL in any sample. All results were U- or J-qualified. However, the MDLs and MRLs in some of the samples were elevated above the target detection limit and laboratory reporting limit of 3.3 µg/kg due samples being diluted prior to being analyzed. See Section 4.4.4.3 for more information. In some samples, dibenzo(a,h)anthracene had U-qualified results with an MDL that exceeded the TEL and (or) ERL. The results are summarized in Exhibit 3-5.

Exhibit 3-5. Summary of Analytical Results for PAHs in Sediment Composites – Charleston to Port Royal

Analyte	Concentrations (µg/kg)								
	CP-14	CP-15	CP-16	CP-17	CP-18	CP-19	CP-20	TEL	ERL
1-Methylnaphthalene^{LMW}	<2.0	<3.8	<5.1	<6.7	<3.4	<3.3	<5.8	x	x
2-Methylnaphthalene^{LMW}	<2.1	<4.0	<5.3	<7.0	<3.5	<3.5	<6.1	20.2	70
Acenaphthene^{LMW}	<2.5	<4.8	<6.4	<8.4	<4.2	<4.2	<7.3	6.71	16
Acenaphthylene	<1.9	<3.7	<4.9	<6.4	<3.2	<3.2	<5.5	5.87	44
Anthracene^{LMW}	<2.3	<4.3	<5.7	<7.6	<3.8	<3.8	<6.6	46.9	85.3
Benzo(a)anthracene^{HMW}	<4.0	<7.6	12	<13	<6.6	<6.6	<11	74.8	261
Benzo(a)pyrene^{HMW}	<3.8	<7.3	<9.6	<13	<6.4	<6.3	<11	88.8	430
Benzo(b)fluoranthene	<2.2	<4.1	<5.5	<7.2	<3.6	<3.6	<6.2	x	x
Benzo(g,h,i)perylene	<1.9	<3.6	<4.8	<6.3	<3.2	<3.2	<5.5	x	x
Benzo(k)fluoranthene	<2.6	<5.0	<6.6	<8.8	<4.4	<4.4	<7.6	x	x
Chrysene^{HMW}	<4.9	<9.3	<12	<16	<8.2	<8.1	<14	108	384
Dibenzo(a,h)anthracene^{HMW}	<5.6	<11	<14	<19	<9.4	<9.4	<16	6.22	63.4
Fluoranthene^{HMW}	4.4	4.9	19	<7.7	<3.9	<3.9	<6.7	113	600
Fluorene^{LMW}	<1.7	<3.3	<4.4	<5.7	<2.9	<2.9	<5.0	21.2	19
Indeno(1,2,3-cd)pyrene	<4.4	<8.3	<11	<15	<7.3	<7.3	<13	x	x
Naphthalene^{LMW}	<1.7	<3.3	<4.3	<5.7	<2.9	<2.8	<4.9	34.6	160
Phenanthrene^{LMW}	3.4	<4.5	5.9	<7.8	<3.9	<3.9	<6.8	86.7	240
Pyrene^{HMW}	3.9	6.3	17	<6.9	<3.5	<3.5	<6.0	153	665
Total LMW PAHs	16	28	37	49	25	24	43	312	552
Total HMW PAHs	27	46	84	76	38	38	65	655	1700
Total PAHs	55	99	154	168	84	84	145	1684	4022

"<" less-than symbol indicates the analyte concentration was less than the MDL (U-qualified; value indicates the MDL)
x = No TEL or ERL published for that parameter.
Underlined values – MDL exceeds the TEL and (or) ERL.
See Table 6 for complete PAH results for sediment composites.

3.3.4 Pesticides

Pesticides were analyzed in four composite samples (LB-1, LB-2, LB-3, and CP-16). Methoxychlor was detected in concentrations greater than the MRL in samples LB-3 and CP-16. No other pesticides were detected in concentrations greater than the MRL in any sample.

The reported MDL and MRL exceeded some of the target detection limits shown in Table 13-3 of the SAP/QAPP or screening criteria as noted below.

- In sample CP-16, the MDL exceeded the target detection limit for toxaphene.
- The MDL and MRL exceeded the TEL for toxaphene for all samples.
- The MRL exceeded the ERL for technical chlordane for all samples except LB-2.

All other results met the target detection limits or screening criteria. Total pesticides ranged from 1.9 µg/kg to 6.1 µg/kg. There are no published sediment screening criteria (i.e., TEL, ERL) for total pesticides. Complete results are provided in Table 7, including the laboratory MDLs and MRLs.

3.3.5 PCBs and Aroclors

PCBs and Aroclors were analyzed in four composite samples (LB-1, LB-2, LB-3, and CP-16). None of the 26 congeners or seven Aroclors were detected above the MDL in any of the samples tested (U-qualified). Total NOAA PCBs in sample CP-16 exceeded the TEL and ERL.

The MDLs met the SAP/QAPP target detection limit for all PCB congeners (1 µg/kg) and Aroclors (3.3 µg/kg) for samples LB-1, LB-2, and LB-3. The MDL slightly exceeded the SAP/QAPP target detection limit of 1 µg/kg for a few PCB congeners (PCB-77, PCB-169, and PCB-183) for sample CP-16. Complete results are provided in Table 8, including the laboratory MDLs and MRLs. Refer to Section 4.4.5.3 for a discussion of the low total solids and its effects on the detection limits.

3.3.6 Dioxins

Dioxins and furans were analyzed in composite samples LB-1, LB-2, LB-3, and CP-16. The toxic equivalent (TEQ) of each congener was calculated using the toxicity equivalency factor (TEF) multiplied by either the determined concentration of the dioxin/furan congener or the MRL if the result was below the MRL. The total TEQ was calculated as the sum of the individual congener TEQs. Total TEQs ranged from 0.189 ng/kg to 0.517 ng/kg in samples LB-1, LB-2, and LB-3. The total TEQ for sample CP-16 was 6.43 ng/kg which exceeded the TEL and AET. Complete results are provided in Table 9, including the laboratory MDLs and MRLs.

3.4 Elutriate and Water Chemistry

Analytical results for elutriates generated from the composite samples and the site water samples are presented in Tables 10 through 14. All sediment samples were prepared using the modified elutriate preparation methods described in *Interim Guidance for Predicting Quality of Effluent Discharged from Confined Dredged Material Disposal Areas—General* (USACE 1985). The modified elutriate analysis for total and dissolved fractions is prepared using one extraction. Half of the elutriate sample extraction is used for the total fraction analyses and the other half is centrifuged for organics and centrifuged and filtered for inorganics for the dissolved fraction analyses. The total and dissolved fractions for each sediment sample were analyzed for parameters shown in Table 2-6 of the SAP/QAPP. In addition, two site water samples from the project area were analyzed to determine background levels. Results for elutriate and water samples are compared to the CMC and South Carolina water quality criteria, which are addressed below as screening criteria and are defined in Section 2.4.2. The water and elutriate chemistry laboratory case narrative and data are provided in Appendix D.

3.4.1 Total Organic Carbon and Total Suspended Solids

TOC concentrations in the elutriate samples for both the total and dissolved fractions ranged from 1.1 mg/L to 21 mg/L. Total suspended solids ranged from 19 mg/L to 290 mg/L. Table 10 has complete results for TOC and total solids, including the laboratory MDLs and MRLs.

3.4.2 Metals and Tributyltin

Total and dissolved metals were analyzed in all 20 composite elutriate samples and two site water samples. Tributyltin was analyzed in elutriate and site water samples from all three stations within the Little River to Winyah Bay reach (LB-1 through LB-3) and from one station within the Charleston to Port Royal reach (CP-16).

For all the metals except mercury, the MRLs for the elutriate samples were elevated above the target detection limits and laboratory reporting limits in Table 2-6 of the SAP/QAPP due to matrix interference. However, the MDLs for most metals, except chromium, copper, selenium, and zinc, met the target detection limits. See Section 4.5.1.1 for more information. Tributlytin was not detected in concentrations above the MDL in any sample tested. The results are summarized in Exhibit 3-6. Table 10 has complete results, including the laboratory MDLs and MRLs.

Little River to Winyah Bay (LB-1 through LB-3)

Total and dissolved arsenic, copper, lead, nickel, and zinc were detected in concentrations greater than the MRLs in some or all elutriate samples. With the exception of total and dissolved copper in sample LB-3, none of the total or dissolved results for metals or tributlytin were detected in concentrations greater than the CMC in any sample. In sample LB-3, total copper (5.2 µg/L) and dissolved copper (4.8 µg/L) exceeded the CMC (4.8 µg/L).

Exhibit 3-6. Summary of Analytical Results for Metals in Sediment Elutriates and Site Water – Little River to Winyah Bay

Analyte	Concentrations (µg/L)								
	SW-1	LB-1 T	LB-1 D	LB-2 T	LB-2 D	LB-3 T	LB-3 D	SC CMC	CMC
Antimony	<0.38	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	x	x
Arsenic	3.9	1.1	0.95	1.0	0.91	1.6	1.3	69	69
Cadmium	0.24	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	43	40
Chromium	2.5	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	1100	1100
Copper	3.7	2.5	1.4	2.8	4.2	**5.2**	**4.8**	5.8	4.8
Lead	1.3	0.36	0.28	0.27	0.27	0.45	<0.26	220	210
Mercury	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	2.1	1.8
Nickel	1.7	1.3	0.93	1.3	0.85	2.7	1.3	75	74
Selenium	<1.5	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	290	290
Silver	0.18	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	2.3	1.9
Zinc	4.5	13	7.3	11	<6.4	28	<6.4	95	90
TBT	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	0.37	0.42

T = total fraction; D = dissolved fraction; x = No TEL or ERL published for that parameter.
"<" less-than symbol = the analyte concentration was less than the MDL (U-qualified; value indicates the MDL)
Bolded values exceed the CMC. See Table 10 for complete results.

Winyah Bay to Charleston (WC-4 through WC-13)

Total and/or dissolved arsenic, copper, chromium, lead, nickel, and zinc were detected in concentrations greater than the MRLs in some or all of the elutriate samples. Tributyltin was not analyzed in any samples in this reach. The results are summarized in Exhibit 3-7. Table 10 has complete results, including the laboratory MDLs and MRLs. The following samples exceeded the SC CMC and/or the CMC.

- WC-5, 6, and 8 – Total Arsenic
- WC-10, 11, and 13 – Total Copper

Charleston to Port Royal (CP-14 through CP-20)

Total and/or dissolved arsenic, copper, chromium, lead, nickel, and zinc were detected in concentrations greater than the MRLs in some or all of the elutriate samples. None of the sample results for metals or tributyltin exceeded the SC CMC and/or the CMC. The results are summarized in Exhibit 3-8. Table 10 has complete results, including the laboratory MDLs and MRLs.

Exhibit 3-7. Summary of Analytical Results for Metals in Sediment Elutriates and Site Water –Winyah Bay to Charleston

Analyte	Concentrations (µg/L)																				
	SW-1	WC-4 T	WC-4 D	WC-5 T	WC-5 D	WC-6 T	WC-6 D	WC-7 T	WC-7 D	WC-8 T	WC-8 D	WC-9 T	WC-9 D	WC-10 T	WC-10 D	WC-11 T	WC-11 D	WC-12 T	WC-12 D	WC-13 T	WC-13 D	SC CMC	CMC
Antimony	<0.38	1.2	1.2	1.3	1.2	1.1	1.3	0.89	<0.76	1.0	<0.76	<0.76	<0.76	1.2	0.76	<0.76	<0.76	<0.76	<0.76	0.81	<0.76	x	x
Arsenic	3.9	26	21	**80**	52	**70**	48	58	38	**91**	62	46	28	63	33	1.7	1.4	3.7	3.4	21	8.5	69	69
Cadmium	0.24	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	43	40
Chromium	2.5	3.5	<3.1	<3.1	<3.1	<3.1	<3.1	4.2	<3.1	4.9	<3.1	<3.1	<3.1	7.5	<3.1	<3.1	<3.1	<3.1	<3.1	14	<3.1	1100	1100
Copper	3.7	3.1	3.7	2.8	4.2	2.0	3.5	2.6	3.2	2.8	2.6	3.0	2.5	**4.8**	2.1	2.2	**5.4**	1.9	2.3	**7.8**	2.1	5.8	4.8
Lead	1.3	1.4	<0.26	0.80	<0.26	0.34	<0.26	0.89	<0.26	1.4	<0.26	2.3	<0.26	2.4	<0.26	0.51	<0.26	0.77	<0.26	6.0	<0.26	220	210
Mercury	<0.13	0.16	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	2.1	1.8
Nickel	1.7	3.3	1.2	2.6	0.99	1.4	<0.67	2.4	1.1	3.0	1.5	2.3	1.3	4.3	2.0	1.0	0.97	1.6	1.1	7.9	2.7	75	74
Selenium	<1.5	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	290	290
Silver	0.18	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	2.3	1.9
Zinc	4.5	14	<6.4	42	<6.4	15	<6.4	16	<6.4	22	<6.4	6.4	<6.4	30	<6.4	<6.4	<6.4	8.1	<6.4	28	<6.4	95	90

T = total fraction; D = dissolved fraction
"<" less-than symbol indicates the analyte concentration was less than the MDL (U-qualified; value indicates the MDL)
Bolded values exceed the CMC and or SC CMC.
x = No TEL or ERL published for that parameter.
See Table 10 for complete results.

Exhibit 3-8. Summary of Analytical Results for Metals in Sediment Elutriates and Site Water – Charleston to Port Royal

Analyte	Concentrations (µg/L)																
	SW-2	CP-14 T	CP-14 D	CP-15 T	CP-15 D	CP-16 T	CP-16 D	CP-17 T	CP-17 D	CP-18 T	CP-18 D	CP-19 T	CP-19 D	CP-20 T	CP-20 D	SC CMC	CMC
Antimony	<0.38	<0.76	<0.76	1.1	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	0.80	0.44	x	x
Arsenic	2.8	1.9	1.6	9.4	8.0	19	9.3	30	20	5.2	4.5	6.5	5.8	68	40	69	69
Cadmium	<0.22	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	43	40
Chromium	3.8	<3.1	<3.1	<3.1	<3.1	11	<3.1	3.2	<3.1	<3.1	<3.1	<3.1	<3.1	13	<3.1	1100	1100
Copper	3.6	2.0	2.3	2.2	2.6	3.6	1.8	1.9	<1.3	1.4	1.3	1.3	1.9	4.6	0.69	5.8	4.8
Lead	6.1	0.57	<0.26	1.2	<0.26	4.1	<0.26	1.0	<0.26	0.40	<0.26	0.41	<0.26	3.5	0.14	220	210
Mercury	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	2.1	1.8
Nickel	7.3	1.2	0.70	2.2	1.2	4.1	0.89	3.0	2.1	1.2	0.75	1.2	<0.67	4.4	0.97	75	74
Selenium	<1.5	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	2.0	<3.0	290	290
Silver	<0.18	<0.18	<0.18	<0.18	<0.18	0.42	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	2.3	1.9
Zinc	23	16	<6.4	11	<6.4	19	<6.4	14	<6.4	7.8	<6.4	8.7	6.9	17	<3.2	95	90
TBT	<0.043	Not analyzed				<0.043	<0.045	Not analyzed								0.37	0.42

T = total fraction; D = dissolved fraction
"<" less-than symbol indicates the analyte concentration was less than the MDL (U-qualified; value indicates the MDL)
x = No TEL or ERL published for that parameter.
See Table 10 for complete results.

3.4.3 PAHs

Total and dissolved PAHs were analyzed in all 20 composite elutriate samples and two site water samples. The MDLs and MRLs for the elutriate and site water samples met the target detection limit and laboratory reporting limits in Table 2-6 of the SAP/QAPP. Table 11 has complete results, including the laboratory MDLs and MRLs.

None of the PAHs were detected in concentrations greater than the MDL in any elutriate or site water samples; all results were U-qualified. Total PAHs ranged from 1.1 µg/L to 5.1 µg/L. There are no screening criteria for PAHs to compare sample results against.

3.4.4 Pesticides

Total and dissolved pesticides were analyzed in four composite elutriate samples (LB-1, LB-2, LB-3, and CP-16) and two site water samples. The MDLs and MRLs for the elutriate and site water samples met the target detection limit and laboratory reporting limits in Table 2-6 of the SAP/QAPP. Table 12 has complete results, including the laboratory MDLs and MRLs.

With the exception of methoxyclor in SW-1, none of the pesticides were detected in concentrations greater than the MRL in any elutriate or site water samples; all results were U- or J-qualified. None of the pesticides were detected in concentrations greater than the CMC in any elutriate or site water samples. Total pesticides ranged from 0.063 µg/L to 0.067 µg/L.

3.4.5 PCB Congeners and Aroclors

Total and dissolved PCBs and Aroclors were analyzed in four composite elutriate samples (LB-1, LB-2, LB-3, and CP-16) and two site water samples. The MDLs and MRLs for the elutriate and site water samples met the target detection limit and laboratory reporting limits in Table 2-6 of the SAP/QAPP. Table 13 has complete results, including the laboratory MDLs and MRLs.

With the exception of PCB 18 in SW-2, none of the PCBs were detected in concentrations greater than the MRL in any elutriate or site water samples; all results were U- or J-qualified. Total EPA Region 4 PCBs for all samples were 15 ng/L. Total NOAA PCBs ranged from 20 ng/L to 21 ng/L. There are no screening criteria for PCBs or Aroclors to compare sample results against.

3.4.6 Dioxins

Total and dissolved dioxins were analyzed in four composite elutriate samples (LB-1, LB-2, LB-3, and CP-16) and two site water samples. The TEQ of each congener was calculated using the TEF (USEPA 2010) multiplied by either the determined concentration of the dioxin/furan congener or the MRL if the result was below the MRL. None of the individual congeners were detected in concentrations greater than the MRL except OCDD total and HpCDD total in CP-16. All the other results were U- or J-qualified. The total TEQ was calculated as the sum of the individual congener TEQs and ranged from 0.309 pg/L in sample LB-2 Dissolved to 1.47 pg/L in sample CP-16 Total. There are no screening criteria to compare results against. Complete results are provided in Table 14, including the laboratory MDLs and MRLs.

4 QUALITY ASSURANCE/QUALITY CONTROL

4.1 Field Sampling

Field sampling took place May 3 through 10, 2021. There were no issues associated with field sample collection, and all sampling and compositing activities conformed to methods outlined in the SAP/QAPP.

4.2 Sample Receipt

4.2.1 Terracon

Sediment samples were delivered to Terracon on May 12, 2021, in good condition and consistent with the chain-of-custody form.

4.2.2 Eurofins TestAmerica

Sediment samples and site water for background analysis and elutriate preparation were received at Eurofins TestAmerica on May 8 and 11, 2021, in good condition and consistent with the accompanying chain-of-custody form.

All analyses were performed consistent with Eurofins TestAmerica QA program. This laboratory data report contains analytical results for samples designated for Tier IV validation deliverables, including summary forms and all associated raw data for each analysis (Appendix D). When appropriate to the method, method blank results have been reported for each analytical test.

4.3 Physical Analysis

All physical analyses were performed by Terracon. Terracon met all standard laboratory quality control during testing.

4.4 Sediment Chemistry

4.4.1 Total Metals

No quality control anomalies associated with the analysis of these samples were observed.

4.4.2 Organotins

4.4.2.1 Matrix Spikes

Batch quality control only is available for this project for tributyltin. Matrix spikes were not performed for the project samples.

No other quality control anomalies associated with the analysis of these samples were observed.

4.4.3 Pesticides

4.4.3.1 Matrix Spike Recoveries

Spikes for this project were below 70% recovery. This indicates a likely matrix interference in the sample. The overall impact on the results should be low since the sample results are either non-detects or below the target detection limits.

4.4.3.2 Calibration Verification Standards

Several continuing calibration standards (CCVs) had slight exceedances greater than 15% difference from the target. The overall impact should be low since the affected sample results were non-detects. In addition, several exceedances were corrected with CCVs that were analyzed later in the run.

No other quality control anomalies associated with the analysis of these samples were observed.

4.4.4 Polynuclear Aromatic Hydrocarbons

4.4.4.1 Matrix Spikes

Batch quality control only is available for this project for PAHs. Matrix spikes were not performed for the project samples.

4.4.4.2 Calibration Verification Standards

Several CCVs had slight exceedances between 15% and 20% differences but were within the lab acceptance criteria. The overall impact should be low since the exceedances were less than 5% different from the target concentration.

4.4.4.3 Elevated Detection Limits

Following preparation, the laboratory noted that the samples were viscous with a greenish tint. Based on the nature of the samples, the laboratory had to dilute the samples for analysis which resulted in elevated detection limits above the target detection limits provided in the SAP/QAPP. In addition, low total solids concentrations in the samples further elevated the detection limit and reporting limit following dry weight calculations.

No other quality control anomalies associated with the analysis of these samples were observed.

4.4.5 PCBs

4.4.5.1 Matrix Spikes

One spike for PCB was outside acceptance criteria, indicating a potential matrix interference. The overall impact is low since all results are below detection.

4.4.5.2 Calibration Verification Exceptions

Several CCVs had slight exceedances outside 15% differences but were within the lab acceptance criteria. The overall impact should be low since the exceedances were less than 5% different from the target concentration.

4.4.5.3 Elevated Detection Limits and Total PCB Concentrations

Due to low total solids content, the dry weight calculations for sample CP-16 had detection limits that were elevated above the target detection limit. In addition, the total NOAA PCB concentration was found to exceed the TEL and ERL. Since all results are below the method detection limit and the exceedance is due solely to low total solids, the overall impact is low, and the usability of the results should not be affected.

4.4.6 Dioxins and Furans by EPA Method 8290

The laboratory's case narrative provides the following explanation for B-qualified data.

Several analytes were detected in method blank MB 410-126984/1-A at levels that were above the MDL but below the MRL. The values should be considered estimates and have been flagged with a "B" qualifier. If the associated sample reported a result above the MDL and/or MRL, the result has been flagged.

Total PCDD, Total PCDD/PCDF, Total PCDF and Total TCDF were detected in method blank MB 410-127347/1-A at levels exceeding the MRL. If the associated sample reported a result above the MDL and/or RL, the result has been flagged with a "B" qualifier.

Several analytes were detected in method blank MB 410-127347/1-A at levels that were above the MDL but below the MRL. The values should be considered estimates and have been flagged with a "B" qualifier. If the associated sample reported a result above the MDL and/or MRL, the result has been flagged.

No other quality control anomalies associated with the analysis of these samples were observed.

4.5 Site Water and Elutriate Chemistry

4.5.1 Total Metals

4.5.1.1 Sample Dilutions and Elevated Detection Limits

Sample elutriates were analyzed at a dilution factor of 2 due to high sodium concentrations in the sample. The dilution required for analysis resulted in elevated detection limits for copper, chromium, selenium, and zinc above the target detection limit in the SAP. The laboratory staff attempted to re-analyze the samples without dilution but were not able to meet analytical criteria.

No quality control anomalies associated with the analysis of these samples were observed.

4.5.2 Organotins

4.5.2.1 Matrix Spikes

Batch quality control is only available for this project for tributyltin. Matrix spikes were not performed for the project samples.

No other quality control anomalies associated with the analysis of these samples were observed.

4.5.3 Organochlorine Pesticides by EPA Method 8081

4.5.3.1 Matrix Spikes

Batch quality control is only available for this project for pesticides. Matrix spikes were not performed for the project samples.

4.5.3.2 Calibration Verification Standards

Several CCVs had slight exceedances greater than 15% difference from the target. The overall impact should be low since the affected sample results were non-detects. In addition, several exceedances were corrected with CCVs that were analyzed later in the run.

No other quality control anomalies associated with the analysis of these samples were observed.

4.5.4 Polynuclear Aromatic Hydrocarbons by EPA Method 8270

4.5.4.1 Matrix Spikes

Batch quality control only is available for this project for PAHs. Matrix spikes were not performed for the project samples.

4.5.4.2 Calibration Verification Standards

Several CCVs had slight exceedances between 15% and 20% differences but were within the lab acceptance criteria. The overall impact should be low since the exceedances were less than 5% different from the target concentration.

No other quality control anomalies associated with the analysis of these samples were observed.

4.5.5 PCB Aroclors and Congeners by EPA Method 8082

4.5.5.1 Matrix Spikes

Batch quality control only is available for this project for PCBs. Matrix spikes were not performed for the project samples.

4.5.5.2 Calibration Verification Exceptions

Several CCVs had slight exceedances outside 15% differences but were within the lab acceptance criteria. The overall impact should be low since the exceedances were less than 5% different from the target concentration.

4.5.5.3 Surrogates

Several PCB Aroclors had surrogates at 18% to 29% indicating a probable matrix interference in the sample. All other samples for congeners and Aroclors were within the acceptance criteria. Since all Aroclors were reported as non-detects below the target detection limit, the overall impact is low.

No other quality control anomalies associated with the analysis of these samples were observed.

4.5.6 Dioxins and Furans by EPA Method 8290

The laboratory's case narrative provides the following explanation for B-qualified data.

Total PCDD, Total PCDD/PCDF and Total PCDF were detected in method blank MB 410-133968/1-A at levels exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Several analytes were detected in method blank MB 410-133968/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates and have been flagged. If the associated sample reported a result above the MDL and/or MRL, the result has been flagged.

No other quality control anomalies associated with the analysis of these samples were observed.

5 REFERENCES

ANAMAR Environmental Consulting, Inc. 2021. *Sampling and Analysis Plan/Quality Assurance Project Plan for the Sediment Sampling and Analysis, Atlantic Intracoastal Waterway, South Carolina.* Submitted to USACE Charleston District. April 2021.

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MAPS

Map 1
AIWW Navigation Channel Overview

Sample Name	Northing	Easting	Latitude	Longitude	Water Depth
AIWW21-LB-1A	723562	2684554	33.80155	-78.74606	9.3
AIWW21-LB-1B	723363	2684079	33.80103	-78.74764	10.6
AIWW21-LB-2A	701197	2648687	33.74218	-78.86564	10.4
AIWW21-LB-2B	700997	2648349	33.74165	-78.86676	13.4
AIWW21-LB-3A	685359	2615713	33.70048	-78.97512	10.8
AIWW21-LB-3B	685377	2615444	33.70055	-78.97601	14.9
AIWW21-WC-4A	348619	2365181	32.78570	-79.81167	15.2
AIWW21-WC-4B	349970	2367834	32.78933	-79.80299	18.7
AIWW21-WC-4C	351287	2370422	32.79287	-79.79452	15.3
AIWW21-WC-4D	352690	2373183	32.79664	-79.78548	18.8
AIWW21-WC-4E	354053	2375855	32.80030	-79.77673	16.9
AIWW21-WC-5A	372756	2390259	32.85122	-79.72911	15.6
AIWW21-WC-5B	373930	2391219	32.85442	-79.72593	15.3
AIWW21-WC-5C	375111	2392168	32.85763	-79.72280	15.7
AIWW21-WC-6A	387891	2402053	32.89242	-79.69008	14.7
AIWW21-WC-6B	388720	2402434	32.89468	-79.68881	16.2
AIWW21-WC-7A	430070	2430684	33.00731	-79.59494	12.8
AIWW21-WC-7B	431333	2431685	33.01074	-79.59162	13.8
AIWW21-WC-7C	432614	2432666	33.01423	-79.58836	11.8
AIWW21-WC-8A	442065	2446541	33.03968	-79.54267	12.3
AIWW21-WC-8B	442141	2447145	33.03986	-79.54069	10.7
AIWW21-WC-9A	447837	2456991	33.05513	-79.50830	12.2
AIWW21-WC-9B	449582	2459891	33.05981	-79.49874	11.7
AIWW21-WC-9C	451235	2462791	33.06424	-79.48920	11.8
AIWW21-WC-9D	452699	2465807	33.06814	-79.47929	9.8
AIWW21-WC-9E	454453	2468699	33.07284	-79.46976	8.4
AIWW21-WC-10A	458342	2470148	33.08347	-79.46484	13.8
AIWW21-WC-10B	457684	2471346	33.08161	-79.46097	13.5
AIWW21-WC-11A	481616	2513771	33.14557	-79.32119	18.2
AIWW21-WC-11B	482193	2514156	33.14714	-79.31990	12.2
AIWW21-WC-12A	491123	2518992	33.17147	-79.30363	12.7
AIWW21-WC-12B	491259	2522373	33.17169	-79.29257	13.6
AIWW21-WC-12C	493068	2524327	33.17657	-79.28609	13.3
AIWW21-WC-12D	494552	2525174	33.18061	-79.28324	16.0
AIWW21-WC-12E	497234	2526886	33.18790	-79.27750	12.3
AIWW21-WC-12F	498344	2527607	33.19092	-79.27508	13.5
AIWW21-WC-13A	521636	2530414	33.25481	-79.26463	12.9
AIWW21-WC-13B	522684	2531503	33.25763	-79.26101	11.4
AIWW21-CP-14A	345450	2269866	32.77961	-80.12190	10.3
AIWW21-CP-14B	345677	2270560	32.78022	-80.11963	6.8
AIWW21-CP-15A	286826	2218980	32.61956	-80.28878	4.5
AIWW21-CP-15B	287883	2219991	32.62244	-80.28547	7.8
AIWW21-CP-15C	288852	2221231	32.62508	-80.28142	8.1
AIWW21-CP-16A	289482	2214611	32.62694	-80.30291	7.2
AIWW21-CP-16B	289117	2214989	32.62593	-80.30169	7.8
AIWW21-CP-17A	285863	2191571	32.61740	-80.37782	9.8
AIWW21-CP-17B	286432	2193980	32.61892	-80.36998	6.4
AIWW21-CP-17C	287003	2196378	32.62045	-80.36218	7.1
AIWW21-CP-17D	288474	2198069	32.62446	-80.35666	8.2
AIWW21-CP-17E	290497	2199392	32.63000	-80.35232	8.9
AIWW21-CP-18A	255926	2181166	32.53528	-80.41216	14.5
AIWW21-CP-18B	256305	2181432	32.53632	-80.41129	9.3
AIWW21-CP-19A	250846	2161163	32.52162	-80.47715	9.3
AIWW21-CP-19B	250339	2161745	32.52021	-80.47527	6.9
AIWW21-CP-20A	247672	2154393	32.51298	-80.49916	8.7
AIWW21-CP-20B	248573	2155866	32.51544	-80.49436	10.1
AIWW21-CP-20C	249618	2157246	32.51829	-80.48987	10.3
AIWW21-CP-20D	250895	2158420	32.52179	-80.48604	8.8
AIWW21-Site Water N	454716	2469047	33.07355	-79.46861	6.0
AIWW21-Site Water S	326819	2254242	32.72876	-80.17322	19.5

Legend

- Sampled Location
- Site Water

N
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Nautical Miles
0 5 10

LOCATOR

ANAMAR
Environmental Consulting, Inc.

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precise location of any feature. Data provided as-is.
Q:\GIS PROJECTS\21-0003 AIWW 404\Maps\Actual\Overview.mxd
Data sources: ANAMAR, USACE, NOAA.

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Map 2
AIWW Navigation Channel
Little River to Winyah Bay
LB-1 to LB-3

78°51'0"W

33°43'30"N

79°1'30"W

78°51'0"W

AIWW21-LB-1A AIWW21-LB-1B

AIWW21-LB-2A AIWW21-LB-2B

AIWW21-LB-3A AIWW21-LB-3B

Sample Name	Northing	Easting	Latitude	Longitude	Water Depth
AIWW21-LB-1A	723562	2684554	33.80155	-78.74606	9.3
AIWW21-LB-1B	723363	2684079	33.80103	-78.74764	10.6
AIWW21-LB-2A	701197	2648687	33.74218	-78.86564	10.4
AIWW21-LB-2B	700997	2648349	33.74165	-78.86676	13.41
AIWW21-LB-3A	685359	2615713	33.70048	-78.97512	10.8
AIWW21-LB-3B	685377	2615444	33.70055	-78.97601	14.9

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

Sampled Location

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Nautical Miles

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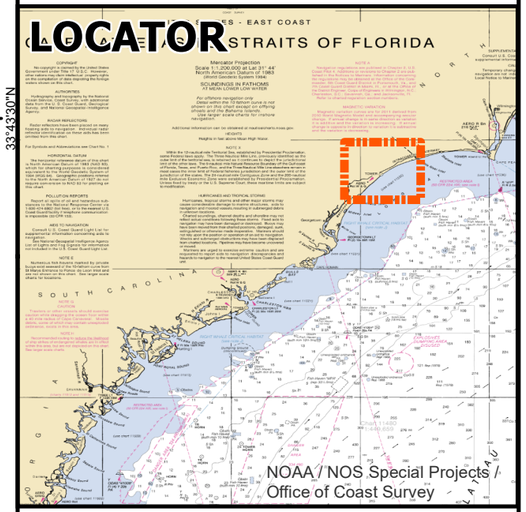
LOCATOR



NOAA / NOS Special Projects / Office of Coast Survey

ANAMAR
Environmental Consulting, Inc.

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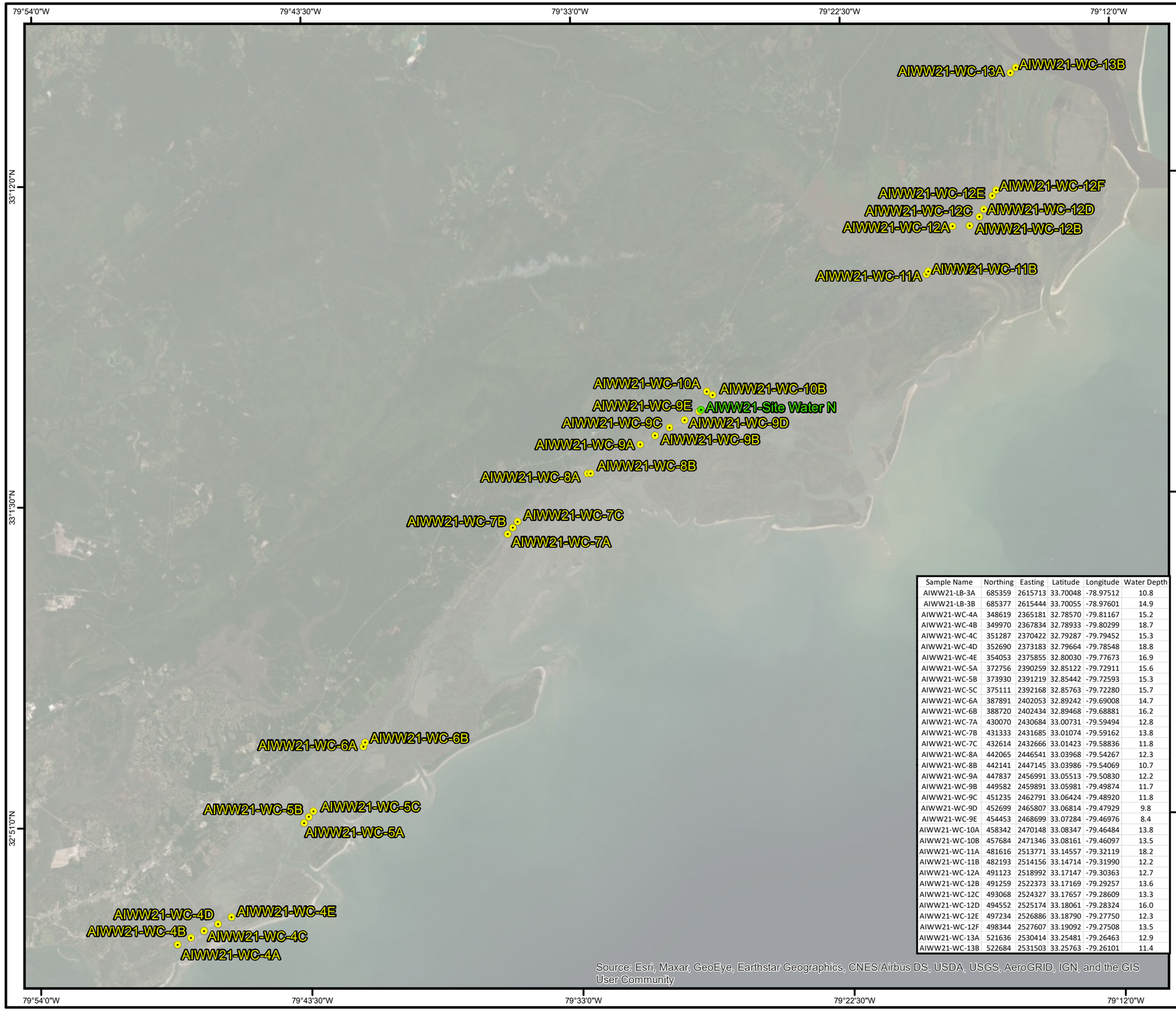
Data sources: ANAMAR, USACE, NOAA.

Map 3
AIWW Navigation Channel
Winyah Bay to Charleston
WC-4 through WC-13



Legend

- Sampled Location
- Site Water



Sample Name	Northing	Easting	Latitude	Longitude	Water Depth
AIWW21-LB-3A	685359	2615713	33.70048	-78.97512	10.8
AIWW21-LB-3B	685377	2615444	33.70055	-78.97601	14.9
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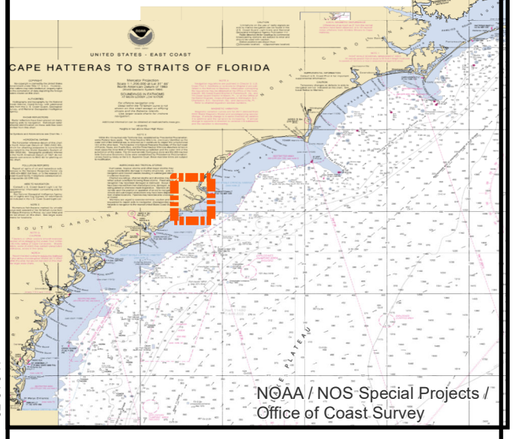
LOCATOR



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Data sources: ANAMAR, USACE, NOAA.

Sample Name	Northing	Easting	Latitude	Longitude	Water Depth
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AIWW21-CP-14B	345677	2270560	32.78022	-80.11963	6.8
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AIWW21-CP-17E	290497	2199392	32.63000	-80.35232	8.9
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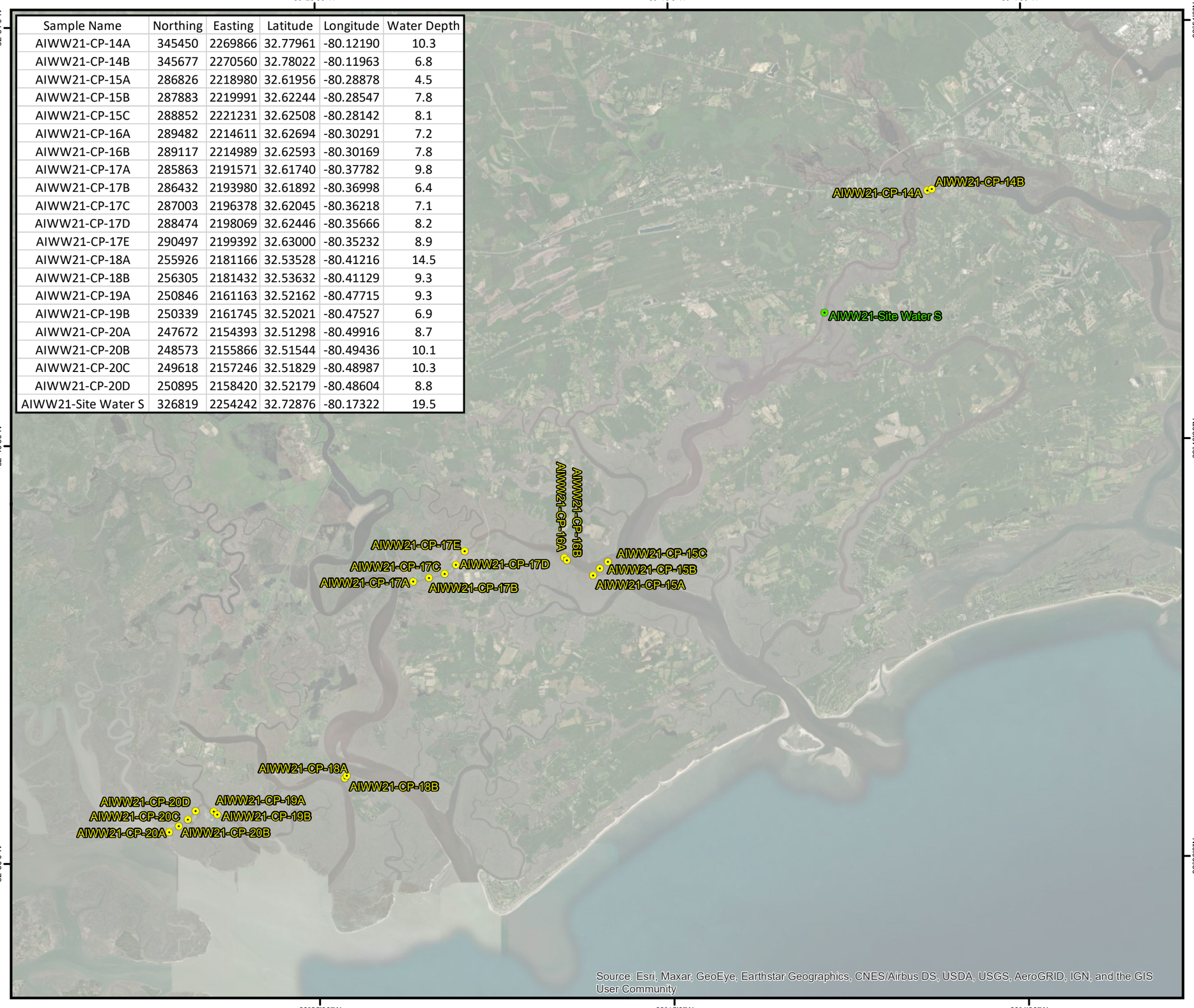
AIWW21-CP-19B	250339	2161745	32.52021	-80.47527	6.9
AIWW21-CP-20A	247672	2154393	32.51298	-80.49916	8.7
AIWW21-CP-20B	248573	2155866	32.51544	-80.49436	10.1
AIWW21-CP-20C	249618	2157246	32.51829	-80.48987	10.3
AIWW21-CP-20D	250895	2158420	32.52179	-80.48604	8.8
AIWW21-Site Water S	326819	2254242	32.72876	-80.17322	19.5



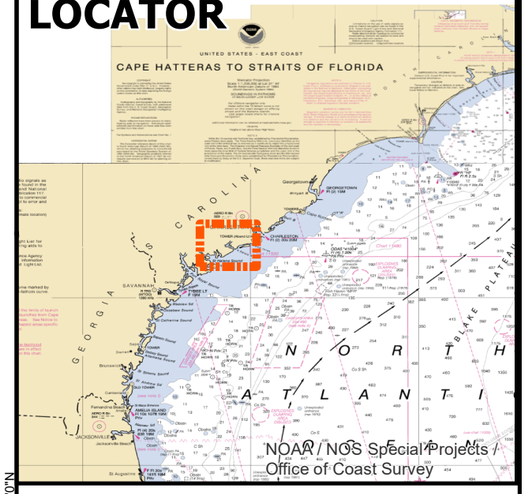
Map 4
AIWW Navigation Channel
Charleston to Port Royal
CP-14 through CP-20

Legend

- Sampled Location
- Site Water

N
W E
S
Nautical Miles
0 1 2

LOCATOR



NOAA / NOS Special Projects / Office of Coast Survey

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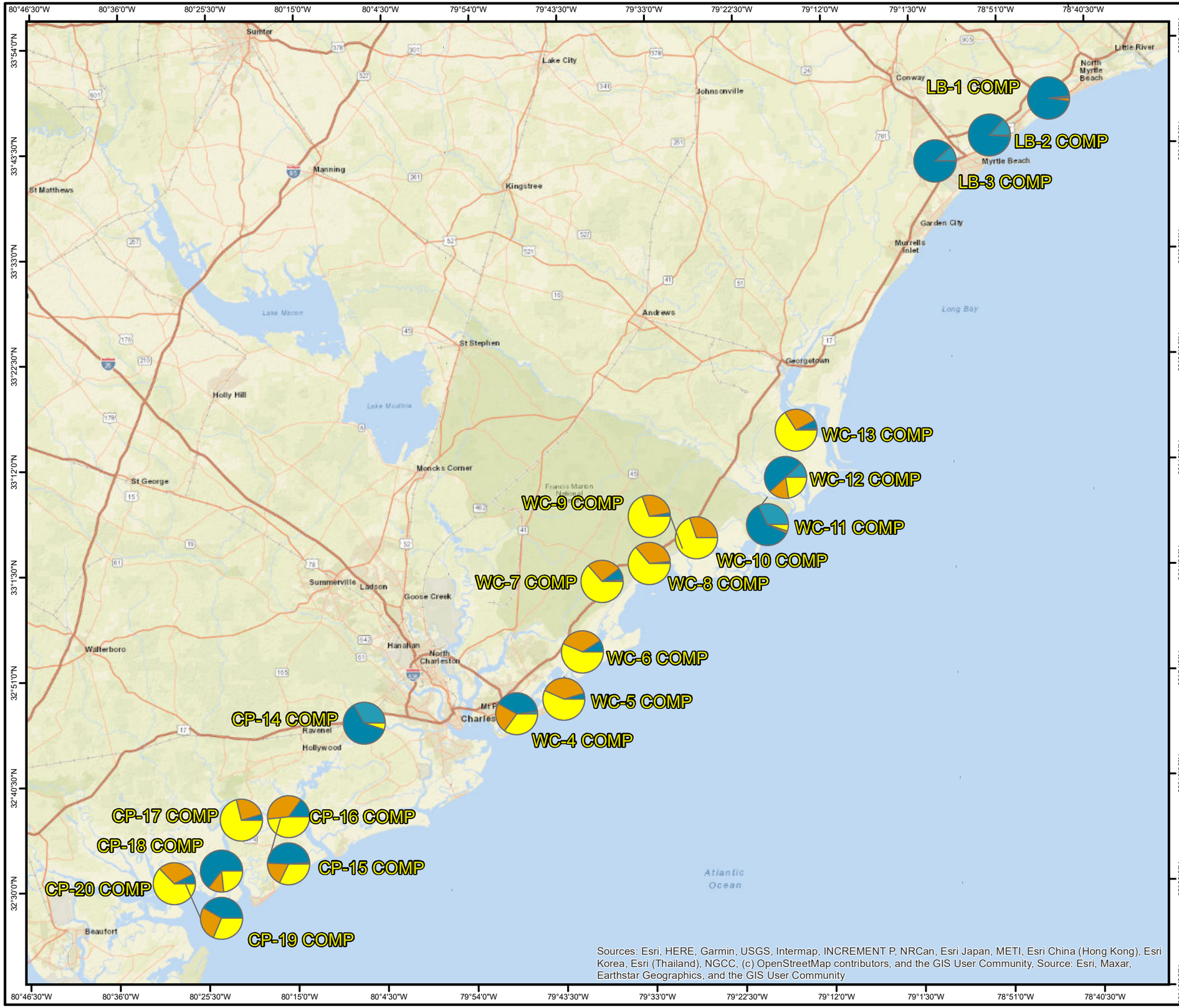
Q:\GIS PROJECTS\21-0003 AIWW 404\Maps\Actual\Map4.mxd
Data sources: ANAMAR, USACE, NOAA.

Map 5
AIWW Navigation Channel
Grain Size Results



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

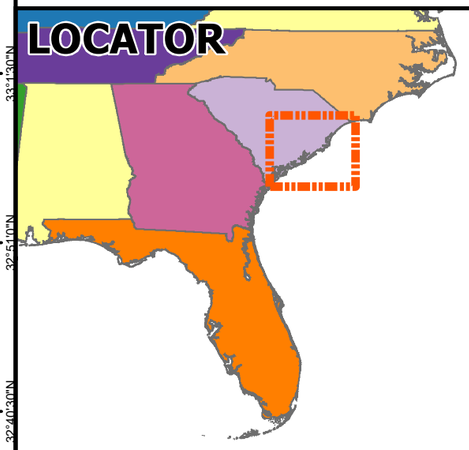
Legend

Physicals

- Gravel
- Coarse Sand
- Medium Sand
- Fine Sand
- Silt
- Clay

N
W E
S

Nautical Miles
0 5 10



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Data sources: ANAMAR, USACE, NOAA.

TABLES

Acronyms and Qualifiers in Tables

Grain Size Definitions

Gravel	Particles ≥4.750 mm
Sand	Particles 0.075–4.749 mm
Silt	Particles 0.005–0.074 mm
Clay	Particles <0.005 mm

Unified Soil Classification System (USCS) classes

CH	Clay of high plasticity, elastic silt
CL	Clay
SC	Clayey sand
SM	Silty sand
SP	Poorly-graded sand
MH	Silt of high plasticity, elastic silt
ML	Silt of low plasticity
OH	Organic clay, organic silt

American Association of State Highway and Transportation Officials (AASHTO) subgroups

A-1-b	≤50% passing #40 sieve and ≤25% passing #200 sieve
A-2-4	≤35% passing #200 sieve and fraction passing #40 sieve has liquid limit of ≤40 and plasticity index of ≤10
A-2-7	≤35% passing #200 sieve and fraction passing #40 sieve has liquid limit of ≤41 and plasticity index of ≤11
A-7-5	≥36% passing #200 sieve and fraction passing #40 sieve has liquid limit of ≥41 and plasticity index of ≥11 and ≤ liquid limit – 30
A-7-6	≥36% passing #200 sieve and fraction passing #40 sieve has liquid limit of ≥41 and plasticity index of ≥11 and > liquid limit – 30
(#)	Group index values beginning at 0 (good soils for roadway subgrade use) with increasing values signifying increasingly poor quality soils for roadway subgrade use

Metals Data Qualifiers

B	Compound was found in the blank and sample.
J	The result is an estimated value.
U	The analyte was analyzed but was not detected (ND) at or above the MDL.

Organics Data Qualifiers

*	LCS and/or LCSD is outside acceptance limits, low biased.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an
p	The %RPD between the primary and confirmation column/detector is >40%. The lower valu
S1	Surrogate recovery exceeds control limits, low biased.

Dioxin/Furan Data Qualifiers

B	Compound was found in the blank and sample.
I	Value is an estimated maximum possible concentration for the associated compound.
J	Result is less than the MRL but greater than or equal to the MDL and the concentration is a

Acronyms and Symbols Used in the Data Tables

AET	apparent effects threshold
CCC	criterion continuous concentration
CMC	criteria maximum concentration
ERL	effects range-low
FDA	U.S. Food and Drug Administration
HMW	high molecular weight PAHs (NOAA 1989)
LL	liquid limit
LMW	low molecular weight PAHs (NOAA 1989)
MDL	method detection limit
MLLW	mean lower low water
MRL	method reporting limit
NAD 83	North American Datum of 1983
ND	non-detect
NOAA	National Oceanic and Atmospheric Administration PCB congeners (see SERIM Table 5-6 for list)
PI	plasticity index
PL	plastic limit
TEF	toxicity equivalence factor
TEL	threshold effects level
TEQ	toxic equivalency quotient
x	no values published for that parameter
–	no qualifier needed or no test conducted for that analyte or parameter

Acronyms and Symbols Used in the Sediment Chemistry Data Tables

Bolded Values = Result greater than or equal to the TEL, ERL and/or AET.

Acronyms and Symbols Used in the Elutriate Chemistry Data Tables

Bolded Values = Result greater than or equal to the CCC and/or CMC.

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TABLE 1
Grab Sample and Field Data Summary

Area	Composite ID	Subsample ID	Date	Sampling Start & End (EDT)	Sediment Elevation* (ft, MLLW)	Latitude (°N, NAD 83)	Longitude (°W, NAD 83)
Little River to Winyah Bay	AIWW21-LB-1	AIWW21-LB-1A	5/4/21	1300-1310	-5.2	33.8015	-78.7461
		AIWW21-LB-1B	5/4/21	1315-1325	-6.4	33.8010	-78.7477
	AIWW21-LB-2	AIWW21-LB-2A	5/4/21	1200-1210	-6.8	33.7422	-78.8656
		AIWW21-LB-2B	5/4/21	1220-1230	-9.7	33.7416	-78.8668
	AIWW21-LB-3	AIWW21-LB-3A	5/4/21	1040-1050	-8.7	33.7005	-78.9751
		AIWW21-LB-3B	5/4/21	1100-1110	-12.4	33.7005	-78.9760
Winyah Bay to Charleston	AIWW21-WC-4	AIWW21-WC-4A	5/5/21	1705-1710	-10.9	32.7857	-79.8116
		AIWW21-WC-4B	5/5/21	1715-1720	-14.6	32.7894	-79.8029
		AIWW21-WC-4C	5/5/21	1720-1725	-11.3	32.7929	-79.7944
		AIWW21-WC-4D	5/5/21	1725-1730	-14.8	32.7967	-79.7854
		AIWW21-WC-4E	5/5/21	1735-1745	-13.1	32.8003	-79.7767
	AIWW21-WC-5	AIWW21-WC-5A	5/5/21	1615-1620	-11.8	32.8512	-79.7292
		AIWW21-WC-5B	5/5/21	1610-1615	-10.4	32.8544	-79.7259
		AIWW21-WC-5C	5/5/21	1600-1610	-10.8	32.8576	-79.7228
	AIWW21-WC-6	AIWW21-WC-6A	5/5/21	1545-1555	-9.8	32.8924	-79.6901
		AIWW21-WC-6B	5/5/21	1530-1540	-11.3	32.8947	-79.6887
	AIWW21-WC-7	AIWW21-WC-7A	5/5/21	1455-1500	-8.0	33.0073	-79.5950
		AIWW21-WC-7B	5/5/21	1450-1455	-9.0	33.0107	-79.5917
		AIWW21-WC-7C	5/5/21	1440-1445	-7.1	33.0142	-79.5883
Winyah Bay to Charleston	AIWW21-WC-8	AIWW21-WC-8A	5/5/21	1350-1355	-8.0	33.0398	-79.5428
		AIWW21-WC-8B	5/5/21	1345-1350	-6.4	33.0399	-79.5408
	AIWW21-WC-9	AIWW21-WC-9A	5/5/21	1320-1325	-8.3	33.0551	-79.5084
		AIWW21-WC-9B	5/5/21	1315-1320	-7.9	33.0598	-79.4989
		AIWW21-WC-9C	5/5/21	1305-1315	-8.2	33.0642	-79.4894
		AIWW21-WC-9D	5/5/21	1250-1300	-6.4	33.0682	-79.4794
		AIWW21-WC-9E	5/5/21	1235-1245	-5.1	33.0729	-79.4697
	AIWW21-WC-10	AIWW21-WC-10A	5/5/21	1850-1855	-11.6	33.0835	-79.4649
		AIWW21-WC-10B	5/5/21	1840-1845	-11.0	33.0816	-79.4610
	AIWW21-WC-11	AIWW21-WC-11A	5/5/21	1145-1155	-16.8	33.1456	-79.3212
		AIWW21-WC-11B	5/5/21	1130-1140	-11.3	33.1472	-79.3199

TABLE 1 (*continued*)
Grab Sample Summary and Field Data

Area	Composite ID	Subsample ID	Date	Sampling Start & End (EDT)	Sediment Elevation* (ft, MLLW)	Latitude (°N, NAD 83)	Longitude (°W, NAD 83)
Winyah Bay to Charleston	AIWW21-WC-12	AIWW21-WC-12A	5/5/21	1050-1055	-12.3	33.1715	-79.3036
		AIWW21-WC-12B	5/5/21	1045-1050	-13.3	33.1717	-79.2924
		AIWW21-WC-12C	5/5/21	1035-1040	-13.1	33.1766	-79.2861
		AIWW21-WC-12D	5/5/21	1025-1030	-15.9	33.1806	-79.2833
		AIWW21-WC-12E	5/5/21	1015-1020	-12.1	33.1879	-79.2775
		AIWW21-WC-12F	5/5/21	1010-1015	-13.4	33.1909	-79.2751
	AIWW21-WC-13	AIWW21-WC-13A	5/5/21	0925-0935	-12.7	33.2548	-79.2647
		AIWW21-WC-13B	5/5/21	0940-0950	-11.3	33.2576	-79.2611
Charleston to Port Royal	AIWW21-CP-14	AIWW21-CP-14A	5/6/21	1310-1315	-6.7	32.7796	-80.1218
		AIWW21-CP-14B	5/6/21	1315-1330	-3.2	32.7802	-80.1196
	AIWW21-CP-15	AIWW21-CP-15A	5/6/21	1205-1210	-2.5	32.6195	-80.2889
		AIWW21-CP-15B	5/6/21	1210-1215	-5.6	32.6224	-80.2855
		AIWW21-CP-15C	5/6/21	1215-1230	-5.7	32.6252	-80.2813
	AIWW21-CP-16	AIWW21-CP-16A	5/6/21	1130-1135	-7.2	32.6270	-80.3030
		AIWW21-CP-16B	5/6/21	1140-1200	-6.3	32.6260	-80.3017
	AIWW21-CP-17	AIWW21-CP-17A	5/6/21	1035-1040	-9.3	32.6175	-80.3777
		AIWW21-CP-17B	5/6/21	1040-1045	-5.8	32.6190	-80.3699
		AIWW21-CP-17C	5/6/21	1050-1055	-6.5	32.6205	-80.3622
		AIWW21-CP-17D	5/6/21	1055-1100	-7.5	32.6245	-80.3566
		AIWW21-CP-17E	5/6/21	1100-1115	-8.1	32.6300	-80.3523
	AIWW21-CP-18	AIWW21-CP-18A	5/6/21	1000-1005	-14.1	32.5353	-80.4122
		AIWW21-CP-18B	5/6/21	1005-1020	-8.9	32.5363	-80.4113
	AIWW21-CP-19	AIWW21-CP-19A	5/6/21	0925-0930	-8.6	32.5216	-80.4769
		AIWW21-CP-19B	5/6/21	0935-0945	-6.4	32.5202	-80.4752
	AIWW21-CP-20	AIWW21-CP-20A	5/6/21	0840-0845	-7.6	32.5130	-80.4991
		AIWW21-CP-20B	5/6/21	0850-0855	-9.2	32.5155	-80.4944
		AIWW21-CP-20C	5/6/21	0900-0905	-9.4	32.5185	-80.4896
		AIWW21-CP-20D	5/6/21	0905-0920	-8.1	32.5218	-80.4860

***** feet mean lower low water calculated from water depth (measured by lead line) and tide height using data from the NOAA water level station (#8665530, Charleston, Cooper River Entrance).

Source: ANAMAR Environmental Consulting, Inc.

TABLE 2
Site Water Sample Summary Including Water Column Measurements

Sample ID:	Little River to North of Charleston			South of Charleston to Port Royal		
	AIWW21-SW-1			AIWW21-SW-2		
Date	5/6/21			5/7/21		
Sampling Start/End Times (EDT)	1145-1330			0947-1006		
Depth of Water (feet)	6.0			19.6		
Time of Measurement (EDT)	1140	1142	1144	0952	1002	1004
Depth of Measurement (feet)	0.5	2.5	5.0	1	8	16.5
Water Temperature (°C)	25.4	25.3	25.3	24.9	24.9	24.9
pH (units)	7.41	7.44	7.45	7.67	7.71	7.73
Salinity (ppt)	33.70	33.71	33.70	27.97	27.95	27.95
Sp. Conductivity (µS/cm)	51332	51327	51312	43441	43410	43408
Dissolved Oxygen (mg/L)	5.48	5.30	5.22	5.94	5.38	5.41
Dissolved Oxygen (%)	80.2	77.3	77.3	83.3	76.2	76.6
Turbidity (NTU)	--	--	--	8.22	--	--
Easting[1]	2469047			2254241		
Northing[1]	454716			326819		
Sampling Method	Pneumatic pump			Pneumatic pump		
Field Description of Sample	Olive in color; some suspended materials, no odor observed			Yellow in color; some suspended materials, no odor observed		
Weather/Tidal Cycle	Low-slack tide with 0-5 knot winds from the NE, calm seas, sunny skies			Mid-outgoing tide with 5-10 knot winds from the W, calm seas, sunny skies		
General Conditions and Observations	Approx. 400' SW of channel marker 37; turbidity appeared to be less than 10 NTUs based on visual estimation.					

[1] Coordinates were recorded in the field and were referenced to North American Datum of 1983, State Plane Coordinate System, SC (Zone 3900), US Survey Feet.
– = No reading taken

Source: ANAMAR Environmental Consulting, Inc.

TABLE 3
Results of Physical Analyses for Sediment Subsamples

Subsample ID: AIWW21-		Little River to Winyah Bay						Winyah Bay to Charleston				
		LB-1A	LB-1B	LB-2A	LB-2B	LB-3A	LB-3B	WC-4A	AWC-4B	WC-4C	WC-4D	WC-4E
Sediment Description		Sand, poorly-graded, mostly medium to fine-grained quartz, trace coarse to fine sand-size shell fragments, trace silt, brown	Sand, poorly-graded, mostly medium to fine-grained quartz, trace coarse to fine sand-size shell fragments, trace silt, brown	Sand, poorly-graded, mostly medium to fine-grained quartz, trace coarse to fine sand-size shell fragments, trace silt, brown	Sand, poorly-graded, mostly medium to fine-grained quartz, trace coarse to fine sand-size shell fragments, trace fine gravel-size shell fragments, trace silt, brown	Sand, poorly-graded, mostly medium to fine-grained quartz, trace silt, brown	Sand, poorly-graded, mostly medium to fine-grained quartz, trace fine gravel-size shell fragments, trace silt, brown	Silty sand, mostly medium to fine-grained quartz, little silt, brown	Silty sand, mostly medium to fine-grained quartz, little silt, brown	Sandy elastic silt, some medium to fine-grained quartz sand, trace coarse to fine sand-size shell fragments, trace fine gravel-size shell fragments, trace fibrous organic matter, gray	Elastic silt, few medium to fine-grained quartz sand, trace coarse to fine sand-size shell fragments, trace fine gravel-size shell fragments, gray	Elastic silt, trace medium to fine-grained quartz sand, trace coarse to fine sand-size shell fragments, trace fine gravel-size shell fragments, trace fibrous organics, gray
% Gravel		0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.3	0.8	0.2
% Coarse Sand		0.2	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.6	2.2	0.2
% Medium Sand		1.7	1.3	14.2	3.5	26.9	7.8	0.2	0.2	1.1	1.5	0.5
% Fine Sand		97.1	98.4	85.6	94.7	72.2	91.3	87.1	86.1	32.0	9.3	2.6
% Sand (total)		99.0	99.8	99.9	98.4	99.3	99.1	87.3	86.3	33.7	13.0	3.3
% Silt & Clay (combined)		1.0	0.2	0.1	1.4	0.7	0.8	12.7	13.7	66.0	86.2	96.5
USCS Classification		SP	SP	SP	SP	SP	SP	SM	SM	MH or CH	MH or CH	MH
% Passing Sieve Size	**Metric Equivalent (mm)**											
1 inch	**25.4**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.75 inch	**19.1**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.375 inch	**9.5**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
#4	**4.75**	100.0	100.0	100.0	99.8	100.0	99.9	100.0	100.0	99.7	99.2	99.8
#10	**2.00**	99.8	99.9	99.9	99.6	99.8	99.9	100.0	100.0	99.1	97.0	99.6
#20	**0.85**	99.4	99.4	99.4	99.1	95.8	98.4	99.9	99.9	98.3	96.2	99.4
#40	**0.425**	98.1	98.6	85.7	96.1	72.9	92.1	99.8	99.8	98.0	95.5	99.1
#60	**0.250**	92.5	93.3	34.0	71.5	24.6	60.0	99.3	99.3	97.3	94.8	98.9
#100	**0.149**	17.1	14.3	2.3	10.6	1.6	5.9	93.0	95.1	94.6	93.9	98.3
#200	**0.075**	1.0	0.2	0.1	1.4	0.7	0.8	12.7	13.7	66.0	86.2	96.5

TABLE 3 (*continued*)
Results of Physical Analyses for Sediment Subsamples

Subsample ID: AIWW21-		Winyah Bay to Charleston									
		WC-5A	WC-5B	WC-5C	WC-6A	WC-6B	WC-7A	WC-7B	WC-7C	WC-8A	WC-8B
Sediment Description		Elastic silt, few medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt with sand, little medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt with sand, little medium to fine-grained quartz sand, trace coarse to fine sand-size shell fragments, trace fibrous organic matter, gray	Elastic silt, few medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt with sand, little medium to fine-grained quartz sand, trace coarse to fine sand-size shell fragment, trace fine gravel-size shell fragments, trace fibrous organic matter, gray	Sandy elastic silt, some medium to fine-grained quartz sand, trace coarse to fine sand-size shell fragments, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray
% Gravel		0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
% Coarse Sand		0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.2	0.0	0.0
% Medium Sand		1.0	0.6	0.8	0.8	0.4	0.2	3.8	1.5	0.2	0.2
% Fine Sand		4.6	2.8	15.6	14.3	6.1	1.3	17.0	32.0	3.4	3.3
% Sand (total)		5.6	3.4	16.4	15.2	6.5	1.5	21.0	33.7	3.6	3.5
% Silt & Clay (combined)		94.4	96.6	83.6	84.8	93.5	98.5	78.8	66.3	96.4	96.5
USCS Classification		MH or CH	MH or CH	MH or CH	MH or CH	MH or CH	MH or CH	MH or CH	MH or CH	MH or CH	MH or CH
% Passing Sieve Size	**Metric Equivalent (mm)**										
1 inch	**25.4**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.75 inch	**19.1**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.375 inch	**9.5**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
#4	**4.75**	100.0	100.0	100.0	100.0	100.0	100.0	99.8	100.0	100.0	100.0
#10	**2.00**	100.0	100.0	100.0	99.9	100.0	100.0	99.6	99.8	100.0	100.0
#20	**0.85**	99.6	99.7	99.6	99.6	99.8	100.0	98.4	99.2	99.9	100.0
#40	**0.425**	99.0	99.4	99.2	99.1	99.6	99.8	95.8	98.3	99.8	99.8
#60	**0.250**	98.1	99.2	98.5	98.4	99.3	99.7	91.6	96.6	99.5	99.7
#100	**0.149**	97.0	98.6	96.8	95.9	98.4	99.5	83.9	90.0	98.9	99.1
#200	**0.075**	94.4	96.6	83.6	84.8	93.5	98.5	78.8	66.3	96.4	96.5

TABLE 3 (*continued*)
Results of Physical Analyses for Sediment Subsamples

Subsample ID: AIWW21-		Winyah Bay to Charleston								
		WC-9A	**WC-9B**	**WC-9C**	**WC-9D**	**WC-9E**	**WC-10A**	**WC-10B**	**WC-11A**	**WC-11B**
Sediment Description		Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, few medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Sand, poorly-graded, mostly medium to fine-grained quartz, trace coarse to fine sand-size shell fragments, trace silt, brown	Sand, poorly-graded with silt, mostly medium to fine-grained quartz, few silt, trace coarse to fine sand-size shell fragments, brown
% Gravel		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Coarse Sand		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
% Medium Sand		0.3	0.1	0.2	0.6	0.0	0.0	0.2	67.5	23.5
% Fine Sand		2.7	2.1	2.4	6.4	2.0	0.5	1.9	30.8	71.3
% Sand (total)		3.0	2.2	2.6	7.0	2.0	0.5	2.1	98.4	94.9
% Silt & Clay (combined)		97.0	97.8	97.4	93.0	98.0	99.5	97.9	1.6	5.1
USCS Classification		MH	MH	MH	MH	MH	MH	MH	SP	SP-SM
% Passing Sieve Size	**Metric Equivalent (mm)**									
1 inch	**25.4**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.75 inch	**19.1**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.375 inch	**9.5**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
#4	**4.75**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
#10	**2.00**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.9
#20	**0.85**	99.8	100.0	99.9	99.9	100.0	100.0	99.9	92.8	97.3
#40	**0.425**	99.7	99.9	99.8	99.4	100.0	100.0	99.8	32.4	76.4
#60	**0.250**	99.5	99.8	99.6	98.9	99.8	100.0	99.6	4.6	31.1
#100	**0.149**	98.9	99.4	99.2	97.7	99.5	99.8	99.2	2.2	7.2
#200	**0.075**	97.0	97.8	97.4	93.0	98.0	99.5	97.9	1.6	5.1

TABLE 3 (*continued*)
Results of Physical Analyses for Sediment Subsamples

Subsample ID: AIWW21-		Winyah Bay to Charleston								Charleston to Port Royal	
		WC-12A	WC-12B	WC-12C	WC-12D	WC-12E	WC-12F	WC-13A	WC-13B	CP-14A	CP-14B
Sediment Description		Silty sand, mostly medium to fine-grained quartz, little silt, trace coarse to fine sand-size shell fragments, brown	Silty sand, mostly medium to fine-grained quartz, little silt, few coarse to fine sand-size shell fragments, trace fine gravel-size shell fragments, brown	Sand, poorly-graded, mostly medium to fine-grained quartz, trace coarse to fine sand-size shell fragments, trace silt, brown	Elastic silt, few medium to finer-grained quartz sand, trace fibrous organic matter, gray	Silty sand, mostly medium to fine-grained quartz, little silt, trace coarse to fine sand-size shell fragments, trace fine gravel-size shell fragments, brown	Sandy elastic silt, some medium to fine-grained quartz sand, trace coarse to fine sand-size shell fragments, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, few medium to fine-grained quartz sand, trace fibrous organic matter, gray	Sand, poorly-graded with silt, mostly medium to fine-grained quartz, few silt, brown	Sand, poorly-graded, mostly medium to fine-grained quartz, trace coarse to fine sand-size shell fragments, trace fine gravel-size shell fragments, brown
% Gravel		0.0	0.9	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.3
% Coarse Sand		0.1	0.4	0.8	0.0	1.0	0.1	0.0	0.0	0.0	0.6
% Medium Sand		1.8	9.7	47.9	1.7	8.9	1.8	0.3	0.3	1.3	59.9
% Fine Sand		85.6	62.8	46.8	5.7	61.5	34.5	2.6	9.3	92.0	37.4
% Sand (total)		87.5	72.9	95.5	7.4	71.4	36.4	2.9	9.6	93.3	97.9
% Silt & Clay (combined)		12.5	26.2	4.5	92.6	28.2	63.6	97.1	90.4	6.7	1.8
USCS Classification		SM or SC	SM or SC	SP	MH	SM	MH	MH	MH	SP-SM	SP
% Passing Sieve Size	**Metric Equivalent (mm)**										
1 inch	**25.4**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.75 inch	**19.1**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.375 inch	**9.5**	100.0	99.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
#4	**4.75**	100.0	99.1	100.0	100.0	99.6	100.0	100.0	100.0	100.0	99.7
#10	**2.00**	99.9	98.7	99.2	100.0	98.6	99.9	100.0	100.0	100.0	99.1
#20	**0.85**	99.6	97.6	83.5	99.7	96.0	98.9	99.9	99.9	99.9	86.9
#40	**0.425**	98.1	89.0	51.3	98.3	89.7	98.1	99.7	99.7	98.7	39.2
#60	**0.250**	86.7	57.0	18.2	96.1	78.5	96.0	99.4	99.3	87.6	10.2
#100	**0.149**	38.8	34.1	6.3	94.4	45.5	82.9	98.9	98.2	28.4	2.4
#200	**0.075**	12.5	26.2	4.5	92.6	28.2	63.6	97.1	90.4	6.7	1.8

TABLE 3 (*continued*)
Results of Physical Analyses for Sediment Subsamples

Subsample ID: AIWW21-		Charleston to Port Royal									
		CP-15A	**CP-15B**	**CP-15C**	**CP-16A**	**CP-16B**	**CP-17A**	**CP-17B**	**CP-17C**	**CP-17D**	**CP-17E**
Sediment Description		Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Silty sand, mostly medium to fine-grained quartz, some silt, trace coarse to fine sand-size shell fragments, brown	Silty sand, mostly medium to fine-grained quartz, some silt, gray	Elastic silt, few medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt with sand, little medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray
% Gravel		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Coarse Sand		0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
% Medium Sand		0.3	0.7	1.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2
% Fine Sand		4.2	61.8	52.0	9.3	15.2	1.0	1.0	3.3	2.5	1.2
% Sand (total)		4.5	62.6	53.2	9.5	15.4	1.2	1.1	3.5	2.8	1.4
% Silt & Clay (combined)		95.5	37.4	46.8	90.5	84.6	98.8	98.9	96.5	97.2	98.6
USCS Classification		MH	SM	SM	MH	MH	MH or CH	MH or CH	MH or CH	MH or CH	MH or CH
% Passing Sieve Size	**Metric Equivalent (mm)**										
1 inch	**25.4**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.75 inch	**19.1**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.375 inch	**9.5**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
#4	**4.75**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
#10	**2.00**	100.0	99.9	100.0	100.0	100.0	100.0	100.0	100.0	99.9	100.0
#20	**0.85**	99.9	99.6	99.7	100.0	99.9	100.0	100.0	99.9	99.9	100.0
#40	**0.425**	99.7	99.2	98.8	99.8	99.8	99.8	99.9	99.8	99.7	99.8
#60	**0.250**	99.6	98.3	96.3	99.6	99.6	99.7	99.8	99.6	99.4	99.7
#100	**0.149**	99.1	85.8	67.8	99.0	99.2	99.5	99.6	98.9	98.8	99.4
#200	**0.075**	95.5	37.4	46.8	90.5	84.6	98.8	98.9	96.5	97.2	98.6

TABLE 3 (*continued*)
Results of Physical Analyses for Sediment Subsamples

Subsample ID: AIWW21-		Charleston to Port Royal							
		CP-18A	CP-18B	CP-19A	CP-19B	CP-20A	CP-20B	CP-20C	CP-20D
Sediment Description		Sandy elastic silt, some medium to fine-grained quartz sand, trace fibrous organic matter, gray	Silty sand, mostly medium to fine-grained quartz, some silt, gray	Sandy elastic silt, some medium to fine-grained quartz sand, trace fibrous organic matter, gray	Sandy elastic silt, some medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, trace medium to fine-grained quartz sand, trace fibrous organic matter, gray	Elastic silt, few medium to fine-grained quartz sand, trace fibrous organic matter, gray
% Gravel		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Coarse Sand		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Medium Sand		0.2	0.3	0.2	0.2	0.2	0.3	0.1	0.1
% Fine Sand		48.1	68.6	34.4	36.0	1.8	3.3	1.3	5.7
% Sand (total)		48.3	68.9	34.6	36.2	2.0	3.6	1.4	5.8
% Silt & Clay (combined)		51.7	31.1	65.4	63.8	98.0	96.4	98.6	94.2
USCS Classification		MH	SM	MH or CH	MH or CH	MH or CH	MH or CH	MH or CH	MH or CH
% Passing Sieve Size	**Metric Equivalent (mm)**								
1 inch	**25.4**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.75 inch	**19.1**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.375 inch	**9.5**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
#4	**4.75**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
#10	**2.00**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
#20	**0.85**	99.9	100.0	99.9	99.9	100.0	99.9	100.0	100.0
#40	**0.425**	99.8	99.7	99.8	99.8	99.8	99.7	99.9	99.9
#60	**0.250**	99.3	98.5	99.6	99.6	99.6	99.5	99.8	99.7
#100	**0.149**	66.1	59.3	96.8	98.8	99.2	98.6	99.5	98.6
#200	**0.075**	51.7	31.1	65.4	63.8	98.0	96.4	98.6	94.2

See Appendix C for grain size distribution graphs and laboratory triplicate results.
Grain sizes and USCS classifications are defined at the front of the tables section.

Source: Terracon Compiled by: ANAMAR Environmental Consulting, Inc.

TABLE 4
Results of Physical Analyses for Composited Sediment Samples

Composite ID: AIWW21-		Little River to Winyah Bay			Winyah Bay to Charleston						
		LB-1	LB-2	LB-3	WC-4	WC-5	WC-6	WC-7	WC-8	WC-9	WC-10
Sediment Description		Sand, poorly-graded, mostly medium to fine-grained quartz, trace silt, trace clay, trace small roots, brown	Sand, poorly-graded, mostly medium to fine-grained quartz, trace silt, trace clay, trace coarse to fine sand-size shell fragments, brown	Sand, poorly-graded, mostly medium to fine-grained quartz, trace silt, trace clay, brown	Sandy fat clay, some medium to fine-grained quartz sand, little silt, trace coarse to fine sand-size shell fragments, gray	Fat clay, some silt, few medium to fine-grained quartz sand, gray	Fat clay, some silt, few medium to fine-grained quartz sand, gray	Fat clay, little silt, few medium to fine-grained quartz sand, gray	Fat clay, some silt, trace medium to fine-grained quartz sand, gray	Elastic silt, some clay, trace medium to fine-grained quartz sand, gray	Elastic silt, some clay, trace medium to fine-grained quartz sand, gray
% Gravel		0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Coarse Sand		0.4	0.2	0.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0
% Medium Sand		1.7	13.4	11.6	2.0	0.8	0.5	1.5	0.3	0.4	0.3
% Fine Sand		94.6	85.1	87.1	39.7	4.5	9.1	8.7	1.4	2.5	0.9
% Sand (total)		96.7	98.7	98.9	42.2	5.3	9.6	10.2	1.7	2.9	1.2
% Silt		2.3	1.0	0.8	23.1	38.5	34.3	26.2	34.6	28.1	30.0
% Clay		0.4	0.3	0.3	34.7	56.2	56.1	63.6	63.7	69.0	68.8
% Silt & Clay (combined)		2.7	1.3	1.1	57.8	94.7	90.4	89.8	98.3	97.1	98.8
USCS Classification		SP	SP	SP	CH	CH	CH	CH	CH	MH	MH
Specific Gravity		2.661	2.655	2.622	2.612	2.610	2.670	2.626	2.602	2.603	2.608
Settling Rates (g/L)		2000	2222	2083	781	775	781	794	794	758	709
Atterberg Limits	**PL**	NP	NP	NP	33	45	47	45	58	59	69
	LL	NP	NP	NP	90	175	159	157	183	161	184
	PI	NP	NP	NP	57	130	112	112	125	102	115
% Passing Sieve Size	**Metric Equivalent (mm)**										
1 inch	**25.4**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.75 inch	**19.1**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.375 inch	**9.5**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
#4	**4.75**	99.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
#10	**2.00**	99.0	99.8	99.8	99.5	100.0	100.0	100.0	100.0	100.0	100.0
#20	**0.85**	98.4	99.1	97.6	98.3	99.7	99.7	99.4	99.9	99.7	99.8
#40	**0.425**	97.3	86.4	88.2	97.5	99.2	99.5	98.5	99.7	99.6	99.7
#60	**0.250**	91.9	40.7	51.9	96.8	99.1	99.1	97.2	99.3	99.2	99.5
#100	**0.149**	16.5	4.2	5.7	94.2	98.5	97.8	93.8	98.8	98.8	99.4
#200	**0.075**	2.7	1.3	1.1	57.8	94.7	90.4	89.8	98.3	97.1	98.8
Hydrometer Readings (% less than the following sizes)		0.4 @ 0.0365 mm	0.3 @ 0.0366 mm	0.3 @ 0.0369 mm	56.8 @ 0.0319 mm	94.0 @ 0.0312 mm	90.3 @ 0.0307 mm	89.3 @ 0.0313 mm	98.2 @ 0.0316 mm	94.7 @ 0.0314 mm	96.7 @ 0.0322 mm
		0.4 @ 0.0231 mm	0.3 @ 0.0231 mm	0.3 @ 0.0234 mm	52.1 @ 0.0205 mm	88.9 @ 0.0200 mm	85.3 @ 0.0196 mm	84.2 @ 0.0200 mm	92.6 @ 0.0202 mm	92.9 @ 0.0200 mm	92.6 @ 0.0205 mm
		0.4 @ 0.0133 mm	0.3 @ 0.0133 mm	0.3 @ 0.0135 mm	47.4 @ 0.0120 mm	76.8 @ 0.0118 mm	77.0 @ 0.0115 mm	75.7 @ 0.0118 mm	83.2 @ 0.0119 mm	85.9 @ 0.0117 mm	88.4 @ 0.0119 mm
		0.4 @ 0.0094 mm	0.3 @ 0.0094 mm	0.3 @ 0.0095 mm	41.6 @ 0.0086 mm	68.1 @ 0.0085 mm	67.1 @ 0.0083 mm	68.9 @ 0.0084 mm	75.8 @ 0.0085 mm	78.8 @ 0.0084 mm	80.1 @ 0.0085 mm
		0.4 @ 0.0067 mm	0.3 @ 0.0067 mm	0.3 @ 0.0067 mm	36.9 @ 0.0062 mm	59.5 @ 0.0061 mm	58.8 @ 0.0060 mm	65.5 @ 0.0060 mm	64.5 @ 0.0061 mm	71.7 @ 0.0060 mm	71.7 @ 0.0061 mm
		0.4 @ 0.0033 mm	0.3 @ 0.0033 mm	0.3 @ 0.0033 mm	31.0 @ 0.0031 mm	52.6 @ 0.0030 mm	52.2 @ 0.0030 mm	57.0 @ 0.0030 mm	60.8 @ 0.0030 mm	64.6 @ 0.0030 mm	65.5 @ 0.0030 mm
		0.4 @ 0.0014 mm	0.3 @ 0.0014 mm	0.3 @ 0.0014 mm	26.3 @ 0.0013 mm	45.7 @ 0.0013 mm	43.9 @ 0.0013 mm	48.5 @ 0.0013 mm	53.3 @ 0.0013 mm	55.7 @ 0.0013 mm	55.1 @ 0.0013 mm

TABLE 4 (*continued*)
Results of Physical Analyses for Composited Sediment Samples

Composite ID: AlWW21-		Winyah Bay to Charleston			Charleston to Port Royal						
		WC-11	WC-12	WC-13	CP-14	CP-15	CP-16	CP-17	CP-18	CP-19	CP-20
Sediment Description		Sand, poorly-graded with clay, mostly medium to fine-grained quartz, few clay, trace coarse to fine sand-size shell fragments, trace silt, brown	Clayey sand, mostly medium to fine-grained quartz, little clay, little silt, trace fibrous organic matter, gray	Elastic silt, few medium to fine-grained quartz sand, trace coarse to fine sand-size shell fragments, trace fibrous organic matter, gray	Sand, poorly-graded with clay, mostly medium to fine-grained quartz sand, few clay, trace silt, brown	Sandy fat clay, some medium to fine-grained quartz sand, little silt, trace coarse to fine sand-size shell fragments, trace fibrous organic matter, gray	Elastic silt with sand, some clay, little medium to fine-grained quartz, trace fibrous organic matter, gray	Fat clay, little silt, few medium to fine-grained quartz sand, trace coarse to fine sand-size shell fragments, trace fibrous organic matter, gray	Clayey sand, mostly medium to fine-grained quartz, little clay, little silt, trace coarse to fine sand-size shell fragments, trace fine gravel-size shell fragments, trace fibrous organic matter, gray	Sandy fat clay, some medium to fine-grained quartz sand, little silt, trace coarse to fine sand-size shell fragments, trace fibrous organic matter, gray	Fat clay, little silt, few medium to fine-grained quartz sand, trace fibrous organic matter, gray
% Gravel		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
% Coarse Sand		0.1	0.1	0.3	0.5	0.1	0.2	0.2	0.1	0.1	0.0
% Medium Sand		31.9	11.8	1.2	33.0	1.2	0.7	0.6	0.5	0.4	0.9
% Fine Sand		61.2	49.9	6.6	61.0	48.1	14.9	4.4	63.8	41.5	7.6
% Sand (total)		93.2	61.8	8.1	94.5	49.4	15.8	5.2	64.4	42.0	8.5
% Silt		1.8	15.7	26.0	0.5	18.5	36.4	24.2	12.2	26.9	29.5
% Clay		5.0	22.5	65.9	5.0	32.1	47.8	70.6	23.1	31.1	62.0
% Silt & Clay (combined)		6.8	38.2	91.9	5.5	50.6	84.2	94.8	35.3	58.0	91.5
USCS Classification		SP-SM	SC	MH	SP-SM	CH	MH	CH	SC	CH	CH
Specific Gravity		2.641	2.631	2.619	2.665	2.614	2.610	2.625	2.639	2.607	2.602
Settling Rates (g/L)		1471	877	787	1754	820	909	568	917	855	730
Atterberg Limits	**PL**	NP	26	82	NP	32	57	62	27	27	51
	LL	NP	64	207	NP	79	141	223	62	78	173
	PI	NP	38	125	NP	47	84	161	35	51	122
% Passing Sieve Size	**Metric Equivalent (mm)**										
1 inch	**25.4**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.75 inch	**19.1**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.375 inch	**9.5**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
#4	**4.75**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.7	100.0	100.0
#10	**2.00**	99.9	99.9	99.7	99.5	99.9	99.8	99.8	99.6	99.9	100.0
#20	**0.85**	97.0	97.1	99.7	93.4	99.4	99.5	99.5	99.4	99.6	99.6
#40	**0.425**	68.0	88.1	98.5	66.5	98.7	99.1	99.2	99.1	99.5	99.1
#60	**0.250**	30.3	70.1	97.3	44.1	97.0	98.4	98.8	97.1	99.2	98.9
#100	**0.149**	10.2	46.9	95.3	11.9	80.8	95.9	97.7	56.2	95.7	97.3
#200	**0.075**	6.8	38.2	91.9	5.5	50.6	84.2	94.8	35.3	58.0	91.5
Hydrometer Readings (% less than the following sizes)		6.1 @ 0.0357 mm	35.0 @ 0.0329 mm	91.3 @ 0.0325 mm	5.0 @ 0.0357 mm	46.3 @ 0.0326 mm	70.2 @ 0.0319 mm	91.5 @ 0.0324 mm	33.2 @ 0.0330 mm	44.4 @ 0.0327 mm	86.3 @ 0.0320 mm
		5.0 @ 0.0227 mm	31.4 @ 0.0211 mm	87.0 @ 0.0207 mm	5.0 @ 0.0226 mm	44.2 @ 0.0208 mm	64.4 @ 0.0205 mm	89.4 @ 0.0205 mm	30.5 @ 0.0211 mm	40.3 @ 0.0210 mm	79.3 @ 0.0206 mm
		5.0 @ 0.0131 mm	29.6 @ 0.0122 mm	82.7 @ 0.0120 mm	5.0 @ 0.0130 mm	39.8 @ 0.0121 mm	60.1 @ 0.0120 mm	81.2 @ 0.0120 mm	27.8 @ 0.0123 mm	38.3 @ 0.0122 mm	72.3 @ 0.0120 mm
		5.0 @ 0.0093 mm	25.9 @ 0.0088 mm	78.4 @ 0.0086 mm	5.0 @ 0.0092 mm	36.5 @ 0.0087 mm	55.8 @ 0.0085 mm	79.1 @ 0.0085 mm	26.0 @ 0.0088 mm	35.2 @ 0.0087 mm	67.0 @ 0.0086 mm
		5.0 @ 0.0066 mm	23.2 @ 0.0063 mm	69.8 @ 0.0061 mm	5.0 @ 0.0065 mm	33.3 @ 0.0062 mm	50.0 @ 0.0061 mm	72.9 @ 0.0061 mm	23.4 @ 0.0062 mm	32.1 @ 0.0062 mm	63.5 @ 0.0061 mm
		5.0 @ 0.0032 mm	22.3 @ 0.0031 mm	61.2 @ 0.0030 mm	5.0 @ 0.0032 mm	31.1 @ 0.0031 mm	45.6 @ 0.0030 mm	68.7 @ 0.0030 mm	22.5 @ 0.0031 mm	30.0 @ 0.0031 mm	58.2 @ 0.0030 mm
		3.8 @ 0.0013 mm	18.6 @ 0.0013 mm	52.6 @ 0.0013 mm	3.8 @ 0.0013 mm	26.7 @ 0.0013 mm	39.8 @ 0.0013 mm	56.3 @ 0.0013 mm	18.9 @ 0.0013 mm	24.9 @ 0.0013 mm	47.7 @ 0.0013 mm

See Appendix C for grain size distribution graphs and laboratory triplicate results.
Grain sizes and soil classifications are defined at the front of the tables section.

Source: Terracon
Compiled by: ANAMAR Environmental Consulting, Inc.

TABLE 5
Analytical Results for Dry Weight Metals, TOC, Total Solids, and Tributyltin in Sediment Samples

				Little River to Winyah Bay												Winyah Bay to Charleston											
		Sample ID:		AIWW21-LB-1				AIWW21-LB-2				AIWW21-LB-3				AIWW21-WC-4				AIWW21-WC-5				AIWW21-WC-6			
Analyte	Maximum Conc. mg/kg	TEL mg/kg	ERL mg/kg	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL
Metals																											
Antimony	0.26	x	x	ND	U	0.028	0.13	ND	U	0.026	0.12	ND	U	0.027	0.12	0.12	J	0.067	0.30	0.13	J	0.086	0.39	0.11	J	0.070	0.32
Arsenic	**25**	7.24	8.2	0.79	--	0.020	0.063	0.43	--	0.019	0.060	0.094	--	0.020	0.062	**18**	--	0.049	0.15	**21**	--	0.062	0.20	**18**	--	0.051	0.16
Cadmium	0.21	0.676	1.2	0.032	J	0.011	0.063	0.011	J	0.010	0.060	ND	U	0.011	0.062	0.11	J	0.026	0.15	0.049	J	0.033	0.20	0.047	J	0.027	0.16
Chromium	51	52.3	81	3.5	B	0.053	0.13	1.3	B	0.050	0.12	0.68	B	0.052	0.12	33	B	0.13	0.30	42	B	0.16	0.39	40	B	0.13	0.32
Copper	**21**	18.7	34	0.84	--	0.13	0.19	0.13	J	0.12	0.18	ND	U	0.13	0.19	9.9	--	0.31	0.46	12	--	0.40	0.59	11	--	0.33	0.48
Lead	23	30.24	46.7	1.8	--	0.063	0.063	1.3	--	0.060	0.060	0.48	--	0.062	0.062	13	--	0.15	0.15	17	--	0.20	0.20	17	--	0.16	0.16
Mercury	0.065	0.13	0.15	ND	U	0.013	0.02	ND	U	0.012	0.019	ND	U	0.013	0.020	ND	U	0.032	0.049	ND	U	0.041	0.064	ND	U	0.034	0.053
Nickel	**17**	15.9	20.9	0.88	--	0.060	0.063	0.18	--	0.056	0.060	0.12	--	0.058	0.062	9.9	--	0.14	0.15	13	--	0.18	0.20	12	--	0.15	0.16
Selenium	0.84	x	x	ND	U	0.077	0.32	ND	U	0.073	0.30	ND	U	0.076	0.31	0.49	J	0.19	0.76	0.48	J	0.24	0.98	0.41	J	0.19	0.79
Silver	0.074	0.730	1	ND	U	0.018	0.063	ND	U	0.017	0.060	ND	U	0.017	0.062	0.047	J	0.043	0.15	ND	U	0.055	0.20	ND	U	0.045	0.16
Zinc	83	124	150	10	--	0.31	0.32	1.5	--	0.29	0.30	0.71	--	0.30	0.31	42	--	0.73	0.76	53	--	0.94	0.98	51	--	0.77	0.79
Others																											
Analyte	**Maximum Conc. %**	**TEL %**	**ERL %**	**Result %**	**Qualifier**	**MDL**	**MRL**	**Result %**	**Qualifier**	**MDL**	**MRL**	**Result %**	**Qualifier**	**MDL**	**MRL**	**Result %**	**Qualifier**	**MDL**	**MRL**	**Result %**	**Qualifier**	**MDL**	**MRL**	**Result %**	**Qualifier**	**MDL**	**MRL**
Carbon, Total Organic	6.4	x	x	0.16	--	0.096	0.13	0.13	--	0.090	0.12	ND	U	0.094	0.13	2.60	--	0.23	0.30	3.6	--	0.30	0.40	2.9	--	0.24	0.32
Total Solids	82.5	x	x	77.4				82.5				79.8				32.9				25.2				31.1			
Analyte	**Maximum Conc. µg/kg**	**TEL µg/kg**	**ERL µg/kg**	**Result µg/kg**	**Qualifier**	**MDL**	**MRL**	**Result µg/kg**	**Qualifier**	**MDL**	**MRL**	**Result µg/kg**	**Qualifier**	**MDL**	**MRL**	**Result µg/kg**	**Qualifier**	**MDL**	**MRL**	**Result µg/kg**	**Qualifier**	**MDL**	**MRL**	**Result µg/kg**	**Qualifier**	**MDL**	**MRL**
Tributyltin	ND	x	x	ND	U	1.9	1.9	ND	U	1.8	1.8	ND	U	1.8	1.8												

TABLE 5 (*continued*)
Analytical Results for Dry Weight Metals, TOC, Total Solids, and Tributyltin in Sediment Samples

Sample ID:	Winyah Bay to Charleston																							
	AIWW21-WC-7				AIWW21-WC-8				AIWW21-WC-9				AIWW21-WC-10				AIWW21-WC-11				AIWW21-WC-12				AIWW21-WC-13			
Analyte	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL
Metals																												
Antimony	0.12	J	0.076	0.35	0.17	J	0.087	0.40	0.13	J	0.082	0.37	0.19	J	0.10	0.46	ND	U	0.030	0.14	0.10	J	0.057	0.26	0.26	J	0.10	0.46
Arsenic	**20**	--	0.055	0.17	**25**	--	0.064	0.20	**22**	--	0.060	0.19	**23**	--	0.074	0.23	1.9	--	0.022	0.069	**9.7**	--	0.041	0.13	**22**	--	0.074	0.23
Cadmium	0.042	J	0.029	0.17	0.051	J	0.034	0.20	0.056	J	0.032	0.19	0.054	J	0.039	0.23	ND	U	0.012	0.069	0.039	J	0.022	0.13	0.079	J	0.039	0.23
Chromium	38	B	0.15	0.35	45	B	0.17	0.40	43	B	0.16	0.37	47	B	0.19	0.46	4.0	B	0.058	0.14	22	B	0.11	0.26	48	B	0.19	0.46
Copper	12	--	0.36	0.52	14	--	0.41	0.60	15	--	0.38	0.56	**19**	--	0.48	0.70	0.91	--	0.14	0.21	8.2	--	0.27	0.39	**21**	--	0.48	0.69
Lead	17	--	0.17	0.17	19	--	0.20	0.20	19	--	0.19	0.19	21	--	0.23	0.23	1.7	--	0.069	0.069	10	--	0.13	0.13	23	--	0.23	0.23
Mercury	ND	U	0.037	0.058	ND	U	0.042	0.066	0.043	J	0.038	0.059	ND	U	0.049	0.076	ND	U	0.014	0.022	0.031	J	0.027	0.042	0.065	J	0.050	0.078
Nickel	12	--	0.16	0.17	15	--	0.19	0.20	14	--	0.18	0.19	**16**	--	0.22	0.23	1.5	--	0.065	0.069	7.4	--	0.12	0.13	**17**	--	0.22	0.23
Selenium	0.46	J	0.21	0.87	0.61	J	0.24	0.99	0.59	J	0.23	0.93	0.69	J	0.28	1.2	ND	U	0.084	0.34	0.34	J	0.16	0.65	0.72	J	0.28	1.2
Silver	ND	U	0.049	0.17	ND	U	0.056	0.20	ND	U	0.052	0.19	ND	U	0.065	0.23	ND	U	0.019	0.069	ND	U	0.036	0.13	ND	U	0.065	0.23
Zinc	51	--	0.84	0.87	58	--	0.96	0.99	58	--	0.90	0.93	67	--	1.1	1.2	7.7	--	0.33	0.34	31	--	0.62	0.65	83	--	1.1	1.2
Others																												
Analyte	Result %	Qualifier	MDL	MRL	Result %	Qualifier	MDL	MRL	Result %	Qualifier	MDL	MRL	Result %	Qualifier	MDL	MRL	Result %	Qualifier	MDL	MRL	Result %	Qualifier	MDL	MRL	Result %	Qualifier	MDL	MRL
Carbon, Total Organic	3.4	--	0.26	0.35	3.9	--	0.30	0.40	4.5	--	0.28	0.38	4.5	--	0.35	0.47	0.26	--	0.11	0.14	2.3	--	0.19	0.26	5.5	--	0.35	0.47
Total Solids	28.4				24.8				26.6				21.4				70.7				38.5				21.1			
Analyte	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL
Tri-n-butyltin Cation																												

TABLE 5 (*continued*)
Analytical Results for Dry Weight Metals, TOC, Total Solids, and Tributyltin in Sediment Samples

Sample ID:	Charleston to Port Royal																							
	AIWW21-CP-14				AIWW21-CP-15				AIWW21-CP-16				AIWW21-CP-17				AIWW21-CP-18				AIWW21-CP-19				AIWW21-CP-20			
Analyte	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL	Result mg/kg	Qualifier	MDL	MRL
Metals																												
Antimony	ND	U	0.029	0.13	0.087	J	0.056	0.25	0.10	J	0.073	0.33	0.15	J	0.096	0.44	0.057	J	0.049	0.22	0.060	J	0.048	0.22	0.11	J	0.082	0.37
Arsenic	0.92	--	0.021	0.065	**11**	--	0.040	0.13	**15**	--	0.053	0.17	**20**	--	0.070	0.22	7.0	--	0.036	0.11	**9.3**	--	0.035	0.11	**16**	--	0.059	0.19
Cadmium	0.011	J	0.011	0.065	0.098	J	0.021	0.13	0.14	J	0.028	0.17	0.21	J	0.037	0.22	0.081	J	0.019	0.11	0.090	J	0.019	0.11	0.16	J	0.032	0.19
Chromium	2.8	B	0.055	0.13	26	B	0.11	0.25	36	B	0.14	0.33	51	B	0.18	0.44	18	B	0.093	0.22	24	B	0.092	0.22	41	B	0.16	0.37
Copper	0.46	--	0.13	0.20	6.2	--	0.26	0.38	8.9	--	0.34	0.50	12	--	0.45	0.65	3.7	--	0.23	0.33	4.4	--	0.23	0.33	8.4	--	0.38	0.56
Lead	1.3	--	0.065	0.065	10	--	0.13	0.13	14	--	0.17	0.17	22	--	0.22	0.22	7.0	--	0.11	0.11	9.1	--	0.11	0.11	16	--	0.19	0.19
Mercury	ND	U	0.014	0.021	ND	U	0.026	0.040	0.039	J	0.035	0.055	0.060	J	0.045	0.070	ND	U	0.023	0.036	ND	U	0.023	0.035	0.048	J	0.039	0.061
Nickel	0.78	--	0.061	0.065	7.2	--	0.12	0.13	10	--	0.16	0.17	14	--	0.20	0.22	4.7	--	0.10	0.11	5.8	--	0.10	0.11	11	--	0.17	0.19
Selenium	ND	U	0.080	0.33	0.39	J	0.15	0.63	0.57	J	0.20	0.83	0.84	J	0.27	1.1	0.30	J	0.14	0.56	0.31	J	0.13	0.55	0.59	J	0.23	0.93
Silver	ND	U	0.018	0.065	ND	U	0.035	0.13	ND	U	0.046	0.17	0.074	J	0.061	0.22	ND	U	0.031	0.11	ND	U	0.031	0.11	ND	U	0.052	0.19
Zinc	2.3	--	0.32	0.33	31	--	0.61	0.63	44	--	0.80	0.83	65	--	1.0	1.1	21	--	0.54	0.56	29	--	0.53	0.55	49	--	0.90	0.93
Others																												
Analyte	Result %	Qualifier	MDL	MRL	Result %	Qualifier	MDL	MRL	Result %	Qualifier	MDL	MRL	Result %	Qualifier	MDL	MRL	Result %	Qualifier	MDL	MRL	Result %	Qualifier	MDL	MRL	Result %	Qualifier	MDL	MRL
Carbon, Total Organic	0.31	--	0.1	0.13	2.5	--	0.19	0.26	5.7	--	0.25	0.33	6.4	--	0.33	0.44	1.8	--	0.17	0.22	2.0	--	0.17	0.22	4.9	--	0.28	0.38
Total Solids	75.0				39.2				30.0				22.7				45.0				45.1				26.3			
Analyte	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL
Tri-n-butyltin Cation									ND	U	5.0	5.0																

Bolded values meet or exceed the TEL and (or) ERL.
Non-detect (ND) = The analyte was not detected at or above the MDL.
Acronyms and qualifiers are defined at the front of the tables section.

Sources: Results from Eurofins TestAmerica; TEL and ERL values from Buchman (2008).
Compiled by: ANAMAR Environmental Consulting, Inc.

TABLE 6
Analytical Results for Dry Weight PAHs in Sediment Samples

Analyte	Maximum Conc. µg/kg	TEL µg/kg	ERL µg/kg	Little River to Winyah Bay												Winyah Bay to Charleston											
				Sample ID: AIWW21-LB-1				AIWW21-LB-2				AIWW21-LB-3				AIWW21-WC-4				AIWW21-WC-5				AIWW21-WC-6			
				Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL
1-Methylnaphthalene[LMW]	<7.2	x	x	3.1	J	0.97	4.3	2.9	J	0.91	4.0	ND	U	0.94	4.1	ND	U	4.6	20	ND	U	5.9	26	ND	U	4.8	21
2-Methylnaphthalene[LMW]	<7.5	20.2	70	5.8	--	1.0	4.3	6.2	--	0.95	4.0	ND	U	0.99	4.1	ND	U	4.8	20	ND	U	6.3	26	ND	U	5.1	21
Acenaphthene[LMW]	<9.1	6.71	16	3.1	J	1.2	4.3	2.3	J	1.1	4.0	ND	U	1.2	4.1	ND	U	5.8	20	ND	U	7.5	26	ND	U	6.1	21
Acenaphthylene	<6.9	5.87	44	1.0	J	0.93	4.3	ND	U	0.87	4.0	ND	U	0.90	4.1	ND	U	4.4	20	ND	U	5.7	26	ND	U	4.7	21
Anthracene[LMW]	<8.2	46.9	85.3	1.6	J	1.1	4.3	ND	U	1.0	4.0	ND	U	1.1	4.1	ND	U	5.2	20	ND	U	6.8	26	ND	U	5.5	21
Benzo(a)anthracene[HMW]	<14	74.8	261	11	--	1.9	4.3	ND	U	1.8	4.0	ND	U	1.9	4.1	ND	U	9.1	20	ND	U	12	26	ND	U	9.6	21
Benzo(a)pyrene[HMW]	<16	88.8	430	16	--	1.8	4.3	ND	U	1.7	4.0	ND	U	1.8	4.1	ND	U	8.8	20	ND	U	11	26	ND	U	9.2	21
Benzo(b)fluoranthene	22	x	x	22	--	1.0	4.3	1.9	J	0.98	4.0	ND	U	1.0	4.1	ND	U	5.0	20	ND	U	6.4	26	ND	U	5.2	21
Benzo(g,h,i)perylene	18	x	x	18	--	0.91	4.3	ND	U	0.86	4.0	ND	U	0.89	4.1	ND	U	4.4	20	ND	U	5.6	26	ND	U	4.6	21
Benzo(k)fluoranthene	<9.4	x	x	7.8	--	1.3	4.3	ND	U	1.2	4.0	ND	U	1.2	4.1	ND	U	6.1	20	ND	U	7.8	26	ND	U	6.4	21
Chrysene[HMW]	17	108	384	17	--	2.3	4.3	ND	U	2.2	4.0	ND	U	2.3	4.1	ND	U	11	20	ND	U	14	26	ND	U	12	21
Dibenzo(a,h)anthracene[HMW]	<20	6.22	63.4	4.0	J	2.7	4.3	ND	U	2.5	4.0	ND	U	2.6	4.1	ND	U	13	20	ND	U	17	26	ND	U	14	21
Fluoranthene[HMW]	33	113	600	33	--	1.1	4.3	4.8	--	1.0	4.0	ND	U	1.1	4.1	7.7	J	5.3	20	ND	U	6.9	26	ND	U	5.6	21
Fluorene[LMW]	<6.2	21.2	19	2.1	J	0.83	4.3	1.6	J	0.78	4.0	ND	U	0.81	4.1	ND	U	4.0	20	ND	U	5.1	26	ND	U	4.2	21
Indeno(1,2,3-cd)pyrene	<16	x	x	15	--	2.1	4.3	ND	U	2.0	4.0	ND	U	2.1	4.1	ND	U	10	20	ND	U	13	26	ND	U	11	21
Naphthalene[LMW]	**56**	34.6	160	**47**	--	0.83	4.3	**56**	--	0.77	4.0	6.4	--	0.80	4.1	23	--	3.9	20	24	J	5.1	26	11	J	4.1	21
Phenanthrene[LMW]	16	86.7	240	16	--	1.1	4.3	5.7	--	1.1	4.0	ND	U	1.1	4.1	ND	U	5.4	20	ND	U	7.0	26	ND	U	5.7	21
Pyrene[HMW]	25	153	665	25	--	1.0	4.3	3.9	J	0.94	4.0	ND	U	0.98	4.1	5.8	J	4.8	20	ND	U	6.2	26	ND	U	5.0	21
Total LMW PAHs	79	312	552	79				76				13				53				63				42			
Total HMW PAHs	106	655	1700	106				17				11				55				67				55			
Total PAHs	249	1684	4022	249				99				29				138				168				130			

TABLE 6 (*continued*)
Analytical Results for Dry Weight PAHs in Sediment Samples

Sample ID:	Winyah Bay to Charleston																							
	AIWW21-WC-7				AIWW21-WC-8				AIWW21-WC-9				AIWW21-WC-10				AIWW21-WC-11				AIWW21-WC-12				AIWW21-WC-13			
Analyte	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL
1-Methylnaphthalene[LMW]	ND	U	5.3	23	ND	U	6.1	27	ND	U	5.6	25	ND	U	7.1	31	ND	U	2.1	9.4	ND	U	4.0	17	ND	U	7.2	32
2-Methylnaphthalene[LMW]	ND	U	5.6	23	ND	U	6.4	27	ND	U	5.9	25	ND	U	7.4	31	ND	U	2.2	9.4	ND	U	4.2	17	ND	U	7.5	32
Acenaphthene[LMW]	ND	U	6.7	23	ND	U	7.7	27	ND	U	7.1	25	ND	U	8.9	31	ND	U	2.7	9.4	ND	U	5.0	17	ND	U	9.1	32
Acenaphthylene	ND	U	5.1	23	ND	U	5.8	27	ND	U	5.4	25	ND	U	6.8	31	ND	U	2.0	9.4	ND	U	3.8	17	ND	U	6.9	32
Anthracene[LMW]	ND	U	6.0	23	ND	U	6.9	27	ND	U	6.4	25	ND	U	8.0	31	ND	U	2.4	9.4	ND	U	4.5	17	ND	U	8.2	32
Benzo(a)anthracene[HMW]	ND	U	11	23	ND	U	12	27	ND	U	11	25	ND	U	14	31	ND	U	4.2	9.4	ND	U	7.8	17	ND	U	14	32
Benzo(a)pyrene[HMW]	ND	U	10	23	ND	U	12	27	ND	U	11	25	ND	U	13	31	ND	U	4.0	9.4	ND	U	7.5	17	ND	U	14	32
Benzo(b)fluoranthene	ND	U	5.7	23	ND	U	6.6	27	ND	U	6.1	25	ND	U	7.6	31	ND	U	2.3	9.4	ND	U	4.3	17	ND	U	7.7	32
Benzo(g,h,i)perylene	ND	U	5.0	23	ND	U	5.8	27	ND	U	5.3	25	ND	U	6.7	31	ND	U	2.0	9.4	ND	U	3.7	17	ND	U	6.8	32
Benzo(k)fluoranthene	ND	U	7.0	23	ND	U	8.0	27	ND	U	7.4	25	ND	U	9.3	31	ND	U	2.8	9.4	ND	U	5.2	17	ND	U	9.4	32
Chrysene[HMW]	ND	U	13	23	ND	U	15	27	ND	U	14	25	ND	U	17	31	ND	U	5.2	9.4	ND	U	9.6	17	ND	U	17	32
Dibenzo(a,h)anthracene[HMW]	ND	U	15	23	ND	U	17	27	ND	U	16	25	ND	U	20	31	ND	U	6.0	9.4	ND	U	11	17	ND	U	20	32
Fluoranthene[HMW]	ND	U	6.2	23	ND	U	7.0	27	ND	U	6.5	25	9.9	J	8.2	31	ND	U	2.5	9.4	ND	U	4.6	17	ND	U	8.3	32
Fluorene[LMW]	ND	U	4.6	23	ND	U	5.2	27	ND	U	4.9	25	ND	U	6.1	31	ND	U	1.8	9.4	ND	U	3.4	17	ND	U	6.2	32
Indeno(1,2,3-cd)pyrene	ND	U	12	23	ND	U	13	27	ND	U	12	25	ND	U	15	31	ND	U	4.6	9.4	ND	U	8.6	17	ND	U	16	32
Naphthalene[LMW]	22	J	4.5	23	18	J	5.2	27	ND	U	4.8	25	ND	U	6.0	31	ND	U	1.8	9.4	ND	U	3.4	17	ND	U	6.1	32
Phenanthrene[LMW]	ND	U	6.3	23	ND	U	7.2	27	ND	U	6.6	25	ND	U	8.3	31	ND	U	2.5	9.4	ND	U	4.7	17	ND	U	8.4	32
Pyrene[HMW]	ND	U	5.5	23	ND	U	6.3	27	ND	U	5.9	25	9.2	J	7.3	31	ND	U	2.2	9.4	ND	U	4.1	17	ND	U	7.5	32
Total LMW PAHs	57				58				41				52				16				29				53			
Total HMW PAHs	61				69				64				83				24				45				81			
Total PAHs	152				166				142				180				53				99				180			

TABLE 6 (*continued*)
Analytical Results for Dry Weight PAHs in Sediment Samples

Sample ID:	Charleston to Port Royal																							
	AIWW21-CP-14				AIWW21-CP-15				AIWW21-CP-16				AIWW21-CP-17				AIWW21-CP-18				AIWW21-CP-19				AIWW21-CP-20			
Analyte	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL
1-Methylnaphthalene[LMW]	ND	U	2.0	8.9	ND	U	3.8	17	ND	U	5.1	22	ND	U	6.7	29	ND	U	3.4	15	ND	U	3.3	15	ND	U	5.8	25
2-Methylnaphthalene[LMW]	ND	U	2.1	8.9	ND	U	4.0	17	ND	U	5.3	22	ND	U	7.0	29	ND	U	3.5	15	ND	U	3.5	15	ND	U	6.1	25
Acenaphthene[LMW]	ND	U	2.5	8.9	ND	U	4.8	17	ND	U	6.4	22	ND	U	8.4	29	ND	U	4.2	15	ND	U	4.2	15	ND	U	7.3	25
Acenaphthylene	ND	U	1.9	8.9	ND	U	3.7	17	ND	U	4.9	22	ND	U	6.4	29	ND	U	3.2	15	ND	U	3.2	15	ND	U	5.5	25
Anthracene[LMW]	ND	U	2.3	8.9	ND	U	4.3	17	ND	U	5.7	22	ND	U	7.6	29	ND	U	3.8	15	ND	U	3.8	15	ND	U	6.6	25
Benzo(a)anthracene[HMW]	ND	U	4.0	8.9	ND	U	7.6	17	12	J	10	22	ND	U	13	29	ND	U	6.6	15	ND	U	6.6	15	ND	U	11	25
Benzo(a)pyrene[HMW]	ND	U	3.8	8.9	ND	U	7.3	17	ND	U	9.6	22	ND	U	13	29	ND	U	6.4	15	ND	U	6.3	15	ND	U	11	25
Benzo(b)fluoranthene	ND	U	2.2	8.9	ND	U	4.1	17	ND	U	5.5	22	ND	U	7.2	29	ND	U	3.6	15	ND	U	3.6	15	ND	U	6.2	25
Benzo(g,h,i)perylene	ND	U	1.9	8.9	ND	U	3.6	17	ND	U	4.8	22	ND	U	6.3	29	ND	U	3.2	15	ND	U	3.2	15	ND	U	5.5	25
Benzo(k)fluoranthene	ND	U	2.6	8.9	ND	U	5.0	17	ND	U	6.6	22	ND	U	8.8	29	ND	U	4.4	15	ND	U	4.4	15	ND	U	7.6	25
Chrysene[HMW]	ND	U	4.9	8.9	ND	U	9.3	17	ND	U	12	22	ND	U	16	29	ND	U	8.2	15	ND	U	8.1	15	ND	U	14	25
Dibenzo(a,h)anthracene[HMW]	ND	U	5.6	8.9	ND	U	11	17	ND	U	14	22	ND	U	19	29	ND	U	9.4	15	ND	U	9.4	15	ND	U	16	25
Fluoranthene[HMW]	4.4	J	2.3	8.9	4.9	J	4.4	17	19	J	5.8	22	ND	U	7.7	29	ND	U	3.9	15	ND	U	3.9	15	ND	U	6.7	25
Fluorene[LMW]	ND	U	1.7	8.9	ND	U	3.3	17	ND	U	4.4	22	ND	U	5.7	29	ND	U	2.9	15	ND	U	2.9	15	ND	U	5.0	25
Indeno(1,2,3-cd)pyrene	ND	U	4.4	8.9	ND	U	8.3	17	ND	U	11	22	ND	U	15	29	ND	U	7.3	15	ND	U	7.3	15	ND	U	13	25
Naphthalene[LMW]	ND	U	1.7	8.9	ND	U	3.3	17	ND	U	4.3	22	ND	U	5.7	29	ND	U	2.9	15	ND	U	2.8	15	ND	U	4.9	25
Phenanthrene[LMW]	3.4	J	2.4	8.9	ND	U	4.5	17	5.9	J	5.9	22	ND	U	7.8	29	ND	U	3.9	15	ND	U	3.9	15	ND	U	6.8	25
Pyrene[HMW]	3.9	J	2.1	8.9	6.3	J	4.0	17	17	J	5.3	22	ND	U	6.9	29	ND	U	3.5	15	ND	U	3.5	15	ND	U	6.0	25
Total LMW PAHs	16				28				37				49				25				24				43			
Total HMW PAHs	27				46				84				76				38				38				65			
Total PAHs	55				99				154				168				84				84				145			

LMW Low molecular weight PAHs (NOAA 1989).

HMW High molecular weight PAHs (NOAA 1989).

Bolded values meet or exceed the TEL and (or) ERL.

Underlined values represent U-qualified results having an MDL that meets or exceeds the TEL and (or) ERL.

Non-detect (ND) = The analyte was not detected at or above the MDL. Non-detect results use the MDL for calculating the total PAHs. (J-qualified results use the value reported by the laboratory for calculating total PAHs.)

Acronyms and qualifiers are defined at the front of the tables section.

Sources: Results from Eurofins TestAmerica; TEL and ERL values from Buchman (2008).
Compiled by: ANAMAR Environmental Consulting, Inc.

TABLE 7
Analytical Results for Dry Weight Pesticides in Sediment Samples

			Sample ID:	Little River to Winyah Bay												Charleston to Port Royal			
				AIWW21-LB-1				AIWW21-LB-2				AIWW21-LB-3				AIWW21-CP-16			
Analyte	Maximum Conc. µg/kg	TEL µg/kg	ERL µg/kg	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL
Aldrin	ND	x	x	ND	U	0.017	0.054	ND	U	0.015	0.050	ND	U	0.016	0.052	ND	U	0.043	0.14
Chlordane (technical)	ND	2.26	0.5	ND	U	0.23	0.54	ND	U	0.21	0.50	ND	U	0.22	0.52	ND	U	0.59	1.4
α (cis)-Chlordane	ND	x	x	ND	U	0.013	0.054	ND	U	0.012	0.050	ND	U	0.013	0.052	ND	U	0.034	0.14
γ (trans)-Chlordane	0.053	x	x	ND	U	0.012	0.054	ND	U	0.012	0.050	ND	U	0.012	0.052	0.053	J p	0.032	0.14
Oxychlordane	0.039	x	x	ND	U	0.0095	0.054	ND	U	0.0088	0.050	ND	U	0.0092	0.052	0.039	J	0.024	0.14
cis-Nonachlor	ND	x	x	ND	U	0.017	0.054	ND	U	0.016	0.050	ND	U	0.017	0.052	ND	U	0.044	0.14
trans-Nonachlor	ND	x	x	ND	U	0.013	0.054	ND	U	0.012	0.050	ND	U	0.013	0.052	ND	U	0.033	0.14
o,p' (2,4')-DDD	ND	x	x	ND	U	0.0095	0.054	ND	U	0.0088	0.050	ND	U	0.0092	0.052	ND	U	0.024	0.14
p,p' (4,4')-DDD	0.18	1.22	2	ND	U	0.023	0.054	ND	U	0.021	0.050	ND	U	0.022	0.052	0.18	p	0.059	0.14
o,p' (2,4')-DDE	ND	x	x	ND	U	0.014	0.054	ND	U	0.013	0.050	ND	U	0.013	0.052	ND	U	0.035	0.14
p,p' (4,4')-DDE	0.32	2.07	2.2	ND	U	0.011	0.054	ND	U	0.010	0.050	ND	U	0.011	0.052	0.32	--	0.028	0.14
o,p' (2,4')-DDT	ND	x	x	ND	U	0.021	0.054	ND	U	0.019	0.050	ND	U	0.020	0.052	ND	U	0.054	0.14
p,p' (4,4')-DDT	ND	1.19	1	ND	U	0.038	0.054	ND	U	0.036	0.050	ND	U	0.037	0.052	ND	U	0.098	0.14
Dieldrin	ND	0.715	0.02	ND	U	0.013	0.054	ND	U	0.012	0.050	ND	U	0.013	0.052	ND	U	0.034	0.14
Endosulfan I	ND	x	x	ND	U	0.015	0.054	ND	U	0.014	0.050	ND	U	0.014	0.052	ND	U	0.037	0.14
Endosulfan II	ND	x	x	ND	U	0.012	0.054	ND	U	0.011	0.050	ND	U	0.011	0.052	ND	U	0.030	0.14
Endrin	0.072	x	x	0.020	J p	0.010	0.054	ND	U	0.0093	0.050	ND	U	0.0097	0.052	0.072	J p	0.026	0.14
Endrin Aldehyde	0.12	x	x	ND	U	0.019	0.054	ND	U	0.018	0.050	ND	U	0.019	0.052	0.12	J p	0.049	0.14
Endrin Ketone	ND	x	x	ND	U	0.0074	0.054	ND	U	0.0069	0.050	ND	U	0.0072	0.052	ND	U	0.019	0.14
Heptachlor	ND	x	x	ND	U	0.017	0.054	ND	U	0.016	0.050	ND	U	0.016	0.052	ND	U	0.043	0.14
Heptachlor Epoxide	ND	x	x	ND	U	0.014	0.054	ND	U	0.013	0.050	ND	U	0.013	0.052	ND	U	0.035	0.14
α-BHC	ND	x	x	ND	U	0.013	0.054	ND	U	0.012	0.050	ND	U	0.013	0.052	ND	U	0.034	0.14
β-BHC	ND	x	x	ND	U	0.015	0.054	ND	U	0.014	0.050	ND	U	0.014	0.052	ND	U	0.038	0.14
δ-BHC	ND	x	x	ND	U	0.017	0.054	ND	U	0.016	0.050	ND	U	0.016	0.052	ND	U	0.043	0.14
γ-BHC (Lindane)	ND	0.32	x	ND	U	0.014	0.054	ND	U	0.013	0.050	ND	U	0.013	0.052	ND	U	0.035	0.14
Methoxychlor	0.32	x	x	ND	U	0.021	0.054	ND	U	0.019	0.050	0.30	--	0.020	0.052	0.32	--	0.053	0.14
Mirex®	ND	x	x	ND	U	0.010	0.054	ND	U	0.0093	0.050	ND	U	0.0097	0.052	ND	U	0.026	0.14
Toxaphene	ND	0.1	x	ND	U	1.5	2.1	ND	U	1.3	2.0	ND	U	1.4	2.1	ND	U	3.7	5.5
Chlorinated Pesticides, Total	6.1	x	x	2.1				1.9				2.3				6.1			

Underlined values represent U-qualified results having an MDL that meets or exceeds the TEL and (or) ERL.
Non-detect (ND) = The analyte was not detected at or above the MDL. Non-detect results use the MDL for calculating total pesticides. (J-qualified results use the value reported by the laboratory for calculating total pesticides.)
Acronyms and qualifiers are defined at the front of the tables section.

Sources: Results from Eurofins TestAmerica; TEL and ERL values from Buchman (2008).
Compiled by: ANAMAR Environmental Consulting, Inc.

TABLE 8
Analytical Results for Dry Weight PCBs and Aroclors in Sediment Samples

Analyte	Maximum Conc. µg/kg	TEL µg/kg	ERL µg/kg	Little River to Winyah Bay												Charleston to Port Royal			
				AIWW21-LB-1				AIWW21-LB-2				AIWW21-LB-3				AIWW21-CP-16			
			Sample ID:	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL	Result µg/kg	Qualifier	MDL	MRL
PCB 8[NOAA]	ND	x	x	ND	U	0.23	0.65	ND	U	0.22	0.61	ND	U	0.22	0.60	ND	U	0.59	1.6
PCB 18[NOAA]	ND	x	x	ND	U	0.40	0.65	ND	U	0.37	0.61	ND	U	0.37	0.60	ND	U	1.0	1.6
PCB 28[NOAA]	ND	x	x	ND	U	0.34	0.65	ND	U	0.32	0.61	ND	U	0.32	0.60	ND	U	0.87	1.6
PCB 44[NOAA]	ND	x	x	ND	U	0.25	0.65	ND	U	0.24	0.61	ND	U	0.24	0.60	ND	U	0.64	1.6
PCB 49	ND	x	x	ND	U	0.28	0.65	ND	U	0.26	0.61	ND	U	0.26	0.60	ND	U	0.71	1.6
PCB 52[NOAA]	ND	x	x	ND	U	0.26	0.65	ND	U	0.24	0.61	ND	U	0.24	0.60	ND	U	0.66	1.6
PCB 66[NOAA]	ND	x	x	ND	U	0.23	0.65	ND	U	0.21	0.61	ND	U	0.21	0.60	ND	U	0.57	1.6
PCB 77	ND	x	x	ND	U	0.56	0.65	ND	U	0.52	0.61	ND	U	0.52	0.60	ND	U	1.4	1.6
PCB 87	ND	x	x	ND	U	0.36	0.65	ND	U	0.34	0.61	ND	U	0.34	0.60	ND	U	0.91	1.6
PCB 101[NOAA]	ND	x	x	ND	U	0.18	0.65	ND	U	0.17	0.61	ND	U	0.17	0.60	ND	U	0.45	1.6
PCB 105[NOAA]	ND	x	x	ND	U	0.18	0.65	ND	U	0.17	0.61	ND	U	0.17	0.60	ND	U	0.45	1.6
PCB 118[NOAA]	ND	x	x	ND	U	0.19	0.65	ND	U	0.18	0.61	ND	U	0.18	0.60	ND	U	0.48	1.6
PCB 126	ND	x	x	ND	U	0.41	0.65	ND	U	0.38	0.61	ND	U	0.38	0.60	ND	U	1.0	1.6
PCB 128[NOAA]	ND	x	x	ND	U	0.24	0.65	ND	U	0.23	0.61	ND	U	0.22	0.60	ND	U	0.61	1.6
PCB 138[NOAA]	ND	x	x	ND	U	0.26	0.65	ND	U	0.24	0.61	ND	U	0.24	0.60	ND	U	0.66	1.6
PCB 153[NOAA]	ND	x	x	ND	U	0.15	0.65	ND	U	0.14	0.61	ND	U	0.14	0.60	ND	U	0.38	1.6
PCB 156	ND	x	x	ND	U	0.35	0.65	ND	U	0.33	0.61	ND	U	0.32	0.60	ND	U	0.88	1.6
PCB 169	ND	x	x	ND	U	0.44	0.65	ND	U	0.42	0.61	ND	U	0.42	0.60	ND	U	1.1	1.6
PCB 170[NOAA]	ND	x	x	ND	U	0.32	0.65	ND	U	0.30	0.61	ND	U	0.30	0.60	ND	U	0.82	1.6
PCB 180[NOAA]	ND	x	x	ND	U	0.31	0.65	ND	U	0.29	0.61	ND	U	0.29	0.60	ND	U	0.77	1.6
PCB 183	ND	x	x	ND	U	0.42	0.65	ND	U	0.40	0.61	ND	U	0.40	0.60	ND	U	1.1	1.6
PCB 184	ND	x	x	ND	U	0.36	0.65	ND	U	0.33	0.61	ND	U	0.33	0.60	ND	U	0.90	1.6
PCB 187[NOAA]	ND	x	x	ND	U	0.16	0.65	ND	U	0.15	0.61	ND	U	0.15	0.60	ND	U	0.42	1.6
PCB 195[NOAA]	ND	x	x	ND	U	0.34	0.65	ND	U	0.31	0.61	ND	U	0.31	0.60	ND	U	0.85	1.6
PCB 206[NOAA]	ND	x	x	ND	U	0.29	0.65	ND	U	0.27	0.61	ND	U	0.27	0.60	ND	U	0.74	1.6
PCB 209[NOAA]	ND	x	x	ND	U	0.40	0.65	ND	U	0.37	0.61	ND	U	0.37	0.60	ND	U	1.0	1.6
Total EPA Region 4 PCBs	20	21.6	22.7	7.9				7.4				7.4				20			
Total NOAA PCBs	**25**	21.6	22.7	9.7				9.1				9.0				**25**			
PCB-1016	ND	x	x	ND	U	0.17	0.53	ND	U	0.16	0.50	ND	U	0.17	0.52	ND	U	0.45	1.4
PCB-1221	ND	x	x	ND	U	0.19	0.53	ND	U	0.18	0.50	ND	U	0.18	0.52	ND	U	0.49	1.4
PCB-1232	ND	x	x	ND	U	0.13	0.53	ND	U	0.12	0.50	ND	U	0.13	0.52	ND	U	0.34	1.4
PCB-1242	ND	x	x	ND	U	0.078	0.53	ND	U	0.073	0.50	ND	U	0.076	0.52	ND	U	0.20	1.4
PCB-1248	ND	x	x	ND	U	0.13	0.53	ND	U	0.12	0.50	ND	U	0.13	0.52	ND	U	0.34	1.4
PCB-1254	ND	63.3	x	ND	U	0.16	0.53	ND	U	0.15	0.50	ND	U	0.16	0.52	ND	U	0.42	1.4
PCB-1260	ND	x	x	ND	U	0.15	0.53	ND	U	0.14	0.50	ND	U	0.15	0.52	ND	U	0.40	1.4

[NOAA] National Oceanic and Atmospheric Administration PCB congeners (NOAA 1989, Table 5-6 of SERIM).

Bolded values meet or exceed the TEL and (or) ERL.

For calculating total EPA Region 4 PCBs and total NOAA PCBs, U-qualified results use the MDL and J-qualified results use the value reported by the laboratory (See SERIM Section 7.3 for details).

Data qualifiers and acronyms are defined at the front of the tables section.

Sources: Results from Eurofins TestAmerica; TEL and ERL values from Buchman (2008)
Compiled by: ANAMAR Environmental Consulting, Inc.

TABLE 9
Analytical Results for Dry Weight Dioxins and Furans in Sediment Samples

Analyte	Maximum Conc. ng/kg	TEL ng/kg	AET ng/kg	TEF ng/kg	Little River to Winyah Bay																Charleston to Port Royal				
					Sample ID: AIWW21-LB-1					AIWW21-LB-2					AIWW21-LB-3					AIWW21-CP-16				
					Result ng/kg	Qualifier	MDL	MRL	TEQ	Result ng/kg	Qualifier	MDL	MRL	TEQ	Result ng/kg	Qualifier	MDL	MRL	TEQ	Result ng/kg	Qualifier	MDL	MRL	TEQ
2,3,7,8-TCDD	0.39	x	x	1	0.078	J	0.010	1.3	0.078	ND	U	0.0080	1.1	0.0080	0.073	J	0.017	1.3	0.073	0.39	J I	0.035	3.3	0.39
1,2,3,7,8-PeCDD	2.4	x	x	1	0.13	J I	0.013	6.6	0.13	0.092	J I	0.013	5.6	0.092	0.25	J I	0.016	6.3	0.25	2.4	J	0.083	17	2.4
1,2,3,6,7,8-HxCDD	5.3	x	x	0.1	0.33	J I B	0.015	6.6	0.033	ND	U	0.0064	5.6	0.00064	ND	U	0.012	6.3	0.0012	5.3	J B	0.23	17	0.53
1,2,3,4,7,8-HxCDD	3.9	x	x	0.1	0.14	J I B	0.014	6.6	0.014	0.072	J I B	0.0068	5.6	0.0072	ND	U	0.012	6.3	0.0012	3.9	J I B	0.23	17	0.39
1,2,3,7,8,9-HxCDD	8.9	x	x	0.1	0.58	J B	0.014	6.6	0.058	0.20	J I B	0.0055	5.6	0.020	0.19	J I B	0.0094	6.3	0.019	8.9	J B	0.21	17	0.89
1,2,3,4,6,7,8-HpCDD	110	x	x	0.01	8.9	B	0.050	6.6	0.089	1.6	J I B	0.0091	5.6	0.016	1.7	J I B	0.016	6.3	0.017	110	B	0.28	17	1.1
OCDD	920	x	x	0.0003	130	B	0.035	13	0.039	39	B	0.016	11	0.0117	40	B	0.017	13	0.012	920	B	0.11	33	0.276
2,3,7,8-TCDF	0.0096	x	x	0.1	0.0096	J I B	0.0063	1.3	0.00096	ND	U	0.0064	1.1	0.00064	ND	U	0.014	1.3	0.0014	ND	U	0.019	3.3	0.0019
1,2,3,7,8-PeCDF	0.29	x	x	0.03	0.12	J I B	0.0050	6.6	0.0036	0.051	J I B	0.0047	5.6	0.00153	0.29	J B	0.012	6.3	0.0087	ND	U	0.031	17	0.00093
2,3,4,7,8-PeCDF	0.85	x	x	0.3	0.066	J I	0.0041	6.6	0.0198	0.061	J I	0.0039	5.6	0.0183	0.058	J I	0.0096	6.3	0.0174	0.85	J I	0.024	17	0.255
1,2,3,6,7,8-HxCDF	0.15	x	x	0.1	0.15	J B	0.0048	6.6	0.015	0.032	J I B	0.0032	5.6	0.0032	0.11	J I B	0.0078	6.3	0.011	ND	U	0.016	17	0.0016
1,2,3,7,8,9-HxCDF	0.41	x	x	0.1	0.053	J I B	0.0051	6.6	0.0053	0.043	J I B	0.0030	5.6	0.0043	0.11	J I B	0.0070	6.3	0.011	0.41	J B	0.017	17	0.041
1,2,3,4,7,8-HxCDF	0.53	x	x	0.1	0.095	J I B	0.0044	6.6	0.0095	ND	U	0.0032	5.6	0.00032	0.25	J I B	0.0076	6.3	0.025	0.53	J I B	0.016	17	0.053
2,3,4,6,7,8-HxCDF	0.78	x	x	0.1	0.10	J B	0.0044	6.6	0.010	0.039	J I B	0.0030	5.6	0.0039	ND	U	0.0075	6.3	0.00075	0.78	J B	0.015	17	0.078
1,2,3,4,6,7,8-HpCDF	2.0	x	x	0.01	1.0	J I B	0.0050	6.6	0.010	0.082	J I B	0.0030	5.6	0.00082	0.21	J I B	0.0079	6.3	0.0021	2.0	J B	0.043	17	0.020
1,2,3,4,7,8,9-HpCDF	0.42	x	x	0.01	0.11	J I B	0.0054	6.6	0.0011	0.049	J B	0.0034	5.6	0.00049	0.091	J B	0.0088	6.3	0.00091	0.42	J I B	0.044	17	0.0042
OCDF	3.7	x	x	0.0003	1.7	J I B	0.0064	13	0.00051	0.26	J I B	0.0036	11	7.8E-05	0.31	J I B	0.011	13	9.3E-05	3.7	J I B	0.014	33	0.00111
Total TEQs[1]	**6.43**	0.85	3.6	x					0.517					0.189					0.452					**6.43**
TCDD, Total	26	x	x	x	3.2	I B	0.010	1.3		ND	U	0.008	1.1		1.5	B	0.017	1.3		26	I B	0.035	3.3	
PeCDD, Total	60	x	x	x	3.5	J I B	0.013	6.6		0.40	J I B	0.013	5.6		1.1	J I B	0.016	6.3		60	I B	0.083	17	
HxCDD, Total	280	x	x	x	16	I B	0.014	6.6		1.4	J I B	0.0062	5.6		3.4	J I B	0.011	6.3		280	I B	0.23	17	
HpCDD, Total	410	x	x	x	25	B	0.050	6.6		3.6	J I B	0.0091	5.6		5.5	J I B	0.016	6.3		410	B	0.28	17	
TCDF, Total	3.9	x	x	x	0.18	J I B	0.0063	1.3		0.28	J B	0.0064	1.1		0.71	J I B	0.014	1.3		3.9	I B	0.019	3.3	
PeCDF, Total	2.7	x	x	x	1.2	J I B	0.0046	6.6		0.38	J I B	0.0043	5.6		0.60	J I B	0.011	6.3		2.7	J I B	0.027	17	
HxCDF, Total	4.5	x	x	x	1.3	J I B	0.0047	6.6		0.18	J I B	0.0031	5.6		0.59	J I B	0.0075	6.3		4.5	J I B	0.016	17	
HpCDF, Total	5.5	x	x	x	2.3	J I B	0.0052	6.6		0.20	J I B	0.0032	5.6		0.38	J I B	0.0084	6.3		5.5	J I B	0.043	17	

[1] Total TEQs are calculated using the MDL when the result is given as ND (Non-detect). J-qualified results use the value reported by the laboratory for calculating total TEQs. These values are multiplied by the TEF prior to summing.

Bolded values meet or exceed the AET and (or) TEL.

Data qualifiers and acronyms are defined at the front of the tables section.

Sources: Results from Eurofins TestAmerica; TEL and AET values from Buchman (2008); and TEF values from Van den Berg et al. (2006)
Compiled by: ANAMAR Environmental Consulting, Inc.

TABLE 10
Analytical Results for Metals, TOC, Total Suspended Solids and Tributyltin in Site Water and Elutriates Generated from Sediment Samples

				Little River to Charleston				Little River to Winyah Bay																	
			Sample ID:	AIWW21-SW-1				AIWW21-LB-1 (Total)				AIWW21-LB-1 (Dissolved)				AIWW21-LB-2 (Total)				AIWW21-LB-2 (Dissolved)				AIWW21-LB-3 (Total)				AIWW21-LB-3 (Dissolved)			
Analyte	Maximum Conc. µg/L	SC CMC µg/L	CMC µg/L	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
Metals																															
Antimony	1.3	x	x	ND	U	0.38	2.0	ND	U	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0
Arsenic	**91**	69	69	3.9	--	0.31	1.0	1.1	J	0.63	2.0	0.95	J	0.63	2.0	1.0	J	0.63	2.0	0.91	J	0.63	2.0	1.6	J	0.63	2.0	1.3	J	0.63	2.0
Cadmium	0.24	43	40	0.24	J	0.22	1.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0
Chromium	14	1100	1100	2.5	--	1.5	2.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0
Copper	**7.8**	5.8	4.8	3.7	--	0.63	2.0	2.5	J	1.3	4.0	1.4	J	1.3	4.0	2.8	J	1.3	4.0	4.2	--	1.3	4.0	**5.2**	--	1.3	4.0	**4.8**	--	1.3	4.0
Lead	6.1	220	210	1.3	--	0.13	1.0	0.36	J	0.26	2.0	0.28	J	0.26	2.0	0.27	J	0.26	2.0	ND	U	0.26	2.0	0.45	J	0.26	2.0	ND	U	0.26	2.0
Mercury	0.16	2.1	1.8	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20
Nickel	7.9	75	74	1.7	--	0.34	1.0	1.3	J	0.67	2.0	0.93	J	0.67	2.0	1.3	J	0.67	2.0	0.85	J	0.67	2.0	2.7	--	0.67	2.0	1.3	J	0.67	2.0
Selenium	2.0	290	290	ND	U	1.5	5.0	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10
Silver	0.42	2.3	1.9	0.18	J	0.18	1.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0
Zinc	30	95	90	4.5	J	3.2	5.0	13	--	6.4	10	7.3	J	6.4	10	11	--	6.4	10	ND	U	6.4	10	28	--	6.4	10	ND	U	6.4	10
Others																															
Analyte	**Maximum Conc. mg/L**	**SC CMC mg/L**	**CMC mg/L**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**
Total Organic Carbon	21	x	x	1.1	F1	0.51	1.0	1.1	--	0.51	1.0	1.3	--	0.51	1.0	1.1	--	0.51	1.0	1.2	--	0.51	1.0	1.1	--	0.51	1.0	1.2	--	0.51	1.0
Total Suspended Solids	290	x	x	59	--	1.0	1.0	19	--	1.0	1.0					19	--	0.50	0.50					23	--	0.50	0.50				
Analyte	**Maximum Conc. µg/L**	**SC CMC µg/L**	**CMC µg/L**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**
Tributyltin	ND	0.37	0.42	ND	U	0.043	0.043	ND	U	0.043	0.043	ND	U	0.043	0.043	ND	U	0.043	0.043	ND	U	0.043	0.043	ND	U	0.043	0.043	ND	U	0.043	0.043

TABLE 10 (*continued*)
Analytical Results for Metals, TOC, TSS, and Tributyltin in Site Water and Elutriates Generated from Sediment

Sample ID:	Winyah Bay to Charleston																											
	AIWW21-WC-4 (Total)				AIWW21-WC-4 (Dissolved)				AIWW21-WC-5 (Total)				AIWW21-WC-5 (Dissolved)				AIWW21-WC-6 (Total)				AIWW21-WC-6 (Dissolved)				AIWW21-WC-7 (Total)				AIWW21-WC-7 (Dissolved)			
Analyte	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
Metals																																
Antimony	1.2	J	0.76	4.0	1.2	J	0.76	4.0	1.3	J	0.76	4.0	1.2	J	0.76	4.0	1.1	J	0.76	4.0	1.3	J	0.76	4.0	0.89	J	0.76	4.0	ND	U	0.76	4.0
Arsenic	26	--	0.63	2.0	21	--	0.63	2.0	**80**	--	0.63	2.0	52	--	0.63	2.0	**70**	--	0.63	2.0	48	--	0.63	2.0	58	--	0.63	2.0	38	--	0.63	2.0
Cadmium	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0
Chromium	3.5	J	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	4.2	--	3.1	4.0	ND	U	3.1	4.0
Copper	3.1	J	1.3	4.0	3.7	J	1.3	4.0	2.8	J	1.3	4.0	4.2	--	1.3	4.0	2.0	J	1.3	4.0	3.5	J	1.3	4.0	2.6	J	1.3	4.0	3.2	J	1.3	4.0
Lead	1.4	J	0.26	2.0	ND	U	0.26	2.0	0.80	J	0.26	2.0	ND	U	0.26	2.0	0.34	J	0.26	2.0	ND	U	0.26	2.0	0.89	J	0.26	2.0	ND	U	0.26	2.0
Mercury	0.16	J	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20
Nickel	3.3	--	0.67	2.0	1.2	J	0.67	2.0	2.6	--	0.67	2.0	0.99	J	0.67	2.0	1.4	J	0.67	2.0	ND	U	0.67	2.0	2.4	--	0.67	2.0	1.1	J	0.67	2.0
Selenium	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10
Silver	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0
Zinc	14	--	6.4	10	ND	U	6.4	10	42	--	6.4	10	ND	U	6.4	10	15	--	6.4	10	ND	U	6.4	10	16	--	6.4	10	ND	U	6.4	10
Others																																
Analyte	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**
Total Organic Carbon	4.3	--	0.51	1.0	4.1	--	0.51	1.0	4.1	--	0.51	1.0	3.8	--	0.51	1.0	3.8	--	0.51	1.0	3.6	--	0.51	1.0	5.4	--	0.51	1.0	4.6	--	0.51	1.0
Total Suspended Solids	110	--	2.5	2.5					100	--	2.5	2.5					73	--	2.5	2.5					95	--	2.5	2.5				
Analyte	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**
Tributyltin																																

TABLE 10 (*continued*)
Analytical Results for Metals, TOC, TSS, and Tributyltin in Site Water and Elutriates Generated from Sediment

Sample ID:	Winyah Bay to Charleston																			
	AIWW21-WC-8 (Total)				AIWW21-WC-8 (Dissolved)				AIWW21-WC-9 (Total)				AIWW21-WC-9 (Dissolved)				AIWW21-WC-10 (Total)				AIWW21-WC-10 (Dissolved)			
Analyte	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
Metals																								
Antimony	1.0	J	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0	1.2	J	0.76	4.0	0.76	J	0.76	4.0
Arsenic	**91**	--	0.63	2.0	62	--	0.63	2.0	46	--	0.63	2.0	28	--	0.63	2.0	63	--	0.63	2.0	33	--	0.63	2.0
Cadmium	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0
Chromium	4.9	--	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	7.5	--	3.1	4.0	ND	U	3.1	4.0
Copper	2.8	J	1.3	4.0	2.6	J	1.3	4.0	3.0	J	1.3	4.0	2.5	J	1.3	4.0	**4.8**	--	1.3	4.0	2.1	J	1.3	4.0
Lead	1.4	J	0.26	2.0	ND	U	0.26	2.0	2.3	--	0.26	2.0	ND	U	0.26	2.0	2.4	--	0.26	2.0	ND	U	0.26	2.0
Mercury	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20
Nickel	3.0	--	0.67	2.0	1.5	J	0.67	2.0	2.3	--	0.67	2.0	1.3	J	0.67	2.0	4.3	--	0.67	2.0	2.0	--	0.67	2.0
Selenium	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10
Silver	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0
Zinc	22	--	6.4	10	ND	U	6.4	10	6.4	J	6.4	10	ND	U	6.4	10	30	--	6.4	10	ND	U	6.4	10
Others																								
Analyte	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**
Total Organic Carbon	10	--	0.51	1.0	8.9	--	0.51	1.0	9.2	--	0.51	1.0	7.7	--	0.51	1.0	13	--	0.51	1.0	11	--	0.51	1.0
Total Suspended Solids	130	--	2.5	2.5					100	--	2.5	2.5					120	--	2.5	2.5				
Analyte	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**
Tributyltin																								

TABLE 10 (*continued*)
Analytical Results for Metals, TOC, TSS, and Tributyltin in Site Water and Elutriates Generated from Sediment

Sample ID:	Winyah Bay to Charleston																			
	AIWW21-WC-11 (Total)				AIWW21-WC-11 (Dissolved)				AIWW21-WC-12 (Total)				AIWW21-WC-12 (Dissolved)				AIWW21-WC-13 (Total)				AIWW21-WC-13 (Dissolved)			
Analyte	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
Metals																								
Antimony	ND	U	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0	0.81	J	0.76	4.0	ND	U	0.76	4.0
Arsenic	1.7	J	0.63	2.0	1.4	J	0.63	2.0	3.7	--	0.63	2.0	3.4	--	0.63	2.0	21	--	0.63	2.0	8.5	--	0.63	2.0
Cadmium	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0
Chromium	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	14	--	3.1	4.0	ND	U	3.1	4.0
Copper	2.2	J	1.3	4.0	**5.4**	--	1.3	4.0	1.9	J	1.3	4.0	2.3	J	1.3	4.0	**7.8**	--	1.3	4.0	2.1	J	1.3	4.0
Lead	0.51	J	0.26	2.0	ND	U	0.26	2.0	0.77	J	0.26	2.0	ND	U	0.26	2.0	6.0	--	0.26	2.0	ND	U	0.26	2.0
Mercury	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20
Nickel	1.0	J	0.67	2.0	0.97	J	0.67	2.0	1.6	J	0.67	2.0	1.1	J	0.67	2.0	7.9	--	0.67	2.0	2.7	--	0.67	2.0
Selenium	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10
Silver	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0
Zinc	ND	U	6.4	10	ND	U	6.4	10	8.1	J	6.4	10	ND	U	6.4	10	28	--	6.4	10	ND	U	6.4	10
Others																								
Analyte	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**
Total Organic Carbon	1.5	--	0.51	1.0	1.4	--	0.51	1.0	2.5	--	0.51	1.0	2.5	--	0.51	1.0	21	--	0.51	1.0	19	--	0.51	1.0
Total Suspended Solids	20	--	0.50	0.50					18	--	0.50	0.50					290	--	5.0	5.0				
Analyte	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**
Tributyltin																								

TABLE 10 (*continued*)
Analytical Results for Metals, TOC, TSS, and Tributyltin in Site Water and Elutriates Generated from Sediment

Sample ID:	Charleston to Port Royal				Charleston to Port Royal																			
	AIWW21-SW-2				AIWW21-CP-14 (Total)				AIWW21-CP-14 (Dissolved)				AIWW21-CP-15 (Total)				AIWW21-CP-15 (Dissolved)				AIWW21-CP-16 (Total)				AIWW21-CP-16 (Dissolved)			
Analyte	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
Metals																												
Antimony	ND	U	0.38	2.0	ND	U	0.76	4.0	ND	U	0.76	4.0	1.1	J	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0
Arsenic	2.8	--	0.31	1.0	1.9	J	0.63	2.0	1.6	J	0.63	2.0	9.4	--	0.63	2.0	8.0	--	0.63	2.0	19	--	0.63	2.0	9.3	--	0.63	2.0
Cadmium	ND	U	0.22	1.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0
Chromium	3.8	--	1.5	2.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	11	--	3.1	4.0	ND	U	3.1	4.0
Copper	3.6	--	0.63	2.0	2.0	J	1.3	4.0	2.3	J	1.3	4.0	2.2	J	1.3	4.0	2.6	J	1.3	4.0	3.6	J	1.3	4.0	1.8	J	1.3	4.0
Lead	6.1	--	0.13	1.0	0.57	J	0.26	2.0	ND	U	0.26	2.0	1.2	J	0.26	2.0	ND	U	0.26	2.0	4.1	--	0.26	2.0	ND	U	0.26	2.0
Mercury	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20
Nickel	7.3	--	0.34	1.0	1.2	J	0.67	2.0	0.70	J	0.67	2.0	2.2	--	0.67	2.0	1.2	J	0.67	2.0	4.1	--	0.67	2.0	0.89	J	0.67	2.0
Selenium	ND	U	1.5	5.0	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10
Silver	ND	U	0.18	1.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	0.42	J B	0.35	2.0	ND	U	0.35	2.0
Zinc	23	--	3.2	5.0	16	--	6.4	10	ND	U	6.4	10	11	--	6.4	10	ND	U	6.4	10	19	--	6.4	10	ND	U	6.4	10
Others																												
Analyte	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**
Total Organic Carbon	1.5	--	0.51	1.0	1.5	--	0.51	1.0	1.7	--	0.51	1.0	4.0	--	0.51	1.0	3.8	--	0.51	1.0	3.6	--	0.51	1.0	3.6	--	0.51	1.0
Total Suspended Solids	36	--	1.0	1.0	210	--	5.0	5.0					190	--	5.0	5.0					240	--	5.0	5.0				
Analyte	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**
Tributyltin	ND	U	0.042	0.042																	ND	U	0.043	0.043	ND	U	0.045	0.045

TABLE 10 (*continued*)
Analytical Results for Metals, TOC, TSS, and Tributyltin in Site Water and Elutriates Generated from Sediment

Sample ID:	Charleston to Port Royal																											
	AIWW21-CP-17 (Total)				AIWW21-CP-17 (Dissolved)				AIWW21-CP-18 (Total)				AIWW21-CP-18 (Dissolved)				AIWW21-CP-19 (Total)				AIWW21-CP-19 (Dissolved)				AIWW21-CP-20 (Total)				AIWW21-CP-20 (Dissolved)			
Analyte	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
Metals																																
Antimony	ND	U	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0	ND	U	0.76	4.0	0.80	J	0.38	2.0	0.44	J	0.38	2.0
Arsenic	30	--	0.63	2.0	20	--	0.63	2.0	5.2	--	0.63	2.0	4.5	--	0.63	2.0	6.5	--	0.63	2.0	5.8	--	0.63	2.0	68	--	0.31	1.0	40	--	0.31	1.0
Cadmium	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.43	2.0	ND	U	0.22	1.0	ND	U	0.22	1.0
Chromium	3.2	J	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	ND	U	3.1	4.0	13	--	1.5	2.0	ND	U	1.5	2.0
Copper	1.9	J	1.3	4.0	ND	U	1.3	4.0	1.4	J	1.3	4.0	1.3	J	1.3	4.0	1.3	J	1.3	4.0	1.9	J	1.3	4.0	4.6	--	0.63	2.0	0.69	J	0.63	2.0
Lead	1.0	J	0.26	2.0	ND	U	0.26	2.0	0.40	J	0.26	2.0	ND	U	0.26	2.0	0.41	J	0.26	2.0	ND	U	0.26	2.0	3.5	--	0.13	1.0	0.14	J	0.13	1.0
Mercury	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20	ND	U	0.13	0.20
Nickel	3.0	--	0.67	2.0	2.1	--	0.67	2.0	1.2	J	0.67	2.0	0.75	J	0.67	2.0	1.2	J	0.67	2.0	ND	U	0.67	2.0	4.4	--	0.34	1.0	0.97	J	0.34	1.0
Selenium	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	ND	U	3.0	10	2.0	J	1.5	5.0	ND	U	1.5	5.0
Silver	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.35	2.0	ND	U	0.18	1.0	ND	U	0.18	1.0
Zinc	14	--	6.4	10	ND	U	6.4	10	7.8	J	6.4	10	ND	U	6.4	10	8.7	J	6.4	10	6.9	J	6.4	10	17	--	3.2	5.0	ND	U	3.2	5.0
Others																																
Analyte	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**	**Result mg/L**	**Qualifier**	**MDL**	**MRL**
Total Organic Carbon	15	--	0.51	1.0	13	--	0.51	1.0	4.6	--	0.51	1.0	4.5	--	0.51	1.0	3	--	0.51	1.0	3	--	0.51	1.0	11	--	0.51	1.0	9.5	--	0.51	1.0
Total Suspended Solids	220	--	5.0	5.0					19	--	0.63	0.63					23	--	0.63	0.63					280	--	5.0	5.0				
Analyte	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**	**Result µg/L**	**Qualifier**	**MDL**	**MRL**
Tributyltin																																

Bolded values meet or exceed the SC CMC and/or CMC.
Non-detect (ND) = The analyte was not detected at or above the MDL.
Data qualifiers and acronyms are defined at the front of the tables section.

Sources: Results from Eurofins TestAmerica; CMC values taken from USEPA (2015), SC CMC values from SCDHEC (2014).
Compiled by: ANAMAR Environmental Consulting, Inc.

TABLE 11
Analytical Results for PAHs in Site Water and Elutriates Generated from Sediment Samples

Analyte	Maximum Conc. µg/L	SC CMC µg/L	CMC µg/L	Little River to Charleston: AIWW21-SW-1				Little River to Winyah Bay: AIWW21-LB-1 (Total)				AIWW21-LB-1 (Dissolved)				AIWW21-LB-2 (Total)				AIWW21-LB-2 (Dissolved)				AIWW21-LB-3 (Total)				AIWW21-LB-3 (Dissolved)			
				Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
1-Methylnaphthalene[LMW]	ND	x	x	ND	U	0.054	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18
2-Methylnaphthalene[LMW]	ND	x	x	ND	U	0.060	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18
Acenaphthene[LMW]	ND	x	x	ND	U	0.063	0.18	ND	U	0.060	0.18	ND	U	0.06	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18
Acenaphthylene	ND	x	x	ND	U	0.063	0.18	ND	U	0.060	0.18	ND	U	0.06	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18
Anthracene[LMW]	ND	x	x	ND	U	0.047	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18
Benzo(a)anthracene[HMW]	ND	x	x	ND	U	0.072	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18
Benzo(a)pyrene[HMW]	ND	x	x	ND	U	0.051	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18
Benzo(b)fluoranthene	ND	x	x	ND	U	0.093	0.18	ND	U	0.09	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18
Benzo(g,h,i)perylene	ND	x	x	ND	U	0.066	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18
Benzo(k)fluoranthene	ND	x	x	ND	U	0.085	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18
Chrysene[HMW]	ND	x	x	ND	U	0.078	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18
Dibenzo(a,h)anthracene[HMW]	ND	x	x	ND	U	0.069	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18
Fluoranthene[HMW]	ND	x	x	ND	U	0.058	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18
Fluorene[LMW]	0.064	x	x	ND	U	0.066	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18
Indeno(1,2,3-cd)pyrene	ND	x	x	ND	U	0.082	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18
Naphthalene[LMW]	0.058	x	x	ND	U	0.057	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18
Phenanthrene[LMW]	0.075	x	x	ND	U	0.053	0.18	ND	U	0.051	0.18	ND	U	0.051	0.18	ND	U	0.051	0.18	ND	U	0.051	0.18	ND	U	0.051	0.18	ND	U	0.051	0.18
Pyrene[HMW]	ND	x	x	ND	U	0.052	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18
Total LMW PAHs	1.7	x	x	0.40				0.38				0.38				0.38				0.38				0.38				0.38			
Total HMW PAHs	1.65	x	x	0.38				0.37				0.37				0.37				0.37				0.37				0.37			
Total PAHs	5.1	x	x	1.2				1.1				1.1				1.1				1.1				1.1				1.1			

TABLE 11 (*continued*)
Analytical Results for PAHs in Site Water and Elutriates Generated from Sediment Samples

Sample ID:	Winyah Bay to Charleston																							
	AIWW21-WC-4 (Total)				AIWW21-WC-4 (Dissolved)				AIWW21-WC-5 (Total)				AIWW21-WC-5 (Dissolved)				AIWW21-WC-6 (Total)				AIWW21-WC-6 (Dissolved)				AIWW21-WC-7 (Total)				AIWW21-WC-7 (Dissolved)			
Analyte	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
1-Methylnaphthalene[LMW]	ND	U	0.056	0.19	ND	U	0.052	0.18	ND	U	0.054	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.054	0.18	ND	U	0.052	0.18
2-Methylnaphthalene[LMW]	ND	U	0.062	0.19	ND	U	0.057	0.18	ND	U	0.060	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.060	0.18	ND	U	0.057	0.18
Acenaphthene[LMW]	ND	U	0.065	0.19	ND	U	0.060	0.18	ND	U	0.063	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.063	0.18	ND	U	0.060	0.18
Acenaphthylene	ND	U	0.065	0.19	ND	U	0.060	0.18	ND	U	0.063	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.063	0.18	ND	U	0.060	0.18
Anthracene[LMW]	ND	U	0.049	0.19	ND	U	0.045	0.18	ND	U	0.047	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.047	0.18	ND	U	0.045	0.18
Benzo(a)anthracene[HMW]	ND	U	0.075	0.19	ND	U	0.069	0.18	ND	U	0.072	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.072	0.18	ND	U	0.069	0.18
Benzo(a)pyrene[HMW]	ND	U	0.053	0.19	ND	U	0.049	0.18	ND	U	0.051	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.051	0.18	ND	U	0.049	0.18
Benzo(b)fluoranthene	ND	U	0.097	0.19	ND	U	0.090	0.18	ND	U	0.093	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.093	0.18	ND	U	0.090	0.18
Benzo(g,h,i)perylene	ND	U	0.069	0.19	ND	U	0.064	0.18	ND	U	0.066	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.066	0.18	ND	U	0.064	0.18
Benzo(k)fluoranthene	ND	U	0.088	0.19	ND	U	0.081	0.18	ND	U	0.085	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.085	0.18	ND	U	0.081	0.18
Chrysene[HMW]	ND	U	0.081	0.19	ND	U	0.075	0.18	ND	U	0.078	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.078	0.18	ND	U	0.075	0.18
Dibenzo(a,h)anthracene[HMW]	ND	U	0.072	0.19	ND	U	0.067	0.18	ND	U	0.069	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.069	0.18	ND	U	0.067	0.18
Fluoranthene[HMW]	ND	U	0.060	0.19	ND	U	0.056	0.18	ND	U	0.058	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.058	0.18	ND	U	0.056	0.18
Fluorene[LMW]	ND	U	0.069	0.19	ND	U	0.064	0.18	ND	U	0.066	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.066	0.18	ND	U	0.064	0.18
Indeno(1,2,3-cd)pyrene	ND	U	0.085	0.19	ND	U	0.079	0.18	ND	U	0.082	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.082	0.18	ND	U	0.079	0.18
Naphthalene[LMW]	ND	U	0.059	0.19	ND	U	0.055	0.18	ND	U	0.057	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18	ND	U	0.057	0.18	ND	U	0.055	0.18
Phenanthrene[LMW]	ND	U	0.055	0.19	ND	U	0.051	0.18	ND	U	0.053	0.18	ND	U	0.051	0.18	0.075	J	0.051	0.18	ND	U	0.051	0.18	ND	U	0.053	0.18	ND	U	0.051	0.18
Pyrene[HMW]	ND	U	0.054	0.19	ND	U	0.050	0.18	ND	U	0.052	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.052	0.18	ND	U	0.050	0.18
Total LMW PAHs	0.42				0.38				0.40				0.38				0.62				0.38				0.40				0.38			
Total HMW PAHs	0.40				0.37				0.38				0.37				0.37				0.37				0.38				0.37			
Total PAHs	1.2				1.1				1.2				1.1				1.1				1.1				1.2				1.1			

TABLE 11 (*continued*)
Analytical Results for PAHs in Site Water and Elutriates Generated from Sediment Samples

Sample ID:	Winyah Bay to Charleston																			
	AIWW21-WC-8 (Total)				AIWW21-WC-8 (Dissolved)				AIWW21-WC-9 (Total)				AIWW21-WC-9 (Dissolved)				AIWW21-WC-10 (Total)				AIWW21-WC-10 (Dissolved)			
Analyte	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
1-Methylnaphthalene[LMW]	ND	U	0.054	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18
2-Methylnaphthalene[LMW]	ND	U	0.060	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18
Acenaphthene[LMW]	ND	U	0.063	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18
Acenaphthylene	ND	U	0.063	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18
Anthracene[LMW]	ND	U	0.047	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18
Benzo(a)anthracene[HMW]	ND	U	0.072	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18
Benzo(a)pyrene[HMW]	ND	U	0.051	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18
Benzo(b)fluoranthene	ND	U	0.093	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18
Benzo(g,h,i)perylene	ND	U	0.066	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18
Benzo(k)fluoranthene	ND	U	0.085	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18
Chrysene[HMW]	ND	U	0.078	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18
Dibenzo(a,h)anthracene[HMW]	ND	U	0.069	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18
Fluoranthene[HMW]	ND	U	0.058	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18
Fluorene[LMW]	ND	U	0.066	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18
Indeno(1,2,3-cd)pyrene	ND	U	0.082	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18
Naphthalene[LMW]	ND	U	0.057	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18	0.058	J	0.055	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18
Phenanthrene[LMW]	ND	U	0.053	0.18	ND	U	0.051	0.18	ND	U	0.051	0.18	ND	U	0.051	0.18	ND	U	0.051	0.18	ND	U	0.051	0.18
Pyrene[HMW]	ND	U	0.052	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18
Total LMW PAHs	0.40				0.38				0.38				0.39				0.38				0.38			
Total HMW PAHs	0.38				0.37				0.37				0.37				0.37				0.37			
Total PAHs	1.2				1.1				1.1				1.1				1.1				1.1			

TABLE 11 (*continued*)
Analytical Results for PAHs in Site Water and Elutriates Generated from Sediment Samples

Sample ID:	Winyah Bay to Charleston																			
	AIWW21-WC-11 (Total)				AIWW21-WC-11 (Dissolved)				AIWW21-WC-12 (Total)				AIWW21-WC-12 (Dissolved)				AIWW21-WC-13 (Total)				AIWW21-WC-13 (Dissolved)			
Analyte	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
1-Methylnaphthalene[LMW]	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.054	0.18	ND	U	0.052	0.18	ND	U	0.23	0.79	ND	U	0.052	0.18
2-Methylnaphthalene[LMW]	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.06	0.18	ND	U	0.057	0.18	ND	U	0.26	0.79	ND	U	0.057	0.18
Acenaphthene[LMW]	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.063	0.18	ND	U	0.060	0.18	ND	U	0.27	0.79	ND	U	0.060	0.18
Acenaphthylene	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.063	0.18	ND	U	0.060	0.18	ND	U	0.27	0.79	ND	U	0.060	0.18
Anthracene[LMW]	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.047	0.18	ND	U	0.045	0.18	ND	U	0.20	0.79	ND	U	0.045	0.18
Benzo(a)anthracene[HMW]	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.072	0.18	ND	U	0.069	0.18	ND	U	0.31	0.79	ND	U	0.069	0.18
Benzo(a)pyrene[HMW]	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.051	0.18	ND	U	0.049	0.18	ND	U	0.22	0.79	ND	U	0.049	0.18
Benzo(b)fluoranthene	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.093	0.18	ND	U	0.090	0.18	ND	U	0.40	0.79	ND	U	0.090	0.18
Benzo(g,h,i)perylene	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.066	0.18	ND	U	0.064	0.18	ND	U	0.29	0.79	ND	U	0.064	0.18
Benzo(k)fluoranthene	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.085	0.18	ND	U	0.081	0.18	ND	U	0.37	0.79	ND	U	0.081	0.18
Chrysene[HMW]	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.078	0.18	ND	U	0.075	0.18	ND	U	0.34	0.79	ND	U	0.075	0.18
Dibenzo(a,h)anthracene[HMW]	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.069	0.18	ND	U	0.067	0.18	ND	U	0.30	0.79	ND	U	0.067	0.18
Fluoranthene[HMW]	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.058	0.18	ND	U	0.056	0.18	ND	U	0.25	0.79	ND	U	0.056	0.18
Fluorene[LMW]	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.066	0.18	ND	U	0.064	0.18	ND	U	0.29	0.79	ND	U	0.064	0.18
Indeno(1,2,3-cd)pyrene	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.082	0.18	ND	U	0.079	0.18	ND	U	0.35	0.79	ND	U	0.079	0.18
Naphthalene[LMW]	ND	U	0.055	0.18	ND	U	0.055	0.18	ND	U	0.057	0.18	ND	U	0.055	0.18	ND	U	0.25	0.79	ND	U	0.055	0.18
Phenanthrene[LMW]	ND	U	0.051	0.18	0.059	J	0.051	0.18	ND	U	0.053	0.18	ND	U	0.051	0.18	ND	U	0.23	0.79	0.065	J	0.051	0.18
Pyrene[HMW]	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.052	0.18	ND	U	0.050	0.18	ND	U	0.23	0.79	ND	U	0.050	0.18
Total LMW PAHs	0.38				0.39				0.40				0.38				1.7				0.40			
Total HMW PAHs	0.37				0.37				0.38				0.37				1.65				0.37			
Total PAHs	1.1				1.1				1.2				1.1				5.1				1.1			

TABLE 11 (*continued*)
Analytical Results for PAHs in Site Water and Elutriates Generated from Sediment Samples

Sample ID:	Charleston to Port Royal				Charleston to Port Royal																			
	AIWW21-SW-2				AIWW21-CP-14 (Total)				AIWW21-CP-14 (Dissolved)				AIWW21-CP-15 (Total)				AIWW21-CP-15 (Dissolved)				AIWW21-CP-16 (Total)				AIWW21-CP-16 (Dissolved)			
Analyte	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
1-Methylnaphthalene[LMW]	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.054	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18
2-Methylnaphthalene[LMW]	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.060	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18
Acenaphthene[LMW]	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.063	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18
Acenaphthylene	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.063	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18
Anthracene[LMW]	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.047	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18
Benzo(a)anthracene[HMW]	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.072	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18
Benzo(a)pyrene[HMW]	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.051	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18
Benzo(b)fluoranthene	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.093	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18
Benzo(g,h,i)perylene	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.066	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18
Benzo(k)fluoranthene	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.085	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18
Chrysene[HMW]	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.078	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18
Dibenzo(a,h)anthracene[HMW]	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.069	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18
Fluoranthene[HMW]	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.058	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18
Fluorene[LMW]	0.064	J	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.066	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18
Indeno(1,2,3-cd)pyrene	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.082	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18
Naphthalene[LMW]	ND	U	0.055	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18	ND	U	0.057	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18
Phenanthrene[LMW]	ND	U	0.051	0.18	ND	U	0.051	0.18	ND	U	0.051	0.18	0.060	J	0.053	0.18	0.055	J	0.051	0.18	ND	U	0.051	0.18	ND	U	0.051	0.18
Pyrene[HMW]	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.052	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18
Total LMW PAHs	0.38				0.38				0.38				0.41				0.39				0.38				0.38			
Total HMW PAHs	0.37				0.37				0.37				0.38				0.37				0.37				0.37			
Total PAHs	1.1				1.1				1.1				1.2				1.1				1.1				1.1			

TABLE 11 (*continued*)
Analytical Results for PAHs in Site Water and Elutriates Generated from Sediment Samples

Sample ID:	Charleston to Port Royal																							
	AIWW21-CP-17 (Total)				AIWW21-CP-17 (Dissolved)				AIWW21-CP-18 (Total)				AIWW21-CP-18 (Dissolved)				AIWW21-CP-19 (Total)				AIWW21-CP-19 (Dissolved)			
Analyte	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
1-Methylnaphthalene[LMW]	ND	U	0.054	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18	ND	U	0.052	0.18
2-Methylnaphthalene[LMW]	ND	U	0.060	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18	ND	U	0.057	0.18
Acenaphthene[LMW]	ND	U	0.063	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18
Acenaphthylene	ND	U	0.063	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18	ND	U	0.060	0.18
Anthracene[LMW]	ND	U	0.047	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18	ND	U	0.045	0.18
Benzo(a)anthracene[HMW]	ND	U	0.072	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18	ND	U	0.069	0.18
Benzo(a)pyrene[HMW]	ND	U	0.051	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18	ND	U	0.049	0.18
Benzo(b)fluoranthene	ND	U	0.093	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18	ND	U	0.090	0.18
Benzo(g,h,i)perylene	ND	U	0.066	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18
Benzo(k)fluoranthene	ND	U	0.085	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18	ND	U	0.081	0.18
Chrysene[HMW]	ND	U	0.078	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18	ND	U	0.075	0.18
Dibenzo(a,h)anthracene[HMW]	ND	U	0.069	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18	ND	U	0.067	0.18
Fluoranthene[HMW]	ND	U	0.058	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18	ND	U	0.056	0.18
Fluorene[LMW]	ND	U	0.066	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18	ND	U	0.064	0.18
Indeno(1,2,3-cd)pyrene	ND	U	0.082	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18	ND	U	0.079	0.18
Naphthalene[LMW]	ND	U	0.057	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18	ND	U	0.055	0.18
Phenanthrene[LMW]	ND	U	0.053	0.18	ND	U	0.051	0.18	0.051	J	0.051	0.18	ND	U	0.051	0.18	ND	U	0.051	0.18	0.051	J	0.051	0.18
Pyrene[HMW]	ND	U	0.052	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18	ND	U	0.050	0.18
Total LMW PAHs	0.40				0.38				0.38				0.38				0.38				0.38			
Total HMW PAHs	0.38				0.37				0.37				0.37				0.37				0.37			
Total PAHs	1.2				1.1				1.1				1.1				1.1				1.1			

Sample ID:	Charleston to Port Royal							
	AIWW21-CP-20 (Total)				AIWW21-CP-20 (Dissolved)			
Analyte	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
1-Methylnaphthalene[LMW]	ND	U	0.052	0.18	ND	U	0.052	0.18
2-Methylnaphthalene[LMW]	ND	U	0.057	0.18	ND	U	0.057	0.18
Acenaphthene[LMW]	ND	U	0.060	0.18	ND	U	0.060	0.18
Acenaphthylene	ND	U	0.060	0.18	ND	U	0.060	0.18
Anthracene[LMW]	ND	U	0.045	0.18	ND	U	0.045	0.18
Benzo(a)anthracene[HMW]	ND	U	0.069	0.18	ND	U	0.069	0.18
Benzo(a)pyrene[HMW]	ND	U	0.049	0.18	ND	U	0.049	0.18
Benzo(b)fluoranthene	ND	U	0.090	0.18	ND	U	0.090	0.18
Benzo(g,h,i)perylene	ND	U	0.064	0.18	ND	U	0.064	0.18
Benzo(k)fluoranthene	ND	U	0.081	0.18	ND	U	0.081	0.18
Chrysene[HMW]	ND	U	0.075	0.18	ND	U	0.075	0.18
Dibenzo(a,h)anthracene[HMW]	ND	U	0.067	0.18	ND	U	0.067	0.18
Fluoranthene[HMW]	ND	U	0.056	0.18	ND	U	0.056	0.18
Fluorene[LMW]	ND	U	0.064	0.18	ND	U	0.064	0.18
Indeno(1,2,3-cd)pyrene	ND	U	0.079	0.18	ND	U	0.079	0.18
Naphthalene[LMW]	ND	U	0.055	0.18	ND	U	0.055	0.18
Phenanthrene[LMW]	0.052	J	0.051	0.18	0.064	J	0.051	0.18
Pyrene[HMW]	ND	U	0.050	0.18	ND	U	0.050	0.18
Total LMW PAHs	0.38				0.40			
Total HMW PAHs	0.37				0.37			
Total PAHs	1.1				1.1			

LMW Low molecular weight PAHs (NOAA 1989).
HMW High molecular weight PAHs (NOAA 1989).
Non-detect (ND) = The analyte was not detected at or above the MDL. Non-detect results use the MDL for calculating the total PAHs. (J-qualified results use the value reported by the laboratory for calculating total PAHs.)
Data qualifiers and acronyms are defined at the front of the tables section.

Sources: Results from Eurofins TestAmerica; There are no applicable CMC values in USEPA (2015).
Compiled by: ANAMAR Environmental Consulting, Inc.

TABLE 12
Analytical Results for Pesticides in Site Water and Elutriates Generated from Sediment Samples

				Little River to Charleston				Little River to Winyah Bay											
	Sample ID:			AIWW21-SW-1				AIWW21-LB-1 (Total)				AIWW21-LB-1 (Dissolved)				AIWW21-LB-2 (Total)				AIWW21-LB-2 (Dissolved)			
Analyte	Maximum Conc. µg/L	SC CMC µg/L	CMC µg/L	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
Aldrin	0.00051	1.3	1.3	0.00051	J p	0.00035	0.0013	ND	U	0.00034	0.0012	ND	U	0.00034	0.0012	ND	U	0.00034	0.0012	ND	U	0.00034	0.0012
Chlordane (technical)	ND	0.09	0.09	ND	U	0.0070	0.012	ND	U	0.0068	0.012	ND	U	0.0069	0.012	ND	U	0.0068	0.012	ND	U	0.0068	0.012
α (cis)-Chlordane	ND	x	x	ND	U	0.00036	0.0013	ND	U	0.00035	0.0012	ND	U	0.00035	0.0012	ND	U	0.00035	0.0012	ND	U	0.00035	0.0012
γ (trans)-Chlordane	ND	x	x	ND	U	0.00040	0.0013	ND	U	0.00039	0.0012	ND	U	0.00039	0.0012	ND	U	0.00039	0.0012	ND	U	0.00039	0.0012
Oxychlordane	0.0039	x	x	0.00033	J p	0.00020	0.017	ND	U	0.00020	0.016	ND	U	0.00020	0.016	ND	U	0.00020	0.016	ND	U	0.00020	0.016
cis-Nonachlor	ND	x	x	ND	U	0.00049	0.0013	ND	U	0.00048	0.0012	ND	U	0.00048	0.0012	ND	U	0.00048	0.0012	ND	U	0.00048	0.0012
trans-Nonachlor	ND	x	x	ND	U	0.00018	0.0013	ND	U	0.00018	0.0012	ND	U	0.00018	0.0012	ND	U	0.00018	0.0012	ND	U	0.00018	0.0012
o,p' (2,4')-DDD	ND	x	x	ND	U	0.00080	0.0013	ND	U	0.00078	0.0012	ND	U	0.00079	0.0012	ND	U	0.00078	0.0012	ND	U	0.00078	0.0012
p,p' (4,4')-DDD	ND	x	x	ND	U	0.00052	0.0013	ND	U	0.00050	0.0012	ND	U	0.00051	0.0012	ND	U	0.00050	0.0012	ND	U	0.00050	0.0012
o,p' (2,4')-DDE	ND	x	x	ND	U	0.00052	0.0013	ND	U	0.00050	0.0012	ND	U	0.00051	0.0012	ND	U	0.00050	0.0012	ND	U	0.00050	0.0012
p,p' (4,4')-DDE	ND	x	x	ND	U	0.00029	0.0013	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012
o,p' (2,4')-DDT	ND	x	x	ND	U	0.00052	0.0013	ND	U	0.00051	0.0012	ND	U	0.00051	0.0012	ND	U	0.00051	0.0012	ND	U	0.00051	0.0012
p,p' (4,4')-DDT	ND	0.13	0.13	ND	U	0.00029	0.0013	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012
Dieldrin	ND	0.71	0.71	ND	U	0.00027	0.0013	ND	U	0.00026	0.0012	ND	U	0.00026	0.0012	ND	U	0.00026	0.0012	ND	U	0.00026	0.0012
Endosulfan I	ND	0.034	0.034	ND	U	0.00067	0.0013	ND	U	0.00065	0.0012	ND	U	0.00065	0.0012	ND	U	0.00065	0.0012	ND	U	0.00065	0.0012
Endosulfan II	ND	0.034	0.034	ND	U	0.00031	0.0013	ND	U	0.00030	0.0012	ND	U	0.00030	0.0012	ND	U	0.00030	0.0012	ND	U	0.00030	0.0012
Endrin	ND	0.037	0.037	ND	U	0.00022	0.0013	ND	U	0.00022	0.0012	ND	U	0.00022	0.0012	ND	U	0.00022	0.0012	ND	U	0.00022	0.0012
Endrin Aldehyde	ND	x	x	ND	U	0.00050	0.0013	ND	U	0.00049	0.0012	ND	U	0.00049	0.0012	ND	U	0.00049	0.0012	ND	U	0.00049	0.0012
Endrin Ketone	ND	x	x	ND	U	0.00038	0.0013	ND	U	0.00037	0.0012	ND	U	0.00038	0.0012	ND	U	0.00037	0.0012	ND	U	0.00037	0.0012
Heptachlor	ND	0.053	0.053	ND	U	0.00044	0.0013	ND	U	0.00043	0.0012	ND	U	0.00043	0.0012	ND	U	0.00043	0.0012	ND	U	0.00043	0.0012
Heptachlor Epoxide	ND	0.053	0.053	ND	U	0.00033	0.0013	ND	U	0.00032	0.0012	ND	U	0.00032	0.0012	ND	U	0.00032	0.0012	ND	U	0.00032	0.0012
α-BHC	ND	x	x	ND	U	0.00023	0.0013	ND	U	0.00022	0.0012	ND	U	0.00023	0.0012	ND	U	0.00022	0.0012	ND	U	0.00022	0.0012
β-BHC	ND	x	x	ND	U	0.00036	0.0013	ND	U	0.00035	0.0012	ND	U	0.00035	0.0012	ND	U	0.00035	0.0012	ND	U	0.00035	0.0012
δ-BHC	ND	x	x	ND	U	0.00062	0.0013	ND	U	0.00061	0.0012	ND	U	0.00061	0.0012	ND	U	0.00061	0.0012	ND	U	0.00061	0.0012
γ-BHC (Lindane)	ND	0.16	0.16	ND	U	0.00028	0.0013	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012
Methoxychlor	0.0022	x	x	0.0022	--	0.00075	0.0013	ND	U	0.00073	0.0012	ND	U	0.00074	0.0012	ND	U	0.00073	0.0012	ND	U	0.00073	0.0012
Mirex®	ND	x	x	ND	U	0.00020	0.0013	ND	U	0.00020	0.0012	ND	U	0.00020	0.0012	ND	U	0.00020	0.0012	ND	U	0.00020	0.0012
Toxaphene	ND	0.21	0.21	ND	U	0.048	0.097	ND	U	0.046	0.094	ND	U	0.047	0.095	ND	U	0.046	0.094	ND	U	0.046	0.094
Pesticides, Total Chlorinated	0.067	x	x	0.067				0.063				0.064				0.063				0.063			

TABLE 12 (*continued*)
Analytical Results for Pesticides in Site Water and Elutriates Generated from Sediment Samples

Sample ID:	Little River to Winyah Bay								Charleston to Port Royal				Charleston to Port Royal							
	AIWW21-LB-3 (Total)				AIWW21-LB-3 (Dissolved)				AIWW21-SW-2				AIWW21-CP-16 (Total)				AIWW21-CP-16 (Dissolved)			
Analyte	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
Aldrin	ND	U	0.00034	0.0012	ND	U	0.00034	0.0012	0.00035	J p	0.00034	0.0012	ND	U	0.00035	0.0013	ND	U	0.00034	0.0012
Chlordane (technical)	ND	U	0.0068	0.012	ND	U	0.0068	0.012	ND	U	0.0068	0.012	ND	U	0.0072	0.012	ND	U	0.0069	0.012
α (cis)-Chlordane	ND	U	0.00035	0.0012	ND	U	0.00035	0.0012	ND	U	0.00035	0.0012	ND	U	0.00036	0.0013	ND	U	0.00035	0.0012
γ (trans)-Chlordane	ND	U	0.00039	0.0012	ND	U	0.00039	0.0012	ND	U	0.00039	0.0012	ND	U	0.00040	0.0013	ND	U	0.00039	0.0012
Oxychlordane	ND	U	0.00020	0.016	ND	U	0.00020	0.016	0.0039	J	0.00020	0.016	ND	U	0.00021	0.017	ND	U	0.00020	0.016
cis-Nonachlor	ND	U	0.00048	0.0012	ND	U	0.00048	0.0012	ND	U	0.00048	0.0012	ND	U	0.00050	0.0013	ND	U	0.00048	0.0012
trans-Nonachlor	ND	U	0.00018	0.0012	ND	U	0.00018	0.0012	ND	U	0.00018	0.0012	ND	U	0.00019	0.0013	ND	U	0.00018	0.0012
o,p' (2,4')-DDD	ND	U	0.00078	0.0012	ND	U	0.00078	0.0012	ND	U	0.00078	0.0012	ND	U	0.00082	0.0013	ND	U	0.00079	0.0012
p,p' (4,4')-DDD	ND	U	0.00050	0.0012	ND	U	0.00050	0.0012	ND	U	0.00050	0.0012	ND	U	0.00053	0.0013	ND	U	0.00051	0.0012
o,p' (2,4')-DDE	ND	U	0.00050	0.0012	ND	U	0.00050	0.0012	ND	U	0.00050	0.0012	ND	U	0.00053	0.0013	ND	U	0.00051	0.0012
p,p' (4,4')-DDE	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012	ND	U	0.00029	0.0013	ND	U	0.00028	0.0012
o,p' (2,4')-DDT	ND	U	0.00051	0.0012	ND	U	0.00051	0.0012	ND	U	0.00051	0.0012	ND	U	0.00053	0.0013	ND	U	0.00051	0.0012
p,p' (4,4')-DDT	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012	ND	U	0.00029	0.0013	ND	U	0.00028	0.0012
Dieldrin	ND	U	0.00026	0.0012	ND	U	0.00026	0.0012	ND	U	0.00026	0.0012	ND	U	0.00027	0.0013	ND	U	0.00026	0.0012
Endosulfan I	ND	U	0.00065	0.0012	ND	U	0.00065	0.0012	ND	U	0.00065	0.0012	ND	U	0.00068	0.0013	ND	U	0.00065	0.0012
Endosulfan II	ND	U	0.00030	0.0012	ND	U	0.00030	0.0012	ND	U	0.00030	0.0012	ND	U	0.00031	0.0013	ND	U	0.00030	0.0012
Endrin	ND	U	0.00022	0.0012	ND	U	0.00022	0.0012	ND	U	0.00022	0.0012	ND	U	0.00023	0.0013	ND	U	0.00022	0.0012
Endrin Aldehyde	ND	U	0.00049	0.0012	ND	U	0.00049	0.0012	ND	U	0.00049	0.0012	ND	U	0.00051	0.0013	ND	U	0.00049	0.0012
Endrin Ketone	ND	U	0.00037	0.0012	ND	U	0.00037	0.0012	ND	U	0.00037	0.0012	ND	U	0.00039	0.0013	ND	U	0.00038	0.0012
Heptachlor	ND	U	0.00043	0.0012	ND	U	0.00043	0.0012	ND	U	0.00043	0.0012	ND	U	0.00045	0.0013	ND	U	0.00043	0.0012
Heptachlor Epoxide	ND	U	0.00032	0.0012	ND	U	0.00032	0.0012	ND	U	0.00032	0.0012	ND	U	0.00034	0.0013	ND	U	0.00032	0.0012
α-BHC	ND	U	0.00022	0.0012	ND	U	0.00022	0.0012	ND	U	0.00022	0.0012	ND	U	0.00024	0.0013	ND	U	0.00023	0.0012
β-BHC	ND	U	0.00035	0.0012	ND	U	0.00035	0.0012	ND	U	0.00035	0.0012	ND	U	0.00036	0.0013	ND	U	0.00035	0.0012
δ-BHC	ND	U	0.00061	0.0012	ND	U	0.00061	0.0012	ND	U	0.00061	0.0012	ND	U	0.00064	0.0013	ND	U	0.00061	0.0012
γ-BHC (Lindane)	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012	ND	U	0.00028	0.0012	ND	U	0.00029	0.0013	ND	U	0.00028	0.0012
Methoxychlor	ND	U	0.00073	0.0012	ND	U	0.00073	0.0012	ND	U	0.00073	0.0012	ND	U	0.00077	0.0013	ND	U	0.00074	0.0012
Mirex®	ND	U	0.00020	0.0012	ND	U	0.00020	0.0012	ND	U	0.00020	0.0012	ND	U	0.00021	0.0013	ND	U	0.00020	0.0012
Toxaphene	ND	U	0.046	0.094	ND	U	0.046	0.094	ND	U	0.046	0.094	ND	U	0.049	0.099	ND	U	0.047	0.095
Pesticides, Total Chlorinated	0.063				0.063				0.067				0.067				0.064			

Non-detect (ND) = The analyte was not detected at or above the MDL. Non-detect results use the MDL for calculating total pesticides. (J-qualified results use the value reported by the laboratory for calculating total pesticides.)
Data qualifiers and acronyms are defined at the front of the tables section.

Sources: Results from Eurofins TestAmerica; CMC values from USEPA (2015), SC CMC values from SCDHEC (2014).
Compiled by: ANAMAR Environmental Consulting, Inc.

TABLE 13
Analytical Results for PCBs and Aroclors in Site Water and Elutriates Generated from Sediment Samples

				Little River to Charleston				Little River to Winyah Bay															
	Sample ID:			AIWW21-SW-1				AIWW21-LB-1 (Total)				AIWW21-LB-1 (Dissolved)				AIWW21-LB-2 (Total)				AIWW21-LB-2 (Dissolved)			
Analyte	Maximum Conc. ng/L	SC CMC ng/L	CMC ng/L	Result ng/L	Qualifier	MDL	MRL	Result ng/L	Qualifier	MDL	MRL	Result ng/L	Qualifier	MDL	MRL	Result ng/L	Qualifier	MDL	MRL	Result ng/L	Qualifier	MDL	MRL
PCB 8[NOAA]	ND	x	x	ND	U	0.38	0.95	ND	U	0.38	0.94	ND	U	0.38	0.94	ND	U	0.38	0.94	ND	U	0.38	0.94
PCB 18[NOAA]	0.98	x	x	ND	U	0.60	0.95	ND	U	0.59	0.94	ND	U	0.59	0.94	ND	U	0.59	0.94	ND	U	0.59	0.94
PCB 28[NOAA]	0.74	x	x	0.74	J	0.47	0.95	ND	U	0.46	0.94	ND	U	0.46	0.94	ND	U	0.46	0.94	ND	U	0.46	0.94
PCB 44[NOAA]	ND	x	x	ND	U	0.69	0.95	ND	U	0.68	0.94	ND	U	0.68	0.94	ND	U	0.68	0.94	ND	U	0.68	0.94
PCB 49	ND	x	x	ND	U	0.32	0.95	ND	U	0.32	0.94	ND	U	0.32	0.94	ND	U	0.32	0.94	ND	U	0.32	0.94
PCB 52[NOAA]	0.54	x	x	0.54	J p	0.44	0.95	ND	U	0.44	0.94	ND	U	0.44	0.94	ND	U	0.44	0.94	ND	U	0.44	0.94
PCB 66[NOAA]	ND	x	x	ND	U	0.57	0.95	ND	U	0.56	0.94	ND	U	0.56	0.94	ND	U	0.56	0.94	ND	U	0.56	0.94
PCB 77	ND	x	x	ND	U	0.67	0.95	ND	U	0.66	0.94	ND	U	0.66	0.94	ND	U	0.66	0.94	ND	U	0.66	0.94
PCB 87	ND	x	x	ND	U	0.54	0.95	ND	U	0.53	0.94	ND	U	0.53	0.94	ND	U	0.53	0.94	ND	U	0.53	0.94
PCB 101[NOAA]	ND	x	x	ND	U	0.56	0.95	ND	U	0.56	0.94	ND	U	0.56	0.94	ND	U	0.56	0.94	ND	U	0.56	0.94
PCB 105[NOAA]	ND	x	x	ND	U	0.47	0.95	ND	U	0.47	0.94	ND	U	0.47	0.94	ND	U	0.47	0.94	ND	U	0.47	0.94
PCB 118[NOAA]	ND	x	x	ND	U	0.70	0.95	ND	U	0.69	0.94	ND	U	0.69	0.94	ND	U	0.69	0.94	ND	U	0.69	0.94
PCB 126	ND	x	x	ND	U	0.69	0.95	ND	U	0.68	0.94	ND	U	0.68	0.94	ND	U	0.68	0.94	ND	U	0.68	0.94
PCB 128[NOAA]	ND	x	x	ND	U	0.52	0.95	ND	U	0.52	0.94	ND	U	0.52	0.94	ND	U	0.52	0.94	ND	U	0.52	0.94
PCB 138[NOAA]	0.63	x	x	ND	U	0.47	0.95	ND	U	0.47	0.94	ND	U	0.47	0.94	ND	U	0.47	0.94	ND	U	0.47	0.94
PCB 153[NOAA]	0.66	x	x	ND	U	0.50	0.95	ND	U	0.50	0.94	ND	U	0.50	0.94	ND	U	0.50	0.94	ND	U	0.50	0.94
PCB 156	ND	x	x	ND	U	0.63	0.95	ND	U	0.62	0.94	ND	U	0.62	0.94	ND	U	0.62	0.94	ND	U	0.62	0.94
PCB 169	ND	x	x	ND	U	0.66	0.95	ND	U	0.65	0.94	ND	U	0.65	0.94	ND	U	0.65	0.94	ND	U	0.65	0.94
PCB 170[NOAA]	ND	x	x	ND	U	0.32	0.95	ND	U	0.32	0.94	ND	U	0.32	0.94	ND	U	0.32	0.94	ND	U	0.32	0.94
PCB 180[NOAA]	ND	x	x	ND	U	0.66	0.95	ND	U	0.65	0.94	ND	U	0.65	0.94	ND	U	0.65	0.94	ND	U	0.65	0.94
PCB 183	ND	x	x	ND	U	0.61	0.95	ND	U	0.60	0.94	ND	U	0.60	0.94	ND	U	0.60	0.94	ND	U	0.60	0.94
PCB 184	ND	x	x	ND	U	0.60	0.95	ND	U	0.60	0.94	ND	U	0.60	0.94	ND	U	0.60	0.94	ND	U	0.60	0.94
PCB 187[NOAA]	ND	x	x	ND	U	0.61	0.95	ND	U	0.60	0.94	ND	U	0.60	0.94	ND	U	0.60	0.94	ND	U	0.60	0.94
PCB 195[NOAA]	ND	x	x	ND	U	0.75	0.95	ND	U	0.74	0.94	ND	U	0.74	0.94	ND	U	0.74	0.94	ND	U	0.74	0.94
PCB 206[NOAA]	ND	x	x	ND	U	0.83	0.95	ND	U	0.83	0.94	ND	U	0.83	0.94	ND	U	0.83	0.94	ND	U	0.83	0.94
PCB 209[NOAA]	ND	x	x	ND	U	0.79	0.95	ND	U	0.78	0.94	ND	U	0.78	0.94	ND	U	0.78	0.94	ND	U	0.78	0.94
Total EPA Region 4 PCBs	15	x	x	15				15				15				15				15			
Total NOAA PCBs	21	x	x	21				20				20				20				20			
Analyte	Maximum Conc. ng/L	SC CMC µg/L	CMC µg/L	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
PCB-1016	ND	x	x	ND	U	0.0046	0.0097	ND	U	0.0045	0.0094	ND	U	0.0045	0.0095	ND	U	0.0045	0.0094	ND	U	0.0045	0.0094
PCB-1221	ND	x	x	ND	U	0.0056	0.0097	ND	U	0.0054	0.0094	ND	U	0.0054	0.0095	ND	U	0.0054	0.0094	ND	U	0.0054	0.0094
PCB-1232	ND	x	x	ND	U	0.0051	0.0097	ND	U	0.0049	0.0094	ND	U	0.005	0.0095	ND	U	0.0049	0.0094	ND	U	0.0049	0.0094
PCB-1242	ND	x	x	ND	U	0.0035	0.0097	ND	U	0.0034	0.0094	ND	U	0.0034	0.0095	ND	U	0.0034	0.0094	ND	U	0.0034	0.0094
PCB-1248	ND	x	x	ND	U	0.0029	0.0097	ND	U	0.0028	0.0094	ND	U	0.0028	0.0095	ND	U	0.0028	0.0094	ND	U	0.0028	0.0094
PCB-1254	ND	x	x	ND	U	0.0044	0.0097	ND	U	0.0043	0.0094	ND	U	0.0043	0.0095	ND	U	0.0043	0.0094	ND	U	0.0043	0.0094
PCB-1260	ND	x	x	ND	U	0.0038	0.0097	ND	U	0.0037	0.0094	ND	U	0.0037	0.0095	ND	U	0.0037	0.0094	ND	U	0.0037	0.0094

TABLE 13 (*continued*)
Analytical Results for PCBs in Site Water and Elutriates Generated from Sediment Samples

	Little River to Winyah Bay								Charleston to Port Royal				Charleston to Port Royal							
Sample ID:	AIWW21-LB-3 (Total)				AIWW21-LB-3 (Dissolved)				AIWW21-SW-2				AIWW21-CP-16 (Total)				AIWW21-CP-16 (Dissolved)			
Analyte	Result ng/L	Qualifier	MDL	MRL	Result ng/L	Qualifier	MDL	MRL	Result ng/L	Qualifier	MDL	MRL	Result ng/L	Qualifier	MDL	MRL	Result ng/L	Qualifier	MDL	MRL
PCB 8[NOAA]	ND	U	0.38	0.94	ND	U	0.38	0.94	ND	U	0.38	0.95	ND	U	0.38	0.95	ND	U	0.38	0.95
PCB 18[NOAA]	ND	U	0.59	0.94	ND	U	0.59	0.94	0.98	--	0.60	0.95	ND	U	0.60	0.95	ND	U	0.60	0.95
PCB 28[NOAA]	ND	U	0.46	0.94	ND	U	0.46	0.94	ND	U	0.47	0.95	ND	U	0.47	0.95	ND	U	0.47	0.95
PCB 44[NOAA]	ND	U	0.68	0.94	ND	U	0.68	0.94	ND	U	0.69	0.95	ND	U	0.69	0.95	ND	U	0.69	0.95
PCB 49	ND	U	0.32	0.94	ND	U	0.32	0.94	ND	U	0.32	0.95	ND	U	0.32	0.95	ND	U	0.32	0.95
PCB 52[NOAA]	ND	U	0.44	0.94	ND	U	0.44	0.94	0.49	J p	0.44	0.95	ND	U	0.44	0.95	ND	U	0.44	0.95
PCB 66[NOAA]	ND	U	0.56	0.94	ND	U	0.56	0.94	ND	U	0.57	0.95	ND	U	0.57	0.95	ND	U	0.57	0.95
PCB 77	ND	U	0.66	0.94	ND	U	0.66	0.94	ND	U	0.67	0.95	ND	U	0.67	0.95	ND	U	0.67	0.95
PCB 87	ND	U	0.53	0.94	ND	U	0.53	0.94	ND	U	0.54	0.95	ND	U	0.54	0.95	ND	U	0.54	0.95
PCB 101[NOAA]	ND	U	0.56	0.94	ND	U	0.56	0.94	ND	U	0.56	0.95	ND	U	0.56	0.95	ND	U	0.56	0.95
PCB 105[NOAA]	ND	U	0.47	0.94	ND	U	0.47	0.94	ND	U	0.47	0.95	ND	U	0.47	0.95	ND	U	0.47	0.95
PCB 118[NOAA]	ND	U	0.69	0.94	ND	U	0.69	0.94	ND	U	0.70	0.95	ND	U	0.70	0.95	ND	U	0.70	0.95
PCB 126	ND	U	0.68	0.94	ND	U	0.68	0.94	ND	U	0.69	0.95	ND	U	0.69	0.95	ND	U	0.69	0.95
PCB 128[NOAA]	ND	U	0.52	0.94	ND	U	0.52	0.94	ND	U	0.52	0.95	ND	U	0.52	0.95	ND	U	0.52	0.95
PCB 138[NOAA]	ND	U	0.47	0.94	ND	U	0.47	0.94	0.63	J p	0.47	0.95	ND	U	0.47	0.95	ND	U	0.47	0.95
PCB 153[NOAA]	ND	U	0.50	0.94	ND	U	0.50	0.94	0.66	J p	0.50	0.95	ND	U	0.50	0.95	ND	U	0.50	0.95
PCB 156	ND	U	0.62	0.94	ND	U	0.62	0.94	ND	U	0.63	0.95	ND	U	0.63	0.95	ND	U	0.63	0.95
PCB 169	ND	U	0.65	0.94	ND	U	0.65	0.94	ND	U	0.66	0.95	ND	U	0.66	0.95	ND	U	0.66	0.95
PCB 170[NOAA]	ND	U	0.32	0.94	ND	U	0.32	0.94	ND	U	0.32	0.95	ND	U	0.32	0.95	ND	U	0.32	0.95
PCB 180[NOAA]	ND	U	0.65	0.94	ND	U	0.65	0.94	ND	U	0.66	0.95	ND	U	0.60	0.95	ND	U	0.66	0.95
PCB 183	ND	U	0.60	0.94	ND	U	0.60	0.94	ND	U	0.61	0.95	ND	U	0.61	0.95	ND	U	0.61	0.95
PCB 184	ND	U	0.60	0.94	ND	U	0.60	0.94	ND	U	0.60	0.95	ND	U	0.60	0.95	ND	U	0.66	0.95
PCB 187[NOAA]	ND	U	0.60	0.94	ND	U	0.60	0.94	ND	U	0.61	0.95	ND	U	0.61	0.95	ND	U	0.61	0.95
PCB 195[NOAA]	ND	U	0.74	0.94	ND	U	0.74	0.94	ND	U	0.75	0.95	ND	U	0.75	0.95	ND	U	0.75	0.95
PCB 206[NOAA]	ND	U	0.83	0.94	ND	U	0.83	0.94	ND	U	0.83	0.95	ND	U	0.83	0.95	ND	U	0.83	0.95
PCB 209[NOAA]	ND	U	0.78	0.94	ND	U	0.78	0.94	ND	U	0.79	0.95	ND	U	0.79	0.95	ND	U	0.79	0.95
Total EPA Region 4 PCBs	15				15				16				15				15			
Total NOAA PCBs	20				20				22				21				21			
Analyte	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL	Result µg/L	Qualifier	MDL	MRL
PCB-1016	ND	U	0.0045	0.0094	ND	U	0.0045	0.0094	ND	U	0.0045	0.0094	ND	U	0.0047	0.0099	ND	U	0.0045	0.0095
PCB-1221	ND	U	0.0054	0.0094	ND	U	0.0054	0.0094	ND	U	0.0054	0.0094	ND	U	0.0057	0.0099	ND	U	0.0054	0.0095
PCB-1232	ND	U	0.0049	0.0094	ND	U	0.0049	0.0094	ND	U	0.0049	0.0094	ND	U	0.0052	0.0099	ND	U	0.0050	0.0095
PCB-1242	ND	U	0.0034	0.0094	ND	U	0.0034	0.0094	ND	U	0.0034	0.0094	ND	U	0.0035	0.0099	ND	U	0.0034	0.0095
PCB-1248	ND	U	0.0028	0.0094	ND	U	0.0028	0.0094	ND	U	0.0028	0.0094	ND	U	0.0030	0.0099	ND	U	0.0028	0.0095
PCB-1254	ND	U	0.0043	0.0094	ND	U	0.0043	0.0094	ND	U	0.0043	0.0094	ND	U	0.0045	0.0099	ND	U	0.0043	0.0095
PCB-1260	ND	U	0.0037	0.0094	ND	U	0.0037	0.0094	ND	U	0.0037	0.0094	ND	U	0.0039	0.0099	ND	U	0.0037	0.0095

Non-detect (ND) results use the MDL for calculating total EPA Region 4 and total NOAA PCBs. (J-qualified results use the value reported by the laboratory for calculating total EPA Region 4 and total NOAA PCBs.)
[NOAA] National Oceanic and Atmospheric Administration PCB congeners (see SERIM Table 5-6 for list).
Data qualifiers and acronyms are defined at the front of the tables section.
Sources: Results from Eurofins TestAmerica; There are no applicable CMC values in USEPA (2015). Compiled by: ANAMAR Environmental Consulting, Inc.

TABLE 14
Analytical Results for Dioxins and Furans in Site Water and Elutriates Generated from Sediment Samples

					Little River to Charleston					Little River to Winyah Bay																
				Sample ID:	AIWW21-SW-1					AIWW21-LB-1 (Total)					AIWW21-LB-1 (Dissolved)					AIWW21-LB-2 (Total)					AIWW21-LB-2 (Dissolved)				
Analyte	Maximum Conc. pg/L	SC CMC pg/L	CMC pg/L	TEF pg/L	Result pg/L	Qualifier	MDL	MRL	TEQ	Result pg/L	Qualifier	MDL	MRL	TEQ	Result pg/L	Qualifier	MDL	MRL	TEQ	Result pg/L	Qualifier	MDL	MRL	TEQ	Result pg/L	Qualifier	MDL	MRL	TEQ
2,3,7,8-TCDD	0.60	x	x	1	ND	U	0.079	4.8	0.079	ND	U	0.063	4.7	0.063	ND	U	0.060	4.7	0.060	ND	U	0.056	4.7	0.056	ND	U	0.046	4.7	0.046
1,2,3,7,8-PeCDD	0.76	x	x	1	ND	U	0.15	24	0.15	ND	U	0.25	23	0.25	0.76	J B	0.11	23	0.76	ND	U	0.26	23	0.26	ND	U	0.14	23	0.14
1,2,3,4,7,8-HxCDD	0.25	x	x	0.1	0.44	J I B	0.06	24	0.044	ND	U	0.054	23	0.0054	ND	U	0.057	23	0.0057	ND	U	0.032	23	0.0032	ND	U	0.028	23	0.0028
1,2,3,6,7,8-HxCDD	0.88	x	x	0.1	0.34	J I B	0.055	24	0.034	0.51	J I B	0.054	23	0.051	ND	U	0.060	23	0.006	0.09	J I B	0.033	23	0.0090	ND	U	0.028	23	0.0028
1,2,3,7,8,9-HxCDD	1.3	x	x	0.1	ND	U	0.063	24	0.0063	ND	U	0.054	23	0.0054	ND	U	0.057	23	0.0057	0.37	J I B	0.032	23	0.037	ND	U	0.028	23	0.0028
1,2,3,4,6,7,8-HpCDD	13	x	x	0.01	4.7	J I B	0.18	24	0.047	2.7	J B	0.055	23	0.027	0.97	J I B	0.038	23	0.0097	1.8	J I B	0.032	23	0.018	0.59	J I B	0.028	23	0.0059
OCDD	250	x	x	0.0003	82	J B	0.062	110	0.025	44	J B	0.14	100	0.013	3.7	J B	0.051	100	0.0011	32	J B	0.13	100	0.0096	3.0	J B	0.026	100	0.0009
2,3,7,8-TCDF	0.34	x	x	0.1	ND	U	0.17	4.8	0.017	0.27	J	0.072	4.7	0.027	0.34	J I	0.067	4.7	0.034	ND	U	0.043	4.7	0.0043	ND	U	0.036	4.7	0.0036
1,2,3,7,8-PeCDF	0.69	x	x	0.03	0.69	J I B	0.076	24	0.021	ND	U	0.20	23	0.006	0.35	J I B	0.056	23	0.011	0.35	J I B	0.067	23	0.011	0.38	J I B	0.14	23	0.011
2,3,4,7,8-PeCDF	0.72	x	x	0.3	0.35	J I	0.064	24	0.105	ND	U	0.16	23	0.048	0.54	J I B	0.045	23	0.162	ND	U	0.053	23	0.016	ND	U	0.12	23	0.036
1,2,3,4,7,8-HxCDF	0.25	x	x	0.1	ND	U	0.037	24	0.0037	0.20	J I B	0.025	23	0.020	0.11	J I B	0.026	23	0.011	ND	U	0.020	23	0.0020	0.091	J I B	0.018	23	0.0091
1,2,3,6,7,8-HxCDF	0.49	x	x	0.1	ND	U	0.039	24	0.0039	0.49	J B	0.024	23	0.049	0.16	J B	0.026	23	0.016	ND	U	0.021	23	0.0021	0.23	J I B	0.019	23	0.023
1,2,3,7,8,9-HxCDF	0.71	x	x	0.1	0.23	J I B	0.038	24	0.023	0.43	J I B	0.029	23	0.043	0.20	J I B	0.028	23	0.020	ND	U	0.024	23	0.0024	0.20	J B	0.021	23	0.020
2,3,4,6,7,8-HxCDF	0.51	x	x	0.1	ND	U	0.041	24	0.0041	0.14	J I B	0.024	23	0.014	0.26	J I B	0.024	23	0.026	ND	U	0.020	23	0.0020	ND	U	0.018	23	0.0018
1,2,3,4,6,7,8-HpCDF	0.66	x	x	0.01	0.40	J B	0.038	24	0.004	0.61	J I B	0.024	23	0.0061	ND	U	0.026	23	0.0003	0.30	J I B	0.020	23	0.0030	ND	U	0.018	23	0.0002
1,2,3,4,7,8,9-HpCDF	0.34	x	x	0.01	ND	U	0.047	24	0.0005	0.26	J I B	0.027	23	0.0026	ND	U	0.027	23	0.0003	ND	U	0.022	23	0.0002	0.25	J I B	0.019	23	0.0025
OCDF	1.6	x	x	0.0003	0.49	J I B	0.049	48	0.0001	1.3	J B	0.040	47	0.0004	0.31	J B	0.030	47	9E-05	0.81	J I B	0.023	47	0.0002	0.15	J I B	0.042	47	5E-05
Total TEQs	1.47	x	x	--					0.567					0.631					1.13					0.435					0.309
TCDD, Total	3.5	x	x	--	ND	U	0.079	4.8		3.5	J I B	0.063	4.7		ND	U	0.060	4.7		1.2	J I B	0.056	4.7		1.2	J I B	0.046	4.7	
PeCDD, Total	4.9	x	x	--	0.83	J I B	0.15	24		ND	U	0.25	23		2.6	J I B	0.11	23		ND	U	0.26	23		ND	U	0.14	23	
HxCDD, Total	23	x	x	--	9.3	J I B	0.059	24		5.7	J I B	0.054	23		2.7	J I B	0.058	23		3.5	J I B	0.032	23		2.6	J I B	0.028	23	
HpCDD, Total	43	x	x	--	17	J I B	0.18	24		8.3	J B	0.055	23		1.7	J I B	0.038	23		3.8	J I B	0.032	23		0.59	J I B	0.028	23	
TCDF, Total	2.0	x	x	--	2.0	J I B	0.17	4.8		0.55	J I B	0.072	4.7		1.4	J I B	0.067	4.7		0.49	J I B	0.043	4.7		0.29	J I B	0.036	4.7	
PeCDF, Total	2.2	x	x	--	2.2	J I B	0.07	24		ND	U	0.20	23		1.2	J I B	0.050	23		1.3	J I B	0.060	23		0.38	J I B	0.13	23	
HxCDF, Total	1.4	x	x	--	0.62	J I B	0.039	24		1.4	J I B	0.026	23		0.73	J I B	0.026	23		0.30	J I B	0.021	23		0.53	J I B	0.019	23	
HpCDF, Total	1.5	x	x	--	0.40	J B	0.042	24		1.1	J I B	0.025	23		ND	U	0.027	23		0.30	J I B	0.021	23		0.25	J I B	0.019	23	

TABLE 14 *(continued)*
Analytical Results for Dioxins and Furans in Site Water and Elutriates Generated from Sediment Samples

	Little River to Winyah Bay										Charleston to Port Royal					Charleston to Port Royal									
Sample ID:	AIWW21-LB-3 (Total)					AIWW21-LB-3 (Dissolved)					AIWW21-SW-2					AIWW21-CP-16 (Total)					AIWW21-CP-16 (Dissolved)				
Analyte	Result pg/L	Qualifier	MDL	MRL	TEQ	Result pg/L	Qualifier	MDL	MRL	TEQ	Result pg/L	Qualifier	MDL	MRL	TEQ	Result pg/L	Qualifier	MDL	MRL	TEQ	Result pg/L	Qualifier	MDL	MRL	TEQ
2,3,7,8-TCDD	ND	U	0.054	4.7	0.054	ND	U	0.060	4.7	0.060	ND	U	0.079	4.7	0.079	0.60	J I B	0.058	4.7	0.60	ND	U	0.068	4.7	0.068
1,2,3,7,8-PeCDD	0.65	J I B	0.065	23	0.65	ND	U	0.076	23	0.076	ND	U	0.068	23	0.068	ND	U	0.14	24	0.14	ND	U	0.15	23	0.15
1,2,3,4,7,8-HxCDD	ND	U	0.044	23	0.0044	ND	U	0.045	23	0.0045	ND	U	0.070	23	0.0070	ND	U	0.074	24	0.0074	ND	U	0.021	23	0.0021
1,2,3,6,7,8-HxCDD	ND	U	0.045	23	0.0045	0.33	J I B	0.046	23	0.033	ND	U	0.066	23	0.0066	0.88	J B	0.072	24	0.088	ND	U	0.022	23	0.0022
1,2,3,7,8,9-HxCDD	ND	U	0.046	23	0.0046	ND	U	0.048	23	0.0048	ND	U	0.066	23	0.0066	1.3	J I B	0.077	24	0.13	0.23	J I B	0.022	23	0.023
1,2,3,4,6,7,8-HpCDD	4.4	J I B	0.063	23	0.044	1.0	J I B	0.047	23	0.010	3.1	J I B	0.047	23	0.031	13	J B	0.16	24	0.13	2.2	J I B	0.020	23	0.022
OCDD	78	J B	0.16	100	0.023	3.2	J I B	0.045	100	0.00096	24	J B	0.066	100	0.0072	250	B	0.15	100	0.075	17	J B	0.077	100	0.0051
2,3,7,8-TCDF	ND	U	0.042	4.7	0.0042	ND	U	0.069	4.7	0.0069	0.9	J B	0.065	4.7	0.090	ND	U	0.044	4.7	0.0044	0.23	J I	0.026	4.7	0.023
1,2,3,7,8-PeCDF	0.53	J I B	0.079	23	0.016	ND	U	0.70	23	0.021	ND	U	0.067	23	0.0020	0.69	J B	0.054	24	0.021	0.35	J B	0.081	23	0.011
2,3,4,7,8-PeCDF	0.33	J I B	0.068	23	0.099	ND	U	0.57	23	0.17	ND	U	0.058	23	0.0174	0.40	J I B	0.043	24	0.12	0.72	J I B	0.072	23	0.22
1,2,3,4,7,8-HxCDF	ND	U	0.021	23	0.0021	ND	U	0.022	23	0.0022	0.25	J I B	0.033	23	0.025	0.19	J B	0.025	24	0.019	ND	U	0.016	23	0.0016
1,2,3,6,7,8-HxCDF	0.23	J I B	0.021	23	0.023	ND	U	0.022	23	0.0022	0.19	J I B	0.032	23	0.019	ND	U	0.024	24	0.0024	0.29	J B	0.016	23	0.029
1,2,3,7,8,9-HxCDF	ND	U	0.024	23	0.0024	ND	U	0.026	23	0.0026	0.36	J I B	0.029	23	0.036	0.71	J I B	0.025	24	0.071	0.079	J I B	0.018	23	0.0079
2,3,4,6,7,8-HxCDF	0.35	J I B	0.02	23	0.035	ND	U	0.020	23	0.0020	0.28	J I B	0.031	23	0.028	0.51	J I B	0.021	24	0.051	0.36	J B	0.015	23	0.036
1,2,3,4,6,7,8-HpCDF	0.21	J I B	0.039	23	0.0021	0.14	J I B	0.020	23	0.0014	ND	U	0.030	23	0.0003	0.66	J I B	0.013	24	0.0066	0.48	J I B	0.015	23	0.0048
1,2,3,4,7,8,9-HpCDF	0.21	J I B	0.044	23	0.0021	ND	U	0.023	23	0.00023	ND	U	0.033	23	0.0003	0.34	J I B	0.016	24	0.0034	ND	U	0.016	23	0.0002
OCDF	0.54	J I B	0.022	47	0.00016	ND	U	0.058	47	1.7E-05	0.37	J I B	0.038	47	0.0001	1.6	J B	0.021	47	0.0005	0.72	J I B	0.052	47	0.0002
Total TEQs					0.971					0.399					0.424					1.47					0.602
TCDD, Total	1.0	J I B	0.054	4.7		1.2	J I B	0.060	4.7		0.51	J I B	0.079	4.7		2.3	J I B	0.058	4.7		ND	U	0.068	4.7	
PeCDD, Total	4.9	J I B	0.065	23		2.8	J I B	0.076	23		0.53	J I B	0.068	23		1.3	J I B	0.14	24		0.67	J I B	0.15	23	
HxCDD, Total	4.8	J I B	0.045	23		1.4	J I B	0.046	23		5.4	J I B	0.067	23		23	J I B	0.074	24		3.8	J I B	0.022	23	
HpCDD, Total	10	J I B	0.063	23		1.5	J I B	0.047	23		9.6	J I B	0.047	23		43	B	0.16	24		6.2	J I B	0.020	23	
TCDF, Total	0.38	J I B	0.042	4.7		0.21	J I B	0.069	4.7		1.7	J I B	0.065	4.7		1.1	J I B	0.044	4.7		1.4	J I B	0.026	4.7	
PeCDF, Total	1.6	J I B	0.073	23		ND	U	0.63	23		ND	U	0.067	23		1.8	J I B	0.049	24		1.2	J I B	0.077	23	
HxCDF, Total	0.70	J I B	0.021	23		ND	U	0.026	23		1.1	J I B	0.031	23		1.4	J I B	0.024	24		0.79	J I B	0.016	23	
HpCDF, Total	0.71	J I B	0.041	23		0.14	J I B	0.022	23		ND	U	0.033	23		1.5	J I B	0.015	24		0.76	J I B	0.015	23	

Non-detect (ND) results use the MDL for calculating total TEQs. (J-qualified results use the value reported by the laboratory for calculating total TEQs.) These values are multiplied by the TEF prior to summing.
Data qualifiers and acronyms are defined at the front of the tables section.

Sources: Results from Eurofins TestAmerica; TEF values from Van den Berg et al. (2006). (There are no federal CMC values for these dioxins and furans [USEPA (2015), Buchman 2008].)
Compiled by: ANAMAR Environmental Consulting, Inc.

NOTE:

Appendices are provided in electronic format only
and can be found on the accompanying disc.

SEDIMENT SAMPLING AND ANALYSIS OF DMMAS FOR BENEFICIAL USE

AEM GROUP
ENVIRONMENTAL SERVICES

Global Knowledge, local solutions ®

Sediment Sampling and Analysis of Dredged Material Management Areas in Charleston County, South Carolina
Final Report

Contract No. W912HP23F0003

Prepared for:
U.S. Army Corps of Engineers
Charleston District
1050 Remount Road, Bldg. 3555
North Charleston, South Carolina 29406

Prepared by:
Advanced Environmental Management Group
44339 Plymouth Oaks Blvd.
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May 9, 2023
G23000

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Appendix C – Field Logs

Appendix D – Analytical Results Summary Tables

Appendix E – Insight Laboratory Reports

Appendix F – Composite Fines Graphs

Appendix G – QAPP

Abbreviations

- AEM Group Advanced Environmental Management Group, LLC
- AIWW Atlantic Intercoastal Waterway
- ASTM American Society for Testing and Materials
- BGL Below ground level
- DMMA Dredged Materials Management Area
- DoD Department of Defense
- GPS Global positioning system
- Insight Insight Group, LLC
- MIN Morris Island
- NOAA National Oceanic and Atmospheric Administration
- NWS National Weather Service
- QAPP Quality Assurance Prevention Plan
- SOW Scope of work
- U.S. EPA United States Environmental Protection Agency
- USACE U.S. Army Corps of Engineers, Charleston District

1.0 Introduction

The U.S. Army Corps of Engineers, Charleston District (USACE) contracted Advanced Environmental Management Group, LLC (AEM Group) to perform sediment sampling and analysis services for the evaluation of sediment located within the Dredged Material Management Areas (DMMA) in accordance with the USACE Order for Supplies or Services and scope of work (SOW) dated January 2023. DMMAs are located along the Atlantic Intercoastal Waterway (AIWW) Federal Navigation Channel and the Charleston Harbor Federal Navigation Channel in Charleston County, South Carolina. Appendix A – Figure 1 shows the project sample locations within the project DMMAs in Charleston County, South Carolina.

The purpose of this project is to obtain representative soil/sediment samples within the seven (7) upland DMMAs project sites in order to aid in characterization and initial evaluation of their suitability for beneficial reuse or placement for future beach nourishment projects.

The SOW included the collection and the grain size analysis of sediment samples at 108 predetermined locations selected by the USACE. A few samples were slightly moved due to site conditions. Sample locations are shown in Appendix A – Figures 1 through 6.

Sampling occurred from February 23 through March 6 and March 29, 2023. The sampling team consisted of Leif Rodney and Ryan Perry from AEM Group. Insight Group, LLC (Insight) of North Charleston, South Carolina also provided sampling assistance for the project. AEM Group collected sediment samples using a hand auger method until refusal.

Sampling, sample handling, and analytical procedures were conducted in accordance with the SOW, in addition to “Standard Methods for the Examination of Water and Wastewater,” 16th Ed, Am. Pub. Health Assoc., or “Test Methods for Evaluating Solid Waste,” 3rd Ed, U.S. EPA No. SW-846, DoD Quality Systems Manual v4.2/5.0, and “Description of Soils (Visual-Manual Procedure)”, ASTM D 2488-69.

The laboratory subcontracted was Insight of North Charleston, South Carolina for the grain size analysis.

This report provides documentation of the field survey and describes the field activities that occurred, the samples collected, and the conditions encountered during the survey. AEM Group's sampling team maintained the field logs for this project and collected digital photographs for the samples and sample locations. It also includes the analytical results and the analytical reports.

Appendix B includes digital photographs taken during this project showing views of the river and the sediment samples.

Appendix C includes the field logs from information recorded in the field.

Appendix D includes the Analytical Results Summary Tables.

Appendix E includes the Insight Laboratory Reports.

Appendix F includes the Bar Graphs associated to the Composite Fine Percentage of the Analytical Results Summary Tables.

Appendix G includes the Quality Assurance Prevention Plan (QAPP).

2.0 Site Description and Sample Information

2.1 Site Description

The project Area consisted of seven (7) upland DMMAs along the AIWW Federal Navigation Channel and the Charleston Harbor Federal Navigation Channel in Charleston County, South Carolina. Morris Island (MIN) (Appendix A – Figure 2 is the southernmost DMMA in the project. It is an uninhabited island lying northeast of Folly Island, southwest of Sullivans Island, and east of James Island, at the mouth of Charleston Harbor. Sampling occurred on the north side of the island that was covered in thick vegetation. Isle of Palms (1088, 1110, 1056, 1028, 1006) (Appendix A – Figure 3, 4, and 5) are five (5) uninhabited DMMAs west-northwest of the Isle of Palms. 1088 and 1110 are located on the westmost island, 1056 is on a middle island, and 1028 and 1006 are located on the eastmost island. The northernmost DMMA was located in McClellanville, Charleston County, South Carolina (562N) directly west of Jeremy Island (Appendix A – Figure 6).

2.2 Sample Information

The SOW required the collection of a total of 648 sediment samples from 108 sediment locations at depths of four to six feet below ground level (BGL). The DMMAs being evaluated are shown in Appendix A – Figure 1.

The Sediment Samples were labeled in relation to their specific location: Morris Island North (MIN), Isle of Palms (1088, 1110, 1056, 1028, 1006), McClellanville (562N). The samples were labeled XX-23-yy-zz (with XX identifying which sample location, with yy identifying which sample number, i.e., sample 1 would be 01, etc., and zz the sample depth.).

3.0 Sample Collection

The field survey and sampling activities were conducted according to the SOW provided to AEM Group for Dredged Material Management Areas Charleston County, South Carolina January 2023, as prepared and later refined based on discussions with the USACE Charleston District project officer, Brandon (Jacob) Kyzar.

3.1 Survey Preparation

In order to organize the sampling effort and prepare the sample containers, AEM Group developed a sampling plan based on the SOW. The sampling crew prepared the supply of containers and sampling supplies prior to mobilization. Based on the nature of the samples, the plan called for samples to be stored on ice and shipped to the certified laboratories at the completion of the collection effort.

The sampling plan summarized the the sampling equipment to be used, the sample locations, sample depths, the analysis parameters, the containers required, the sampling preservation requirements, the chain-of-custody, the health and safety plans, and the delivery of the samples.

3.2 Weather and Climatic Conditions

The samples were collected between February 23 through March 29, 2023. The weather during the sampling from the National Weather Service (NWS) Daily Summary on wunderground.com is presented in Table 1 below.

Table 1
Weather Summary

February 2023 – March 2023	Min Temp °F	Max Temp °F	Wind Speed, mph	Wind Gust, mpg	Wind Direction	Weather
02/23	64	84	16	23	Variable South	Fair, Cloudy
02/25	58	71	15	24	Variable North, West	Cloudy
02/27	57	81	20	29	Variable South	Fog, Fair, Partly Cloudy
02/28	64	86	20	28	Variable West	Fair, Partly Cloudy
03/01	59	85	15	0	Variable West	Fair, Mostly Cloudy
03/02	65	82	16	25	Variable West	Mostly Cloudy, Light Rain
03/03	64	80	24	24	Variable South	Partly Cloudy, Fair, Mostly Cloudy, Windy
03/06	57	78	13	0	Variable East	Partly Cloudy, Mostly Cloudy, Fair

February 2023 – March 2023	Min Temp °F	Max Temp °F	Wind Speed, mph	Wind Gust, mpg	Wind Direction	Weather
03/29	50	68	24	31	Variable North, East	Cloudy, Fair

3.3 Sample Collection

Samples were taken four to six feet BGL using a hand auger that was manually driven directly into the sediment surface.

The samples were analyzed for grain size.

3.3.1 Sample Locations

Prior to collecting sediment samples, latitude and longitude sample coordinates were provided by the USACE. The proposed sample locations were entered into a Global Positioning System (GPS) unit to locate each proposed sampling site. Samples were collected as close as possible to the USACE selected locations based on field conditions.

The sample team used the GPS unit with the predetermined sample locations to navigate to the proposed sample points, and then recorded the actual sample location once sampling had begun.

All units were recorded in feet. This information is located in Appendix C Field Log. Isle of Palms is listed as PA23-1088SWC-1 through 13 PA23-1110SWC-1 through 10, PA23-1056SWC-1 through 17, PA23-1006SWC-1 through 14, and PA23-1028SWC-1 through 14. McCllelanville is listed as PA23-562NWC-1 through 18. Morris Island is listed as PA23-MIN-1 through 22.

3.3.2 Sediment Sampling Procedures

Once the sediment sample was collected, it was measured, photographed, and described. The hand auger was driven into the ground to the predetermined depths. Samples were collected at every foot interval (0-1’, 1-2’, 2-3’, 3-4’, 4-5’, 5-6’). Sediment samples were placed into a ziplock bag and the composite sample mixed all interval samples then placed into a ziplock bag and photographed.

3.4 Field Logs

AEM Group developed a field log for this project, *Sediment Sampling Field Log*. The field forms were filled out completely in the field on a tablet.

Field conditions, activities, and field data were documented in field log sheets on a tablet. Information recorded in the log sheets includes:

- Station identification number, using a unique prefix for each site.
- Sample collection date and names of the sampling team
- Depth at each sampling location
- Depth of each core retrieved
- A description, measurement and identification of the material of each core retrieved according to ASTM D 2488-69, “Description of Soils (Visual Manual Procedure)”
- Types of sampling equipment used
- Latitude and longitude of station locations
- Time of sample collection

Field collected sample information is included in Appendix C.

3.5 Photographs

Digital color photographs were taken of some activities and the sediment samples prior to or after mixing them, to indicate color, texture, and homogeneity of the sediment.

Appendix B contains a copy of the sample photographs.

3.6 Sample Containers and Sample Preservation

Geotechnical samples sent to Insight required no preservation.

3.7 Sample Custody

Chain-of-custody protocol was maintained during sampling and shipping activities.

Procedures for sample packaging, shipping, and chain-of-custody followed the guidelines as listed in the U.S. Army Corps of Engineers Sample Handling Protocol for Low, Medium and High Concentration Samples of Hazardous Waste, dated October 1986. Samples for this project were considered to be low-level environmental samples for safety, packaging and shipping purposes.

Sample containers were carefully double bagged to prevent breakage. Each signed chain-of-custody was given to the courier.

4.0 Sample Analysis

Six hundred forty-three (643) of six hundred forty-eight (648) sediment samples were collected from one hundred and eight (108) sample locations for analysis. Samples were delivered under chain of custody to Insight Group of North Charleston, South Carolina between February 23, and March 29, 2023.

The five sediment samples that were not obtained were due to backfill of saturated material. The constant backfill of material made reaching further depths unattainable. The missed segments are the following:

- PA22-1006SWC-7E
- PA22-1006SWC-7F
- PA22-1028SWC-11F
- PA22-1028SWC-12E
- PA22-1028SWC-12F

Sediment samples were submitted to Insight Group for the following analyses:

- Grain size without hydrometer (ASTM D6913)

4.1 Analytical Results

The analytical results are included in a summary table located in Appendix D.

The composite fines percentages for each location within each DMMA is represented in the bar graphs provided in Appendix F. The graphs provide a visual representation of the fines content within each DMMA. See below for the breakdown of each DMMA.

- 562N: Composite Fines Average – 56%
    - Composite Locations <10% Fines – 3 of 18
    - Composite Locations <20% Fines – 4 of 18
    - Composite Locations <35% Fines – 5 of 18
- 1006S: Composite Fines Average – 61%
    - Composite Locations <10% Fines – 1 of 14
    - Composite Locations <20% Fines – 1 of 14
    - Composite Locations <35% Fines – 1 of 14
- 1028S: Composite Fines Average – 15%
    - Composite Locations <10% Fines – 8 of 14
    - Composite Locations <20% Fines – 9 of 14
    - Composite Locations <35% Fines – 12 of 14
- 1056S: Composite Fines Average – 20%
    - Composite Locations <10% Fines – 8 of 17
    - Composite Locations <20% Fines – 11 of 17
    - Composite Locations <35% Fines – 13 or 17
- 1088S: Composite Fines Average – 12%
    - Composite Locations <10% Fines – 8 of 13
    - Composite Locations <20% Fines – 11 of 13
    - Composite Locations <35% Fines – 12 or 13

- 1110S: Composite Fines Average – 10%
    - Composite Locations <10% Fines – 6 of 10
    - Composite Locations <20% Fines – 9 of 10
    - Composite Locations <35% Fines – 10 or 10
- MIN: Composite Fines Average – 44%
    - Composite Locations <10% Fines – 2 of 22
    - Composite Locations <20% Fines – 4 of 22
    - Composite Locations <35% Fines – 11 or 22

4.2 Analytical Reports

The Insight analytical report is located in Appendix E.

References

- ASTM Standard D 2488-69. 1975. *Recommended Practice for Description Of Soils (Visual-Manual Procedure)*. ASTM International, West Conshohocken, PA, 1975, 04.08, D18.07: www.astm.org

- ASTM Standard D6913-04. 2009. Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis. ASTM International, West Conshohocken, PA, 2009. DOI: 10.1520/D6913-04R09E01. www.astm.org

- Coor, J.L., and J.D. Ousley. 2019. *Historical Analysis of the Changes in Fines during Beach Nourishment*. ERDC/CHL CHETN-VI-xx. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

APPENDIX A

FIGURES

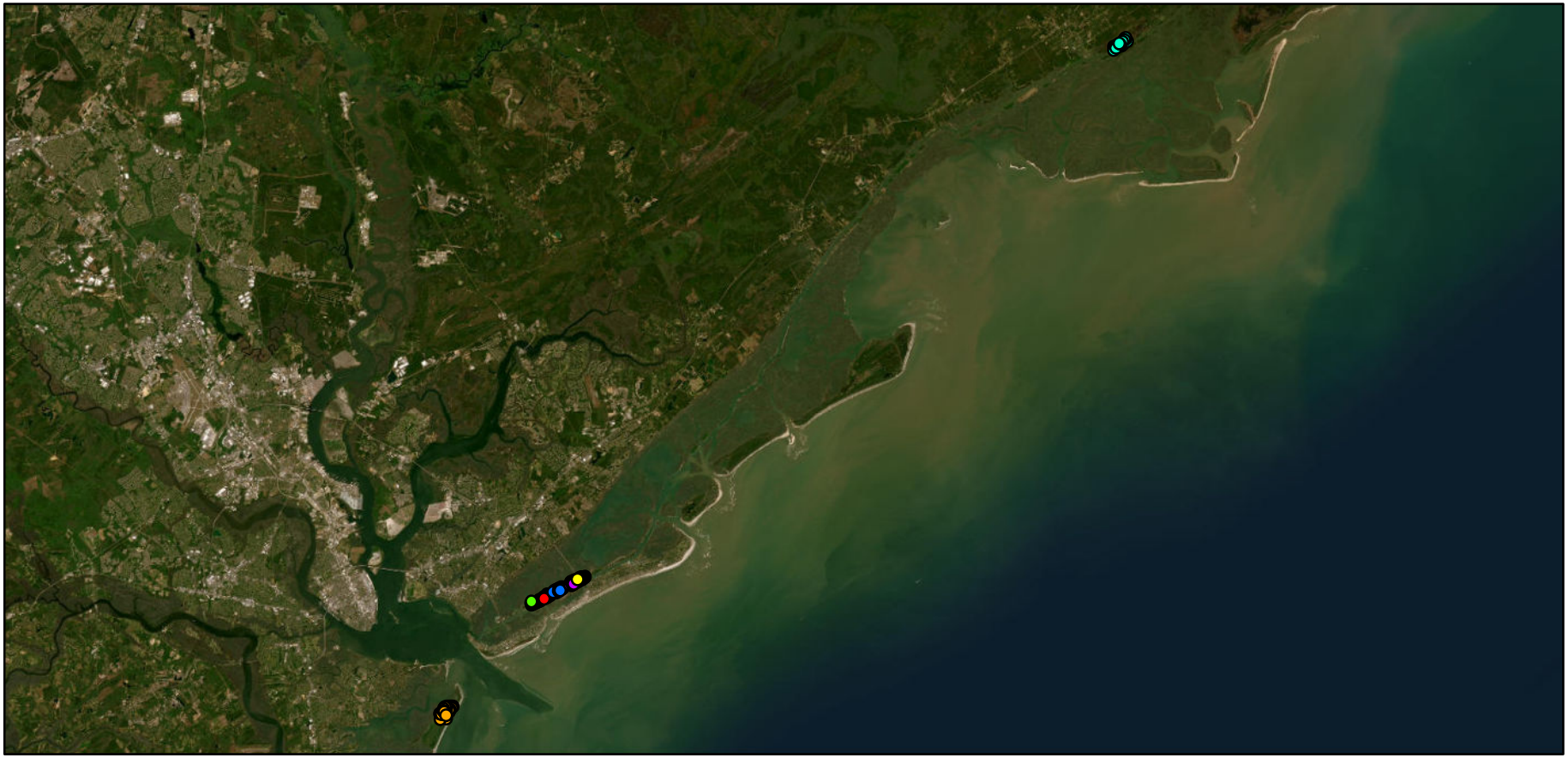

Figure 1
Overall Sampled Location

Client	Date	Drawn by
USACE Charleston	4-11-2023	RP

Location	Project no.
Charleston Harbor, South Carloina	G23000

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Figure 2
Isle of Palms 1088SW-C & 1110SW-C

Client	Date	Drawn by
USACE Charleston	4-11-2023	RP

Location	Project no.
Charleston Harbor, South Carloina	G23000

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Figure 3
Isle of Palms 1056SW-C

Client	Date	Drawn by
USACE Charleston	4-11-2023	RP

Location	Project no.
Charleston Harbor, South Carloina	G23000

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Figure 4
Isle of Palms 1006SW-C & 1028SW-C

Client	Date	Drawn by
USACE Charleston	4-11-2023	RP

Location	Project no.
Charleston Harbor, South Carloina	G23000

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Figure 5
McClellanville

Client	Date	Drawn by
USACE Charleston	4-11-2023	RP

Location	Project no.
Charleston Harbor, South Carloina	G23000

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Figure 6
Morris Island North

Client USACE Charleston	**Date** 4-11-2023	**Drawn by** RP
Location Charleston Harbor, South Carloina		**Project no.** G23000

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APPENDIX B

PHOTOGRAPHS

AREA

562N W-C

Composite 1		Composite 4	
Composite 2		Composite 5	
Composite 3		Composite 6	

AREA

562N W-C

Composite 7		Composite 10	
Composite 8		Composite 11	
Composite 9		Composite 12	

AREA

562N W-C

Composite 13		Composite 16	
Composite 14		Composite 17	
Composite 15		Composite 18	

AREA

1028S W-C

Composite 1		Composite 4	N/A
Composite 2		Composite 5	
Composite 3		Composite 6	

AREA

1028S W-C

Composite 7		Composite 10	
Composite 8		Composite 11	
Composite 9	N/A	Composite 12	

AREA

1028S W-C

Composite 13	
Composite 14	

AREA

10565 W-C

Composite 1		Composite 4	
Composite 2		Composite 5	
Composite 3		Composite 6	

AREA

10565 W-C

Composite 7		Composite 10	
Composite 8		Composite 11	
Composite 9		Composite 12	

AREA

10565 W-C

Composite 13		Composite 16	
Composite 14		Composite 17	
Composite 15			

AREA

1088S W-C

composite 1		composite 5	
composite 2		composite 6	
composite 3		composite 7	
composite 4		composite 8	

AREA

1088S W-C

composite 9		composite 13	
composite 10			
composite 11			
composite 12			

AREA

11105 W-C

Composite 1		Composite 4	
Composite 2		Composite 5	
Composite 3		Composite 6	

Appendix B
FY23 Charleston Harbor Sediment Sampling & Analysis

Client
USACE - Charleston

Location
Charleston Harbor, South Carolina

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Composite 7		Composite 10	
Composite 8			
Composite 9			

AREA

10065S W-C

Composite 1		Composite 4	
Composite 2		Composite 5	
Composite 3		Composite 6	

Appendix B
FY23 Charleston Harbor Sediment Sampling & Analysis

Client
USACE - Charleston

Location
Charleston Harbor, South Carolina

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AREA

10065S W-C

Composite 7		Composite 10	
Composite 8		Composite 11	
Composite 9		Composite 12	

AREA

10065S W-C

Composite 13	
Composite 14	

AREA

Morris Island North

Composite 1		Composite 4	
Composite 2		Composite 5	
Composite 3		Composite 6	

AREA

Morris Island North

Composite 7		Composite 10	
Composite 8		Composite 11	
Composite 9		Composite 12	

AREA

Morris Island North

Composite 13		Composite 16	
Composite 14		Composite 17	
Composite 15		Composite 18	

AREA

Morris Island North

Composite 19		Composite 22	
Composite 20			
Composite 21			

APPENDIX C

FIELD LOGS

Table 2. 562N W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2480231.42,460585.87	1A	0-1	3/3/2023	10:56	sand	medium sand	light brown	dry	loose	
	1B	2-1		10:58	sand	medium sand	light brown	dry	loose	
	1C	3-2		11:00	sand	medium sand	light brown	damp	loose	
	1D	4-3		11:02	sand	medium sand	light brown	damp	loose	
	1E	5-4		11:04	sand	medium sand	light brown	moist	loose	
	1F	6-5		11:06	sand	medium sand	light brown	moist	loose	
	Composite	0-6		11:08						
XY=2480056.06,460392.76	2A	0-1	3/3/2023	10:40	sand	fine sand	light brown	dry	loose	
	2B	2-1		10:42	sand	fine sand	light brown	dry	loose	
	2C	3-2		10:44	sand	fine sand	light brown	moist	loose	
	2D	4-3		10:46	sand	fine sand	light brown	moist	loose	
	2E	5-4		10:48	sand	fine sand	light brown	moist	loose	
	2F	6-5		10:50	sand	fine sand	light brown	moist	loose	
	Composite	0-6		10:52						
XY=2480294.70,460258.37	3A	0-1	3/3/2023	10:24	sand	medium sand	light brown	dry	loose	
	3B	2-1		10:26	sand	medium sand	light brown	dry	loose	
	3C	3-2		10:28	sand	medium sand	light brown	dry	loose	
	3D	4-3		10:30	sand	medium sand	light brown	wet	loose	
	3E	5-4		10:32	sand	medium sand	light brown	wet	loose	Shell deposits
	3F	6-5		10:34	sand	medium sand	light brown	saturated	loose	Shell deposits
	Composite	0-6		10:36						
XY=2480510.92,459863.61	4A	0-1	3/3/2023	10:00	clay	clay	dark brown	dry	loose	red clay deposits
	4B	2-1		10:02	sand	medium sand	medium brown	dry	loose	
	4C	3-2		10:04	sand	medium sand	medium brown	dry	loose	shell deposits
	4D	4-3		10:06	sand	medium sand	medium brown	wet	loose	shell deposits
	4E	5-4		10:08	sand	medium sand	medium brown	saturated	loose	shell deposits
	4F	6-5		10:10	sand	medium sand	medium brown	saturated	loose	shell deposits
	Composite	0-6		10:12						
XY=2480150.70,459664.94	5A	0-1	2/25/2023	14:03	clay	clay	red/grey/brown	damp	hard	
	5B	2-1		14:05	clay	clay	red/grey/brown	damp	hard	
	5C	3-2		14:07	clay	clay	red/grey/brown	wet	hard	saturation @ 3.5
	5D	4-3		14:09	sand	medium sand	red/gray	saturated	loose	
	Composite	0-4		14:11						
XY=2479909.28,460081.91	6A	0-1	3/3/2023	11:40	clay	clay	gray	moist	loose	phragmites
	6B	2-1		11:42	clay	clay	gray	moist	loose	
	6C	3-2		11:44	clay	clay	gray	moist	loose	
	6D	4-3		11:46	clay	clay	gray	saturated	loose	last 2" medium grain, brown sand
	Composite	0-4		11:48						

Table 2. 562N W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2479610.14,459759.82	7A	0-1	3/3/2023	12:02	clay	clay	gray	damp	firm	reddish coloring
	7B	2-1		12:04	clay	clay	gray	damp	firm	reddish coloring
	7C	3-2		12:06	clay	clay	gray	damp	firm	reddish coloring
	7D	4-3		12:08	clay	clay	gray	saturated	firm	reddish coloring last 2 inches med sand
	Composite	0-4		12:10						
XY=2479801.36,459395.09	8A	0-1	2/25/2023	13:38	clay	fine sand	gray-red	damp	firm	
	8B	2-1		13:40	clay	fine sand	gray-red	damp	firm	
	8C	3-2		13:42	clay	fine sand	gray-red	damp	firm	
	8D	4-3		13:44	clay	fine sand	gray-red	saturated	firm	
	Composite	0-4		13:46						
XY=2479438.71,459021.44	9A	0-1	2/25/2023	13:00	clay	clay	grey/brown/red	damp	loose	rained last night
	9B	2-1		13:02	clay	clay	grey/brown/red	damp	firm	rained last night
	9C	3-2		13:04	clay	clay	grey/brown/red	damp	firm	rained last night
	9D	4-3		13:06	clay	clay	grey/brown/red	damp	firm	rained last night
	Composite	0-4		13:08	clay	clay	grey/brown/red	damp	firm	
XY=2479223.62,459241.63	10A	0-1	3/3/2023	12:30	clay	clay	gray	damp	firm	reddish coloring
	10B	2-1		12:32	clay	clay	gray	damp	firm	reddish coloring
	10C	3-2		12:34	clay	clay	gray	dry	hard	reddish coloring
	10D	4-3		12:36	clay	clay	gray	damp	hard	reddish coloring
	Composite	0-4		12:38						
XY=2478957.24,459440.29	11A	0-1	3/3/2023	12:50	clay	clay	gray	damp	firm	reddish streaks in clay
	11B	2-1		12:52	clay	clay	gray	damp	firm	reddish streaks in clay
	11C	3-2		12:54	clay	clay	gray	moist	firm	reddish streaks in clay
	11D	4-3		12:56	clay	clay	gray	moist	firm	reddish streaks in clay
	Composite	0-4		12:58						
XY=2478517.64,459130.17	12A	0-1	2/25/2023	9:30	clay	Clay	medium brown	damp	firm	rained last night
	12B	2-1		9:32	clay	Clay	black/brown	damp	soft	rained last night
	12C	3-2		9:33	clay	Clay	black/brown	damp	soft	rained last night
	12D	4-3		9:36	clay	Clay	black/brown	damp	soft	rained last night
	Composite	0-4		9:38						
XY=2478708.86,458765.44	13A	0-1	2/25/2023	13:52	clay	clay	red/brown/grey	damp	loose	
	13B	2-1		13:54	clay	clay	red/brown/grey	damp	soft	
	13C	3-2		13:56	clay	clay	red/brown/grey	damp	firm	
	13D	4-3		13:58	clay	clay	gray-brown	damp	hard	
	13E	5-4		15:10	clay	clay	gray	moist	hard	
	13F	6-5		15:12	clay	clay	gray	moist	hard	
	Composite	0-6		15:14						

Table 2. 562N W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2478315.94,458406.00	14A	0-1	2/25/2023	15:50	sand	fine sand	red/brown	damp	loose	
	14B	2-1		15:52	clay/sand	clay	gray-brown	damp	soft	
	14C	3-2		15:54	clay	clay	gray	damp	soft	
	14D	4-3		15:56	clay	clay	gray	damp	soft	
	14E	5-4		15:58	clay	clay	gray	damp	firm	
	14F	6-5		16:00	clay	clay	gray	damp	firm	
	Composite	0-6		16:02						
XY=2478163.21,458685.40	15A	0-1	2/25/2023	10:38	sand	fine sand	light brown	damp	loose	
	15B	2-1		10:40	clay	very fine sand	gray	moist	soft	
	15C	3-2		10:42	clay	very fine sand	gray	moist	soft	
	15D	4-3		10:44	clay	very fine sand	gray	moist	refusal	refusal @ 3.5
	Composite	0-4		10:46						
XY=2477828.40,458743.52	16A	0-1	2/25/2023	10:00	clay	clay	medium brown	damp	firm	rained last night
	16B	2-1		10:02	clay	clay	black/grey	damp	soft	rained last night
	16C	3-2		10:04	clay	clay	black/grey	damp	soft	rained last night
	16D	4-3		10:06	clay	clay	black/grey/red	damp	firm	rained last night
	Composite	0-4		10:08						
XY=2478014.33,458498.56	17A	0-1	2/25/2023	10:54	sand	fine sand	light brown	damp	loose	
	17B	2-1		10:56	sand/silt	very fine sand	black-grey	damp	hard	
	17C	3-2		10:58	sand/silt	fine sand	black-grey	damp	firm	
	17D	4-3		11:00	sand/silt	fine sand	black-grey	damp	firm	
	17E	5-4		11:02	sand-clay	very fine sand	black-grey	damp	soft	grey sand with black clay deposits
	17F	6-5		11:04	sand-clay	very fine sand	black-grey	damp	soft	grey sand with black clay deposits
	Composite	0-6		11:06						
XY=2477893.87,458156.17	18A	0-1	2/25/2023	11:28	sand	very fine sand	medium brown	damp	soft	rained last night
	18B	2-1		11:30	sand/silt	very fine sand	black	moist	soft	
	18C	3-2		11:32	clay	silty/clay	grey/black	damp	firm	
	18D	4-3		11:34	sand	fine sand	gray	damp	soft	
	18E	5-4		11:36	sand	fine sand	gray	damp	soft	
	18F	6-5		11:38	sand	fine sand	gray-brown	damp	soft	black clay at base
	Composite	0-6		11:40						

Table 3. 1028S W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2369308.64,351355.36	1A	0-1	3/6/2023	9:34	sand	fine sand	light brown	damp	loose	
	1B	2-1		9:36	sand	fine sand	light brown	damp	loose	
	1C	3-2		9:38	sand	fine sand	light brown	damp	loose	
	1D	4-3		9:40	sand	fine sand	gray	wet	loose	
	1E	5-4		9:42	sand	fine sand	gray	saturated	loose	
	1F	6-5		9:44	sand	fine sand	gray	saturated	loose	
	Composite	0-6		9:46						
XY=2369510.35,351445.38	2A	0-1	3/6/2023	9:00	sand	fine sand	dark brown	damp	loose	
	2B	2-1		9:02	sand	fine sand	dark brown	damp	loose	
	2C	3-2		9:04	sand	fine sand	dark brown	moist	loose	
	2D	4-3		9:06	sand	very fine sand	dark brown	saturated	loose	
	2E	5-4		9:08	sand	very fine sand	gray	saturated	loose	
	2F	6-5		9:10	sand	very fine sand	gray	saturated	loose	
	Composite	0-6		9:12						
XY=2369768.20,351470.43	3A	0-1	3/6/2023	13:32	sand	fine sand	light brown	damp	soft	
	3B	2-1		13:34	sand	fine sand	gray-brown	damp	soft	
	3C	3-2		13:36	sand	fine sand	gray	moist	soft	
	3D	4-3		13:38	sand/silt	fine sand	gray	moist	firm	
	3E	5-4		13:40	clay	clay	gray	saturated	firm	
	3F	6-5		13:42	clay	clay	gray	saturated	firm	
	Composite	0-6		13:44						
XY=2370023.60,351594.79	4A	0-1	3/6/2023	14:00	sand	fine sand	light brown	dry		
	4B	2-1		14:02	sand	fine sand	gray-brown	damp		
	4C	3-2		14:04	sand	fine sand	gray	moist		
	4D	4-3		14:06	sand	fine sand	gray	moist		
	4E	5-4		14:08	sand/silt	fine sand	gray	moist		
	4F	6-5		14:10	sand/silt	fine sand	gray	moist		
	Composite	0-6		14:12						
XY=2370309.35,351755.00	5A	0-1	3/6/2023	14:30	sand	fine sand	light brown	dry	loose	
	5B	2-1		14:32	sand	fine sand	light brown	damp	loose	
	5C	3-2		14:34	sand	fine sand	light brown	moist	loose	
	5D	4-3		14:36	sand	fine sand	gray	moist	loose	
	5E	5-4		14:38	sand	fine sand	gray	moist	loose	
	5F	6-5		14:40	sand	fine sand	gray	wet	loose	
	Composite	0-6		14:42						

Table 3. 1028S W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2370556.54,351867.94	6A	0-1	3/6/2023	15:15	sand	fine sand	dark brown	moist	soft	
	6B	2-1		15:17	sand	fine sand	dark brown	moist	soft	
	6C	3-2		15:19	sand	fine sand	gray-brown	moist	firm	
	6D	4-3		15:21	sand	fine sand	gray	saturated	firm	
	6E	5-4		15:23	sand	fine sand	gray	saturated	firm	
	6F	6-5		15:25	clay	clay	gray	saturated	firm	
	Composite	0-6		15:27						
XY=2370451.45,352048.92	7A	0-1	3/6/2023	11:46	sand	fine sand	light brown	damp	loose	
	7B	2-1		11:48	sand/silt	very fine sand	gray-brown	moist	soft	
	7C	3-2		11:50	sand/silt	very fine sand	gray-brown	moist	firm	
	7D	4-3		11:52	clay	clay	gray	wet	firm	
	Composite	0-4		11:54						
XY=2370204.26,351935.97	8A	0-1	3/6/2023	14:45	sand	fine sand	light brown	dry	soft	
	8B	2-1		14:47	sand	fine sand	light brown	damp	soft	
	8C	3-2		14:49	sand	fine sand	medium brow	damp	soft	
	8D	4-3		14:51	sand	fine sand	gray	damp	soft	
	Composite	0-4		14:53						
XY=2369918.49,351775.76	9A	0-1	3/6/2023	15:45	sand	fine sand	dark brown	damp	soft	
	9B	2-1		15:47	sand	fine sand	dark brown	damp	soft	
	9C	3-2		15:49	sand	fine sand	dark brown	damp	soft	
	9D	4-3		15:51	sand	fine sand	gray	damp	soft	
	Composite	0-4		15:53						
XY=2369713.59,351667.13	10A	0-1	3/6/2023	12:50	sand/silt	very fine sand	gray-brown	damp	loose	
	10B	2-1		12:52	sand/silt	very fine sand	gray-brown	moist	loose	
	10C	3-2		12:54	sand/silt	very fine sand	gray	saturated	loose	
	10D	4-3		12:56	sand/silt	very fine sand	gray	saturated	loose	
	10E	5-4		12:58	sand/silt	very fine sand	gray	saturated	loose	
	10F	6-5		13:00	clay	very fine sand	gray	saturated	hard	
	Composite	0-6		13:32						
XY=2369544.93,351810.63	11A	0-1	3/6/2023	12:00	sand	fine sand	light brown	damp	soft	
	11B	2-1		12:28	sand	fine sand	light brown	damp	soft	
	11C	3-2		12:57	sand	fine sand	gray	moist	loose	
	11D	4-3		13:06	sand	fine sand	gray	moist	loose	
	11E	5-4		13:08	sand	fine sand	gray	saturated	refusal	Back Fill
	11F	6-5								

Table 3. 1028S W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
	Composite	0-6		10:10						
XY=2369708.47,351962.68	12A	0-1	3/6/2023	10:36	sand	fine sand	light brown	damp	loose	
	12B	2-1		10:38	sand	fine sand	light brown	damp	soft	
	12C	3-2		10:40	sand/silt	very fine sand	gray	wet	firm	
	12D	4-3		10:42	sand/silt	very fine sand	gray	saturated	refusal	backfill (saturation)
	12E	5-4		:						
	12F	6-5		:						
	Composite	0-6		10:44						
XY=2370104.87,352177.71	13A	0-1	3/6/2023	10:56	sand	fine sand	light brown	damp	loose	
	13B	2-1		10:58	sand	fine sand	gray-brown	wet	loose	
	13C	3-2		11:00	sand	fine sand	gray	saturated	loose	
	13D	4-3		11:02	sand	fine sand	gray	saturated	loose	
	Composite	0-4		11:04						
XY=2370352.06,352290.65	14A	0-1	3/6/2023	11:18	sand	fine sand	dark brown	damp	loose	
	14B	2-1		11:20	sand/silt	very fine sand	gray-brown	moist	soft	
	14C	3-2		11:22	sand/silt	very fine sand	gray-brown	wet	soft	
	14D	4-3		11:24	clay	clay	gray	wet	firm	
	Composite	0-4		11:26						

11F, 12E, and 12F refusal / did not sample

Table 4. 10565 W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2366404.51,349878.25	1A	0-1	3/2/2023	10:46	clay	clay	gray	damp	firm	
	1B	2-1		10:48	sand	fine sand	medium brown	damp	firm	
	1C	3-2		10:50	sand	fine sand	medium brown	wet	firm	
	1D	4-3		10:52	sand/silt	very fine sand	gray	saturated	firm	
	Composite	0-4		10:54						
XY=2366725.47,350017.83	2A	0-1	3/2/2023	20:08	sand	fine sand	medium brown	damp	soft	
	2B	2-1		21:00	sand	fine sand	medium brown	wet	soft	
	2C	3-2		21:02	sand/silt	Sand/silt	gray	saturated	soft	
	2D	4-3		21:04	sand/silt	Sand/silt	gray	saturated	soft	
	2E	5-4		21:06	sand/silt	sand/silt	gray	saturated	soft	
	2F	6-5		21:08	sand/silt	sand/silt	gray	saturated	soft	
	Composite	0-6		22:00						
XY=2367046.43,350157.42	3A	0-1	3/2/2023	13:02	sand	fine sand	gray	damp	soft	
	3B	2-1		13:04	sand	fine sand	gray	wet	soft	
	3C	3-2		13:06	sand/silt	sand/silt	gray	wet	firm	
	3D	4-3		13:08	sand/silt	sand/silt	gray	saturated	firm	
	3E	5-4		13:10	sand/silt	sand/silt	gray	saturated	firm	
	3F	6-5		13:12	sand/silt	sand/silt	gray	saturated	firm	
	Composite	0-6		13:14						
XY=2367367.39,350297.00	4A	0-1	3/2/2023	16:00	clay	clay	gray	damp	firm	
	4B	2-1		16:02	sand	fine sand	gray	wet	soft	
	4C	3-2		16:04	sand	fine sand	gray	wet	soft	
	4D	4-3		16:06	sand/silt	silt/sand	gray	saturated	soft	
	Composite	0-4		16:08						
XY=2367688.36,350436.58	5A	0-1	3/2/2023	15:34	clay	clay	gray	damp	firm	
	5B	2-1		15:36	sand/silt	very fine sand	gray	wet	loose	
	5C	3-2		15:38	sand/silt	very fine sand	gray	wet	loose	
	5D	4-3		15:40	sand/silt	very fine sand	gray	saturated	loose	
	5E	5-4		15:42	silt	very fine sand	gray	saturated	loose	
	5F	6-5		15:44	clay	very fine sand	gray	saturated	firm	
	Composite	0-6		15:46						
XY=2367745.41,350665.65	6A	0-1	3/2/2023	15:14	clay	clay	gray	dry	soft	
	6B	2-1		15:16	silt	silt	gray	wet	soft	
	6C	3-2		15:18	silt	silt	gray	wet	soft	
	6D	4-3		15:20	silt	silt	gray	wet	soft	

Table 4. 10565 W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
	Composite	0-4		15:22						
XY=2367424.44,350526.06	7A	0-1	3/2/2023	14:24	clay	clay	gray	damp	soft	
	7B	2-1		14:26	clay	clay	gray	damp	soft	
	7C	3-2		14:28	clay	clay	gray	damp	soft	
	7D	4-3		14:30	clay	clay	gray	damp	firm	
	Composite	0-4		14:32						
XY=2367103.48,350386.48	8A	0-1	3/2/2023	13:22	sand	fine sand	gray	wet	soft	
	8B	2-1		13:24	sand	fine sand	gray	wet	soft	
	8C	3-2		13:26	sand/silt	very fine sand	black	saturated	soft	
	8D	4-3		13:28	sand/silt	very fine sand	black	saturated	soft	
	Composite	0-4		13:30						
XY=2366782.52,350246.89	9A	0-1	3/2/2023	9:56	sand	fine sand	light brown	damp	soft	
	9B	2-1		9:58	sand	fine sand	light brown	moist	soft	
	9C	3-2		10:00	sand	fine sand	light brown	wet	firm	
	9D	4-3		10:02	sand/silt	very fine sand	gray	saturated	firm	
	9E	5-4		10:04	sand/silt	very fine sand	gray	saturated	firm	
	9F	6-5		10:06	sand/silt	very fine sand	gray	saturated	firm	
	Composite	0-6		10:08						
XY=2366440.62,350099.26	10A	0-1	3/2/2023	11:08	sand	fine sand	reddish	damp	firm	first 4inch grey clay
	10B	2-1		11:10	sand/silt	silt/sand	gray	damp	firm	
	10C	3-2		11:12	sand/silt	silt/sand	gray	wet	firm	
	10D	4-3		11:14	sand/silt	silt/sand	gray	saturated	firm	
	Composite	0-4		11:16						
XY=2365958.41,349912.22	11A	0-1	3/2/2023	12:36	sand	very fine sand	light brown	damp	soft	
	11B	2-1		12:38	sand	very fine sand	light brown	moist	firm	
	11C	3-2		12:40	sand	very fine sand	light brown	wet	firm	
	11D	4-3		12:42	sand	very fine sand	light brown	saturated	firm	
	11E	5-4		12:44	sand/silt	very fine sand	gray	saturated	firm	
	11F	6-5		12:46	sand/silt	very fine sand	black	saturated	firm	
	Composite	0-6		12:48						
XY=2366176.17,350186.29	12A	0-1	3/2/2023	12:14	sand	fine sand	light brown	dry	soft	
	12B	2-1		12:16	sand	fine sand	light brown	dry	soft	
	12C	3-2		12:18	sand	fine sand	light brown	moist	soft	
	12D	4-3		12:20	sand	fine sand	light brown	wet	soft	deposit of reddish sand
	12E	5-4		12:22	sand	fine sand	light brown	saturated	soft	

Table 4. 10565 W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
	12F	6-5		12:24	sand/silt	silt/sand	gray	saturated	firm	
	Composite	0-6		12:26						
XY=2366462.58,350341.52	13A	0-1	3/2/2023	11:56	sand	fine sand	light brown	moist	firm	
	13B	2-1		11:58	sand	fine sand	light brown	wet	firm	
	13C	3-2		12:00	sand	fine sand	light brown	saturated	firm	
	13D	4-3		12:02	sand	fine sand	gray	saturated	firm	
	Composite	0-4		12:04						
XY=2366759.80,350503.08	14A	0-1	3/2/2023	10:22	clay	Clay	gray	damp	firm	
	14B	2-1		10:24	sand/clay	sand/clay	gray	damp	firm	
	14C	3-2		10:26	sand	fine sand	light brown	wet	soft	
	14D	4-3		10:28	sand/silt	sand/silt	gray	wet	soft	
	Composite	0-4		10:30						
XY=2367114.30,350649.02	15A	0-1	3/2/2023	13:46	loam	loam	dark brown	damp	firm	organic rich
	15B	2-1		13:48	sand/silt	silt/sand	gray	moist	firm	
	15C	3-2		13:50	sand/silt	silt/sand	gray	wet	firm	
	15D	4-3		13:52	sand/silt	silt/sand	gray	saturated	firm	
	Composite	0-4		13:54						
XY=2367443.15,350806.87	16A	0-1	3/2/2023	14:02	clay	clay	gray	damp	firm	
	16B	2-1		14:04	clay	clay	gray	moist	soft	
	16C	3-2		14:06	sand/silt	very fine sand	gray	saturated	firm	
	16D	4-3		14:08	sand/silt	very fine sand	gray	saturated	loose	
	Composite	0-4		14:10						
XY=2367771.49,350955.91	17A	0-1	3/2/2023	14:58	clay	clay	gray	damp	hard	
	17B	2-1		15:00	clay	clay	gray	saturated	hard	
	17C	3-2		15:02	silt	very fine sand	gray	saturated	soft	
	17D	4-3		15:04	silt	very fine sand	gray	saturated	soft	
	Composite	0-4		15:06						

Table 5. 1088S W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2365225.09,349106.96	1A	0-1	3/1/2023	11:12	sand	fine sand	light brown	dry	loose	
	1B	2-1		11:14	sand	fine sand	light brown	dry	loose	
	1C	3-2		11:16	sand	fine sand	light brown	damp	loose	thin layer of shells
	1D	4-3		11:18	sand/silt	sand/silt	gray	wet	firm	thin layer of shells
	1E	5-4		11:20	sand/silt	sand/silt	gray	saturated	firm	thin layer of shells
	1F	6-5		11:22	sand/silt	sand/silt	gray	saturated	firm	thin layer of shells
	composite	0-6		11:24						
XY=2364923.77,349329.23	2A	0-1	3/1/2023	10:56	sand	fine sand	light brown	moist	firm	
	2B	2-1		10:58	sand	fine sand	gray	moist	firm	
	2C	3-2		11:00	sand/silt	very fine sand	gray	wet	soft	
	2D	4-3		11:02	sand/silt	very fine sand	gray	saturated	soft	
	2E	5-4		11:04	sand/silt	very fine sand	gray	saturated	soft	
	2F	6-5		11:06	sand/silt	very fine sand	gray	saturated	soft	
	composite	0-6		11:08						
XY=2364923.77,349329.23	3A	0-1	3/1/2023	10:30	sand	medium sand	light brown	damp	soft	
	3B	2-1		10:32	clay	clay	gray	damp	firm	
	3C	3-2		10:34	sand/silt	Silt/Sand	gray	moist	firm	
	3D	4-3		10:36	sand	fine sand	gray	moist	soft	
	composite	0-4		10:38						
XY=2364711.70,349192.00	4A	0-1	3/1/2023	11:54	sand	fine sand	light brown	moist	loose	
	4B	2-1		11:56	sand	fine sand	light brown	wet	soft	
	4C	3-2		11:58	sand	fine sand	gray	saturated	soft	
	4D	4-3		12:00	sand/silt	silt/sand	gray	saturated	soft	
	4E	5-4		12:02	sand/silt	silt/sand	gray	saturated	soft	
	4F	6-5		12:04	sand/silt	silt/sand	gray	saturated	soft	
	composite	0-6		12:06						
XY=2364805.53,348944.26	5A	0-1	3/1/2023	11:34	sand	very fine sand	light brown	moist	firm	
	5B	2-1		11:36	sand	very fine sand	gray	moist	firm	clay deposits
	5C	3-2		11:38	sand	very fine sand	black	moist	firm	clay deposits
	5D	4-3		11:40	sand/silt	very fine sand	black	saturated	firm	clay deposits
	5E	5-4		11:42	sand/silt	very fine sand	black	saturated	firm	clay deposits
	5F	6-5		11:44	sand/silt	very fine sand	black	saturated	firm	clay deposits
	composite	0-6		11:46						
XY=2364544.20,348886.21	6A	0-1	3/1/2023	12:34	sand	fine sand	light brown	wet	loose	reddish deposits
	6B	2-1		12:36	sand/silt	fine sand	gray	saturated	loose	reddish deposits
	6C	3-2		12:38	sand/silt	fine sand	gray	saturated	loose	reddish deposits
	6D	4-3		12:40	sand/silt	fine sand	gray	saturated	loose	reddish deposits
	composite	0-4		12:42						

Table 5. 1088S W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2364368.95,348757.38	7A	0-1	3/1/2023	12:50	sand	fine sand	medium brown	damp	soft	
	7B	2-1		12:52	sand	fine sand	gray	wet	soft	
	7C	3-2		12:54	sand/silt	Silt/sand	black	wet	soft	
	7D	4-3		12:56	sand/silt	Silt/sand	Black	wet	soft	
	7E	5-4		12:58	sand/silt	Silt/sand	Black	saturated	soft	
	7F	6-5		13:00	sand/silt	Silt/sand	Black	saturated	soft	
	composite	0-6		13:02						
XY=2364191.29,348831.07	8A	0-1	3/1/2023	13:18	sand	fine sand	light brown	wet	firm	
	8B	2-1		13:20	sand	fine sand	gray	wet	firm	4" layer of shells between 1 and 2'
	8C	3-2		13:22	sand/silt	very fine sand	black	saturated	loose	
	8D	4-3		13:24	sand/silt	very fine sand	black	saturated	loose	
	8E	5-4		13:26	sand/silt	very fine sand	black	saturated	loose	shell deposits
	8F	6-5		13:28	sand/silt	very fine sand	black	saturated	loose	shell deposits
	composite	0-6		13:30						
XY=2364089.11,348617.63	9A	0-1	3/1/2023	13:56	sand	fine sand	light brown	damp	loose	shell deposits
	9B	2-1		13:58	sand	fine sand	light brown	moist	loose	shell deposits
	9C	3-2		14:00	sand	fine sand	gray	wet	loose	
	9D	4-3		14:02	sand/silt	very fine sand	black	saturated	loose	
	9E	5-4		14:04	sand/silt	very fine sand	black	saturated	loose	
	9F	6-5		14:06	sand/silt	very fine sand	black	saturated	loose	
	composite	0-6		14:08	sand/silt	very fine sand	black	saturated	loose	
XY=2364010.17,348925.31	10A	0-1	3/1/2023	13:38	sand	fine sand	light brown	dry	loose	
	10B	2-1		13:40	sand/silt	sand/silt	gray	saturated	loose	
	10C	3-2		13:42	sand/silt	silt/sand	gray	saturated	loose	
	10D	4-3		13:44	sand/silt	silt/sand	gray	saturated	loose	
	composite	0-4		13:46						
XY=2363888.80,348623.09	11A	0-1	2/28/2023	14:16	sand/silt	very fine sand	gray	wet	soft	
	11B	2-1		14:18	sand/silt	very fine sand	gray	saturated	soft	
	11C	3-2		14:20	sand/silt	very fine sand	gray	saturated	soft	
	11D	4-3		14:22	sand/silt	very fine sand	black	saturated	soft	
	composite	0-4		14:24						
XY=2363548.50,348533.15	12A	0-1	2/28/2023	13:32	top soil	soil	dark brown	damp	loose	
	12B	2-1		13:34	sand	fine sand	light brown	moist	soft	
	12C	3-2		13:36	sand	fine sand	light brown	wet	soft	
	12D	4-3		13:38	sand	fine sand	gray-brown	wet	soft	
	12E	5-4		13:40	sand/silt	fine sand	gray	saturated	soft	clay deposits
	12F	6-5		13:42	sand/silt	fine sand	gray	saturated	soft	clay deposits
	composite	0-6		13:44						

Table 5. 1088S W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2363517.89,348310.58	13A	0-1	2/28/2023	13:06	sand	fine sand	light brown	damp	loose	
	13B	2-1		13:08	sand	fine sand	light brown	moist	loose	
	13C	3-2		13:10	sand	fine sand	gray	wet	loose	
	13D	4-3		13:12	sand	fine sand	gray	wet	loose	
	13E	5-4		13:14	sand/silt	sand/silt	gray	saturated	loose	clay deposits
	13F	6-5		13:16	sand/silt	sand/silt	gray	saturated	loose	clay deposits
	composite	0-6		13:18						

Analytical report notes

7F refusal, did not sample

11, 12, 13 were given as 1110S W-C 11, 12, 13

Table 6. 1110S W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2363235.25,348207.07	1A	0-1	02/28/23	11:42	sand	fine sand	light brown	dry	loose	
	1B	2-1		11:44	sand	fine sand	light brown	damp	soft	
	1C	3-2		11:46	sand	fine sand	gray	wet	soft	
	1D	4-3		11:48	sand	fine sand	gray	saturated	soft	
	1E	5-4		11:50	sand	fine sand	gray	saturated	soft	
	1F	6-5		11:52	sand	fine sand	gray	saturated	soft	
	Composite	0-6		11:54						
XY=2363131.19,348419.81	2A	0-1	02/28/23	12:30	sand/silt	silty/sand	dark brown	moist	soft	
	2B	2-1		12:32	sand/silt	silty/sand	gray	saturated	soft	water at 2'
	2C	3-2		12:34	sand/silt	silty/sand	gray	saturated	soft	
	2D	4-3		12:36	sand/silt	silty/sand	gray	saturated	soft	
	Composite	0-4		12:38						
XY=2363023.12,348107.68	3A	0-1	02/28/23	12:50	sand	fine sand	medium brown	moist	soft	
	3B	2-1		12:52	sand	fine sand	gray	wet	soft	
	3C	3-2		12:54	sand	fine sand	dark grey	saturated	soft	
	3D	4-3		12:56	sand	fine sand	dark grey	saturated	soft	
	Composite	0-4		12:58						
XY=2362793.03,347913.11	4A	0-1	02/28/23	11:20	sand	very fine sand	light brown	dry	soft	
	4B	2-1		11:22	sand	very fine sand	light brown	dry	soft	
	4C	3-2		11:24	sand	very fine sand	gray	saturated	soft	
	4D	4-3		11:26	sand	very fine sand	gray	saturated	soft	
	Composite	0-4		11:28						
XY=2362618.7,347932.13	5A	0-1	02/28/23	11:00	sand	very fine sand	light brown	damp	soft	
	5B	2-1		11:02	sand	very fine sand	light grey	moist	soft	
	5C	3-2		11:04	sand	very fine sand	gray	wet	soft	
	5D	4-3		11:06	sand/silt	very fine sand	gray	saturated	soft	
	Composite	0-4		11:08						
XY=2362036.9,347651.99	6A	0-1	02/28/23	10:24	fine sand/clay	very fine sand	dark grey	dry	loose	first 2inchs brown sand
	6B	2-1		10:26	fine sand/clay	very fine sand	dark grey	dry	loose	
	6C	3-2		10:28	fine sand/clay	very fine sand	dark grey	dry	loose	
	6D	4-3		10:30	sand/silt	very fine sand	gray	saturated	soft	
	Composite	0-4		10:32						
XY=2361645.81,347305.03	7A	0-1	02/28/23	9:40	sand	very fine sand	light brown	dry	soft	
	7B	2-1		9:42	sand	very fine sand	light brown	dry	soft	
	7C	3-2		9:44	sand	very fine sand	light brown	dry	soft	
	7D	4-3		9:46	sand	very fine sand	light brown	dry	soft	
	7E	5-4		9:48	sand	fine sand	light brown	wet	soft	
	7F	6-5		9:50	sand	fine sand	light brown	wet	soft	
	Composite	0-6		9:52						

Table 6. 1110S W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2361683.38,347534.27	8A	0-1	02/28/23	10:02	sand	very fine sand	light brown	dry	soft	
	8B	2-1		10:04	sand	very fine sand	light brown	damp	soft	
	8C	3-2		10:06	clay	clay	gray	moist	firm	
	8D	4-3		10:08	sand/silt	very fine sand	gray	wet	soft	
	Composite	0-4		10:10						
XY=2361626.71,347756.85	9A	0-1	03/29/23		Sand	Fine Sand	Light Brown	Dry	Soft	
	9B	1-2			Sand	Fine Sand	Light Brown	Dry	Soft	
	9C	2-3			Sand	Fine Sand	Light Brown	Damp	Soft	
	9D	3-4			Sand	Medium Sand	Medium Brown	Moist	Firm	Shell fragments and clay present
	Composite	0-4			Sand	Fine Sand	Light Brown	Damp	Soft	
XY=2361659.43,347990.34	10A	0-1	03/29/23		Sand	Fine Sand	Light Brown	Dry	Soft	
	10B	1-2			Sand	Fine Sand	Light Brown	Dry	Soft	
	10C	2-3			Clay	Very Fine Sand	Grey	Moist	Firm	
	10D	3-4			Clay	Very Fine Sand	Grey	Wet	Firm	
	Composite	0-4			Sand/Clay	Fine to Very Fi	Grey/Brown	Moist	Firm	

9 and 10 were obtained by Insight with no time stamp

Table 7. 10065S W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2372288.74,353060.14	1A	0-1	3/6/2023	9:04	sand	fine sand	gray	wet	loose	
	1B	2-1		9:06	clay	clay	gray	saturated	soft	
	1C	3-2		9:08	clay	clay	gray	saturated	soft	
	1D	4-3		9:10	clay	clay	gray	saturated	soft	
	1E	5-4		9:12	clay	clay	gray	saturated	soft	
	1F	6-5		9:14	clay	clay	gray	saturated	soft	
	Composite	0-6		9:16						
XY=2372187.65,352905.16	2A	0-1	3/6/2023	9:34	sand	fine sand	medium brown	damp	loose	
	2B	2-1		9:36	sand	fine sand	medium brown	damp	loose	
	2C	3-2		9:38	sand	fine sand	medium brown	saturated	loose	
	2D	4-3		9:40	sand	fine sand	gray	saturated	loose	
	2E	5-4		9:42	sand	fine sand	gray	saturated	loose	
	2F	6-5		9:44	sand	fine sand	gray	saturated	loose	
	Composite	0-6		9:46						
XY=2372001.01,352683.60	3A	0-1	3/6/2023	10:01	clay	clay	gray	damp	firm	
	3B	2-1		10:01	clay	clay	gray	damp	firm	
	3C	3-2		10:01	clay	clay	gray	saturated	firm	
	3D	4-3		10:01	clay	clay	gray	saturated	firm	
	3E	5-4		10:02	clay	clay	gray	saturated	hard	
	3F	6-5		10:02	clay	clay	gray	saturated	hard	
	Composite	0-6		10:02						
XY=2371738.06,352471.67	4A	0-1	3/6/2023	11:03	clay	clay	gray	dry	firm	
	4B	2-1		11:04	clay	clay	gray	dry	firm	
	4C	3-2		11:04	sand/silt	sand/silt	gray	wet	soft	
	4D	4-3		11:04	sand/silt	sand/silt	gray	wet	soft	
	Composite	0-4		11:04						
XY=2371403.10,352312.53	5A	0-1	3/6/2023	13:01	clay	clay	gray	damp	hard	
	5B	2-1		13:01	clay	clay	gray	damp	hard	
	5C	3-2		13:02	clay	clay	gray	saturated	soft	
	5D	4-3		13:02	clay	clay	gray	saturated	soft	
	Composite	0-4		13:02						
XY=2371007.25,352112.34	6A	0-1	3/6/2023	14:01	clay	clay	gray	wet	soft	water at 4inches
	6B	2-1		14:01	clay	clay	gray	saturated	loose	
	6C	3-2		14:01	clay	clay	gray	saturated	loose	
	6D	4-3		14:01	clay	clay	gray	saturated	loose	
	6E	5-4		14:02	clay	clay	gray	saturated	loose	
	6F	6-5		14:02	clay	clay	gray	saturated	loose	
	Composite	0-6		14:02						

Table 7. 10065S W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2370817.26,352272.34	7A	0-1	3/6/2023	14:02	clay	clay	gray	wet	firm	water at 4 inches
	7B	2-1		14:03	clay	clay	gray	saturated	hard	
	7C	3-2		14:03	clay	clay	gray	saturated	hard	
	7D	4-3		14:03	clay	clay	gray	saturated	refusal	material hard and not catching, sliding
	7E	5-4								
	7F	6-5								
	Composite	0-6		14:03						
XY=2371212.98,352472.52	8A	0-1	3/6/2023	13:03	clay	clay	gray	damp	firm	
	8B	2-1		13:03	clay	clay	gray	damp	soft	
	8C	3-2		13:03	clay	clay	gray	saturated	soft	
	8D	4-3		13:04	clay	clay	gray	saturated	soft	
	Composite	0-4		13:04						
XY=2371547.94,352631.67	9A	0-1	3/6/2023	12:05	clay	clay	gray	damp	hard	
	9B	2-1		12:05	clay	clay	gray	damp	hard	
	9C	3-2		12:05	clay	clay	gray	saturated	soft	
	9D	4-3		12:05	clay	clay	gray	saturated	soft	
	Composite	0-4		12:05						
XY=2371757.81,352731.77	10A	0-1	3/6/2023	12:00	clay	clay	gray	dry	hard	
	10B	2-1		12:02	clay	clay	gray	dry	hard	
	10C	3-2		12:04	clay	clay	gray	saturated	soft	
	10D	4-3		12:06	clay	clay	gray	saturated	soft	
	Composite	0-4		12:08						
XY=2371882.90,352922.55	11A	0-1	3/6/2023	10:04	clay	clay	gray	moist	firm	saturated after 6 inches
	11B	2-1		10:04	clay	clay	gray	saturated	firm	
	11C	3-2		10:04	clay	clay	gray	saturated	firm	
	11D	4-3		10:04	clay	clay	gray	saturated	firm	
	11E	5-4		10:05	clay	clay	gray	saturated	firm	
	11F	6-5		10:05	clay	clay	gray	saturated	firm	
	Composite	0-6		10:05						
XY=2371453.13,352847.39	12A	0-1	3/6/2023	12:02	clay	clay	gray	damp	hard	
	12B	2-1		12:02	clay	clay	gray	damp	hard	
	12C	3-2		12:02	clay	clay	gray	saturated	soft	
	12D	4-3		12:02	clay	clay	gray	saturated	soft	
	Composite	0-4		12:02						

Table 7. 10065S W-C

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2371118.18,352688.25	13A	0-1	3/6/2023	13:05	clay	clay	gray	damp	firm	
	13B	2-1		13:05	clay	clay	gray	saturated	soft	
	13C	3-2		13:05	clay	clay	gray	saturated	soft	
	13D	4-3		13:05	clay	clay	gray	saturated	soft	
	Composite	0-4		13:05						
XY=2370722.45,352488.07	14A	0-1	3/6/2023	14:05	clay	clay	gray	wet	firm	water at 4 inches
	14B	2-1		14:05	clay	clay	gray	saturated	soft	
	14C	3-2		14:05	clay	clay	gray	saturated	soft	
	14D	4-3		14:05	clay	clay	gray	saturated	soft	
	14E	5-4		15:00	clay	clay	gray	saturated	soft	
	14F	6-5		15:02	clay	clay	gray	saturated	soft	
	Composite	0-6		15:04						

Analytical report notes

7E and 7F refusal : did not sample

Table 8. Morris Island North

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2345955.19,327117.03	1A	0-1	2/23/2023	10:10	clay	clay/silt	gray-brown	dry	firm	
	1B	2-1		10:12	clay	clay/silt	gray-brown	dry	firm	
	1C	3-2		10:14	clay	clay/silt	grey/red	dry	firm	
	1D	4-3		10:16	sand	medium sand	light brown	moist	loose	saturation
	1E	5-4		10:18	sand	medium sand	light brown	wet	loose	saturation
	1F	6-5		10:20	sand	medium sand	light brown	wet	loose	saturation
	Composite	0-6		10:22						
XY=2345491.74,327117.03	2A	0-1	2/23/2023	11:18	sand	fine sand	gray	damp	soft	
	2B	2-1		11:20	sand	fine sand	brown-gray	moist	soft	
	2C	3-2		11:22	sand	fine sand	brown-gray	saturated	soft	saturation
	2D	4-3		11:24	sand	fine sand	brown-gray	saturated	soft	saturation
	2E	5-4		11:26	sand	fine sand	brown-gray	saturated	soft	saturation
	2F	6-5		11:28	sand	fine sand	brown-gray	saturated	soft	saturation
	Composite	0-6		11:30						
XY=2345077.91,327117.03	3A	0-1	2/23/2023	11:50	sand	fine sand	light brown	moist	soft	
	3B	2-1		11:52	sand	fine sand	gray-brown	moist	soft	
	3C	3-2		11:54	sand	fine sand	gray-brown	moist	soft	saturation
	3D	4-3		11:56	sand/silt	fine sand	gray	moist	soft	saturation
	3E	5-4		11:58	sand/silt	fine sand	gray	moist	soft	saturation
	3F	6-5		12:00	sand/silt	fine sand	gray	moist	soft	saturation
	Composite	0-6		12:02						
XY=2344747.71,327081.03	4A	0-1	2/27/2023	12:46	sand/silt	fine sand	light brown	damp	soft	
	4B	2-1		12:48	sand/silt	fine sand	light brown	damp	soft	
	4C	3-2		12:50	sand/silt	fine sand	light brown	damp	soft	
	4D	4-3		12:52	clay	clay	gray	damp	firm	
	4E	5-4		12:54	silty/clay	silty/clay	gray	damp	soft	
	4F	6-5		12:56	sand/clay	sand/clay	gray	damp	soft	
	Composite	0-6		12:58						
XY=2344343.98,326995.90	5A	0-1	2/27/2023	13:10	clay/sand	clay/sand	gray-brown	damp	soft	
	5B	2-1		13:12	clay/sand	clay/sand	gray-brown	damp	soft	
	5C	3-2		13:14	clay	clay	gray	damp	firm	water at 3ft
	5D	4-3		13:16	sand	medium sand	medium brown	saturated	loose	
	5E	5-4		13:18	sand	medium sand	medium brown	saturated	loose	
	5F	6-5		13:20	sand	medium sand	medium brown	saturated	loose	
	Composite	0-6		13:22						
XY=2344566.92,326829.24	6A	0-1	2/27/2023	12:08	sand/silt	fine sand	medium brown	damp	soft	
	6B	2-1		12:10	sand/silt	fine sand	medium brown	damp	soft	
	6C	3-2		12:12	sand/silt	very fine sand	medium brown	damp	soft	more silt than 0-2

Table 8. Morris Island North

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
	6D	4-3		12:14	sand	fine sand	medium brown	moist	soft	
	6E	5-4		12:16	sand	fine sand	medium brown	saturated	soft	water at 4ft
	6F	6-5		12:18	clay	clay	medium brown	saturated	firm	water at 4ft
	Composite	0-6		12:20						
XY=2345166.65,326885.89	7A	0-1	2/23/2023	12:45	sand	medium sand	light brown	dry	loose	
	7B	2-1		12:47	sand	medium sand	light brown	dry	loose	
	7C	3-2		12:49	sand	medium sand	light brown	damp	loose	
	7D	4-3		12:51	sand	medium sand	medium brown	wet	loose	
	7E	5-4		12:53	sand	medium sand	medium brown	saturated	loose	
	7F	6-5		12:55	sand	medium sand	gray	saturated	soft	
	Composite	0-6		12:57						
XY=2345486.43,326889.56	8A	0-1	2/23/2023	1:30	sand	medium sand	light brown	damp	soft	
	8B	2-1		1:32	sand	medium sand	light brown	damp	soft	
	8C	3-2		1:34	sand/silt	fine sand	gray-brown	wet	soft	
	8D	4-3		1:36	sand/silt	fine sand	gray-brown	wet	soft	
	8E	5-4		1:38	sand/silt	fine sand	gray-brown	saturated	soft	saturated
	8F	6-5		1:40	sand/silt	fine sand	gray-brown	saturated	soft	saturated
	Composite	0-6		1:42						
XY=2345660.47,326749.03	9A	0-1	2/23/2023	14:18	sand/silt	fine sand	gray-brown	damp	soft	
	9B	2-1		14:20	sand/silt	fine sand	gray-brown	damp	soft	
	9C	3-2		14:22	clay	very fine sand	gray-brown	damp	firm	
	9D	4-3		14:24	clay	very fine sand	gray-brown	damp	firm	water level
	9E	5-4		14:26	sand/silt	fine sand	medium brown	saturated	loose	
	9F	6-5		14:28	silt	very fine sand	gray-brown	saturated	firm	
	Composite	0-6		14:30						
XY=2345356.79,326388.15	10A	0-1	2/27/2023	10:10	sand/silt	very fine sand	light brown	damp	soft	
	10B	2-1		10:12	sand/silt	very fine sand	light brown	damp	soft	
	10C	3-2		10:14	clay	clay	gray	damp	soft	
	10D	4-3		10:16	silt	silt	gray	damp	soft	
	10E	5-4		10:18	silt	silt	gray	moist	soft	saturation
	10F	6-5		10:20	silt	silt	gray	moist	soft	saturation, chunks of clay
	Composite	0-6		10:22	silt	silt	gray	moist	soft	saturation, chunks of clay
XY=2345099.55,326578.94	11A	0-1	2/27/2023	10:40	sand/silt	very fine sand	brown/grey	moist	soft	
	11B	2-1		10:42	sand/silt	very fine sand	brown/grey	wet	soft	
	11C	3-2		10:44	sand/silt	very fine sand	brown/grey	saturated	soft	
	11D	4-3		10:46	sand/silt	very fine sand	brown/grey	saturated	soft	caving in
	11E	5-4		10:48	sand/silt	very fine sand	brown/grey	saturated	soft	
	11F	6-5		10:50	clay	clay	gray	saturated	soft	smells like eggs
	Composite	0-6		10:52						

Table 8. Morris Island North

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2344639.57,326509.69	12A	0-1	2/27/2023	11:14	sand/silt	very fine sand	medium brown	damp	soft	
	12B	2-1		11:16	sand/silt	very fine sand	medium brown	damp	soft	
	12C	3-2		11:18	clay/silt	clay/silt	gray	damp	soft	
	12D	4-3		11:20	clay	clay	gray	dry	firm	
	12E	5-4		11:22	clay	clay	gray	dry	firm	
	12F	6-5		11:24	clay	clay	gray	dry	firm	
	Composite	0-6		11:26						
XY=2344101.39,326657.63	13A	0-1	2/27/2023	14:00	sand	very fine sand	light brown	damp	loose	
	13B	2-1		14:02	sand	very fine sand	light brown	damp	loose	
	13C	3-2		14:04	clay	clay	light brown	damp	soft	
	13D	4-3		14:06	clay	clay	light brown	damp	soft	
	13E	5-4		14:08	clay	clay	light brown	wet	firm	water at 4
	13F	6-5		14:10	clay	clay	light brown	wet	firm	
	Composite	0-6		14:12						
XY=2343988.55,326215.72	14A	0-1	2/27/2023	14:44	clay	clay	dark brown	damp	loose	
	14B	2-1		14:46	clay	clay	dark brown	damp	loose	
	14C	3-2		14:48	clay	clay	dark brown	moist	soft	
	14D	4-3		14:50	clay	clay	dark brown	moist	soft	
	Composite	0-4		14:52						
XY=2344448.52,325996.78	15A	0-1	2/27/2023	15:14	clay	clay	gray	damp	loose	
	15B	2-1		15:16	clay	clay	gray	damp	loose	
	15C	3-2		15:18	clay	clay	gray	moist	firm	
	15D	4-3		15:20	clay	clay	gray	moist	firm	
	Composite	0-4		15:22						
XY=2345068.54,325920.32	16A	0-1	2/27/2023	10:15	sand/silt	fine sand	gray	damp	soft	
	16B	2-1		10:17	sand/silt	fine sand	gray	damp	soft	
	16C	3-2		10:19	sand/silt	fine sand	gray	moist	soft	
	16D	4-3		10:21	sand/silt	fine sand	gray-brown	wet	soft	gray clay deposit
	Composite	0-4		10:23						
XY=2344579.01,325041.67	17A	0-1	2/27/2023	11:00	sand/silt	medium sand	gray-brown	moist	firm	clay deposits, saturation @ 1'
	17B	2-1		11:02	sand/silt	medium sand	gray-brown	saturated	firm	
	17C	3-2		11:04	clay	clay	gray-brown	saturated	hard	dk brown sand deposits
	17D	4-3		11:06	clay	clay	gray-brown	saturated	hard	dk brown sand deposits
	Composite	0-4		11:08						
XY=2344336.77,325574.41	18A	0-1	2/27/2023	15:30	clay	very fine sand	gray-brown	wet	firm	saturation at 1ft
	18B	2-1		15:32	clay	very fine sand	gray	saturated	firm	
	18C	3-2		15:34	clay	very fine sand	gray	saturated	firm	
	18D	4-3		15:36	clay	very fine sand	gray	saturated	firm	
	Composite	0-4		15:38						

Table 8. Morris Island North

Coordinates	Sample ID	Depth	Date	Time	Texture	Grain Size	Color	Moisture	Density	Notes
XY=2343670.60,325536.54	19A	0-1	2/27/2023	14:16	sand/silt	very fine sand	dark brown	damp	loose	
	19B	2-1		14:18	clay	clay	gray-brown	saturated	firm	
	19C	3-2		14:20	clay	clay	gray-brown	saturated	firm	
	19D	4-3		14:22	clay	clay	gray-brown	saturated	firm	
	Composite	0-4		14:24						
XY=2343610.04,325102.26	20A	0-1	2/27/2023	1:36	sand/silt	fine sand	medium brown	dry	loose	
	20B	2-1		1:38	sand/silt	fine sand	medium brown	dry	loose	clay deposits
	20C	3-2		1:40	sand/silt	fine sand	medium brown	dry	loose	clay deposits
	20D	4-3		1:42	sand/silt	fine sand	medium brown	dry	loose	clay deposits
	Composite	0-4		1:44						
XY=2344261.07,324673.04	21A	0-1	2/27/2023	11:42	sand	fine sand	medium brown	damp	soft	clay deposits
	21B	2-1		11:44	sand	fine sand	medium brown	damp	soft	clay deposits
	21C	3-2		11:46	sand	fine sand	medium brown	damp	soft	clay deposits
	21D	4-3		11:48	clay	clay	gray	saturated	firm	
	Composite	0-4		11:50						
XY=2343747.30,324691.76	22A	0-1	2/27/2023	12:50	sand/silt	fine sand	medium brown	dry	loose	
	22B	2-1		12:52	sand/silt	fine sand	medium brown	dry	loose	
	22C	3-2		12:54	sand/silt	fine sand	medium brown	damp	loose	Clay deposits
	22D	4-3		12:56	sandy/clay	medium sand	gray-brown	damp	firm	
	Composite	0-4		12:58						

APPENDIX D

ANALYTICAL RESULTS SUMMARY TABLE

Table 9. 562N

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
PA22-562NWC-1	XY=2480231.42,460585.87	PA22-562NWC-1A	0-1	1	0	0.5	1.2	19.1	24.6	54.6	100
		PA22-562NWC-1B	1-2	2	0	0.3	0.5	31.2	67	1	100
		PA22-562NWC-1C	2-3	3	0	0	0.6	33.1	65.4	0.9	100
		PA22-562NWC-1D	3-4	4	0	0.3	0.6	24	74.3	0.8	100
		PA22-562NWC-1E	4-5	5	0	0.1	0.1	8.1	90.9	0.8	100
		PA22-562NWC-1F	5-6	6	0	0.2	0.2	19.2	79.4	1	100
		Composite	0-6	7	0	0.1	0.6	23.4	75.1	0.8	100
PA22-562NWC-2	XY=2480056.06,460392.76	PA22-562NWC-2A	0-1	8	0	1	3.4	42.4	52.4	0.8	100
		PA22-562NWC-2B	1-2	9	3.2	1.9	5.1	52.6	35.9	1.3	100
		PA22-562NWC-2C	2-3	10	0	1	2.7	42.9	52.4	1	100
		PA22-562NWC-2D	3-4	11	0	0.7	2.2	32.9	62.6	1.6	100
		PA22-562NWC-2E	4-5	12	0	0.3	2.4	36.2	59.8	1.3	100
		PA22-562NWC-2F	5-6	13	0	0.7	2.8	36.9	57.9	1.7	100
		Composite	0-6	14	0	0.7	2.8	40.2	55.5	0.8	100
PA22-562NWC-3	XY=2480294.70,460258.37	PA22-562NWC-3A	0-1	15	0	0.5	1.5	26.8	69.7	1.5	100
		PA22-562NWC-3B	1-2	16	0	0.3	1.7	27.7	68.1	2.2	100
		PA22-562NWC-3C	2-3	17	0	0.5	1.5	24.4	72	1.6	100
		PA22-562NWC-3D	3-4	18	0	0.6	1.5	19.3	76.9	1.7	100
		PA22-562NWC-3E	4-5	19	0	0.3	1.2	20.7	75.6	2.2	100
		PA22-562NWC-3F	5-6	20	0	0.5	1.3	21.5	74.4	2.3	100
		Composite	0-6	21	0	0.3	1.2	23.3	73.9	1.3	100
PA22-562NWC-4	XY=2480510.92,459863.61	PA22-562NWC-4A	0-1	22	0	0	0	8.9	9.9	81.2	100
		PA22-562NWC-4B	1-2	23	0	0.3	0.5	11.8	67.2	20.2	100
		PA22-562NWC-4C	2-3	24	0	3.1	10.2	31.8	48.3	6.6	100
		PA22-562NWC-4D	3-4	25	0	2.1	6.9	31.9	54.6	4.5	100
		PA22-562NWC-4E	4-5	26	0	2.6	6.8	22.1	52.4	16.1	100
		PA22-562NWC-4F	5-6	27	0	1.6	2.6	10.6	67.9	17.3	100
		Composite	0-6	28	NR	NR	5.3	20.7	51.9	20	97.9

Table 9. 562N

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
PA22-562NWC-5	XY=2480150.70,459664.94	PA22-562NWC-5A	0-1	29	0	0	0	2.1	3.1	94.8	100
		PA22-562NWC-5B	1-2	30	0	0	0	0.6	1.2	98.2	100
		PA22-562NWC-5C	2-3	31	0	0	0.1	8.1	14.9	76.9	100
		PA22-562NWC-5D	3-4	32	0	0	0.2	30.5	61.4	7.9	100
		Composite	0-4	33	0	0	0.3	17.2	37.1	45.4	100
PA22-562NWC-6	XY=2479909.28,460081.91	PA22-562NWC-6A	0-1	34	0	0	0	2.1	1.8	96.1	100
		PA22-562NWC-6B	1-2	35	0	0	1.7	20.5	9.9	67.9	100
		PA22-562NWC-6C	2-3	36	0	0	0	3.4	3.3	93.3	100
		PA22-562NWC-6D	3-4	37	0	0	0	4.1	41.9	54	100
		Composite	0-4	38	0	0	0.2	15.2	33.9	50.7	100
PA22-562NWC-7	XY=2479610.14,459759.82	PA22-562NWC-7A	0-1	39	0	0	0	1.1	2.9	96	100
		PA22-562NWC-7B	1-2	40	0	0.1	2	17	10.3	70.6	100
		PA22-562NWC-7C	2-3	41	0	0	0.1	17.9	17.7	64.3	100
		PA22-562NWC-7D	3-4	42	0	0	0.2	3.7	9.5	86.6	100
		Composite	0-4	43	0	0	0.9	16.6	12.8	69.7	100
PA22-562NWC-8	XY=2479801.36,459395.09	PA22-562NWC-8A	0-1	44	0	0	0	9.5	8.9	81.6	100
		PA22-562NWC-8B	1-2	45	0	0	0	5.6	4.8	89.6	100
		PA22-562NWC-8C	2-3	46	0	0	0	0.5	0.8	98.7	100
		PA22-562NWC-8D	3-4	47	0	0	0	0.2	0.9	98.9	100
		Composite	0-4	48	0	0	0	3.6	2.7	93.7	100
PA22-562NWC-9	XY=2479438.71,459021.44	PA22-562NWC-9A	0-1	49	0	0	0	3.4	2.6	94	100
		PA22-562NWC-9B	1-2	50	0	0	0	2.1	5.3	92.6	100
		PA22-562NWC-9C	2-3	51	0	0	0	0.3	2.3	94.7	100
		PA22-562NWC-9D	3-4	52	0	0	0	0.7	2.9	96.4	100
		Composite	0-4	53	0	0	0	0.5	2.4	97.1	100
PA22-562NWC-10	XY=2479223.62,459241.63	PA22-562NWC-10A	0-1	54	0	0	0.1	5	9.8	85.1	100
		PA22-562NWC-10B	1-2	55	0	0	0	8.3	7.3	84.4	100
		PA22-562NWC-10C	2-3	56	0	0	0.1	25.7	25.8	48.4	100
		PA22-562NWC-10D	3-4	57	0	0	1.4	6.4	6.8	85.4	100
		Composite	0-4	58	0	0	0.1	23.2	22.9	53.8	100

Table 9. 562N

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
PA22-562NWC-11	XY=2478957.24,459440.29	PA22-562NWC-11A	0-1	59	0	0	0	3.8	4.8	91.4	100
		PA22-562NWC-11B	1-2	60	0	0	0	27.1	22	50.9	100
		PA22-562NWC-11C	2-3	61	0	0	0	0.2	1.8	98	100
		PA22-562NWC-11D	3-4	62	0	0	3.1	20.3	16.8	59.8	100
		Composite	0-4	63	NR	NR	NR	16.3	11.4	70.5	98.2
PA22-562NWC-12	XY=2478517.64,459130.17	PA22-562NWC-12A	0-1	64	0	0	0	7	4.1	88.9	100
		PA22-562NWC-12B	1-2	65	0	0	0	0.8	6.9	92.3	100
		PA22-562NWC-12C	2-3	66	0	0	0	0.3	1.6	98.1	100
		PA22-562NWC-12D	3-4	67	0	0	0.1	1.9	4.7	93.3	100
		Composite	0-4	68	0	0	0	0.2	1.6	98.2	100
PA22-562NWC-13	XY=2478708.86,458765.44	PA22-562NWC-13A	0-1	69	0	0	0.1	0.5	2.2	97.2	100
		PA22-562NWC-13B	1-2	70	0	0	0	8	8	84	100
		PA22-562NWC-13C	2-3	71	0	0	0	0.8	6.6	92.6	100
		PA22-562NWC-13D	3-4	72	0	0	0	0.4	1.8	97.8	100
		PA22-562NWC-13E	4-5	73	0	0	0	0.3	3.6	96.1	100
		PA22-562NWC-13F	5-6	74	0	0	0	0.2	7.3	92.5	100
		Composite	0-6	75	0	0	0	0.5	9.5	90	100
PA22-562NWC-14	XY=2478315.94,458406.00	PA22-562NWC-14A	0-1	76	0	0	0	0.6	45.8	53.6	100
		PA22-562NWC-14B	1-2	77	0	0	0	0.6	9	90.4	100
		PA22-562NWC-14C	2-3	78	0	0	0	3.9	7.9	88.2	100
		PA22-562NWC-14D	3-4	79	0	0	0	4.8	13.7	81.5	100
		PA22-562NWC-14E	4-5	80	0	0	0	1.1	18.1	80.8	100
		PA22-562NWC-14F	5-6	81	0	0	0	0.2	5.3	94.5	100
		Composite	0-6	82	0	0	0	1.4	13.3	85.3	100
PA22-562NWC-15	XY=2478163.21,458685.40	PA22-562NWC-15A	0-1	83	0	0	0	0.9	69.3	29.8	100
		PA22-562NWC-15B	1-2	84	0	0	0	0.9	11.1	88	100
		PA22-562NWC-15C	2-3	85	0	0	0	0.4	2.4	97.2	100
		PA22-562NWC-15D	3-4	86	0	0	0	0.5	5.1	94.4	100
		Composite	0-4	87	0	0	0	1.2	44	54.8	100

Table 9. 562N

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
PA22-562NWC-16	XY=2477828.40,458743.52	PA22-562NWC-16A	0-1	88	0	0	0	3.9	5.3	90.8	100
		PA22-562NWC-16B	1-2	89	0	0	0	0.2	1.2	98.6	100
		PA22-562NWC-16C	2-3	90	0	0	0	1.9	3.3	94.8	100
		PA22-562NWC-16D	3-4	91	0	0	0	0.4	4.4	95.2	100
		Composite	0-4	92	0	0	0	0.5	9.7	89.8	100
PA22-562NWC-17	XY=2478014.33,458498.56	PA22-562NWC-17A	0-1	93	0	0	0	3.9	88.2	7.9	100
		PA22-562NWC-17B	1-2	94	0	0	0	0.5	18.6	80.9	100
		PA22-562NWC-17C	2-3	95	0	0	0.2	10	13	76.8	100
		PA22-562NWC-17D	3-4	96	0	0	0	0.6	5.1	94.3	100
		PA22-562NWC-17E	4-5	97	0	0	0.1	0.4	41	58.5	100
		PA22-562NWC-17F	5-6	98	0	0	0	0.2	6.3	93.5	100
		Composite	0-6	99	0	0	0	0.7	29.8	69.5	100
PA22-562NWC-18	XY=2477893.87,458156.17	PA22-562NWC-18A	0-1	100	0	0	0	0.9	89.1	10	100
		PA22-562NWC-18B	1-2	101	0	0	0.2	3.7	30	66.1	100
		PA22-562NWC-18C	2-3	102	0	0	0	7.5	40.8	51.7	100
		PA22-562NWC-18D	3-4	103	0	0	0	10.7	64.6	24.7	100
		PA22-562NWC-18E	4-5	104	0	0	0.2	12.6	75.9	11.3	100
		PA22-562NWC-18F	5-6	105	0	0	0.2	20.8	74.2	4.8	100
		Composite	0-6	106	0	0	0.1	4.6	71	24.3	100

NR: Not Reported

Table 10. 1028S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
PA22-1028SWC-1	XY=2369308.64,351355.36	PA22-1028SWC-1A	0-1	1	0	0	0.1	1	94.8	4.1	100
		PA22-1028SWC-1B	1-2	2	0	0	0.1	1	94.3	4.6	100
		PA22-1028SWC-1C	2-3	3	0	0	0	4.6	84.1	11.3	100
		PA22-1028SWC-1D	3-4	4	0	0	0.5	3.7	81.1	14.7	100
		PA22-1028SWC-1E	4-5	5	0	0	0.1	1.5	76.7	21.7	100
		PA22-1028SWC-1F	5-6	6	0	0.2	0.2	2.1	68.2	29.3	100
		Composite	0-6	7	0	0.9	1	8.3	53.2	36.6	100
PA22-1028SWC-2	XY=2369510.35,351445.38	PA22-1028SWC-2A	0-1	8	0	0	0	1.5	90.8	7.7	100
		PA22-1028SWC-2B	1-2	9	0	0	0.2	0.9	92	6.9	100
		PA22-1028SWC-2C	2-3	10	0	0	0	0.3	95.8	3.9	100
		PA22-1028SWC-2D	3-4	11	0	0	0	0.1	96.8	3.1	100
		PA22-1028SWC-2E	4-5	12	0	0	0	0.3	96	3.7	100
		PA22-1028SWC-2F	5-6	13	0	0	0	0.4	94.9	4.7	100
		Composite	0-6	14	0	0	0	0.4	95	4.6	100
PA22-1028SWC-3	XY=2369768.20,351470.43	PA22-1028SWC-3A	0-1	15	0	0	0.1	2.5	88.7	8.7	100
		PA22-1028SWC-3B	1-2	16	0	0	0.6	3.1	88.6	7.7	100
		PA22-1028SWC-3C	2-3	17	NR	NR	NR	1.1	92.7	6.1	99.9
		PA22-1028SWC-3D	3-4	18	0	0	0.5	4.5	73.7	21.3	100
		PA22-1028SWC-3E	4-5	19	0	0	0	3.8	53.2	43	100
		PA22-1028SWC-3F	5-6	20	0	0	0.2	2	38.4	59.4	100
		Composite	0-6	21	0	0.5	1.5	3.8	56.5	37.7	100
PA22-1028SWC-4	XY=2370023.60,351594.79	PA22-1028SWC-4A	0-1	22	0	0	0	0.1	96.1	3.8	100
		PA22-1028SWC-4B	1-2	23	0	0	0	0.1	94.4	5.5	100
		PA22-1028SWC-4C	2-3	24	0	0	0	0.2	89.6	10.2	100
		PA22-1028SWC-4D	3-4	25	0	0	0	0.1	95.1	4.8	100
		PA22-1028SWC-4E	4-5	26	0	0	0	0.1	94.1	5.8	100
		PA22-1028SWC-4F	5-6	27	0	0	0	0.1	96.5	3.4	100
		Composite	0-6	28	0	0	0.1	0.2	96	3.7	100
PA22-1028SWC-5	XY=2370309.35,351755.00	PA22-1028SWC-5A	0-1	29	0	0	0.1	0.3	97.8	1.8	100
		PA22-1028SWC-5B	1-2	30	0	0	0	0.2	97.5	2.3	100

Table 10. 1028S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
		PA22-1028SWC-5C	2-3	31	0	0	0	0.1	93.4	6.5	100
		PA22-1028SWC-5D	3-4	32	0	0	0	0.1	95.3	4.6	100
		PA22-1028SWC-5E	4-5	33	0	0	0	0.3	91.8	7.9	100
		PA22-1028SWC-5F	5-6	34	0	0	0	0.1	95	4.9	100
		Composite	0-6	35	NR	NR	NR	NR	95.2	4.7	99.9
PA22-1028SWC-6	XY=2370556.54,351867.94	PA22-1028SWC-6A	0-1	36	0	0	0	0.6	94.1	5.3	100
		PA22-1028SWC-6B	1-2	37	0	0	0	0.2	95.1	4.7	100
		PA22-1028SWC-6C	2-3	38	0	0	0	0.5	92.9	6.6	100
		PA22-1028SWC-6D	3-4	39	0	0	0	0.2	94.7	5.1	100
		PA22-1028SWC-6E	4-5	40	0	0	0	0.2	92.6	7.2	100
		PA22-1028SWC-6F	5-6	41	0	0	0	1.2	73.2	25.6	100
		Composite	0-6	42	0	0	0	0.4	70.7	28.9	100
PA22-1028SWC-7	XY=2370451.45,352048.92	PA22-1028SWC-7A	0-1	43	0	0	0	0.4	94.9	4.7	100
		PA22-1028SWC-7B	1-2	44	0	0	0	0.5	96.4	3.1	100
		PA22-1028SWC-7C	2-3	45	0	0	0	0.4	93.6	6	100
		PA22-1028SWC-7D	3-4	46	0	8.5	0.5	8.9	47.4	34.7	100
		Composite	0-4	47	0	0	0	0.4	94.5	5.1	100
PA22-1028SWC-8	XY=2370204.26,351935.97	PA22-1028SWC-8A	0-1	48	0	0	0	0.1	97.2	2.7	100
		PA22-1028SWC-8B	1-2	49	0	0	0	0.1	98.5	1.4	100
		PA22-1028SWC-8C	2-3	50	0	0	0	0.2	97.6	2.2	100
		PA22-1028SWC-8D	3-4	51	0	0	0	0.1	94.1	5.8	100
		Composite	0-4	52	0	0	0	0.1	98.1	1.8	100
PA22-1028SWC-9	XY=2369918.49,351775.76	PA22-1028SWC-9A	0-1	53	0	0	0	2.1	89.7	8.2	100
		PA22-1028SWC-9B	1-2	54	0	0	0	1.1	88.2	10.7	100
		PA22-1028SWC-9C	2-3	55	0	0	0	2.1	91.4	6.5	100
		PA22-1028SWC-9D	3-4	56	0	0	0	2.1	93.9	4	100
		Composite	0-4	57	0	0.4	0.2	0.6	92.3	6.5	100
PA22-1028SWC-10	XY=2369713.59,351667.13	PA22-1028SWC-10A	0-1	58	0	0	0	0.5	96.6	2.9	100
		PA22-1028SWC-10B	1-2	59	0	0	0	0.3	98.2	1.5	100
		PA22-1028SWC-10C	2-3	60	0	0	0	0.5	94.3	5.2	100

Table 10. 1028S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
		PA22-1028SWC-10D	3-4	61	0	0	0.6	5.4	79.2	14.8	100
		PA22-1028SWC-10E	4-5	62	0	0	0	1.2	93.5	5.3	100
		PA22-1028SWC-10F	5-6	63	0	0	0	1.2	46.5	52.3	100
		Composite	0-6	64	0	1.5	1.1	5.7	80.4	11.3	100
PA22-1028SWC-11	XY=2369544.93,351810.63	PA22-1028SWC-11A	0-1	65	0	0.1	5	8.1	67.8	19	100
		PA22-1028SWC-11B	1-2	66	0	0	0.2	1.1	91.2	7.5	100
		PA22-1028SWC-11C	2-3	67	0	0.9	3.1	9.3	62.2	24.5	100
		PA22-1028SWC-11D	3-4	68	0	0.1	0.3	1.2	90.7	7.7	100
		PA22-1028SWC-11E	4-5	69	0	0	0.1	1.3	61.7	36.9	100
		PA22-1028SWC-11F	5-6	70							0
		Composite	0-6	71	0	0	0	1.7	77.2	21.1	100
PA22-1028SWC-12	XY=2369708.47,351962.68	PA22-1028SWC-12A	0-1	72	0	0.3	0.5	1.4	95	2.8	100
		PA22-1028SWC-12B	1-2	73	0	0	0.2	0.4	95.4	4	100
		PA22-1028SWC-12C	2-3	74	0	0	0.1	0.4	95.5	4	100
		PA22-1028SWC-12D	3-4	75	0	0	0.3	1	89.5	9.2	100
		PA22-1028SWC-12E	4-5	76							0
		PA22-1028SWC-12F	5-6	77							0
		Composite	0-6	78	0	0	0.3	0.7	93.7	5.3	100
PA22-1028SWC-13	XY=2370104.87,352177.71	PA22-1028SWC-13A	0-1	79	0	0	0.1	0.4	96.8	2.7	100
		PA22-1028SWC-13B	1-2	80	0	0	0.1	0.4	96.5	3	100
		PA22-1028SWC-13C	2-3	81	0	0	0	0.6	96.2	3.2	100
		PA22-1028SWC-13D	3-4	82	0	0	0	1.3	95.4	3.3	100
		Composite	0-4	83	0	0	0.1	0.3	94.5	5.1	100
PA22-1028SWC-14	XY=2370352.06,352290.65	PA22-1028SWC-14A	0-1	84	0	0	0	0.4	93.9	5.7	100
		PA22-1028SWC-14B	1-2	85	0	0	0	0.3	94.5	5.2	100
		PA22-1028SWC-14C	2-3	86	0	0	0	0.3	97.3	2.4	100
		PA22-1028SWC-14D	3-4	87	0	0	0	14.1	38.7	47.2	100
		Composite	0-4	88	0	0	0.5	6.8	59.8	32.9	100

NR: Not Reported

Table 10. 1028S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
PA22-1028SWC-11F	Refusal / Did Not Sample									
PA22-1028SWC-12E	Refusal / Did Not Sample									
PA22-1028SWC-12F	Refusal / Did Not Sample									

Table 11. 1056S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
PA22-1056SWC-1	XY=2366404.51,349878.25	PA22-1056SWC-1A	0-1	1	0	0	0.2	0.7	87.1	12	100
		PA22-1056SWC-1B	1-2	2	0	0	0.1	0	97.6	2.3	100
		PA22-1056SWC-1C	2-3	3	0	0	0	0.2	95.1	4.7	100
		PA22-1056SWC-1D	3-4	4	0	0	0.1	0.2	93.2	6.5	100
		Composite	0-4	5	0	0	0	0.1	94	5.9	100
PA22-1056SWC-2	XY=2366725.47,350017.83	PA22-1056SWC-2A	0-1	6	0	0.1	0	0.8	93.7	5.4	100
		PA22-1056SWC-2B	1-2	7	0	0	0	0.5	94.8	4.7	100
		PA22-1056SWC-2C	2-3	8	0	0	0	9.2	14.7	76.1	100
		PA22-1056SWC-2D	3-4	9	0	0	0	0.5	91.9	7.6	100
		PA22-1056SWC-2E	4-5	10	0	0	0.1	0.4	90.4	9.1	100
		PA22-1056SWC-2F	5-6	11	0	0	0.1	1.4	91	7.5	100
		Composite	0-6	12	0	0.1	0.1	0.7	94.3	4.8	100
PA22-1056SWC-3	XY=2367046.43,350157.42	PA22-1056SWC-3A	0-1	13	0	0.1	0	0.2	96.3	3.4	100
		PA22-1056SWC-3B	1-2	14	0	0	0	0.1	96.4	3.5	100
		PA22-1056SWC-3C	2-3	15	0	0	0	2.4	86	11.6	100
		PA22-1056SWC-3D	3-4	16	0	0	0	0.4	87.7	11.9	100
		PA22-1056SWC-3E	4-5	17	0	0	0	1.3	80.1	18.6	100
		PA22-1056SWC-3F	5-6	18	0	0	0.5	2.2	86.3	11	100
		Composite	0-6	19	0	0	0	0.3	93.2	6.5	100
PA22-1056SWC-4	XY=2367367.39,350297.00	PA22-1056SWC-4A	0-1	20	0	0.2	0.1	7.6	36.9	55.2	100
		PA22-1056SWC-4B	1-2	21	0	0	0.1	6.8	43.4	49.7	100
		PA22-1056SWC-4C	2-3	22	0	0	0	2.5	68.6	28.9	100
		PA22-1056SWC-4D	3-4	23	0	0	0	0.2	96.1	3.7	100
		Composite	0-4	24	0	0	0	3.4	79.1	17.5	100
PA22-1056SWC-5	XY=2367688.36,350436.58	PA22-1056SWC-5A	0-1	25	0	0	0.2	4.2	34.3	61.3	100
		PA22-1056SWC-5B	1-2	26	0	0	0	4.1	86.2	9.7	100
		PA22-1056SWC-5C	2-3	27	0	0.1	0.5	2.1	97.6	5.7	100
		PA22-1056SWC-5D	3-4	28	0	0.2	0.5	2	84	13.3	100
		PA22-1056SWC-5E	4-5	29	0	0.2	0.6	15.3	67	16.9	100
		PA22-1056SWC-5F	5-6	30	0	0.2	0	8.8	39.2	51.8	100

Table 11. 1056S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
		Composite	0-6	31	0	1.4	1.6	14.1	67.9	15	100
PA22-1056SWC-6	XY=2367745.41,350665.65	PA22-1056SWC-6A	0-1	32	0	0	0	5.6	46.8	47.6	100
		PA22-1056SWC-6B	1-2	33	0	0	0	11.5	33.2	55.3	100
		PA22-1056SWC-6C	2-3	34	0	1.3	1.1	21.6	46.6	29.4	100
		PA22-1056SWC-6D	3-4	35	0	0	0.2	3.8	31.1	64.9	100
		Composite	0-4	36	0	0	0	5	32.9	62.1	100
PA22-1056SWC-7	XY=2367424.44,350526.06	PA22-1056SWC-7A	0-1	37	0	0	0.1	4.5	42.3	53.1	100
		PA22-1056SWC-7B	1-2	38	0	0	0	4.4	26.5	69.1	100
		PA22-1056SWC-7C	2-3	39	0	0	0	2.7	29.6	67.7	100
		PA22-1056SWC-7D	3-4	40	0	0	0	4.6	35	60.4	100
		Composite	0-4	41	0	0	0	5.9	36.3	57.8	100
PA22-1056SWC-8	XY=2367103.48,350386.48	PA22-1056SWC-8A	0-1	42	0	0	0	0.4	97.1	2.5	100
		PA22-1056SWC-8B	1-2	43	0	0	0	0.1	97.5	2.4	100
		PA22-1056SWC-8C	2-3	44	0	0	0	0.4	96.6	3	100
		PA22-1056SWC-8D	3-4	45	0	0	0	0.2	95.4	4.4	100
		Composite	0-4	46	0	0	0	0.1	96.1	3.8	100
PA22-1056SWC-9	XY=2366782.52,350246.89	PA22-1056SWC-9A	0-1	47	0	0	0	0.7	96.2	3.1	100
		PA22-1056SWC-9B	1-2	48	0	0	0.1	0.3	97.2	2.4	100
		PA22-1056SWC-9C	2-3	49	0	0	0.1	0.1	97.6	2.2	100
		PA22-1056SWC-9D	3-4	50	0	0	0	0.1	96.7	3.2	100
		PA22-1056SWC-9E	4-5	51	0	0	0	0.6	93.9	5.5	100
		PA22-1056SWC-9F	5-6	52	0	0	0.1	1.9	89.8	8.2	100
		Composite	0-6	53	0	0	0	0.5	96.4	3.1	100
PA22-1056SWC-10	XY=2366440.62,350099.26	PA22-1056SWC-10A	0-1	54	0	0	0.8	17.2	53.5	28.5	100
		PA22-1056SWC-10B	1-2	55	0	0	0	7.6	69.2	23.2	100
		PA22-1056SWC-10C	2-3	56	NR	NR	NR	0.9	93.5	5.5	99.9
		PA22-1056SWC-10D	3-4	57	0	0	0	1.4	91.6	7	100
		Composite	0-4	58	0	0	0.1	4.3	81.3	14.3	100
PA22-1056SWC-11	XY=2365958.41,349912.22	PA22-1056SWC-11A	0-1	59	0	0	0	0.4	97.3	2.3	100
		PA22-1056SWC-11B	1-2	60	0	0	0.1	0.1	95.6	4.2	100

Table 11. 1056S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
		PA22-1056SWC-11C	2-3	61	0	0	0	0.9	96.6	2.5	100
		PA22-1056SWC-11D	3-4	62	0	0	0	0.6	95.7	3.7	100
		PA22-1056SWC-11E	4-5	63	0	0	0	0.8	94.3	4.9	100
		PA22-1056SWC-11F	5-6	64	0	0	0	0.1	88.1	11.8	100
		Composite	0-6	65	0	0	0	0.1	97.2	2.7	100
PA22-1056SWC-12	XY=2366176.17,350186.29	PA22-1056SWC-12A	0-1	66	0	0	0.2	1.8	96.5	1.5	100
		PA22-1056SWC-12B	1-2	67	0	0	0	0.1	97.3	2.6	100
		PA22-1056SWC-12C	2-3	68	0	0	0	0.2	97.4	2.4	100
		PA22-1056SWC-12D	3-4	69	0	0	0.1	0.8	97.4	1.7	100
		PA22-1056SWC-12E	4-5	70	0	0	0	0.2	97.9	1.9	100
		PA22-1056SWC-12F	5-6	71	0	0	0.2	7	68.5	24.3	100
		Composite	0-6	72	NR	NR	NR	2	92.4	5.5	99.9
PA22-1056SWC-13	XY=2366462.58,350341.52	PA22-1056SWC-13A	0-1	73	0	0	0	0.2	98	1.8	100
		PA22-1056SWC-13B	1-2	74	0	0	0	0.3	95.4	4.3	100
		PA22-1056SWC-13C	2-3	75	0	0	0	0.1	97.6	2.3	100
		PA22-1056SWC-13D	3-4	76	0	0	0	0.2	97.3	2.5	100
		Composite	0-4	77	NR	NR	NR	NR	97.3	2.5	99.8
PA22-1056SWC-14	XY=2366759.80,350503.08	PA22-1056SWC-14A	0-1	78	0	0	0	22.5	20.4	57.1	100
		PA22-1056SWC-14B	1-2	79	0	0	0	20.8	18.8	60.4	100
		PA22-1056SWC-14C	2-3	80	0	0	0.1	6	77.8	16.1	100
		PA22-1056SWC-14D	3-4	81	0	0	0	14.1	65.2	20.7	100
		Composite	0-4	82	0	0	0.6	10.7	61.7	27	100
PA22-1056SWC-15	XY=2367114.30,350649.02	PA22-1056SWC-15A	0-1	83	0	0	0	14	35.1	50.9	100
		PA22-1056SWC-15B	1-2	84	0	0	0.5	5	86.7	7.8	100
		PA22-1056SWC-15C	2-3	85	0	0	0.1	4.9	81.1	13.9	100
		PA22-1056SWC-15D	3-4	86	0	0	0	7.2	78.5	14.3	100
		Composite	0-4	87	0	0	3.9	20.1	34.8	41.2	100
PA22-1056SWC-16	XY=2367443.15,350806.87	PA22-1056SWC-16A	0-1	88	0	0	0	9.3	36.5	54.2	100
		PA22-1056SWC-16B	1-2	89	0	0	0	2.1	32.8	44.1	100
		PA22-1056SWC-16C	2-3	90	0	0.2	0.6	13.2	41.3	44.7	100

Table 11. 1056S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
		PA22-1056SWC-16D	3-4	91	0	2.1	2.1	3.3	82.9	9.6	100
		Composite	0-4	92	0	0.8	0.9	27	36.9	34.4	100
PA22-1056SWC-17	XY=2367771.49,350955.91	PA22-1056SWC-17A	0-1	93	0	0.5	1.2	19.1	24.6	54.6	100
		PA22-1056SWC-17B	1-2	94	0	1.1	4.6	23.4	31.9	39	100
		PA22-1056SWC-17C	2-3	95	0	0	0	20.8	28.8	50.4	100
		PA22-1056SWC-17D	3-4	96	0	0	0.1	10.4	41.9	47.6	100
		Composite	0-4	97	0	2	3.1	17.9	39.8	37.2	100

NR: Not Reported

Table 12. 1088S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
PA22-1088SWC-1	XY=2365225.09,349106.96	PA22-1088SWC-1A	0-1	1	0	0	0.4	1.8	90.2	7.6	100
		PA22-1088SWC-1B	1-2	2	0	0.8	1	3.9	87	7.3	100
		PA22-1088SWC-1C	2-3	3	0	1.8	2.5	8.8	80.3	6.6	100
		PA22-1088SWC-1D	3-4	4	0	0.4	1.2	5.3	45.5	47.6	100
		PA22-1088SWC-1E	4-5	5	0	1.9	3.5	8.4	53.8	32.4	100
		PA22-1088SWC-1F	5-6	6	0	4.5	5	8.5	66.1	15.9	100
		Composite	0-6	7	0	2.2	1.8	3.9	80.3	11.8	100
PA22-1088SWC-2	XY=2364923.77,349329.23	PA22-1088SWC-2A	0-1	8	0	0	0	0.3	86.7	13	100
		PA22-1088SWC-2B	1-2	9	0	0	0	0.5	91.8	7.7	100
		PA22-1088SWC-2C	2-3	10	0	0	0	0.5	86.6	12.9	100
		PA22-1088SWC-2D	3-4	11	0	0	0	0.4	89	10.6	100
		PA22-1088SWC-2E	4-5	12	0	0	0	0.6	90.7	8.7	100
		PA22-1088SWC-2F	5-6	13	0	0	0	0.3	90.1	9.6	100
		Composite	0-6	14	0	0	0	0.7	91.2	8.1	100
PA22-1088SWC-3	XY=2364659.09,349440.66	PA22-1088SWC-3A	0-1	15	0	0	0.1	4.3	82.7	12.9	100
		PA22-1088SWC-3B	1-2	16	0	0.5	2	8.7	28.5	60.3	100
		PA22-1088SWC-3C	2-3	17	0	1.3	4.3	7.2	23.8	63.4	100
		PA22-1088SWC-3D	3-4	18	0	0	0	1.3	76.9	21.8	100
		Composite	0-4	19	0	0	0.1	5.6	54.7	39.6	100
PA22-1088SWC-4	XY=2364711.70,349192.00	PA22-1088SWC-4A	0-1	20	0	0	0	1.1	9.5	3.4	100
		PA22-1088SWC-4B	1-2	21	0	0	0.2	2.1	86	11.7	100
		PA22-1088SWC-4C	2-3	22	0	0	0	0.8	82.8	16.4	100
		PA22-1088SWC-4D	3-4	23	0	0	0.1	1.4	76.3	22.2	100
		PA22-1088SWC-4E	4-5	24	0	0	0	3.5	71.2	25.3	100
		PA22-1088SWC-4F	5-6	25	0	0	0.3	1	79.5	19.2	100
		Composite	0-6	26	0	0	0.1	2.1	81.1	16.7	100
PA22-1088SWC-5	XY=2364805.53,348944.26	PA22-1088SWC-5A	0-1	27	0	0	0	0.3	97.3	2.4	100
		PA22-1088SWC-5B	1-2	28	0	0	0	0.8	95.1	4.1	100
		PA22-1088SWC-5C	2-3	29	0	0	0.1	1.7	93.2	5	100
		PA22-1088SWC-5D	3-4	30	0	0	0.4	4.6	85.1	9.9	100

Table 12. 1088S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
		PA22-1088SWC-5E	4-5	31	0	0	0.1	0.7	96.6	2.6	100
		PA22-1088SWC-5F	5-6	32	0	0	0	0.8	88.8	10.4	100
		Composite	0-6	33	0	0	0	0.1	93	6.6	100
PA22-1088SWC-6	XY=2364544.20,348886.21	PA22-1088SWC-6A	0-1	34	0	0	0.2	2.3	92.2	5.3	100
		PA22-1088SWC-6B	1-2	35	0	0	0	1.4	94.5	4.1	100
		PA22-1088SWC-6C	2-3	36	0	0	0.1	2.2	94.4	3.3	100
		PA22-1088SWC-6D	3-4	37	0	0	0	0.4	90	9.6	100
		Composite	0-4	38	0	0	0	2.1	89.3	8.6	100
PA22-1088SWC-7	XY=2364368.95,348757.38	PA22-1088SWC-7A	0-1	39	0	0.3	0.6	3.2	94.2	1.7	100
		PA22-1088SWC-7B	1-2	40	0	0	0.1	0.5	97.8	1.6	100
		PA22-1088SWC-7C	2-3	41	0	0	0	0.1	97.6	2.3	100
		PA22-1088SWC-7D	3-4	42	0	0	0.2	0.7	97.1	2	100
		PA22-1088SWC-7E	4-5	43	0	0	0.2	0.8	96.3	2.7	100
		PA22-1088SWC-7F	5-6	44							
		Composite	0-6	45	0	0.1	0.2	1.5	94	4.2	100
PA22-1088SWC-8	XY=2364191.29,348831.07	PA22-1088SWC-8A	0-1	46	0	0.7	0.6	3.1	93.8	1.8	100
		PA22-1088SWC-8B	1-2	47	0	1.1	2.1	5.6	89.6	1.6	100
		PA22-1088SWC-8C	2-3	48	0	1	0.5	2.3	91.7	4.5	100
		PA22-1088SWC-8D	3-4	49	0	0	0.1	3.7	92.3	3.9	100
		PA22-1088SWC-8E	4-5	50	0	0	0.2	0.9	93.3	5.6	100
		PA22-1088SWC-8F	5-6	51	0	0.1	0.3	0.8	96.5	2.3	100
		Composite	0-6	52	0	0.5	1.5	3.1	93	1.9	100
PA22-1088SWC-9	XY=2364089.11,348617.63	PA22-1088SWC-9A	0-1	53	0	1.9	1	2.2	93.5	1.4	100
		PA22-1088SWC-9B	1-2	54	0	0	0	0.4	98.1	1.5	100
		PA22-1088SWC-9C	2-3	55	0	0	0	0.2	98.4	1.4	100
		PA22-1088SWC-9D	3-4	56	0	0	0	0.4	97.4	2.2	100
		PA22-1088SWC-9E	4-5	57	0	0	0	0.4	97.3	2.3	100
		PA22-1088SWC-9F	5-6	58	0	0	0	0.5	94.2	5.3	100
		Composite	0-6	59	0	0	0.1	0.9	89	10	100

Table 12. 1088S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
PA22-1088SWC-10	XY=2364010.17,348925.31	PA22-1088SWC-10A	0-1	60	0	0	0	0.3	96.7	3	100
		PA22-1088SWC-10B	1-2	61	0	0	0.1	0.2	98.5	1.2	100
		PA22-1088SWC-10C	2-3	62	0	0	0	0.7	93.5	5.8	100
		PA22-1088SWC-10D	3-4	63	0	0	0	0.1	67.5	32.4	100
		Composite	0-4	64	0	0	0.1	0.4	95.9	3.6	100
PA22-1088SWC-11	XY=2363888.80,348623.09	PA22-1088SWC-11A	0-1	65	0	0.1	0.1	2.6	65.9	31.3	100
		PA22-1088SWC-11B	1-2	66	0	0	0	0.7	94.1	5.2	100
		PA22-1088SWC-11C	2-3	67	0	0	0.1	0.6	94.8	4.5	100
		PA22-1088SWC-11D	3-4	68	0	0	0.5	2.5	88.7	8.3	100
		Composite	0-4	69	0	0	0	0.4	90.7	8.9	100
PA22-1088SWC-12	XY=2363548.50,348533.15	PA22-1088SWC-12A	0-1	70	0	1.7	1	2.4	65.6	29.3	100
		PA22-1088SWC-12B	1-2	71	0	0	0.2	1.3	89.2	9.3	100
		PA22-1088SWC-12C	2-3	72	0	0	0	1.1	93.1	5.8	100
		PA22-1088SWC-12D	3-4	73	0	0	0	0.7	93.4	5.9	100
		PA22-1088SWC-12E	4-5	74	0	0	0.2	1.1	80.2	18.5	100
		PA22-1088SWC-12F	5-6	75	0	0	0.2	1	88	10.8	100
		Composite	0-6	76	0	1.2	0.5	1.7	82.4	14.2	100
PA22-1088SWC-13	XY=2363517.89,348310.58	PA22-1088SWC-13A	0-1	77	0	0	0.3	1.4	91.5	6.8	100
		PA22-1088SWC-13B	1-2	78	0	0.1	0.4	3	92.1	4.4	100
		PA22-1088SWC-13C	2-3	79	0	0	0.6	2.9	91.6	4.9	100
		PA22-1088SWC-13D	3-4	80	0	1	2.6	5	87.3	4.1	100
		PA22-1088SWC-13E	4-5	81	0	0	0	0.2	92.4	7.4	100
		PA22-1088SWC-13F	5-6	82	0	0	0.6	1.4	85.5	12.5	100
		Composite	0-6	83	0	0	0.3	2.1	77.2	20.4	100

PA22-1088SWC-7F Refusal / Did Not Sample
PA22-1088SWC-11 Analytical Report posts as PA23-1110S W-C 11
PA22-1088SWC-12 Analytical Report posts as PA23-1110S W-C 12
PA22-1088SWC-13 Analytical Report posts as PA23-1110S W-C 13

Table 13. 1110S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
PA22-1110SWC-1	XY=2363235.25,348207.07	PA22-1110SWC-1A	0-1	1	0	0	0.1	0.6	97.9	1.4	100
		PA22-1110SWC-1B	1-2	2	0	0	0.1	0.3	98.7	0.9	100
		PA22-1110SWC-1C	2-3	3	0	0	0.3	0.5	98	1.2	100
		PA22-1110SWC-1D	3-4	4	0	0.3	1.9	4	92.7	1.1	100
		PA22-1110SWC-1E	4-5	5	0	0.1	0.4	1.4	96.3	1.8	100
		PA22-1110SWC-1F	5-6	6	0	0.8	2	3.5	91.7	2	100
		Composite	0-6	7	0	0.6	1.8	3.7	88.9	5	100
PA22-1110SWC-2	XY=2363131.19,348419.81	PA22-1110SWC-2A	0-1	8	0	0	1.1	1.1	92.2	5.6	100
		PA22-1110SWC-2B	1-2	9	0	0	0.9	9.8	64.4	24.9	100
		PA22-1110SWC-2C	2-3	10	0	0	0	0.7	93.8	5.5	100
		PA22-1110SWC-2D	3-4	11	0	0	0.5	3.1	81.7	14.7	100
		Composite	0-4	12	0	0	0.5	4	84.4	11.1	100
PA22-1110SWC-3	XY=2363023.12,348107.68	PA22-1110SWC-3A	0-1	13	0	0	0.1	1.8	91.8	6.3	100
		PA22-1110SWC-3B	1-2	14	0	0	0.1	0.6	97.1	2.2	100
		PA22-1110SWC-3C	2-3	15	0	0	0	0.9	92.8	6.3	100
		PA22-1110SWC-3D	3-4	16	0	0	1.1	8.7	69.1	21.1	100
		Composite	0-4	17	0	0	0.1	1.4	96.3	2.2	100
PA22-1110SWC-4	XY=2362793.03,347913.11	PA22-1110SWC-4A	0-1	18	0	0	0	0.1	97.7	2.2	100
		PA22-1110SWC-4B	1-2	19	0	0	0	0.3	98.2	1.5	100
		PA22-1110SWC-4C	2-3	20	0	0	0	0.2	98.4	1.4	100
		PA22-1110SWC-4D	3-4	21	0	0	0	0.4	95.5	4.1	100
		Composite	0-4	22	0	0	0	0.2	98.3	1.5	100
PA22-1110SWC-5	XY=2362618.7,347932.13	PA22-1110SWC-5A	0-1	23	0	0	0	3.4	92.5	4.1	100
		PA22-1110SWC-5B	1-2	24	0	0	0	0.3	96.1	3.6	100
		PA22-1110SWC-5C	2-3	25	0	0	0.3	1.5	93.7	4.5	100
		PA22-1110SWC-5D	3-4	26	0	0	0.4	4.3	85.4	9.9	100
		Composite	0-4	27	0	0	0	0.3	95.2	4.5	100
PA22-1110SWC-6	XY=2362036.9,347651.99	PA22-1110SWC-6A	0-1	28	0	0	0	1.3	60.8	37.9	100
		PA22-1110SWC-6B	1-2	29	0	0	0.7	2.5	54.8	42	100

Table 13. 1110S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
		PA22-1110SWC-6C	2-3	30	0	0	0.4	2.4	56.3	40.9	100
		PA22-1110SWC-6D	3-4	31	0	0	0.7	2.6	77.6	19.1	100
		Composite	0-4	32	0	0	0.1	1.6	65.9	32.4	100
PA22-1110SWC-7	XY=2361645.81,347305.03	PA22-1110SWC-7A	0-1	33	0	0.1	0.3	1.6	91	7	100
		PA22-1110SWC-7B	1-2	34	0	0	0.5	2.4	89.8	7.3	100
		PA22-1110SWC-7C	2-3	35	0	0	0	1.9	91.7	6.4	100
		PA22-1110SWC-7D	3-4	36	0	0	0.1	1.8	92.2	5.9	100
		PA22-1110SWC-7E	4-5	37	0	0	0	0.5	93.7	5.8	100
		PA22-1110SWC-7F	5-6	38	0	0	0	0.5	92.8	6.7	100
		Composite	0-6	39	0	0	0.1	1.1	93.1	5.7	100
PA22-1110SWC-8	XY=2361683.38,347534.27	PA22-1110SWC-8A	0-1	40	0	0	0.1	1.1	92.4	6.4	100
		PA22-1110SWC-8B	1-2	41	0	0	0	1.4	92.1	6.5	100
		PA22-1110SWC-8C	2-3	42	0	0	0.2	3.2	38.9	57.7	100
		PA22-1110SWC-8D	3-4	43	0	0	0	1.2	80.5	18.3	100
		Composite	0-4	44	0	0	0.2	1.9	85.4	12.5	100
PA22-1110SWC-9	XY=2361626.71,347756.85	PA22-1110SWC-9A	0-1	45	0	0	1.2	4.9	85.4	8.5	100
		PA22-1110SWC-9B	1-2	46	0	0.2	0.9	3.5	89.3	6.1	100
		PA22-1110SWC-9C	2-3	47	0	0.3	0.7	2.8	82.6	13.6	100
		PA22-1110SWC-9D	3-4	48	0	10.4	6.2	13.8	41.8	27.8	100
		Composite	0-4	49	0	0.1	1.2	7.6	74.5	16.6	100
PA22-1110SWC-10	XY=2361659.43,347990.34	PA22-1110SWC-10A	0-1	50	0	0	0.1	1.3	89.2	9.4	100
		PA22-1110SWC-10B	1-2	51	0	0	0	0.6	93.6	5.8	100
		PA22-1110SWC-10C	2-3	52	0	0	0.1	1.1	90.4	8.4	100
		PA22-1110SWC-10D	3-4	53	0	0	0.9	12.6	58.7	27.8	100
		Composite	0-4	54	0	0	0.1	3.5	86.2	10.2	100

Table 14. 1006S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
PA22-1006SWC-1	XY=2372288.74,353060.14	PA22-1006SWC-1A	0-1	1	0	0	0.3	2	85.6	12.1	100
		PA22-1006SWC-1B	1-2	2	0	0	0.8	13.5	21.4	64.3	100
		PA22-1006SWC-1C	2-3	3	0	1.4	7.6	11.9	23.7	55.4	100
		PA22-1006SWC-1D	3-4	4	0	12.3	4.9	13.3	24.1	45.4	100
		PA22-1006SWC-1E	4-5	5	0	0	4	18.9	19.6	57.5	100
		PA22-1006SWC-1F	5-6	6	0	0	2.4	14.3	16.6	66.7	100
		Composite	0-6	7	0	0	0.3	6	33.2	60.5	100
PA22-1006SWC-2	XY=2372187.65,352905.16	PA22-1006SWC-2A	0-1	8	0	0	0.4	1.4	91.9	6.3	100
		PA22-1006SWC-2B	1-2	9	0	2.3	1.1	3.1	83.9	9.6	100
		PA22-1006SWC-2C	2-3	10	0	2.3	4.6	11.5	76.4	5.2	100
		PA22-1006SWC-2D	3-4	11	0	3.7	5.7	20.6	64.8	5.2	100
		PA22-1006SWC-2E	4-5	12	0	2.8	3.5	13.6	72.2	7.9	100
		PA22-1006SWC-2F	5-6	13	0	0.8	2.1	8.6	82.9	5.6	100
		Composite	0-6	14	0	1.1	1.7	5.8	81.4	10	100
PA22-1006SWC-3	XY=2372001.01,352683.60	PA22-1006SWC-3A	0-1	15	0	0	0.4	4.8	39.8	55	100
		PA22-1006SWC-3B	1-2	16	0	0	0	1	26.8	72.2	100
		PA22-1006SWC-3C	2-3	17	NR	NR	NR	NR	10.9	88.1	99
		PA22-1006SWC-3D	3-4	18	0	0	0	3.5	13.9	82.6	100
		PA22-1006SWC-3E	4-5	19	0	0	0	3	25.6	71.4	100
		PA22-1006SWC-3F	5-6	20	0	0	0	1.4	26.6	72	100
		Composite	0-6	21	0	0	0	3.3	12.5	84.2	100
PA22-1006SWC-4	XY=2371738.06,352471.67	PA22-1006SWC-4A	0-1	22	0	0	0	0.8	11.5	87.7	100
		PA22-1006SWC-4B	1-2	23	0	0	0	0.2	8.3	91.5	100
		PA22-1006SWC-4C	2-3	24	0	0	0	4.9	10.5	84.6	100
		PA22-1006SWC-4D	3-4	25	0	0	0	2	10	88	100
		Composite	0-4	26	0	0	0.2	0.9	8.4	90.5	100
PA22-1006SWC-5	XY=2371403.10,352312.53	PA22-1006SWC-5A	0-1	27	0	0	0.3	10.1	22.6	67	100
		PA22-1006SWC-5B	1-2	28	0	0	0	16	40.8	43.2	100
		PA22-1006SWC-5C	2-3	29	0	0	0.2	13.5	27.4	58.9	100
		PA22-1006SWC-5D	3-4	30	0	0	0	20	31.2	48.8	100

Table 14. 1006S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
		Composite	0-4	31	0	0	0.2	12	33.2	54.6	100
PA22-1006SWC-6	XY=2371007.25,352112.34	PA22-1006SWC-6A	0-1	32	0	0	0	1.6	29.9	68.5	100
		PA22-1006SWC-6B	1-2	33	0	0	0	1.7	10.5	87.8	100
		PA22-1006SWC-6C	2-3	34	0	0	0	2.7	10.9	86.4	100
		PA22-1006SWC-6D	3-4	35	0	0.2	0.2	0.8	7.9	90.9	100
		PA22-1006SWC-6E	4-5	36	0	0	0.3	7	15.6	77.1	100
		PA22-1006SWC-6F	5-6	37	0	3.7	10.9	13.7	12.2	59.5	100
		Composite	0-6	38	0	0	0	0.7	11.1	88.2	100
PA22-1006SWC-7	XY=2370817.26,352272.34	PA22-1006SWC-7A	0-1	39	0	0	0.2	0.9	7.1	91.8	100
		PA22-1006SWC-7B	1-2	40	0	0	0	1	11	88	100
		PA22-1006SWC-7C	2-3	41	0	0	0	0.7	11.2	88.1	100
		PA22-1006SWC-7D	3-4	42	0	0	0	0.9	8.1	91	100
		PA22-1006SWC-7E	4-5	43							0
		PA22-1006SWC-7F	5-6	44							0
		Composite	0-6	45	0	0	0	0.4	5	94.6	100
PA22-1006SWC-8	XY=2371212.98,352472.52	PA22-1006SWC-8A	0-1	46	0	2.5	2.9	12.4	34	48.2	100
		PA22-1006SWC-8B	1-2	47	0	0	0	6.5	33.1	60.4	100
		PA22-1006SWC-8C	2-3	48	0	0	0	14.7	32.1	53.2	100
		PA22-1006SWC-8D	3-4	49	0	0	0	9.8	24.2	66	100
		Composite	0-4	50	0	0	0	0.5	20.5	79	100
PA22-1006SWC-9	XY=2371547.94,352631.67	PA22-1006SWC-9A	0-1	51	0	0	0	0.4	9	90.6	100
		PA22-1006SWC-9B	1-2	52	0	4.1	8.9	9.5	18.8	58.7	100
		PA22-1006SWC-9C	2-3	53	0	0	0	11.2	23.7	65.1	100
		PA22-1006SWC-9D	3-4	54	0	0	0	10.9	19.3	69.8	100
		Composite	0-4	55	0	0	0	16.4	24.1	59.5	100
PA22-1006SWC-10	XY=2371757.81,352731.77	PA22-1006SWC-10A	0-1	56	0	0	0.2	16.7	36.5	46.6	100
		PA22-1006SWC-10B	1-2	57	0	3.8	11	23.7	28.6	32.9	100
		PA22-1006SWC-10C	2-3	58	0	0	0.6	18	20.3	61.1	100
		PA22-1006SWC-10D	3-4	59	0	0	5.9	27.4	8.9	57.8	100

Table 14. 1006S

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
		Composite	0-4	60	0	1.3	5.9	21.9	20	50.9	100
PA22-1006SWC-11	XY=2371882.90,352922.55	PA22-1006SWC-11A	0-1	61	0	0	0	14.1	21	64.9	100
		PA22-1006SWC-11B	1-2	62	0	0.5	3.1	28.8	22	45.6	100
		PA22-1006SWC-11C	2-3	63	0	2.4	6.5	15.8	18.8	56.5	100
		PA22-1006SWC-11D	3-4	64	0	0	0	15	25.5	59.5	100
		PA22-1006SWC-11E	4-5	65	0	0.4	3.8	17.9	15.4	62.5	100
		PA22-1006SWC-11F	5-6	66	0	0	0.3	11.1	11.7	76.9	100
		Composite	0-6	67	0	0	0.2	25.1	32.5	42.2	100
PA22-1006SWC-12	XY=2371453.13,352847.39	PA22-1006SWC-12A	0-1	68	0	0	0.2	13.4	25.6	60.8	100
		PA22-1006SWC-12B	1-2	69	0	0	0	16.4	29.4	54.2	100
		PA22-1006SWC-12C	2-3	70	0	0	0	19.7	26.1	54.2	100
		PA22-1006SWC-12D	3-4	71	0	0	0	16.8	25.4	57.8	100
		Composite	0-4	72	0	0	0.5	20.4	27.9	51.2	100
PA22-1006SWC-13	XY=2371118.18,352688.25	PA22-1006SWC-13A	0-1	73	0	0	0.2	17.5	39.8	42.5	100
		PA22-1006SWC-13B	1-2	74	0	0	0	19.3	23.8	56.9	100
		PA22-1006SWC-13C	2-3	75	0	0	0	13.7	31.8	54.5	100
		PA22-1006SWC-13D	3-4	76	0	0	0	18.9	28.9	52.2	100
		Composite	0-4	77	0	0	0.2	21.6	30.7	47.5	100
PA22-1006SWC-14	XY=2370722.45,352488.07	PA22-1006SWC-14A	0-1	78	0	0	0.2	20.1	30.1	49.6	100
		PA22-1006SWC-14B	1-2	79	0	0	0.7	22.4	24.6	52.3	100
		PA22-1006SWC-14C	2-3	80	0	0	5.5	26.2	23.5	44.8	100
		PA22-1006SWC-14D	3-4	81	0	0	0	13.1	44.4	42.5	100
		PA22-1006SWC-14E	4-5	82	0	0	0	22	43.3	34.7	100
		PA22-1006SWC-14F	5-6	83	0	0	0.2	30.2	36.7	32.9	100
		Composite	0-6	84	0	0	0	21.2	32.1	46.7	100

NR: Not Reported

PA22-1006SWC-7E	Refusal / Did Not Sample
PA22-1006SWC-7F	Refusal / Did Not Sample

Table 15. MIN

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
PA22-MIN-1	XY=2345955.19,327117.03	PA22-MIN-1A	0-1	1	0	0	0.1	0.8	21.4	77.7	100
		PA22-MIN-1B	1-2	2	0	0	0	0.5	24.7	74.8	100
		PA22-MIN-1C	2-3	3	0	0	0	1.9	30.5	67.6	100
		PA22-MIN-1D	3-4	4	0	0.8	2	15.6	61.8	19.8	100
		PA22-MIN-1E	4-5	5	0	0	0	0.5	68.6	30.9	100
		PA22-MIN-1F	5-6	6	0	0.6	2.2	28.8	58.8	9.6	100
		Composite	0-6	7	0	0.3	2.1	15.3	58.6	23.7	100
PA22-MIN-2	XY=2345491.74,327117.03	PA22-MIN-2A	0-1	8	0	0	0	0.2	91.8	8	100
		PA22-MIN-2B	1-2	9	0	0	0.2	1.3	91.8	6.7	100
		PA22-MIN-2C	2-3	10	0	0.3	2.8	16.9	61.6	18.4	100
		PA22-MIN-2D	3-4	11	0	0	0.1	3.2	86.1	10.6	100
		PA22-MIN-2E	4-5	12	0	0	0.2	3.6	86.8	9.4	100
		PA22-MIN-2F	5-6	13	0	0.4	0.5	3.7	82	13.4	100
		Composite	0-6	14	0	0.4	0.3	3.5	76.9	18.9	100
PA22-MIN-3	XY=2345077.91,327117.03	PA22-MIN-3A	0-1	15	0	0	0.2	1.6	86.2	12	100
		PA22-MIN-3B	1-2	16	0	0.2	0.7	3.1	87.1	8.9	100
		PA22-MIN-3C	2-3	17	0	0.3	0.4	2.3	90.3	6.7	100
		PA22-MIN-3D	3-4	18	0	0	0.1	1.9	82.5	15.5	100
		PA22-MIN-3E	4-5	19	0	0	0.2	1.2	76.3	22.3	100
		PA22-MIN-3F	5-6	20	0	0.1	0	1.1	74.1	24.7	100
		Composite	0-6	21	0	0	0.1	1.4	79.5	19	100
PA22-MIN-4	XY=2344747.71,327081.03	PA22-MIN-4A	0-1	22	0	0	0	1.9	76.9	21.2	100
		PA22-MIN-4B	1-2	23	0	0	0	2.1	74	23.9	100
		PA22-MIN-4C	2-3	24	0	0	0.1	0.4	86.3	13.2	100
		PA22-MIN-4D	3-4	25	0	0	0	2.6	12.9	84.5	100
		PA22-MIN-4E	4-5	26	0	0	0	0.5	56.9	42.6	100
		PA22-MIN-4F	5-6	27	0	0	0	2.1	44.6	53.3	100
		Composite	0-6	28	0	0	0	2.9	57.5	39.6	100
PA22-MIN-5	XY=2344343.98,326995.90	PA22-MIN-5A	0-1	29	0	0	0.1	4	52.4	43.5	100
		PA22-MIN-5B	1-2	30	0	0	0	6.8	49.6	43.6	100

Table 15. MIN

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
		PA22-MIN-5C	2-3	31	0	0	0	3.3	52.8	43.9	100
		PA22-MIN-5D	3-4	32	0	0	0	0.1	96.7	3.2	100
		PA22-MIN-5E	4-5	33	0	0	0	0.1	96.1	3.8	100
		PA22-MIN-5F	5-6	34	0	0	0	0.3	96.1	3.6	100
		Composite	0-6	35	0	0	0	3.6	66.4	30	100
PA22-MIN-6	XY=2344566.92,326829.24	PA22-MIN-6A	0-1	36	0	0	0	6.1	63.3	30.6	100
		PA22-MIN-6B	1-2	37	0	0.1	0.6	7.8	50.9	40.6	100
		PA22-MIN-6C	2-3	38	0	0	0.2	1.8	83	15	100
		PA22-MIN-6D	3-4	39	0	0	0	1	80.7	18.3	100
		PA22-MIN-6E	4-5	40	0	0	0	0.8	78.6	20.6	100
		PA22-MIN-6F	5-6	41	0	0	0.1	8.5	56.5	34.9	100
		Composite	0-6	42	0	0.2	4.4	9.9	56.7	28.8	100
PA22-MIN-7	XY=2345166.65,326885.89	PA22-MIN-7A	0-1	43	0	0.6	1.6	13.3	83.7	0.8	100
		PA22-MIN-7B	1-2	44	0	0.4	3.3	19.3	73.7	3.3	100
		PA22-MIN-7C	2-3	45	0	0.3	2.7	12.5	83	1.5	100
		PA22-MIN-7D	3-4	46	0	0.1	1.1	6.7	89.7	2.4	100
		PA22-MIN-7E	4-5	47	0	4.5	3.1	22.2	67.8	2.4	100
		PA22-MIN-7F	5-6	48	0	21.2	6.7	23.6	43	5.5	100
		Composite	0-6	49	0	5.8	5	16.8	69	3.4	100
PA22-MIN-8	XY=2345486.43,326889.56	PA22-MIN-8A	0-1	50	0	0	0.1	3.3	93.4	3.2	100
		PA22-MIN-8B	1-2	51	0	0	0.2	3	92.6	4.2	100
		PA22-MIN-8C	2-3	52	0	0	0.7	2.1	73.3	23.9	100
		PA22-MIN-8D	3-4	53	0	0	0	2.3	86.8	10.9	100
		PA22-MIN-8E	4-5	54	0	0	0.1	2.4	84	13.5	100
		PA22-MIN-8F	5-6	55	0	0	0	2.6	85.5	11.9	100
		Composite	0-6	56	0	0.1	0.3	2.9	91.1	5.6	100
PA22-MIN-9	XY=2345660.47,326749.03	PA22-MIN-9A	0-1	57	0	0	0	2.4	48.6	49	100
		PA22-MIN-9B	1-2	58	0	0	0	0.8	60.9	38.3	100
		PA22-MIN-9C	2-3	59	0	0	0	1.4	28.4	70.2	100
		PA22-MIN-9D	3-4	60	0	0	0.1	1	46.2	52.7	100

Table 15. MIN

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
		PA22-MIN-9E	4-5	61	0	0	0.3	1.7	78.8	19.2	100
		PA22-MIN-9F	5-6	62	0	0	0.4	3.3	49.6	46.7	100
		Composite	0-6	63	0	0	0	1	61.7	37.3	100
PA22-MIN-10 XY=2345356.79,326388.15		PA22-MIN-10A	0-1	64	0	0	0.5	3.4	81.3	14.8	100
		PA22-MIN-10B	1-2	65	0	0	0	1.3	54.1	44.6	100
		PA22-MIN-10C	2-3	66	0	0	0	11.8	39.7	48.5	100
		PA22-MIN-10D	3-4	67	0	7	3.1	27.5	28.9	33.5	100
		PA22-MIN-10E	4-5	68	0	0	0.3	1.2	26.4	72.1	100
		PA22-MIN-10F	5-6	69	0	0	0	0.7	18.5	80.8	100
		Composite	0-6	70	0	0	0.1	0.4	11	88.5	100
PA22-MIN-11 XY=2345099.55,326578.94		PA22-MIN-11A	0-1	71	0	0	0.1	0.4	92.8	6.7	100
		PA22-MIN-11B	1-2	72	0	0	0	0.8	94.2	5	100
		PA22-MIN-11C	2-3	73	0	0	0.1	6.2	78.6	15.1	100
		PA22-MIN-11D	3-4	74	0	0.2	0	1	92.5	6.3	100
		PA22-MIN-11E	4-5	75	0	0	0.4	2.3	83.6	13.7	100
		PA22-MIN-11F	5-6	76	0	2	3.1	8.7	32	54.2	100
		Composite	0-6	77	0	0.2	0.2	1	72.9	25.7	100
PA22-MIN-12 XY=2344639.57,326509.69		PA22-MIN-12A	0-1	78	0	0.6	0.7	9.9	70	18.8	100
		PA22-MIN-12B	1-2	79	0	0	0.1	2.2	55.1	42.6	100
		PA22-MIN-12C	2-3	80	0	0	0.1	0.8	19.9	79.2	100
		PA22-MIN-12D	3-4	81	0	0	0.1	1.5	36.5	61.9	100
		PA22-MIN-12E	4-5	82	0	15.1	3.5	10.9	17.7	52.8	100
		PA22-MIN-12F	5-6	83	0	0	0	17	30.5	52.5	100
		Composite	0-6	84	0	0	0	1.7	37.5	60.8	100
PA22-MIN-13 XY=2344101.39,326657.63		PA22-MIN-13A	0-1	85	0	0	0	2.2	83.5	14.3	100
		PA22-MIN-13B	1-2	86	0	0	0.1	0.8	91.1	8	100
		PA22-MIN-13C	2-3	87	0	0	0.1	9.5	55.4	35	100
		PA22-MIN-13D	3-4	88	0	0.1	1.6	12.3	49	37	100
		PA22-MIN-13E	4-5	89	0	0	0	13.2	40.3	46.5	100
		PA22-MIN-13F	5-6	90	0	0	0.5	10.9	46.9	41.7	100

Table 15. MIN

Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
		Composite	0-6	91	0	0	0.1	6.3	66.4	27.2	100
PA22-MIN-14	XY=2343988.55,326215.72	PA22-MIN-14A	0-1	92	0	0	0.3	6.8	92.9		100
		PA22-MIN-14B	1-2	93	0	0	0.2	17.5	21.7	60.6	100
		PA22-MIN-14C	2-3	94	0	0	0	17.4	29	53.6	100
		PA22-MIN-14D	3-4	95	0	0	1.9	17	19.6	61.5	100
		Composite	0-4	96	0	0	0.2	8.4	22.4	69	100
PA22-MIN-15	XY=2344448.52,325996.78	PA22-MIN-15A	0-1	97	0	0	0	26.7	29.6	43.7	100
		PA22-MIN-15B	1-2	98	0	0	0.2	22.3	31.1	46.4	100
		PA22-MIN-15C	2-3	99	0	0	0.4	18.2	28.5	52.9	100
		PA22-MIN-15D	3-4	100	0	0	2.8	24.7	11.8	60.7	100
		Composite	0-4	101	0	0	0	17.1	33.1	49.8	100
PA22-MIN-16	XY=2345068.54,325920.32	PA22-MIN-16A	0-1	102	0	0	0.7	19.4	22.4	57.5	100
		PA22-MIN-16B	1-2	103	0	0	0.2	12	56.1	31.7	100
		PA22-MIN-16C	2-3	104	0	0	0	12.8	48.9	38.3	100
		PA22-MIN-16D	3-4	105	0	0	0.6	5.2	77.9	16.3	100
		Composite	0-4	106	0	0	0.1	10.6	58.3	31	100
PA22-MIN-17	XY=2344579.01,325041.67	PA22-MIN-17A	0-1	107	0	0	0.2	13.7	17.8	68.3	100
		PA22-MIN-17B	1-2	108	0	0	0.7	20.7	19.8	58.8	100
		PA22-MIN-17C	2-3	109	0	0	0.2	11.7	19.9	68.2	100
		PA22-MIN-17D	3-4	110	0	0	0	1	4.1	94.9	100
		Composite	0-4	111	0	0	0.3	15.3	16.6	67.8	100
PA22-MIN-18	XY=2344336.77,325574.41	PA22-MIN-18A	0-1	112	0	0	0.3	1.9	21.9	75.9	100
		PA22-MIN-18B	1-2	113	0	0	0	1.8	5.2	93	100
		PA22-MIN-18C	2-3	114	0	0	0.3	17.2	8.5	74	100
		PA22-MIN-18D	3-4	115	0	0	0.2	22.8	13.8	63.2	100
		Composite	0-4	116	0	0	0	0.8	6.6	92.6	100
PA22-MIN-19	XY=2343670.60,325536.54	PA22-MIN-19A	0-1	117	0	0	0.4	1.3	7.5	90.8	100
		PA22-MIN-19B	1-2	118	0	0	0.2	0.7	5.6	93.5	100
		PA22-MIN-19C	2-3	119	0	0	0	17	25.7	57.3	100

Table 15. MIN

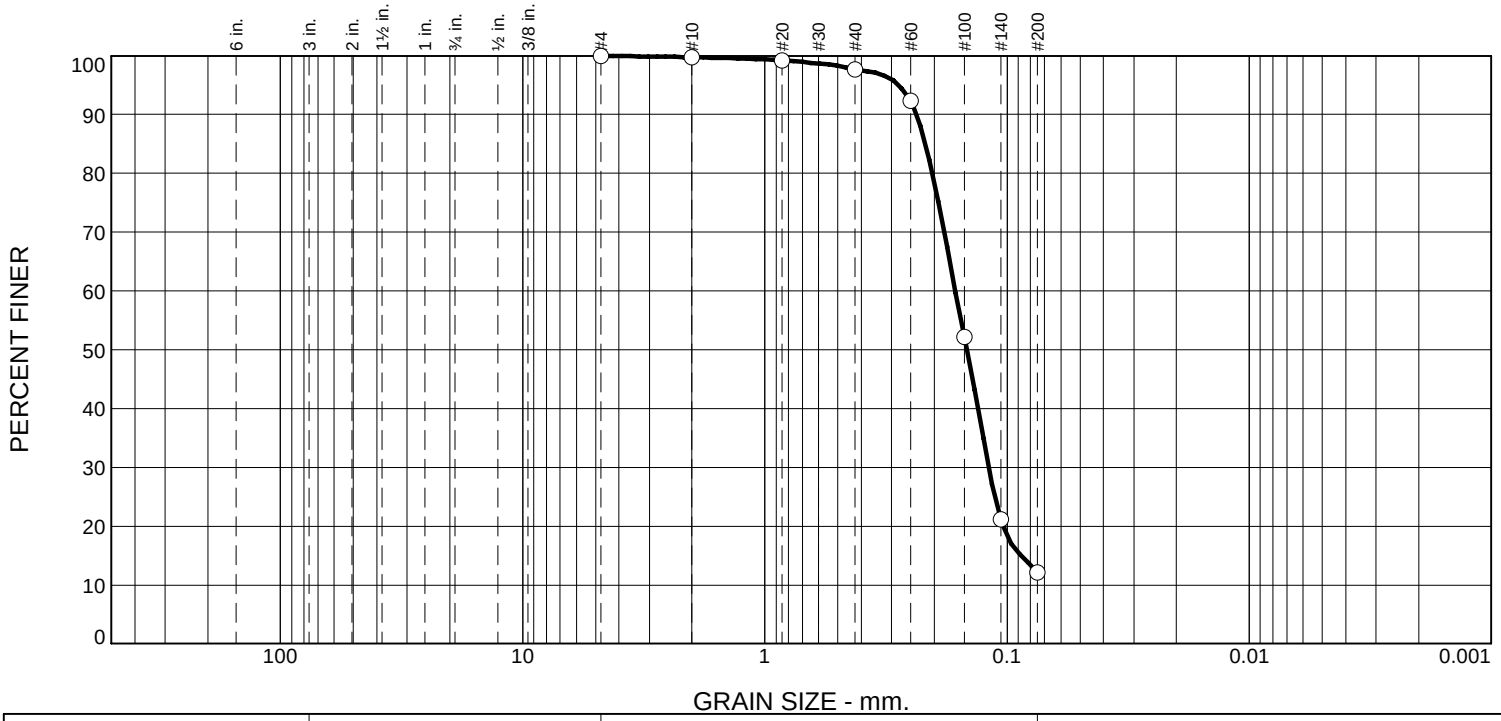
Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)		Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines	Total
		PA22-MIN-19D	3-4	120	0	0	0.3	20.2	23.5	56	100
		Composite	0-4	121	0	0	0	1.8	2.9	95.3	100
PA22-MIN-20	XY=2343610.04,325102.26	PA22-MIN-20A	0-1	122	0	0	0.2	12.6	52.9	34.3	100
		PA22-MIN-20B	1-2	123	0	0	0	1.9	33.4	64.7	100
		PA22-MIN-20C	2-3	124	0	0	0.4	3.2	43	53.4	100
		PA22-MIN-20D	3-4	125	0	0	0.1	12.3	35.3	52.3	100
		Composite	0-4	126	0	0	0.3	9	34.9	55.8	100
PA22-MIN-21	XY=2344261.07,324673.04	PA22-MIN-21A	0-1	127	0	0.1	0.9	5.5	73.8	19.7	100
		PA22-MIN-21B	1-2	128	0	0	0.1	4.8	76	19.1	100
		PA22-MIN-21C	2-3	129	0	0.1	0.6	6	70.6	22.7	100
		PA22-MIN-21D	3-4	130	0	0	0.4	2.5	51.6	45.5	100
		Composite	0-4	131	0	0	0.1	1.4	71.9	26.6	100
PA22-MIN-22	XY=2343747.30,324691.76	PA22-MIN-22A	0-1	132	0	0	0	1.3	38.8	59.9	100
		PA22-MIN-22B	1-2	133	0	0	0.2	1.2	56.2	42.4	100
		PA22-MIN-22C	2-3	134	0	0.3	4.8	14.3	41.8	38.8	100
		PA22-MIN-22D	3-4	135	0	0	3.8	19.6	30.4	46.2	100
		Composite	0-4	136	0	0	1	18.9	39.9	40.2	100

NR: Not Reported

APPENDIX E

INSIGHT LABORATORY REPORTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	2.0	85.6	12.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	99.2		
#40	97.7		
#60	92.3		
#100	52.2		
#140	21.1		
#200	12.1		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2359 D_{85}= 0.2172

D_{60}= 0.1637 D_{50}= 0.1462

D_{30}= 0.1190 D_{15}= 0.0879

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

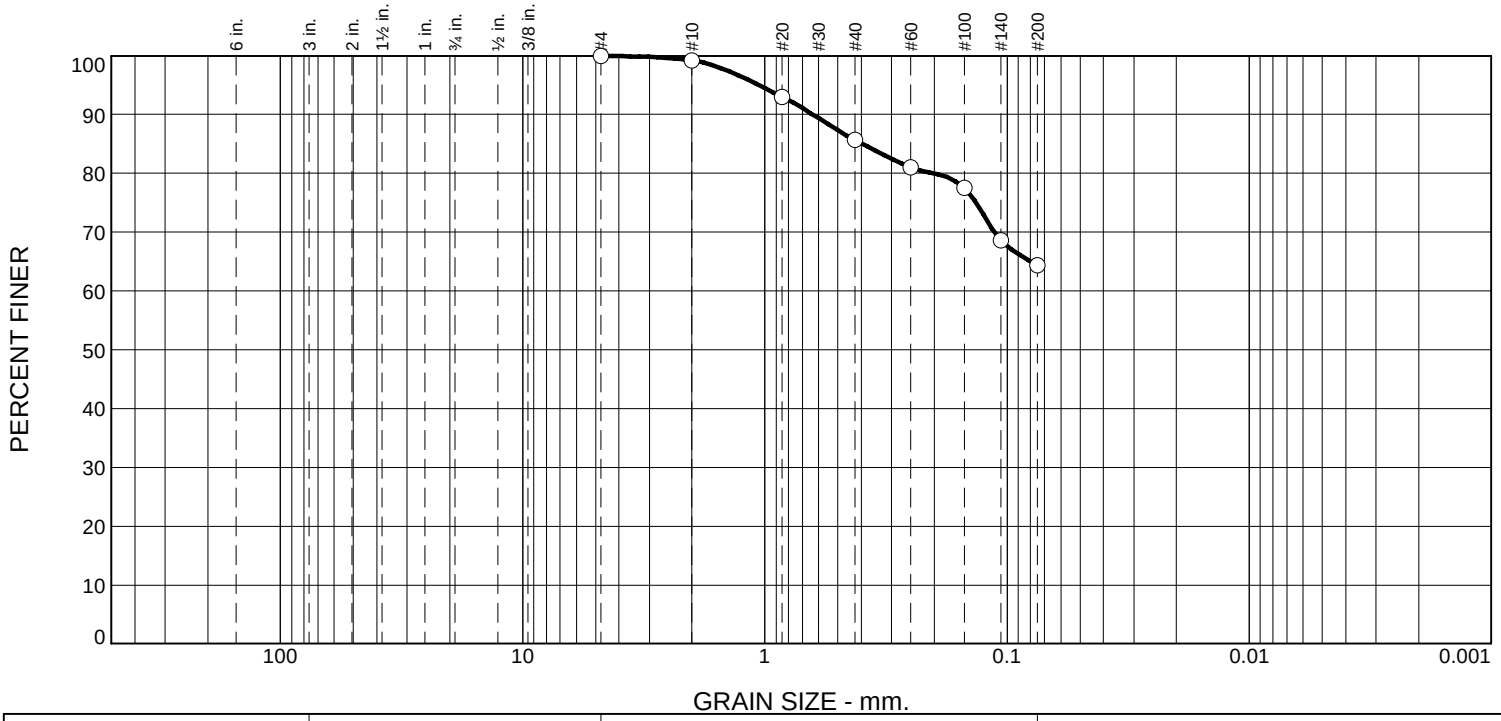
Source of Sample: PA23-1006S-WC
Sample Number: 1A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.8	13.5	21.4	64.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.2		
#20	93.0		
#40	85.7		
#60	81.0		
#100	77.5		
#140	68.6		
#200	64.3		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6336 D_{85}= 0.3967
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

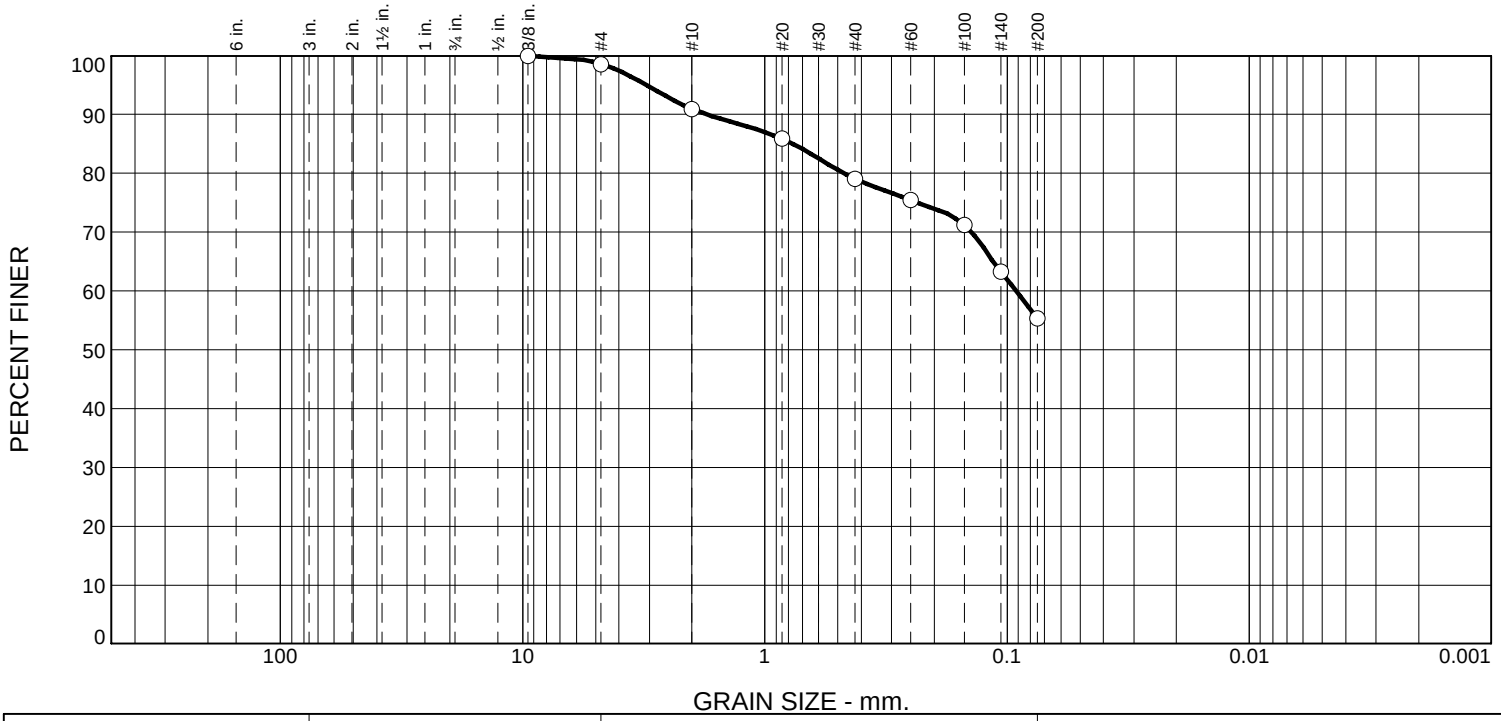
Source of Sample: PA23-1006S-WC
Sample Number: 1B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.4	7.6	11.9	23.7	55.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	98.6		
#10	91.0		
#20	85.9		
#40	79.1		
#60	75.4		
#100	71.2		
#140	63.3		
#200	55.4		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.7317 D_{85}= 0.7674
D_{60}= 0.0918 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

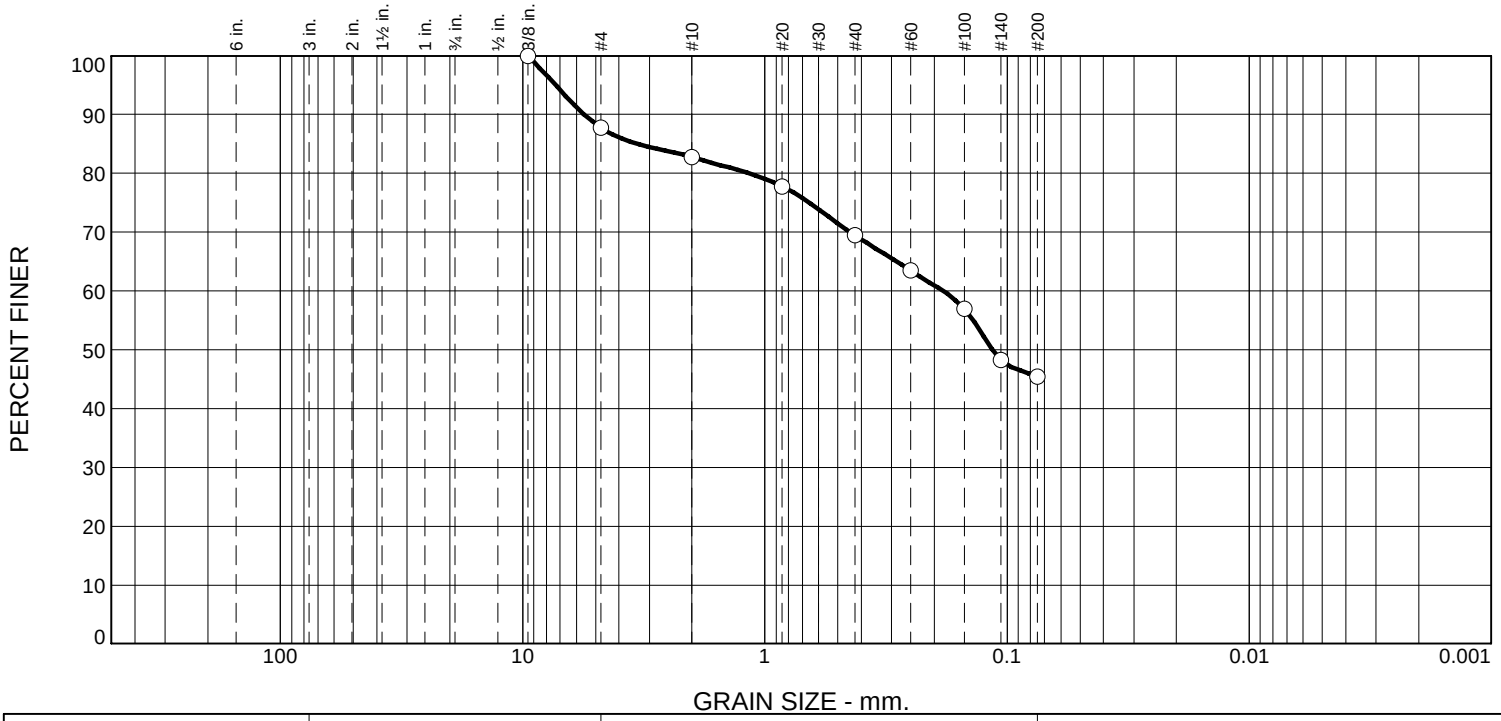
Source of Sample: PA23-1006S-WC
Sample Number: 1C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	12.3	4.9	13.3	24.1	45.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	87.7		
#10	82.8		
#20	77.8		
#40	69.5		
#60	63.4		
#100	56.9		
#140	48.3		
#200	45.4		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 5.5791 D_{85}= 3.3570
D_{60}= 0.1839 D_{50}= 0.1149
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/16/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

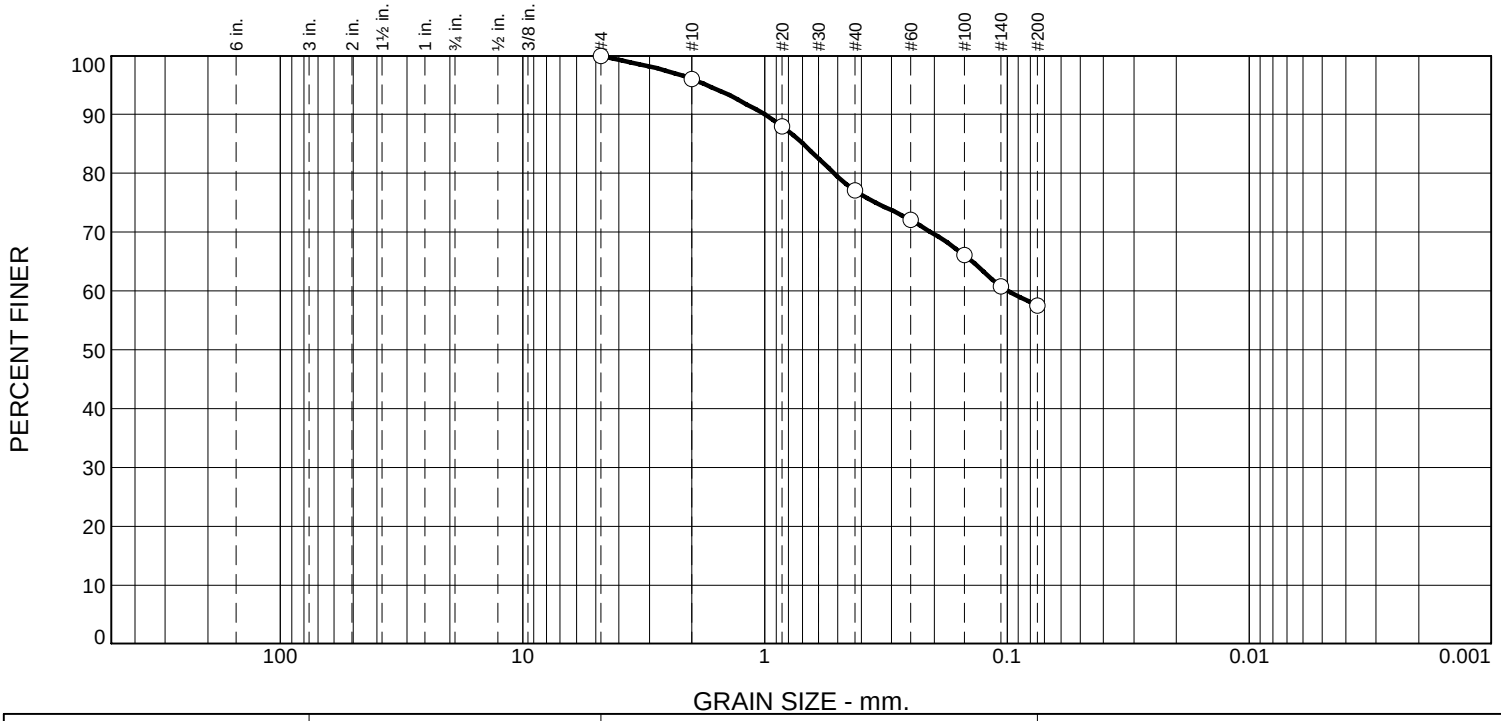
Date Sampled: 3/6/23
Date Received: 3/27/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 1D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	4.0	18.9	19.6	57.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	96.0		
#20	88.0		
#40	77.1		
#60	72.1		
#100	66.1		
#140	60.8		
#200	57.5		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.0036 D_{85}= 0.6928
D_{60}= 0.0989 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

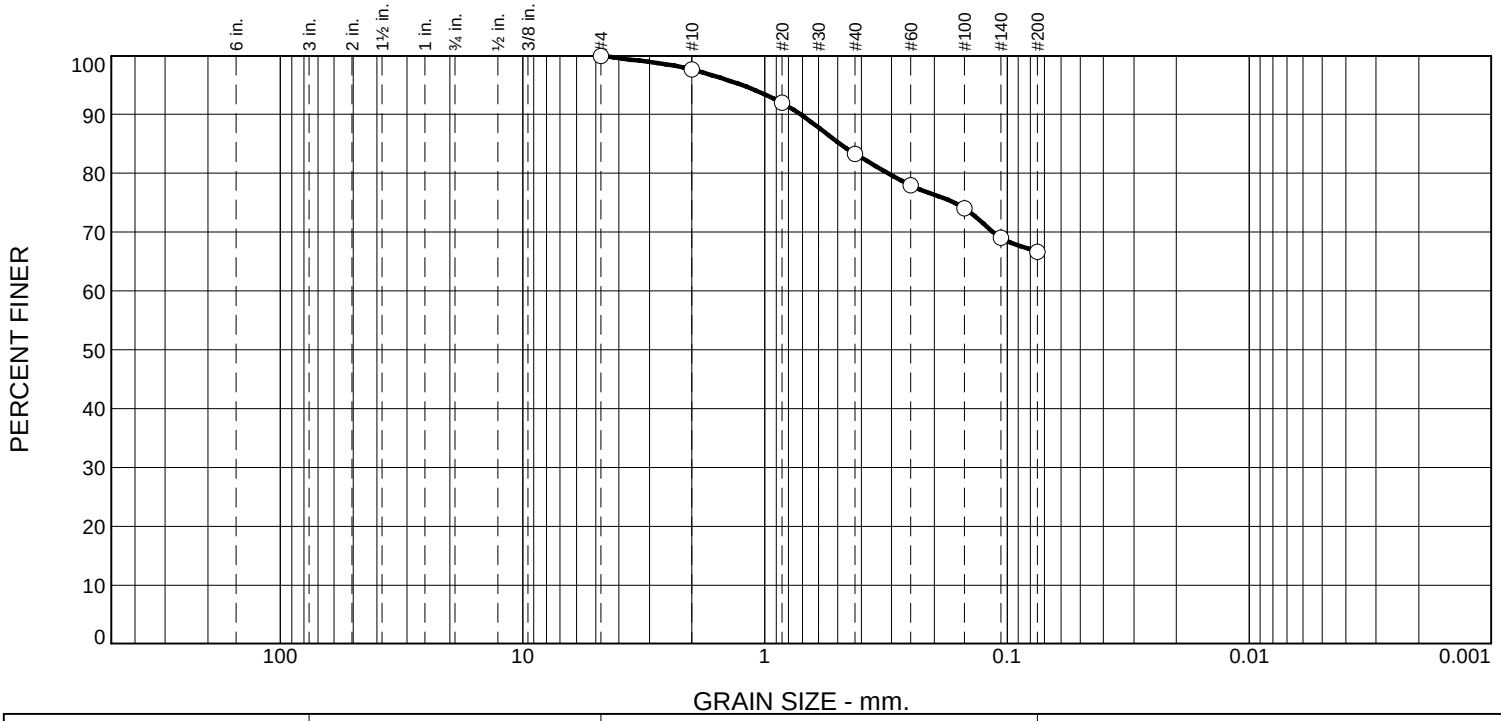
Source of Sample: PA23-1006S-WC
Sample Number: 1E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	2.4	14.3	16.6	66.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	97.6		
#20	92.0		
#40	83.3		
#60	78.0		
#100	74.1		
#140	69.0		
#200	66.7		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.7117 D_{85}= 0.4874
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

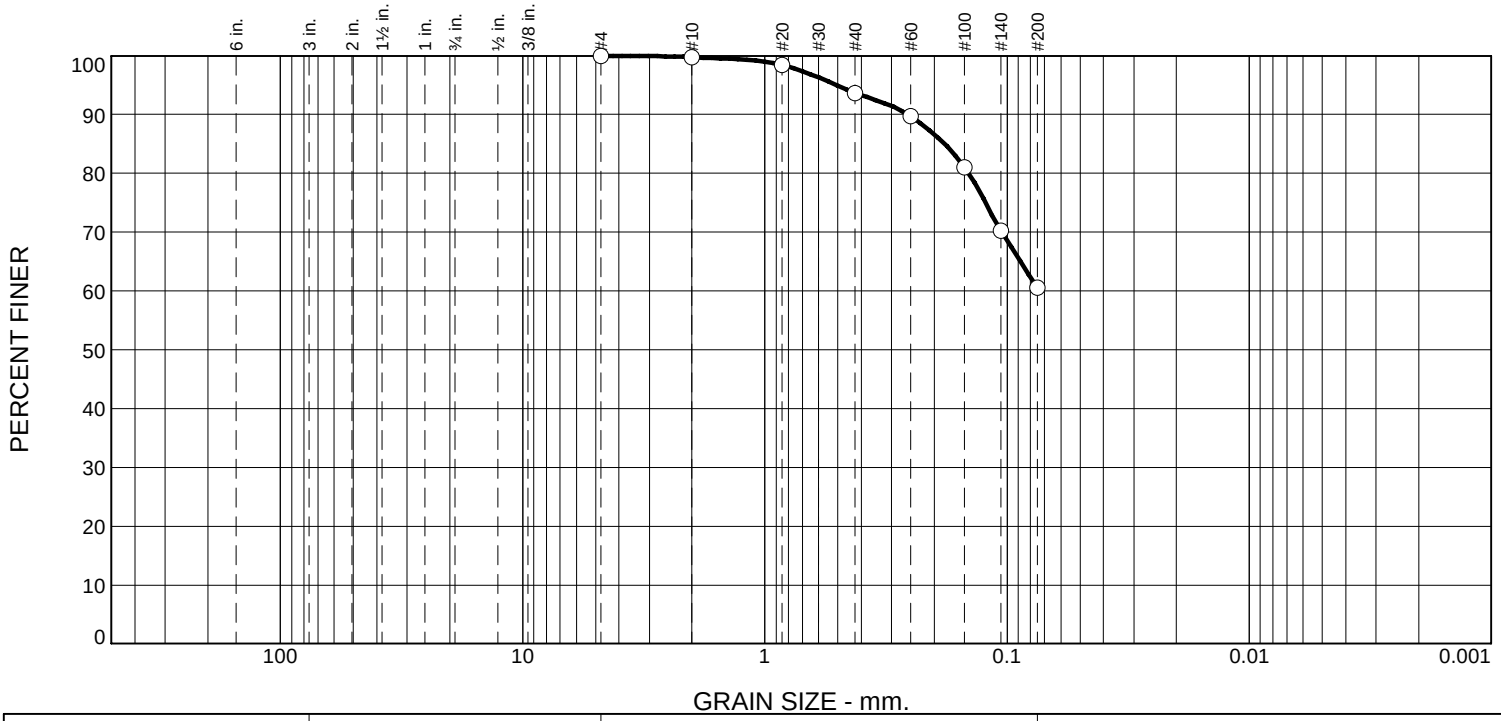
Source of Sample: PA23-1006S-WC
Sample Number: 1F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	6.0	33.2	60.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	98.4		
#40	93.7		
#60	89.7		
#100	81.1		
#140	70.3		
#200	60.5		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2556 D_{85}= 0.1812
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

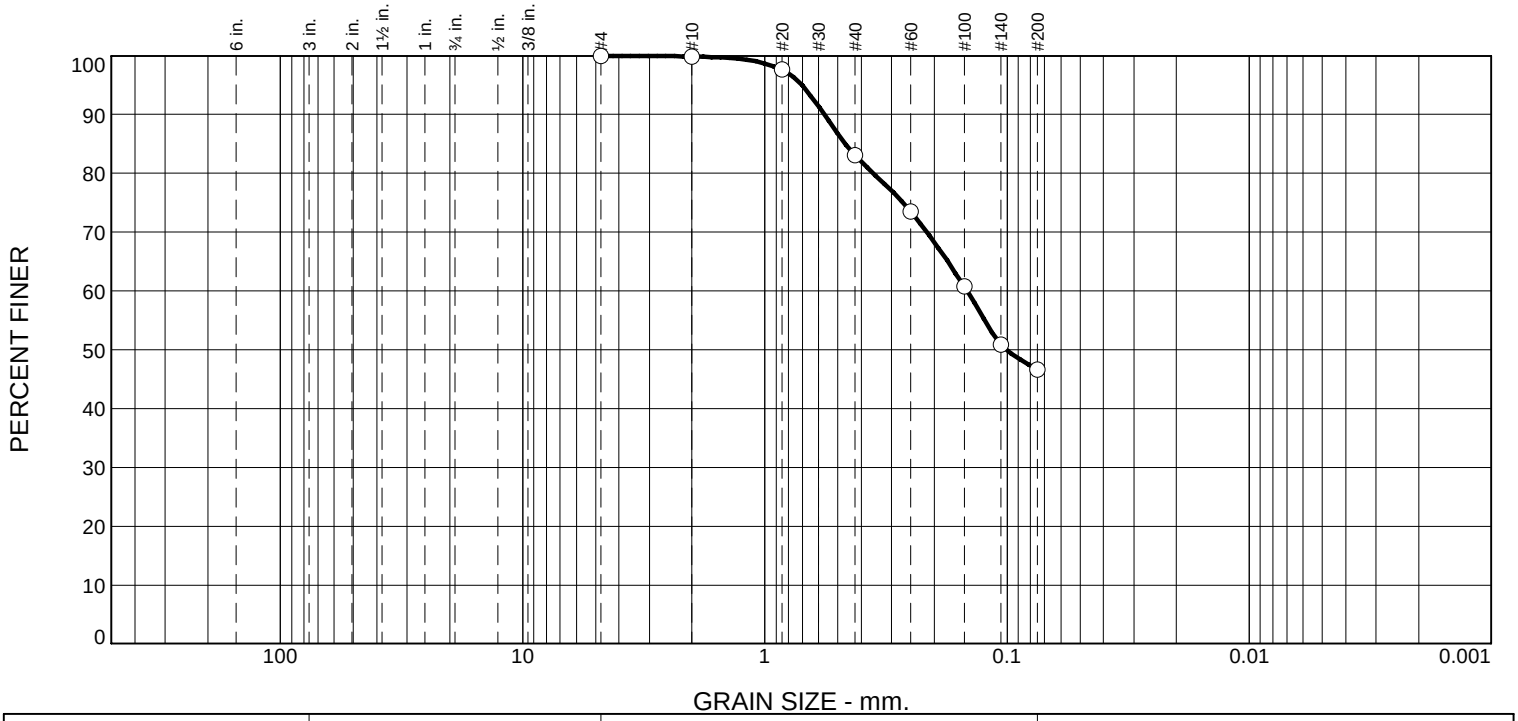
Source of Sample: PA23-1006S-WC
Sample Number: 1 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	16.7	36.5	46.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	97.7		
#40	83.1		
#60	73.5		
#100	60.8		
#140	50.9		
#200	46.6		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.5680 D_{85}= 0.4649
D_{60}= 0.1459 D_{50}= 0.1008
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

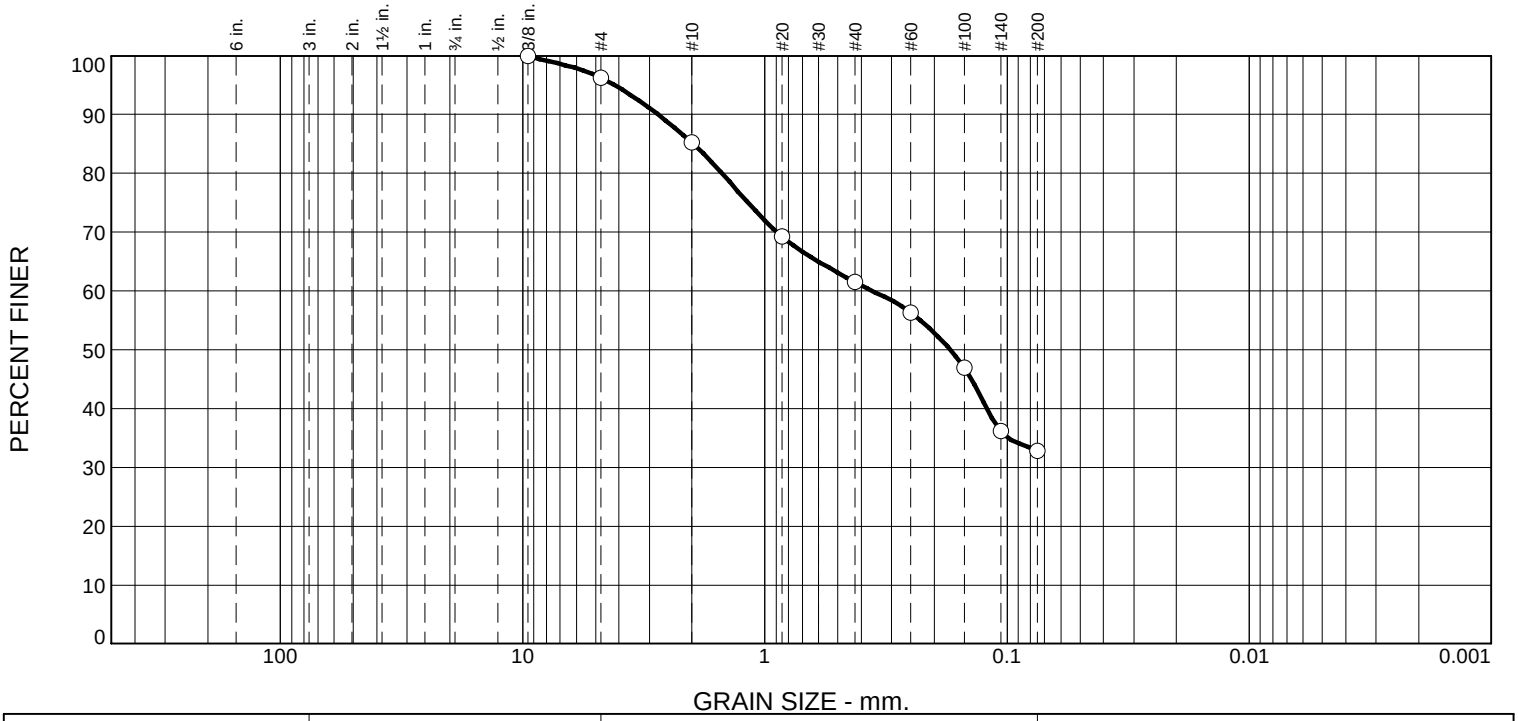
Source of Sample: PA23-1006S-WC
Sample Number: 10A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.8	11.0	23.7	28.6	32.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	96.2		
#10	85.2		
#20	69.2		
#40	61.5		
#60	56.3		
#100	46.9		
#140	36.2		
#200	32.9		

* (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 2.7659 D_{85}= 1.9735

D_{60}= 0.3607 D_{50}= 0.1716

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hach

Title: Sr Engineer

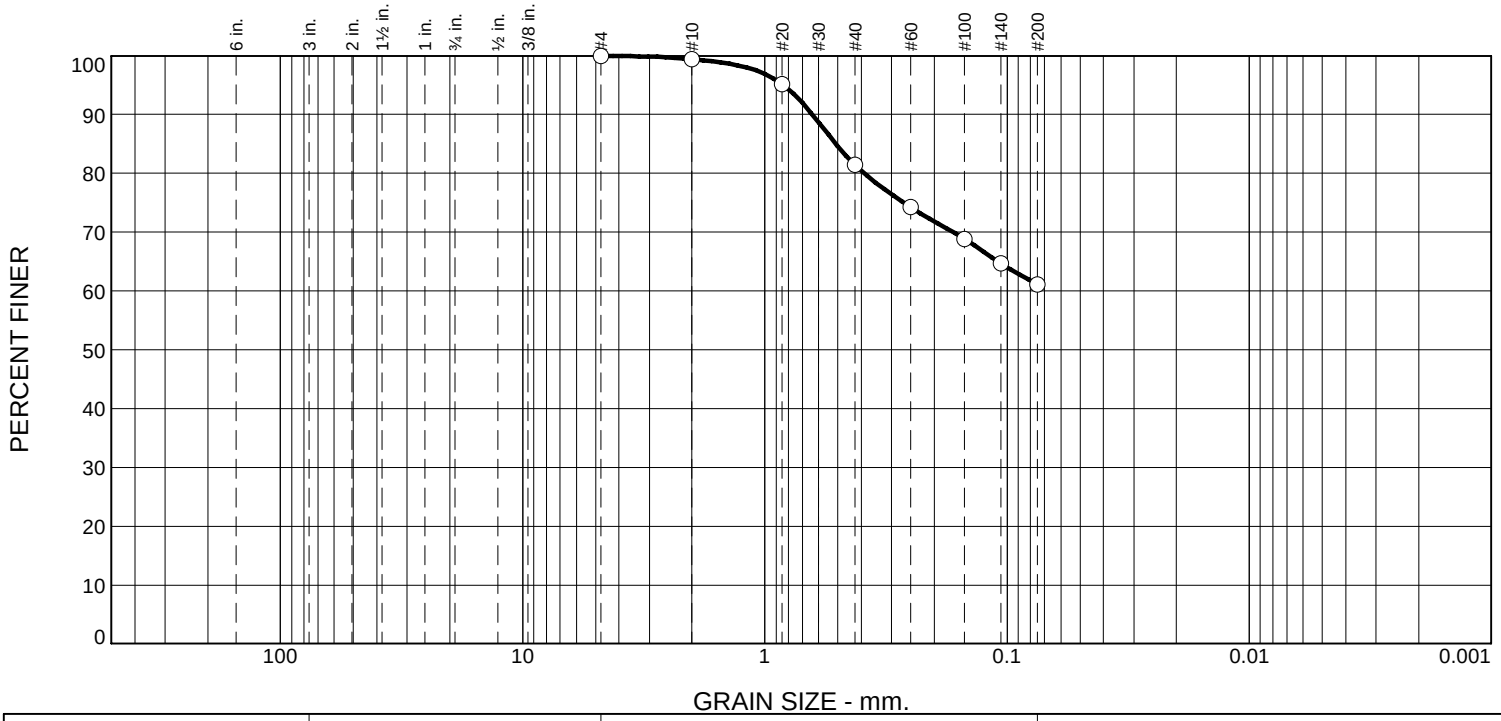
Source of Sample: PA23-1006S-WC
Sample Number: 10B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	18.0	20.3	61.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.4		
#20	95.2		
#40	81.4		
#60	74.3		
#100	68.9		
#140	64.7		
#200	61.1		

* (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.6372 D_{85}= 0.5097

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

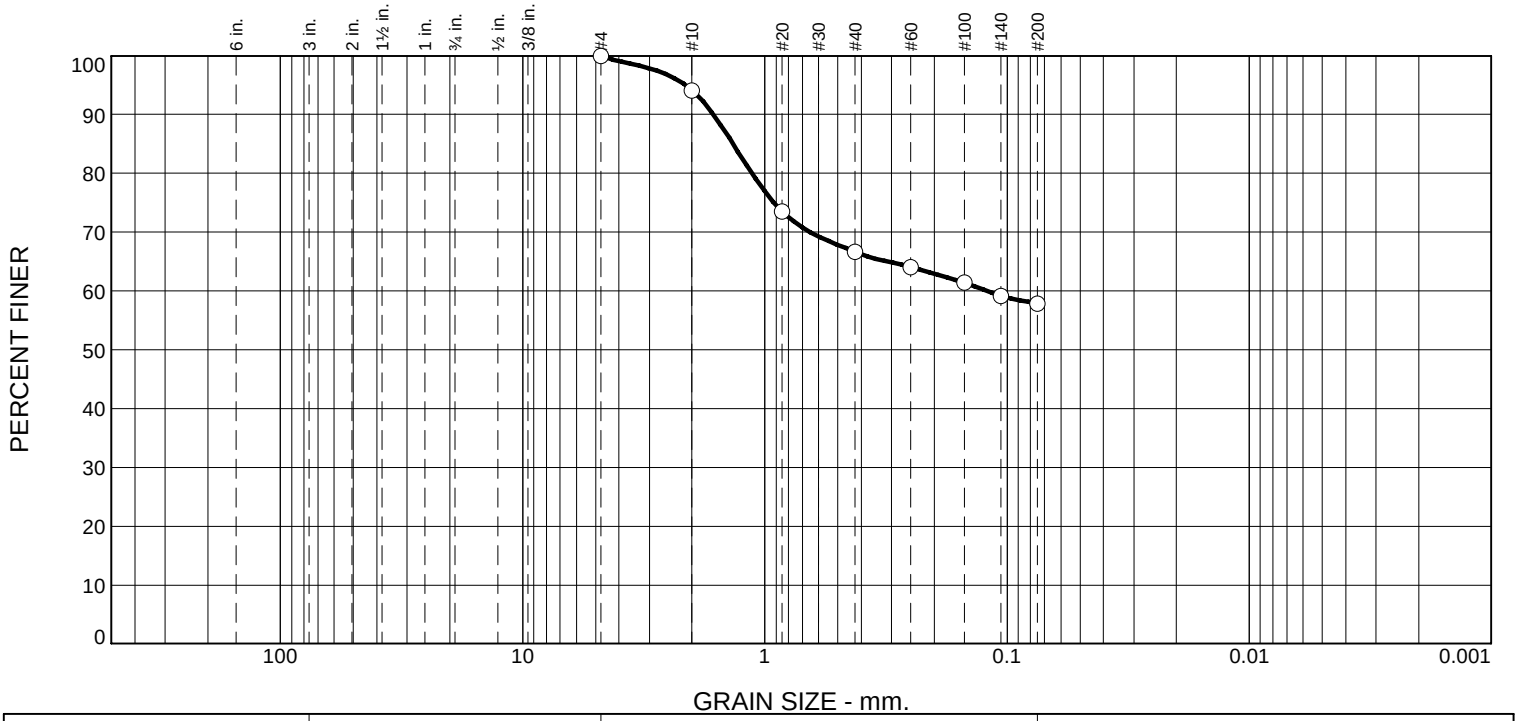
Source of Sample: PA23-1006S-WC
Sample Number: 10C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	5.9	27.4	8.9	57.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	94.1		
#20	73.5		
#40	66.7		
#60	64.1		
#100	61.4		
#140	59.2		
#200	57.8		

* (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 1.6331 D_{85}= 1.3519
D_{60}= 0.1215 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

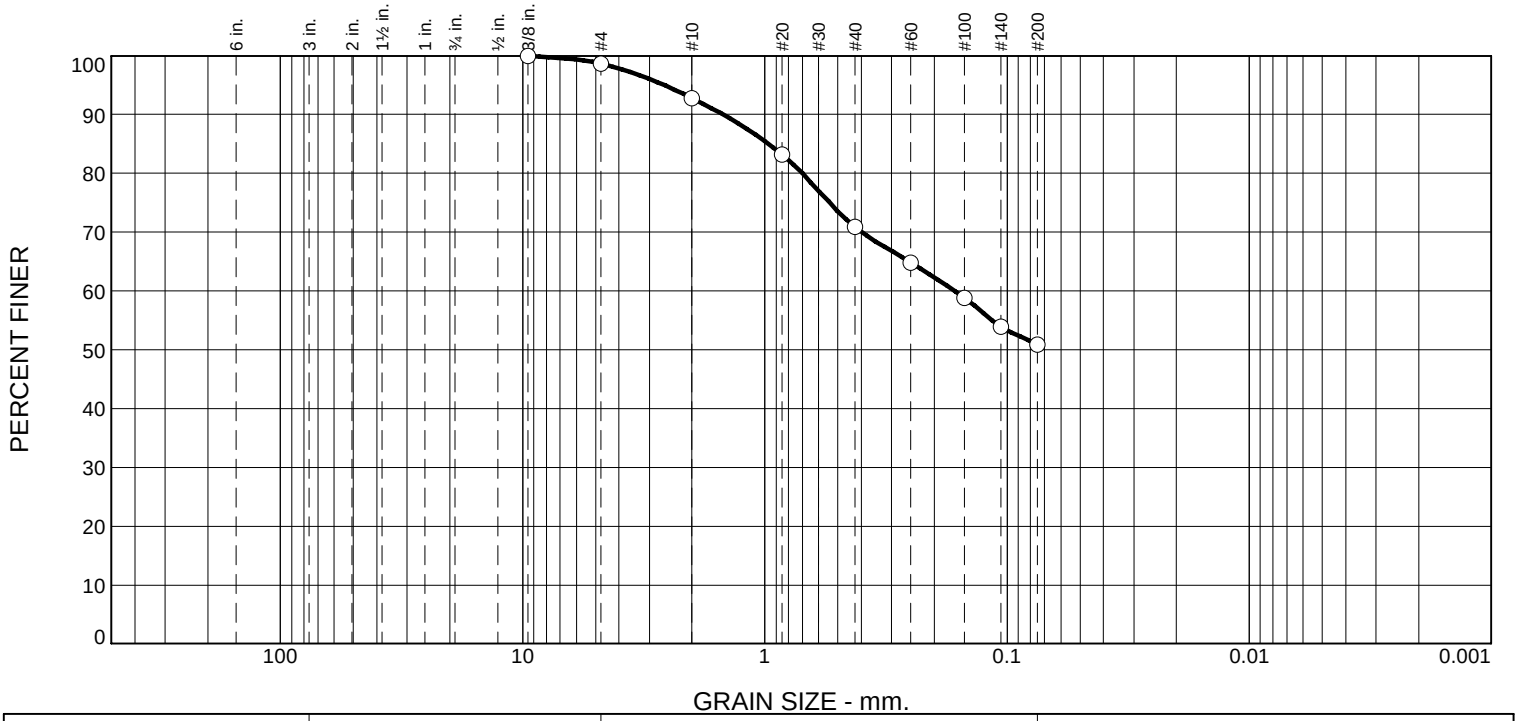
Source of Sample: PA23-1006S-WC
Sample Number: 10D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	5.9	21.9	20.0	50.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	98.7		
#10	92.8		
#20	83.2		
#40	70.9		
#60	64.9		
#100	58.8		
#140	54.0		
#200	50.9		

* (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.4895 D_{85}= 0.9654
D_{60}= 0.1647 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/28/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

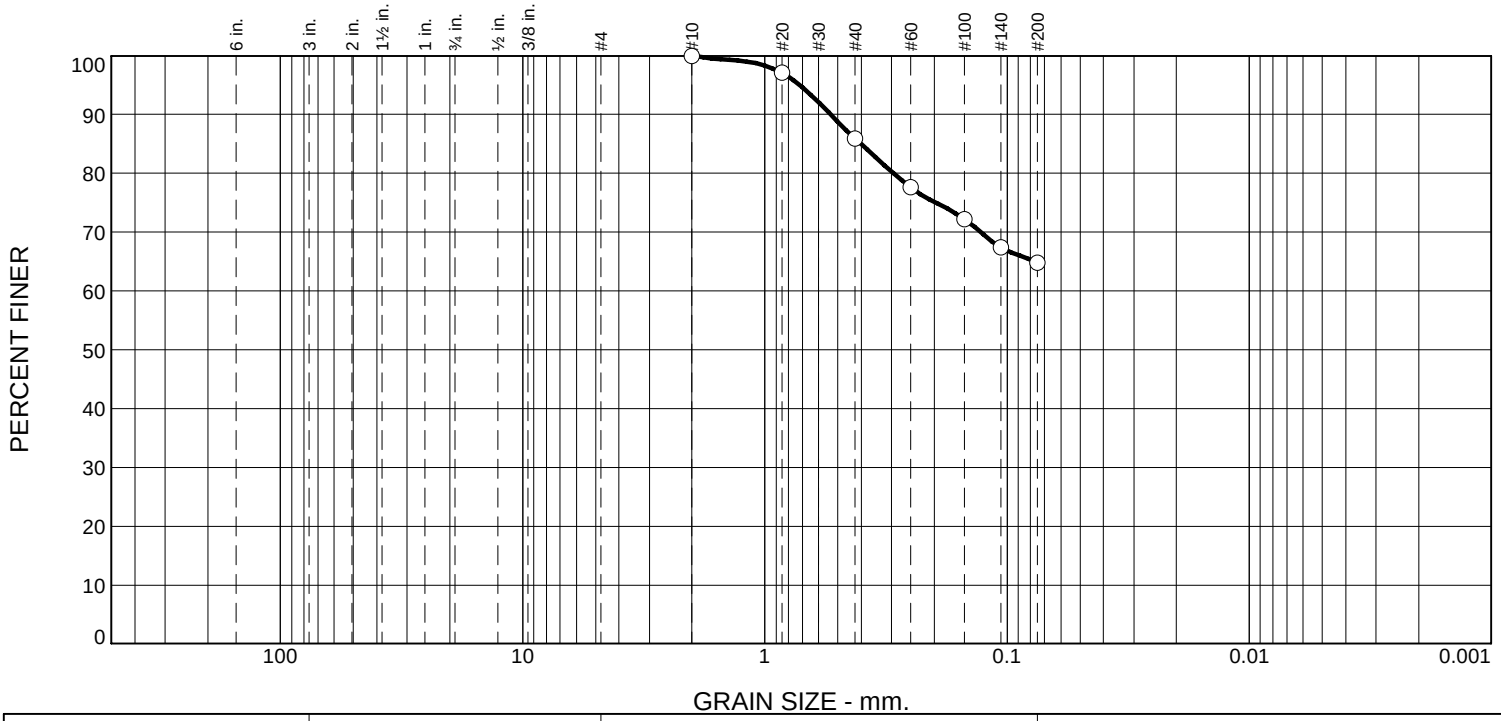
Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 10 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	14.1	21.0	64.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.1		
#40	85.9		
#60	77.6		
#100	72.2		
#140	67.4		
#200	64.9		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.5359 D_{85}= 0.4008
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/29/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

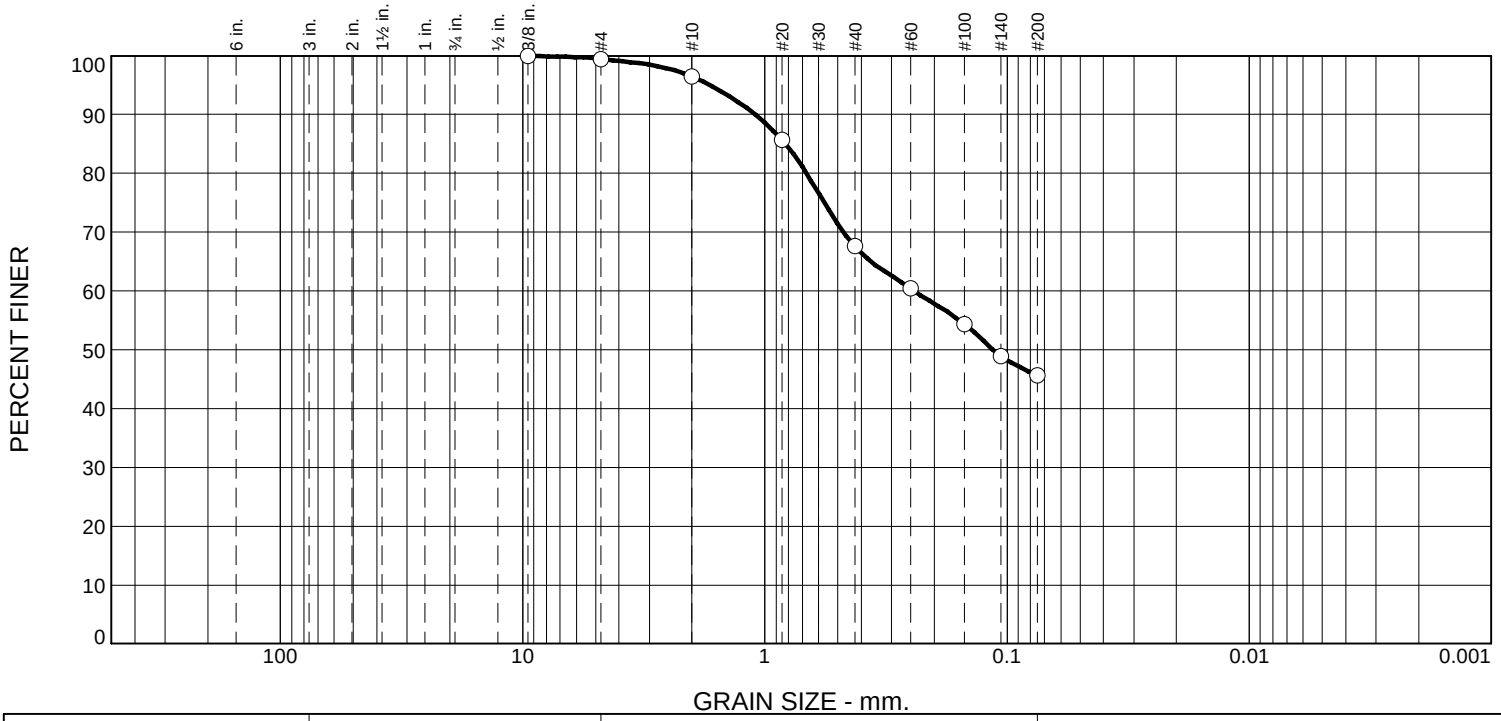
Source of Sample: PA23-1006S-WC
Sample Number: 11A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	3.1	28.8	22.0	45.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.5		
#10	96.4		
#20	85.7		
#40	67.6		
#60	60.4		
#100	54.4		
#140	48.9		
#200	45.6		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.0965 D_{85}= 0.8206
D_{60}= 0.2413 D_{50}= 0.1145
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/29/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

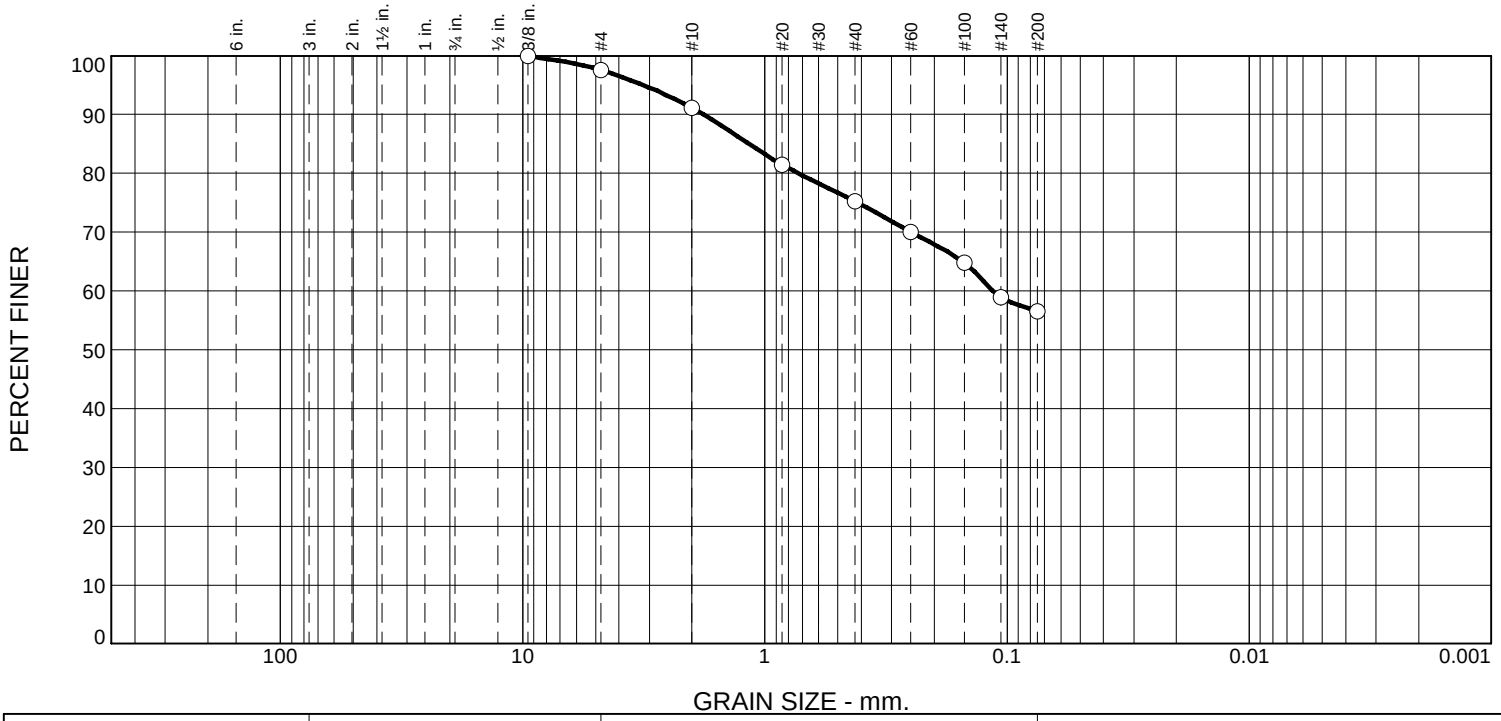
Source of Sample: PA23-1006S-WC
Sample Number: 11B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.4	6.5	15.8	18.8	56.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	97.6		
#10	91.1		
#20	81.5		
#40	75.3		
#60	70.0		
#100	64.8		
#140	59.0		
#200	56.5		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.7829 D_{85}= 1.1607
D_{60}= 0.1141 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/29/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

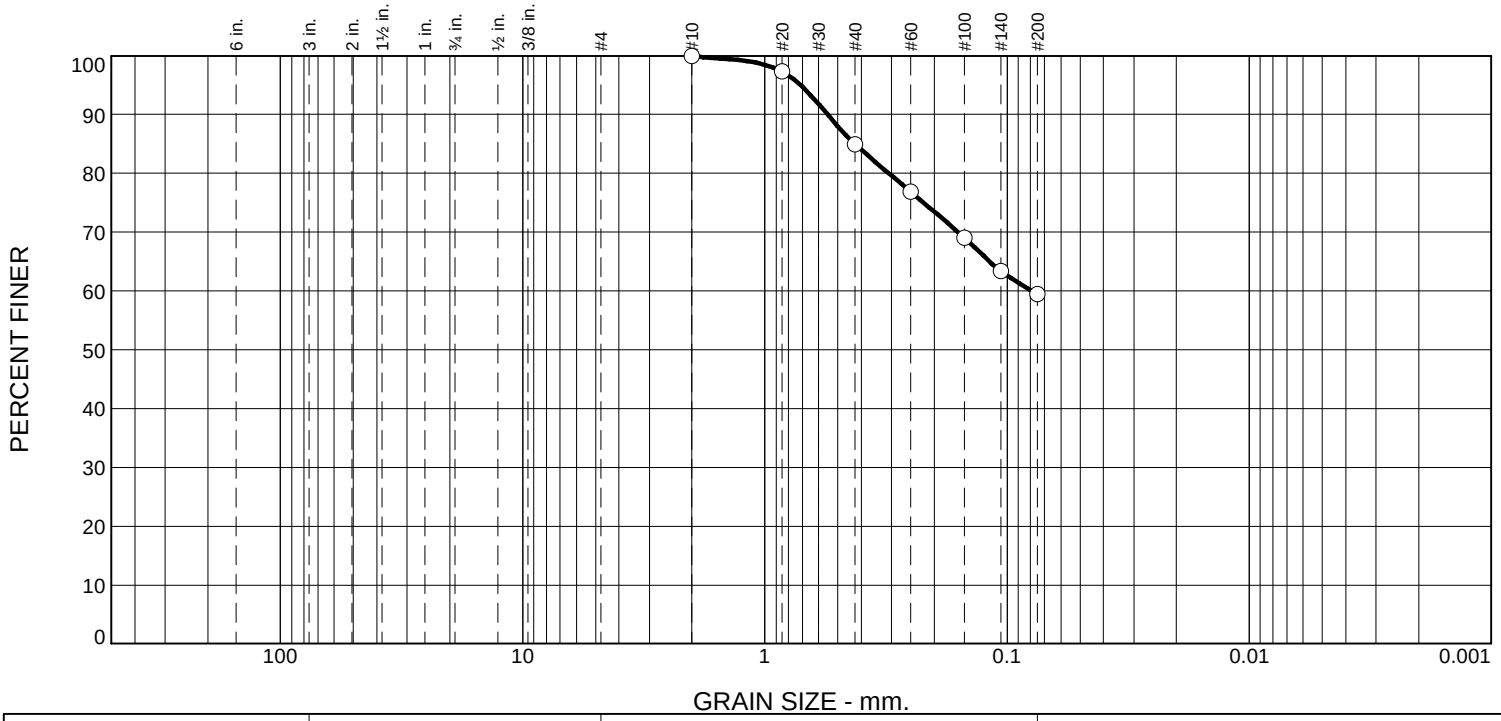
Source of Sample: PA23-1006S-WC
Sample Number: 11C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	15.0	25.5	59.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.3		
#40	85.0		
#60	76.9		
#100	69.1		
#140	63.4		
#200	59.5		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.5510 D_{85}= 0.4254
D_{60}= 0.0788 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/29/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

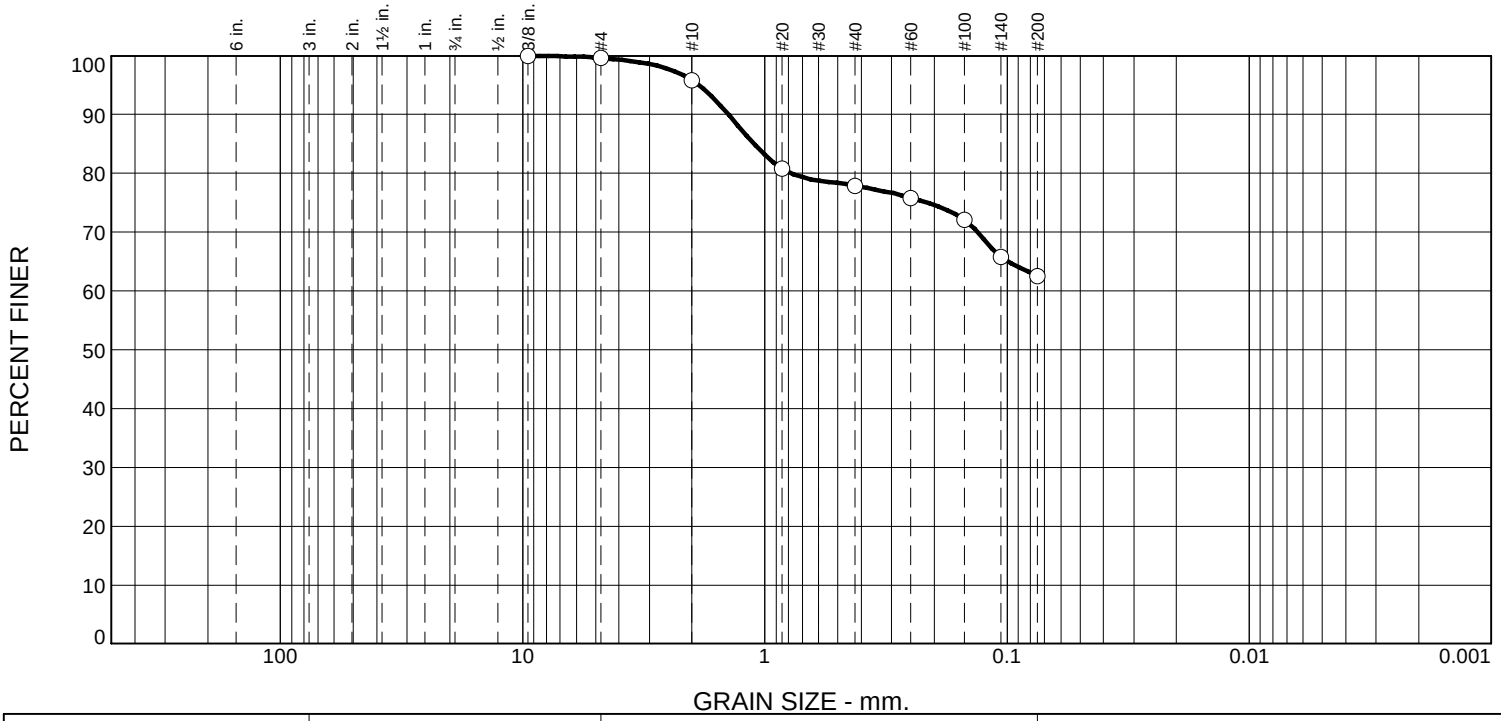
Source of Sample: PA23-1006S-WC
Sample Number: 11D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	3.8	17.9	15.4	62.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.6		
#10	95.8		
#20	80.8		
#40	77.9		
#60	75.8		
#100	72.1		
#140	65.8		
#200	62.5		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.4135 D_{85}= 1.1073
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/29/23 Technician: B. Horn
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

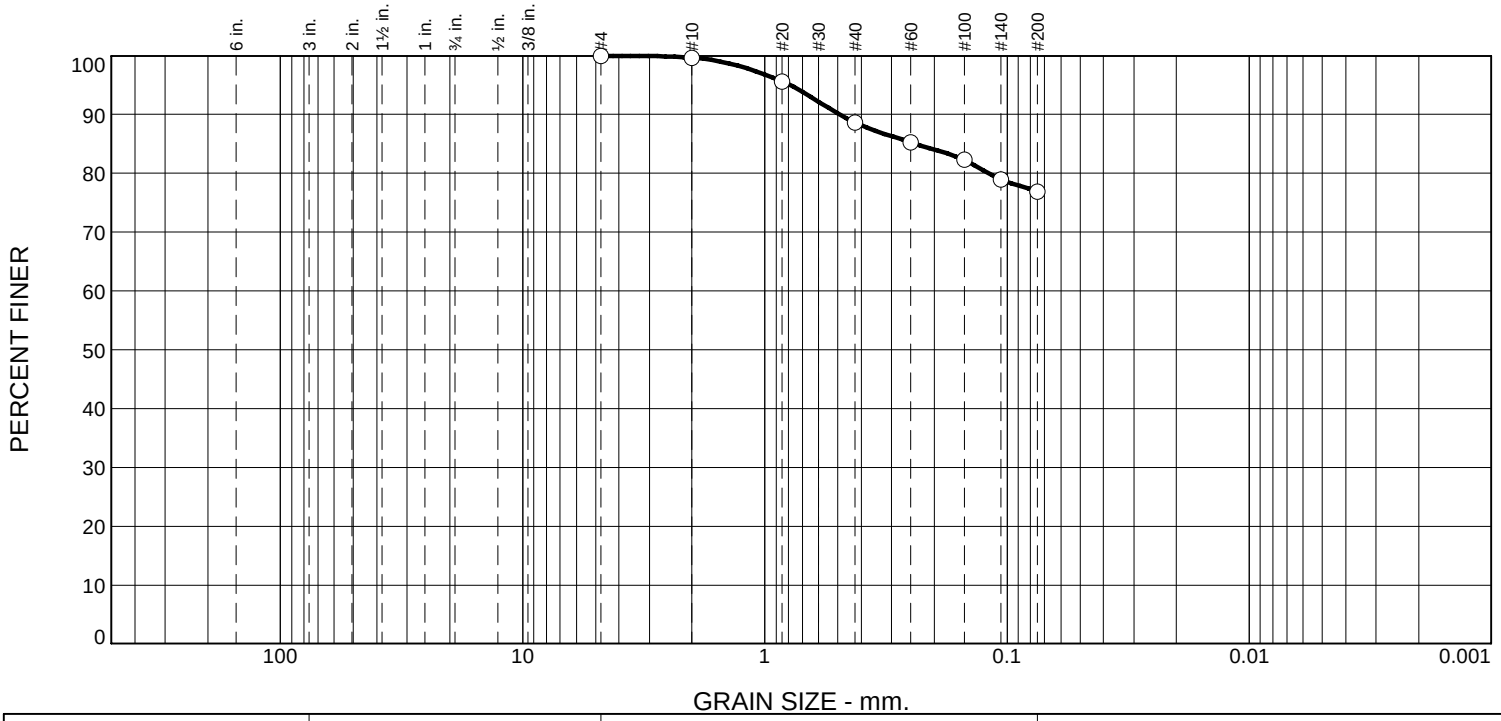
Source of Sample: PA23-1006S-WC
Sample Number: 11E

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	11.1	11.7	76.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	95.7		
#40	88.6		
#60	85.3		
#100	82.3		
#140	78.9		
#200	76.9		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4918 D_{85}= 0.2382
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/29/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

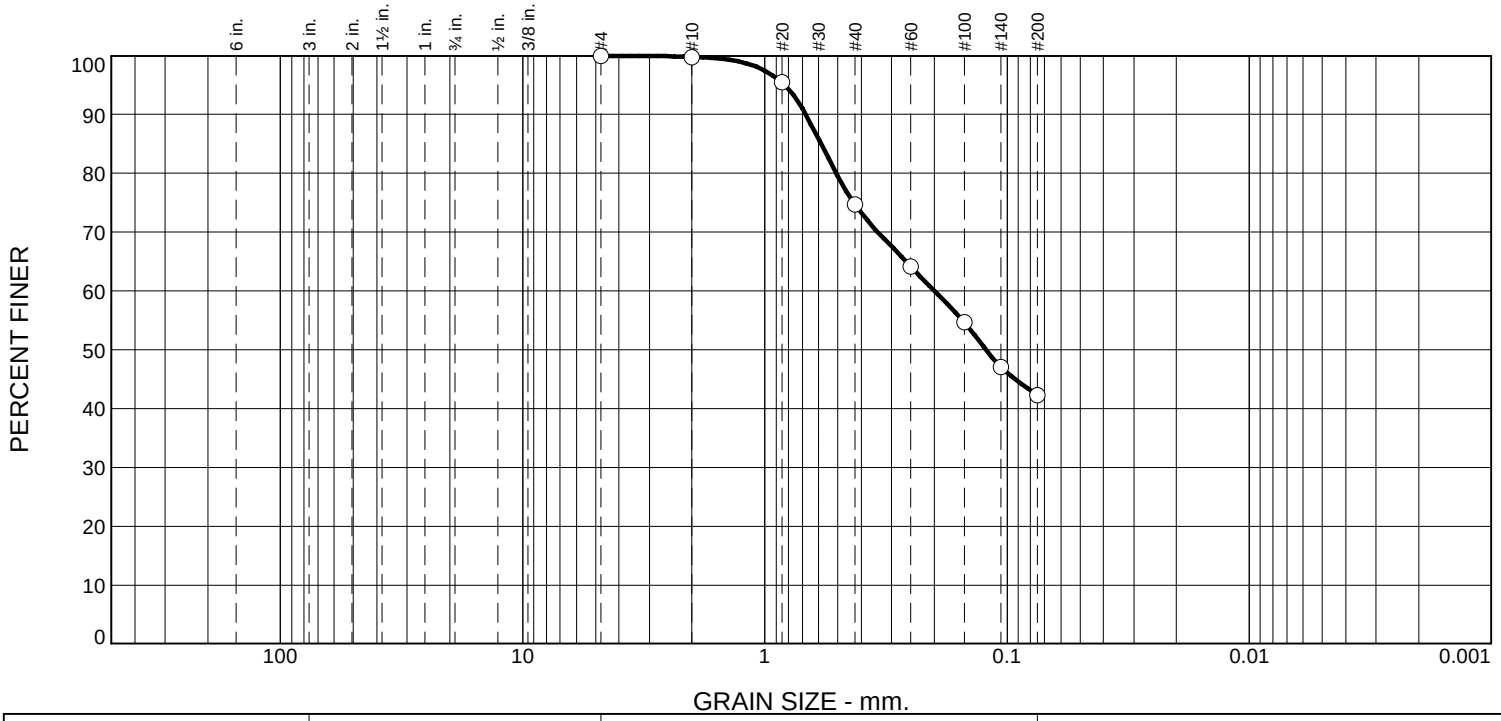
Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 11F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	25.1	32.5	42.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	95.5		
#40	74.7		
#60	64.2		
#100	54.7		
#140	47.0		
#200	42.2		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6783 D_{85}= 0.5850
D_{60}= 0.1991 D_{50}= 0.1222
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/29/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

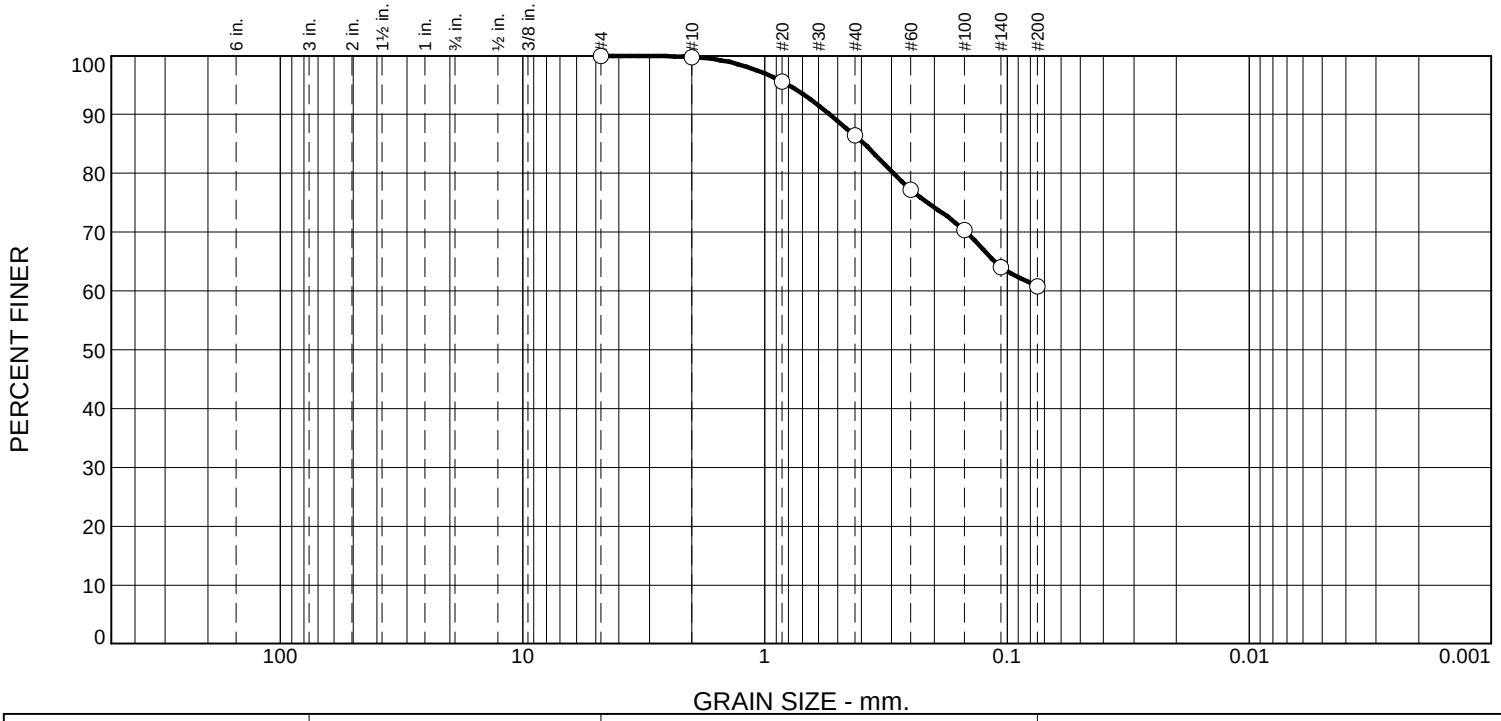
Source of Sample: PA23-1006S-WC
Sample Number: 11 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	13.4	25.6	60.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	95.6		
#40	86.4		
#60	77.2		
#100	70.4		
#140	64.1		
#200	60.8		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/29/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.5386 D_{85}= 0.3890
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

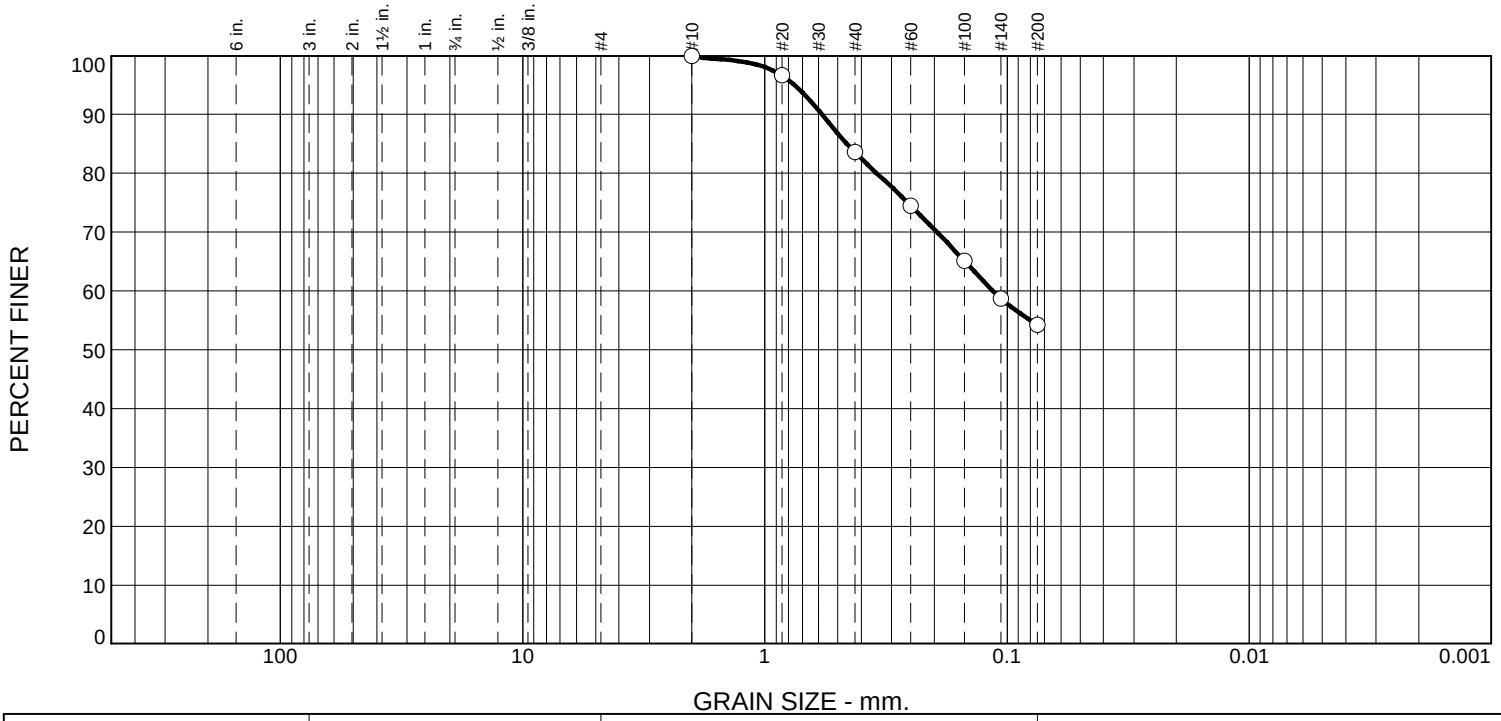
Source of Sample: PA23-1006S-WC
Sample Number: 12A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	16.4	29.4	54.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	96.7		
#40	83.6		
#60	74.5		
#100	65.1		
#140	58.7		
#200	54.2		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.5807 D_{85}= 0.4581
D_{60}= 0.1147 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/29/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

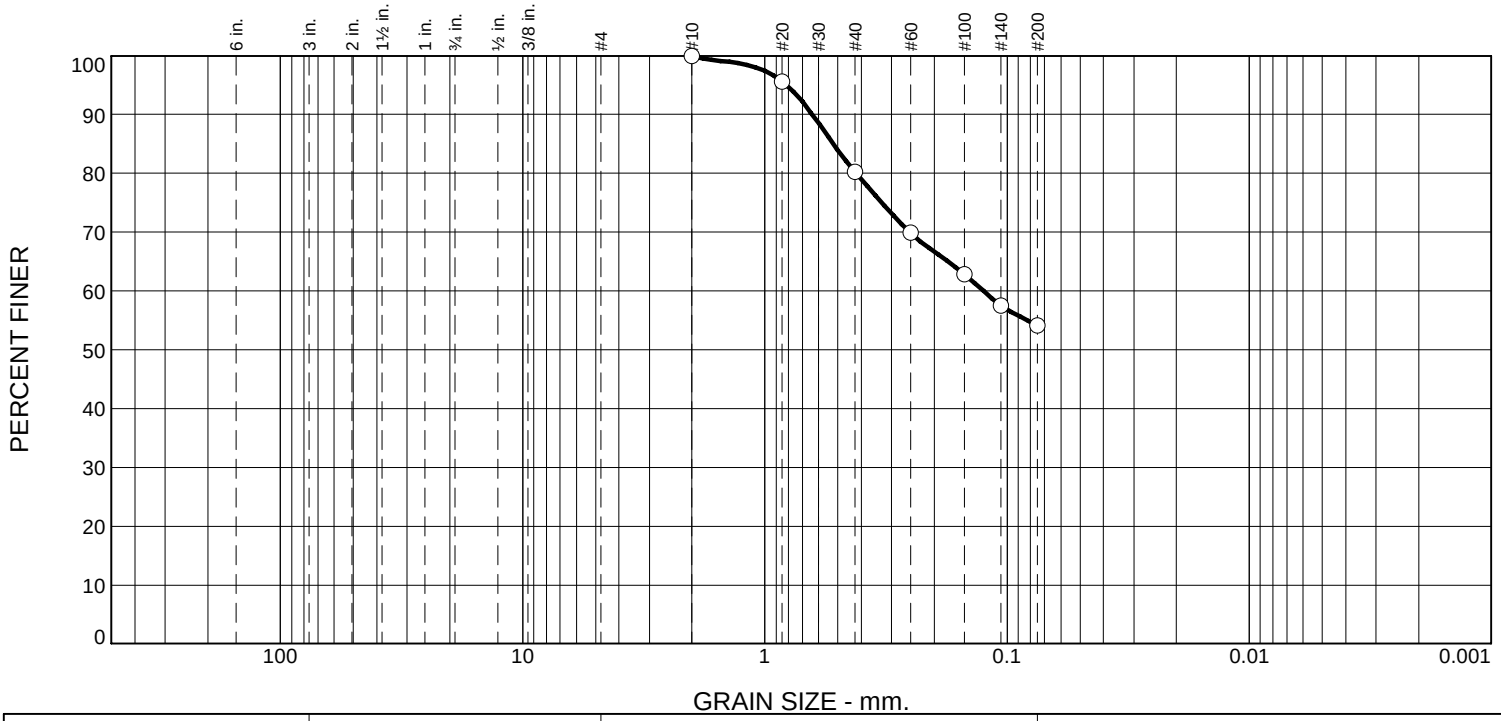
Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 12B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	19.7	26.1	54.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	95.7		
#40	80.3		
#60	69.9		
#100	62.9		
#140	57.5		
#200	54.2		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6371 D_{85}= 0.5207
D_{60}= 0.1252 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/29/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

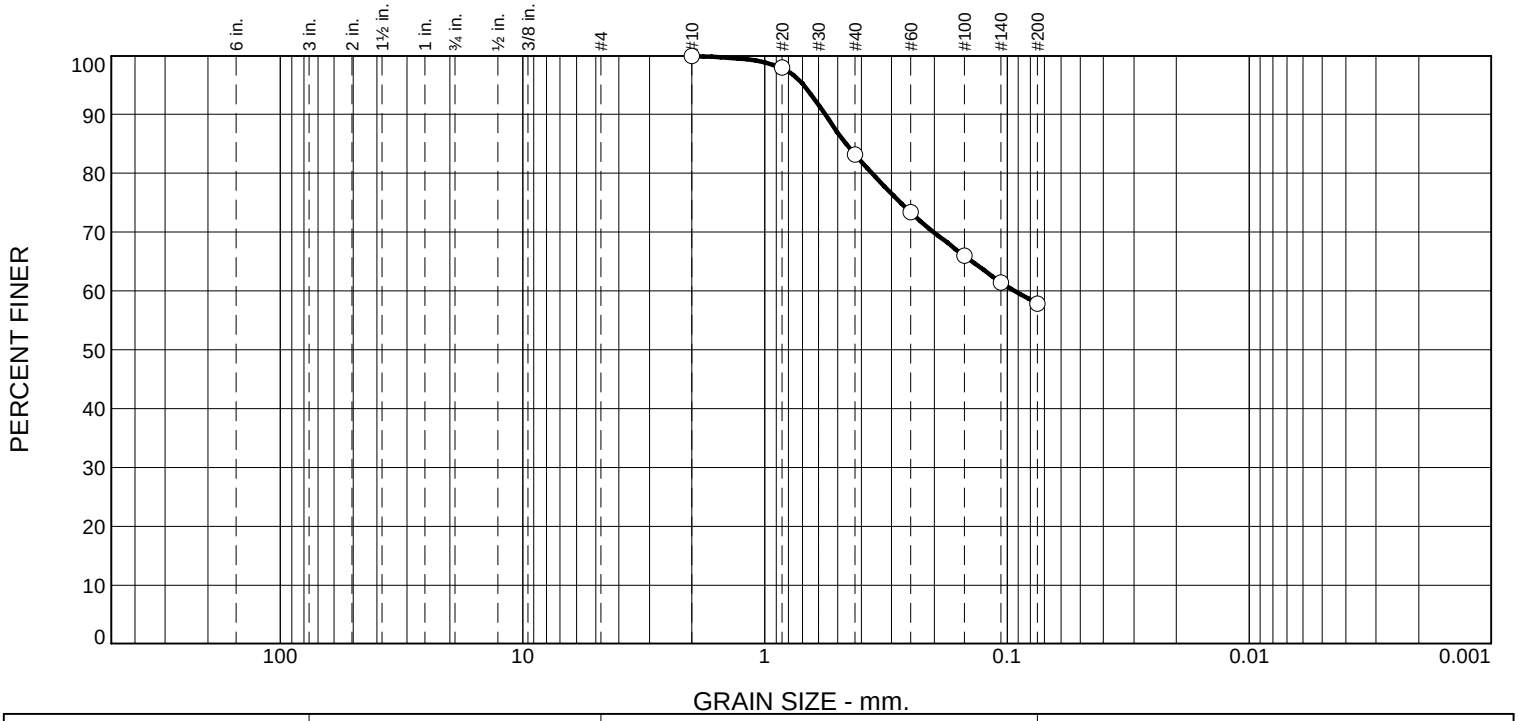
Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 12C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	16.8	25.4	57.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.0		
#40	83.2		
#60	73.4		
#100	66.0		
#140	61.5		
#200	57.8		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/29/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.5628 D_{85}= 0.4618
D_{60}= 0.0928 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

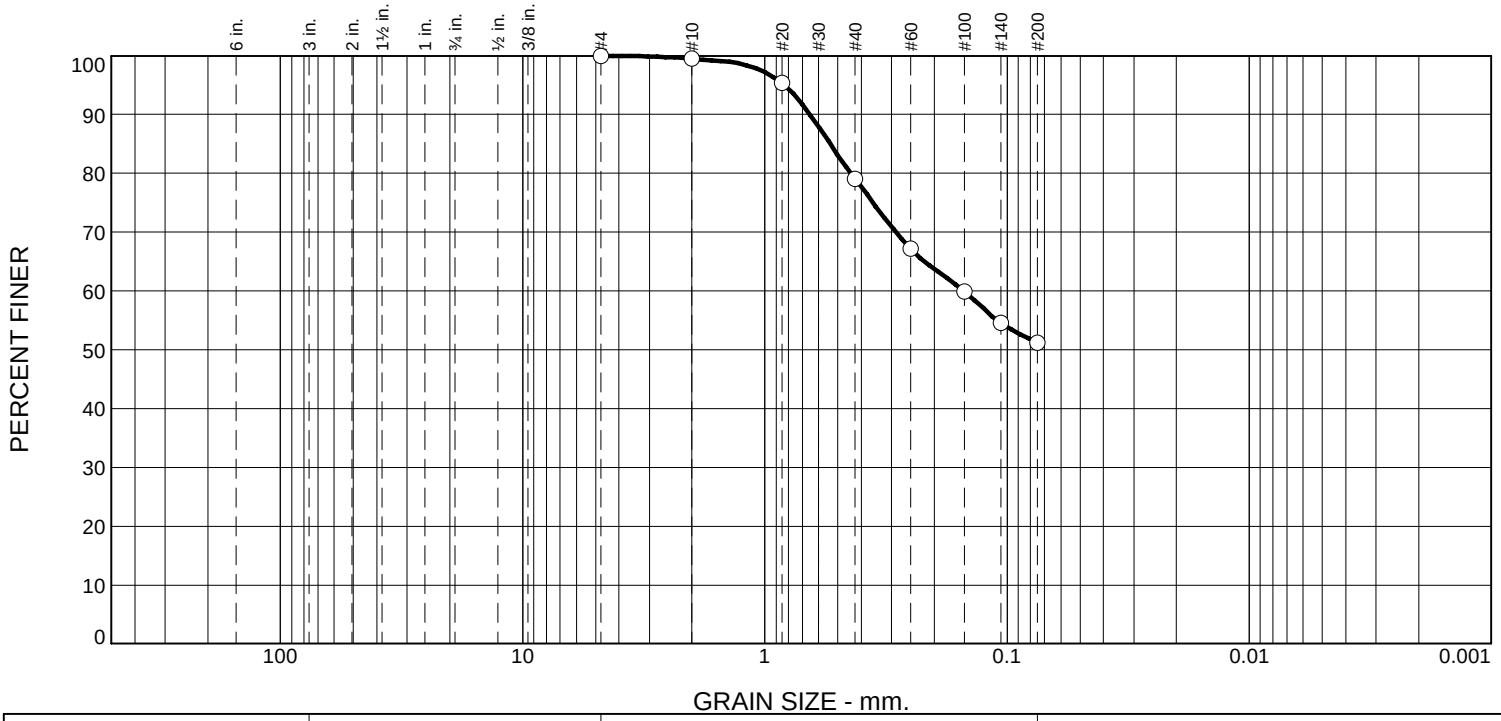
Source of Sample: PA23-1006S-WC
Sample Number: 12D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	20.4	27.9	51.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.5		
#20	95.3		
#40	79.1		
#60	67.2		
#100	59.9		
#140	54.5		
#200	51.2		

* (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/29/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.6512 D_{85}= 0.5371
D_{60}= 0.1505 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

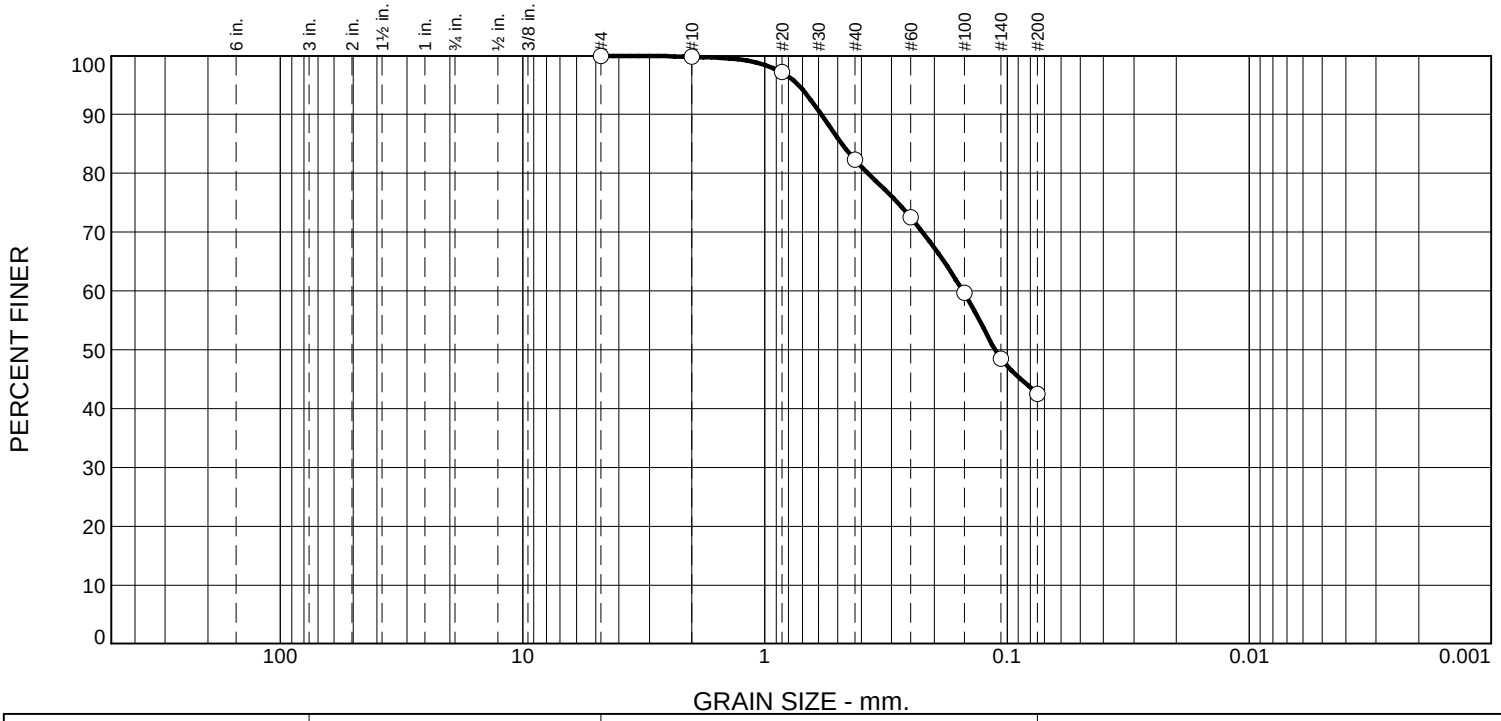
Source of Sample: PA23-1006S-WC
Sample Number: 12 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	17.5	39.8	42.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	97.2		
#40	82.3		
#60	72.6		
#100	59.6		
#140	48.5		
#200	42.5		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.5844 D_{85}= 0.4797

D_{60}= 0.1519 D_{50}= 0.1120

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/30/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 13A

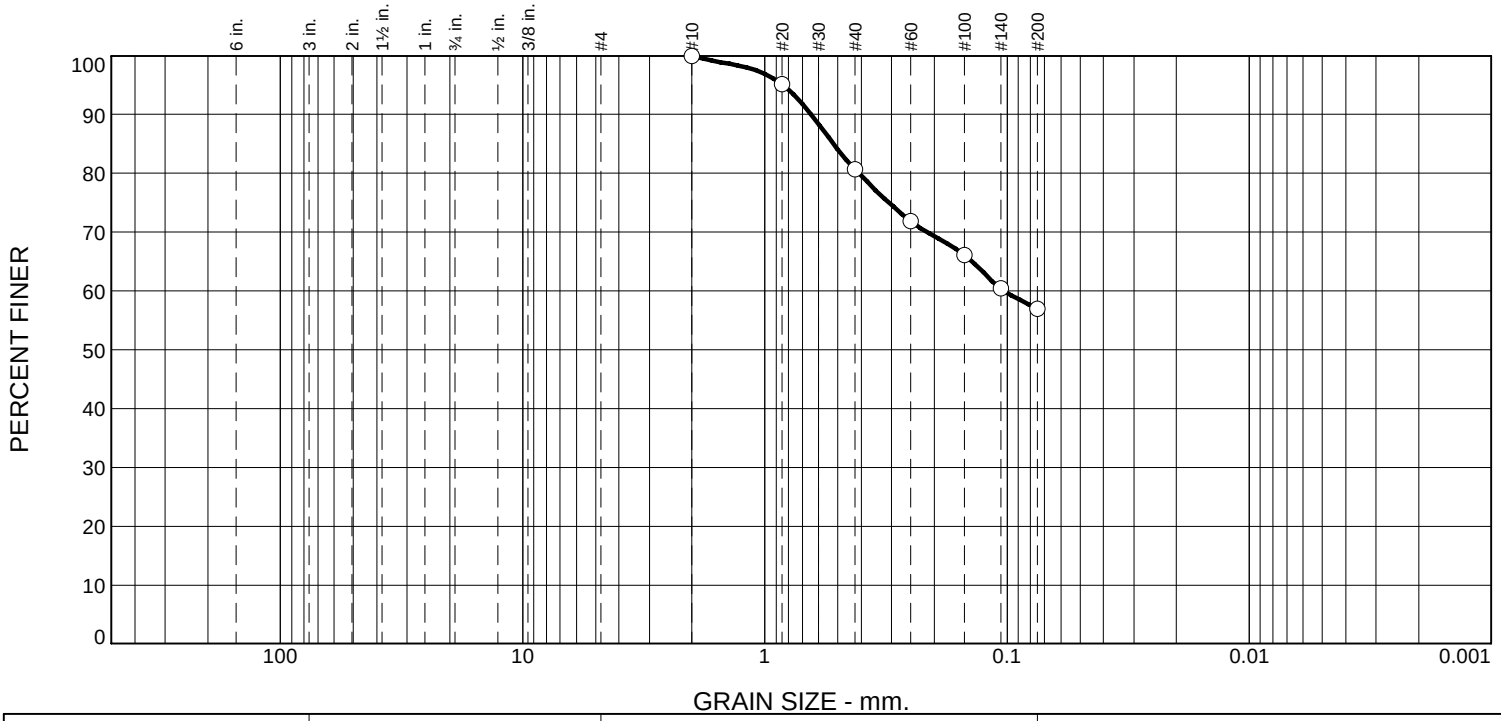
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	19.3	23.8	56.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	95.2		
#40	80.7		
#60	71.9		
#100	66.2		
#140	60.4		
#200	56.9		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6448 D_{85}= 0.5205
D_{60}= 0.1024 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/30/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

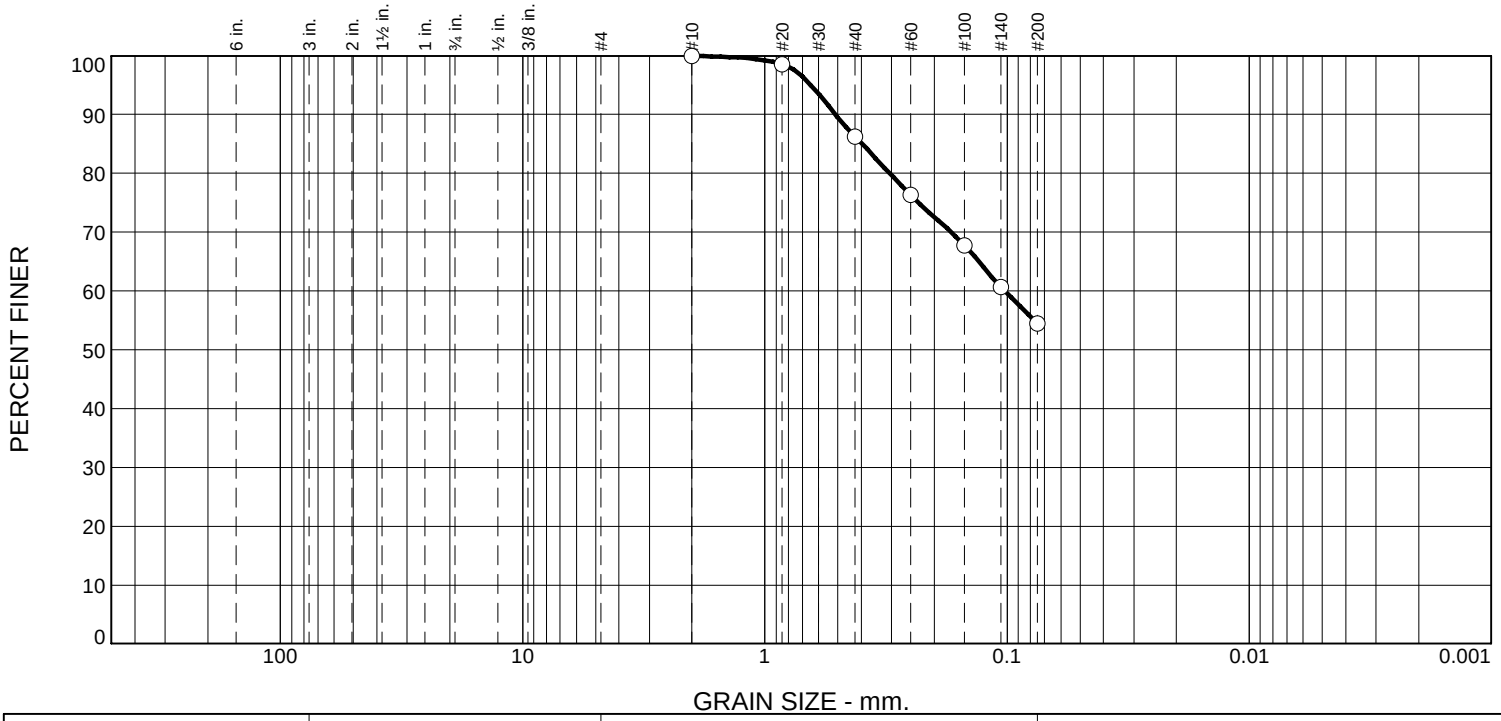
Source of Sample: PA23-1006S-WC
Sample Number: 13B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	13.7	31.8	54.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.6		
#40	86.3		
#60	76.3		
#100	67.8		
#140	60.7		
#200	54.5		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.5100 D_{85}= 0.3971
D_{60}= 0.1023 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/30/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

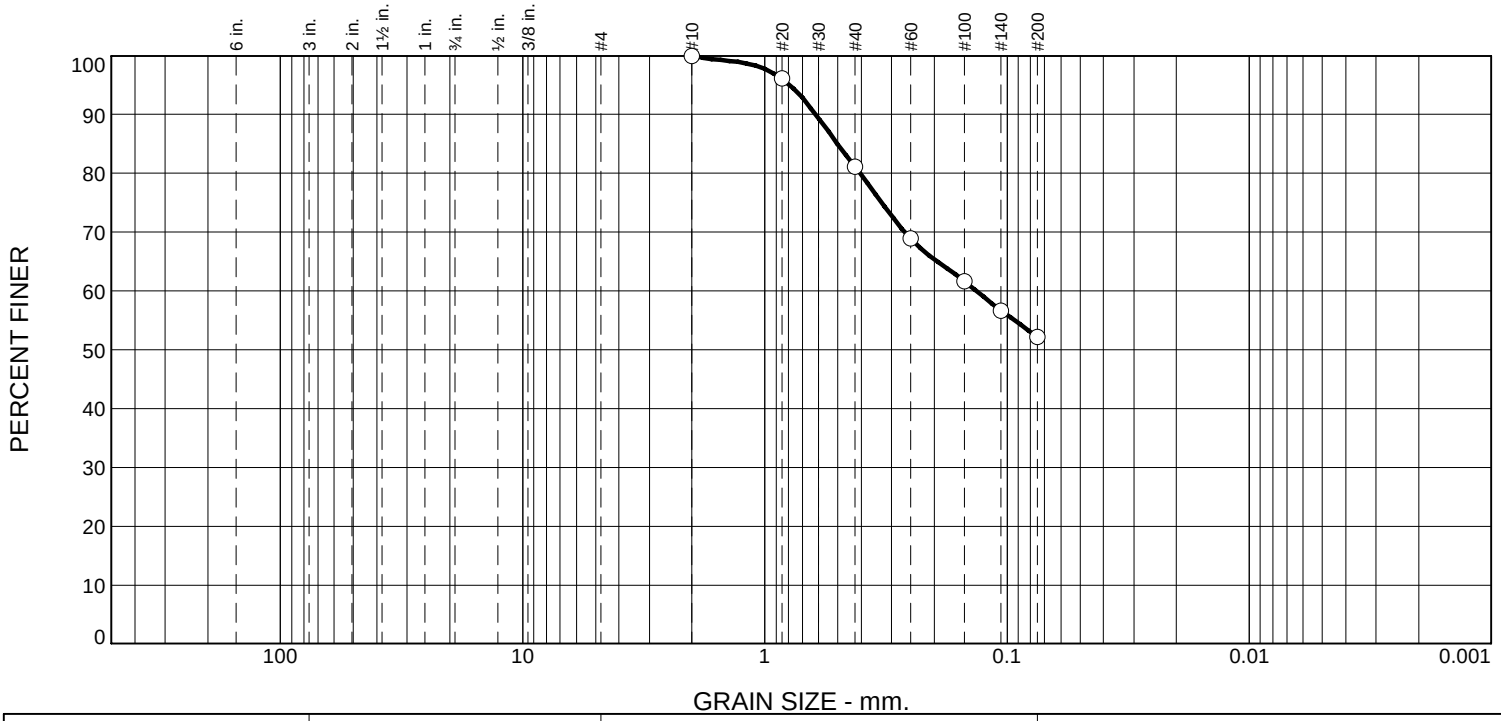
Source of Sample: PA23-1006S-WC
Sample Number: 13C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	18.9	28.9	52.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	96.1		
#40	81.1		
#60	68.9		
#100	61.7		
#140	56.7		
#200	52.2		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6158 D_{85}= 0.5010
D_{60}= 0.1337 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/30/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

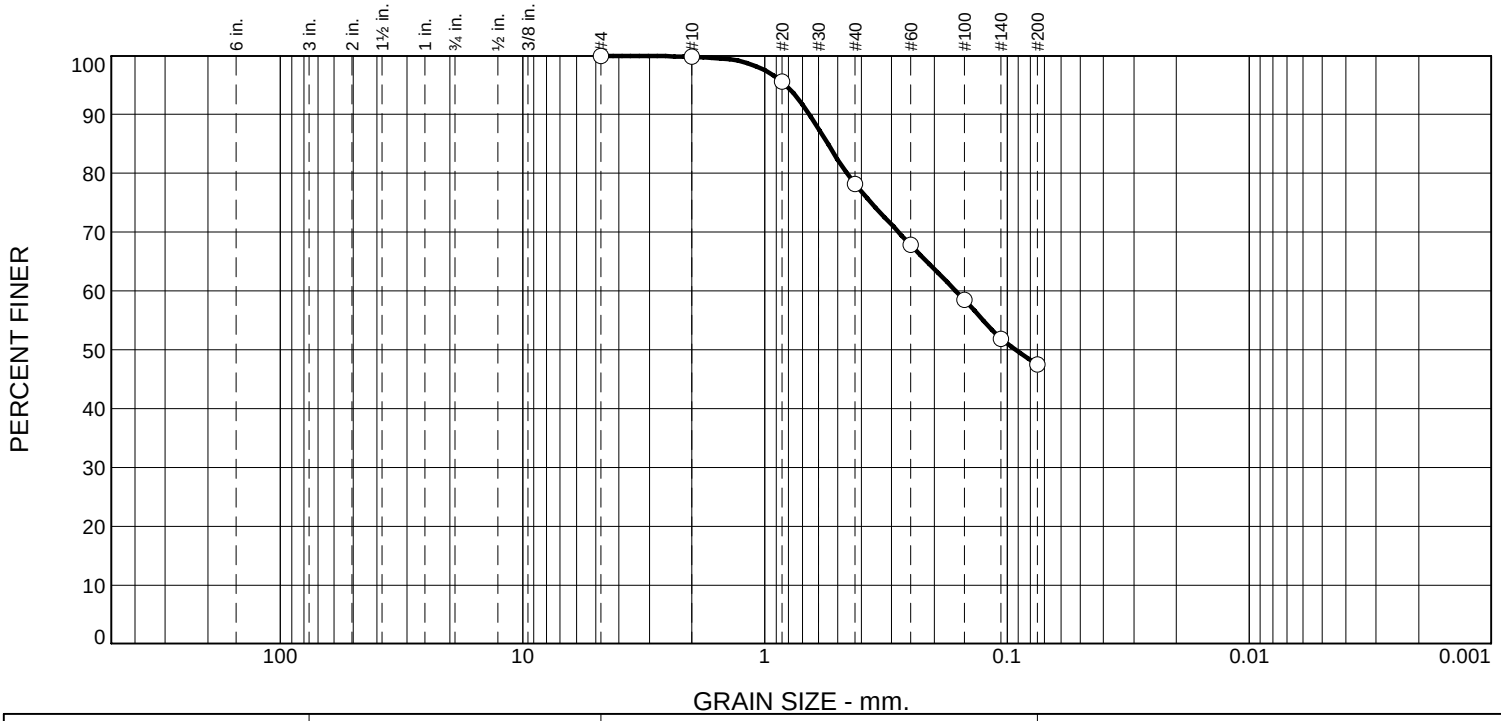
Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 13D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	21.6	30.7	47.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	95.6		
#40	78.2		
#60	67.9		
#100	58.5		
#140	51.9		
#200	47.5		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6554 D_{85}= 0.5489
D_{60}= 0.1628 D_{50}= 0.0924
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/30/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

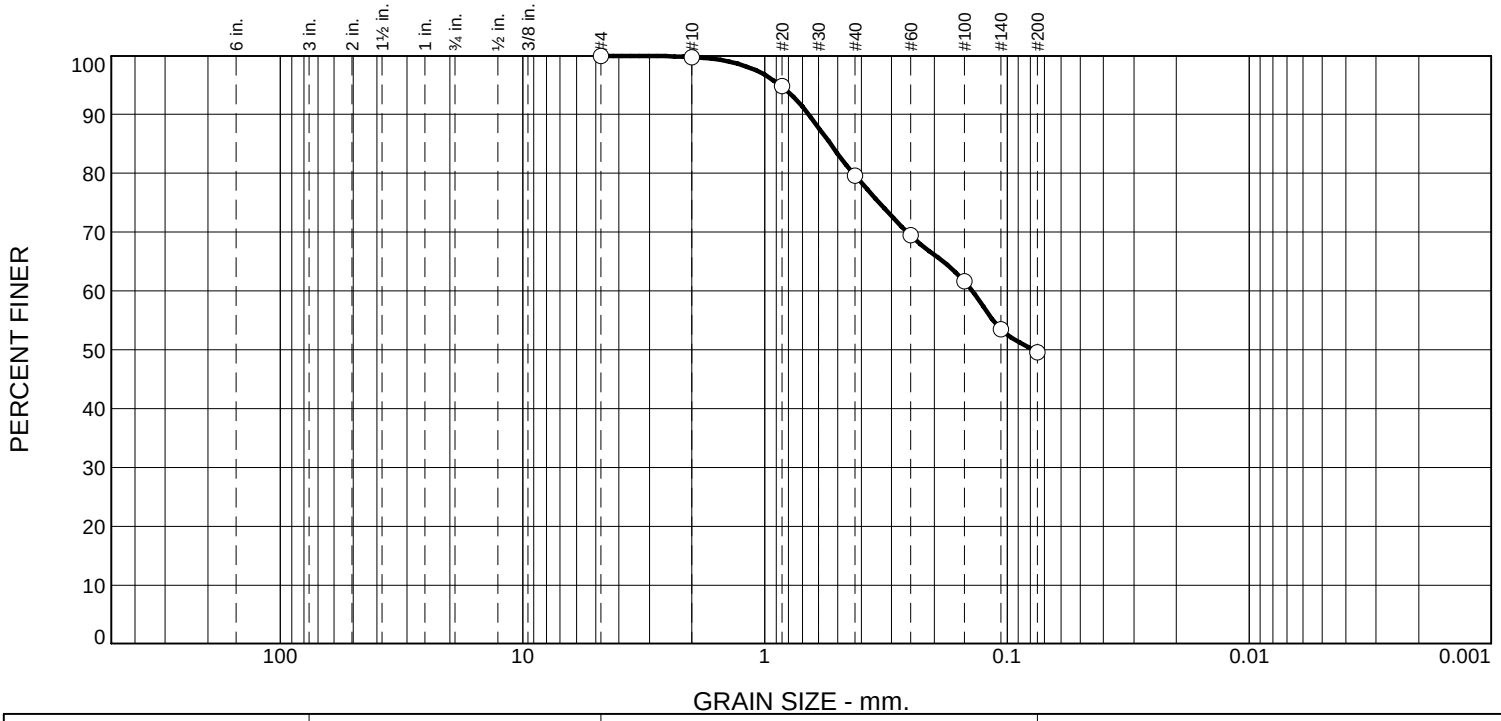
Source of Sample: PA23-1006S-WC
Sample Number: 13 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	20.1	30.1	49.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	94.8		
#40	79.7		
#60	69.5		
#100	61.7		
#140	53.5		
#200	49.6		

· (no specification provided)

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/30/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.6596 D_{85}= 0.5359
D_{60}= 0.1390 D_{50}= 0.0781
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

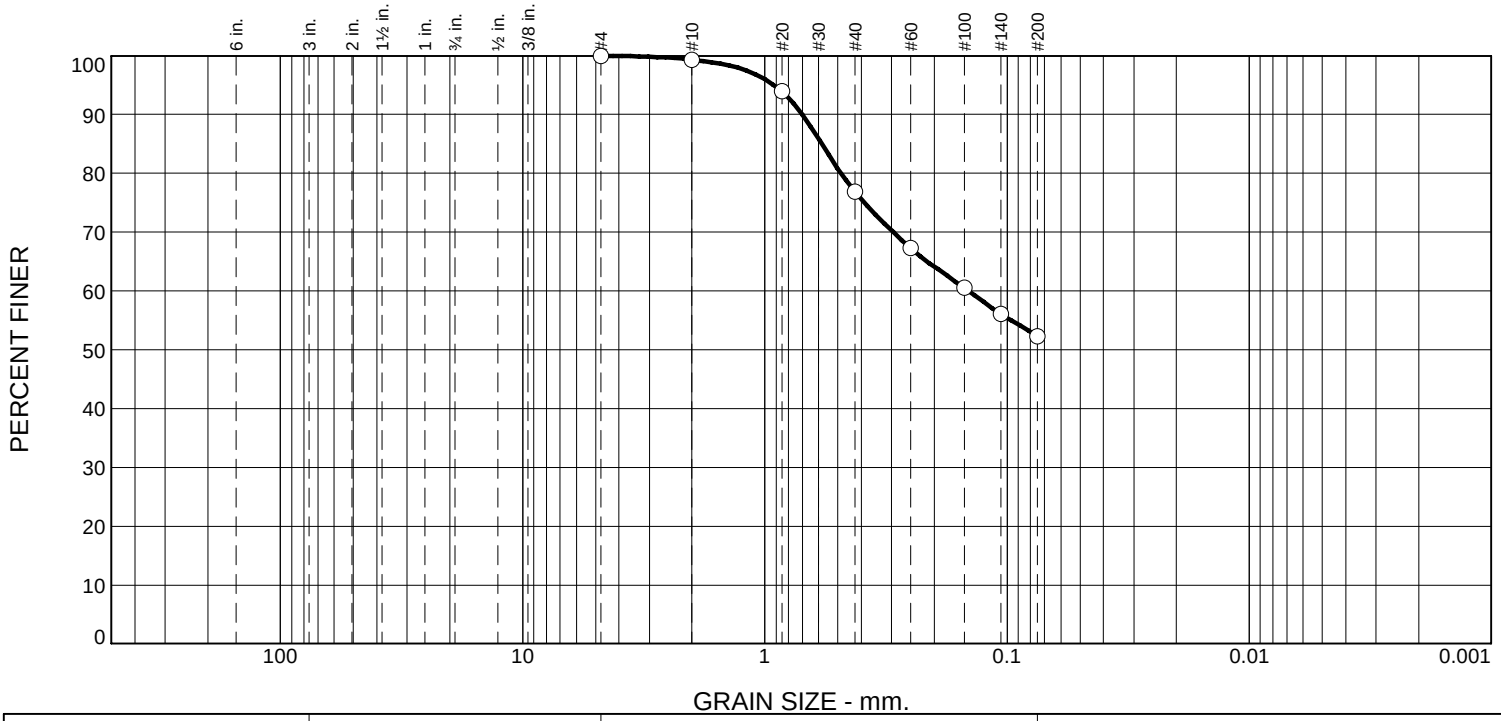
Source of Sample: PA23-1006S-WC
Sample Number: 14A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	22.4	24.6	52.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.3		
#20	93.9		
#40	76.9		
#60	67.3		
#100	60.5		
#140	56.1		
#200	52.3		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.7017 D_{85}= 0.5818
D_{60}= 0.1442 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/30/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

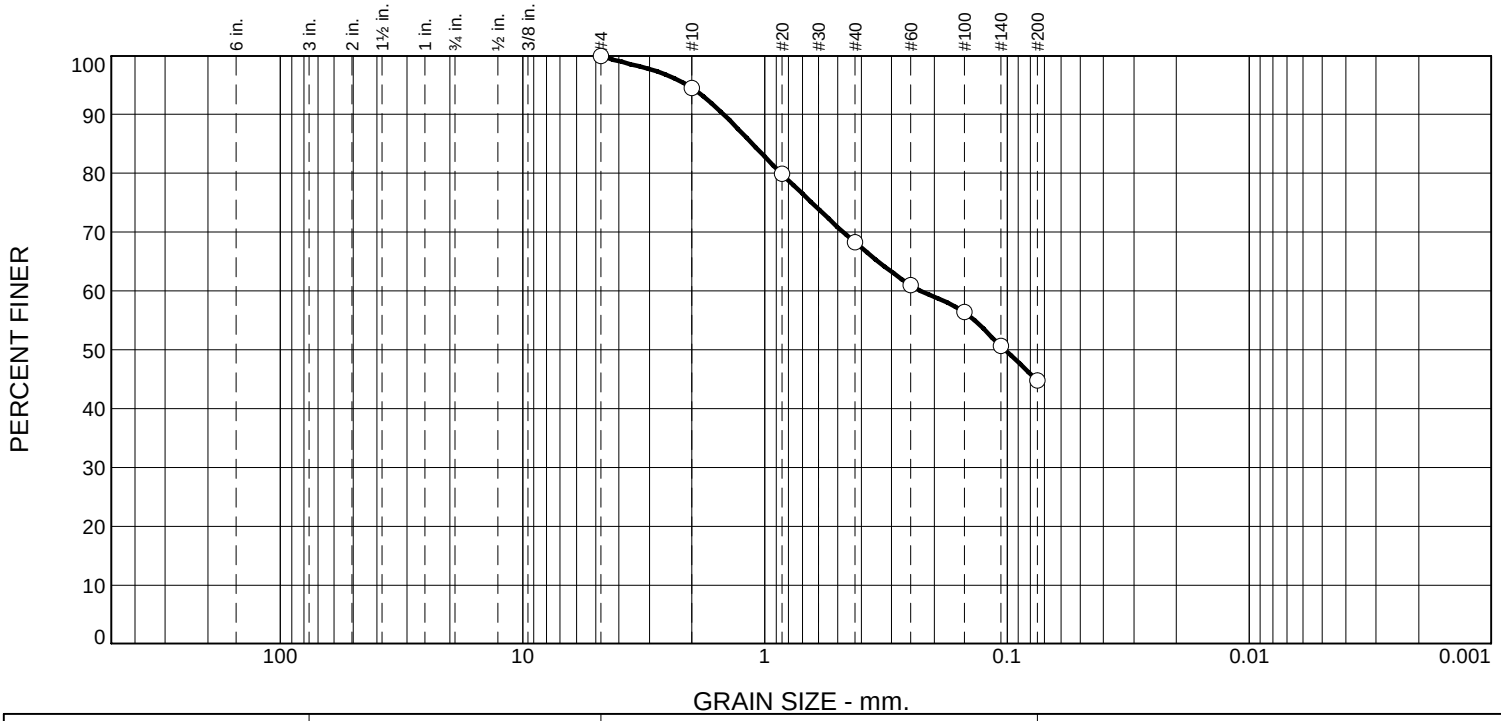
Source of Sample: PA23-1006S-WC
Sample Number: 14B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	5.5	26.2	23.5	44.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	94.5		
#20	79.9		
#40	68.3		
#60	61.0		
#100	56.4		
#140	50.6		
#200	44.8		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.4775 D_{85}= 1.1262
D_{60}= 0.2266 D_{50}= 0.1022
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/30/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

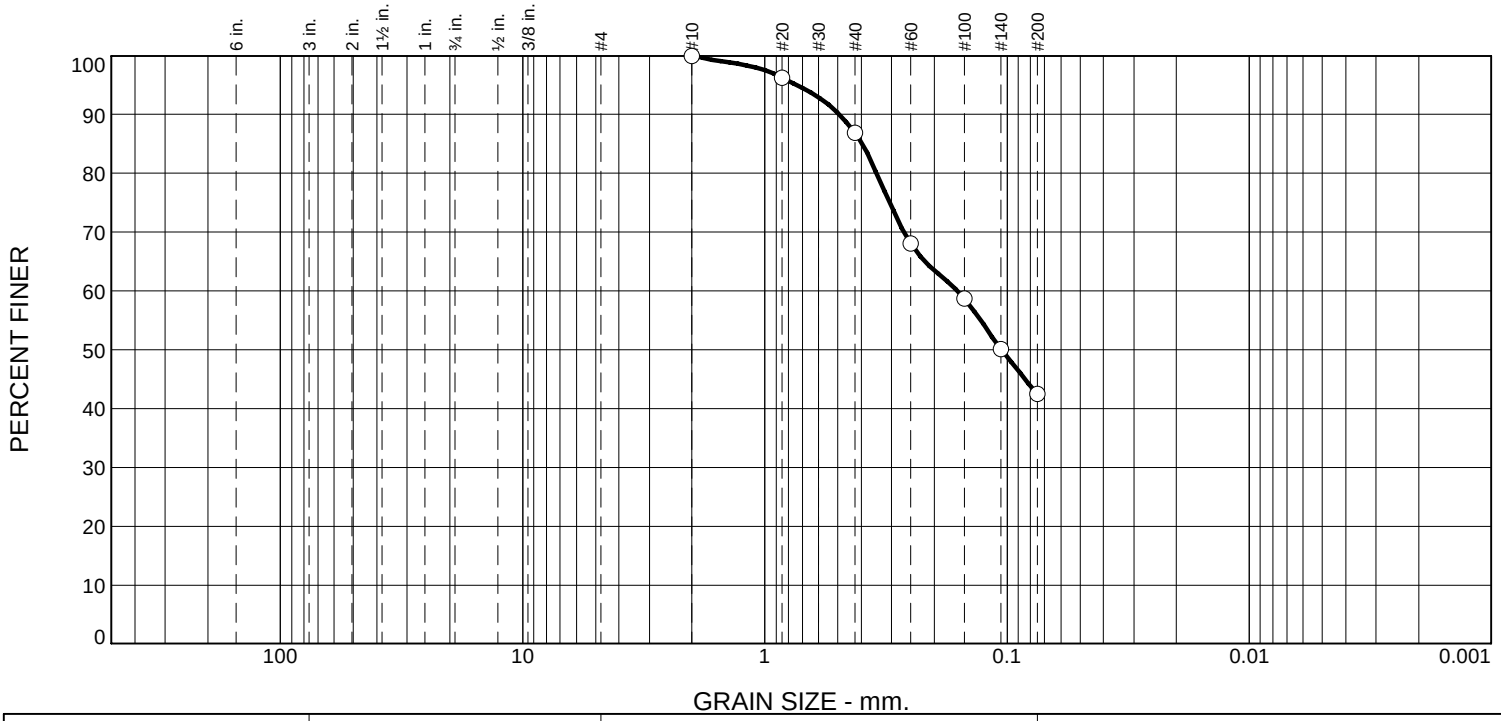
Source of Sample: PA23-1006S-WC
Sample Number: 14C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	13.1	44.4	42.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	96.3		
#40	86.9		
#60	68.1		
#100	58.7		
#140	50.1		
#200	42.5		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4923 D_{85}= 0.3972
D_{60}= 0.1603 D_{50}= 0.1054
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/30/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

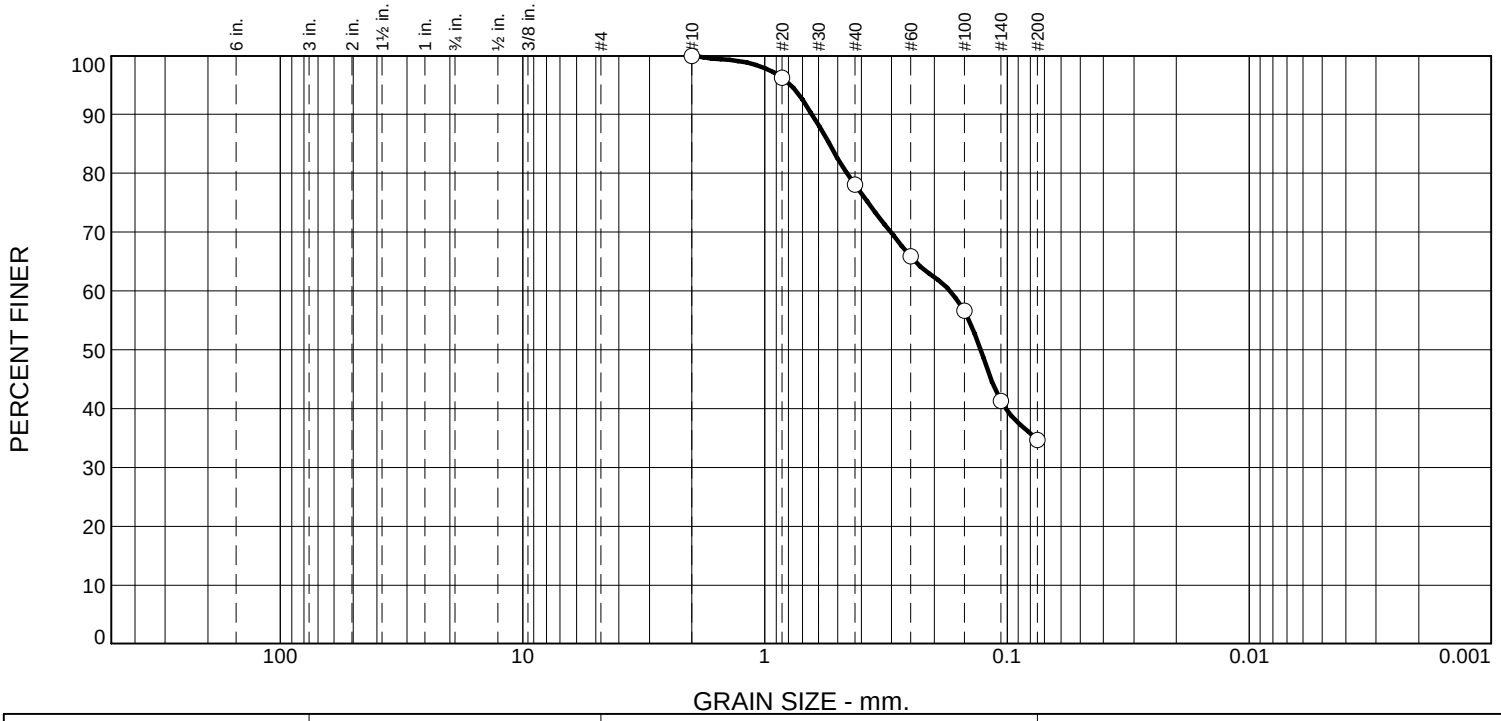
Source of Sample: PA23-1006S-WC
Sample Number: 14D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	22.0	43.3	34.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	96.3		
#40	78.0		
#60	65.9		
#100	56.6		
#140	41.3		
#200	34.7		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6383 D_{85}= 0.5413
D_{60}= 0.1721 D_{50}= 0.1287
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/30/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

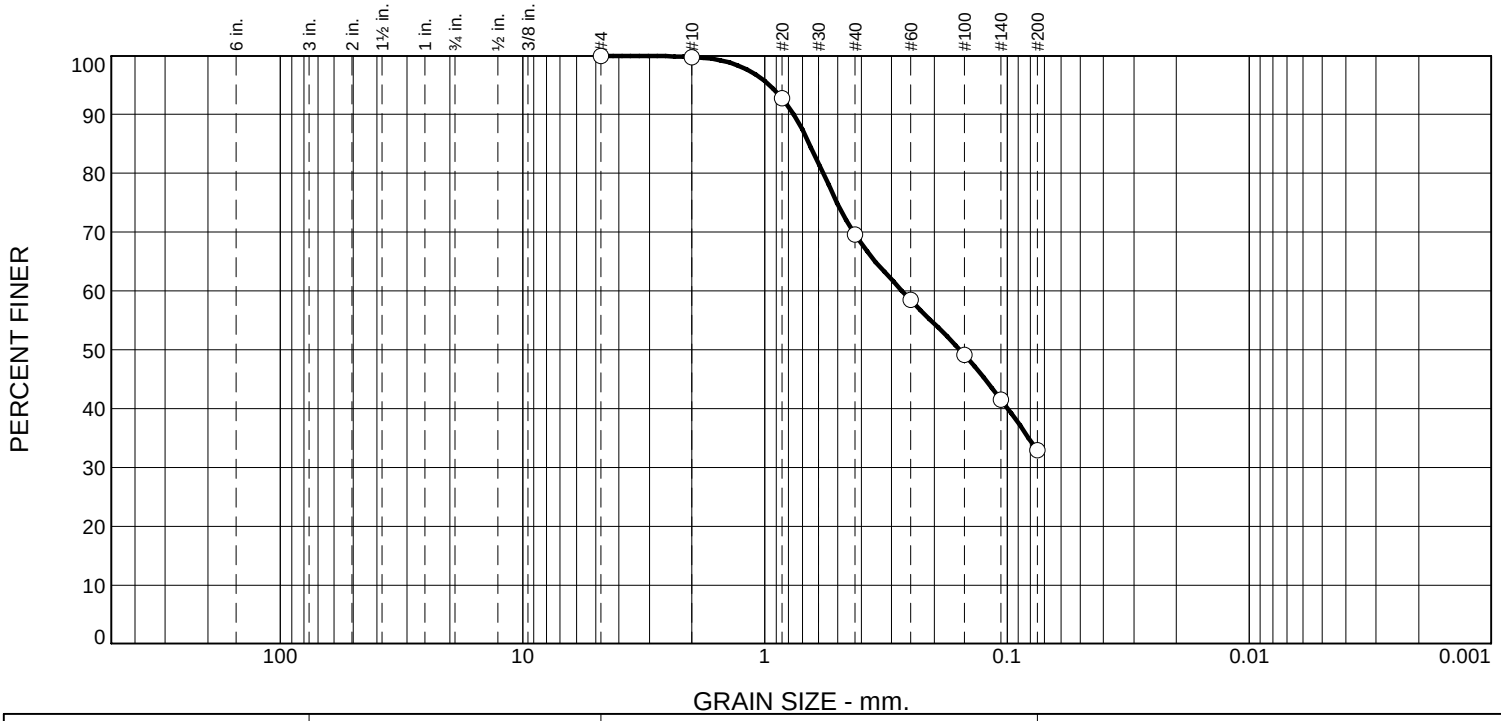
Source of Sample: PA23-1006S-WC
Sample Number: 14E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	30.2	36.7	32.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	92.8		
#40	69.6		
#60	58.5		
#100	49.2		
#140	41.5		
#200	32.9		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7609 D_{85}= 0.6552

D_{60}= 0.2708 D_{50}= 0.1563

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/30/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

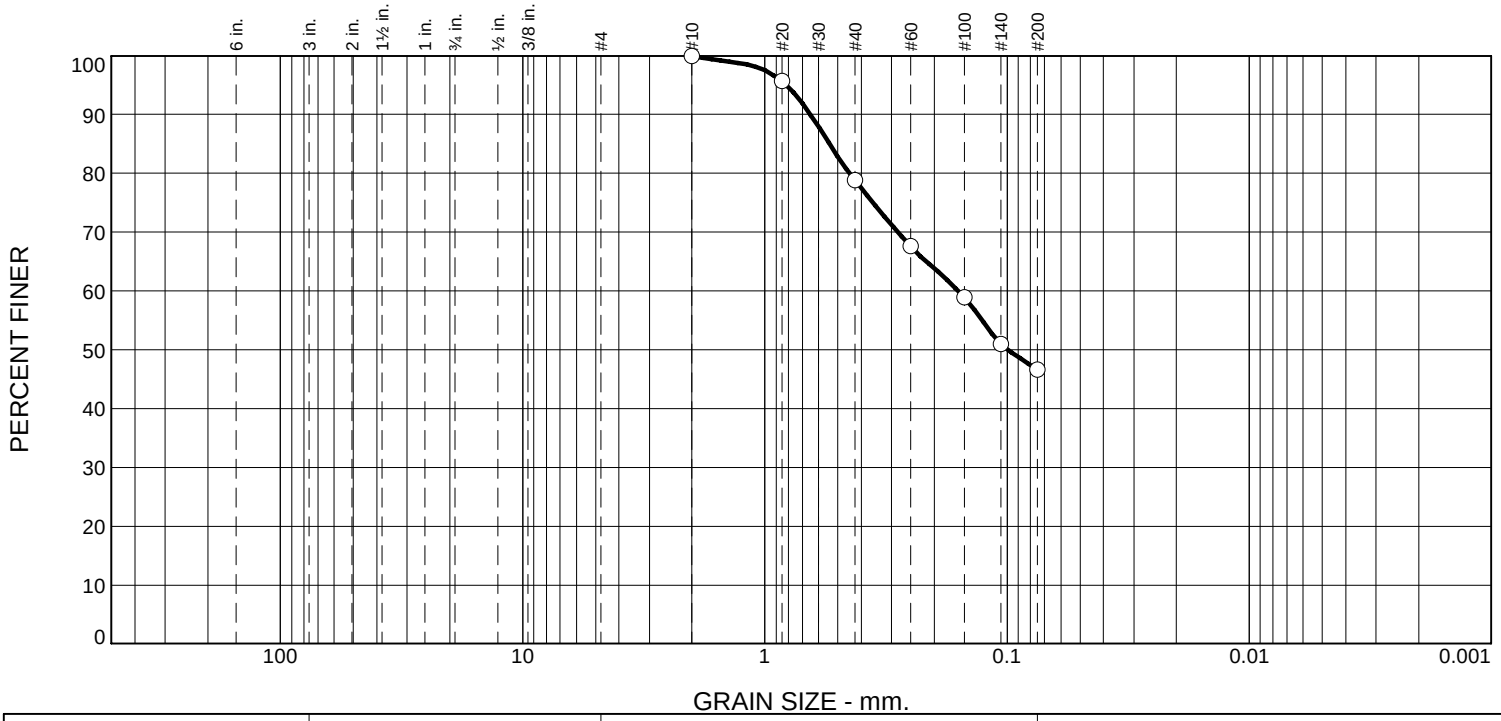
Source of Sample: PA23-1006S-WC
Sample Number: 14F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	21.2	32.1	46.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	95.7		
#40	78.8		
#60	67.6		
#100	58.9		
#140	51.0		
#200	46.7		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6488 D_{85}= 0.5396
D_{60}= 0.1587 D_{50}= 0.0994
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/30/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

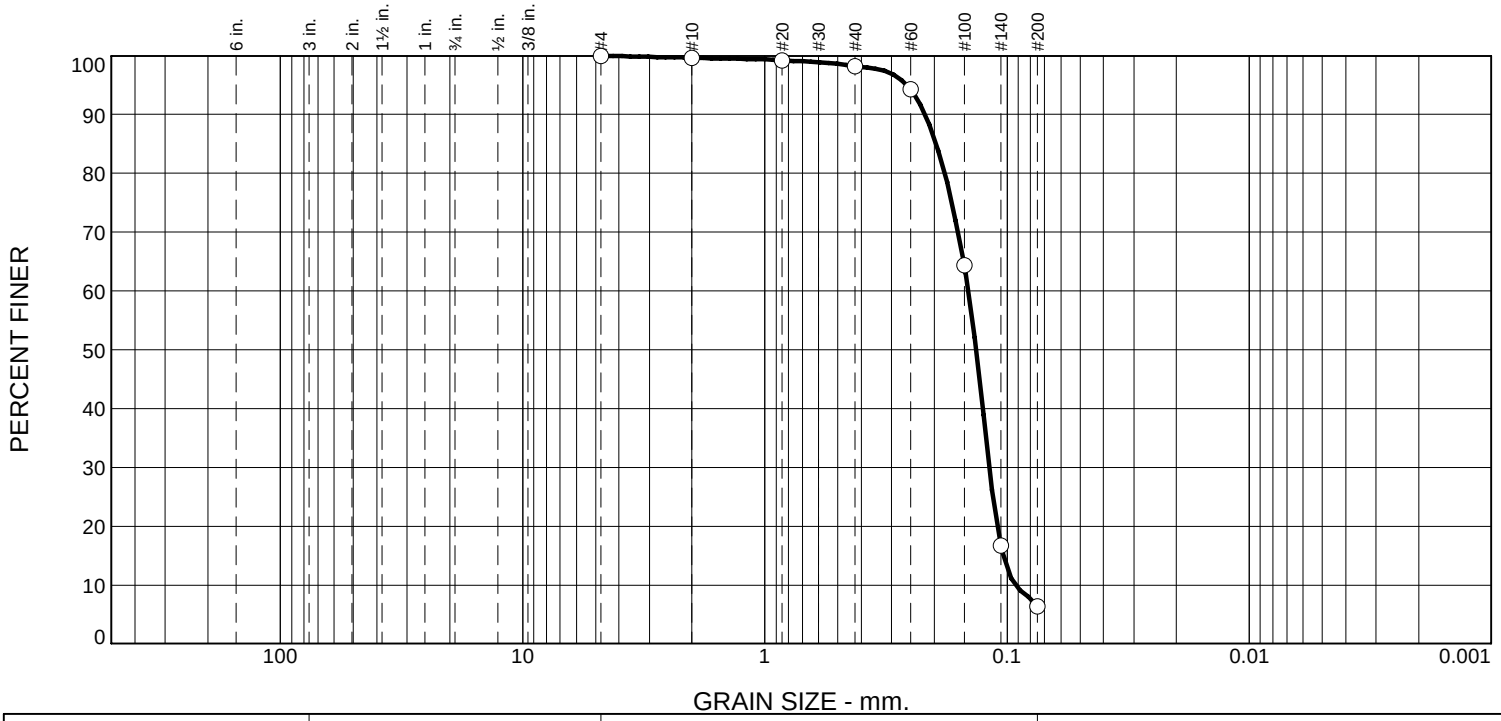
Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 14 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	1.4	91.9	6.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.6		
#20	99.2		
#40	98.2		
#60	94.3		
#100	64.4		
#140	16.7		
#200	6.3		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2179 D_{85}= 0.1964

D_{60}= 0.1442 D_{50}= 0.1343

D_{30}= 0.1183 D_{15}= 0.1036

D_{10}= 0.0926

C_u= 1.56 C_c= 1.05

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 2A

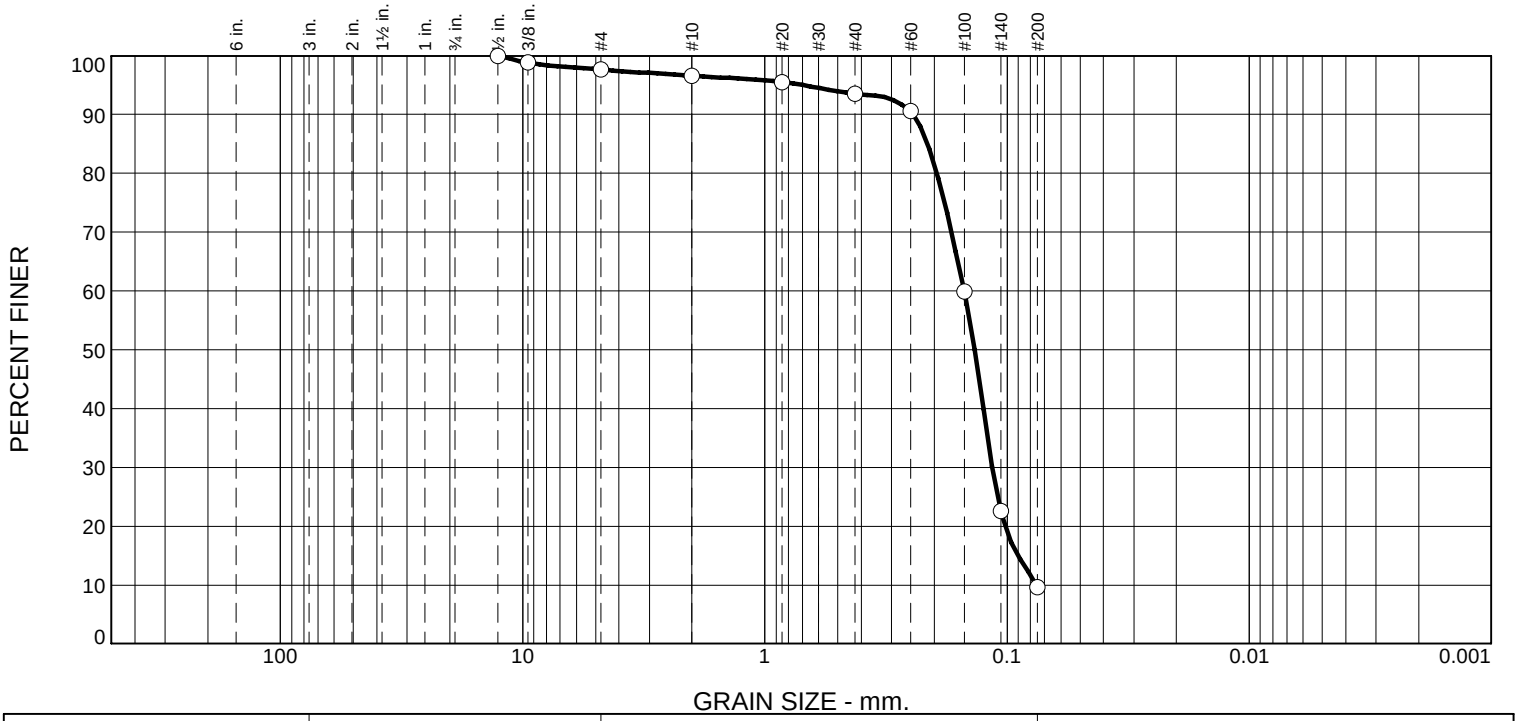
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.3	1.1	3.1	83.9	9.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	98.8		
#4	97.7		
#10	96.6		
#20	95.5		
#40	93.5		
#60	90.6		
#100	59.9		
#140	22.6		
#200	9.6		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2431 D_{85}= 0.2129

D_{60}= 0.1502 D_{50}= 0.1362

D_{30}= 0.1150 D_{15}= 0.0904

D_{10}= 0.0758

C_u= 1.98 C_c= 1.16

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1006S-WC

Sample Number: 2B

INSIGHT GROUP
A CHRISTOPHER COMPANY

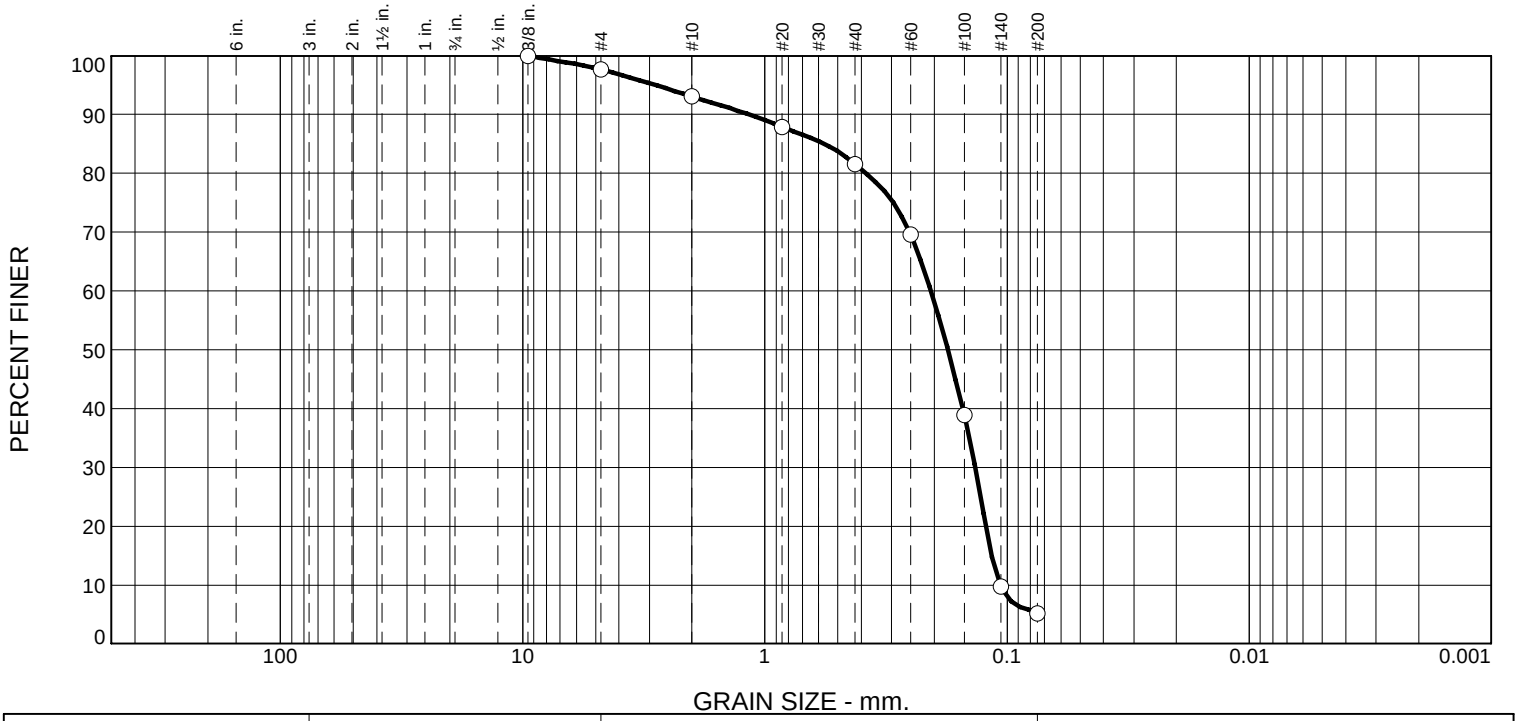
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.3	4.6	11.5	76.4	5.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	97.7		
#10	93.1		
#20	87.9		
#40	81.6		
#60	69.6		
#100	38.9		
#140	9.7		
#200	5.2		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 1.1577 D_{85}= 0.5674

D_{60}= 0.2063 D_{50}= 0.1758

D_{30}= 0.1355 D_{15}= 0.1156

D_{10}= 0.1067

C_u= 1.93 C_c= 0.83

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 2C

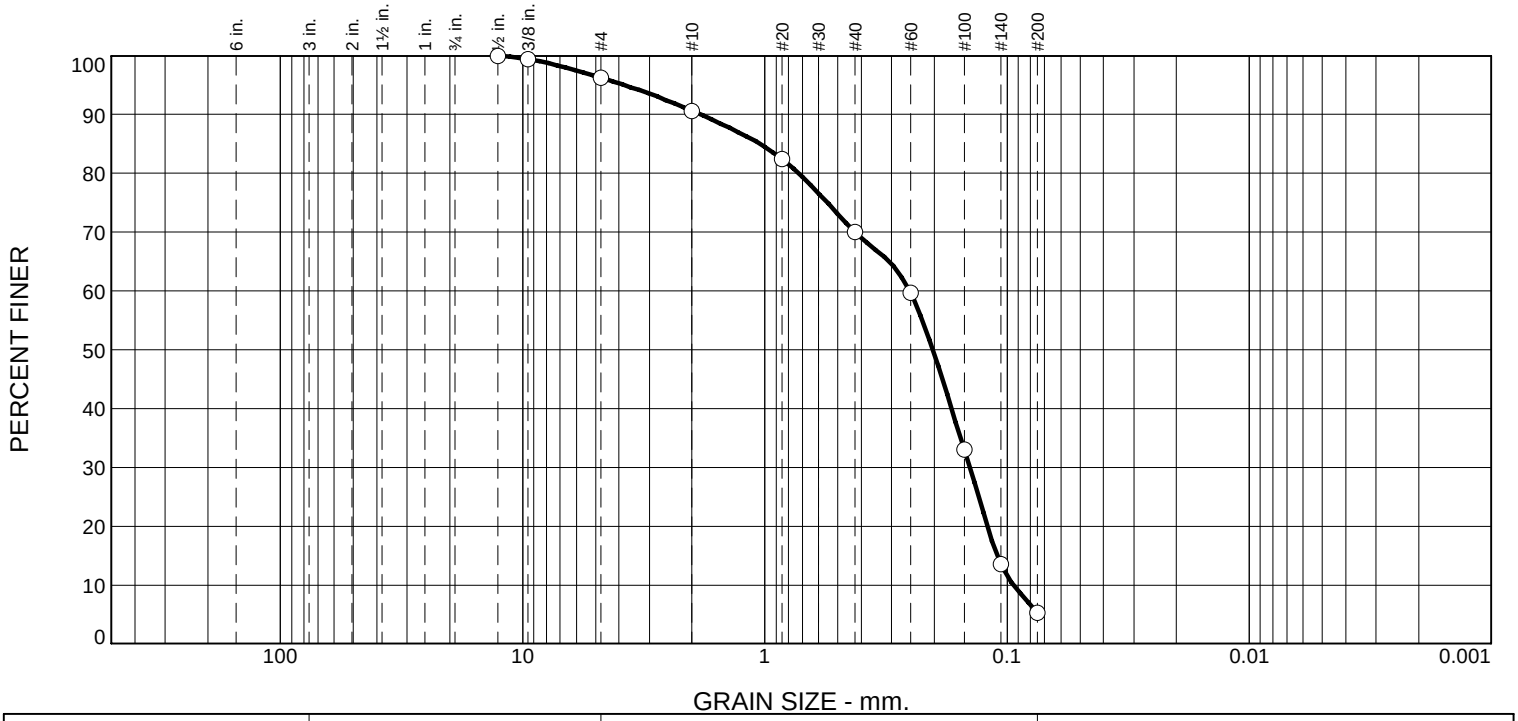
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.7	5.7	20.6	64.8	5.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	99.4		
#4	96.3		
#10	90.6		
#20	82.4		
#40	70.0		
#60	59.7		
#100	33.0		
#140	13.6		
#200	5.2		

* (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 1.8483 D_{85}= 1.0470

D_{60}= 0.2519 D_{50}= 0.2024

D_{30}= 0.1422 D_{15}= 0.1095

D_{10}= 0.0945

C_u= 2.67 C_c= 0.85

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 2D

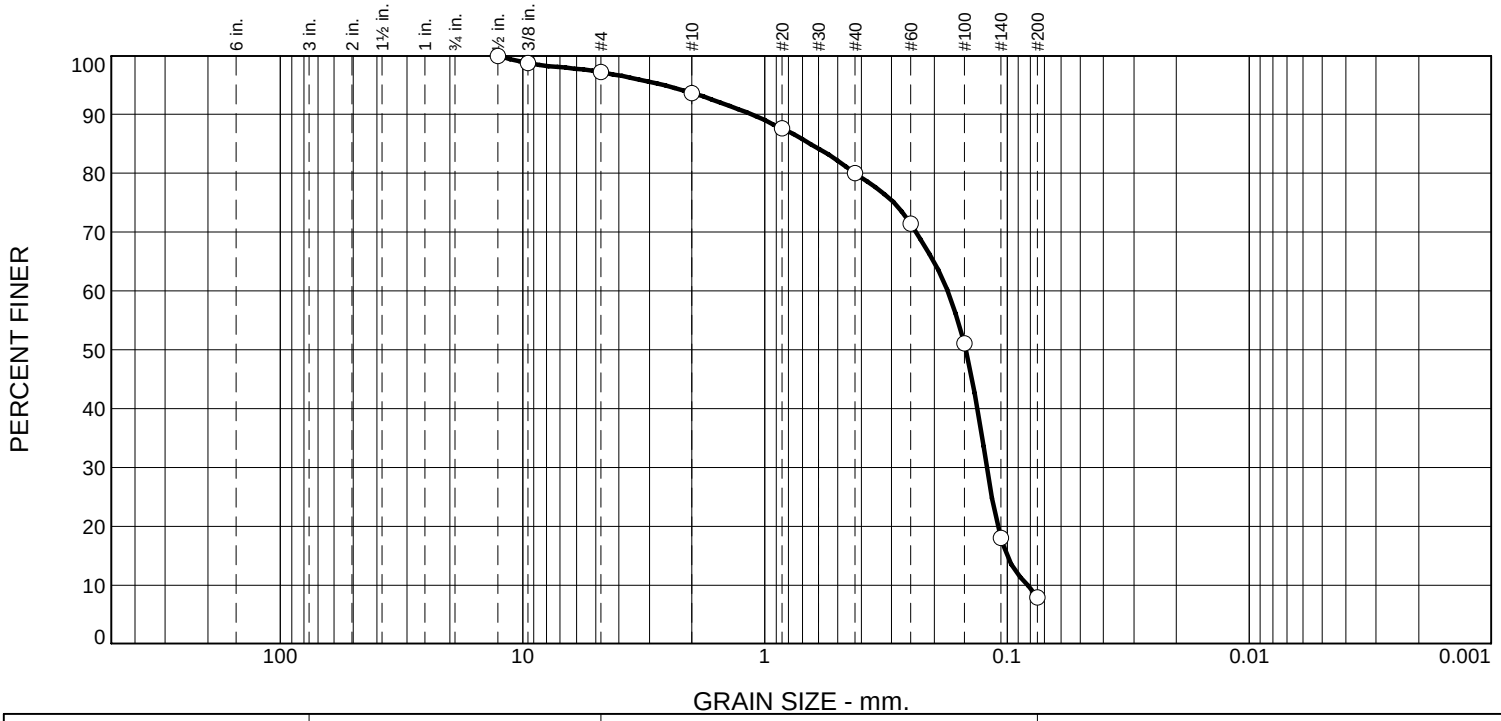
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.8	3.5	13.6	72.2	7.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	98.8		
#4	97.2		
#10	93.7		
#20	87.6		
#40	80.1		
#60	71.4		
#100	51.1		
#140	18.0		
#200	7.9		

· (no specification provided)

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 1.1329 D_{85}= 0.6459
D_{60}= 0.1762 D_{50}= 0.1477
D_{30}= 0.1212 D_{15}= 0.1000
D_{10}= 0.0823
C_u= 2.14 C_c= 1.01

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

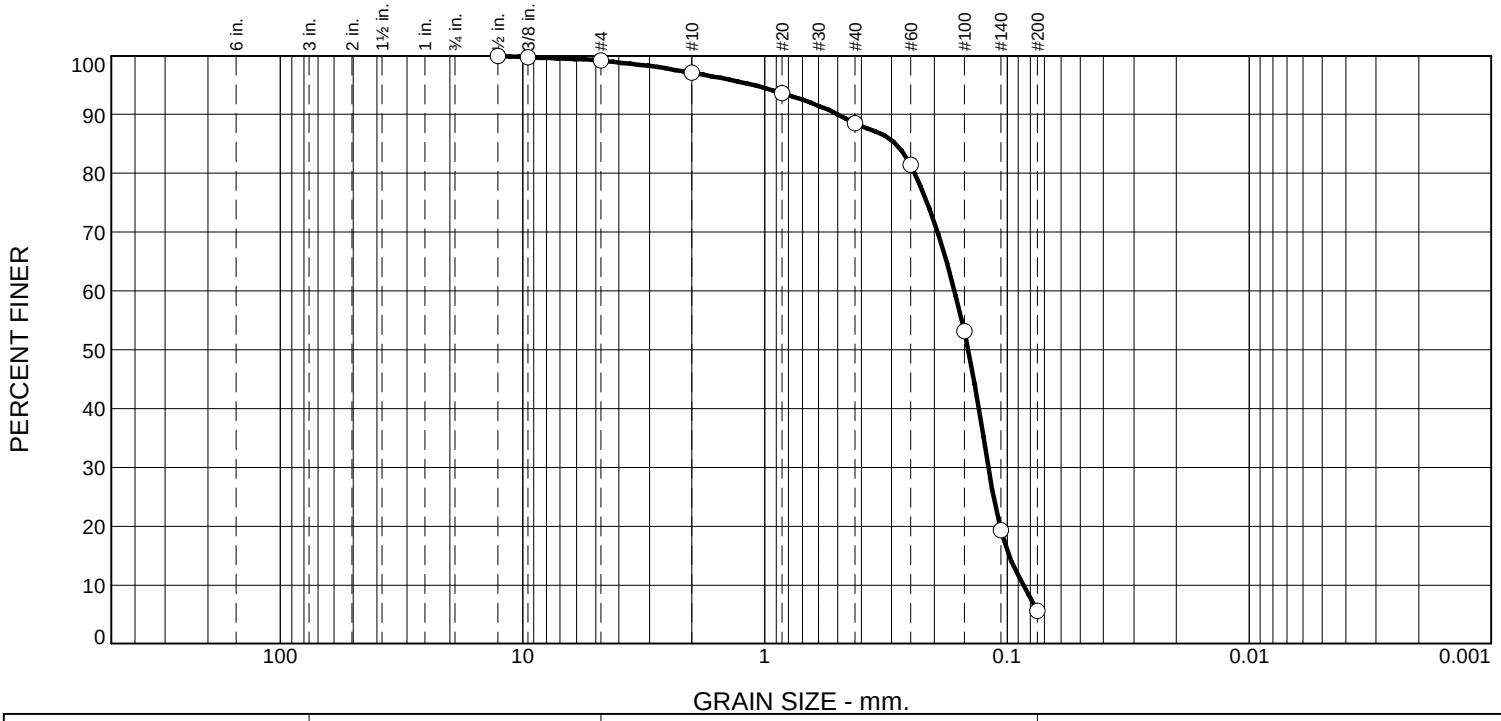
Source of Sample: PA23-1006S-WC
Sample Number: 2E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	2.1	8.6	82.9	5.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	99.7		
#4	99.2		
#10	97.1		
#20	93.7		
#40	88.5		
#60	81.4		
#100	53.1		
#140	19.3		
#200	5.6		

· (no specification provided)

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.4970 D_{85}= 0.2881
D_{60}= 0.1649 D_{50}= 0.1445
D_{30}= 0.1194 D_{15}= 0.0983
D_{10}= 0.0857
C_u= 1.92 C_c= 1.01

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

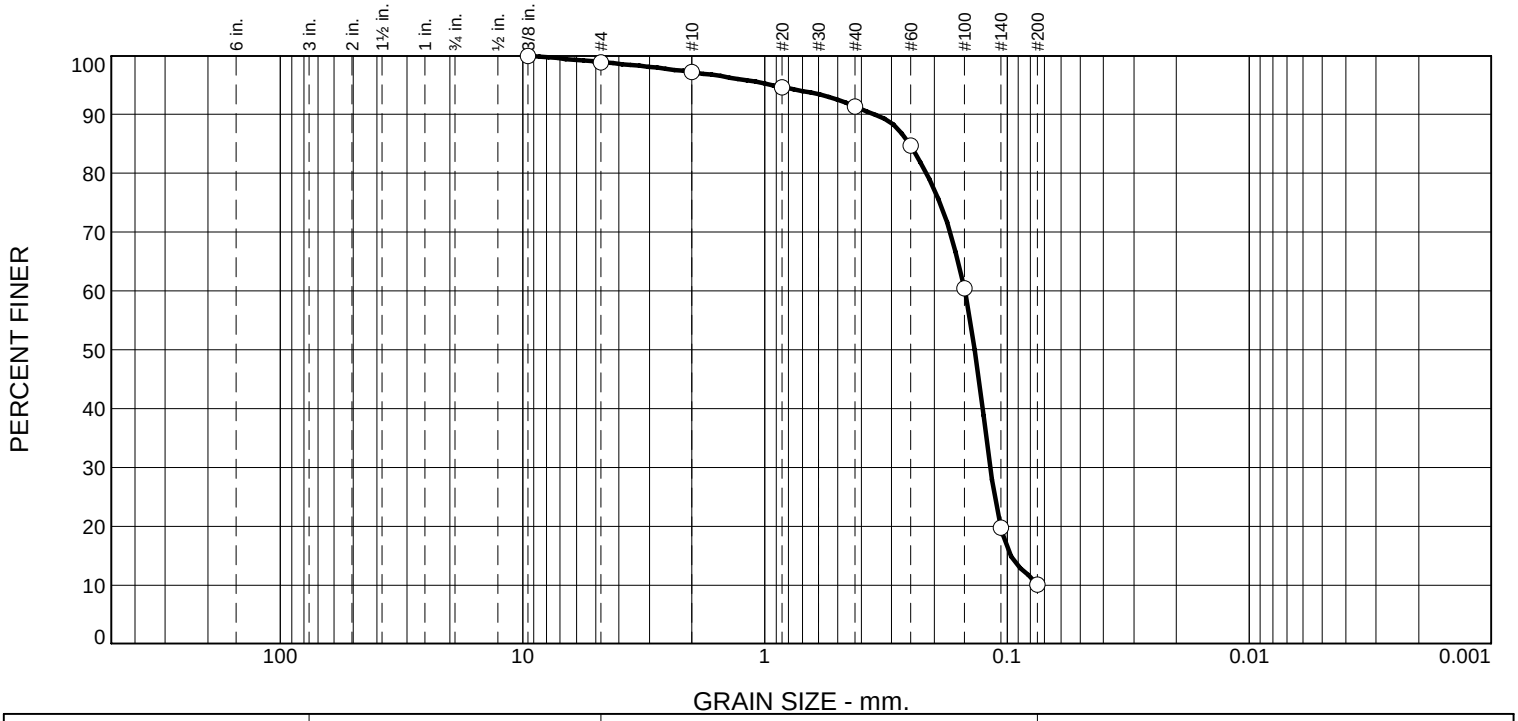
Source of Sample: PA23-1006S-WC
Sample Number: 2F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.1	1.7	5.8	81.4	10.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	98.9		
#10	97.2		
#20	94.7		
#40	91.4		
#60	84.7		
#100	60.5		
#140	19.8		
#200	10.0		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.3491 D_{85}= 0.2524

D_{60}= 0.1491 D_{50}= 0.1361

D_{30}= 0.1172 D_{15}= 0.0968

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 2 Comp

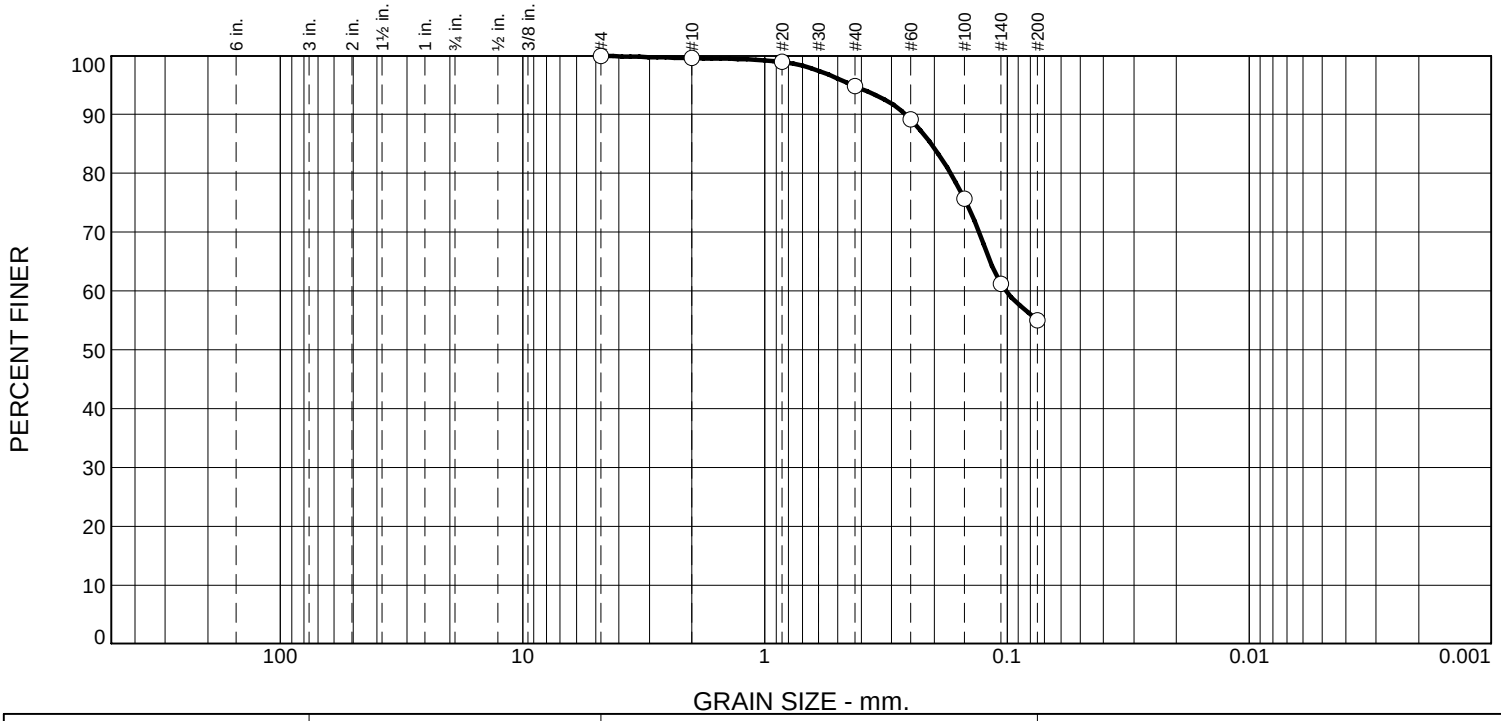
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	4.8	39.8	55.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.6		
#20	99.0		
#40	94.8		
#60	89.2		
#100	75.7		
#140	61.2		
#200	55.0		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2616 D_{85}= 0.2056
D_{60}= 0.1014 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

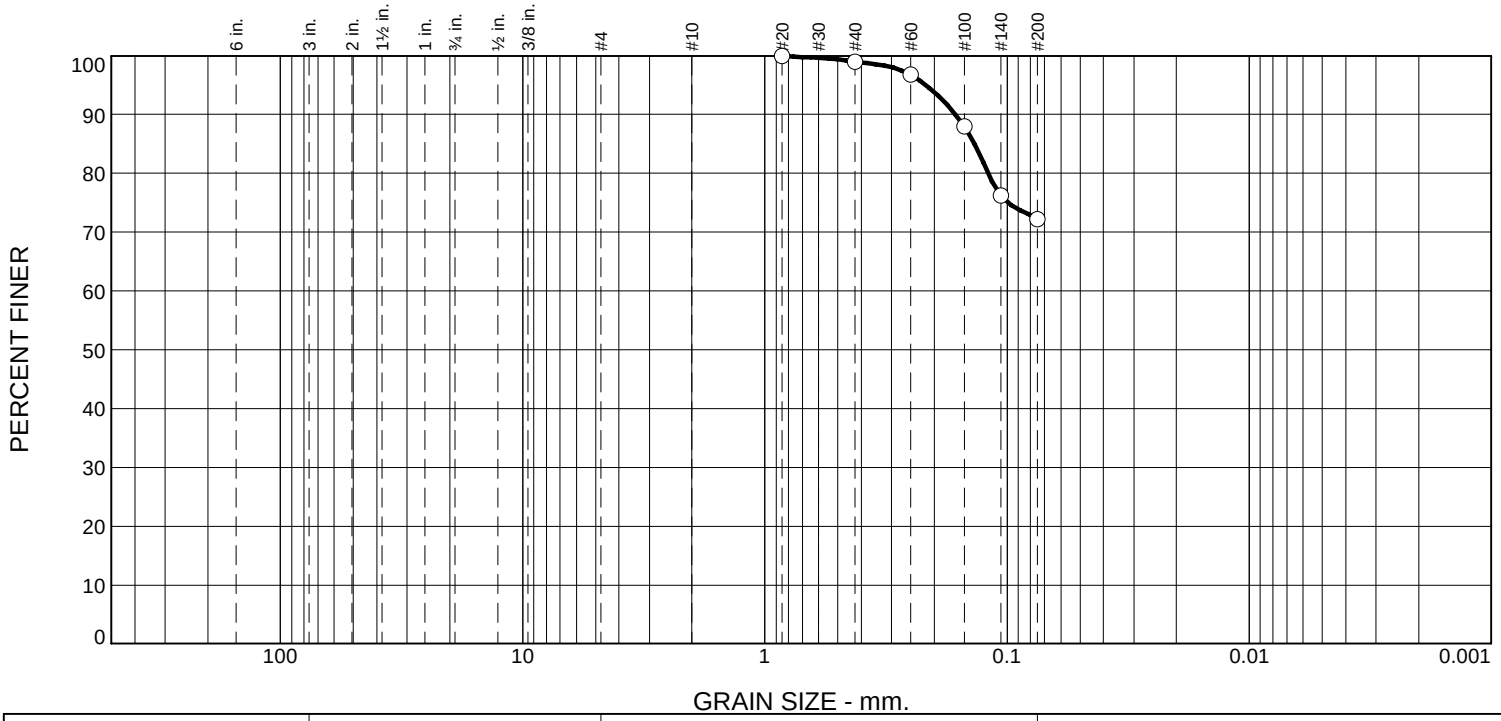
Source of Sample: PA23-1006S-WC
Sample Number: 3A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.0	26.8	72.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.0		
#60	96.8		
#100	88.0		
#140	76.2		
#200	72.2		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1631 D_{85}= 0.1364
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

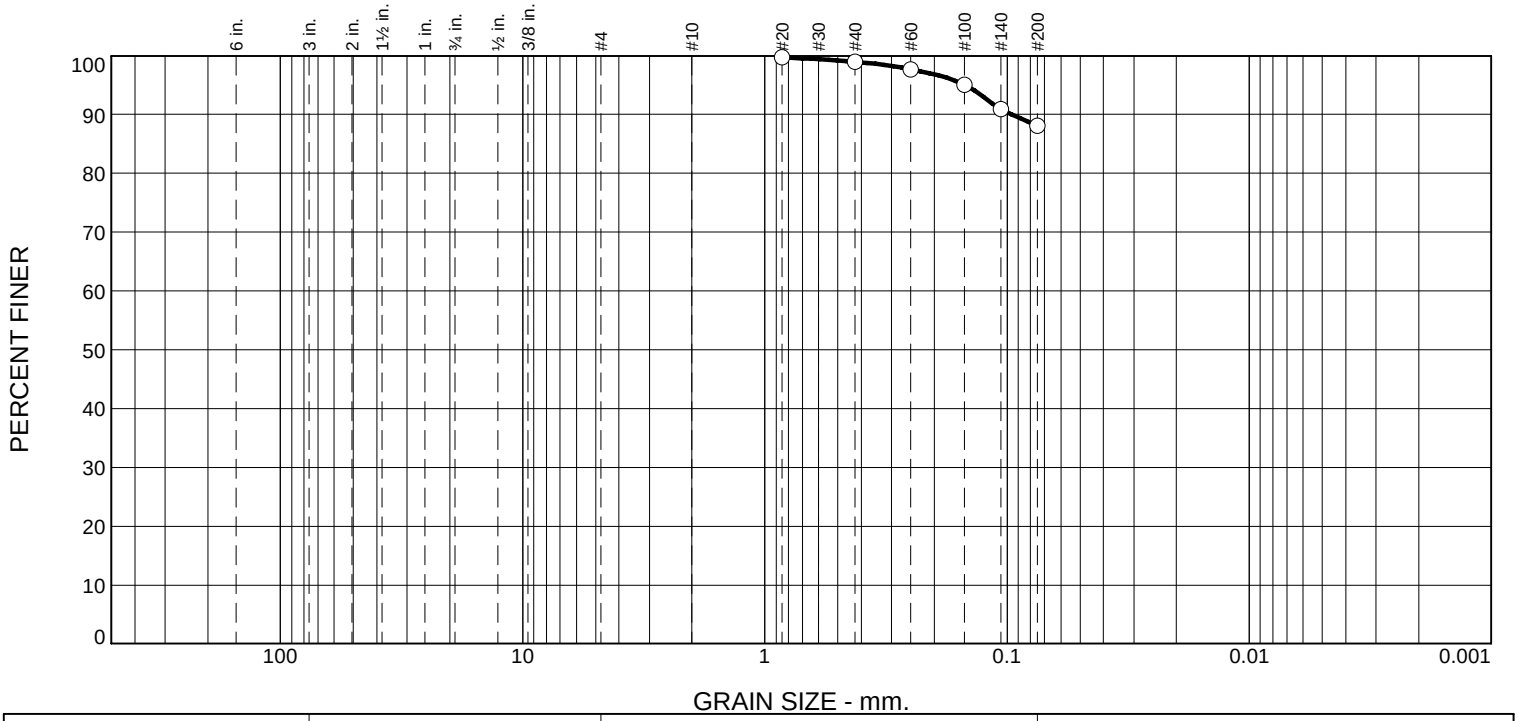
Source of Sample: PA23-1006S-WC
Sample Number: 3B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
					10.9	88.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	99.7		
#40	99.0		
#60	97.7		
#100	95.1		
#140	91.0		
#200	88.1		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.0954 D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

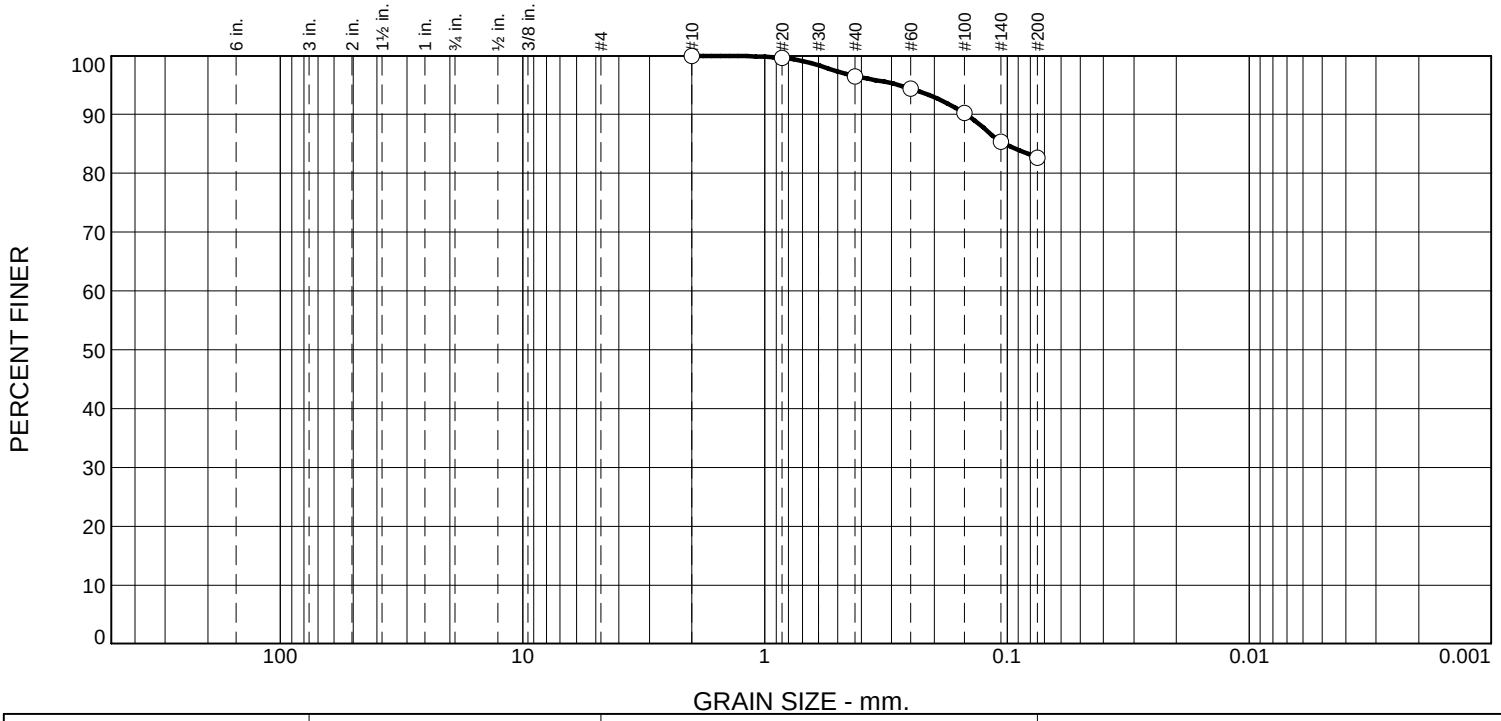
Source of Sample: PA23-1006S-WC
Sample Number: 3C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.5	13.9	82.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	96.5		
#60	94.4		
#100	90.3		
#140	85.4		
#200	82.6		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1465 D_{85}= 0.1018
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

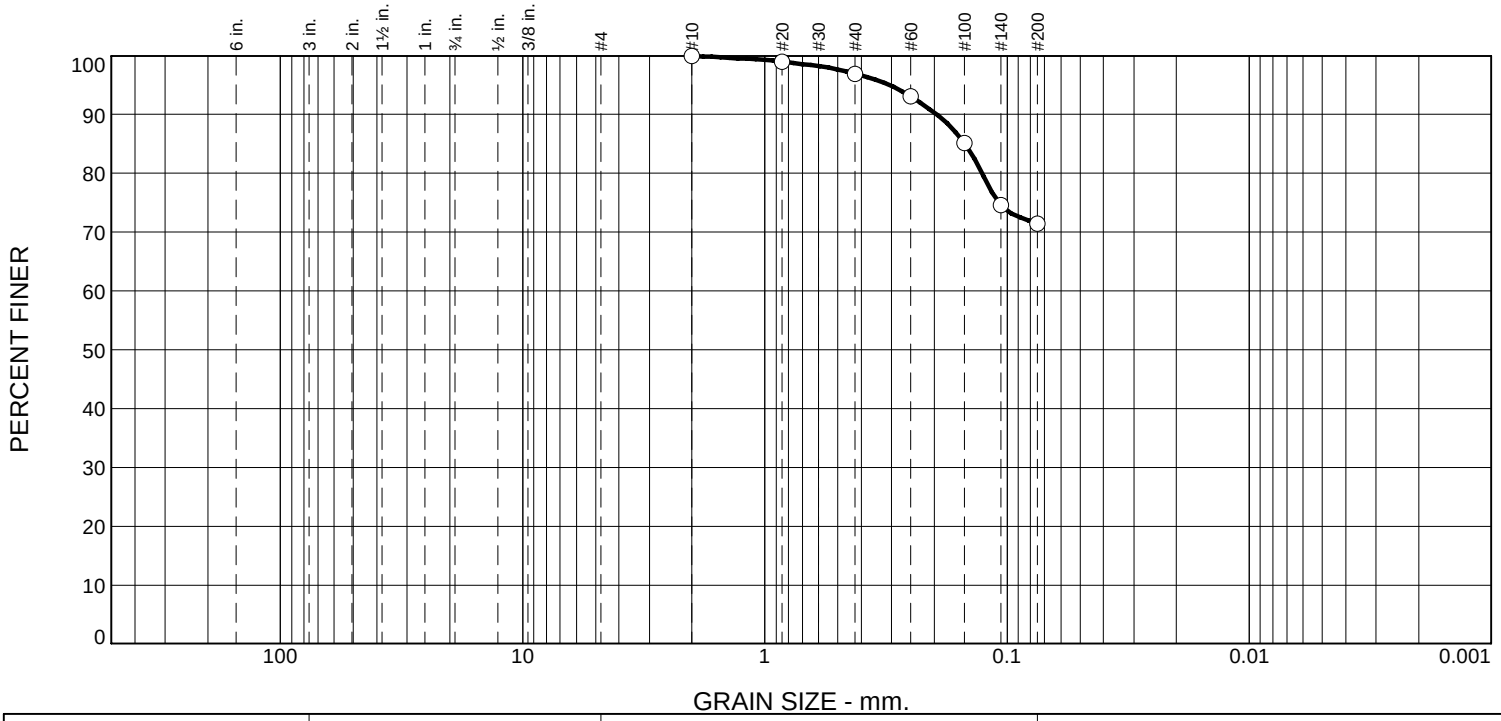
Source of Sample: PA23-1006S-WC
Sample Number: 3D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.0	25.6	71.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.0		
#40	97.0		
#60	93.1		
#100	85.2		
#140	74.6		
#200	71.4		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1952 D_{85}= 0.1488
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

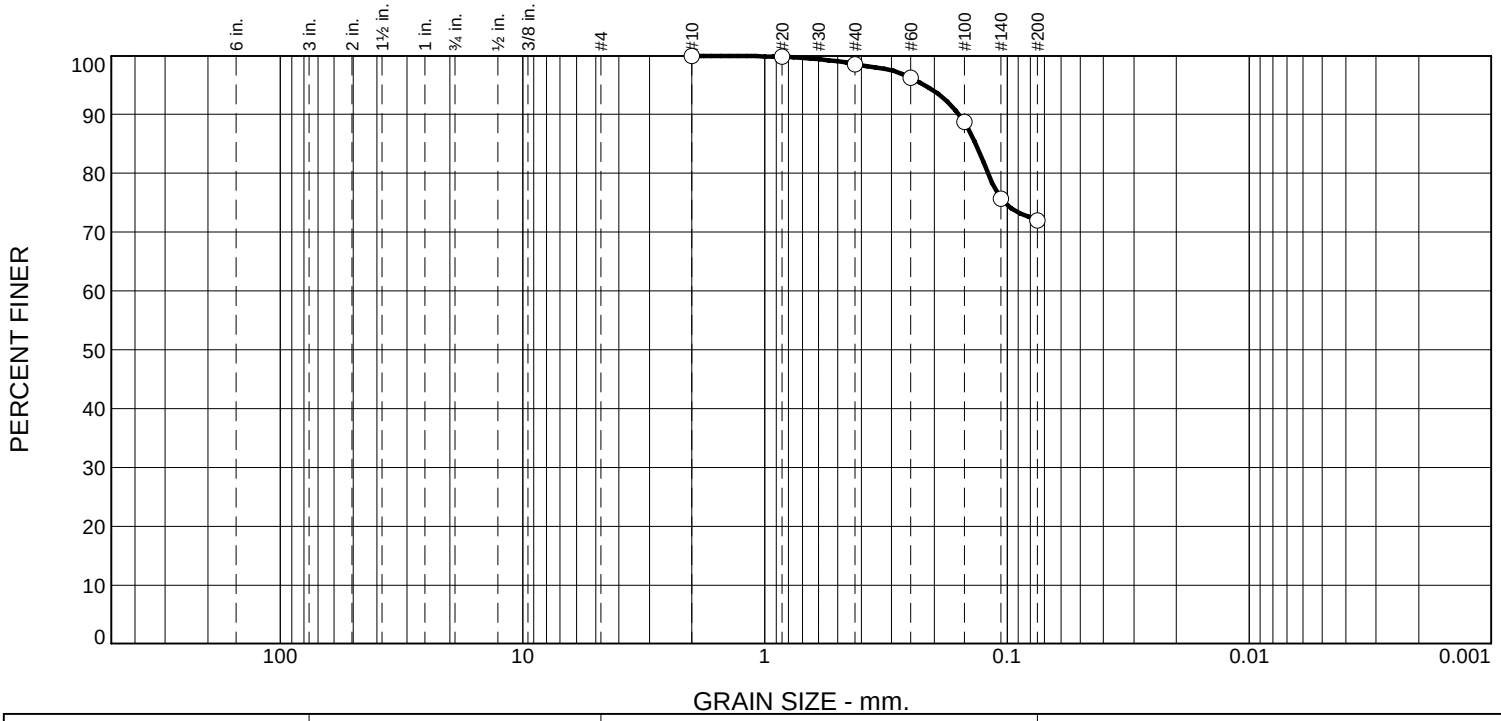
Source of Sample: PA23-1006S-WC
Sample Number: 3E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.4	26.6	72.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	98.6		
#60	96.2		
#100	88.8		
#140	75.7		
#200	72.0		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1579 D_{85}= 0.1347
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

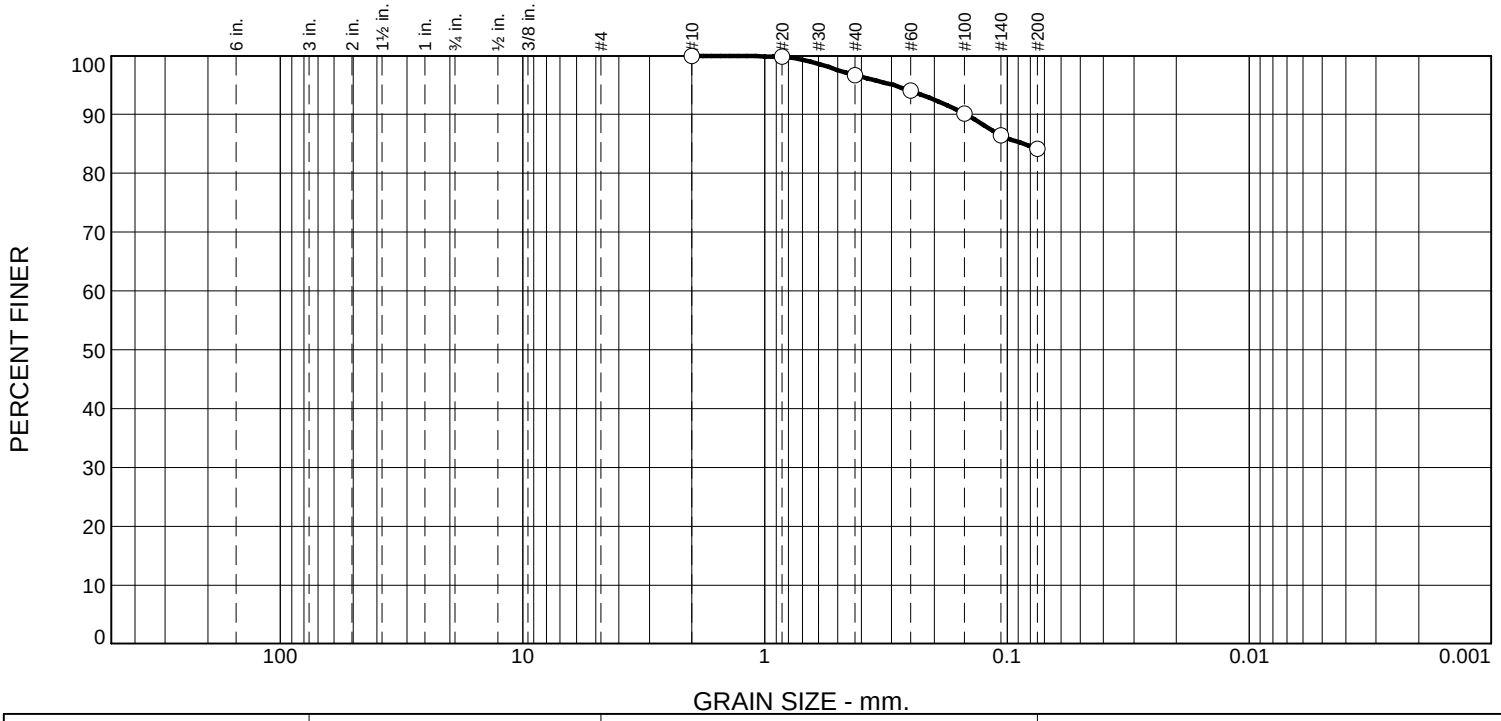
Source of Sample: PA23-1006S-WC
Sample Number: 3F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.3	12.5	84.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	96.7		
#60	94.1		
#100	90.2		
#140	86.5		
#200	84.2		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1474 D_{85}= 0.0853
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/17/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

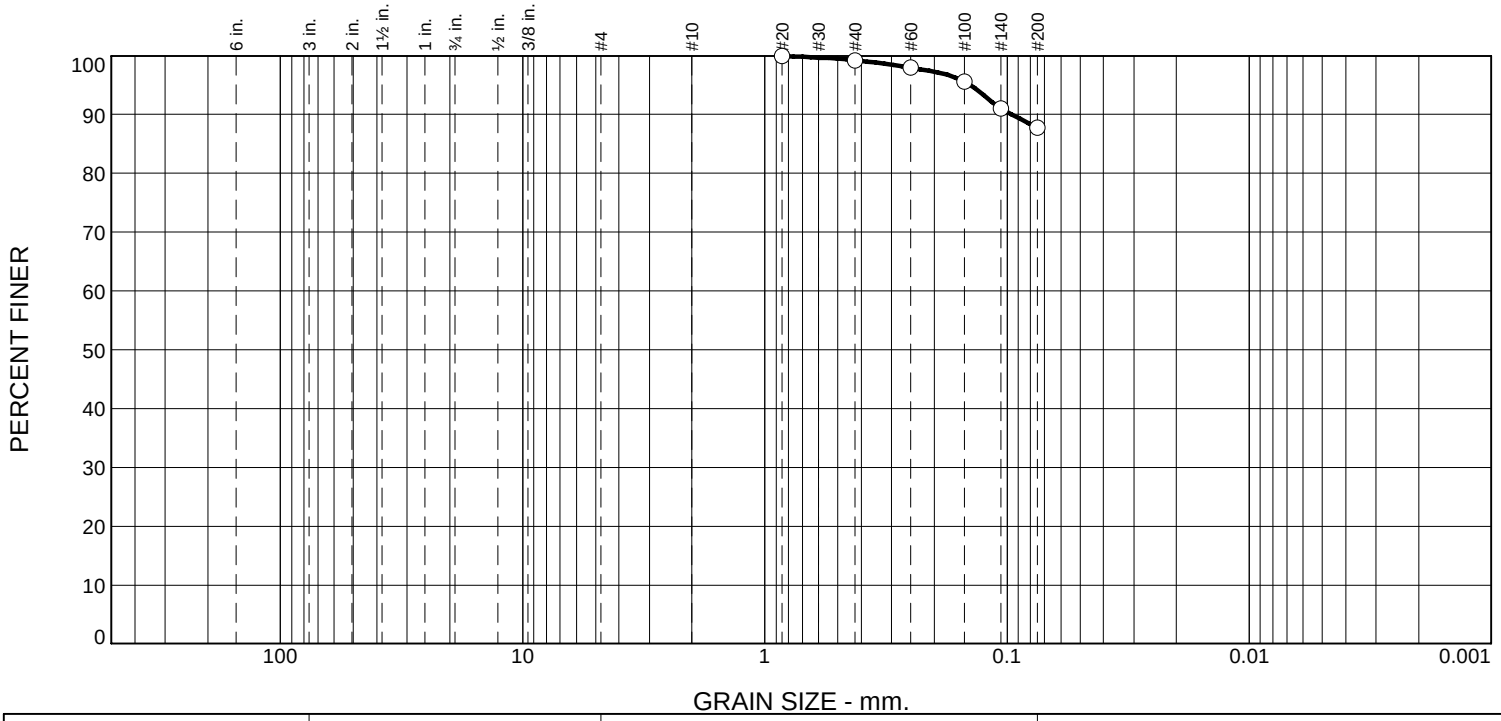
Source of Sample: PA23-1006S-WC
Sample Number: 3 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	11.5	87.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.2		
#60	98.0		
#100	95.7		
#140	91.0		
#200	87.7		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.0960 D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/17/23 Technician: M. Moore

Test Notes

Hydrometer Test
Test Date: _____ Technician: _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

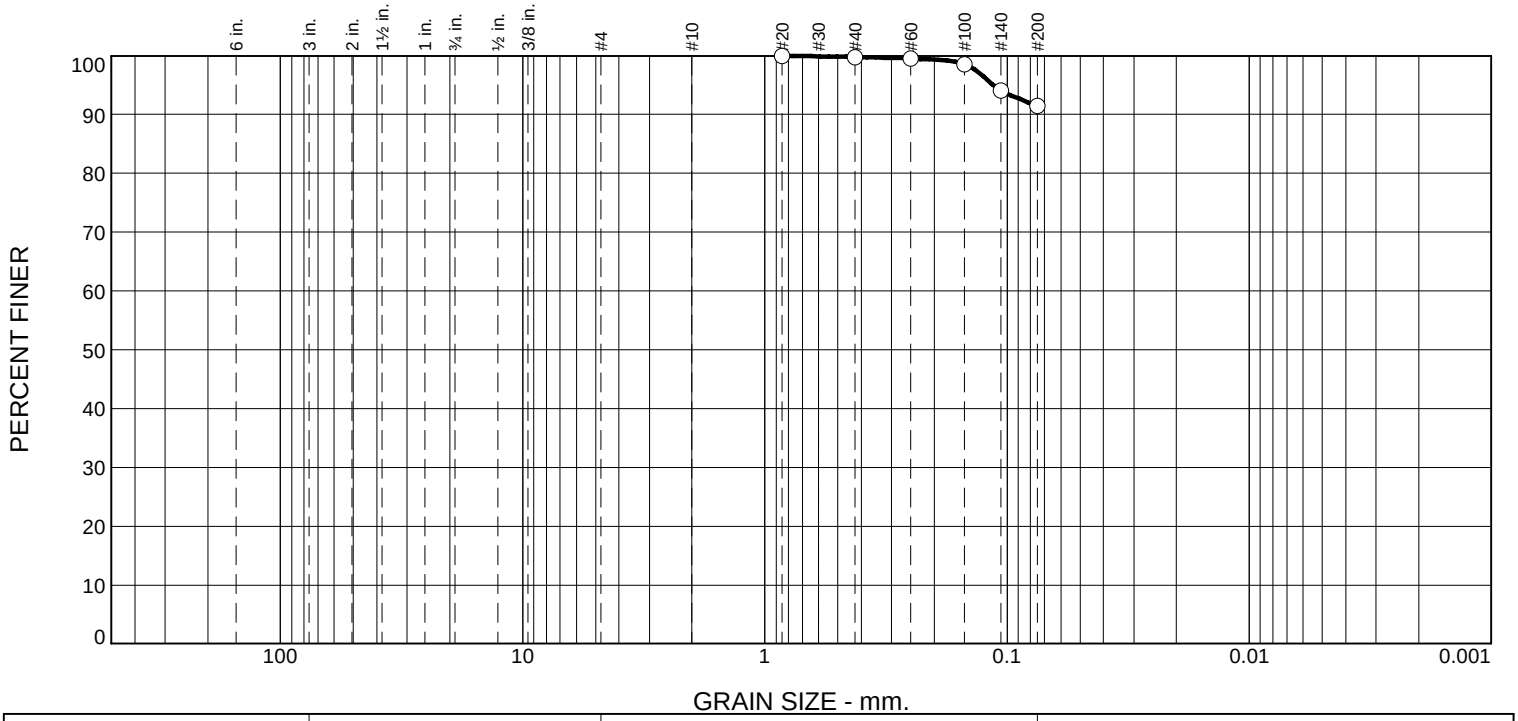
Source of Sample: PA23-1006S-WC
Sample Number: 4A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	8.3	91.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	99.5		
#100	98.6		
#140	94.1		
#200	91.5		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

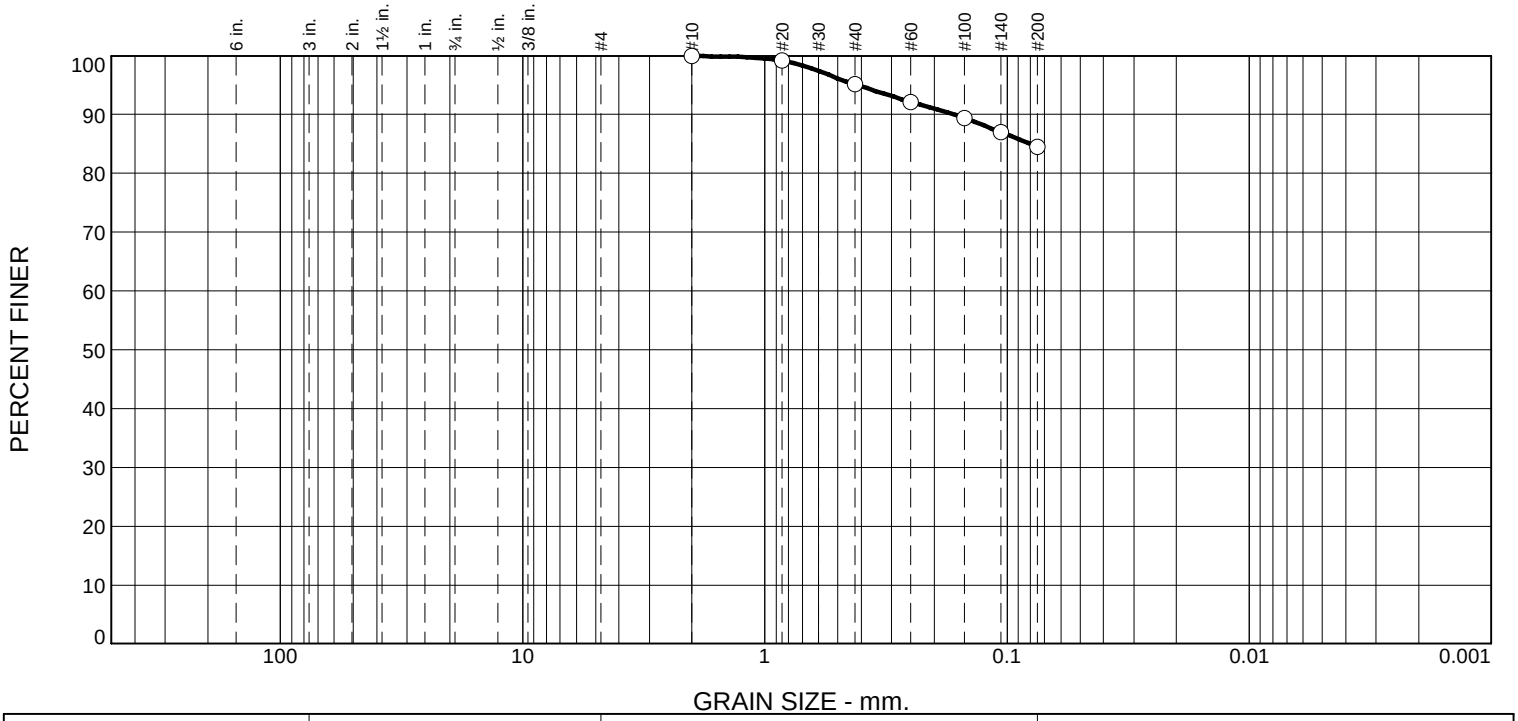
Source of Sample: PA23-1006S-WC
Sample Number: 4B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.9	10.5	84.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.2		
#40	95.1		
#60	92.1		
#100	89.4		
#140	87.0		
#200	84.6		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1653 D_{85}= 0.0799
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

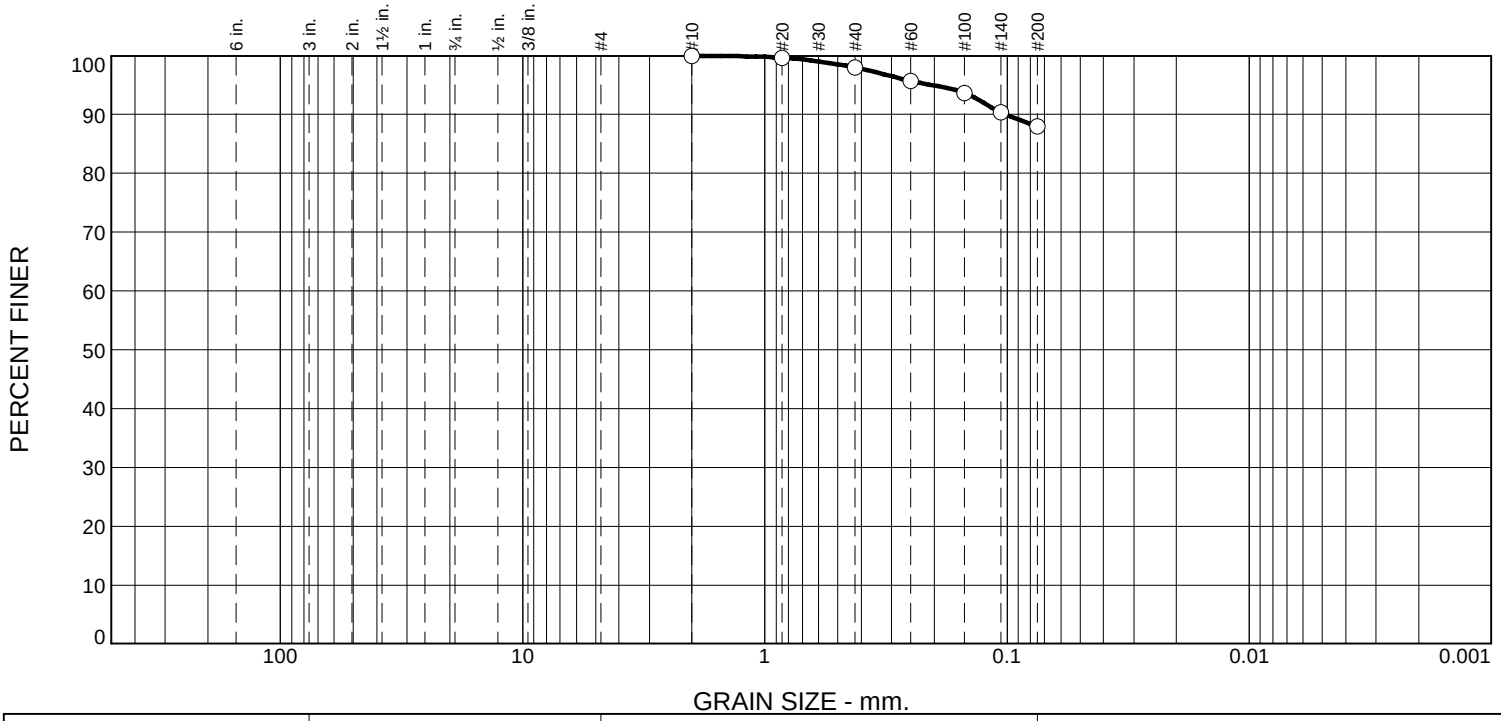
Source of Sample: PA23-1006S-WC
Sample Number: 4C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.0	10.0	88.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	98.0		
#60	95.7		
#100	93.7		
#140	90.4		
#200	88.0		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1011 D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

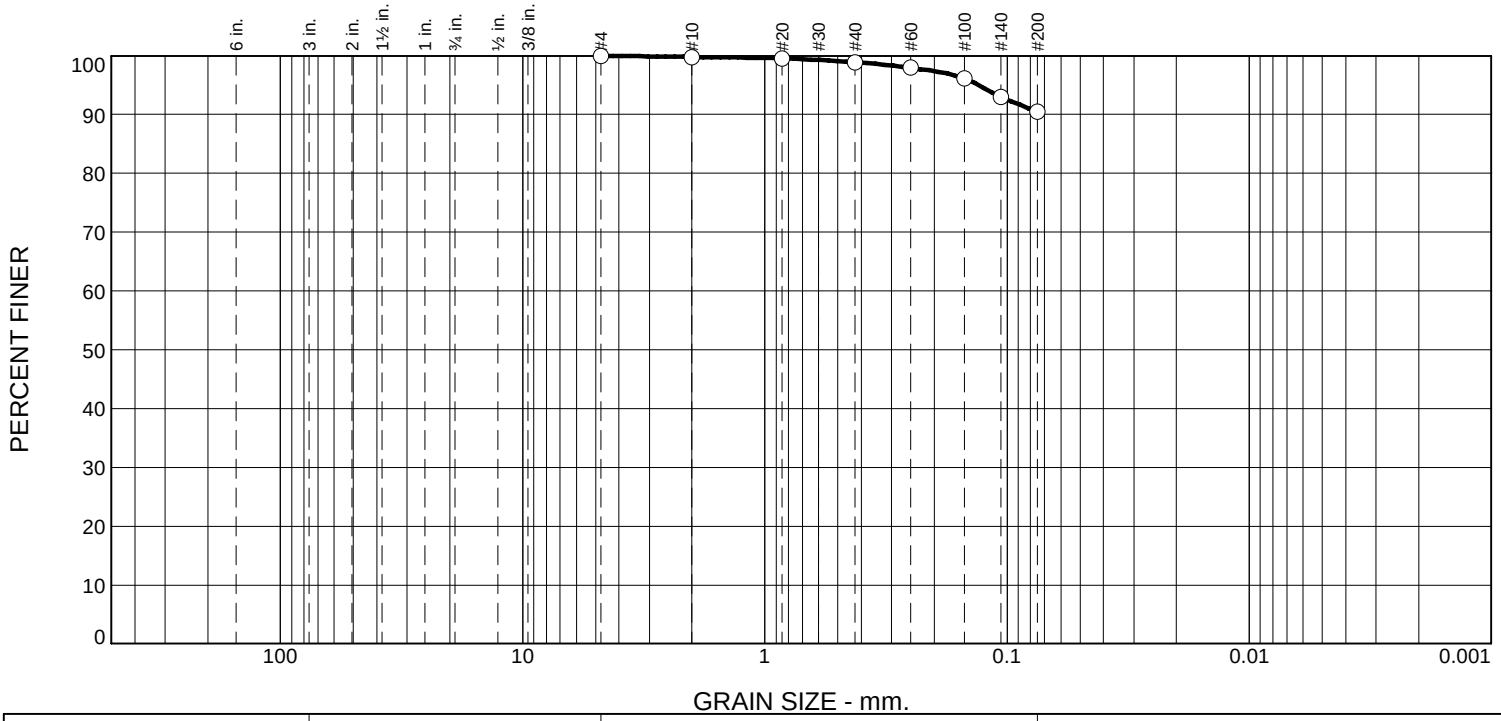
Source of Sample: PA23-1006S-WC
Sample Number: 4D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.9	8.4	90.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.5		
#40	98.9		
#60	98.0		
#100	96.1		
#140	93.0		
#200	90.5		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/17/23 Technician: M. Moore

Test Notes

Hydrometer Test
Test Date: _____ Technician: _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

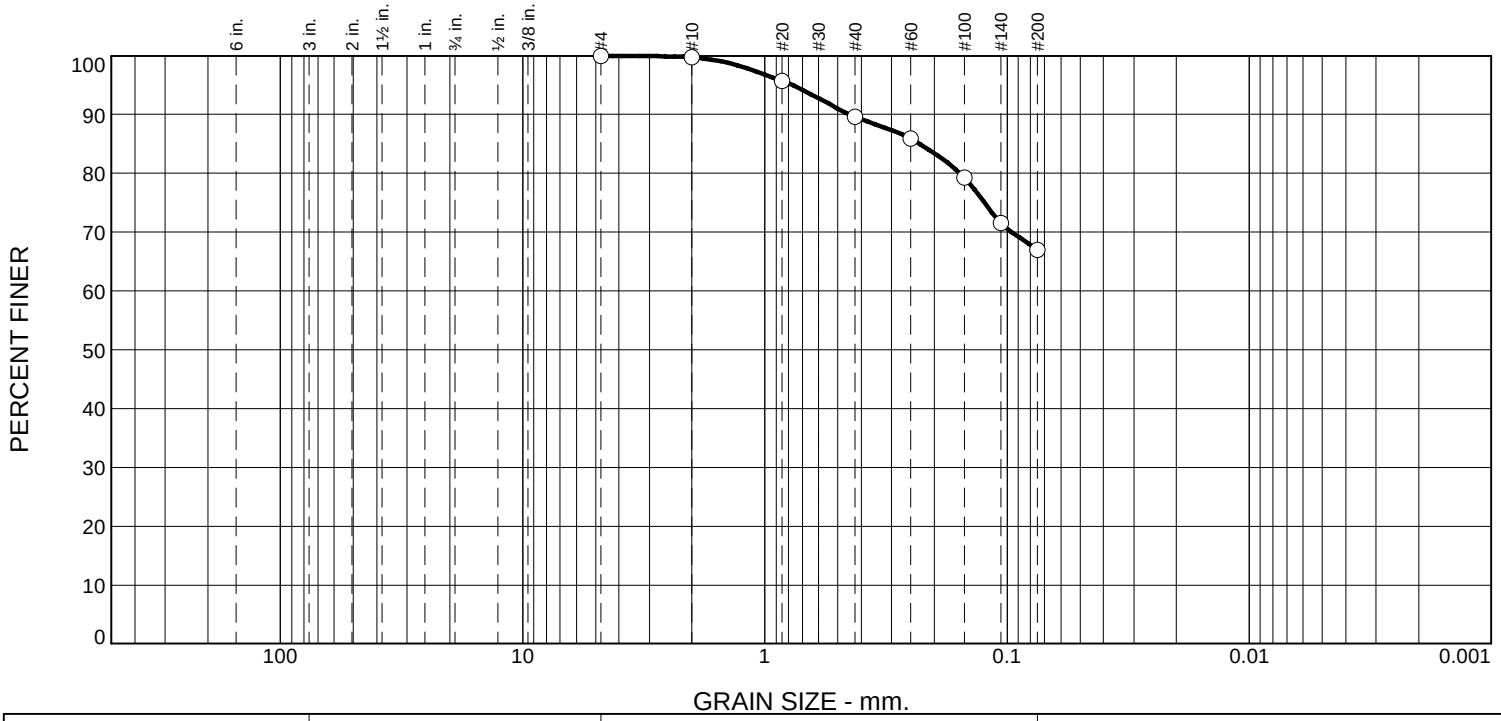
Source of Sample: PA23-1006S-WC
Sample Number: 4 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	10.1	22.6	67.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	95.7		
#40	89.6		
#60	85.9		
#100	79.3		
#140	71.5		
#200	67.0		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Atterberg (ASTM D4318)
PL= **LL=** **PI=**

Coefficients
D_{90}= 0.4448 D_{85}= 0.2290
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

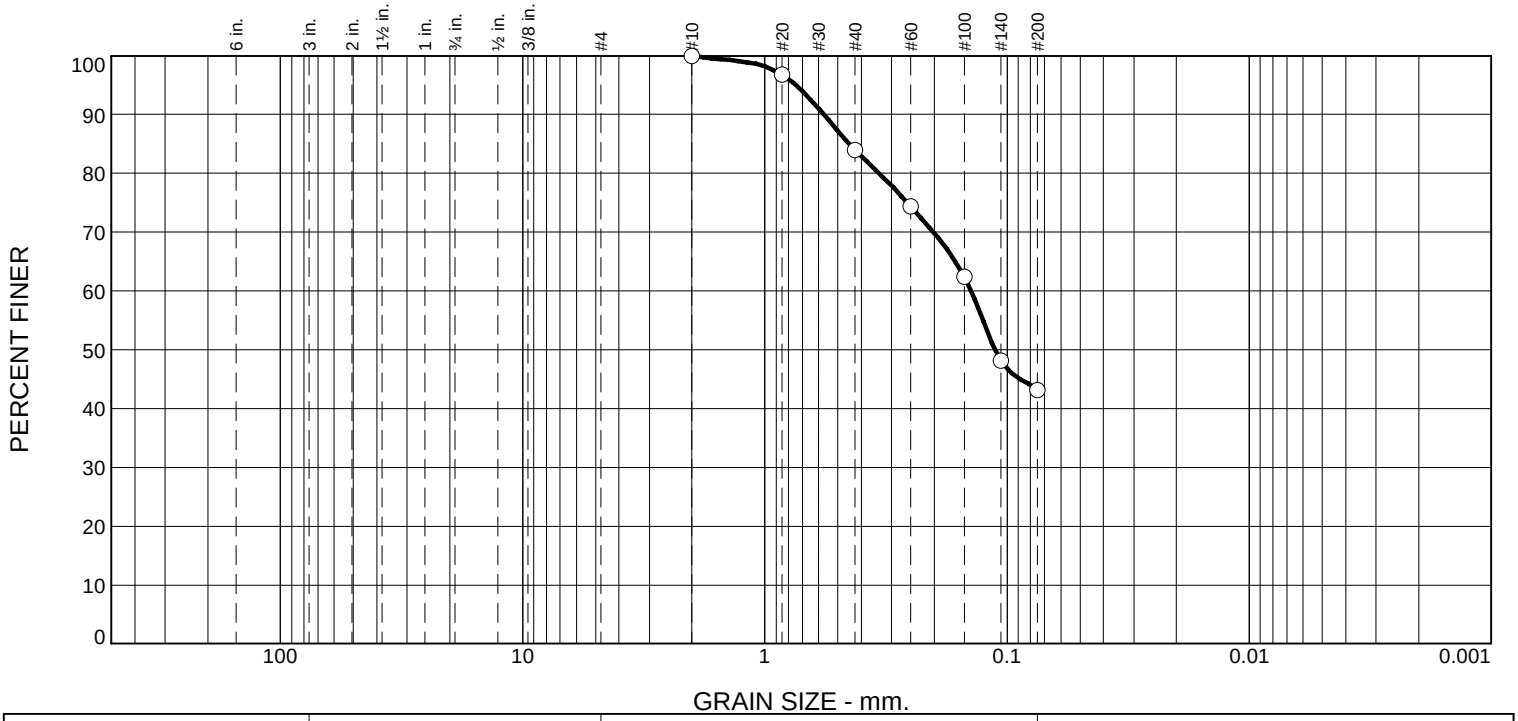
Source of Sample: PA23-1006S-WC
Sample Number: 5A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	16.0	40.8	43.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	96.8		
#40	84.0		
#60	74.4		
#100	62.4		
#140	48.1		
#200	43.2		

* (no specification provided)

Source of Sample: PA23-1006S-WC
Sample Number: 5B

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.5710 D_{85}= 0.4481
D_{60}= 0.1406 D_{50}= 0.1122
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

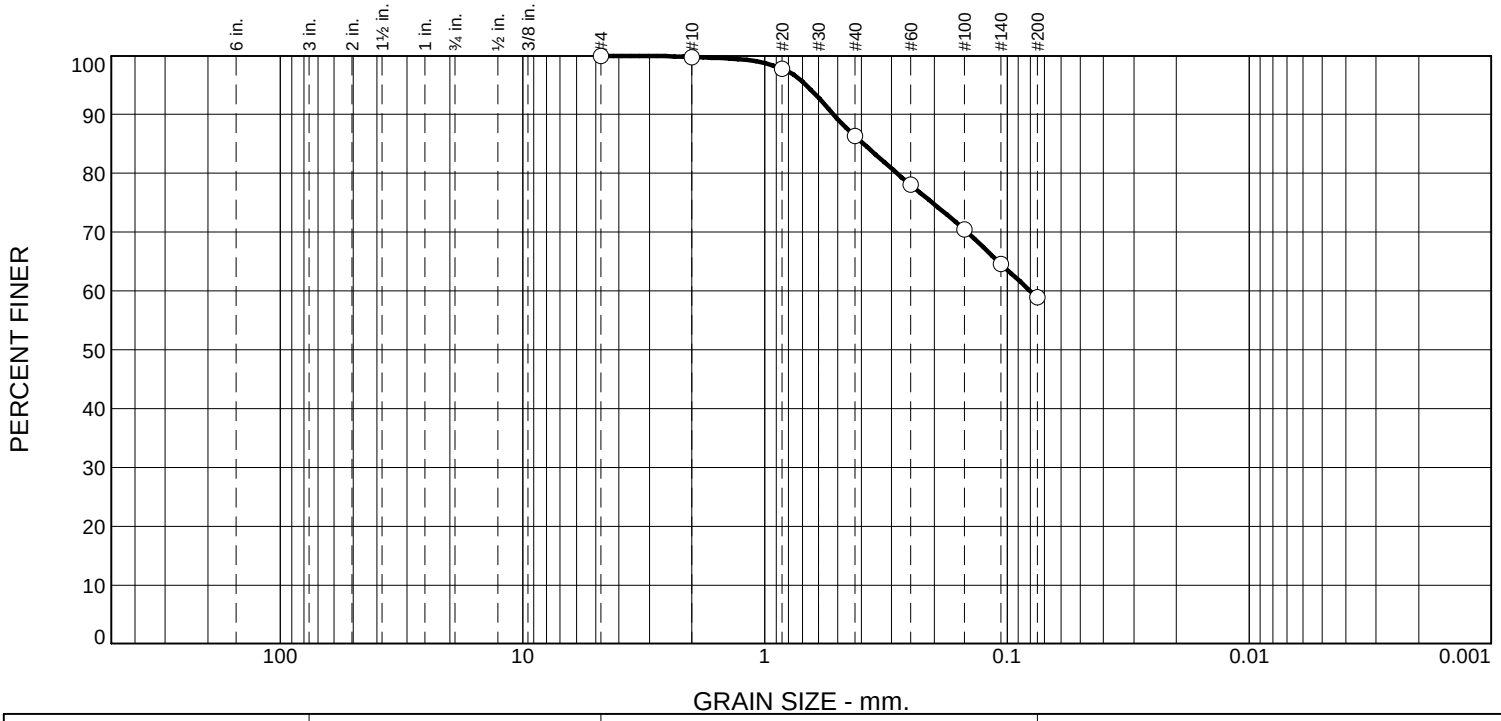
Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	13.5	27.4	58.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	97.8		
#40	86.3		
#60	78.0		
#100	70.4		
#140	64.6		
#200	58.9		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Atterberg (ASTM D4318)
PL= **LL=** **PI=**

Coefficients
D_{90}= 0.5197 D_{85}= 0.3917
D_{60}= 0.0802 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

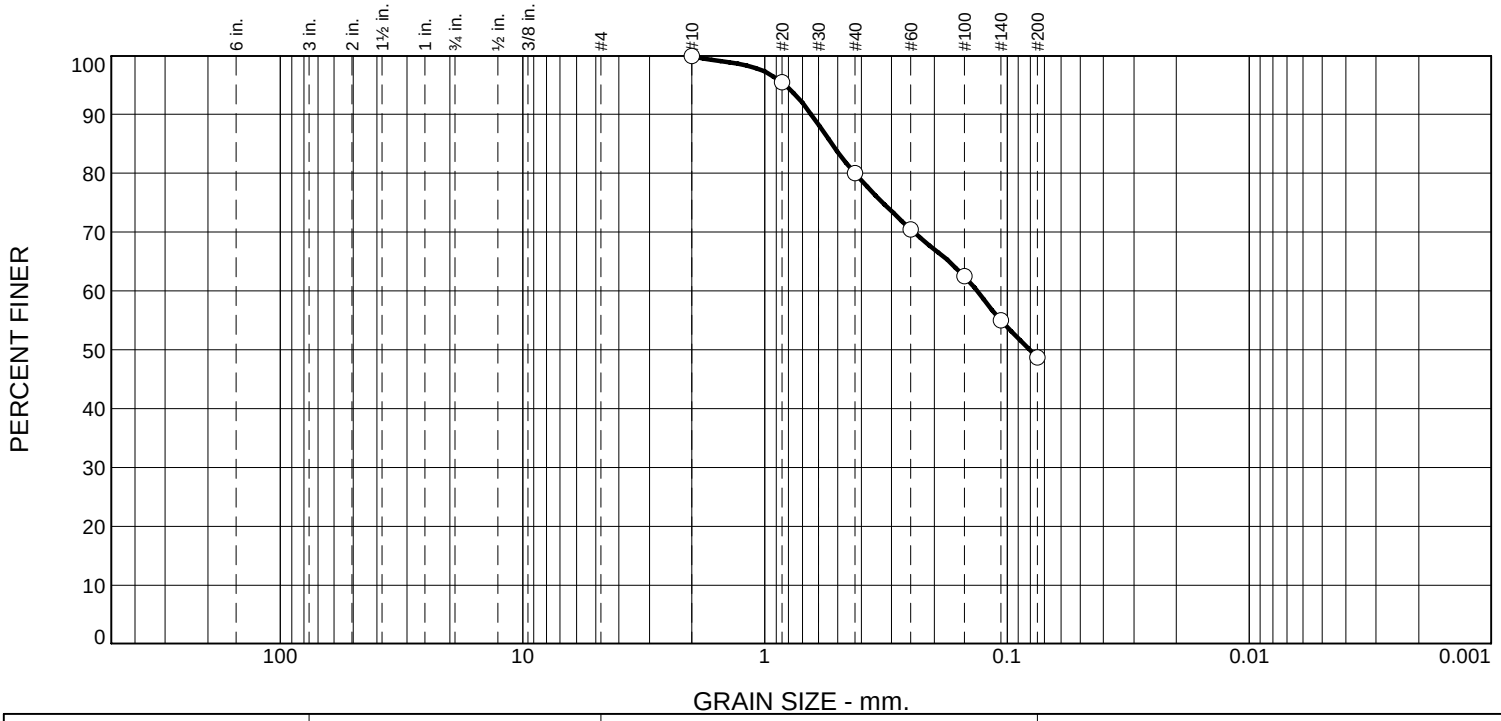
Source of Sample: PA23-1006S-WC
Sample Number: 5C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	20.0	31.2	48.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	95.5		
#40	80.0		
#60	70.5		
#100	62.5		
#140	55.0		
#200	48.8		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6440 D_{85}= 0.5275
D_{60}= 0.1330 D_{50}= 0.0805
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

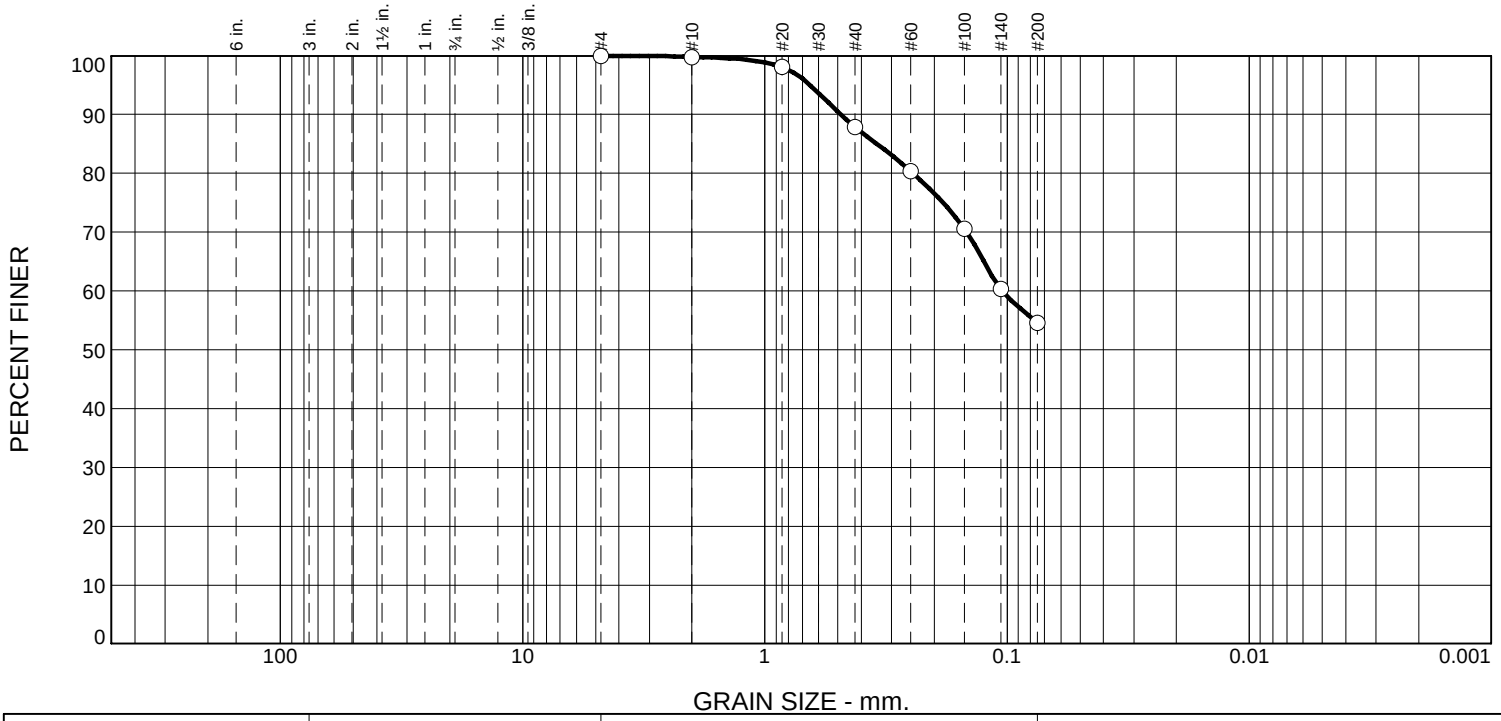
Source of Sample: PA23-1006S-WC
Sample Number: 5D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	12.0	33.2	54.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	98.1		
#40	87.8		
#60	80.4		
#100	70.6		
#140	60.3		
#200	54.6		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/17/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.4865 D_{85}= 0.3446
D_{60}= 0.1044 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

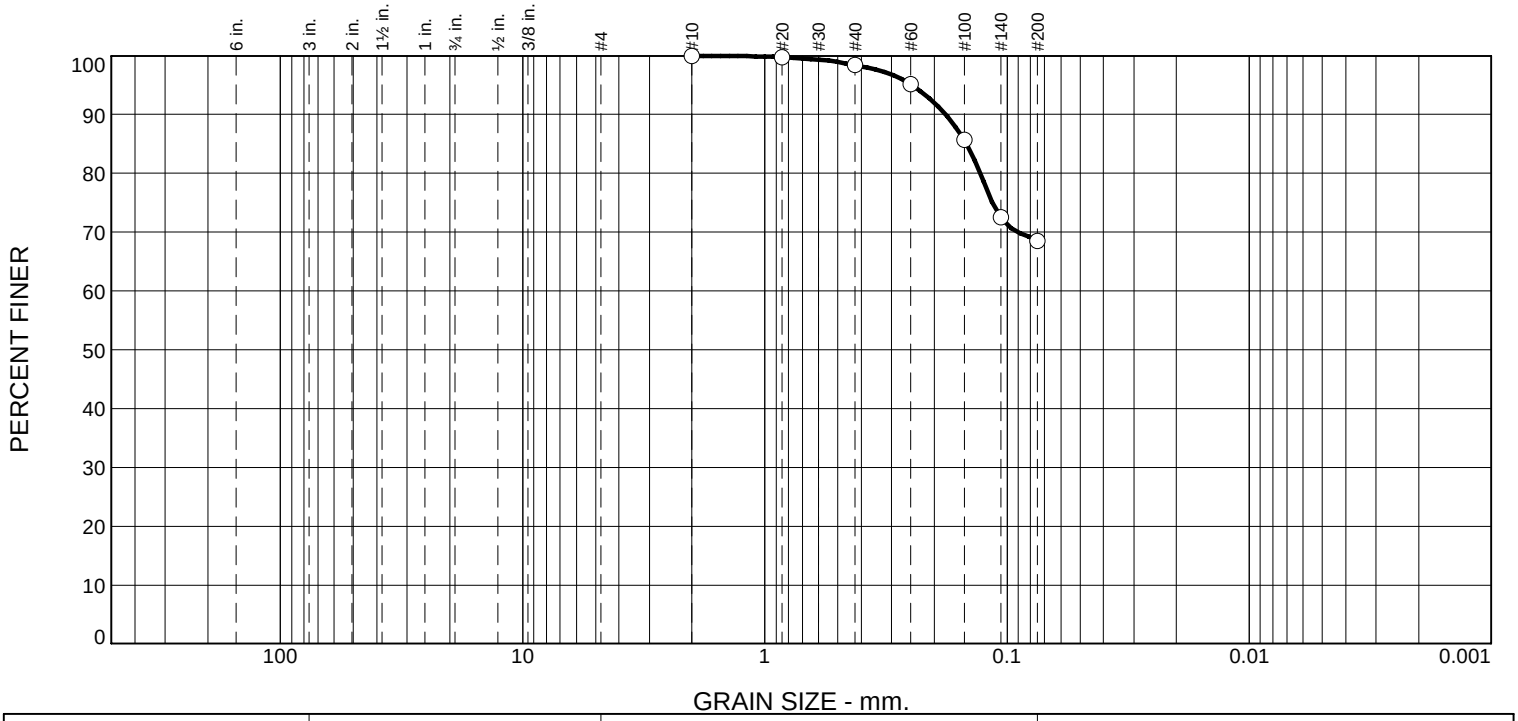
Source of Sample: PA23-1006S-WC
Sample Number: 5 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.6	29.9	68.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	98.4		
#60	95.1		
#100	85.7		
#140	72.5		
#200	68.5		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1793 D_{85}= 0.1465

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/24/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr. Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 6A

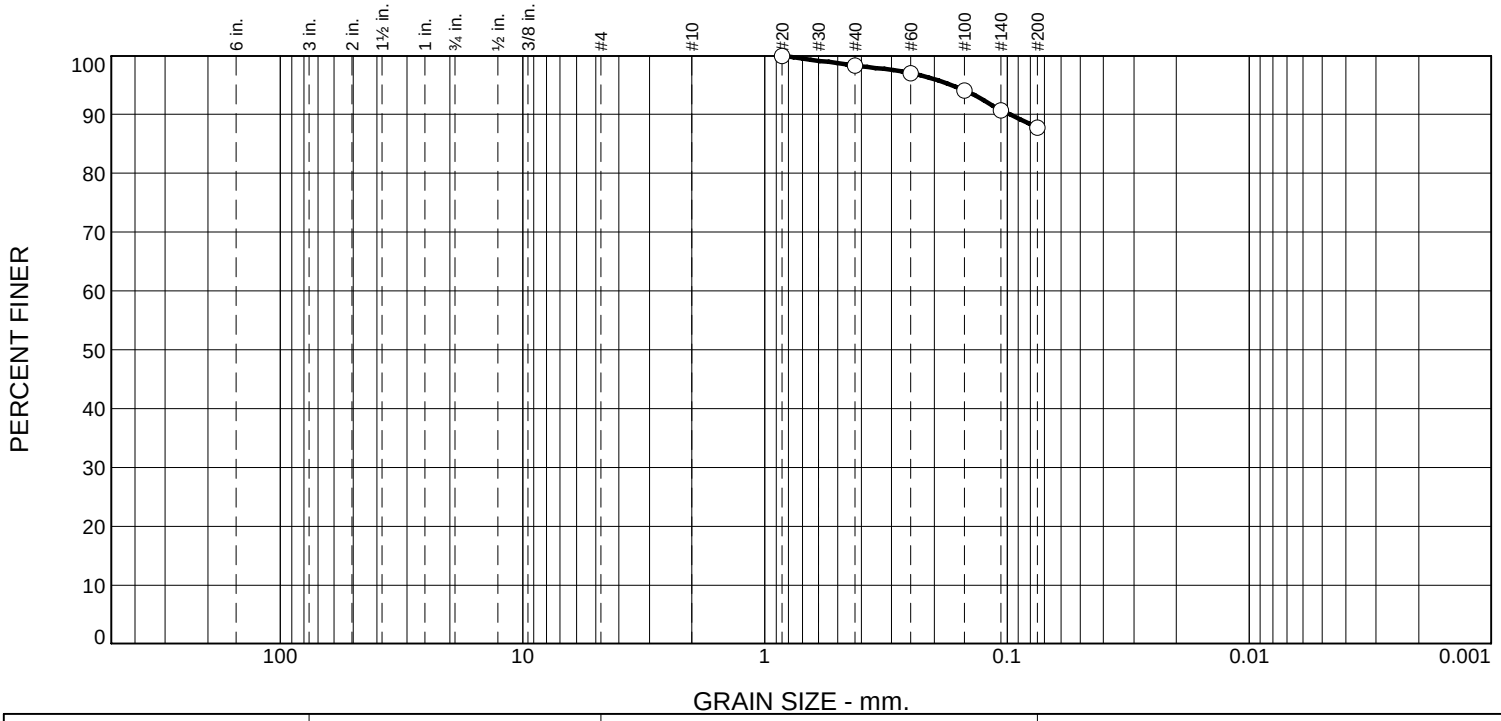
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.7	10.5	87.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	98.3		
#60	97.1		
#100	94.1		
#140	90.8		
#200	87.8		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.0973 D_{85}=

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/24/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr. Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 6B

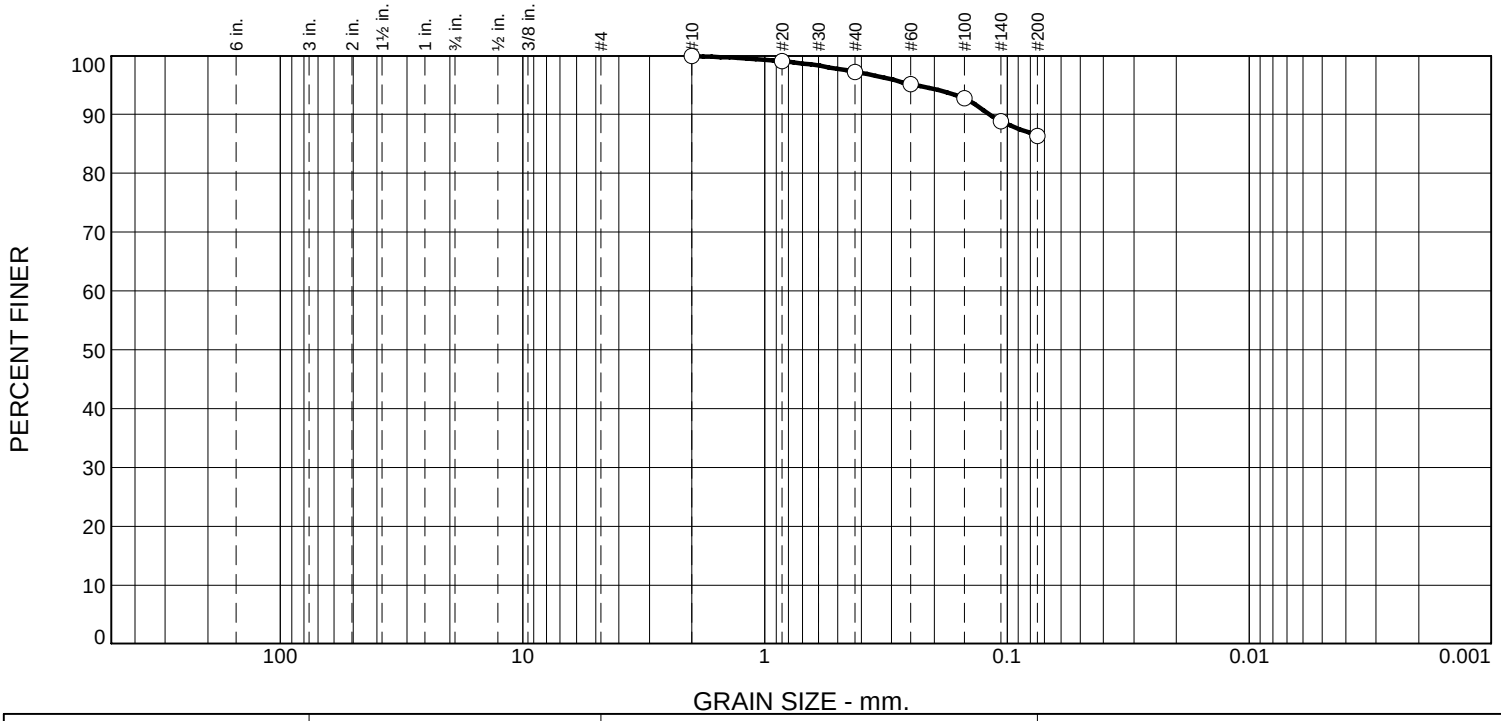
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.7	10.9	86.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.1		
#40	97.3		
#60	95.2		
#100	92.7		
#140	88.8		
#200	86.4		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1180 D_{85}=

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/24/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr. Engineer

Source of Sample: PA23-1006S-WC
Sample Number: 6C

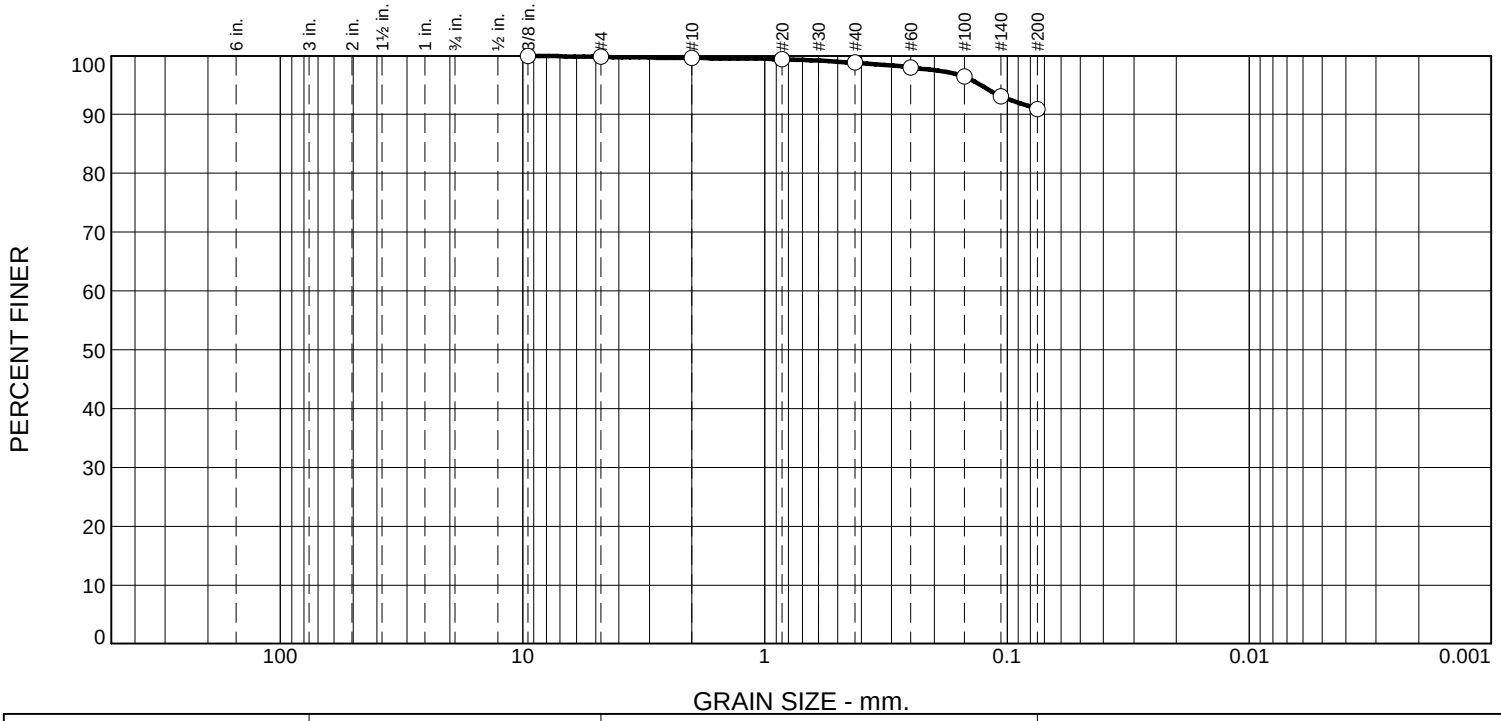
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	0.8	7.9	90.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.8		
#10	99.6		
#20	99.4		
#40	98.8		
#60	98.0		
#100	96.4		
#140	93.1		
#200	90.9		

* (no specification provided)

Material Description

Dark Grayish Brown with Black

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= D_{85}=

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/24/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr. Engineer

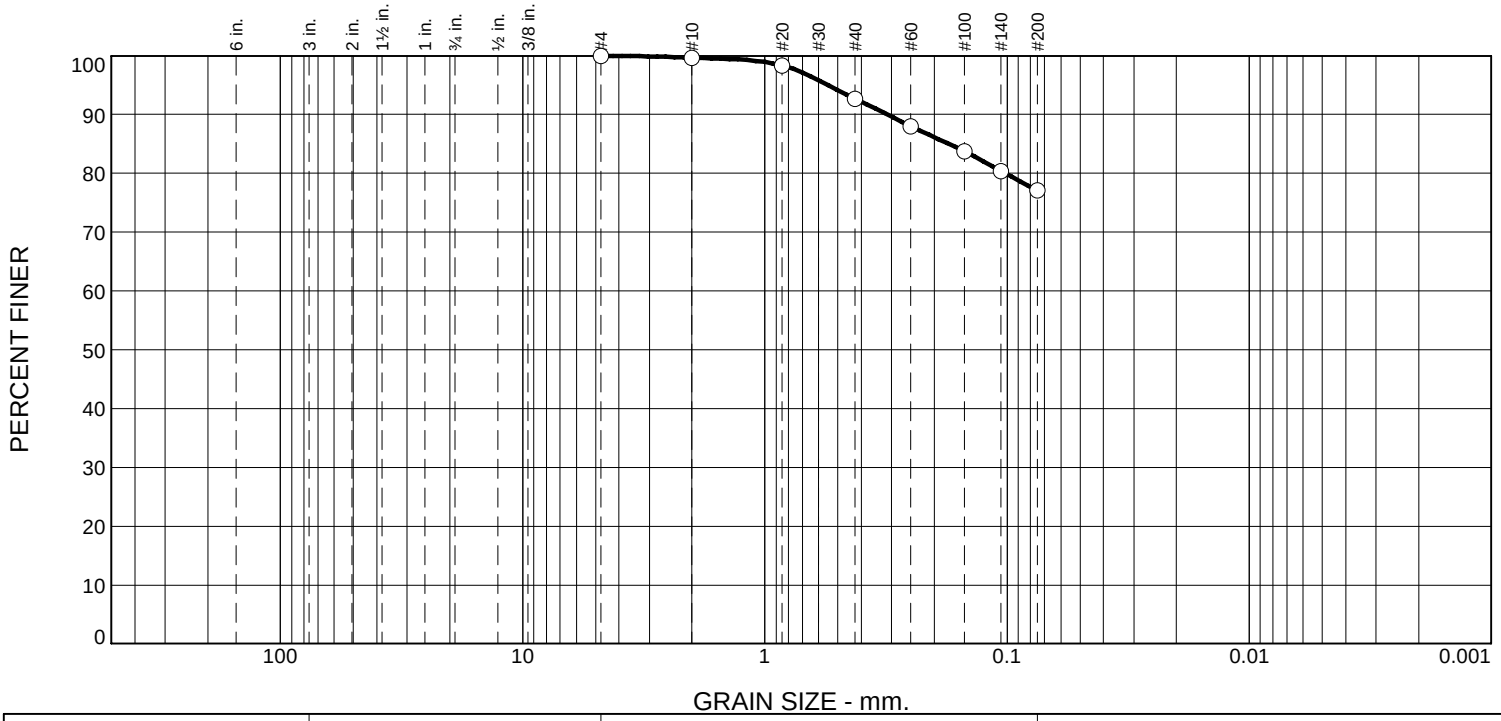
Source of Sample: PA23-1006S-WC
Sample Number: 6D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	7.0	15.6	77.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	98.3		
#40	92.7		
#60	88.0		
#100	83.7		
#140	80.4		
#200	77.1		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Sieve Test (ASTM D6913)

Test Date: 3/24/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.3125 D_{85}= 0.1737

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr. Engineer

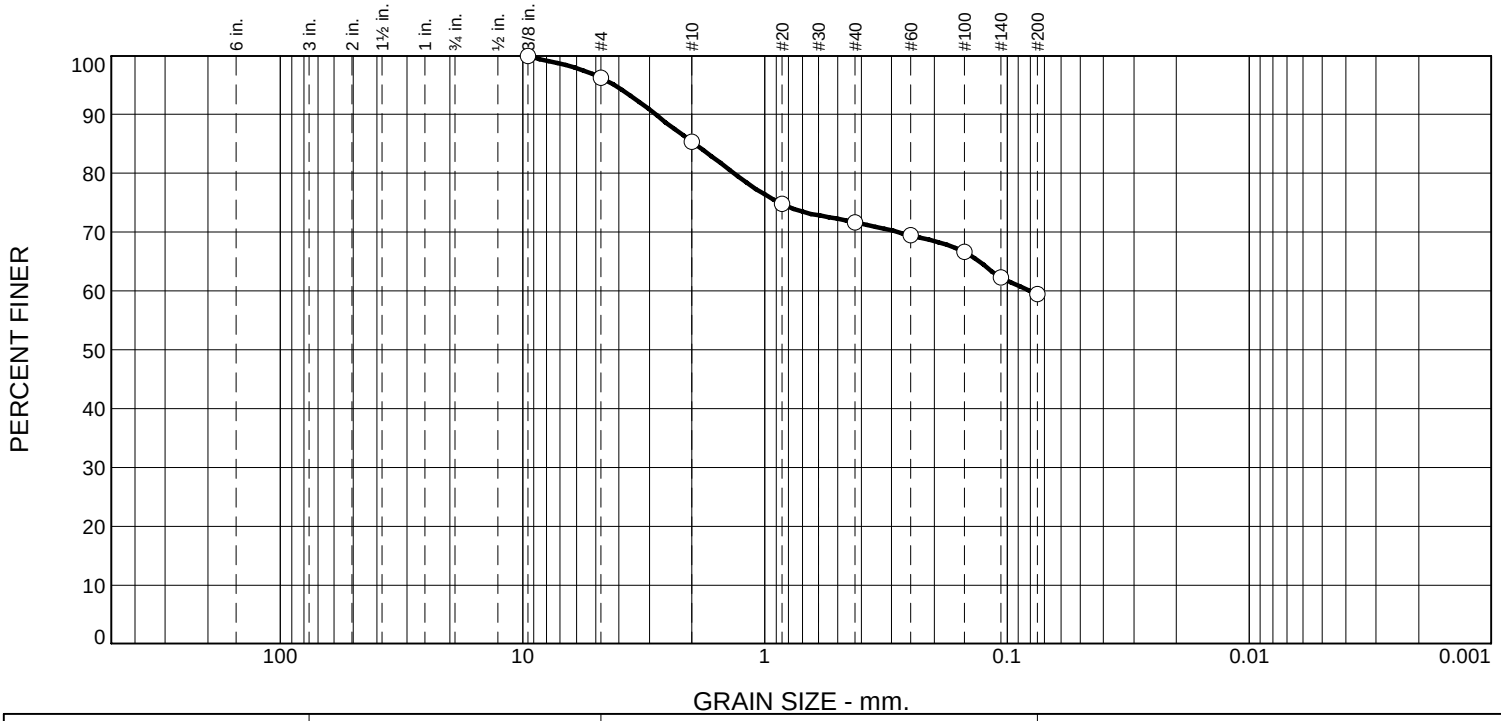
Source of Sample: PA23-1006S-WC
Sample Number: 6E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.7	10.9	13.7	12.2	59.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	96.3		
#10	85.4		
#20	74.8		
#40	71.7		
#60	69.5		
#100	66.7		
#140	62.3		
#200	59.5		

* (no specification provided)

Material Description

Dark Grayish Brown with Black

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 2.8256 D_{85}= 1.9440

D_{60}= 0.0800 D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/24/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr. Engineer

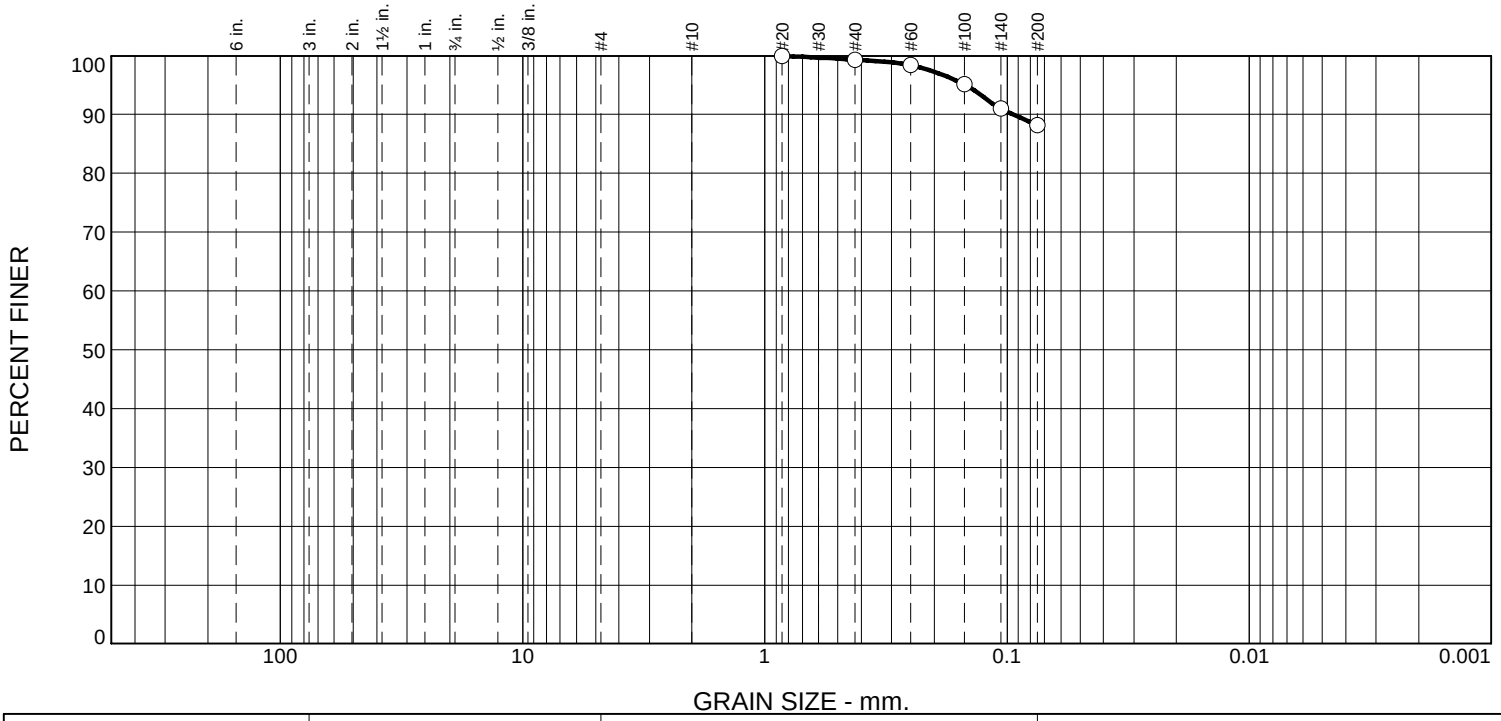
Source of Sample: PA23-1006S-WC
Sample Number: 6F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	11.1	88.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.3		
#60	98.4		
#100	95.2		
#140	91.0		
#200	88.2		

* (no specification provided)

Material Description

Dark Grayish Brown with Black

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.0948 D_{85}=

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/27/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr. Engineer

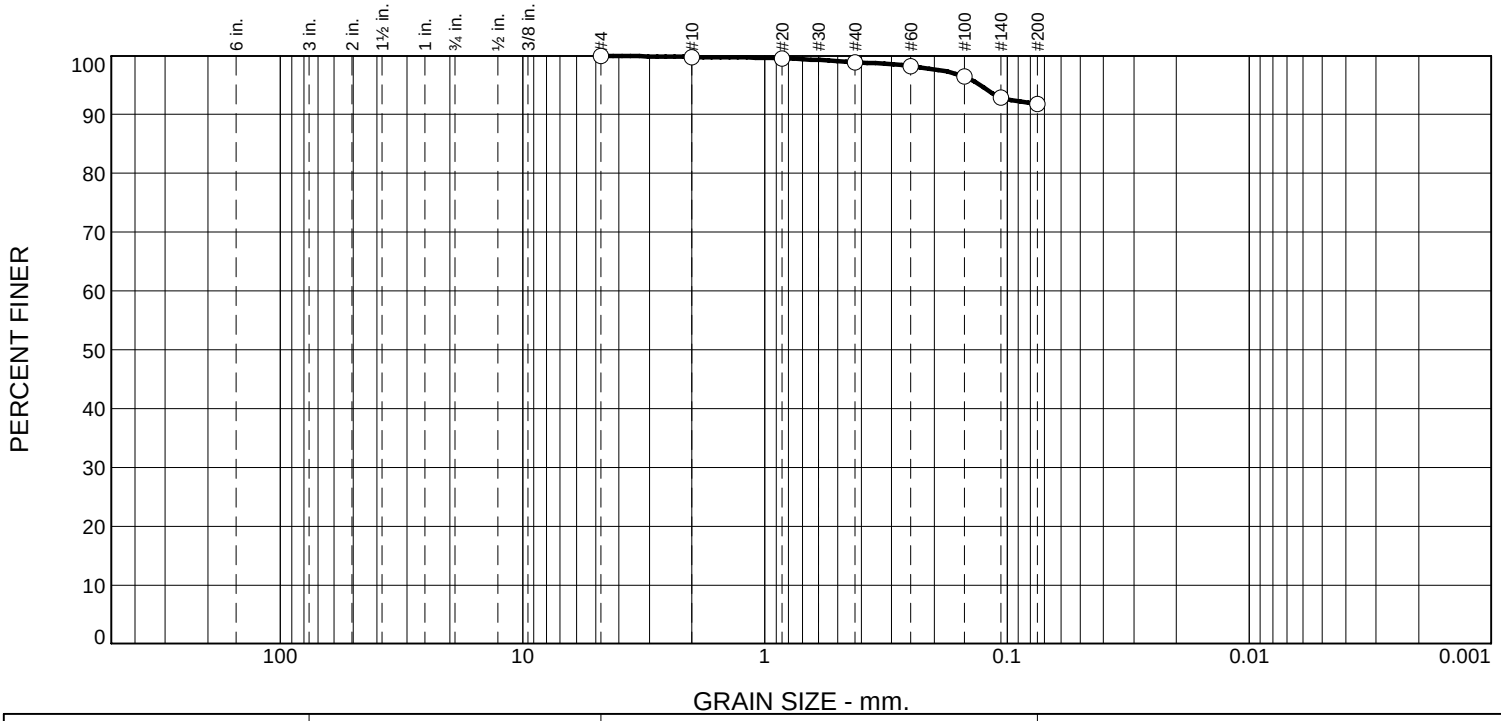
Source of Sample: PA23-1006S-WC
Sample Number: 6 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.9	7.1	91.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.6		
#40	98.9		
#60	98.2		
#100	96.5		
#140	92.9		
#200	91.8		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= D_{85}=

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/24/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1006S-WC

Sample Number: 7A

INSIGHT GROUP
A CHRISTOPHER COMPANY

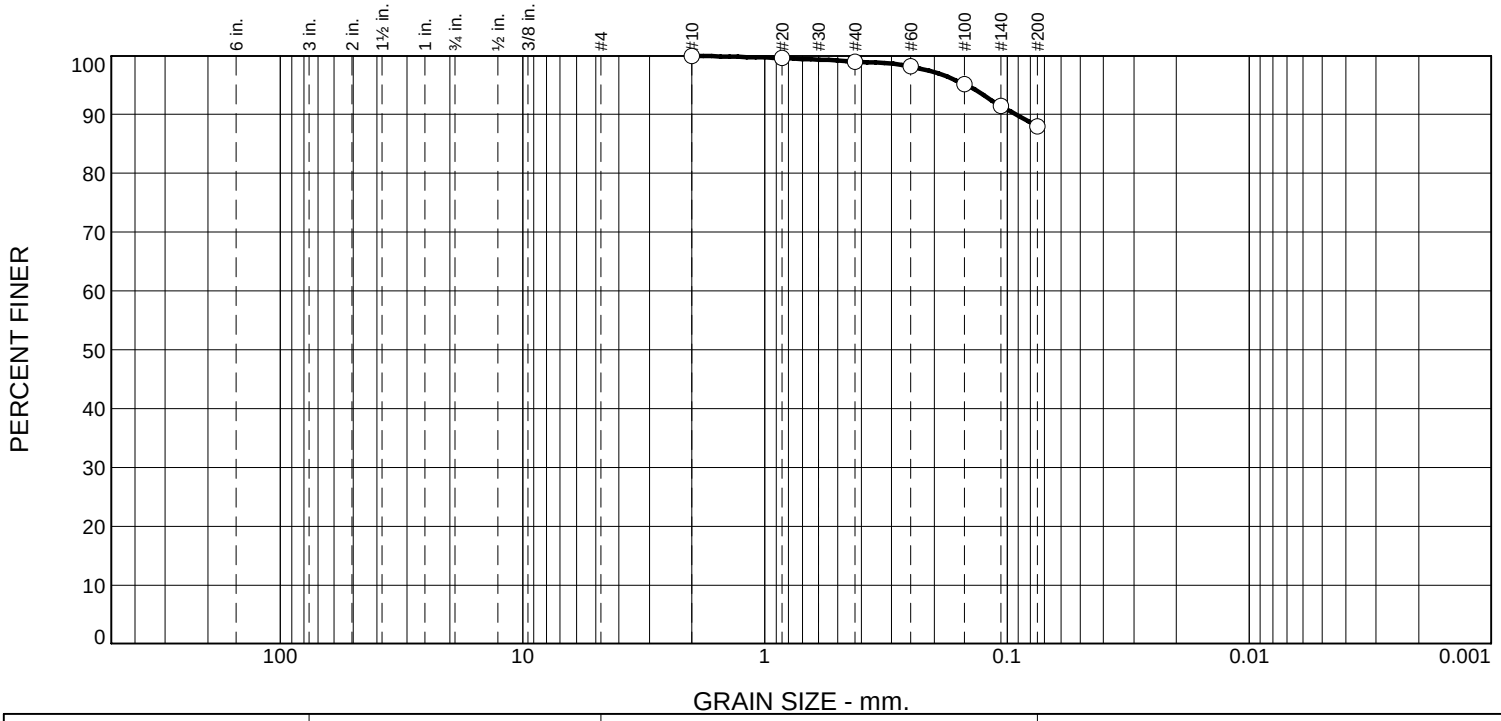
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.0	11.0	88.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.6		
#40	99.0		
#60	98.2		
#100	95.2		
#140	91.4		
#200	88.0		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.0920 D_{85}=

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/24/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

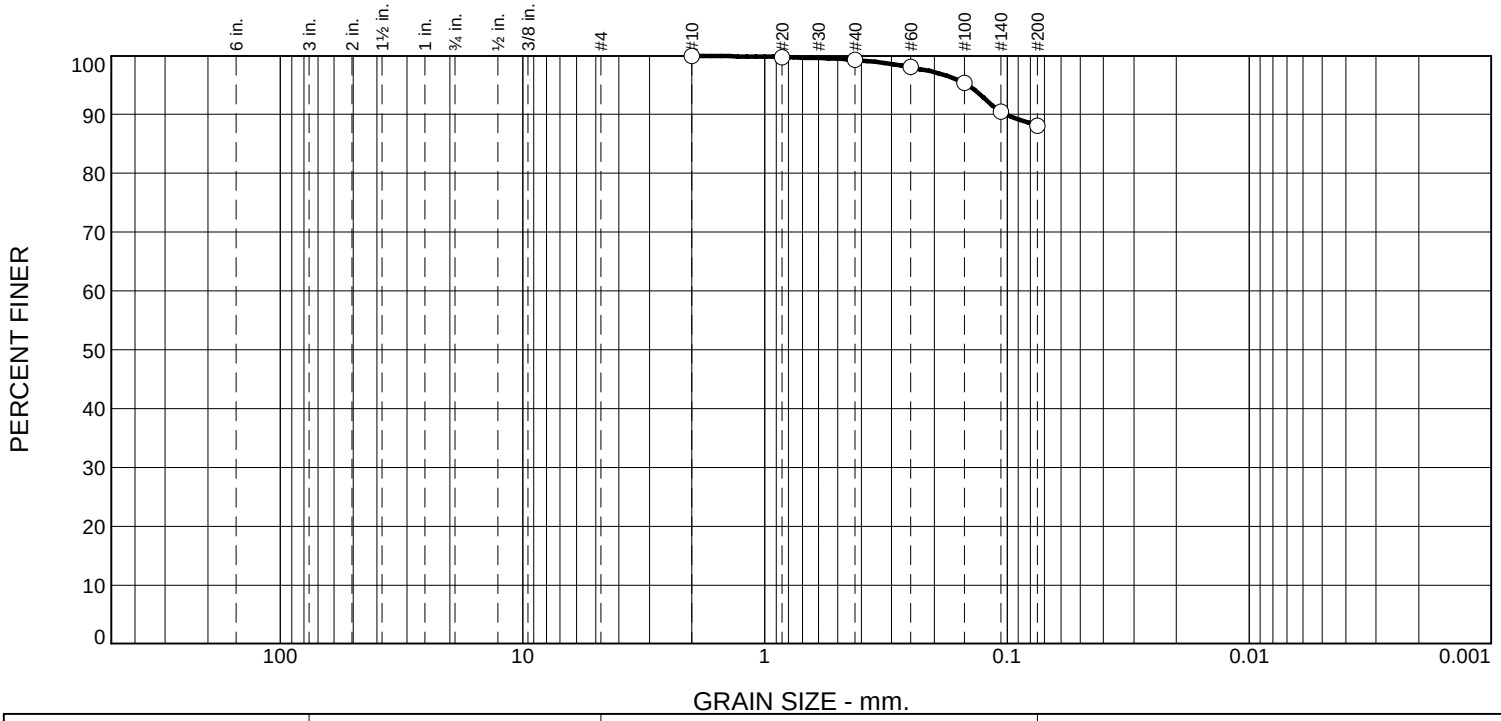
Source of Sample: PA23-1006S-WC
Sample Number: 7B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	11.2	88.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.3		
#60	98.1		
#100	95.4		
#140	90.5		
#200	88.1		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1005 D_{85}=

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/24/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

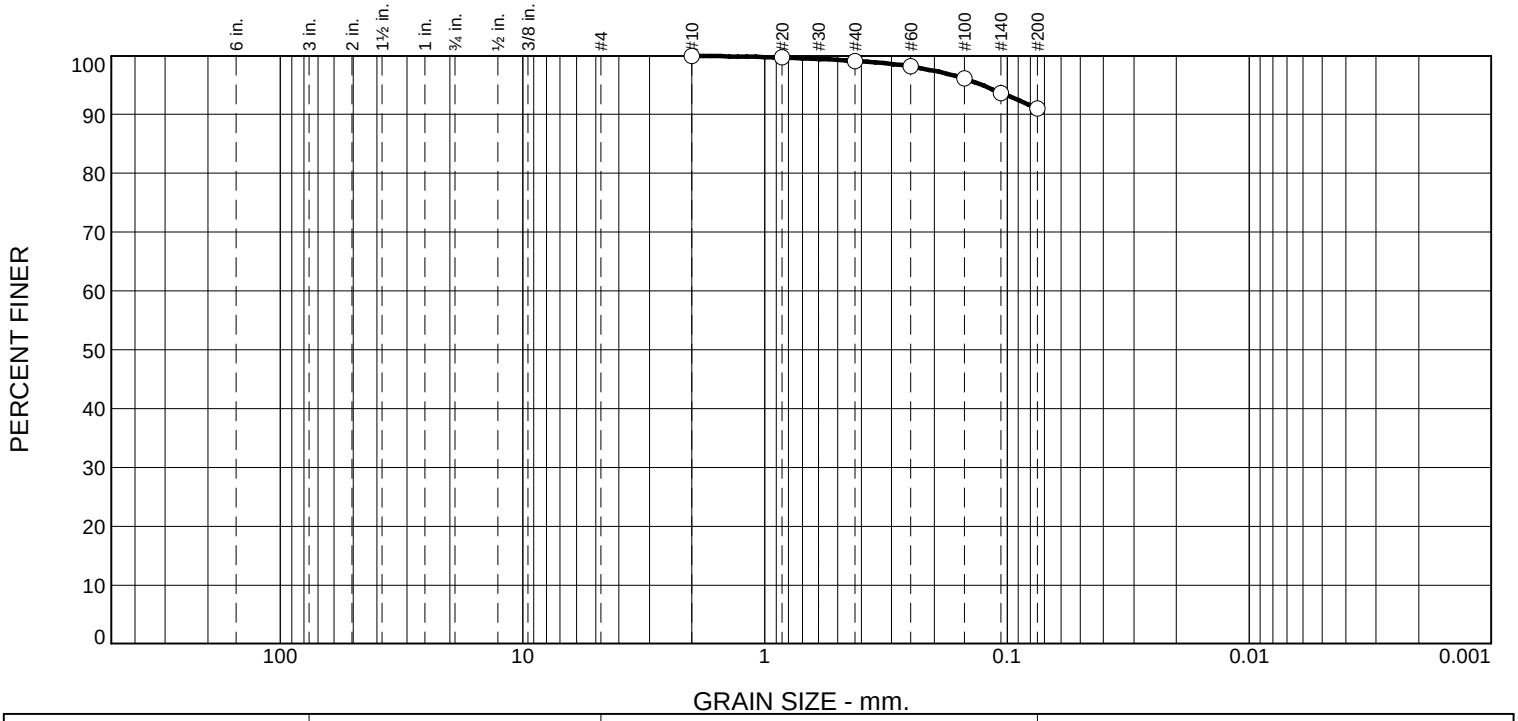
Source of Sample: PA23-1006S-WC
Sample Number: 7C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	8.1	91.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	99.1		
#60	98.2		
#100	96.1		
#140	93.7		
#200	91.0		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= D_{85}=

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/24/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1006S-WC

Sample Number: 7D

INSIGHT GROUP
A CHRISTOPHER COMPANY

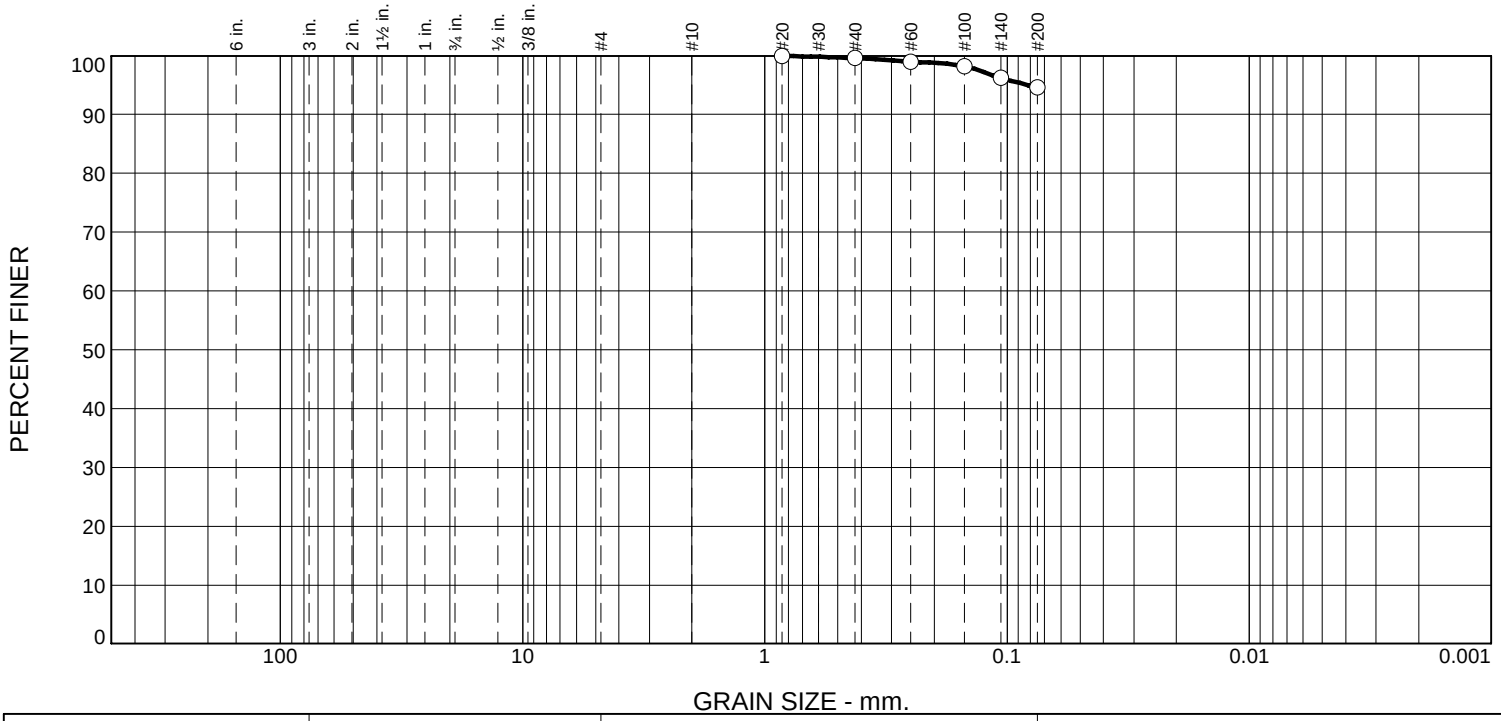
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	5.0	94.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.6		
#60	99.0		
#100	98.2		
#140	96.2		
#200	94.6		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= D_{85}=

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/24/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

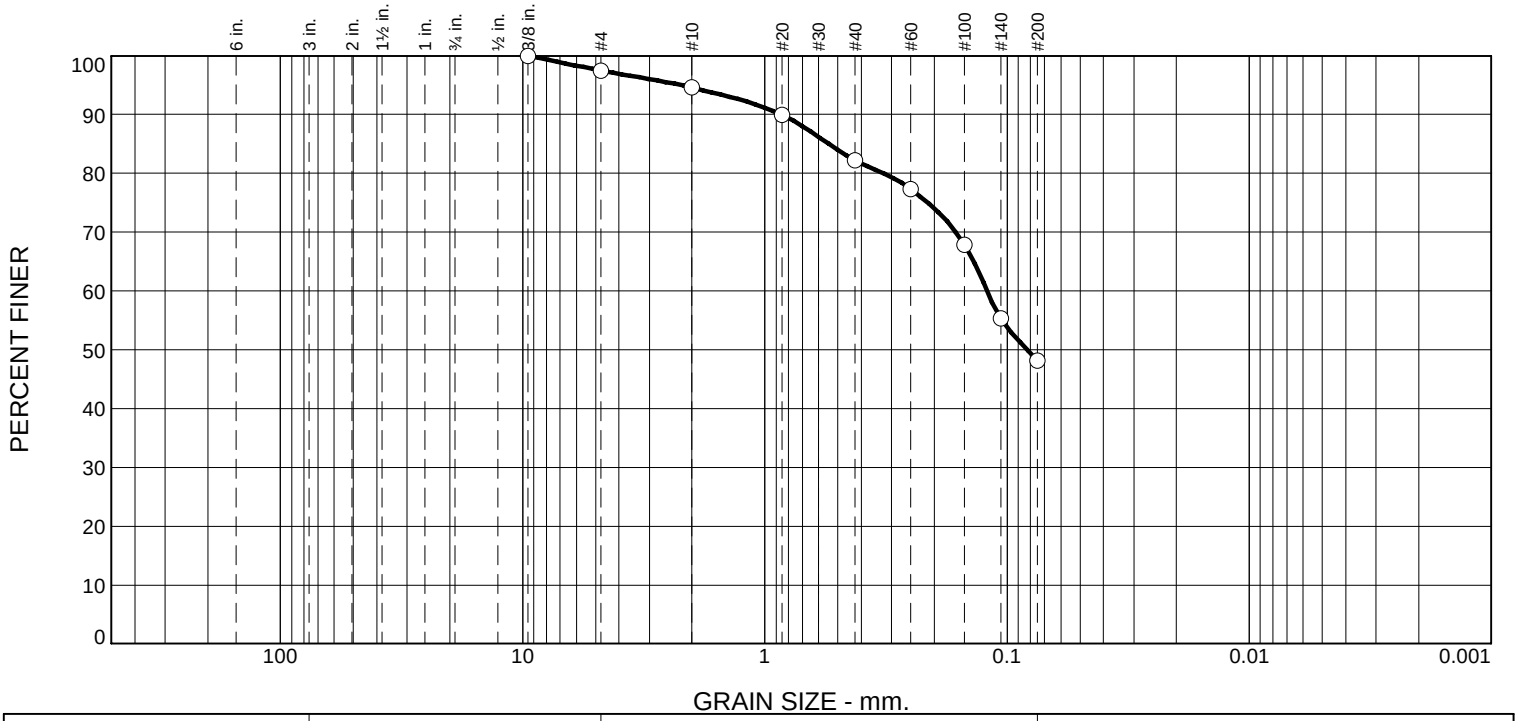
Source of Sample: PA23-1006S-WC
Sample Number: 7 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.5	2.9	12.4	34.0	48.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	97.5		
#10	94.6		
#20	89.9		
#40	82.2		
#60	77.4		
#100	67.9		
#140	55.3		
#200	48.2		

* (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.8560 D_{85}= 0.5432

D_{60}= 0.1210 D_{50}= 0.0826

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1006S-WC

Sample Number: 8A

INSIGHT GROUP
A CHRISTOPHER COMPANY

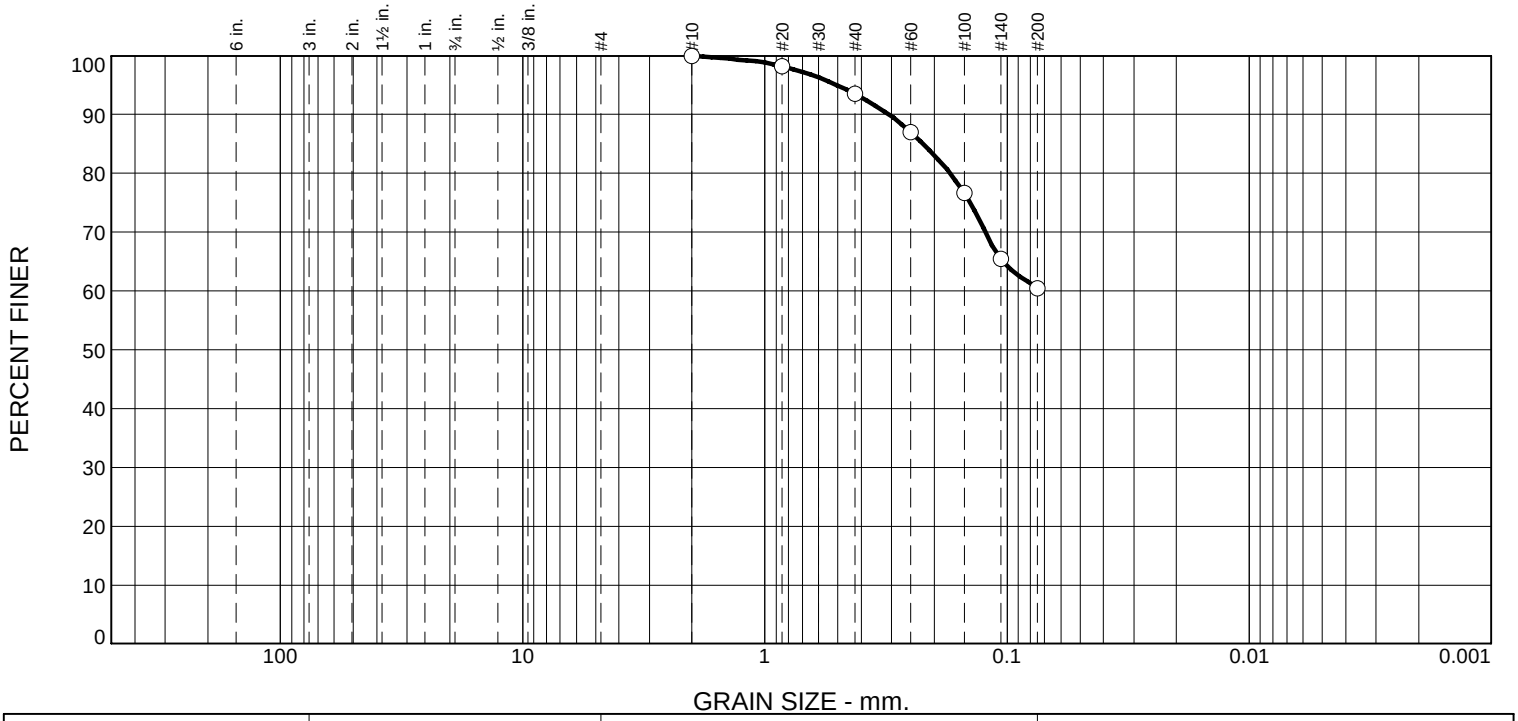
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.5	33.1	60.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.2		
#40	93.5		
#60	87.0		
#100	76.7		
#140	65.4		
#200	60.4		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3080 D_{85}= 0.2219
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

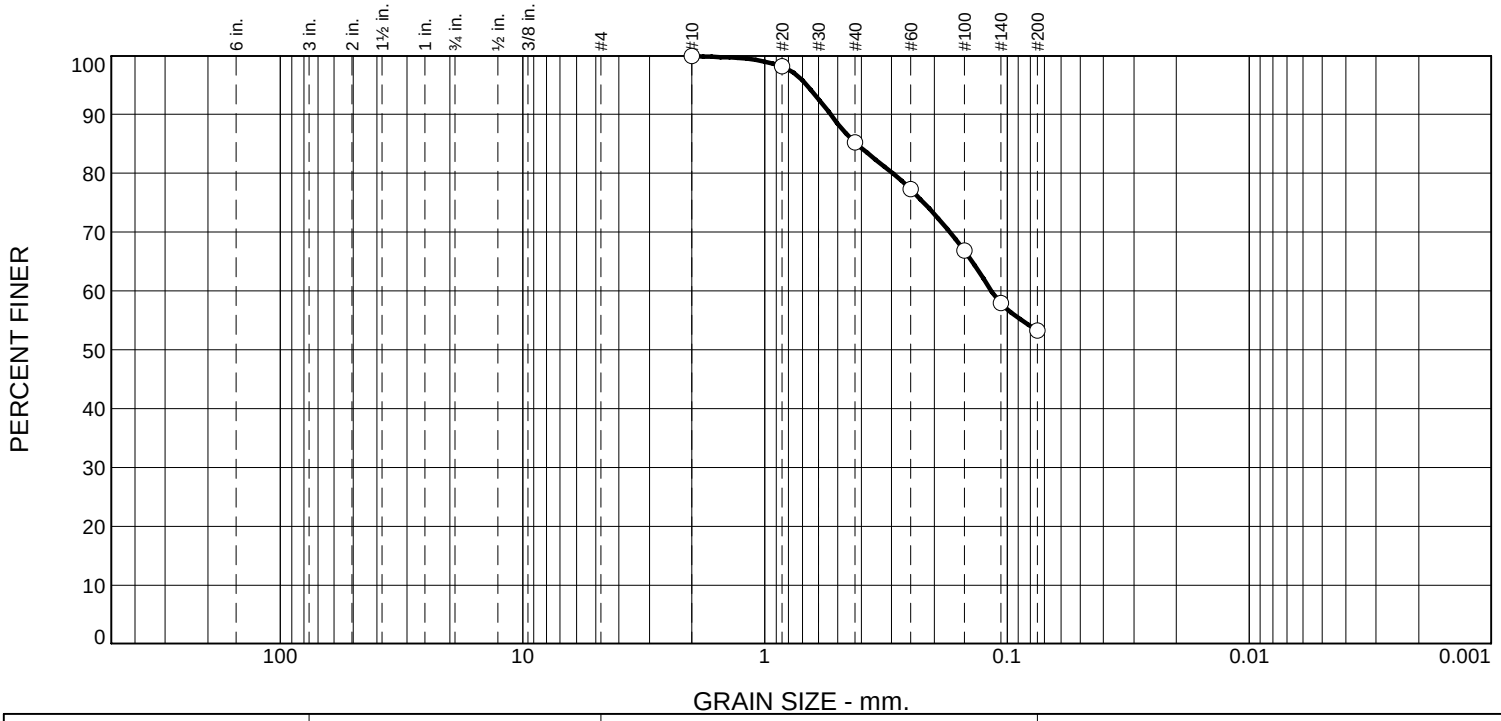
Source of Sample: PA23-1006S-WC
Sample Number: 8B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	14.7	32.1	53.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.2		
#40	85.3		
#60	77.3		
#100	66.9		
#140	57.9		
#200	53.2		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.5351 D_{85}= 0.4186
D_{60}= 0.1160 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

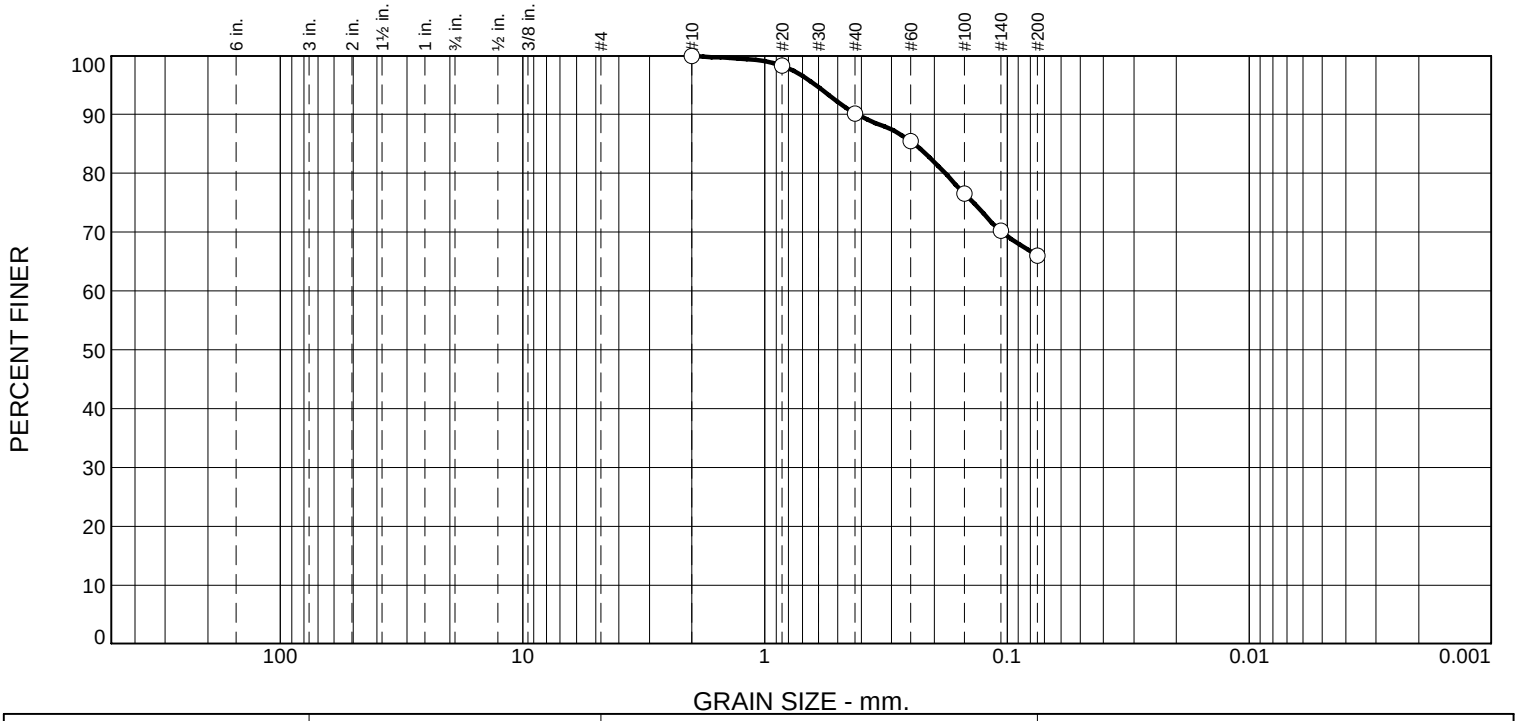
Source of Sample: PA23-1006S-WC
Sample Number: 8C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	9.8	24.2	66.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.3		
#40	90.2		
#60	85.5		
#100	76.6		
#140	70.2		
#200	66.0		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4160 D_{85}= 0.2405
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

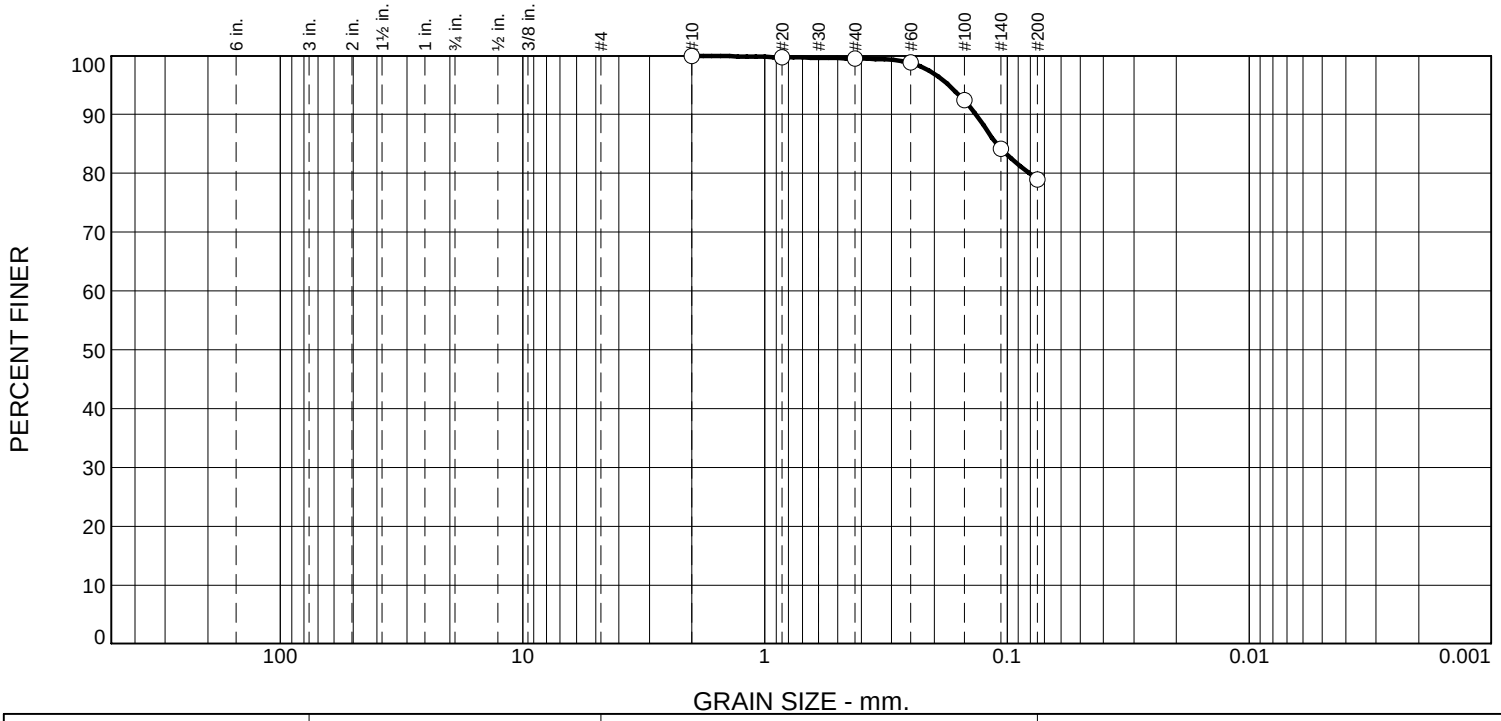
Source of Sample: PA23-1006S-WC
Sample Number: 8D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	20.5	79.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.5		
#60	98.8		
#100	92.4		
#140	84.2		
#200	79.0		

* (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1344 D_{85}= 0.1103
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

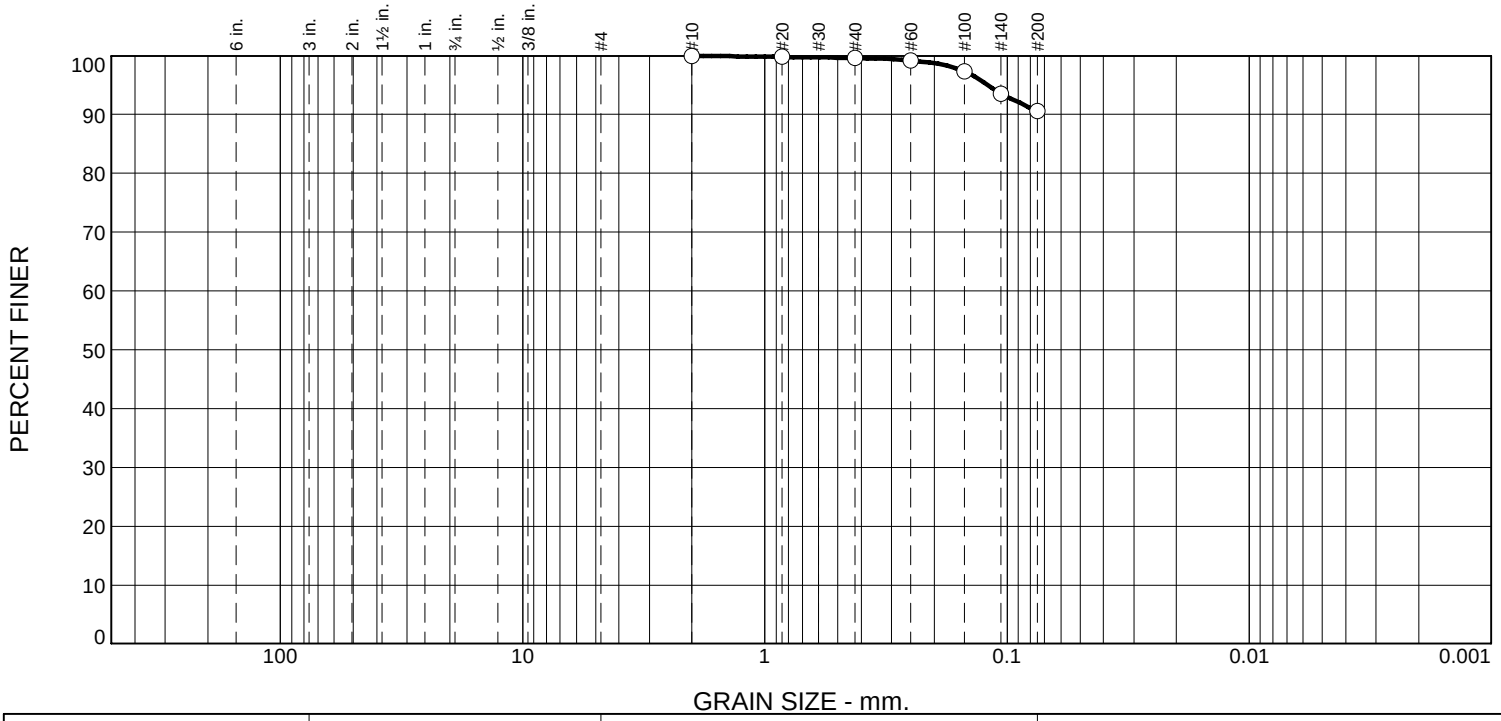
Source of Sample: PA23-1006S-WC
Sample Number: 8 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	9.0	90.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.6		
#60	99.2		
#100	97.4		
#140	93.6		
#200	90.6		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

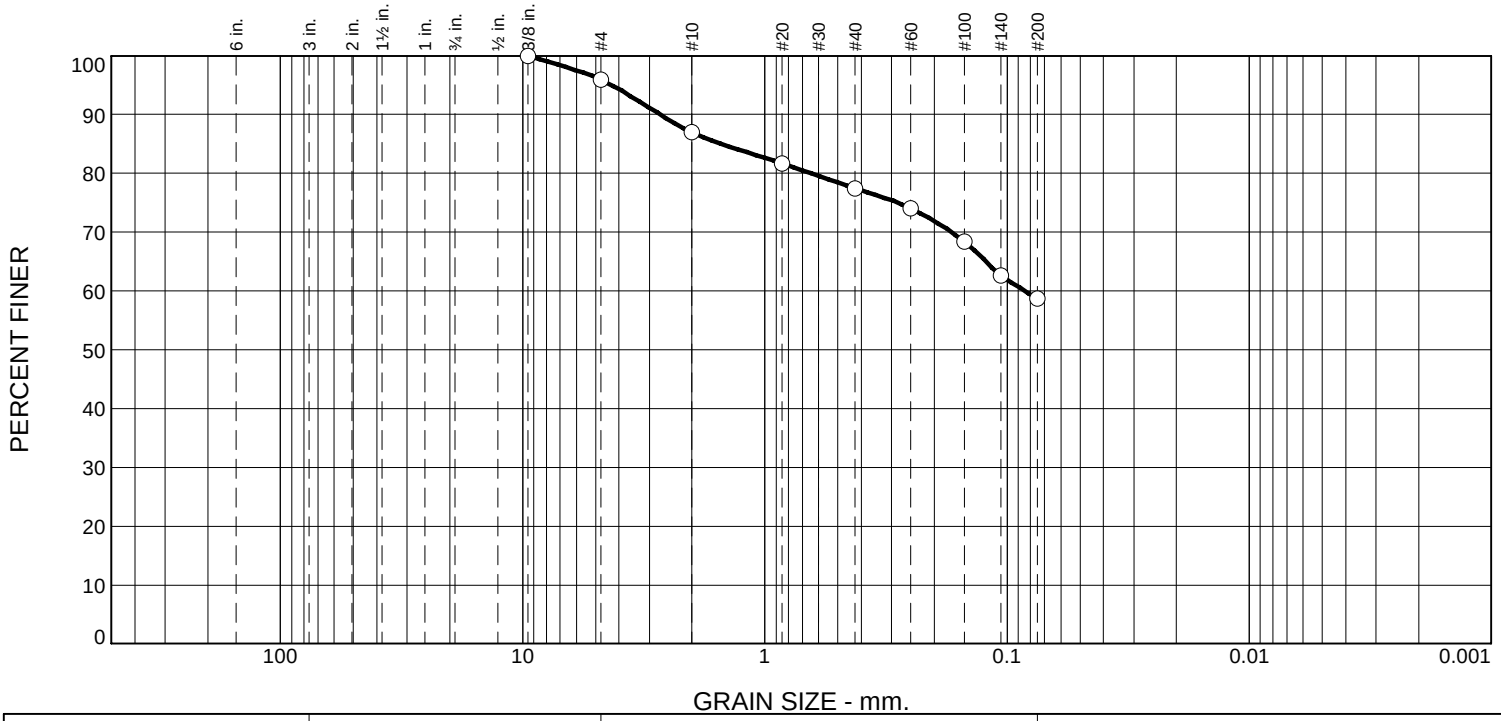
Source of Sample: PA23-1006S-WC
Sample Number: 9A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.1	8.9	9.5	18.8	58.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	95.9		
#10	87.0		
#20	81.7		
#40	77.5		
#60	74.1		
#100	68.4		
#140	62.7		
#200	58.7		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 2.7117 D_{85}= 1.5166
D_{60}= 0.0844 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

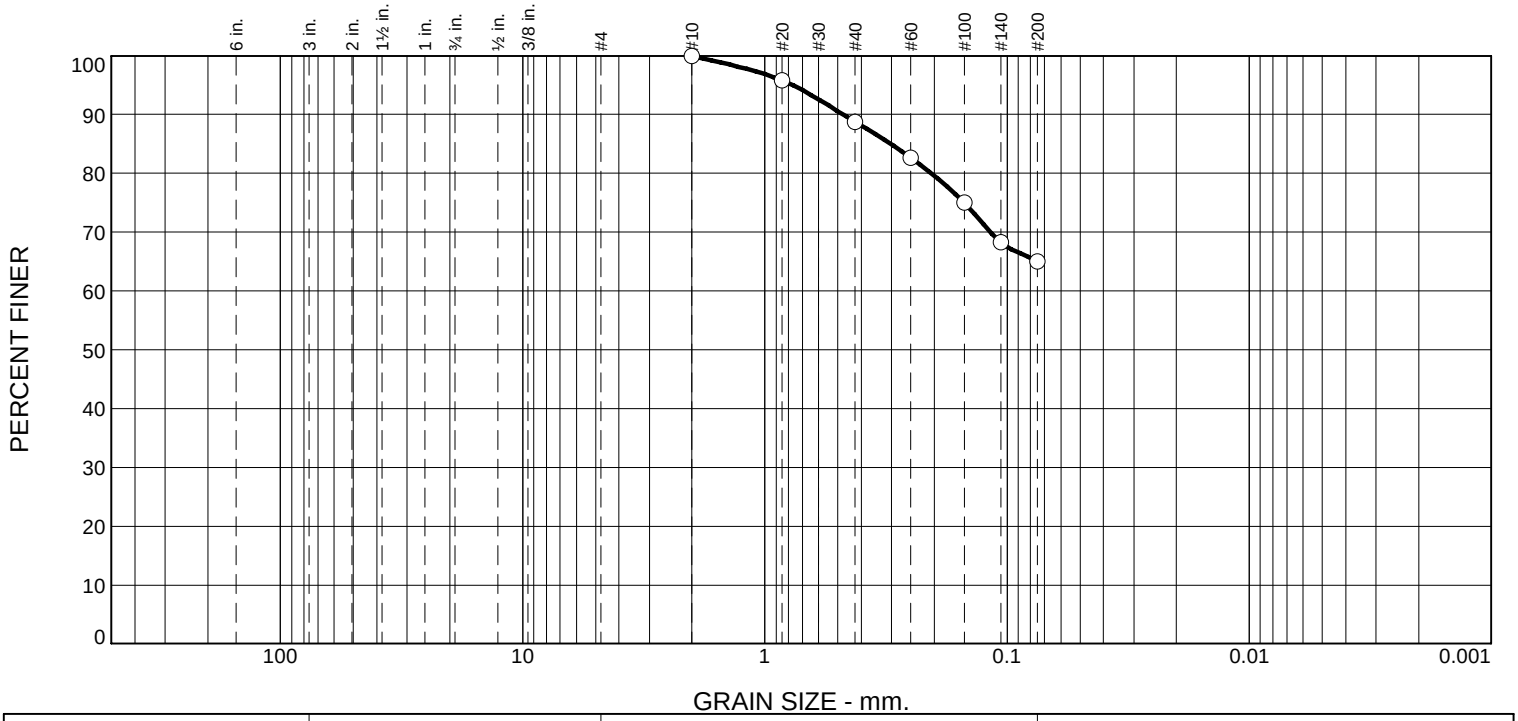
Source of Sample: PA23-1006S-WC
Sample Number: 9B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	11.2	23.7	65.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	95.8		
#40	88.8		
#60	82.7		
#100	75.0		
#140	68.3		
#200	65.1		

* (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4748 D_{85}= 0.3012
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

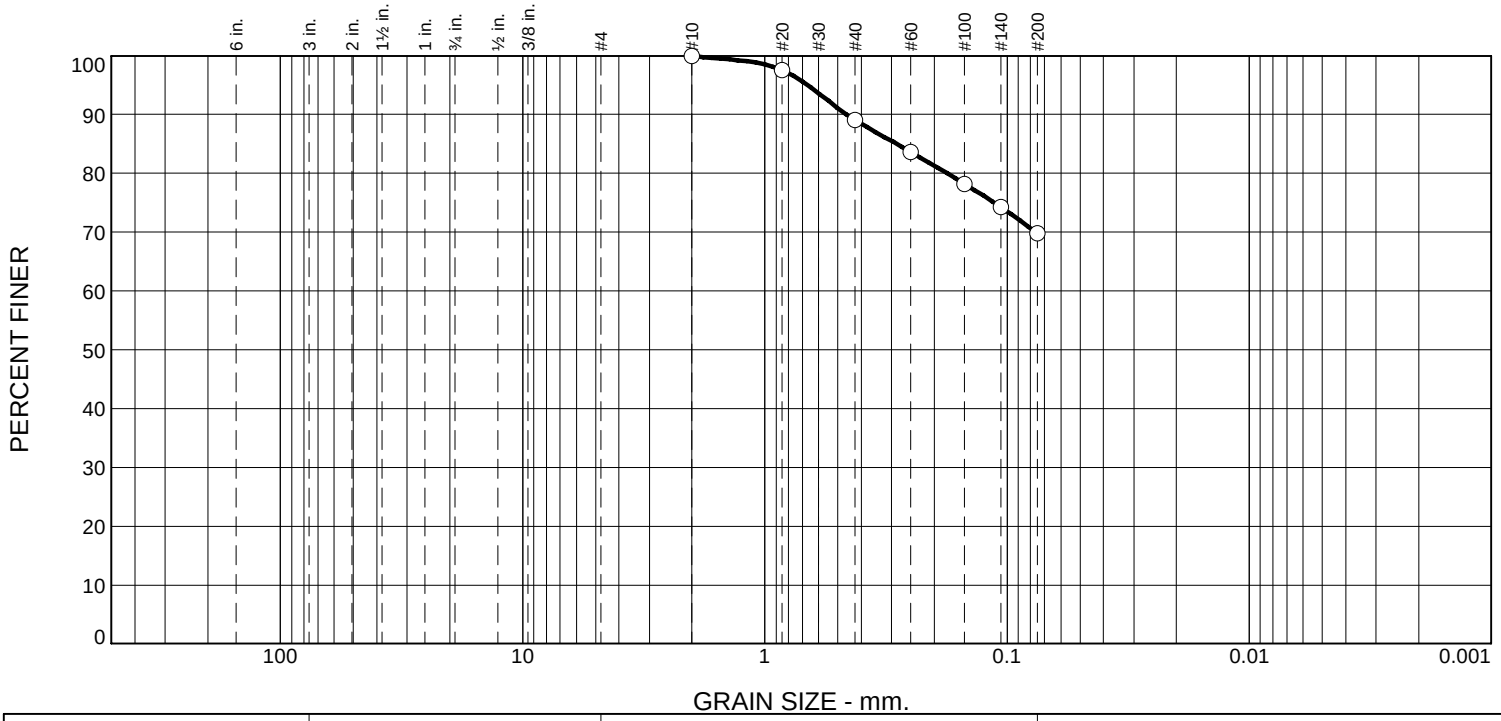
Source of Sample: PA23-1006S-WC
Sample Number: 9C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	10.9	19.3	69.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.5		
#40	89.1		
#60	83.7		
#100	78.2		
#140	74.3		
#200	69.8		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4582 D_{85}= 0.2850
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

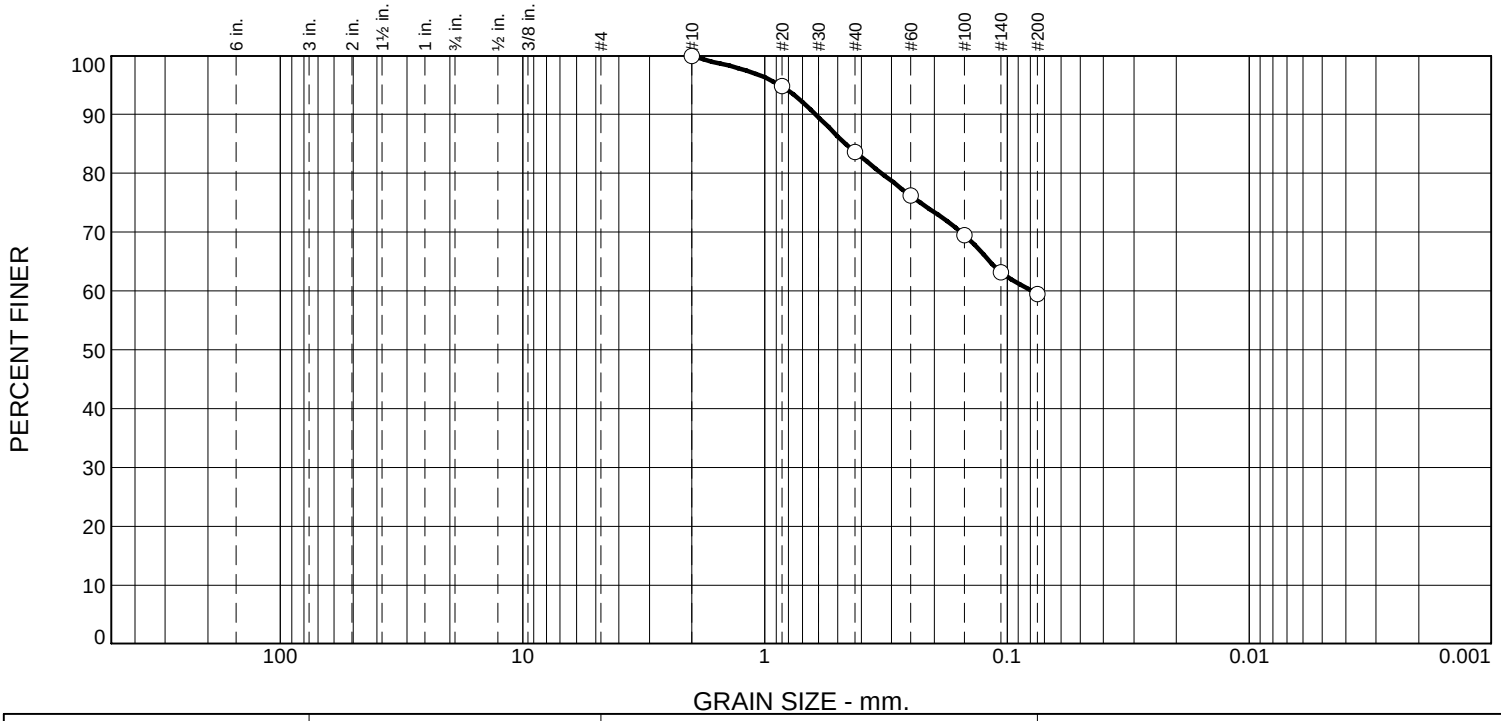
Source of Sample: PA23-1006S-WC
Sample Number: 9D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	16.4	24.1	59.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	94.8		
#40	83.6		
#60	76.2		
#100	69.5		
#140	63.2		
#200	59.5		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6162 D_{85}= 0.4630
D_{60}= 0.0789 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/28/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

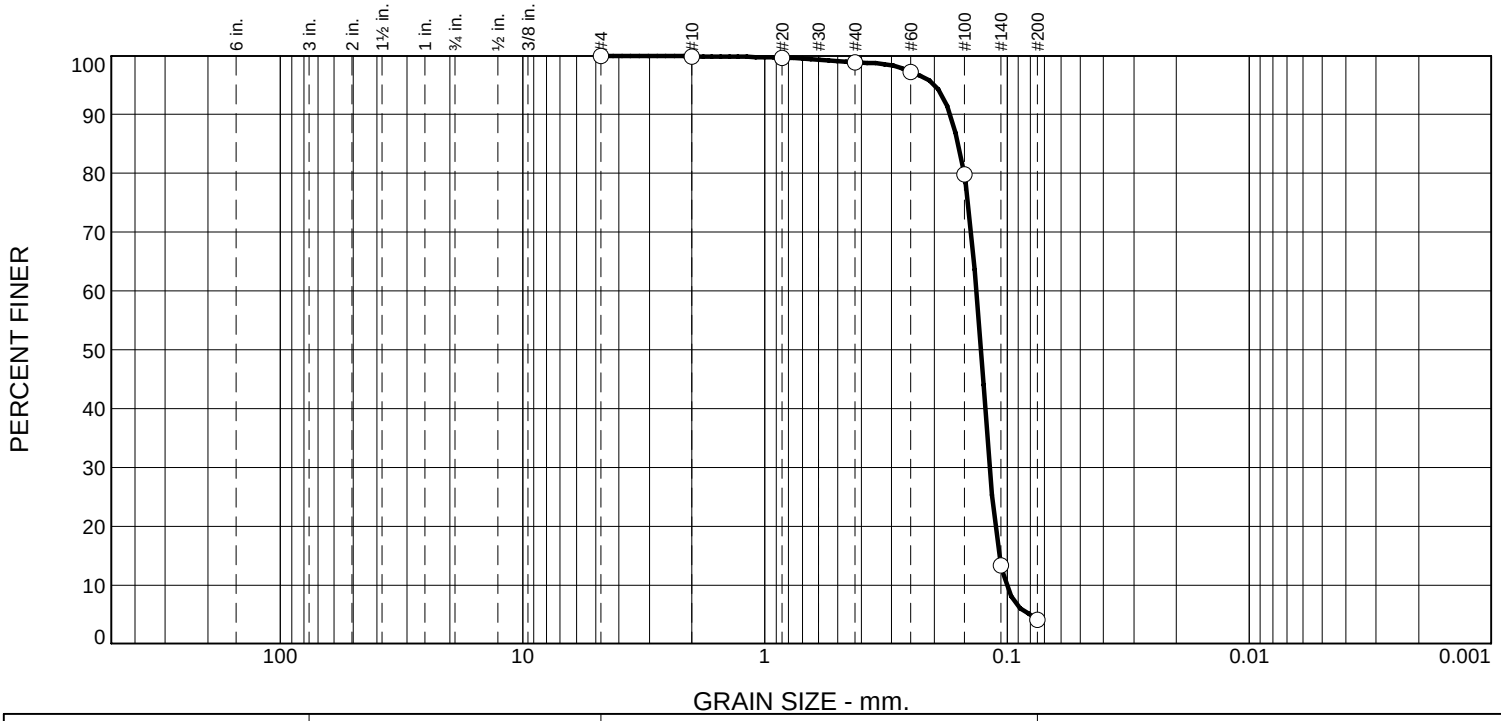
Source of Sample: PA23-1006S-WC
Sample Number: 9 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.0	94.8	4.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.9		
#60	97.3		
#100	79.8		
#140	13.4		
#200	4.1		

* (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1718 D_{85}= 0.1590
D_{60}= 0.1339 D_{50}= 0.1284
D_{30}= 0.1179 D_{15}= 0.1079
D_{10}= 0.1006
C_u= 1.33 C_c= 1.03

USCS (ASTM D2487)
SP

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

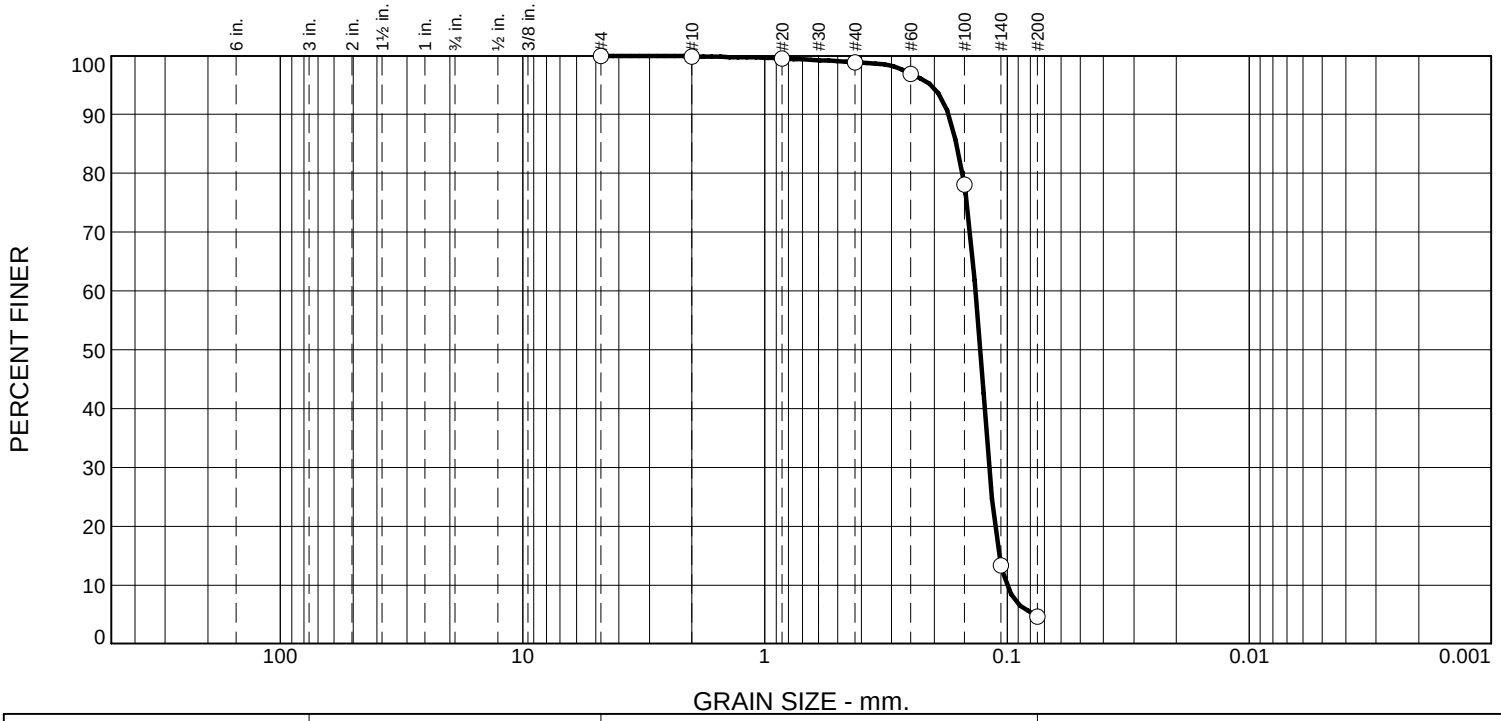
Source of Sample: PA23-1028S W-C
Sample Number: 1A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.0	94.3	4.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.5		
#40	98.9		
#60	96.9		
#100	78.1		
#140	13.4		
#200	4.6		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1748 D_{85}= 0.1616
D_{60}= 0.1350 D_{50}= 0.1292
D_{30}= 0.1184 D_{15}= 0.1079
D_{10}= 0.1002
C_u= 1.35 C_c= 1.04

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

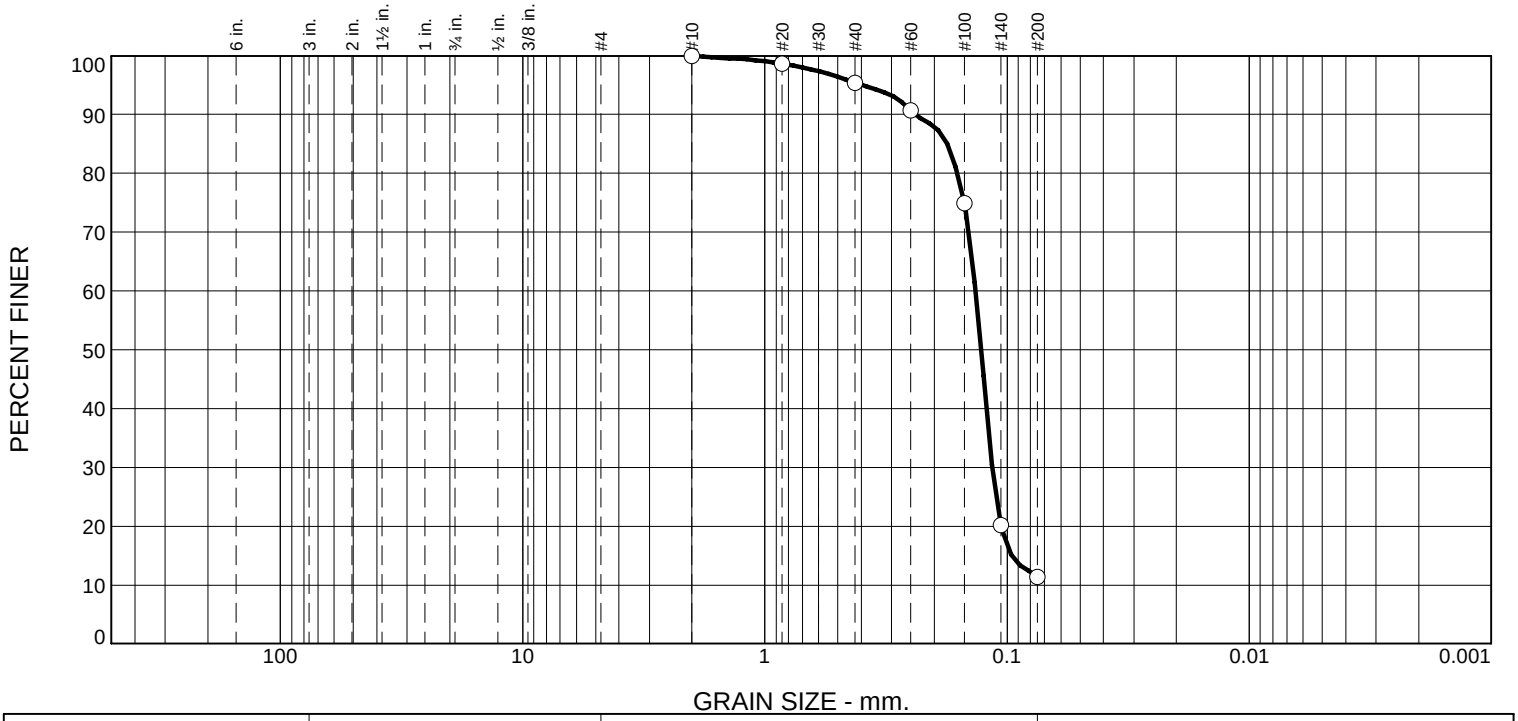
Source of Sample: PA23-1028S W-C
Sample Number: 1B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.6	84.1	11.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.7		
#40	95.4		
#60	90.7		
#100	74.9		
#140	20.2		
#200	11.3		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2396 D_{85}= 0.1771
D_{60}= 0.1351 D_{50}= 0.1281
D_{30}= 0.1150 D_{15}= 0.0956
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

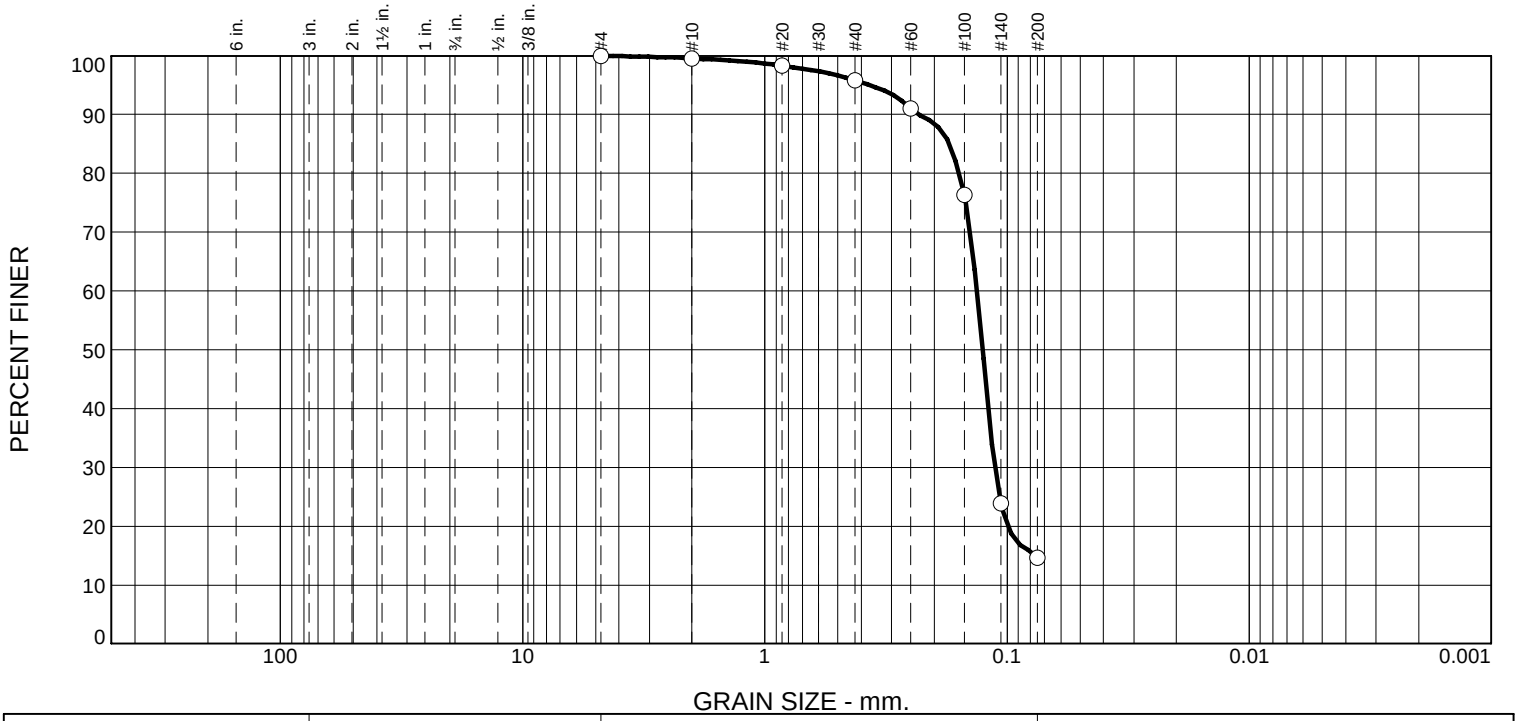
Source of Sample: PA23-1028S W-C
Sample Number: 1C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	3.7	81.1	14.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.5		
#20	98.3		
#40	95.8		
#60	91.1		
#100	76.4		
#140	23.8		
#200	14.7		

· (no specification provided)

Material Description

Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2310 D_{85}= 0.1733

D_{60}= 0.1333 D_{50}= 0.1263

D_{30}= 0.1122 D_{15}= 0.0761

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 1D

INSIGHT GROUP
A CHRISTOPHER COMPANY

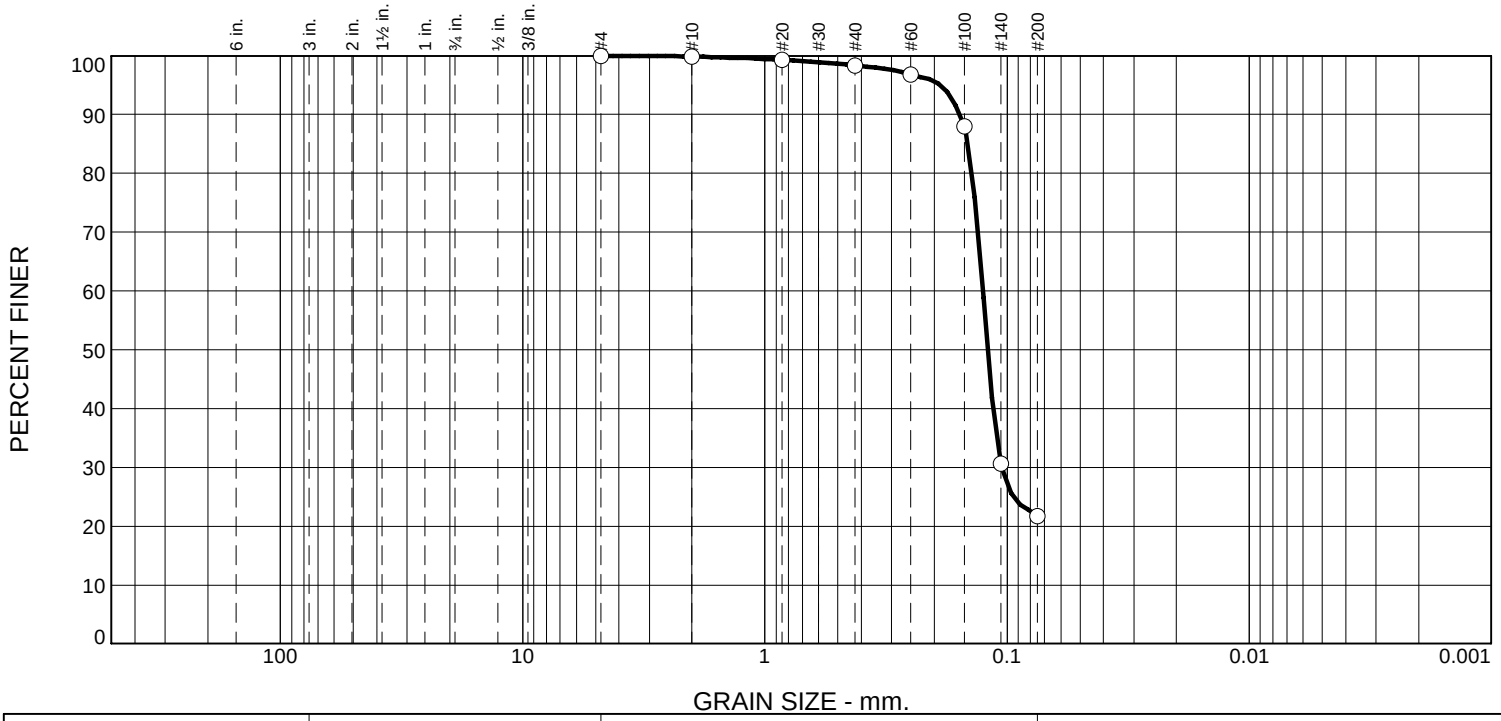
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.5	76.7	21.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.3		
#40	98.4		
#60	96.8		
#100	88.0		
#140	30.7		
#200	21.7		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1566 D_{85}= 0.1447
D_{60}= 0.1259 D_{50}= 0.1201
D_{30}= 0.1051 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

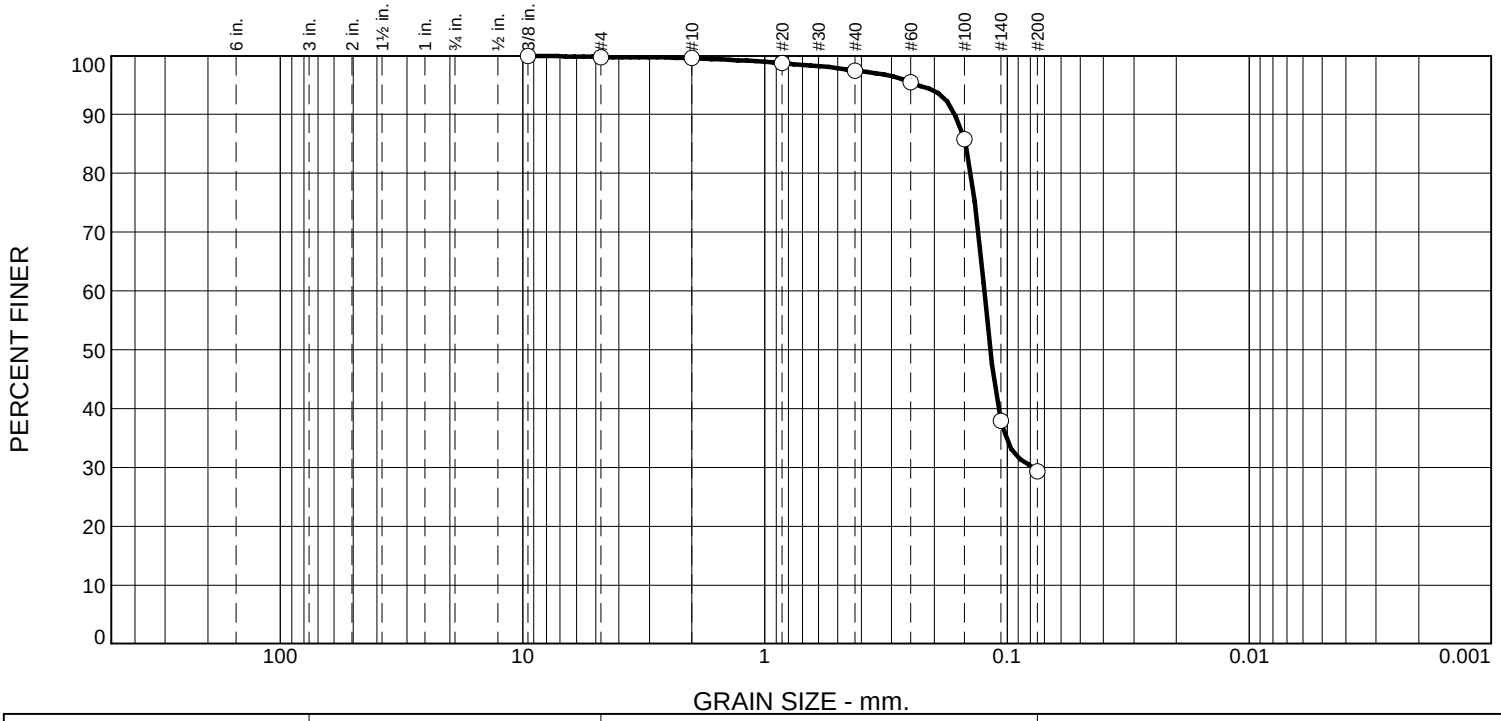
Source of Sample: PA23-1028S W-C
Sample Number: 1E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	2.1	68.2	29.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.8		
#10	99.6		
#20	98.7		
#40	97.5		
#60	95.5		
#100	85.8		
#140	37.9		
#200	29.3		

* (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1644 D_{85}= 0.1481
D_{60}= 0.1243 D_{50}= 0.1171
D_{30}= 0.0779 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

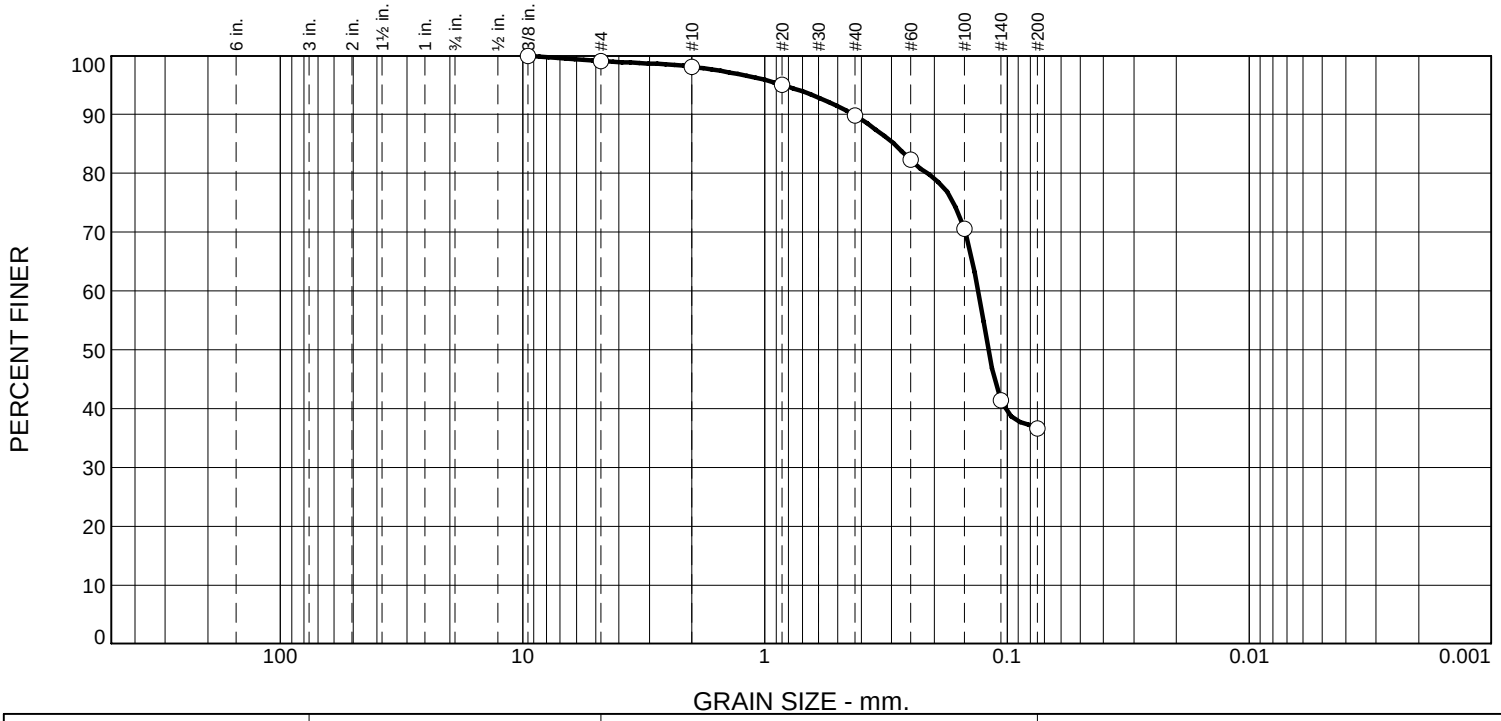
Source of Sample: PA23-1028S W-C
Sample Number: 1F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	1.0	8.3	53.2	36.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.1		
#10	98.1		
#20	95.1		
#40	89.8		
#60	82.3		
#100	70.6		
#140	41.4		
#200	36.6		

* (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4326 D_{85}= 0.2933
D_{60}= 0.1319 D_{50}= 0.1194
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

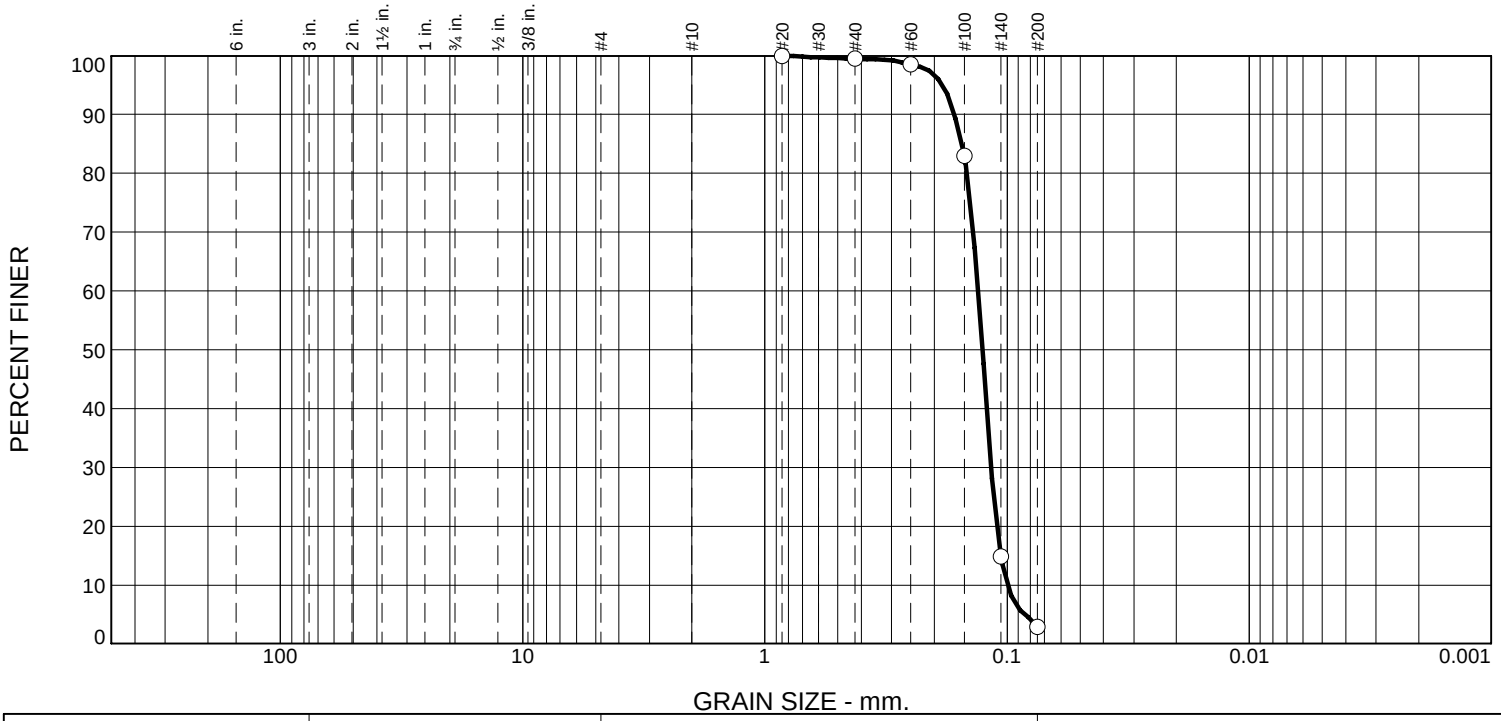
Source of Sample: PA23-1028S W-C
Sample Number: 1 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	96.6	2.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.5		
#60	98.5		
#100	82.9		
#140	14.8		
#200	2.9		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1650 D_{85}= 0.1536

D_{60}= 0.1318 D_{50}= 0.1265

D_{30}= 0.1163 D_{15}= 0.1062

D_{10}= 0.0998

C_u= 1.32 C_c= 1.03

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C
Sample Number: 10A

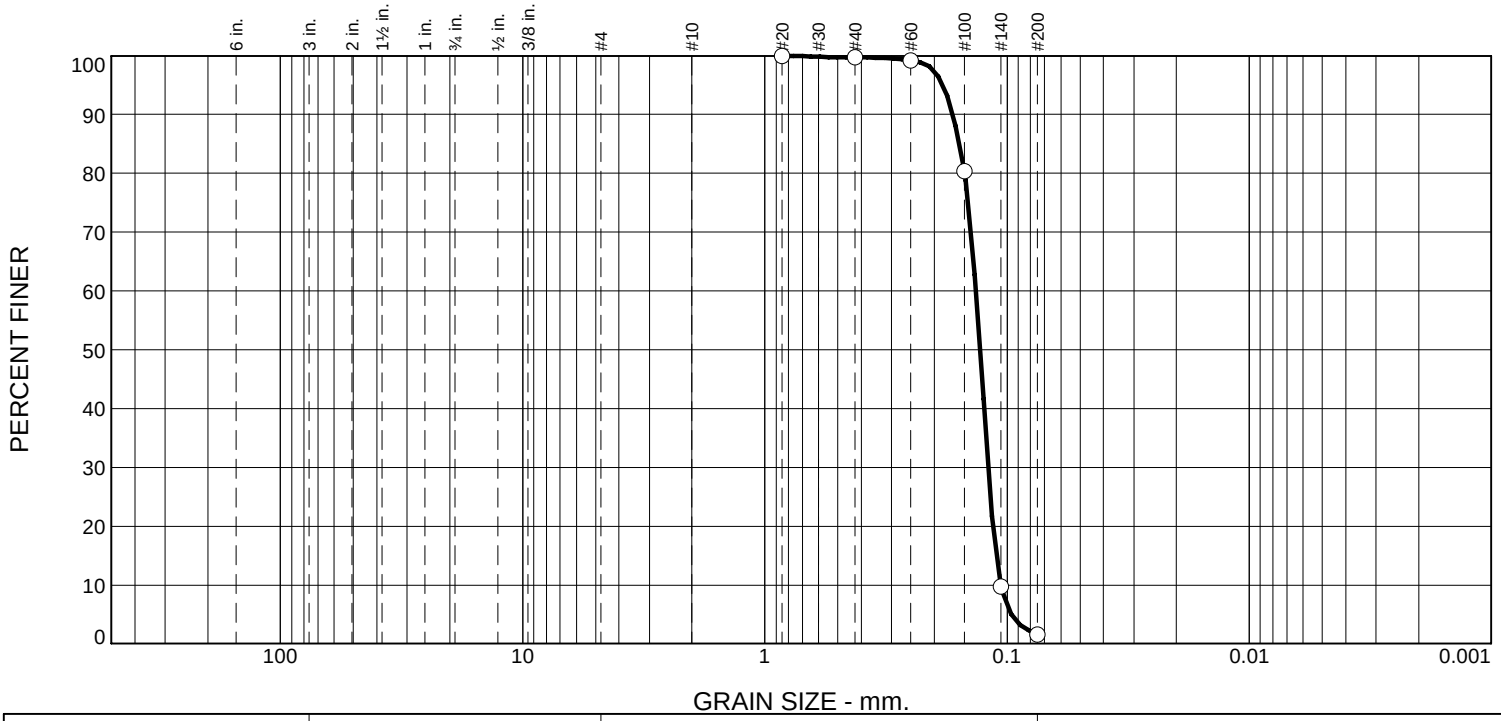
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	98.2	1.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.7		
#60	99.2		
#100	80.3		
#140	9.8		
#200	1.5		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1675 D_{85}= 0.1572

D_{60}= 0.1346 D_{50}= 0.1294

D_{30}= 0.1196 D_{15}= 0.1110

D_{10}= 0.1063

C_u= 1.27 C_c= 1.00

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 10B

INSIGHT GROUP
A CHRISTOPHER COMPANY

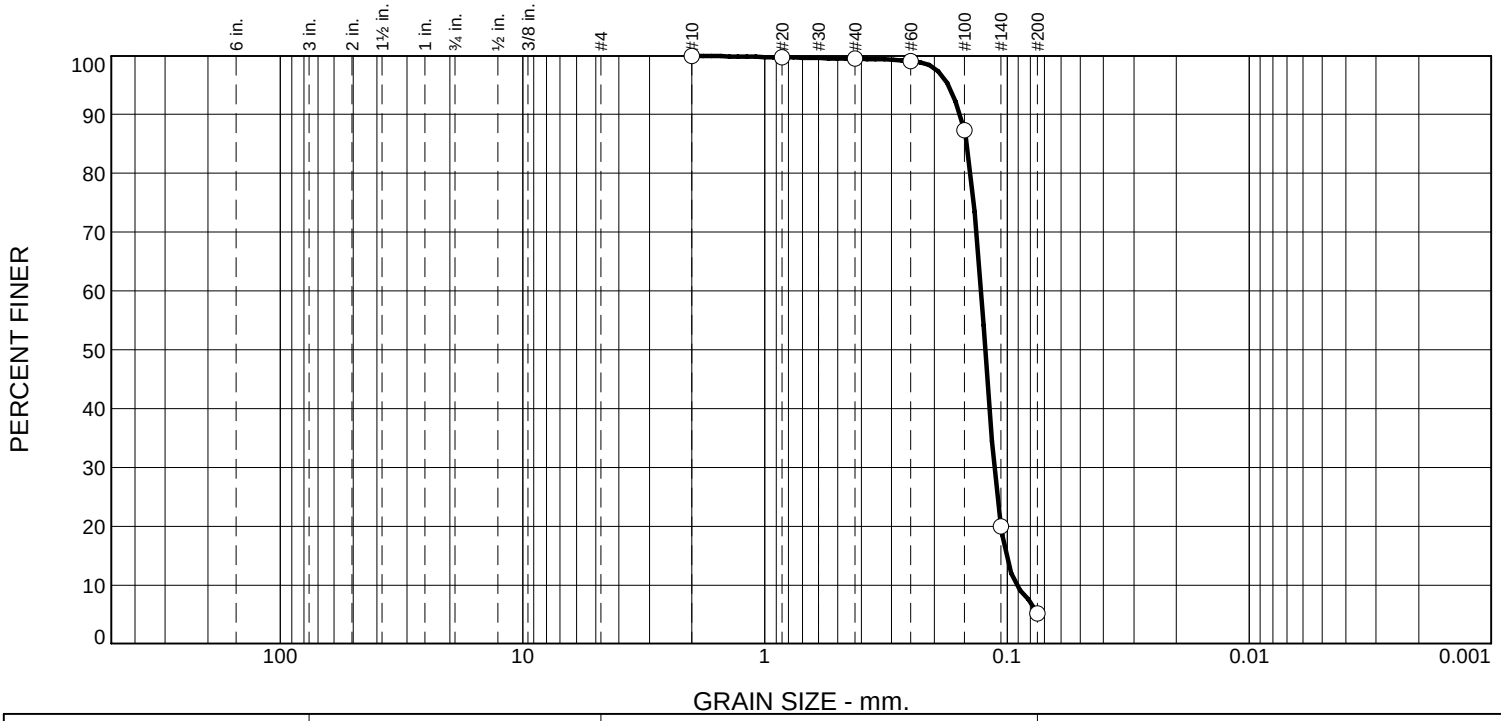
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	94.3	5.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	99.5		
#60	99.1		
#100	87.4		
#140	19.9		
#200	5.2		

· (no specification provided)

Source of Sample: PA23-1028S W-C
Sample Number: 10C

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1564 D_{85}= 0.1461
D_{60}= 0.1283 D_{50}= 0.1231
D_{30}= 0.1128 D_{15}= 0.1008
D_{10}= 0.0916
C_u= 1.40 C_c= 1.08

USCS (ASTM D2487)

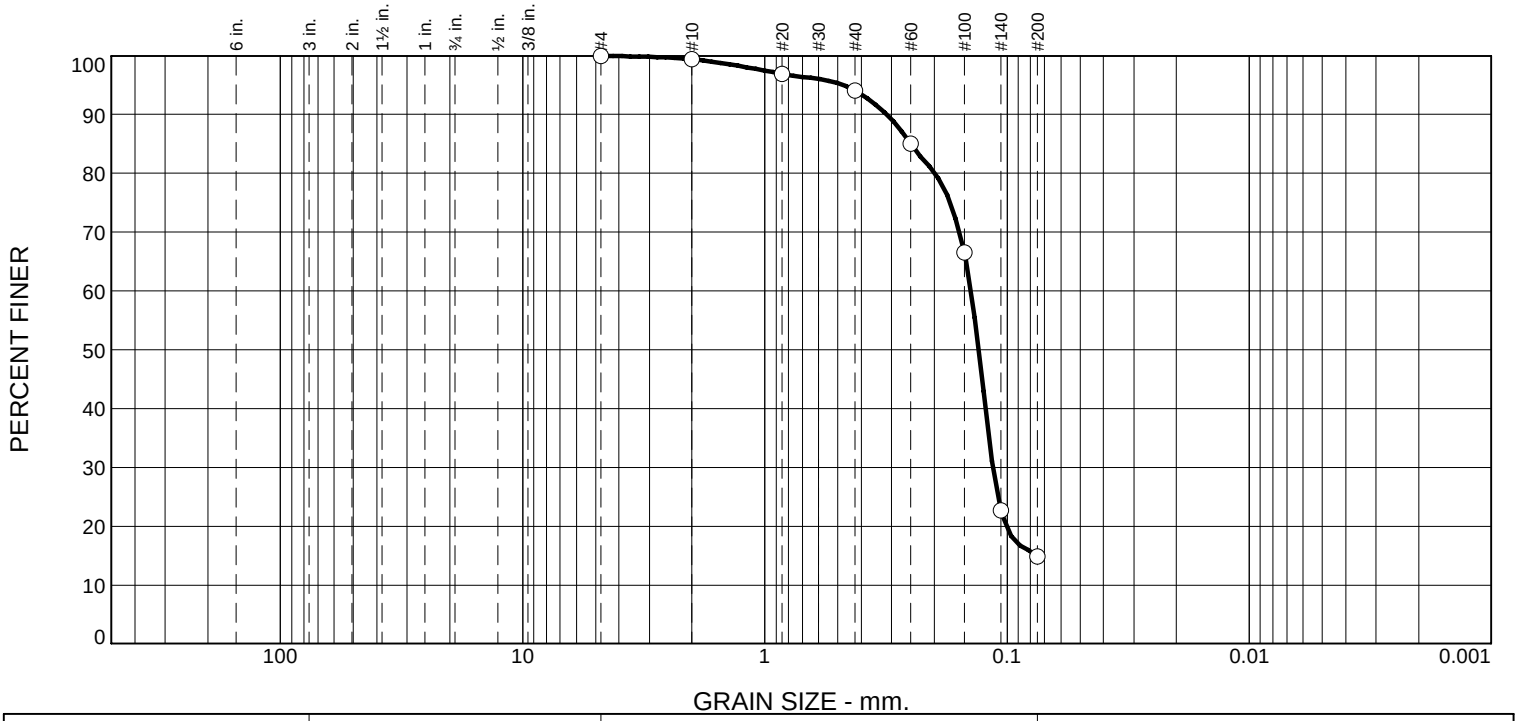
Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	5.4	79.2	14.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.4		
#20	96.9		
#40	94.0		
#60	85.1		
#100	66.6		
#140	22.7		
#200	14.8		

· (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.3141 D_{85}= 0.2493

D_{60}= 0.1409 D_{50}= 0.1312

D_{30}= 0.1143 D_{15}= 0.0757

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 10D

INSIGHT GROUP
A CHRISTOPHER COMPANY

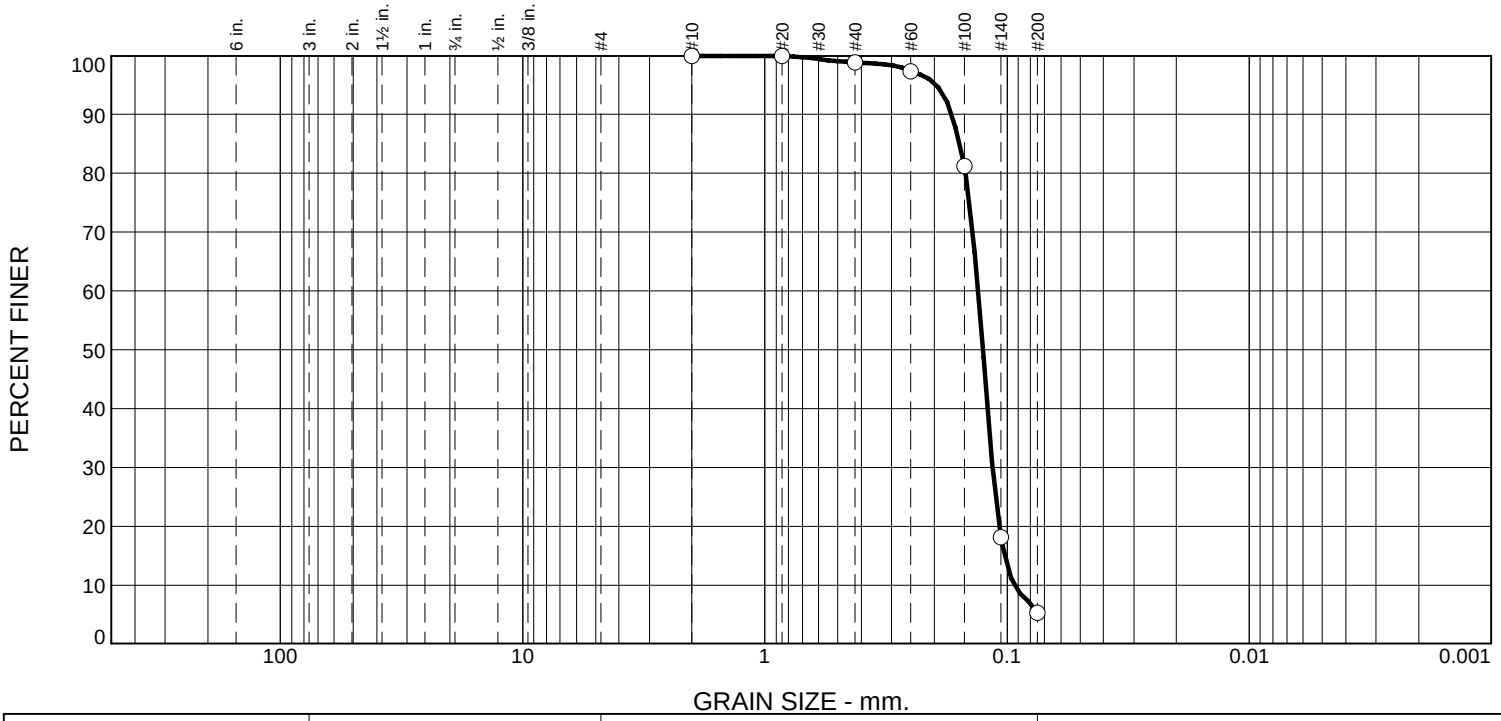
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.2	93.5	5.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	98.8		
#60	97.4		
#100	81.2		
#140	18.2		
#200	5.3		

· (no specification provided)

Material Description

Grayish Brown with Black

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1695 D_{85}= 0.1568

D_{60}= 0.1319 D_{50}= 0.1260

D_{30}= 0.1146 D_{15}= 0.1025

D_{10}= 0.0936

C_u= 1.41 C_c= 1.06

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 10E

INSIGHT GROUP
A CHRISTOPHER COMPANY

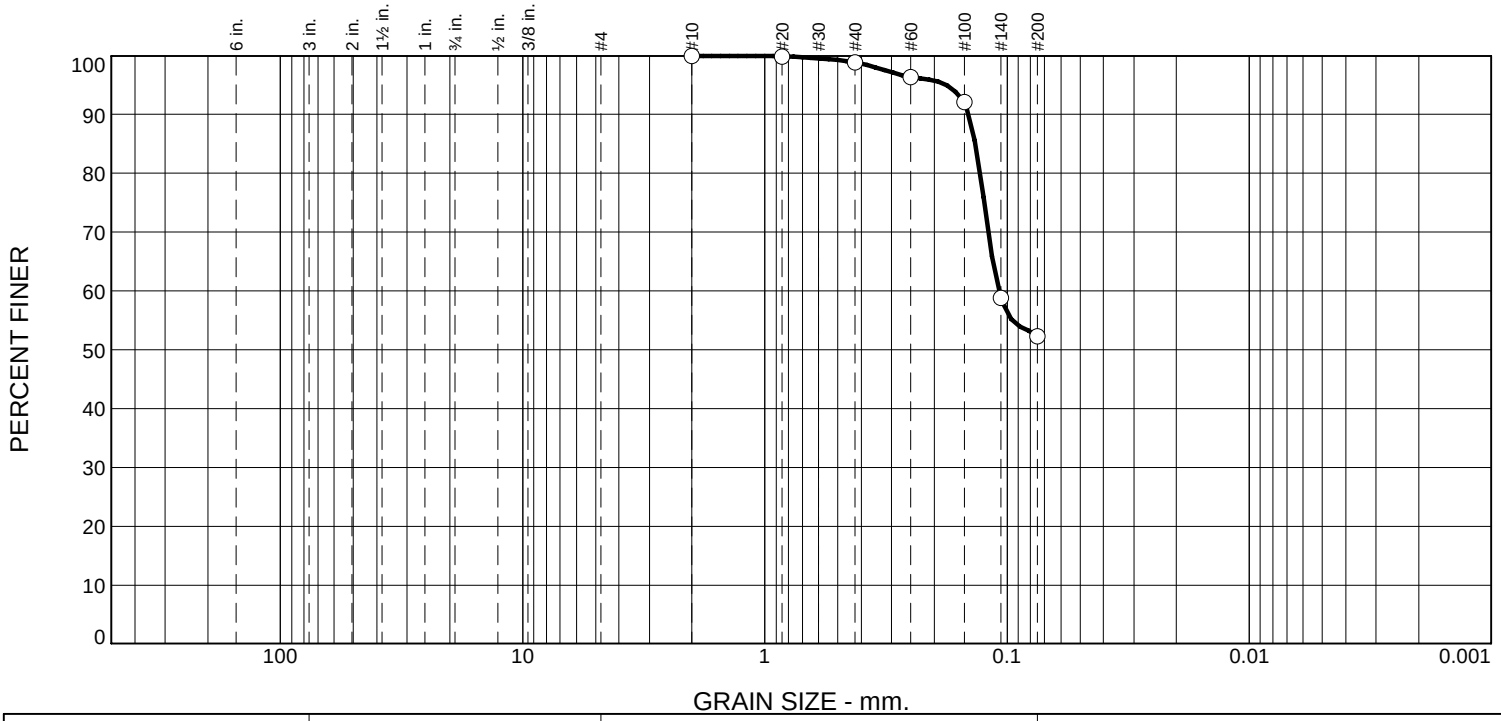
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.2	46.5	52.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	98.8		
#60	96.4		
#100	92.1		
#140	58.8		
#200	52.3		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1434 D_{85}= 0.1354

D_{60}= 0.1080 D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C
Sample Number: 10F

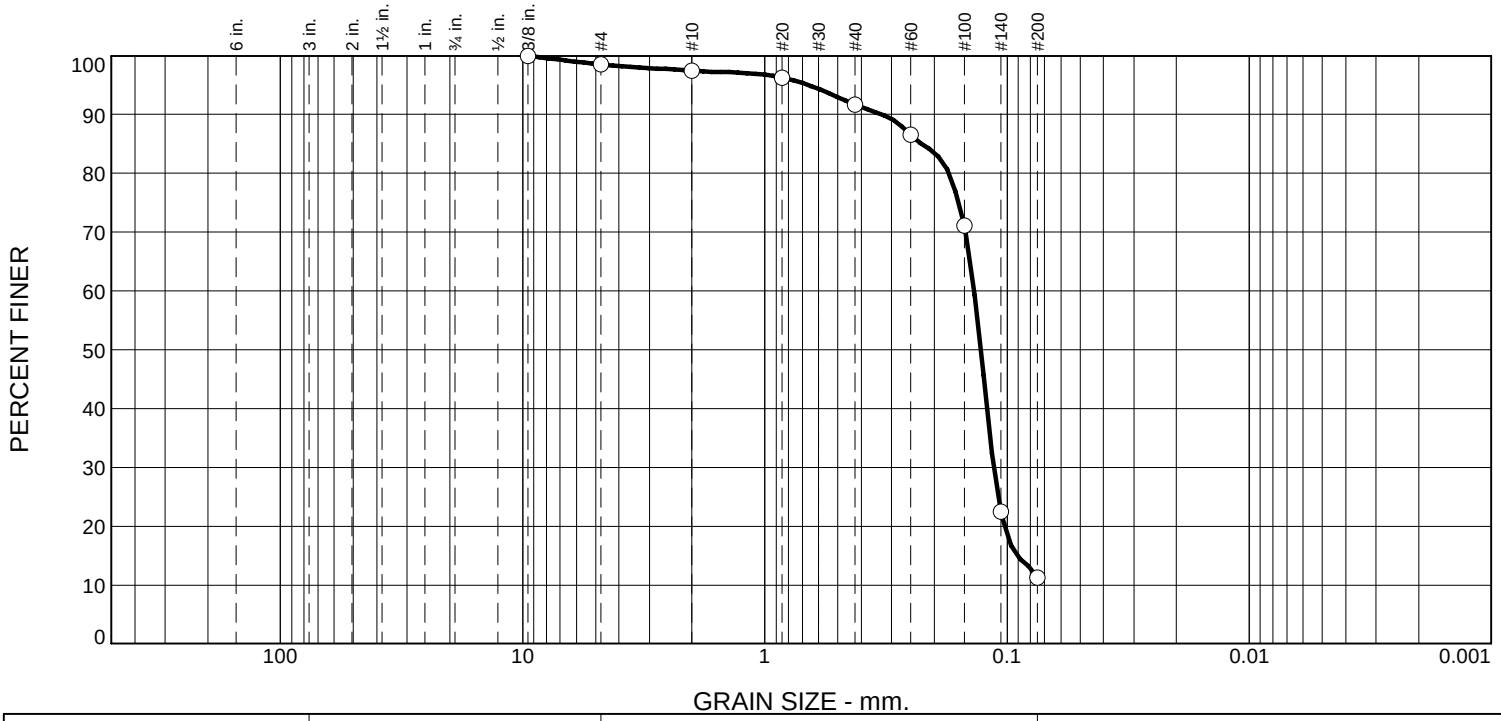
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.5	1.1	5.7	80.4	11.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	98.5		
#10	97.4		
#20	96.3		
#40	91.7		
#60	86.6		
#100	71.1		
#140	22.5		
#200	11.3		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.3286 D_{85}= 0.2244

D_{60}= 0.1369 D_{50}= 0.1285

D_{30}= 0.1133 D_{15}= 0.0911

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C
Sample Number: 10 Comp

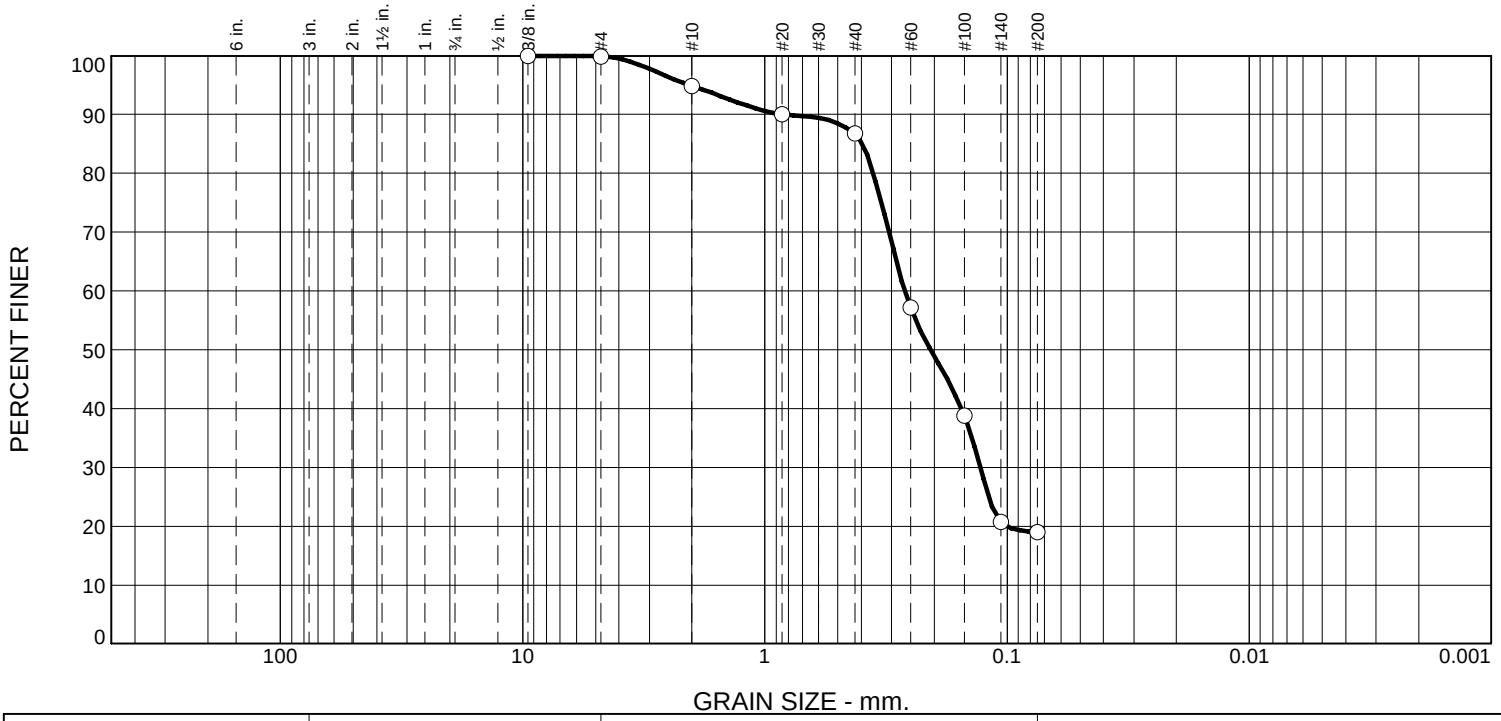
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	5.0	8.1	67.8	19.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.9		
#10	94.9		
#20	90.1		
#40	86.8		
#60	57.2		
#100	38.8		
#140	20.7		
#200	19.0		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.8268 D_{85}= 0.3962

D_{60}= 0.2641 D_{50}= 0.2069

D_{30}= 0.1291 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 11A

INSIGHT GROUP
A CHRISTOPHER COMPANY

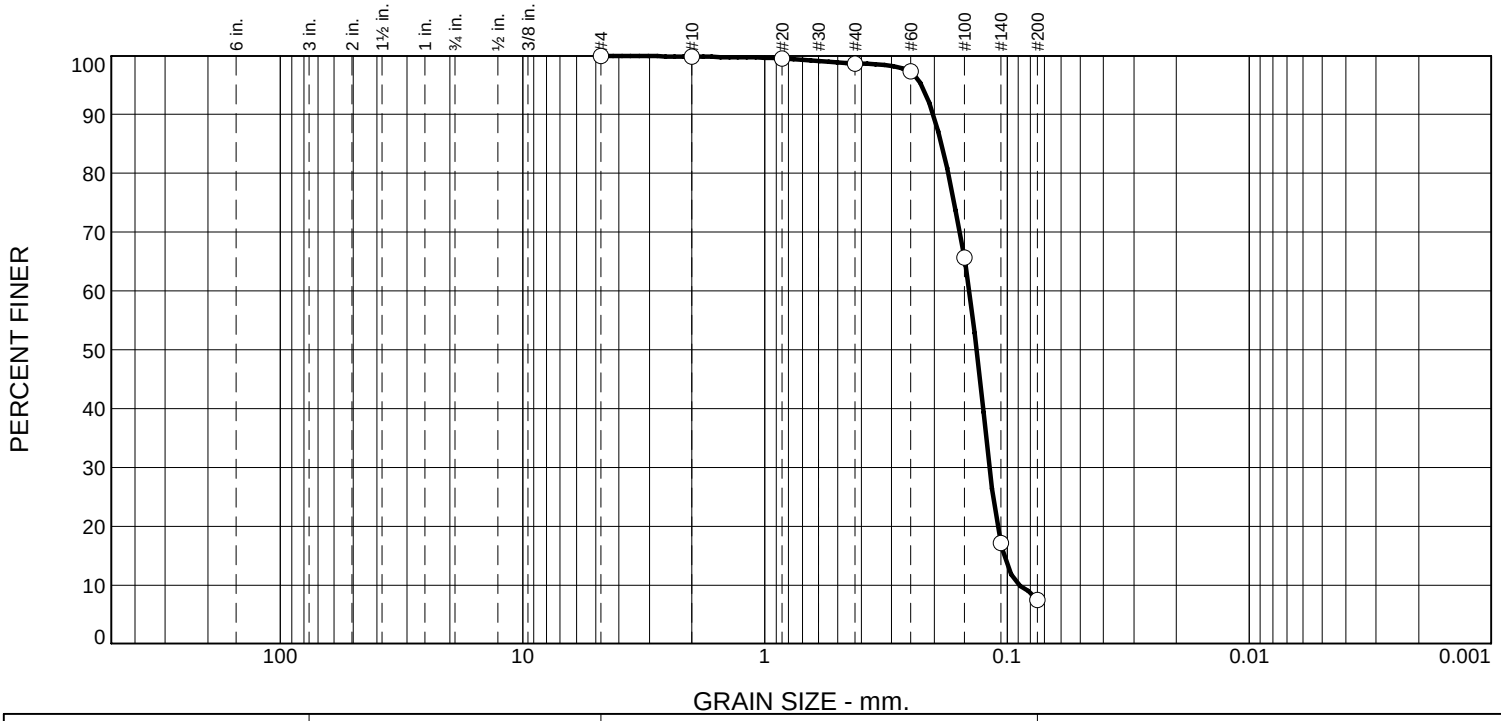
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.1	91.2	7.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.5		
#40	98.7		
#60	97.3		
#100	65.7		
#140	17.1		
#200	7.5		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2019 D_{85}= 0.1869

D_{60}= 0.1430 D_{50}= 0.1337

D_{30}= 0.1181 D_{15}= 0.1029

D_{10}= 0.0892

C_u= 1.60 C_c= 1.09

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 11B

INSIGHT GROUP
A CHRISTOPHER COMPANY

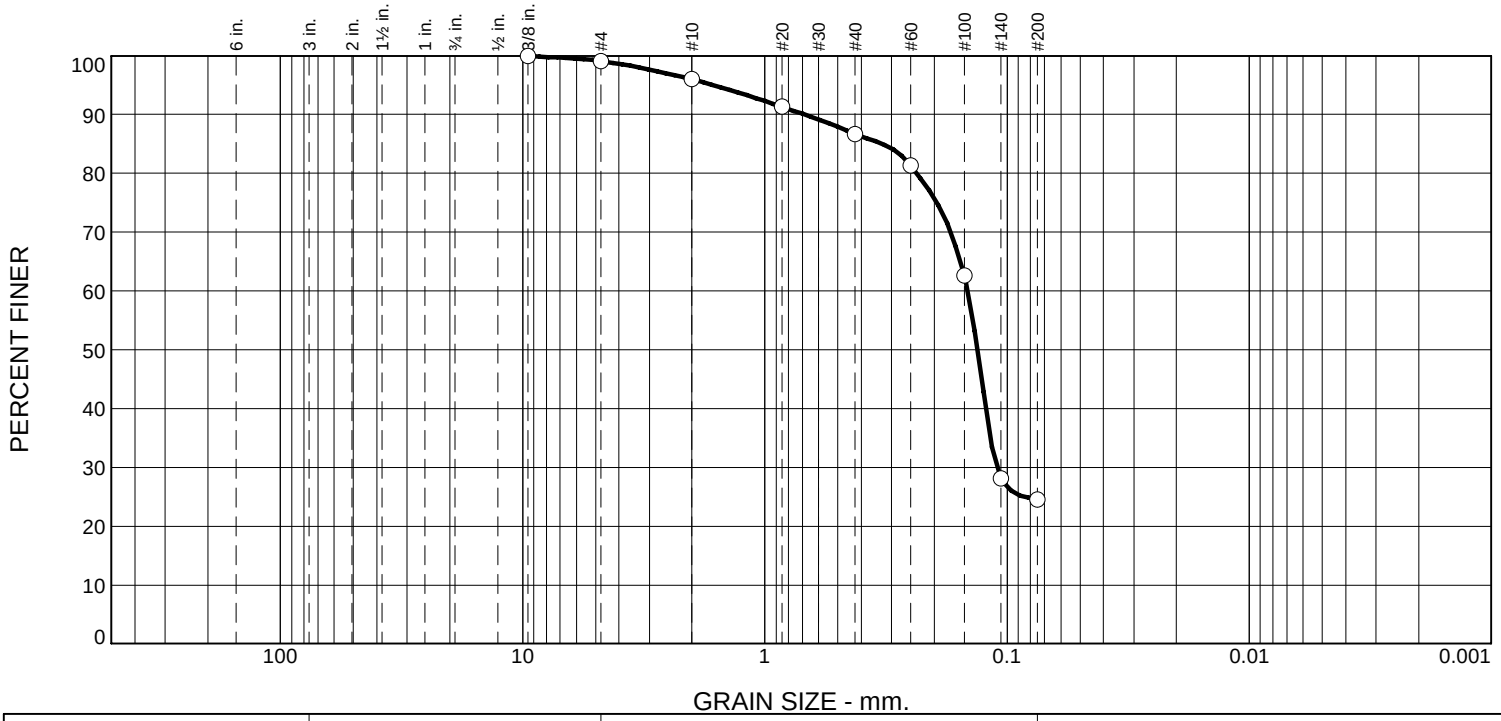
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	3.1	9.3	62.2	24.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.1		
#10	96.0		
#20	91.3		
#40	86.7		
#60	81.3		
#100	62.6		
#140	28.1		
#200	24.5		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.6837 D_{85}= 0.3263

D_{60}= 0.1452 D_{50}= 0.1326

D_{30}= 0.1103 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 11C

INSIGHT GROUP
A CHRISTOPHER COMPANY

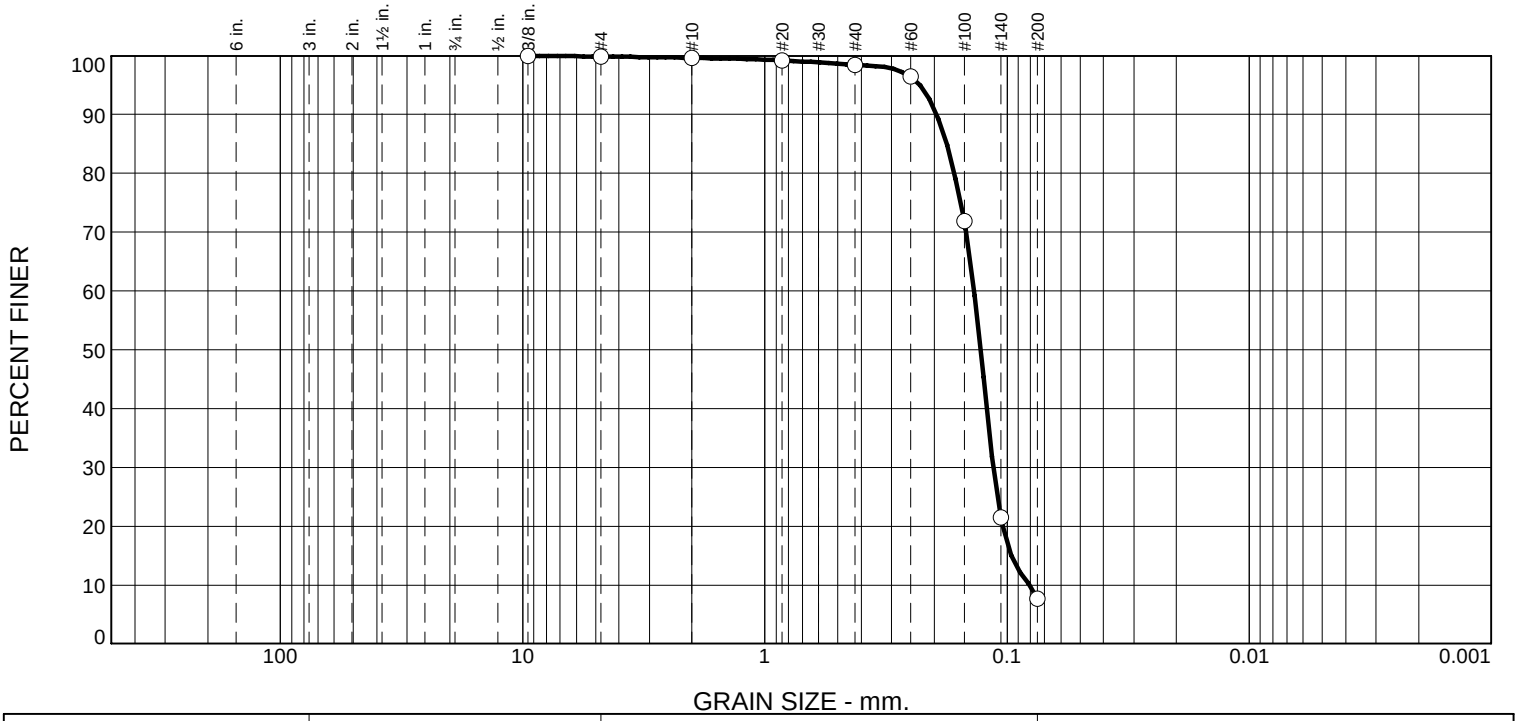
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	1.2	90.7	7.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.9		
#10	99.6		
#20	99.2		
#40	98.4		
#60	96.4		
#100	71.8		
#140	21.5		
#200	7.7		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1955 D_{85}= 0.1776

D_{60}= 0.1368 D_{50}= 0.1287

D_{30}= 0.1138 D_{15}= 0.0962

D_{10}= 0.0807

C_u= 1.70 C_c= 1.17

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 11D

INSIGHT GROUP
A CHRISTOPHER COMPANY

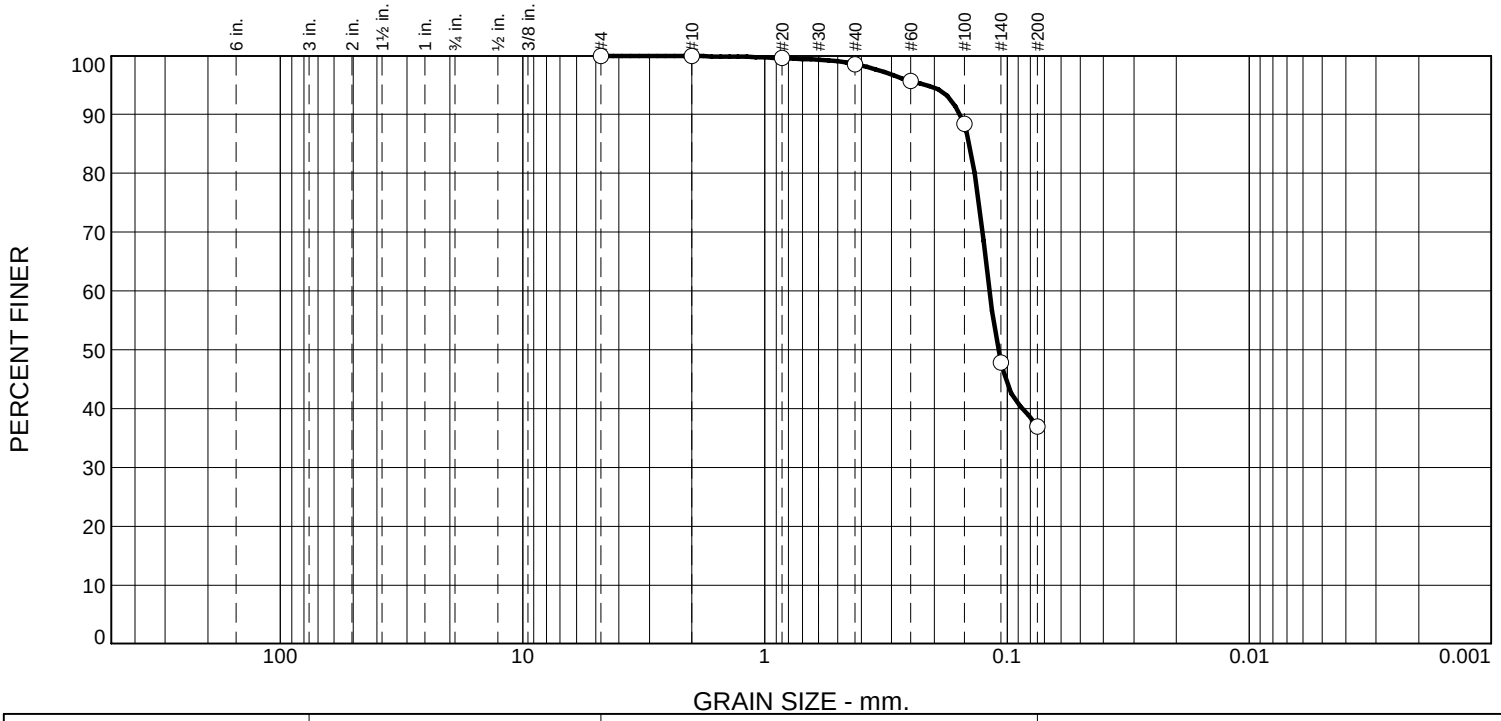
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.3	61.7	36.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.6		
#60	95.7		
#100	88.4		
#140	47.8		
#200	36.9		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1562 D_{85}= 0.1426

D_{60}= 0.1181 D_{50}= 0.1088

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 11E

INSIGHT GROUP
A CHRISTOPHER COMPANY

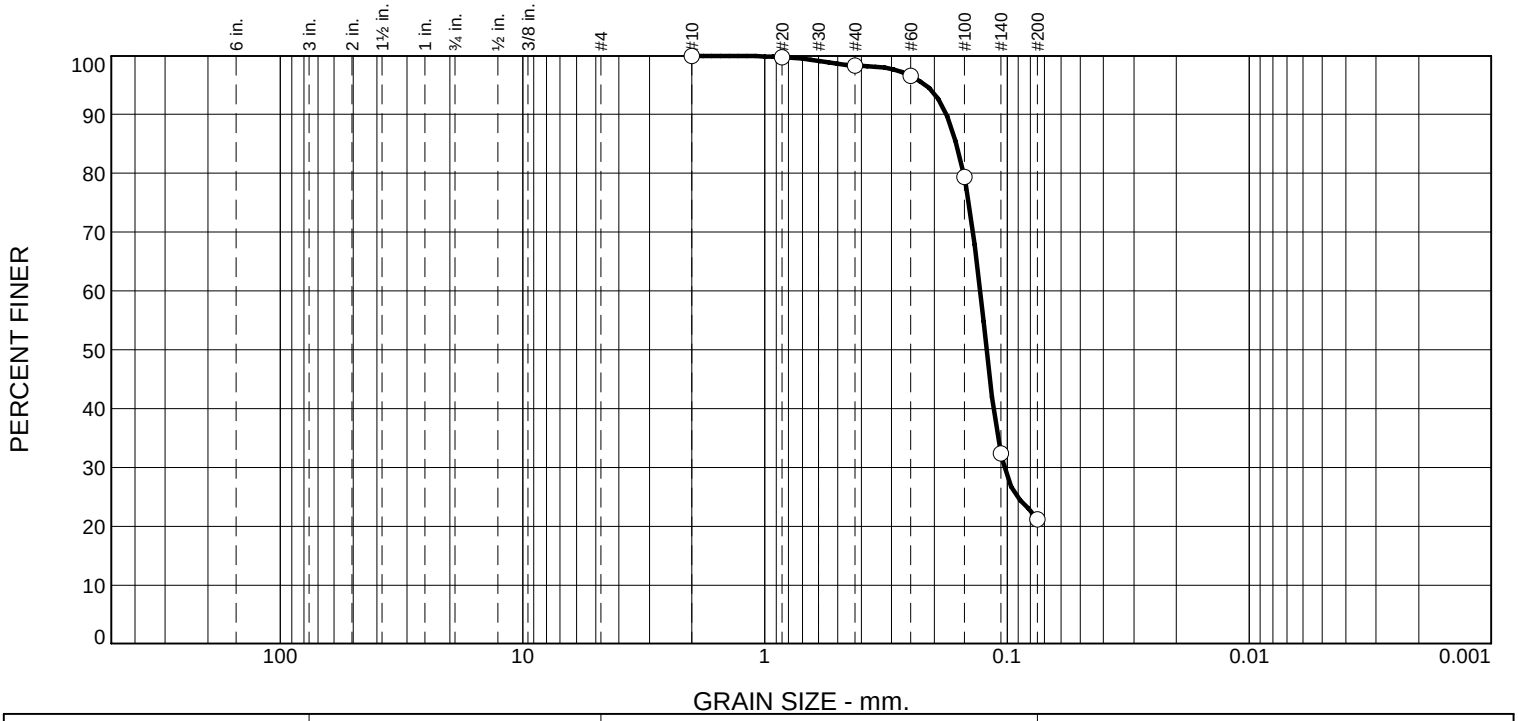
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.7	77.2	21.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	98.3		
#60	96.6		
#100	79.4		
#140	32.4		
#200	21.1		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1784 D_{85}= 0.1619

D_{60}= 0.1294 D_{50}= 0.1216

D_{30}= 0.1027 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C
Sample Number: 11 Comp

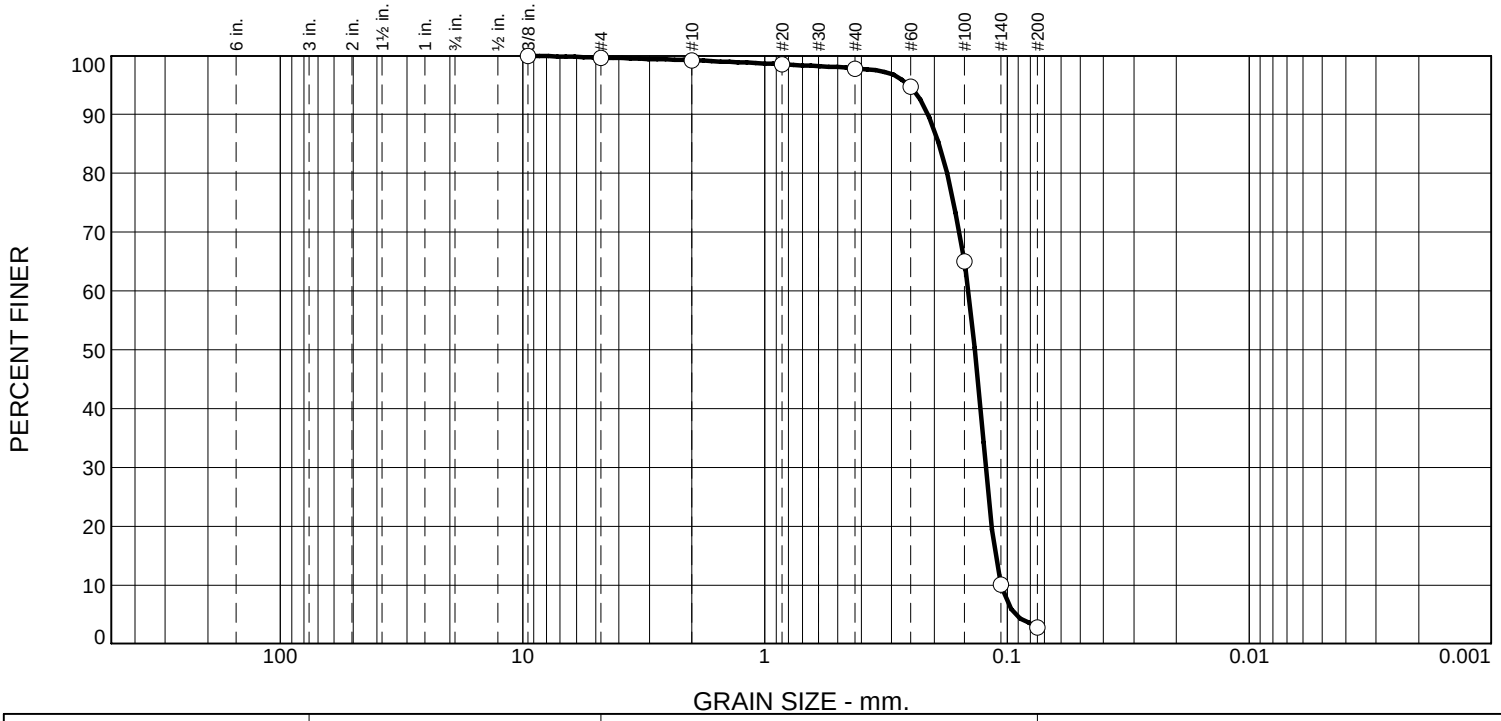
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.5	1.4	95.0	2.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.7		
#10	99.2		
#20	98.5		
#40	97.8		
#60	94.7		
#100	65.0		
#140	10.1		
#200	2.8		

* (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2118 D_{85}= 0.1913

D_{60}= 0.1442 D_{50}= 0.1359

D_{30}= 0.1225 D_{15}= 0.1116

D_{10}= 0.1058

C_u= 1.36 C_c= 0.98

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 12A

INSIGHT GROUP
A CHRISTOPHER COMPANY

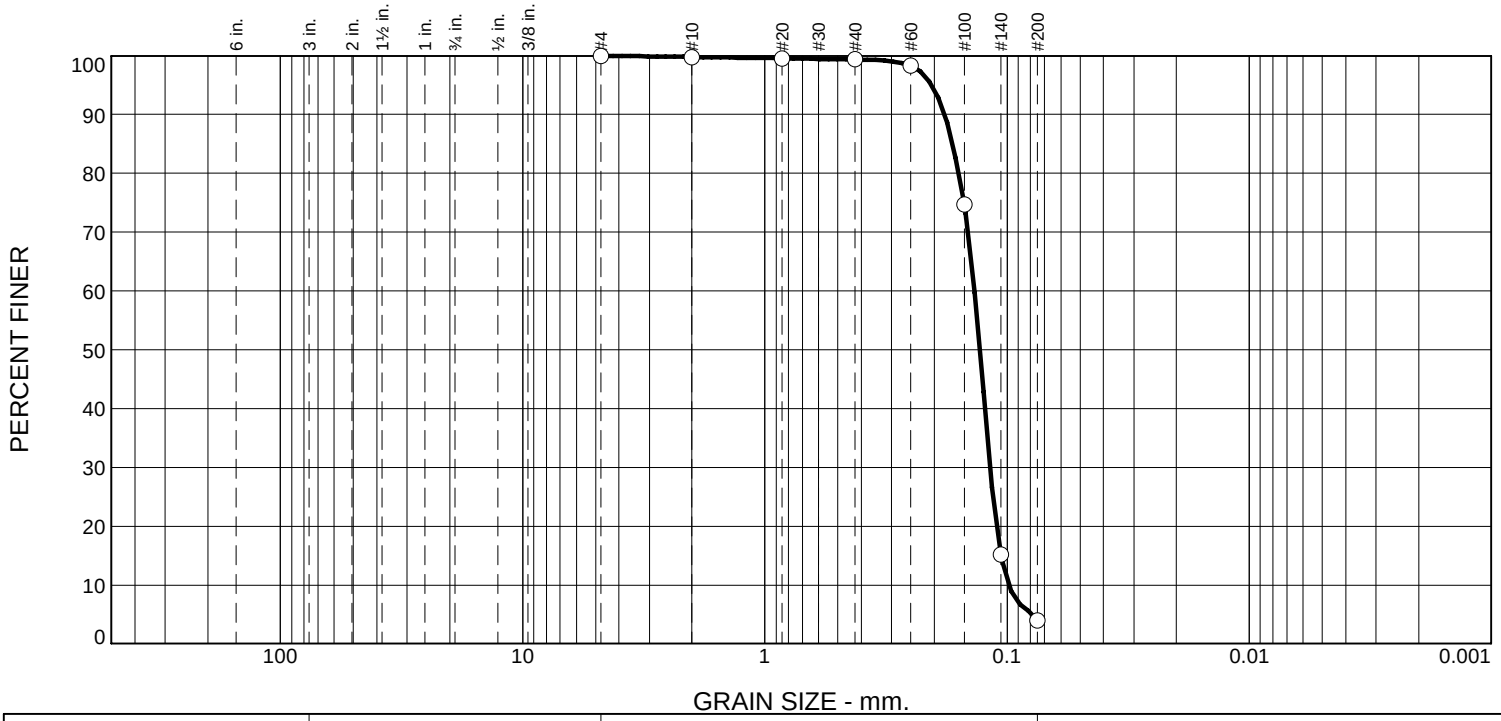
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.4	95.4	4.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.6		
#40	99.4		
#60	98.3		
#100	74.7		
#140	15.1		
#200	4.0		

· (no specification provided)

Material Description
Light Brown and Gray

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1816 D_{85}= 0.1680
D_{60}= 0.1364 D_{50}= 0.1297
D_{30}= 0.1174 D_{15}= 0.1058
D_{10}= 0.0985
C_u= 1.38 C_c= 1.03

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

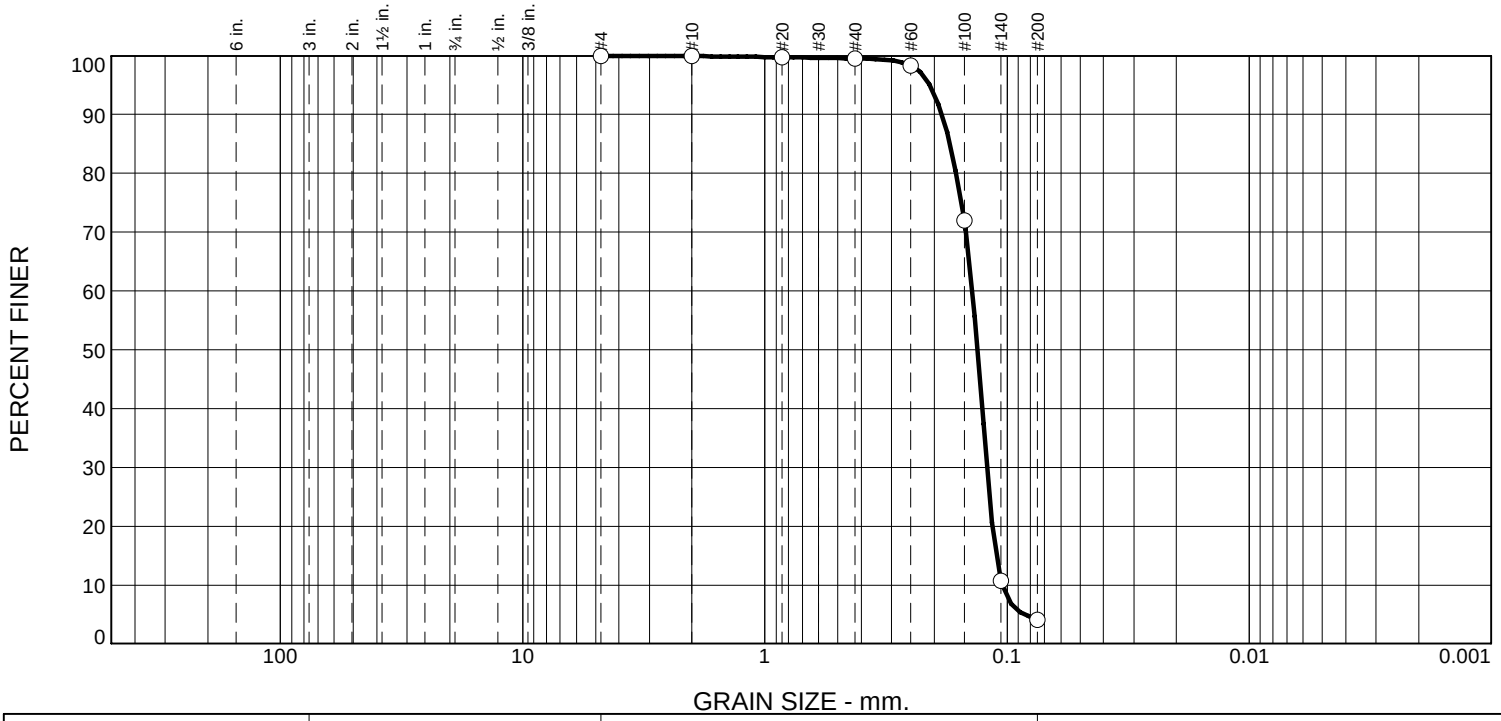
Source of Sample: PA23-1028S W-C
Sample Number: 12B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.4	95.5	4.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.7		
#40	99.5		
#60	98.4		
#100	72.0		
#140	10.7		
#200	4.0		

· (no specification provided)

Material Description
Light Brown and Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1862 D_{85}= 0.1724
D_{60}= 0.1391 D_{50}= 0.1326
D_{30}= 0.1210 D_{15}= 0.1110
D_{10}= 0.1046
C_u= 1.33 C_c= 1.01

Sieve Test (ASTM D6913)
Test Date: 3/15/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)
SP

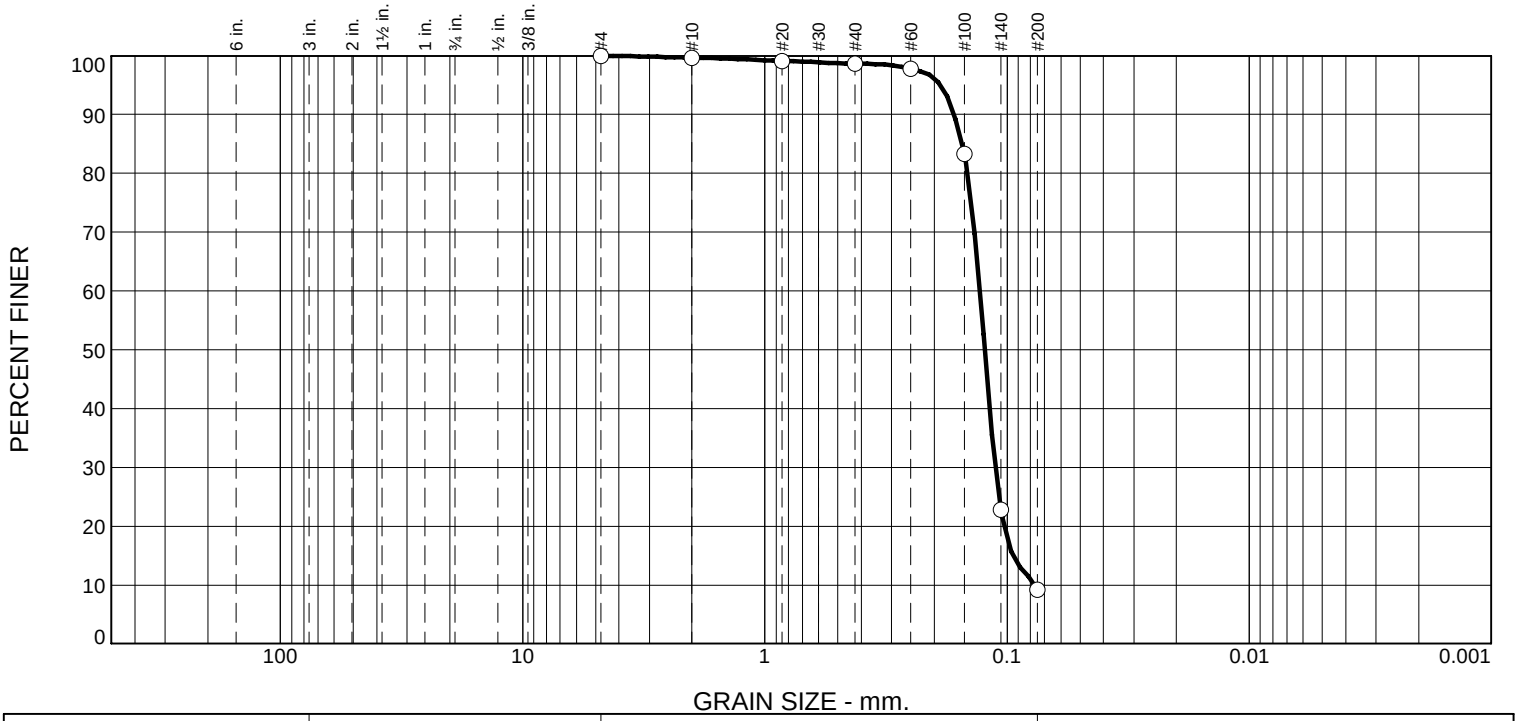
Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1028S W-C
Sample Number: 12C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.0	89.5	9.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	99.1		
#40	98.7		
#60	97.8		
#100	83.4		
#140	22.8		
#200	9.2		

* (no specification provided)

Material Description

Gray with Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1653 D_{85}= 0.1531

D_{60}= 0.1297 D_{50}= 0.1237

D_{30}= 0.1117 D_{15}= 0.0949

D_{10}= 0.0767

C_u= 1.69 C_c= 1.25

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 12D

INSIGHT GROUP
A CHRISTOPHER COMPANY

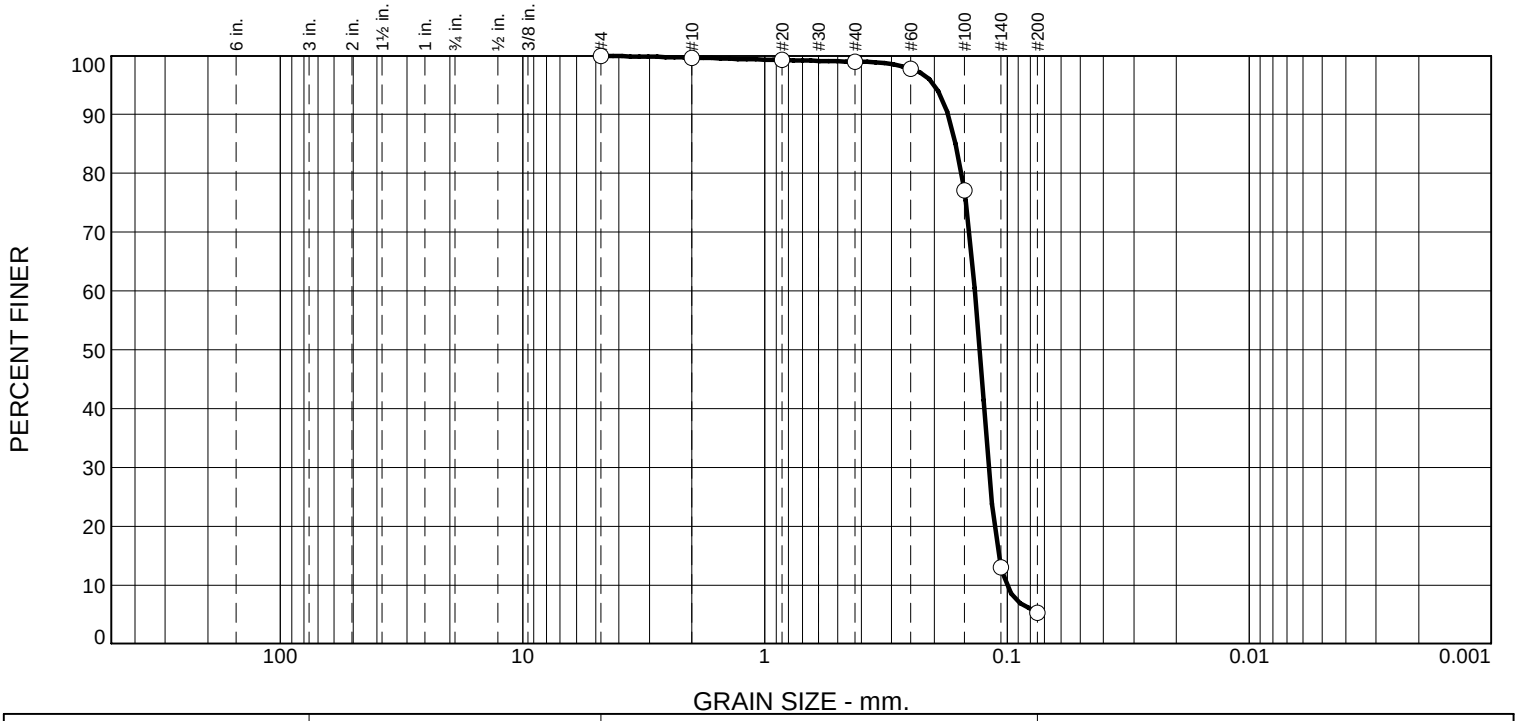
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	0.7	93.7	5.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	99.3		
#40	99.0		
#60	97.8		
#100	77.1		
#140	13.1		
#200	5.3		

* (no specification provided)

Material Description

Brown

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1756 D_{85}= 0.1630

D_{60}= 0.1358 D_{50}= 0.1299

D_{30}= 0.1189 D_{15}= 0.1085

D_{10}= 0.1001

C_u= 1.36 C_c= 1.04

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/723

Checked By: J. Hatch

Title: Sr Engineer

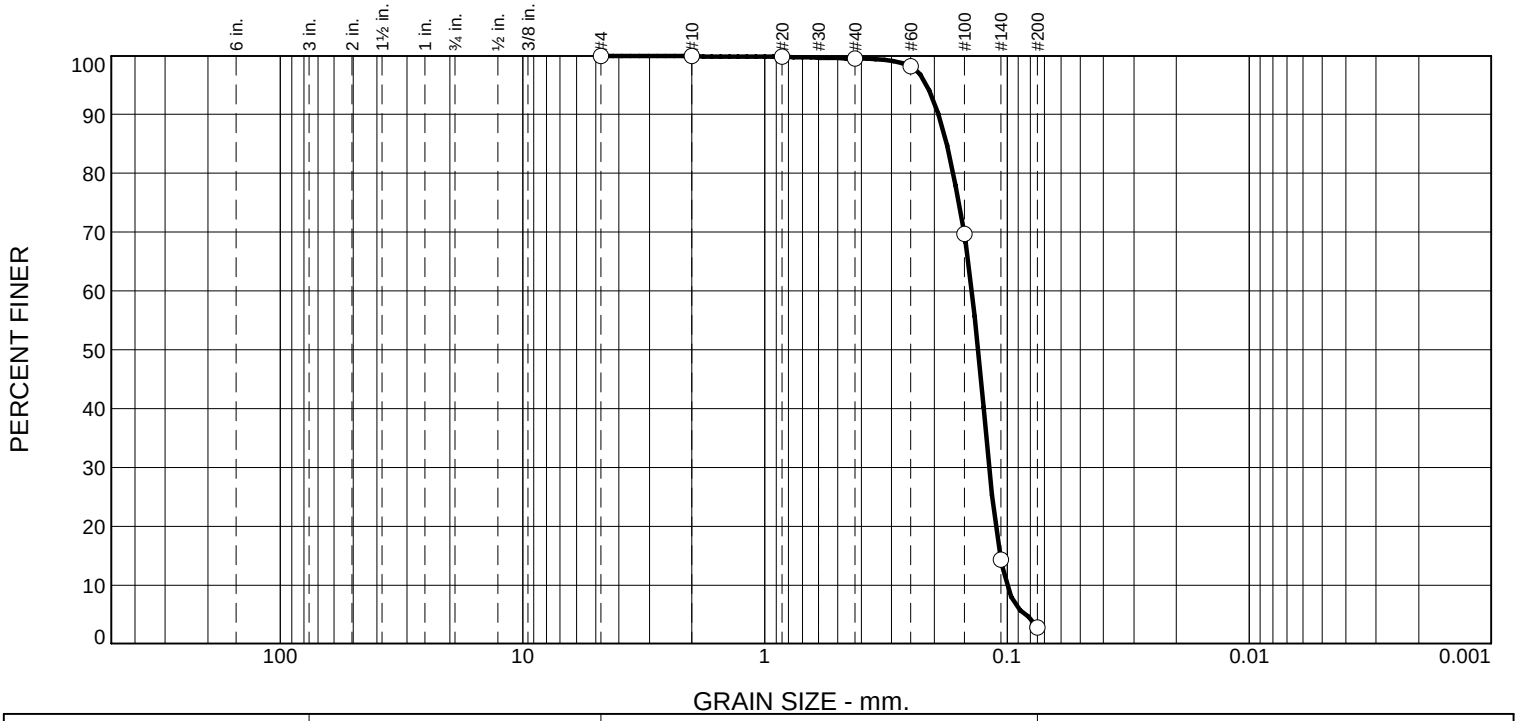
Source of Sample: PA23-1028S W-C
Sample Number: 12 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.4	96.8	2.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.5		
#60	98.3		
#100	69.7		
#140	14.4		
#200	2.7		

· (no specification provided)

Material Description

Brown with Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1922 D_{85}= 0.1778

D_{60}= 0.1397 D_{50}= 0.1319

D_{30}= 0.1184 D_{15}= 0.1067

D_{10}= 0.1001

C_u= 1.40 C_c= 1.00

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 13A

INSIGHT GROUP
A CHRISTOPHER COMPANY

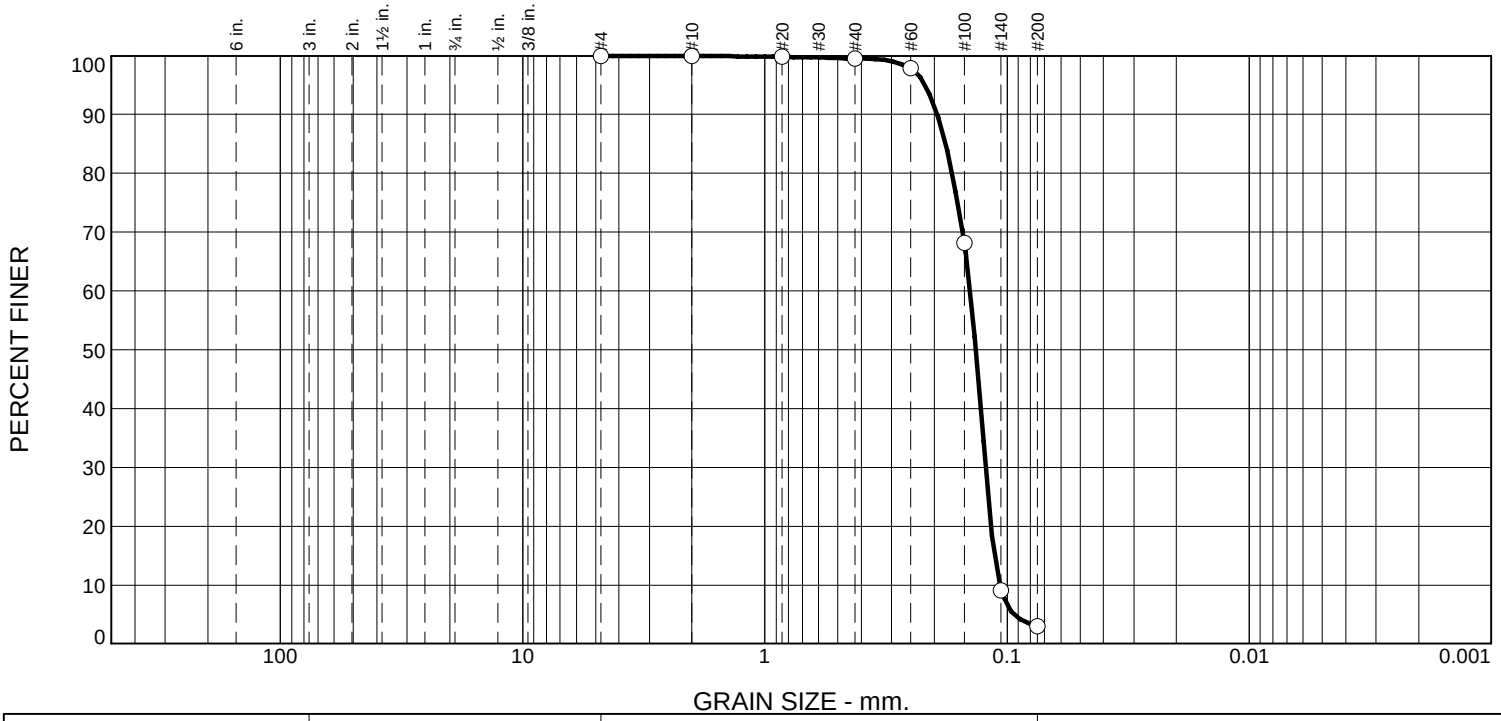
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.4	96.5	3.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.5		
#60	97.9		
#100	68.2		
#140	9.0		
#200	3.0		

* (no specification provided)

Material Description

Brown with Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1945 D_{85}= 0.1798

D_{60}= 0.1419 D_{50}= 0.1347

D_{30}= 0.1226 D_{15}= 0.1127

D_{10}= 0.1076

C_u= 1.32 C_c= 0.98

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 13B

INSIGHT GROUP
A CHRISTOPHER COMPANY

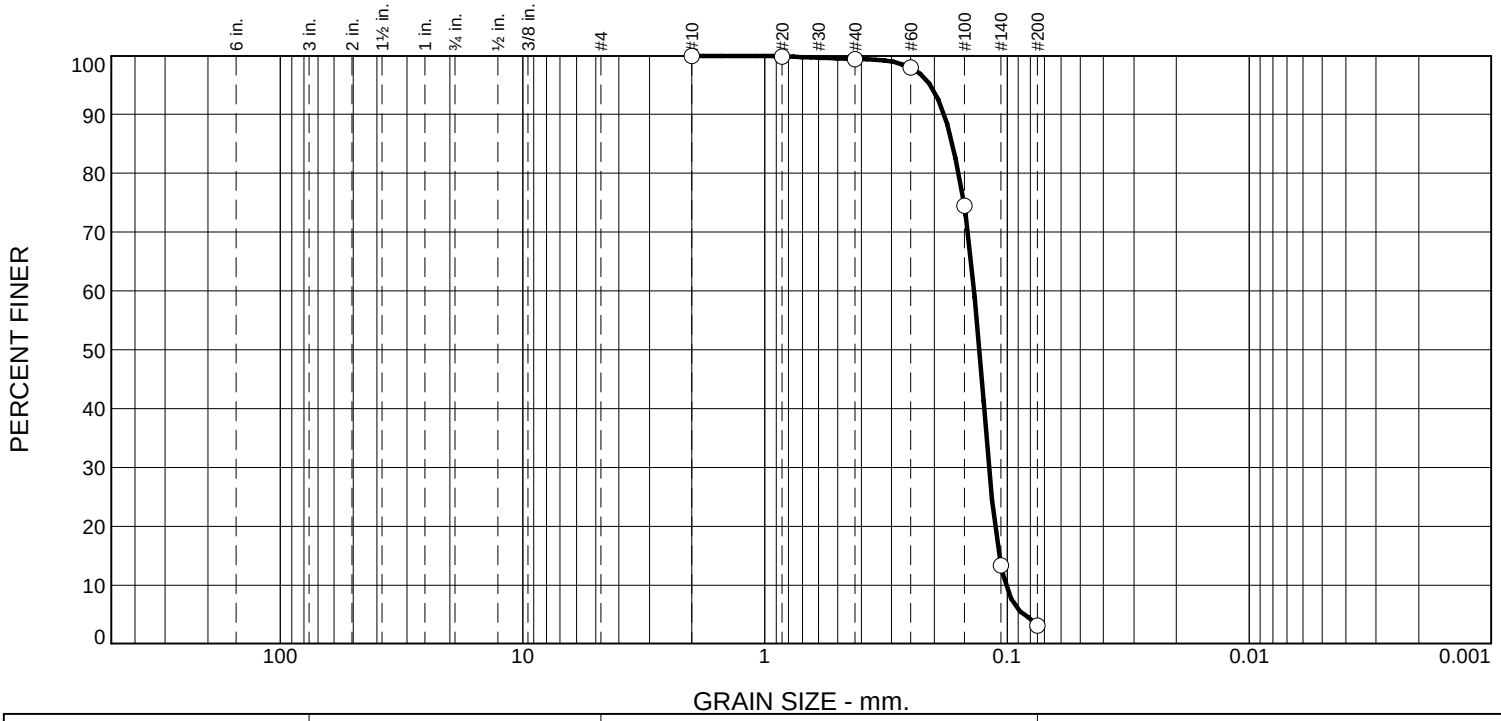
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	96.2	3.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.4		
#60	98.0		
#100	74.5		
#140	13.3		
#200	3.2		

· (no specification provided)

Material Description

Brown with Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1821 D_{85}= 0.1682

D_{60}= 0.1369 D_{50}= 0.1304

D_{30}= 0.1186 D_{15}= 0.1079

D_{10}= 0.1012

C_u= 1.35 C_c= 1.02

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C
Sample Number: 13C

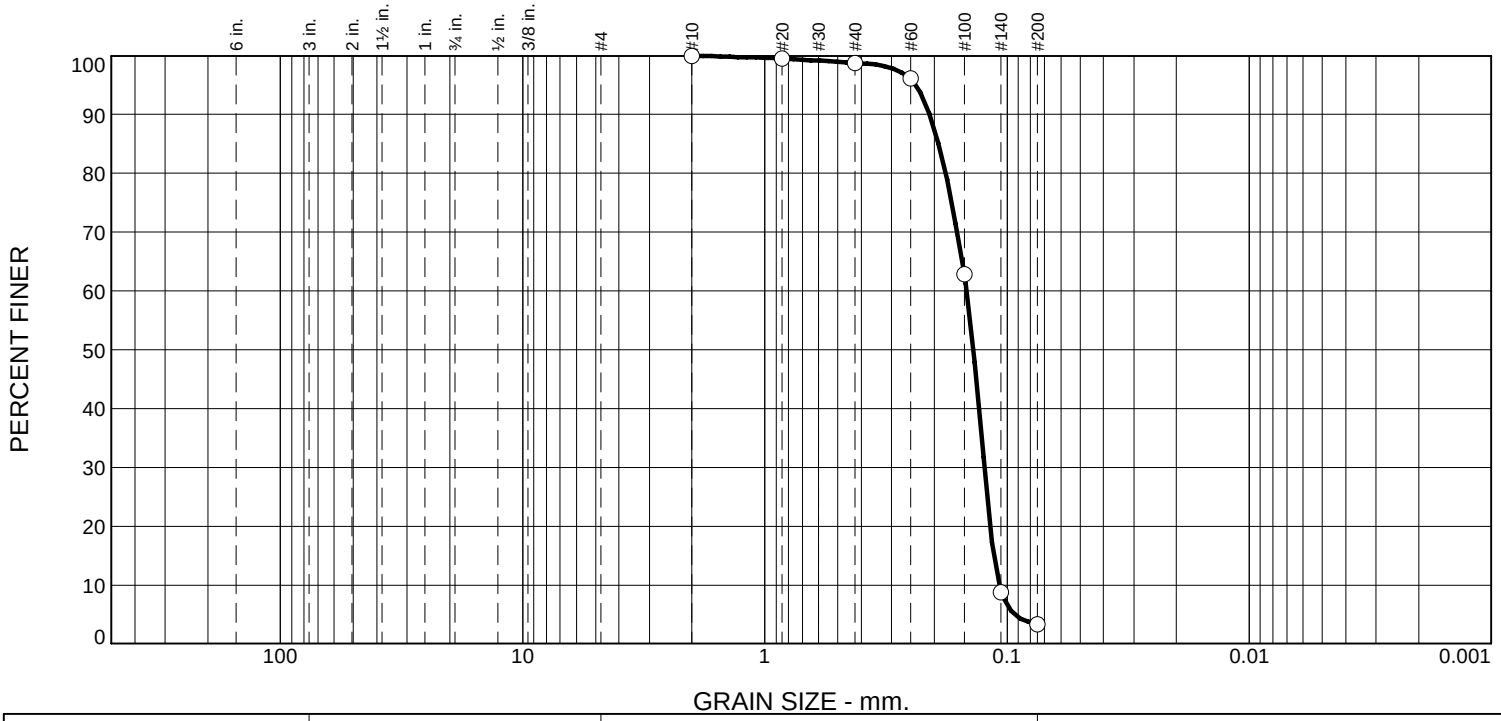
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.3	95.4	3.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.5		
#40	98.7		
#60	96.1		
#100	62.8		
#140	8.8		
#200	3.3		

· (no specification provided)

Material Description

Brown with Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2087 D_{85}= 0.1921

D_{60}= 0.1466 D_{50}= 0.1377

D_{30}= 0.1241 D_{15}= 0.1134

D_{10}= 0.1081

C_u= 1.36 C_c= 0.97

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

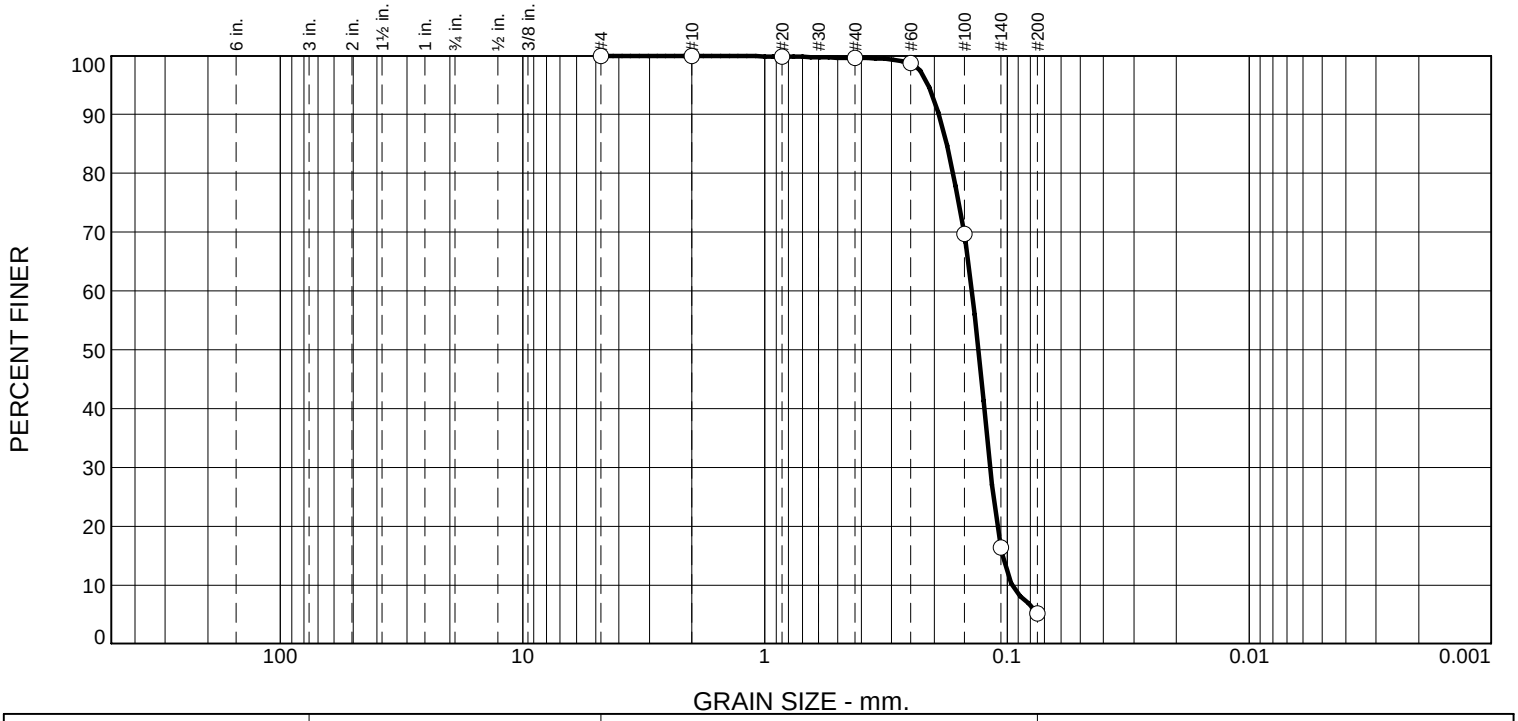
Source of Sample: PA23-1028S W-C
Sample Number: 13D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.3	94.5	5.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.9		
#40	99.6		
#60	98.8		
#100	69.7		
#140	16.4		
#200	5.1		

* (no specification provided)

Material Description

Brown with Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1914 D_{85}= 0.1778

D_{60}= 0.1395 D_{50}= 0.1315

D_{30}= 0.1174 D_{15}= 0.1043

D_{10}= 0.0956

C_u= 1.46 C_c= 1.03

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 13 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

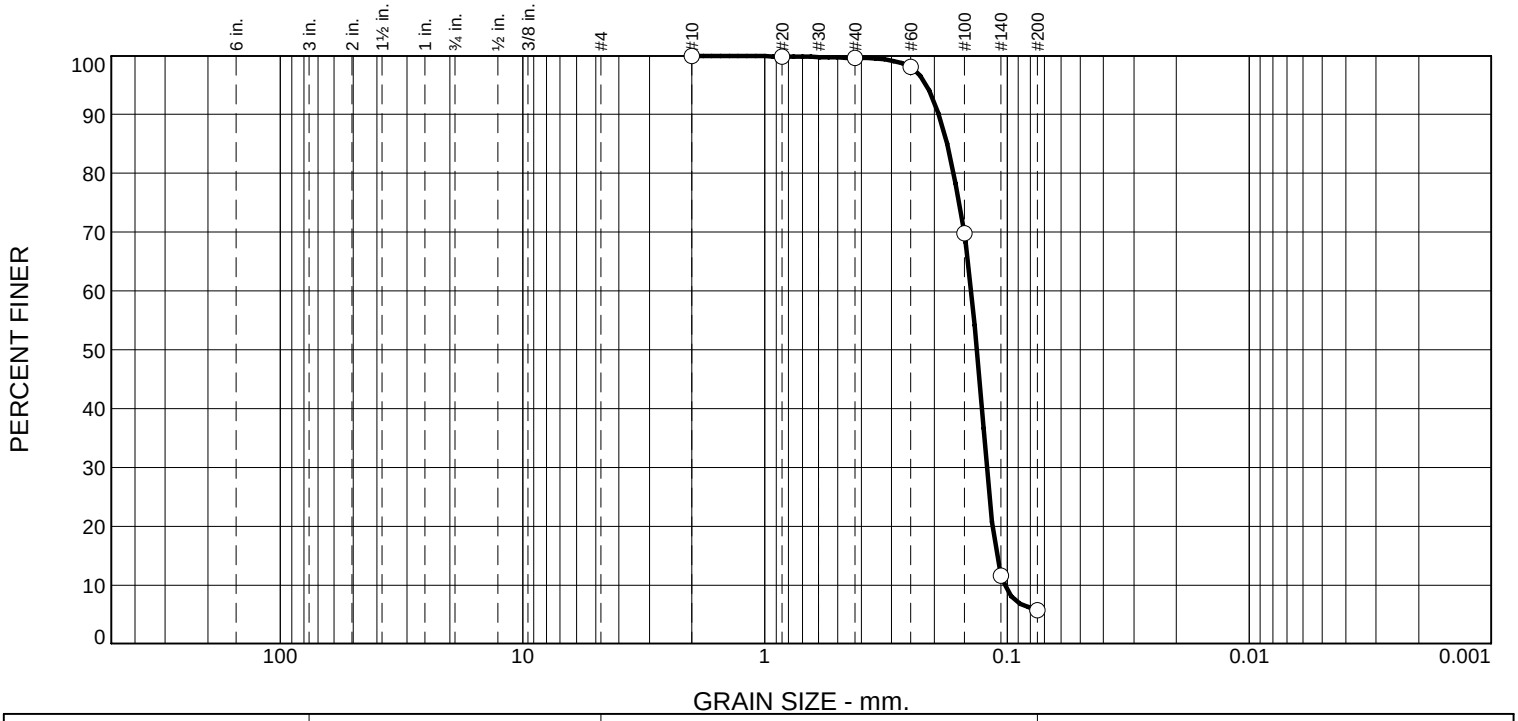
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	93.9	5.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	98.1		
#100	69.8		
#140	11.6		
#200	5.7		

· (no specification provided)

Material Description

Brown with Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1917 D_{85}= 0.1771

D_{60}= 0.1404 D_{50}= 0.1334

D_{30}= 0.1213 D_{15}= 0.1105

D_{10}= 0.1023

C_u= 1.37 C_c= 1.02

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 14A

INSIGHT GROUP
A CHRISTOPHER COMPANY

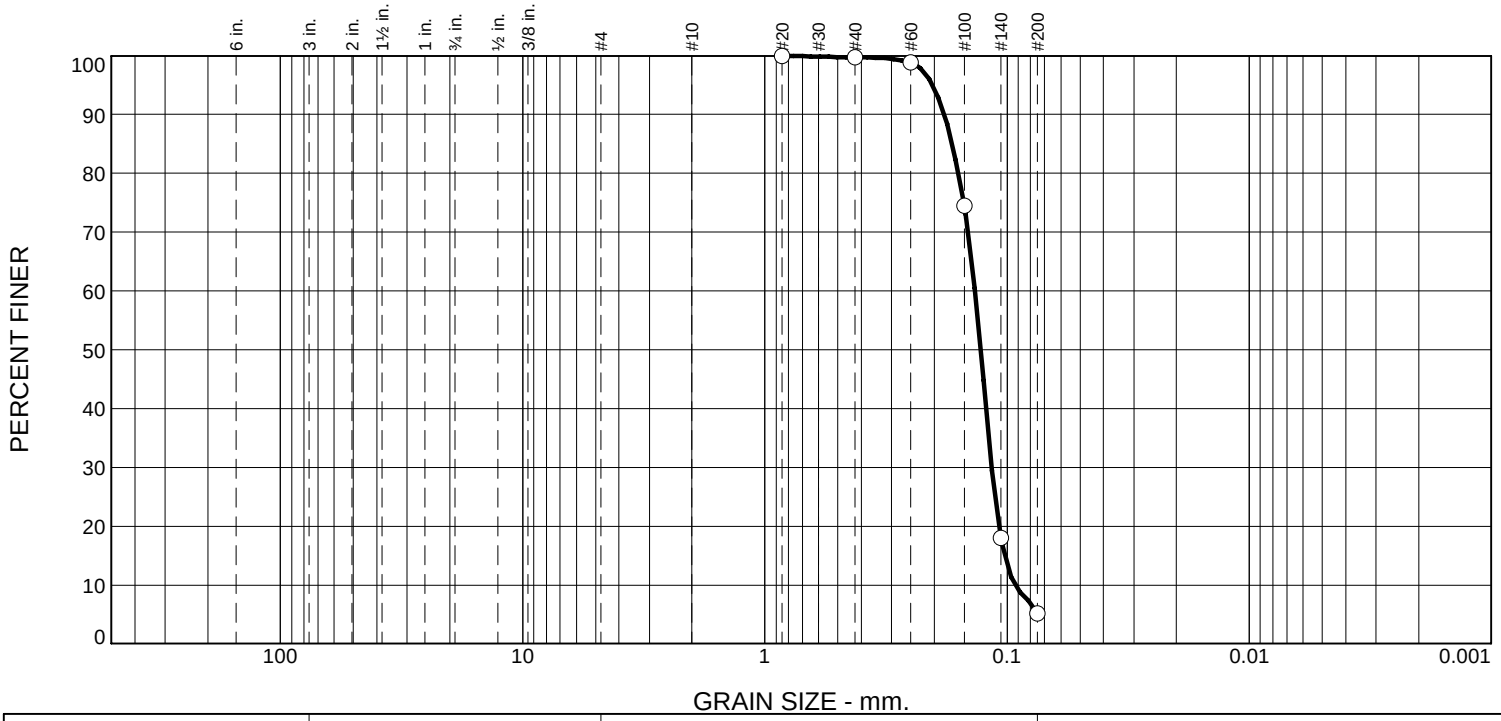
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	94.5	5.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.7		
#60	98.9		
#100	74.5		
#140	18.0		
#200	5.2		

· (no specification provided)

Material Description

Brown with Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1821 D_{85}= 0.1687

D_{60}= 0.1358 D_{50}= 0.1287

D_{30}= 0.1156 D_{15}= 0.1024

D_{10}= 0.0930

C_u= 1.46 C_c= 1.06

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 14B

INSIGHT GROUP
A CHRISTOPHER COMPANY

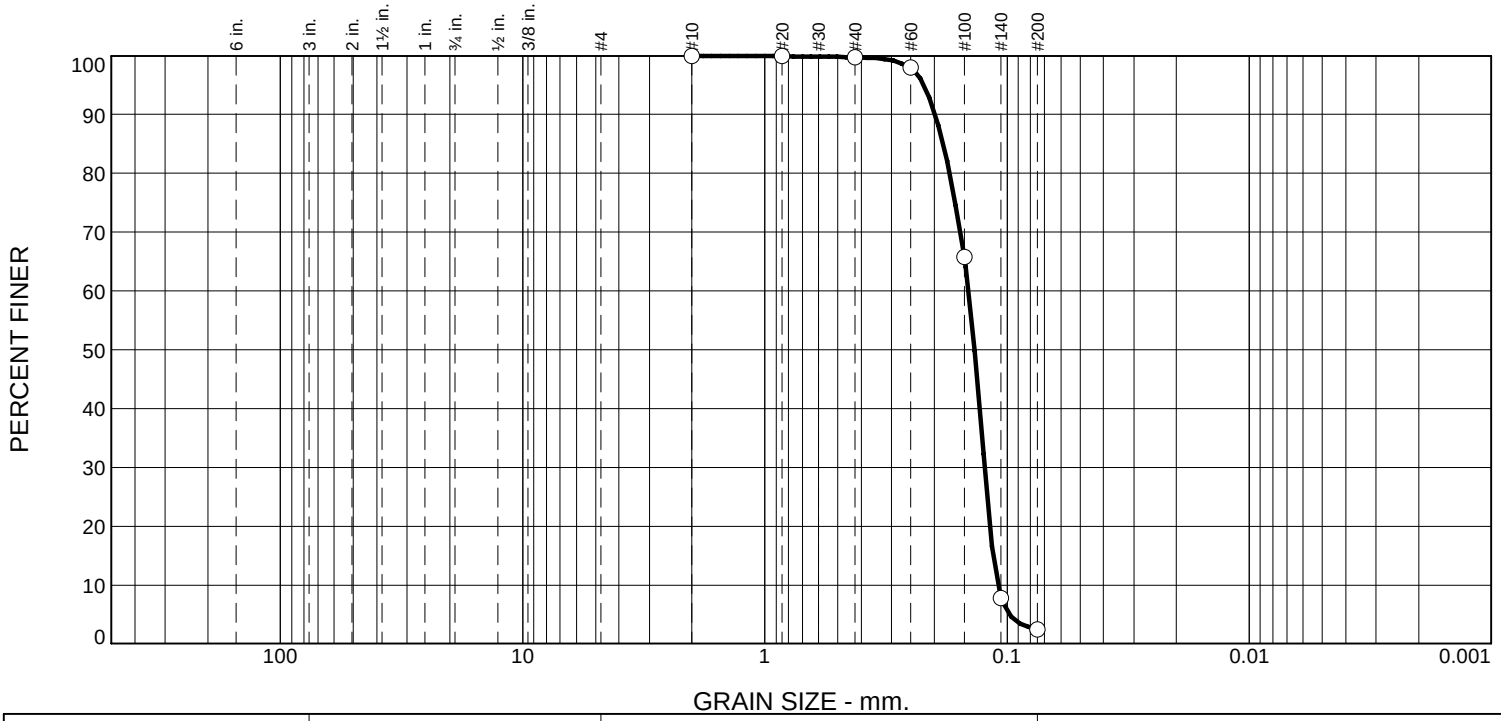
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	97.3	2.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.7		
#60	98.0		
#100	65.7		
#140	7.8		
#200	2.4		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1982 D_{85}= 0.1838
D_{60}= 0.1440 D_{50}= 0.1363
D_{30}= 0.1239 D_{15}= 0.1140
D_{10}= 0.1094
C_u= 1.32 C_c= 0.97

Sieve Test (ASTM D6913)
Test Date: 3/16/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)
SP

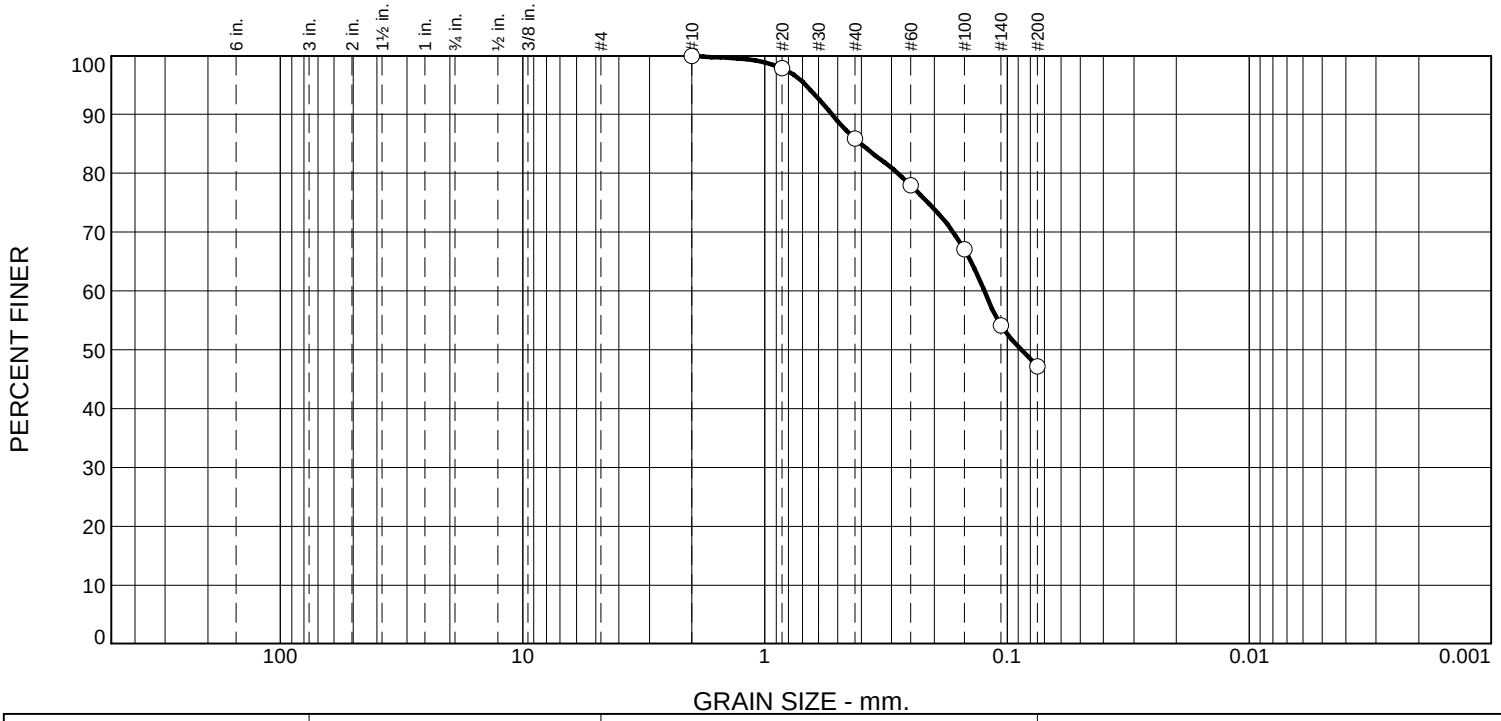
Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1028S W-C
Sample Number: 14C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	14.1	38.7	47.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.9		
#40	85.9		
#60	78.0		
#100	67.1		
#140	54.2		
#200	47.2		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.5281 D_{85}= 0.4016

D_{60}= 0.1242 D_{50}= 0.0876

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

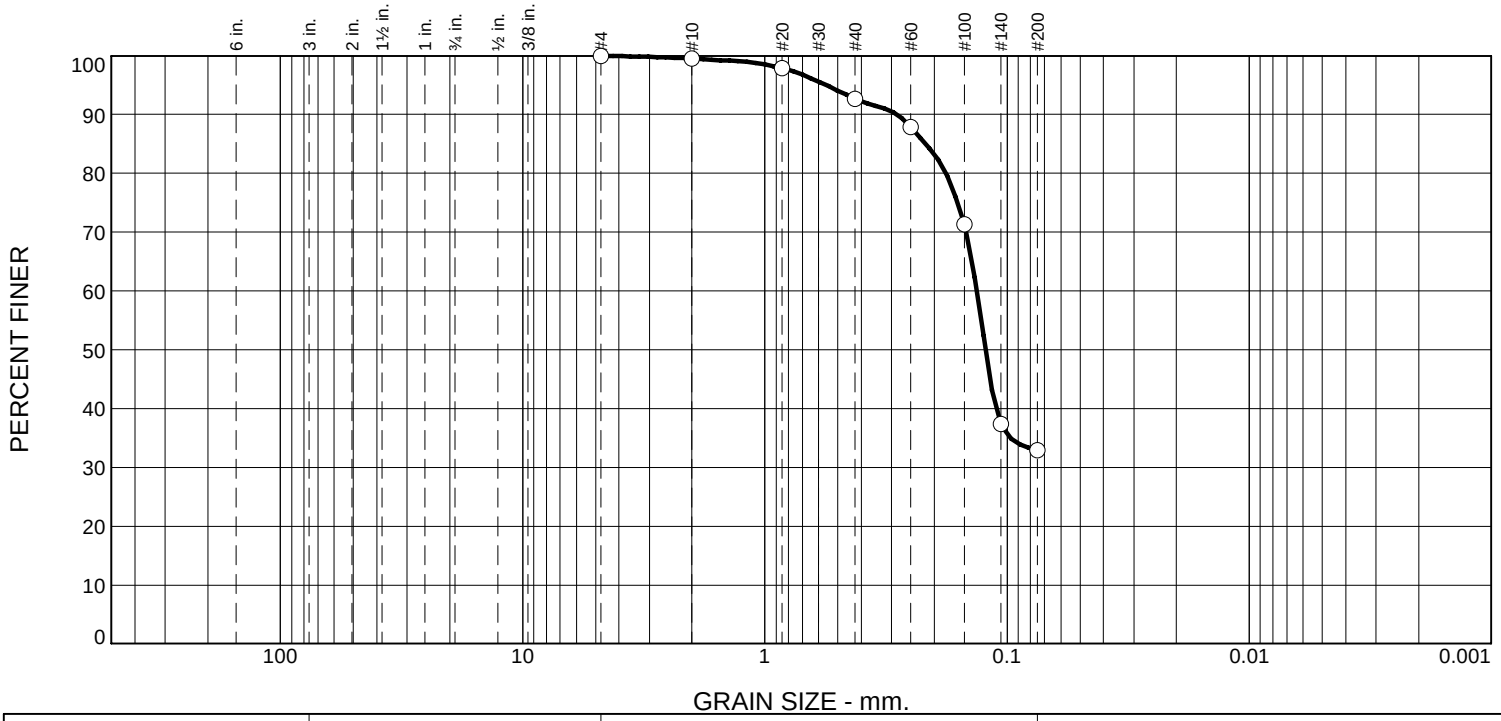
Source of Sample: PA23-1028S W-C
Sample Number: 14D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	6.8	59.8	32.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.5		
#20	97.9		
#40	92.7		
#60	87.9		
#100	71.3		
#140	37.4		
#200	32.9		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2856 D_{85}= 0.2160

D_{60}= 0.1334 D_{50}= 0.1228

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/16/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C
Sample Number: 14 Comp

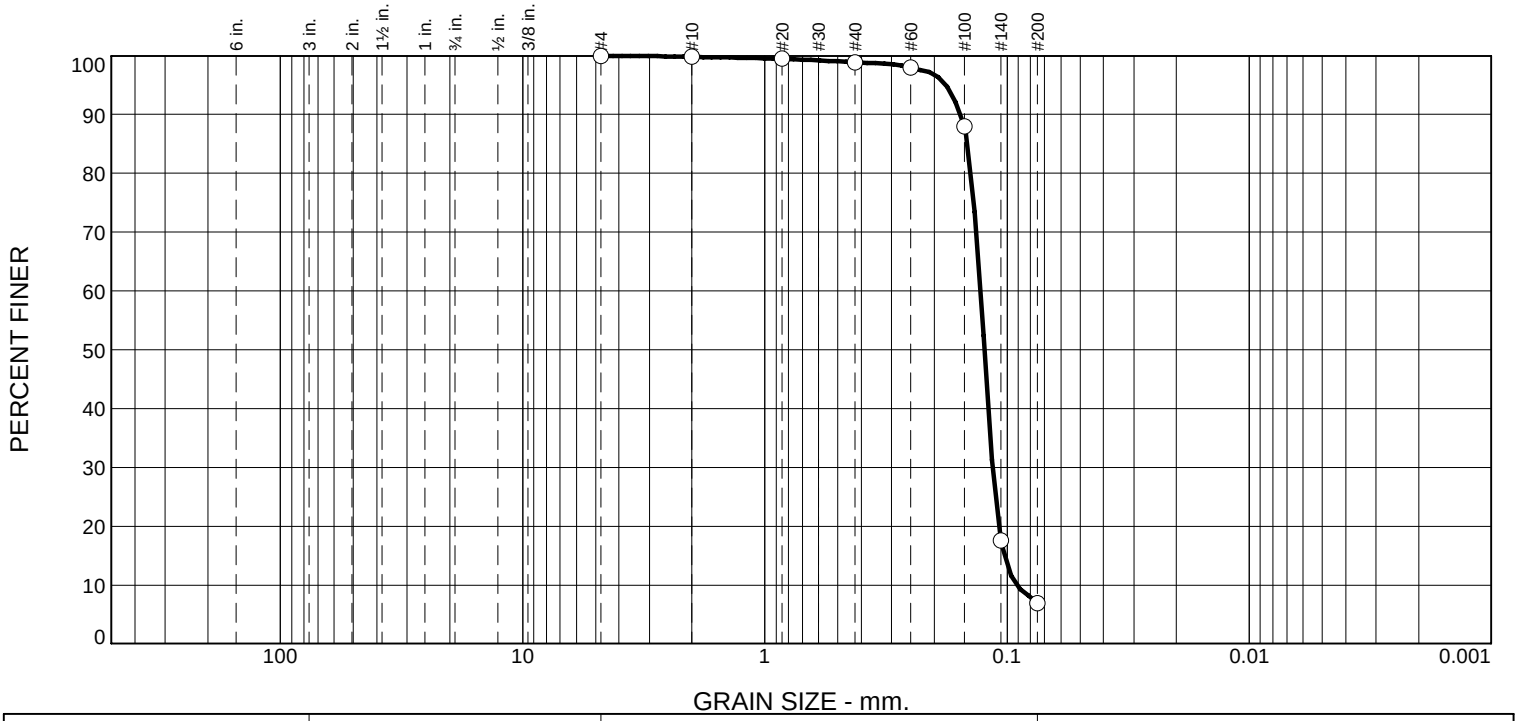
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.9	92.0	6.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.5		
#40	98.9		
#60	98.0		
#100	88.0		
#140	17.6		
#200	6.9		

· (no specification provided)

Material Description
Dark Gray with Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1556 D_{85}= 0.1452
D_{60}= 0.1289 D_{50}= 0.1241
D_{30}= 0.1145 D_{15}= 0.1026
D_{10}= 0.0918
C_u= 1.40 C_c= 1.11

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1028S W-C
Sample Number: 2B

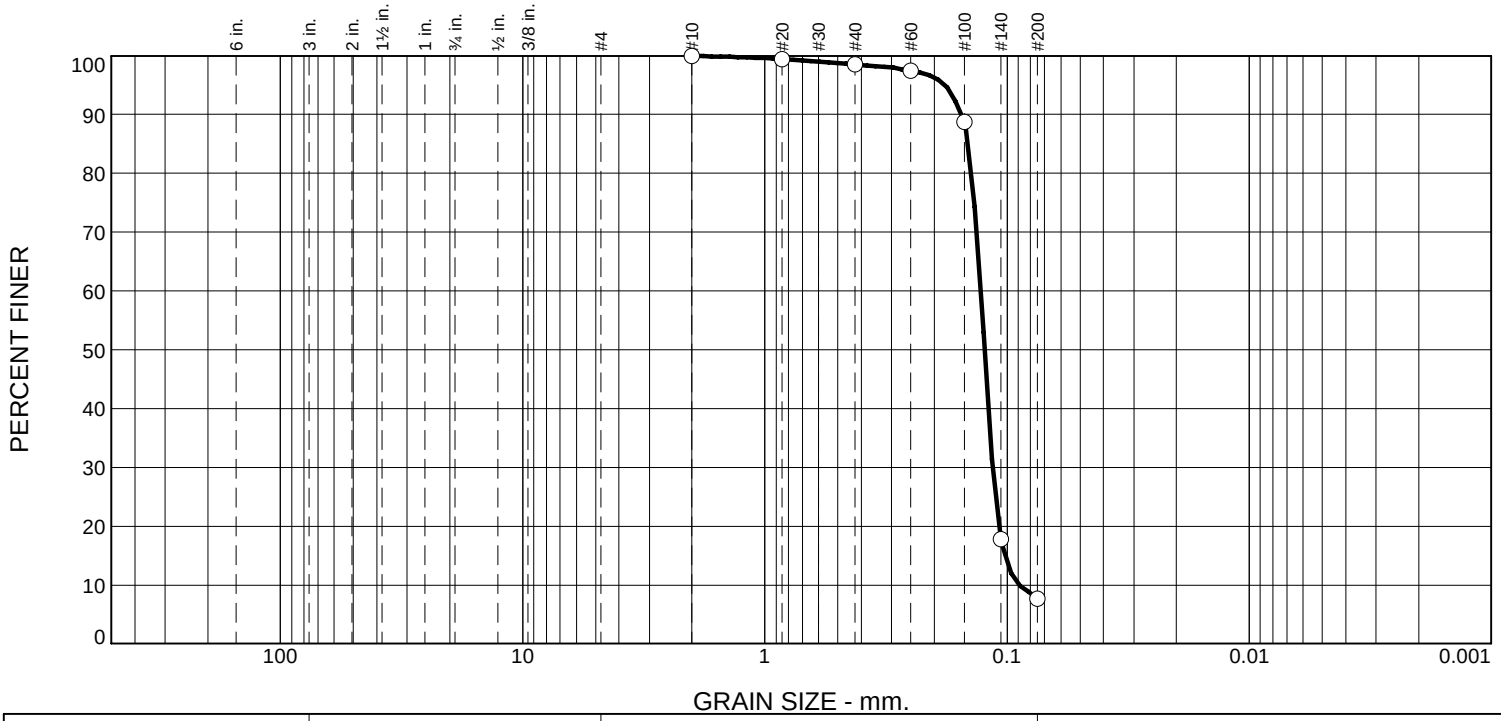
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.5	90.8	7.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.5		
#40	98.5		
#60	97.4		
#100	88.7		
#140	17.8		
#200	7.7		

· (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1541 D_{85}= 0.1443

D_{60}= 0.1286 D_{50}= 0.1239

D_{30}= 0.1145 D_{15}= 0.1021

D_{10}= 0.0892

C_u= 1.44 C_c= 1.14

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C
Sample Number: 2A

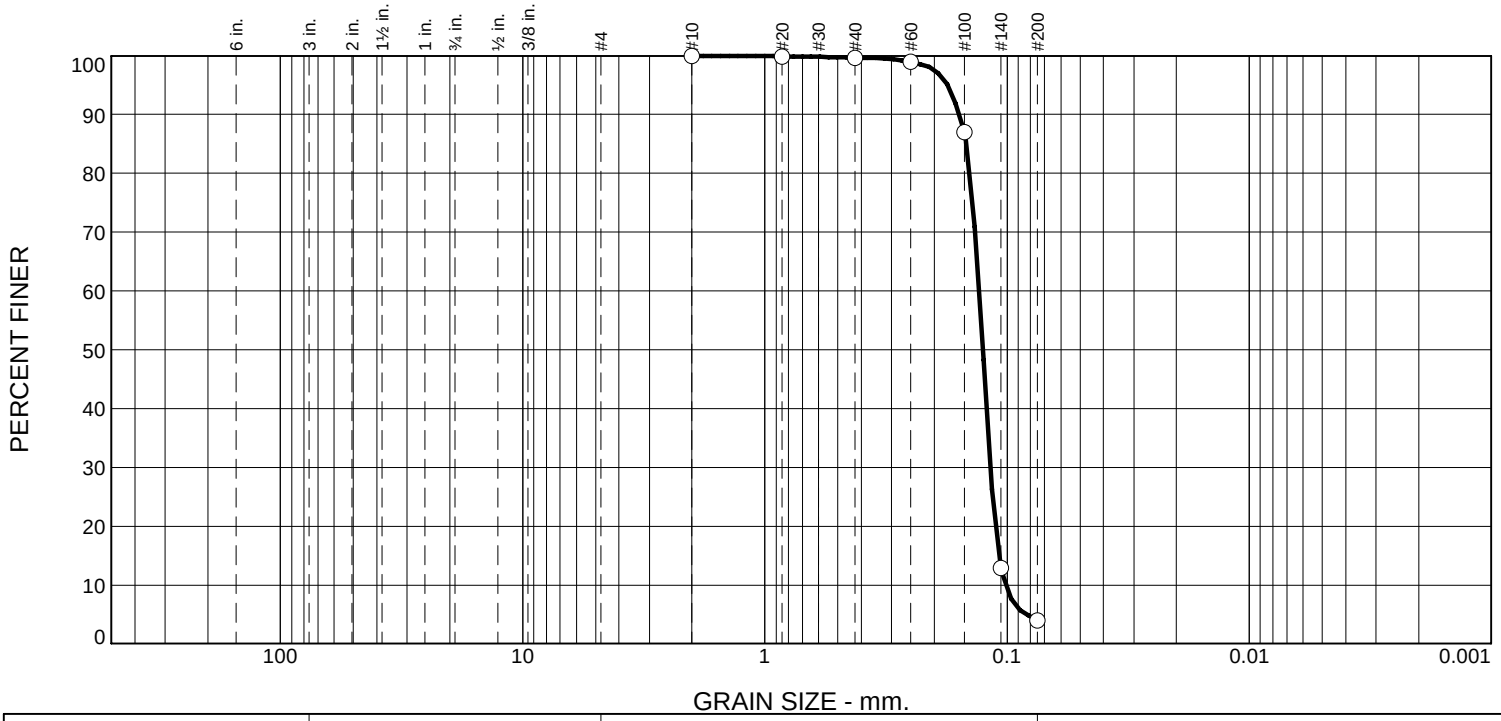
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	95.8	3.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.7		
#60	98.9		
#100	87.0		
#140	12.9		
#200	3.9		

· (no specification provided)

Material Description

Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1573 D_{85}= 0.1468

D_{60}= 0.1306 D_{50}= 0.1260

D_{30}= 0.1171 D_{15}= 0.1083

D_{10}= 0.1014

C_u= 1.29 C_c= 1.03

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

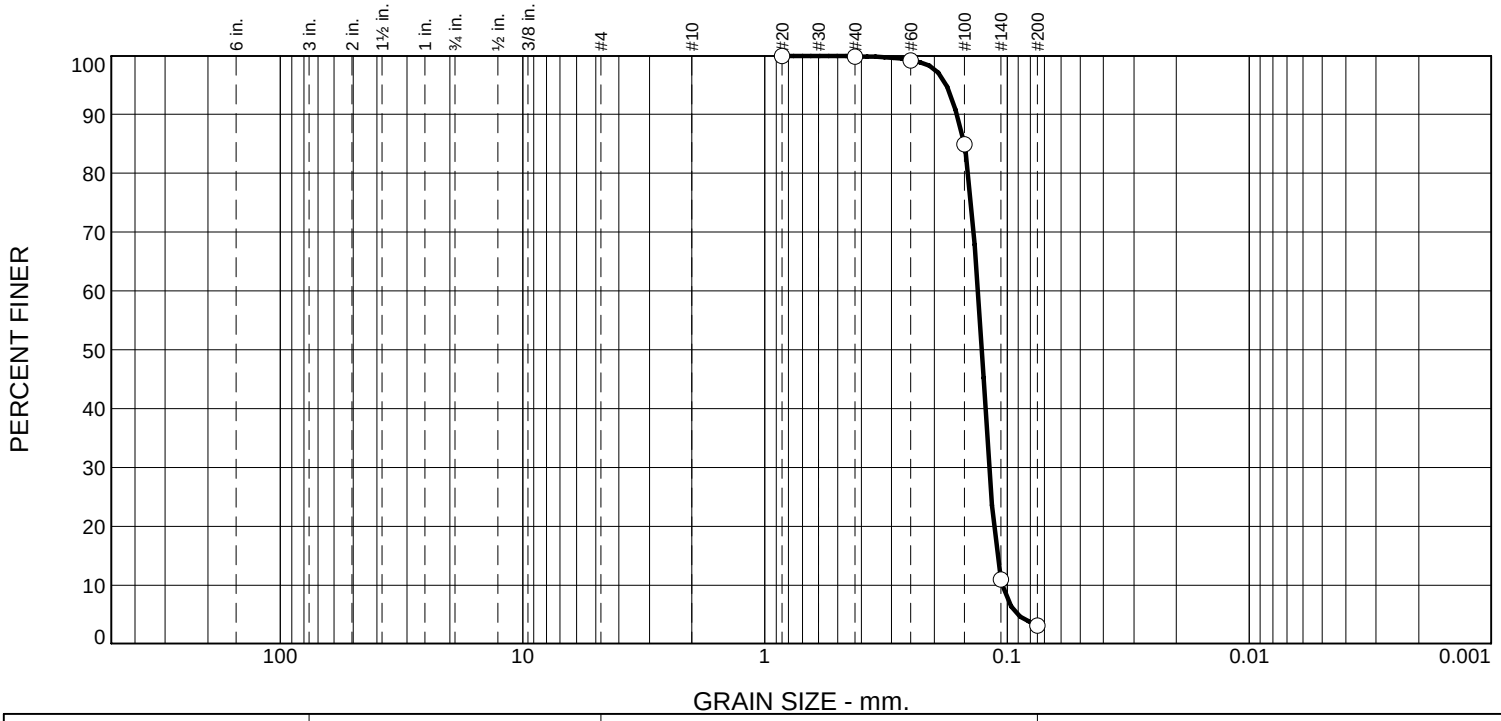
Source of Sample: PA23-1028S W-C
Sample Number: 2C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	96.8	3.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.2		
#100	84.9		
#140	10.9		
#200	3.1		

· (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1609 D_{85}= 0.1502

D_{60}= 0.1320 D_{50}= 0.1274

D_{30}= 0.1184 D_{15}= 0.1101

D_{10}= 0.1045

C_u= 1.26 C_c= 1.02

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 2D

INSIGHT GROUP
A CHRISTOPHER COMPANY

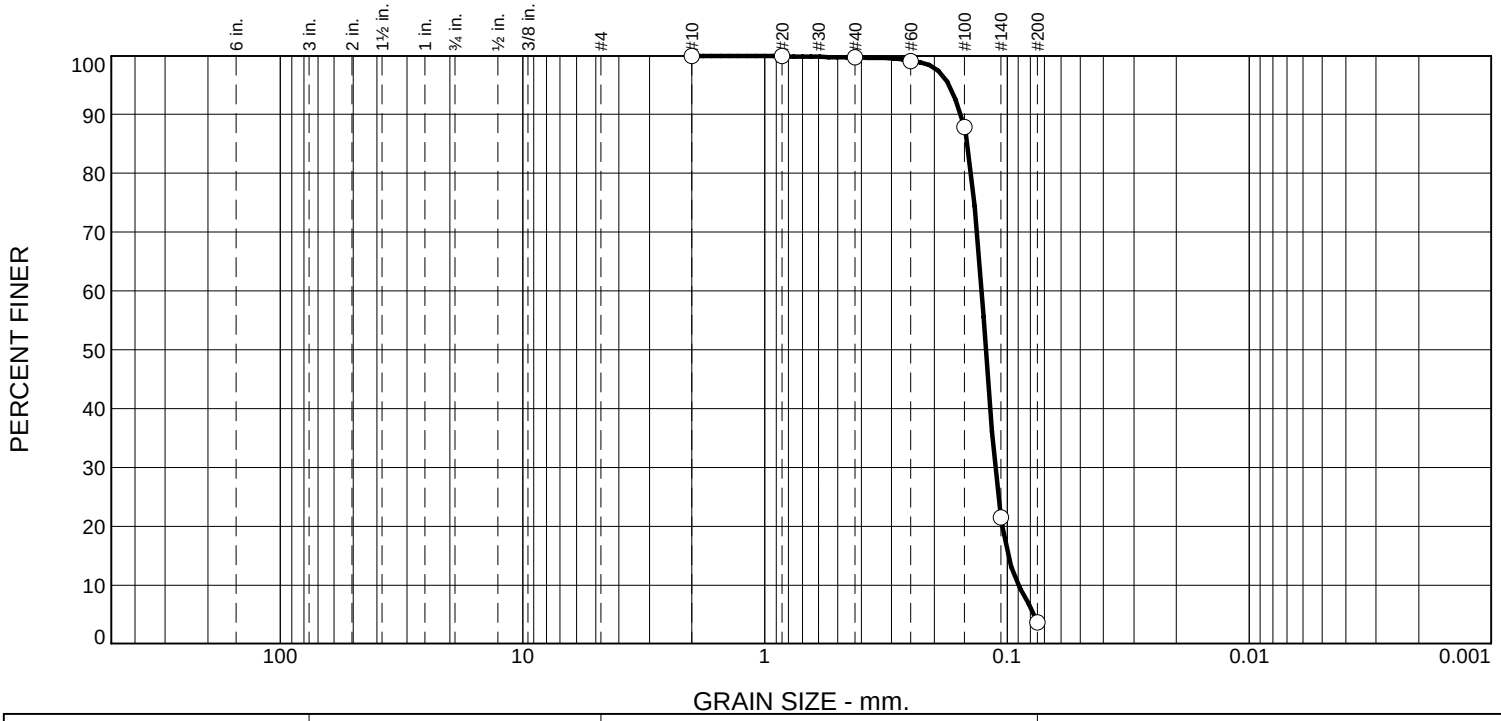
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	96.0	3.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.7		
#60	99.1		
#100	87.9		
#140	21.5		
#200	3.7		

· (no specification provided)

Material Description

Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1552 D_{85}= 0.1454

D_{60}= 0.1276 D_{50}= 0.1224

D_{30}= 0.1118 D_{15}= 0.0991

D_{10}= 0.0902

C_u= 1.41 C_c= 1.09

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

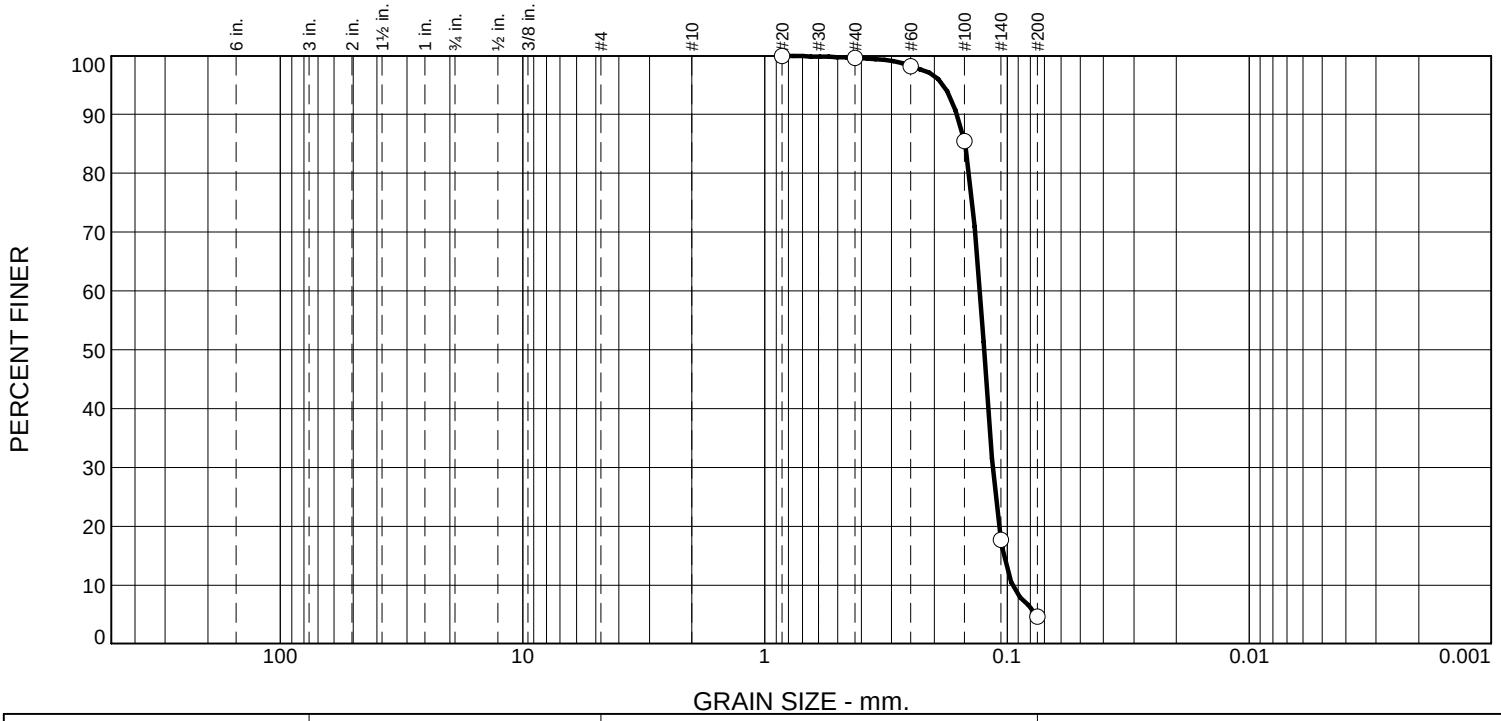
Source of Sample: PA23-1028S W-C
Sample Number: 2E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	94.9	4.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.6		
#60	98.2		
#100	85.5		
#140	17.6		
#200	4.7		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1610 D_{85}= 0.1490
D_{60}= 0.1297 D_{50}= 0.1246
D_{30}= 0.1144 D_{15}= 0.1032
D_{10}= 0.0952
C_u= 1.36 C_c= 1.06

USCS (ASTM D2487)
SP

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

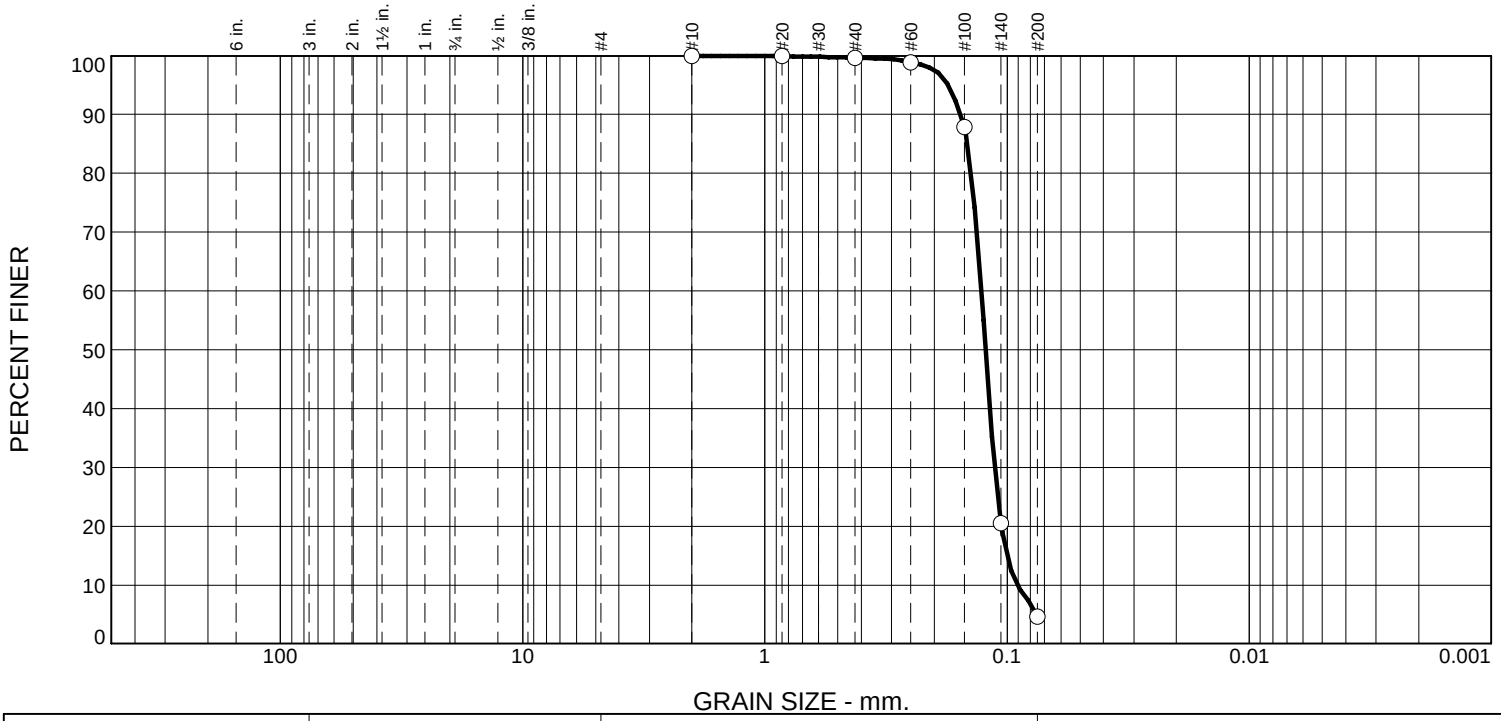
Source of Sample: PA23-1028S W-C
Sample Number: 2F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	95.0	4.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	98.9		
#100	87.9		
#140	20.5		
#200	4.6		

· (no specification provided)

Source of Sample: PA23-1028S W-C
Sample Number: 2 Comp

Material Description
Dark Gray with Brown

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1554 D_{85}= 0.1453
D_{60}= 0.1278 D_{50}= 0.1227
D_{30}= 0.1124 D_{15}= 0.1002
D_{10}= 0.0911
C_u= 1.40 C_c= 1.09

USCS (ASTM D2487)

SP

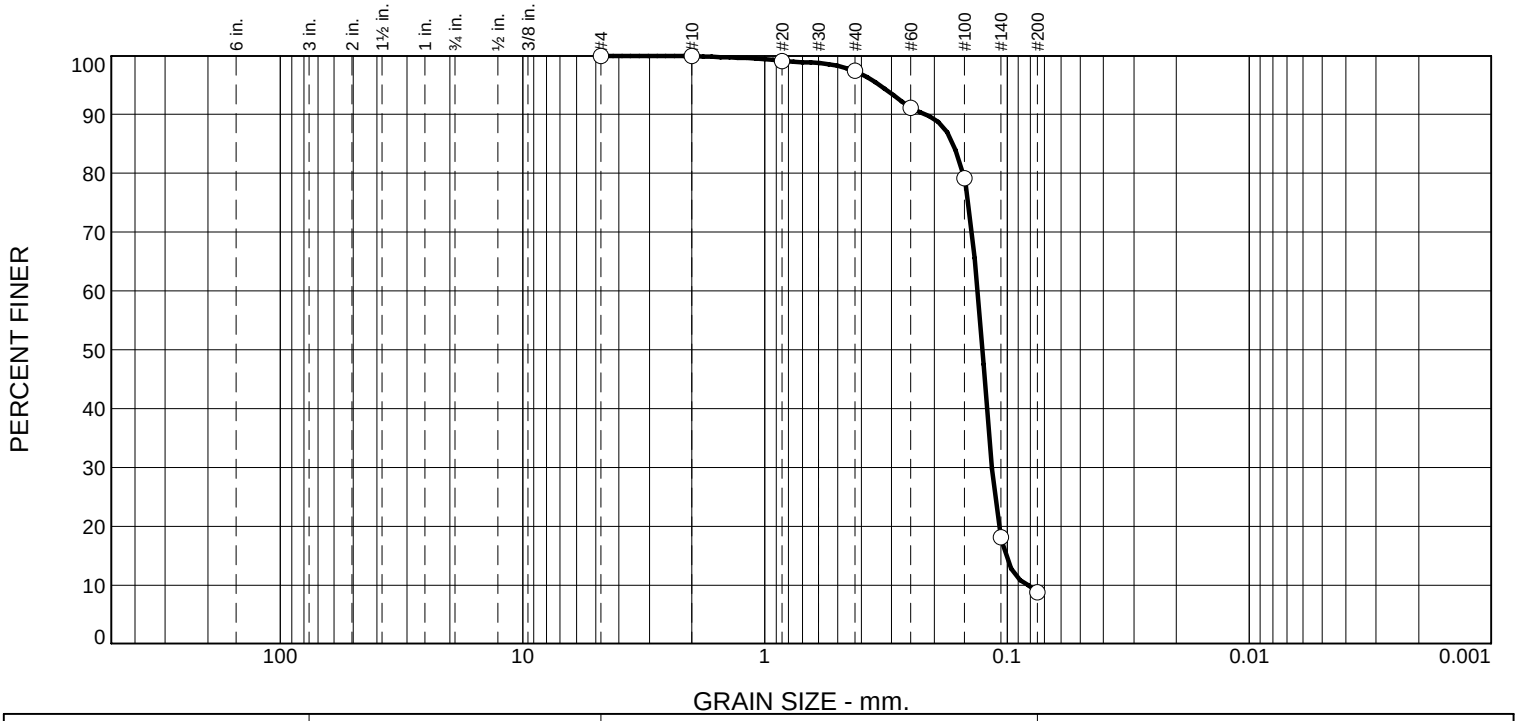
Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.5	88.7	8.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.1		
#40	97.4		
#60	91.2		
#100	79.2		
#140	18.2		
#200	8.7		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2173 D_{85}= 0.1671

D_{60}= 0.1325 D_{50}= 0.1266

D_{30}= 0.1154 D_{15}= 0.1011

D_{10}= 0.0822

C_u= 1.61 C_c= 1.22

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 3A

INSIGHT GROUP
A CHRISTOPHER COMPANY

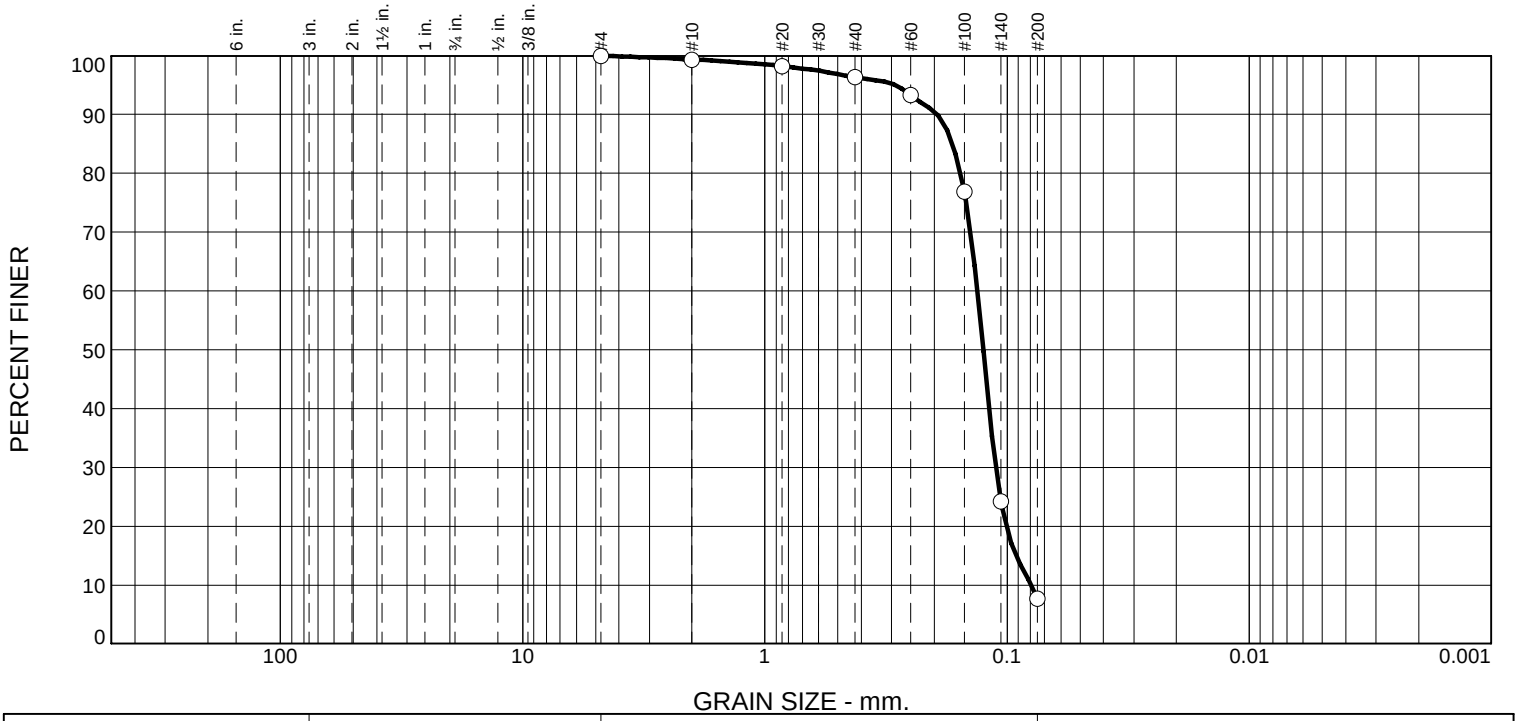
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	3.1	88.6	7.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.4		
#20	98.3		
#40	96.3		
#60	93.3		
#100	76.9		
#140	24.3		
#200	7.7		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1945 D_{85}= 0.1681

D_{60}= 0.1327 D_{50}= 0.1254

D_{30}= 0.1112 D_{15}= 0.0922

D_{10}= 0.0793

C_u= 1.67 C_c= 1.17

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

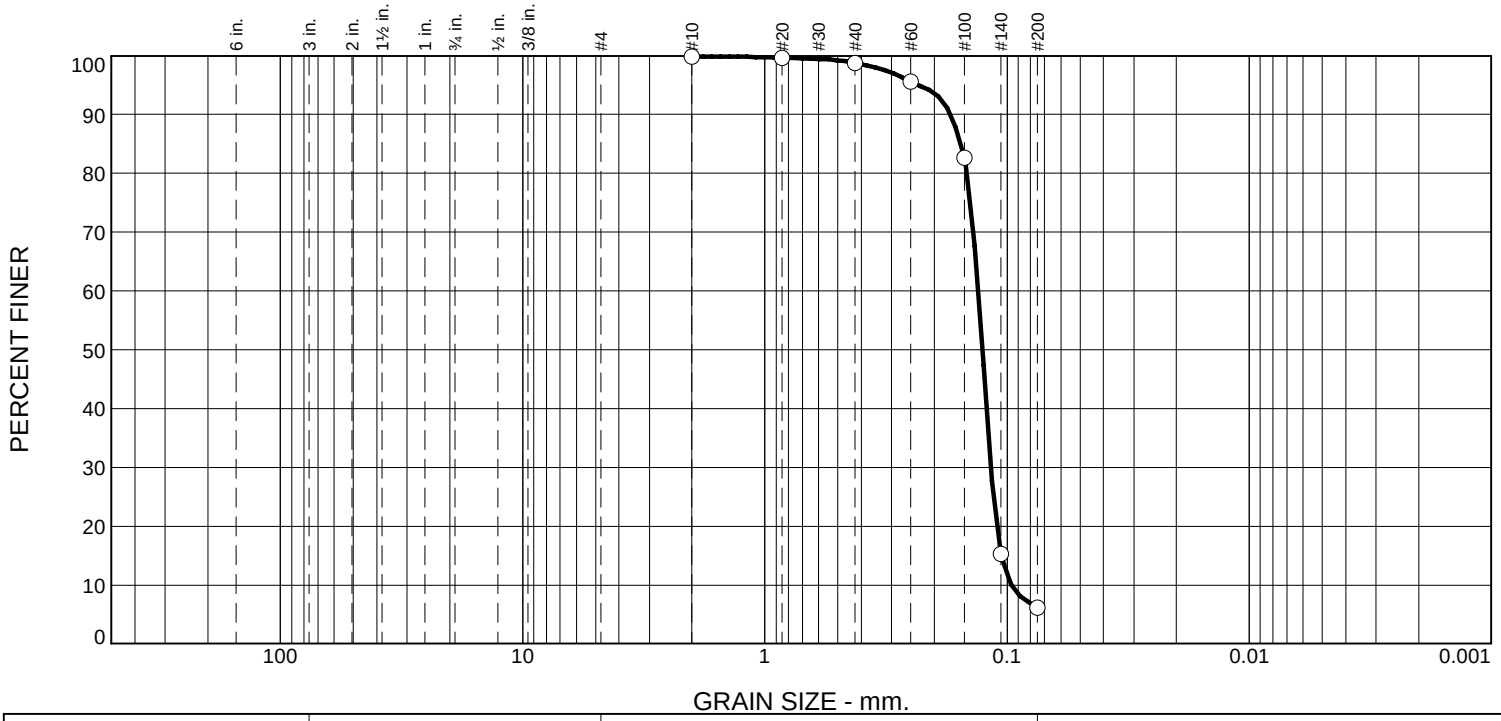
Source of Sample: PA23-1028S W-C
Sample Number: 3B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
				1.1	92.7	6.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	99.9		
#20	99.7		
#40	98.8		
#60	95.6		
#100	82.7		
#140	15.3		
#200	6.1		

* (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1713 D_{85}= 0.1551

D_{60}= 0.1317 D_{50}= 0.1265

D_{30}= 0.1165 D_{15}= 0.1055

D_{10}= 0.0961

C_u= 1.37 C_c= 1.07

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

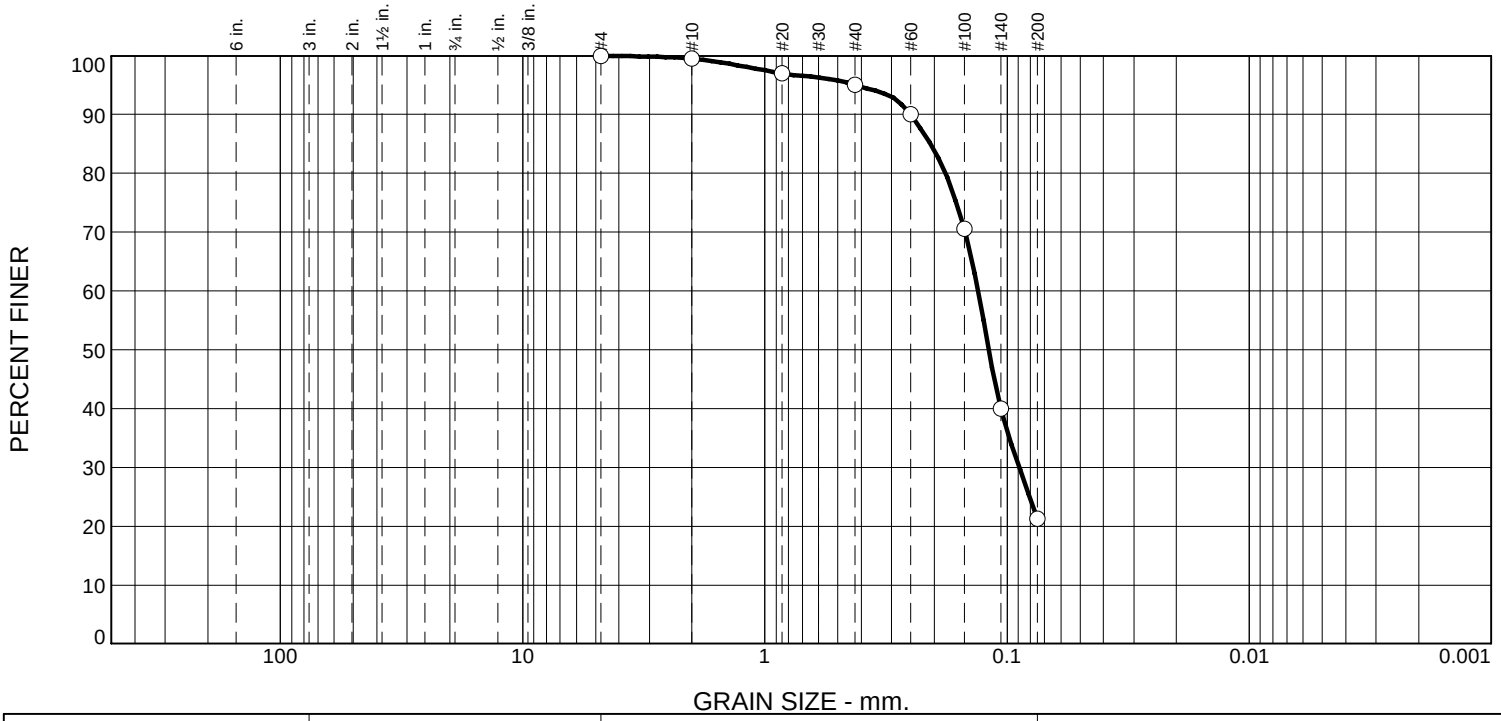
Source of Sample: PA23-1028S W-C
Sample Number: 3C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	4.5	73.7	21.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.5		
#20	97.0		
#40	95.0		
#60	90.0		
#100	70.6		
#140	40.0		
#200	21.3		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2497 D_{85}= 0.2069

D_{60}= 0.1319 D_{50}= 0.1190

D_{30}= 0.0893 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 3D

INSIGHT GROUP
A CHRISTOPHER COMPANY

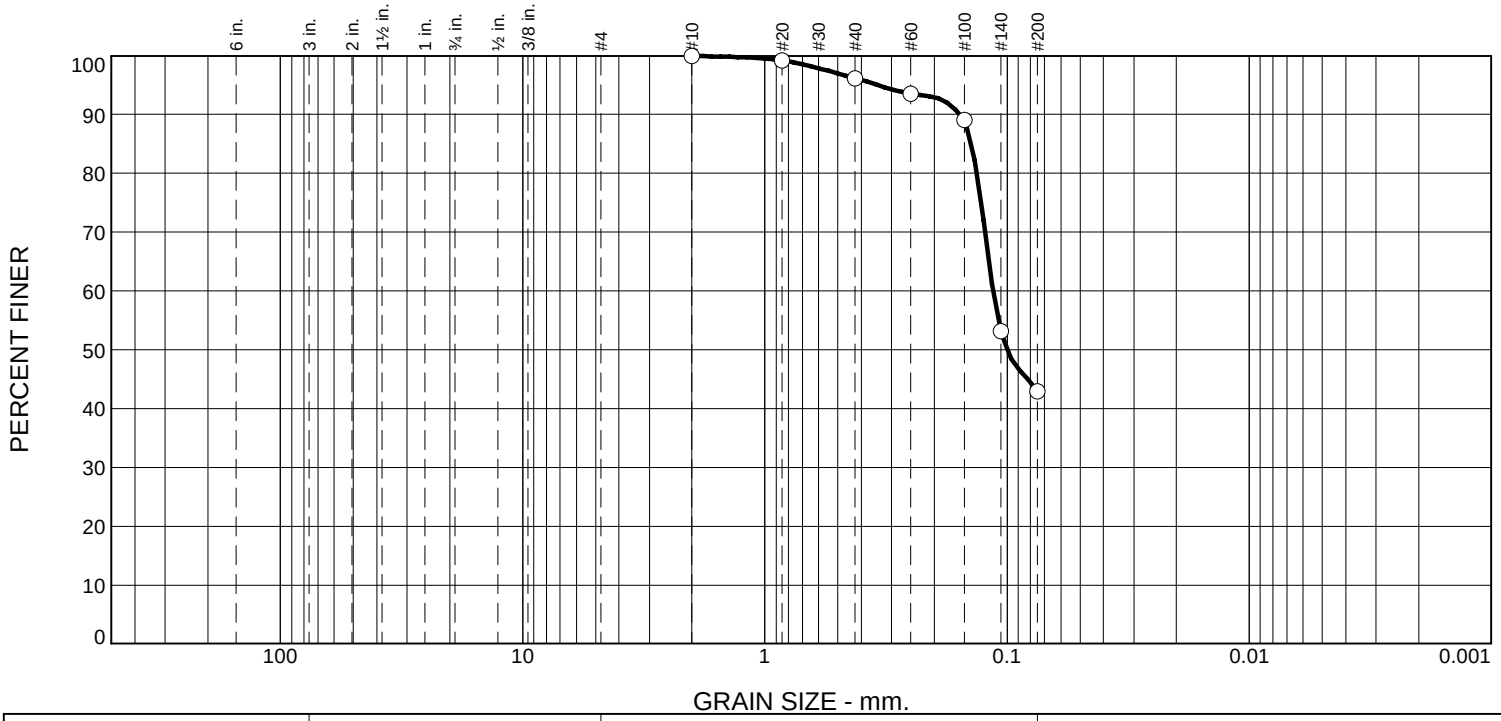
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.8	53.2	43.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.2		
#40	96.2		
#60	93.5		
#100	89.0		
#140	53.2		
#200	43.0		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1562 D_{85}= 0.1401

D_{60}= 0.1141 D_{50}= 0.1001

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 3E

INSIGHT GROUP
A CHRISTOPHER COMPANY

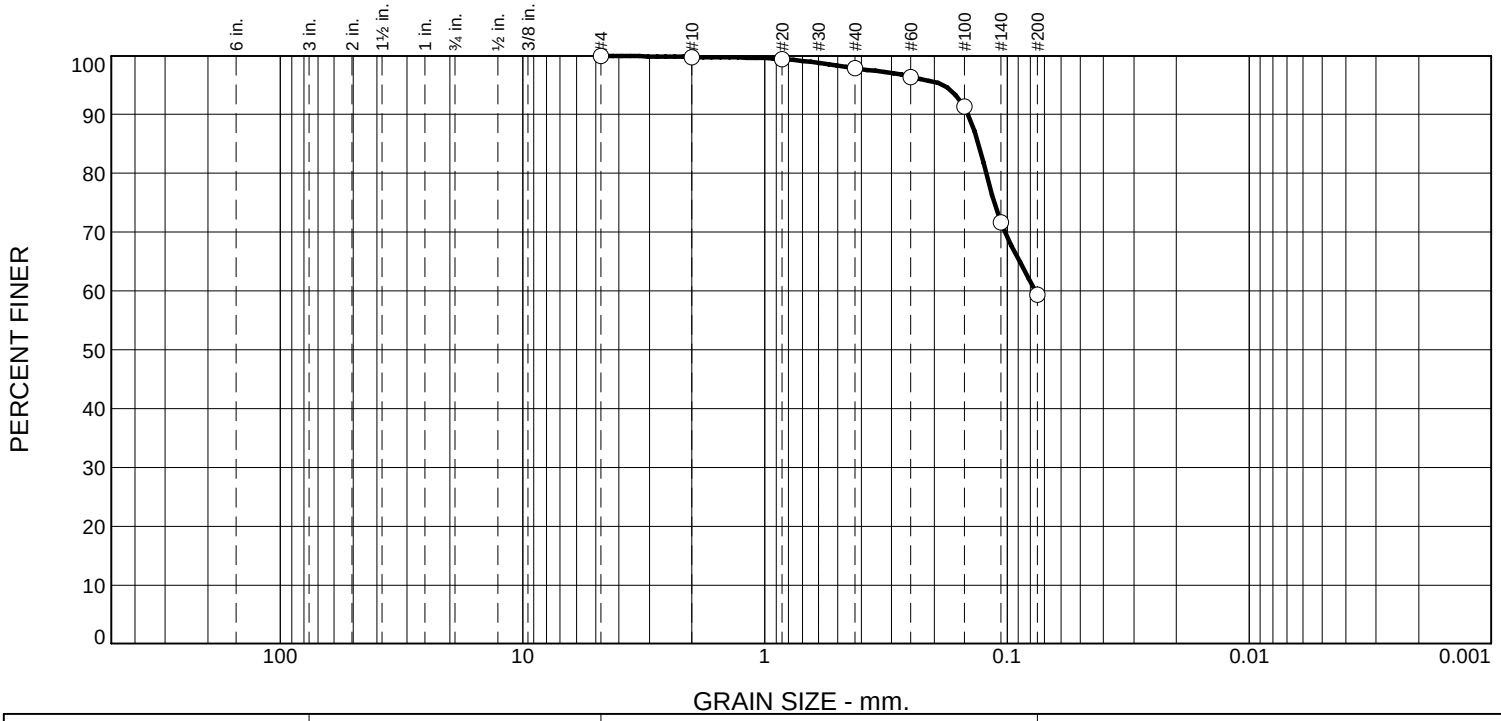
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	2.0	38.4	59.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.4		
#40	97.8		
#60	96.4		
#100	91.4		
#140	71.7		
#200	59.4		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1443 D_{85}= 0.1315

D_{60}= 0.0763 D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

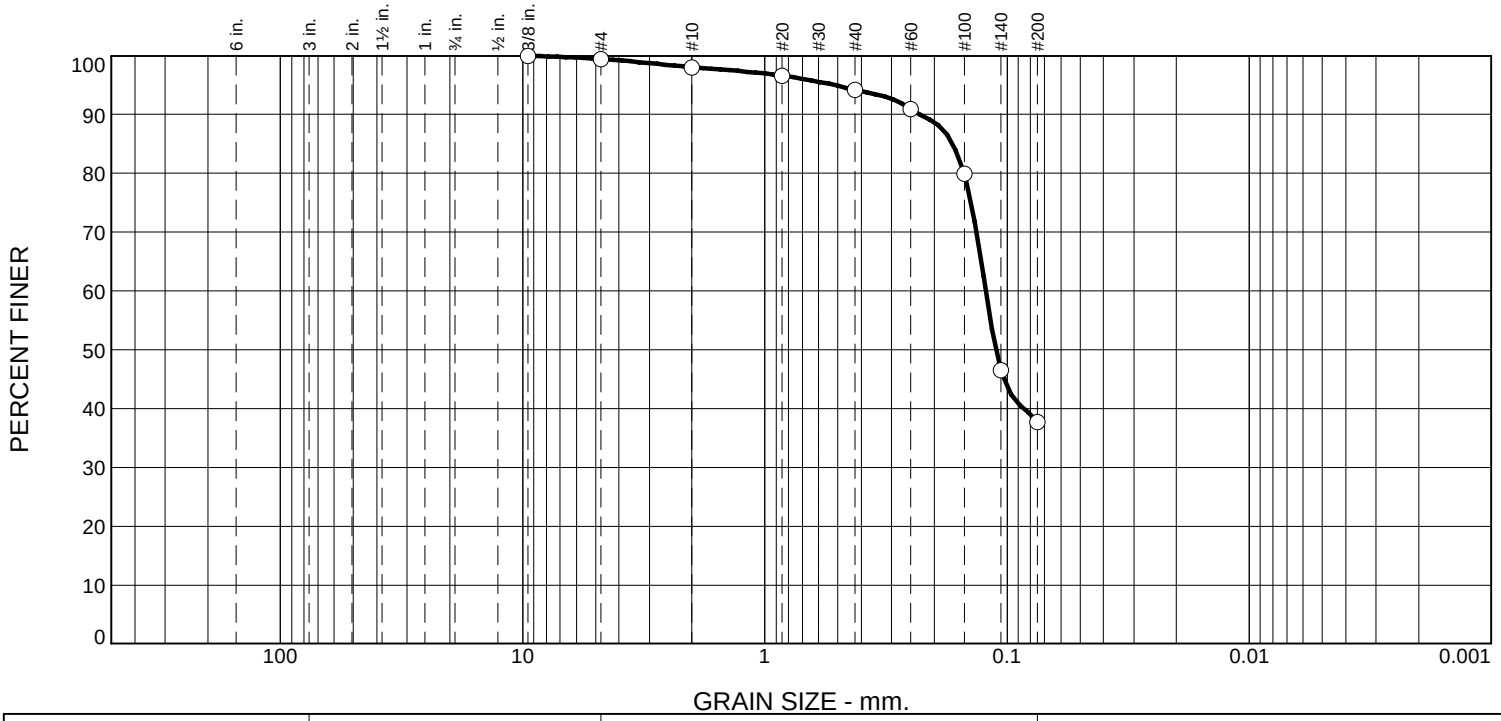
Source of Sample: PA23-1028S W-C
Sample Number: 3F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	1.5	3.8	56.5	37.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.5		
#10	98.0		
#20	96.6		
#40	94.2		
#60	90.9		
#100	79.9		
#140	46.5		
#200	37.7		

* (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2298 D_{85}= 0.1677

D_{60}= 0.1225 D_{50}= 0.1111

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: Comp 3

INSIGHT GROUP
A CHRISTOPHER COMPANY

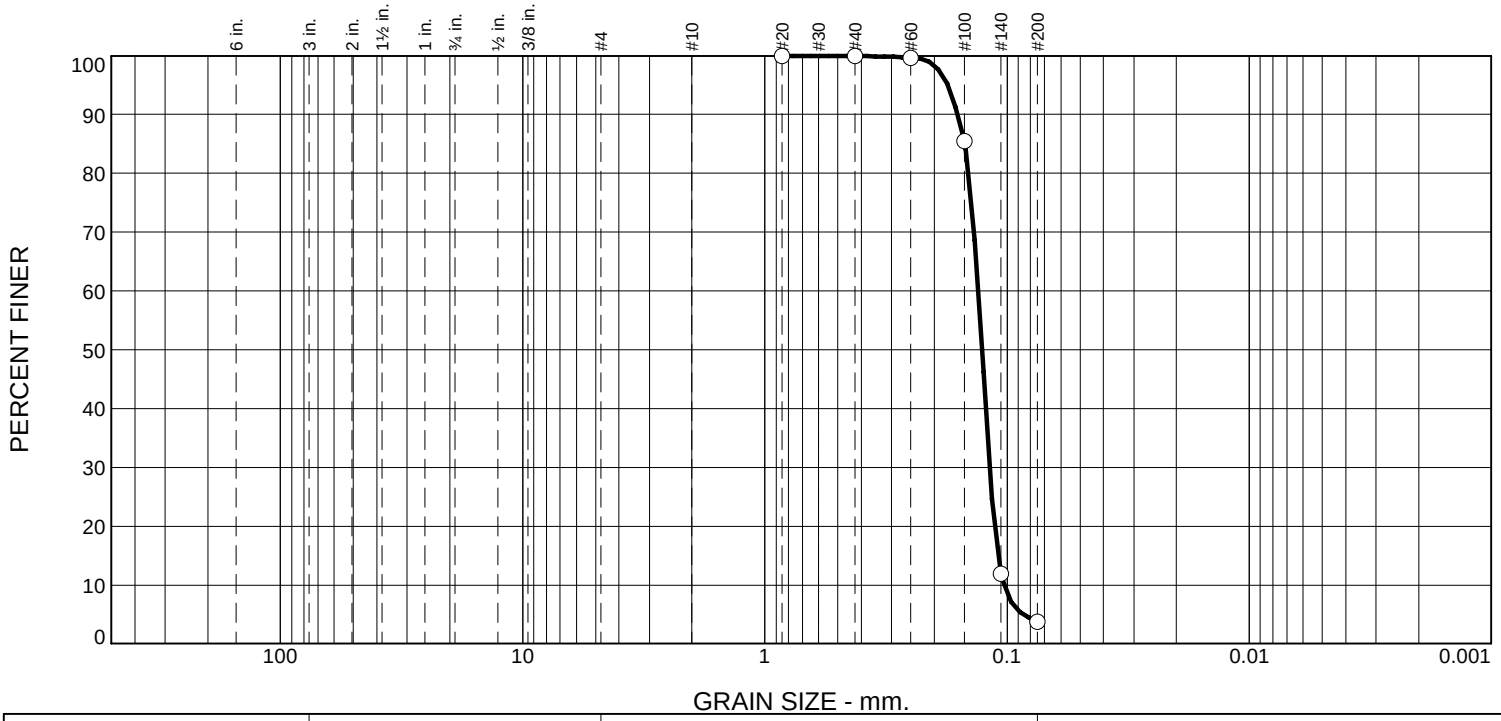
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	96.1	3.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.7		
#100	85.4		
#140	11.9		
#200	3.8		

* (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1596 D_{85}= 0.1493
D_{60}= 0.1317 D_{50}= 0.1270
D_{30}= 0.1179 D_{15}= 0.1093
D_{10}= 0.1028
C_u= 1.28 C_c= 1.03

Sieve Test (ASTM D6913)
Test Date: 3/13/23 **Technician:** M. Moore
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)
SP

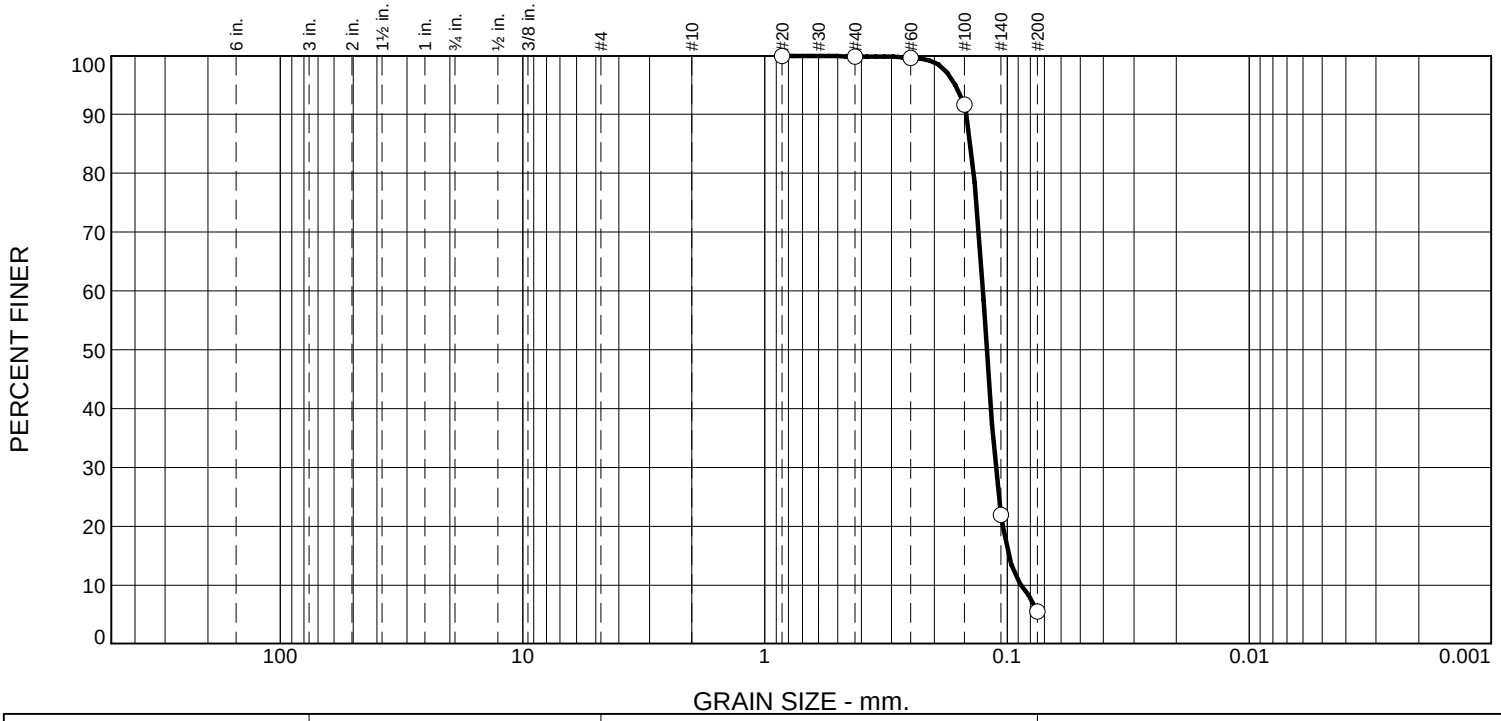
Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1028S W-C
Sample Number: 4A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	94.4	5.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.7		
#100	91.7		
#140	21.9		
#200	5.5		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1465 D_{85}= 0.1410
D_{60}= 0.1260 D_{50}= 0.1213
D_{30}= 0.1114 D_{15}= 0.0986
D_{10}= 0.0879
C_u= 1.43 C_c= 1.12

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

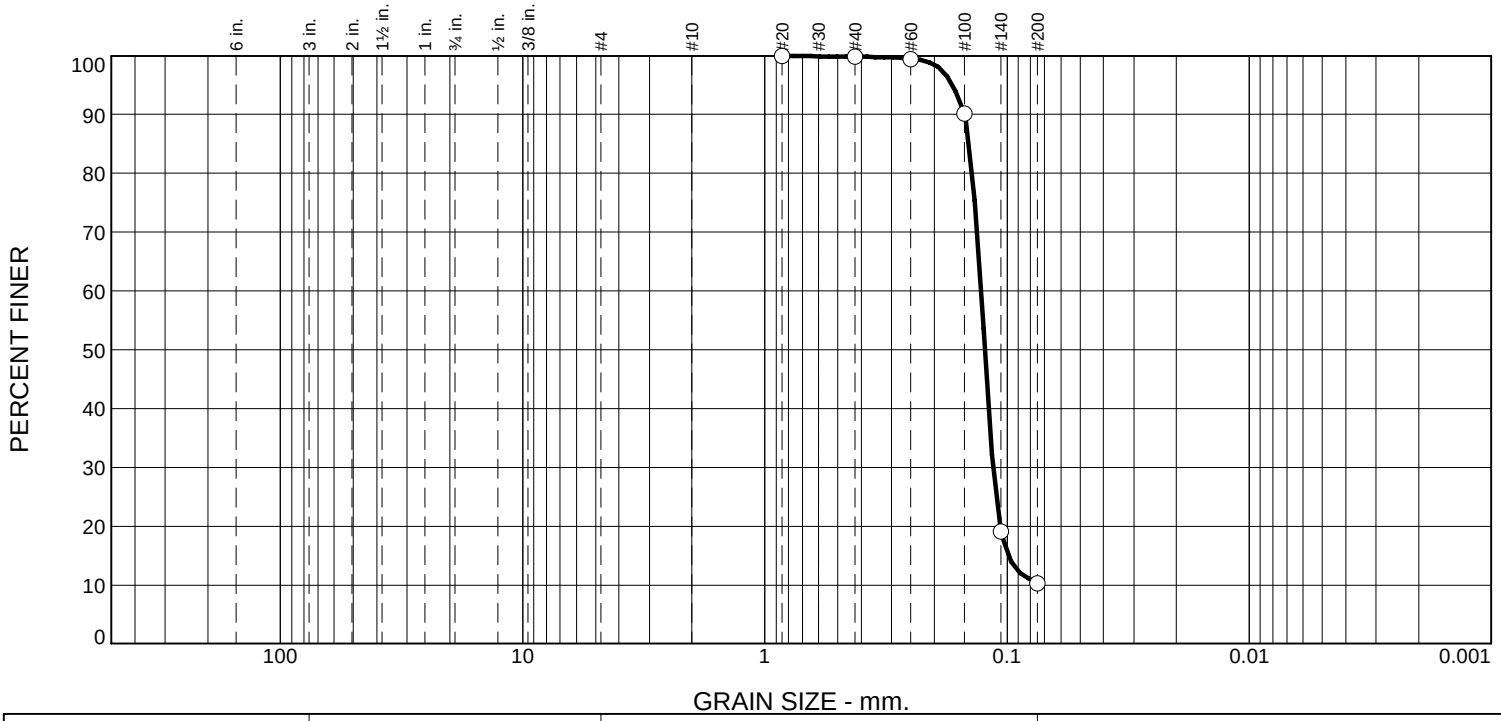
Source of Sample: PA23-1028S W-C
Sample Number: 4B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	89.6	10.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	99.5		
#100	90.1		
#140	19.1		
#200	10.2		

* (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1496 D_{85}= 0.1430
D_{60}= 0.1282 D_{50}= 0.1236
D_{30}= 0.1141 D_{15}= 0.0988
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

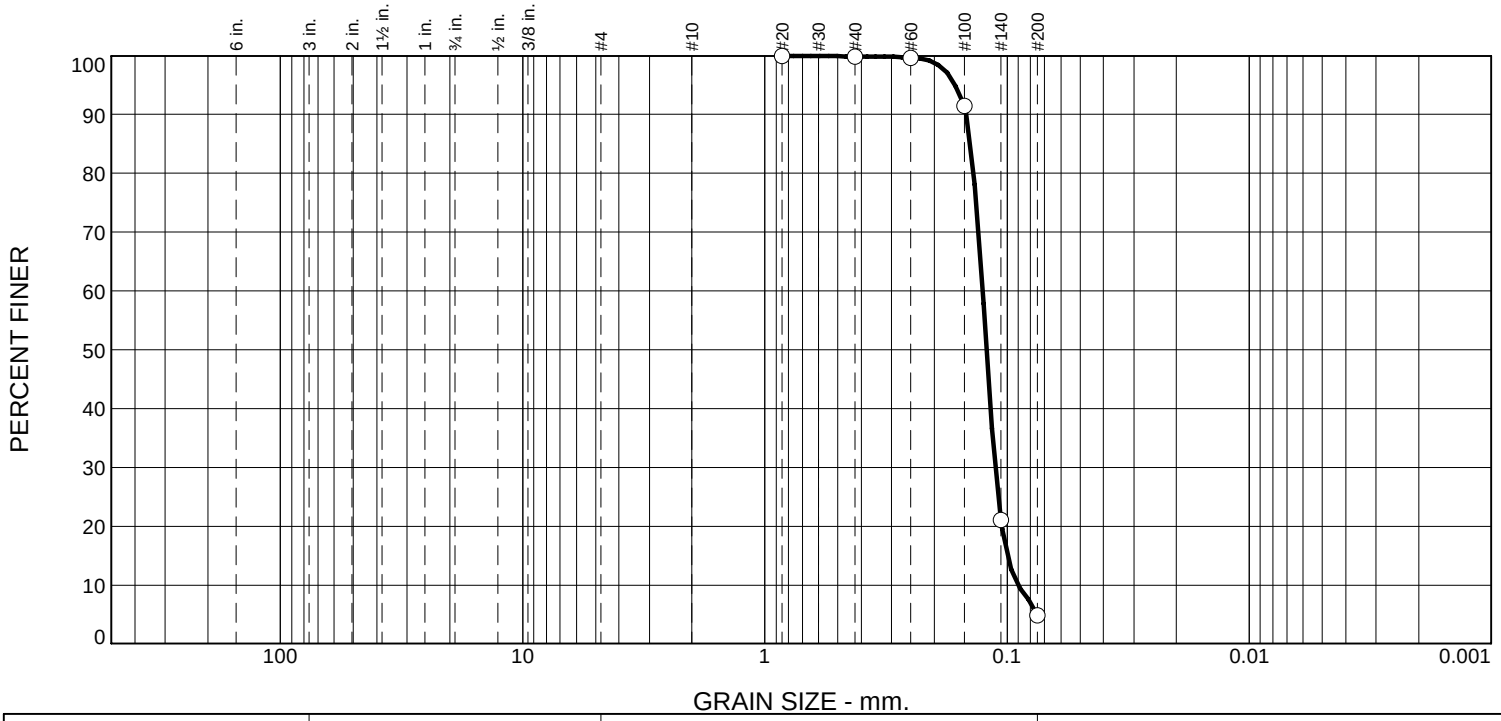
Source of Sample: PA23-1028S W-C
Sample Number: 4C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	95.1	4.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.7		
#100	91.5		
#140	21.0		
#200	4.8		

· (no specification provided)

Material Description

Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1468 D_{85}= 0.1412

D_{60}= 0.1263 D_{50}= 0.1216

D_{30}= 0.1118 D_{15}= 0.0998

D_{10}= 0.0905

C_u= 1.39 C_c= 1.09

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 4D

INSIGHT GROUP
A CHRISTOPHER COMPANY

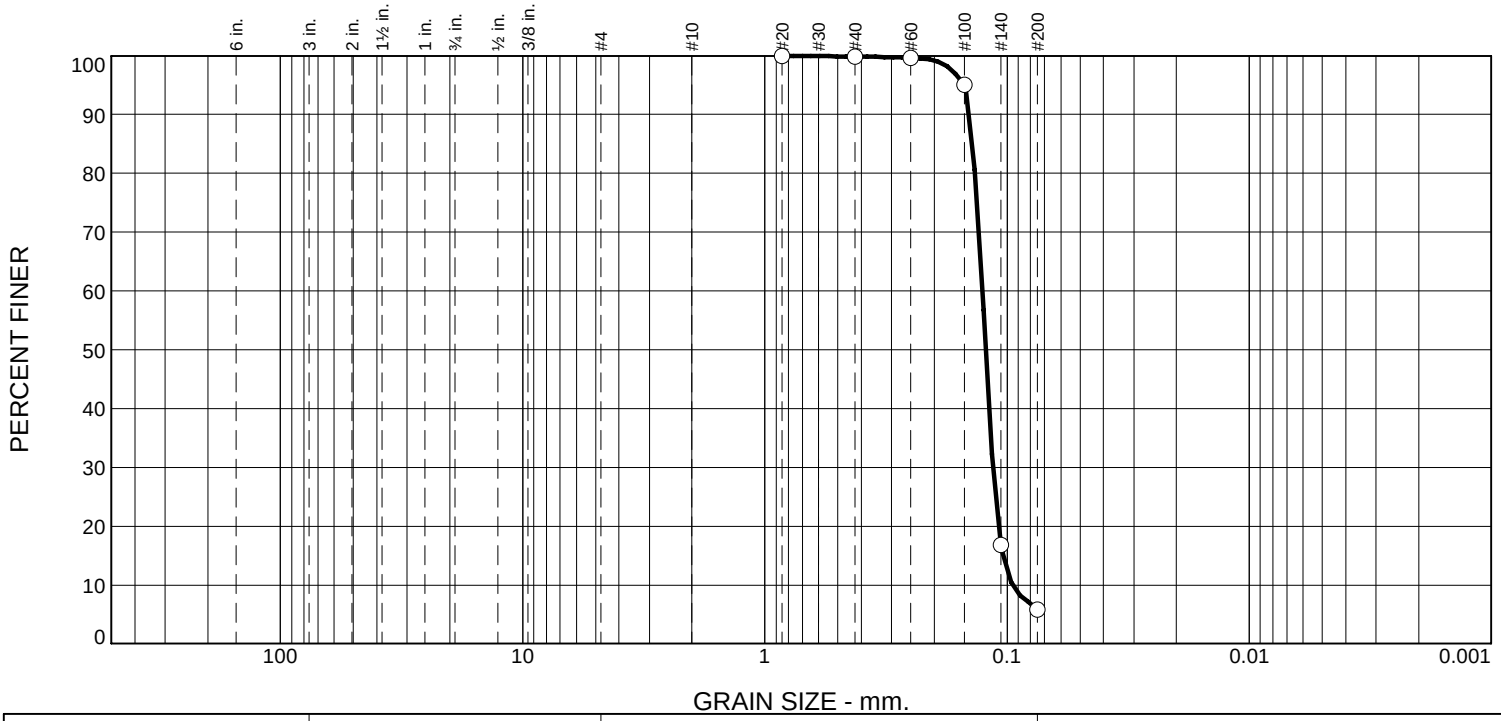
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	94.1	5.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.6		
#100	95.1		
#140	16.8		
#200	5.8		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1424 D_{85}= 0.1387
D_{60}= 0.1266 D_{50}= 0.1226
D_{30}= 0.1142 D_{15}= 0.1038
D_{10}= 0.0950
C_u= 1.33 C_c= 1.08

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

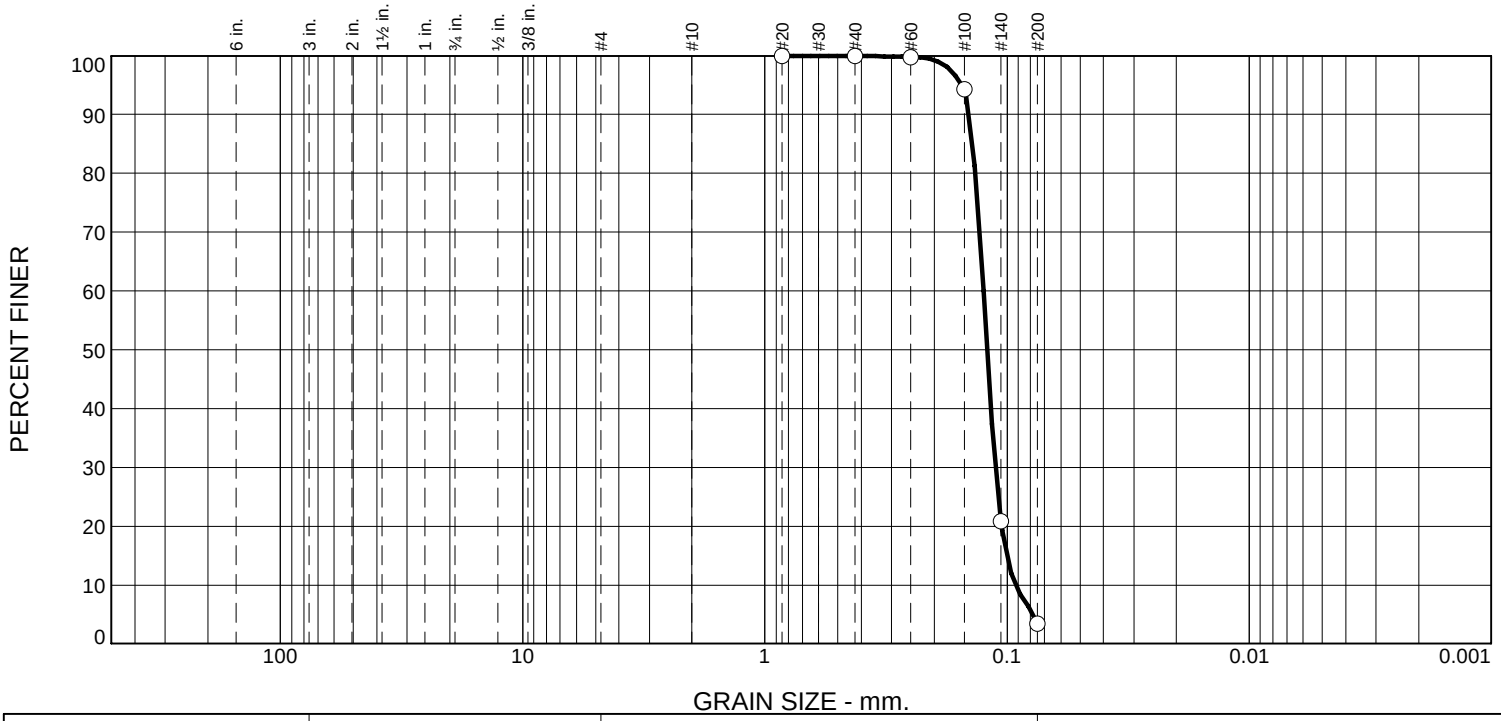
Source of Sample: PA23-1028S W-C
Sample Number: 4E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	96.5	3.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.8		
#100	94.3		
#140	20.9		
#200	3.4		

* (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1429 D_{85}= 0.1387

D_{60}= 0.1253 D_{50}= 0.1208

D_{30}= 0.1117 D_{15}= 0.1004

D_{10}= 0.0926

C_u= 1.35 C_c= 1.07

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 4F

INSIGHT GROUP
A CHRISTOPHER COMPANY

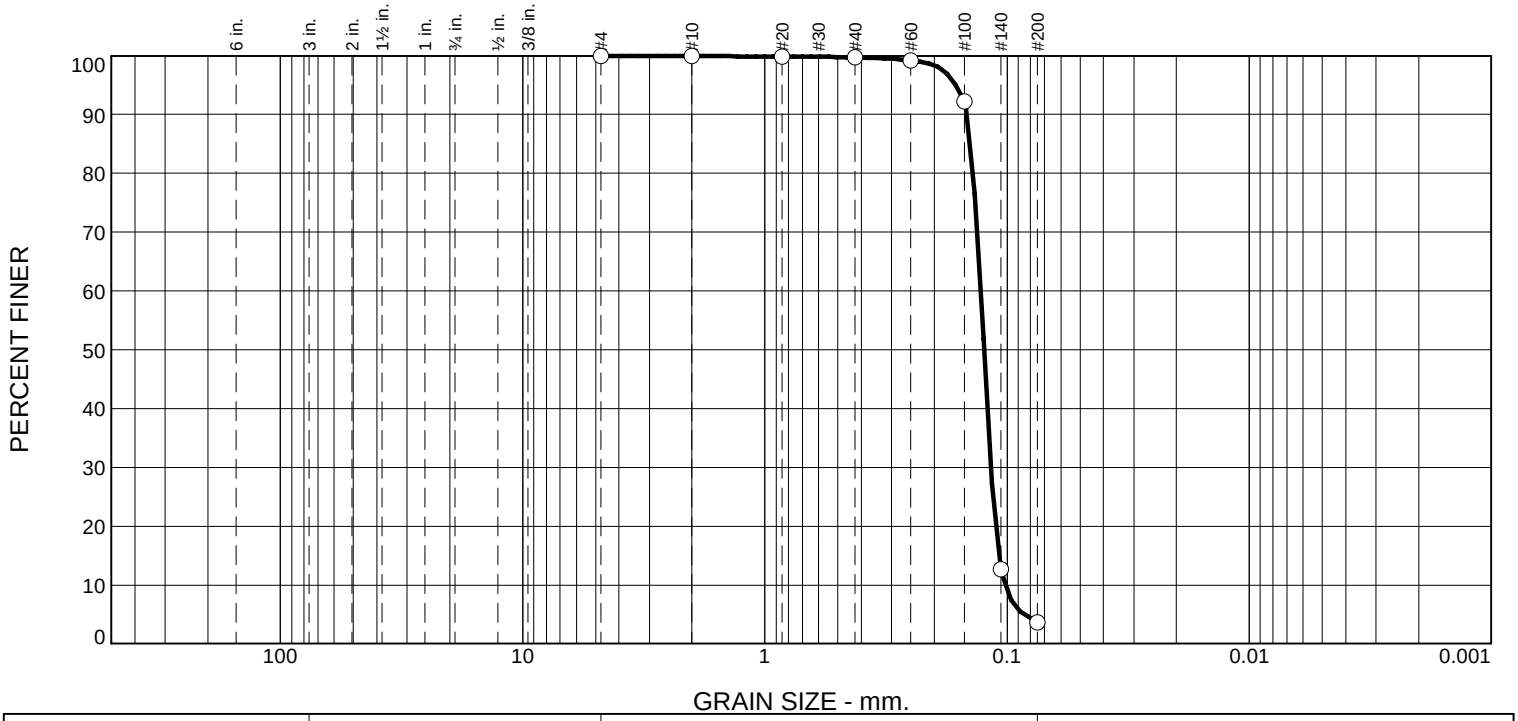
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.2	96.0	3.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.7		
#60	99.2		
#100	92.2		
#140	12.7		
#200	3.7		

* (no specification provided)

Material Description

Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1459 D_{85}= 0.1413

D_{60}= 0.1285 D_{50}= 0.1245

D_{30}= 0.1164 D_{15}= 0.1084

D_{10}= 0.1018

C_u= 1.26 C_c= 1.04

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C
Sample Number: Comp 4

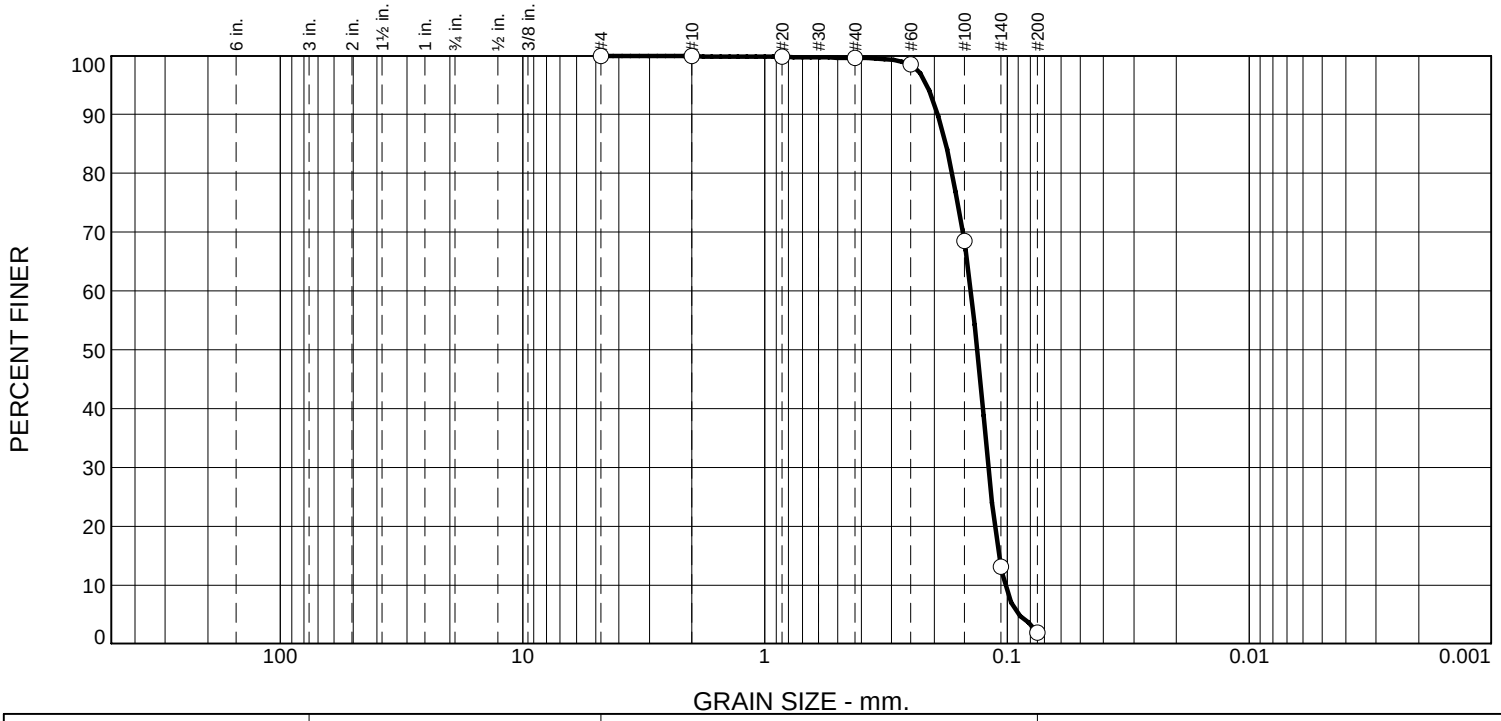
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.3	97.8	1.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.6		
#60	98.5		
#100	68.5		
#140	13.1		
#200	1.8		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1934 D_{85}= 0.1795

D_{60}= 0.1409 D_{50}= 0.1329

D_{30}= 0.1194 D_{15}= 0.1080

D_{10}= 0.1019

C_u= 1.38 C_c= 0.99

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C
Sample Number: 5A

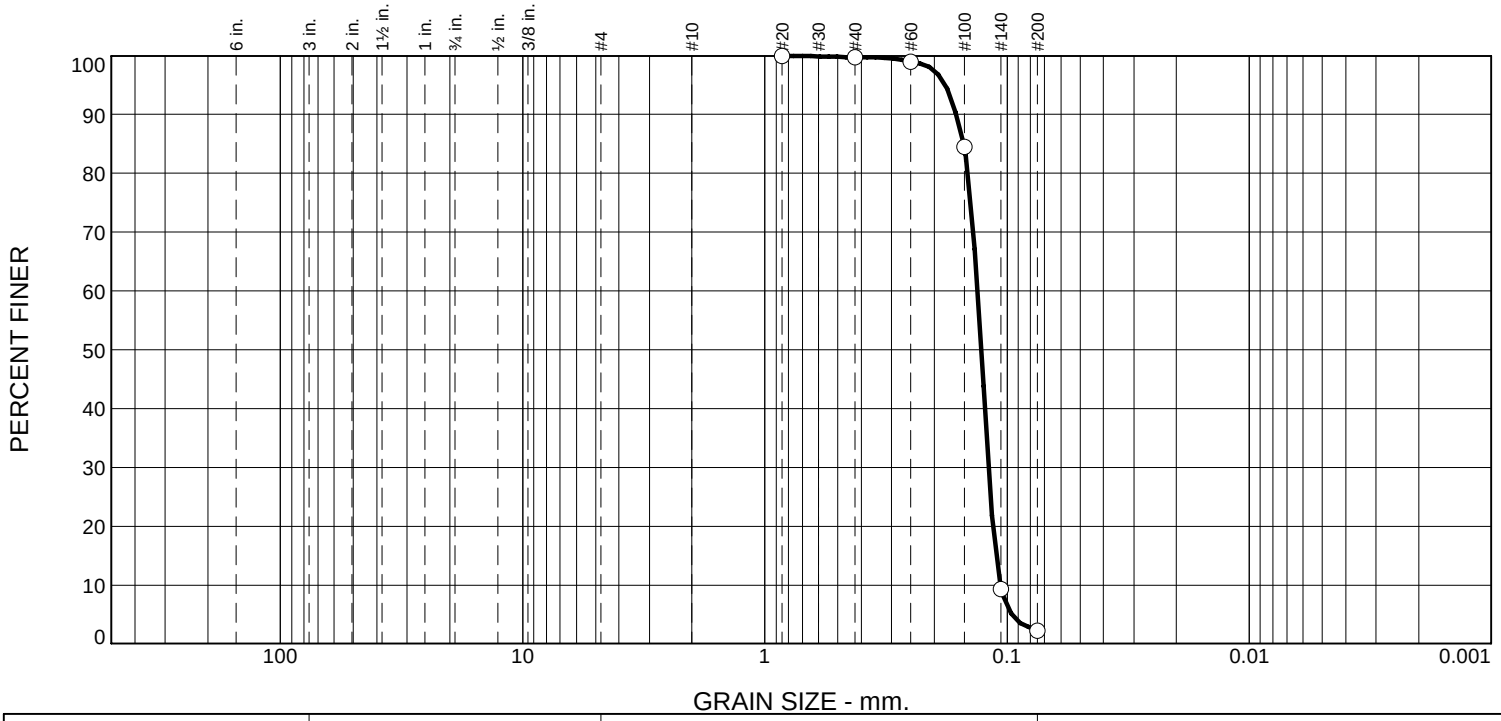
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	97.5	2.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	99.0		
#100	84.5		
#140	9.3		
#200	2.3		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1619 D_{85}= 0.1509

D_{60}= 0.1326 D_{50}= 0.1279

D_{30}= 0.1192 D_{15}= 0.1113

D_{10}= 0.1071

C_u= 1.24 C_c= 1.00

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

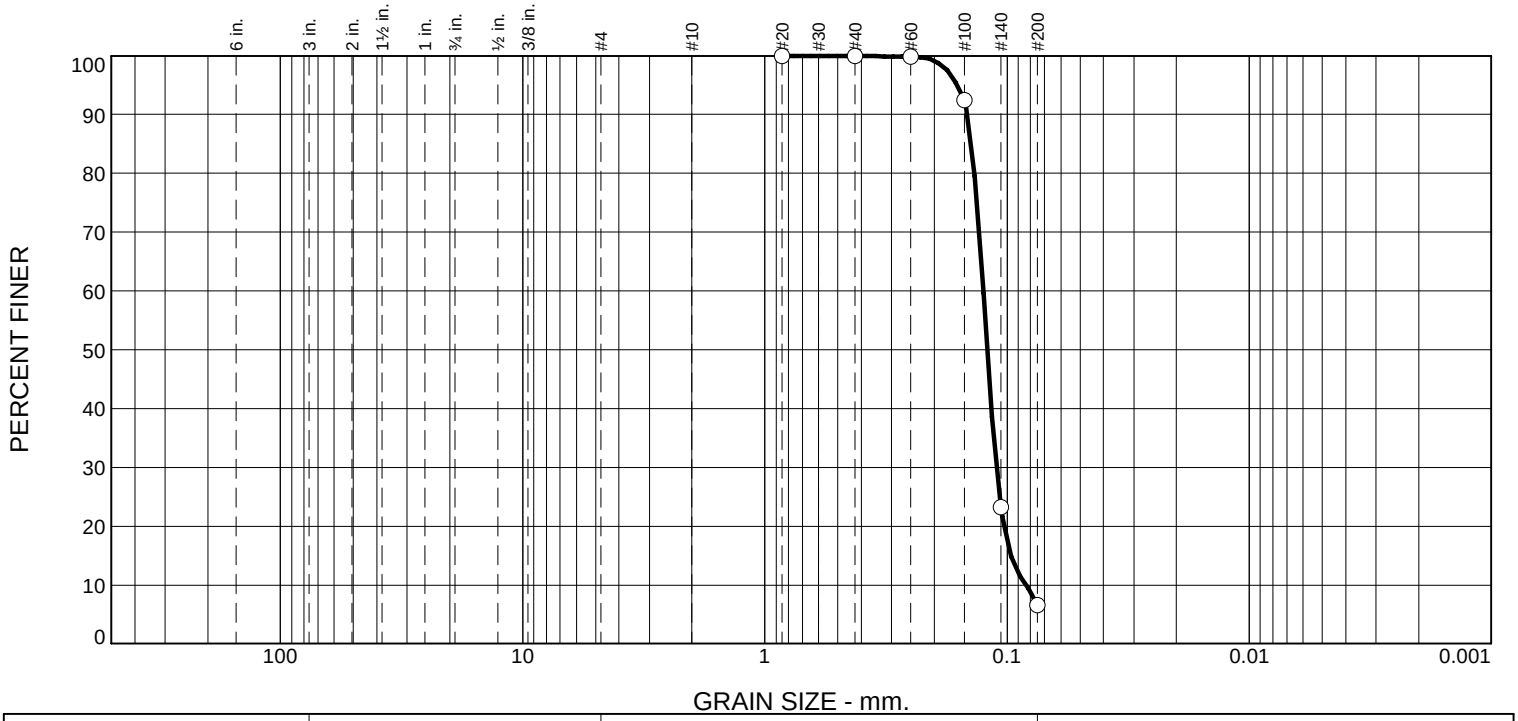
Source of Sample: PA23-1028S W-C
Sample Number: 5B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	93.4	6.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.8		
#100	92.4		
#140	23.2		
#200	6.5		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1453 D_{85}= 0.1402

D_{60}= 0.1255 D_{50}= 0.1207

D_{30}= 0.1106 D_{15}= 0.0966

D_{10}= 0.0836

C_u= 1.50 C_c= 1.17

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 5C

INSIGHT GROUP
A CHRISTOPHER COMPANY

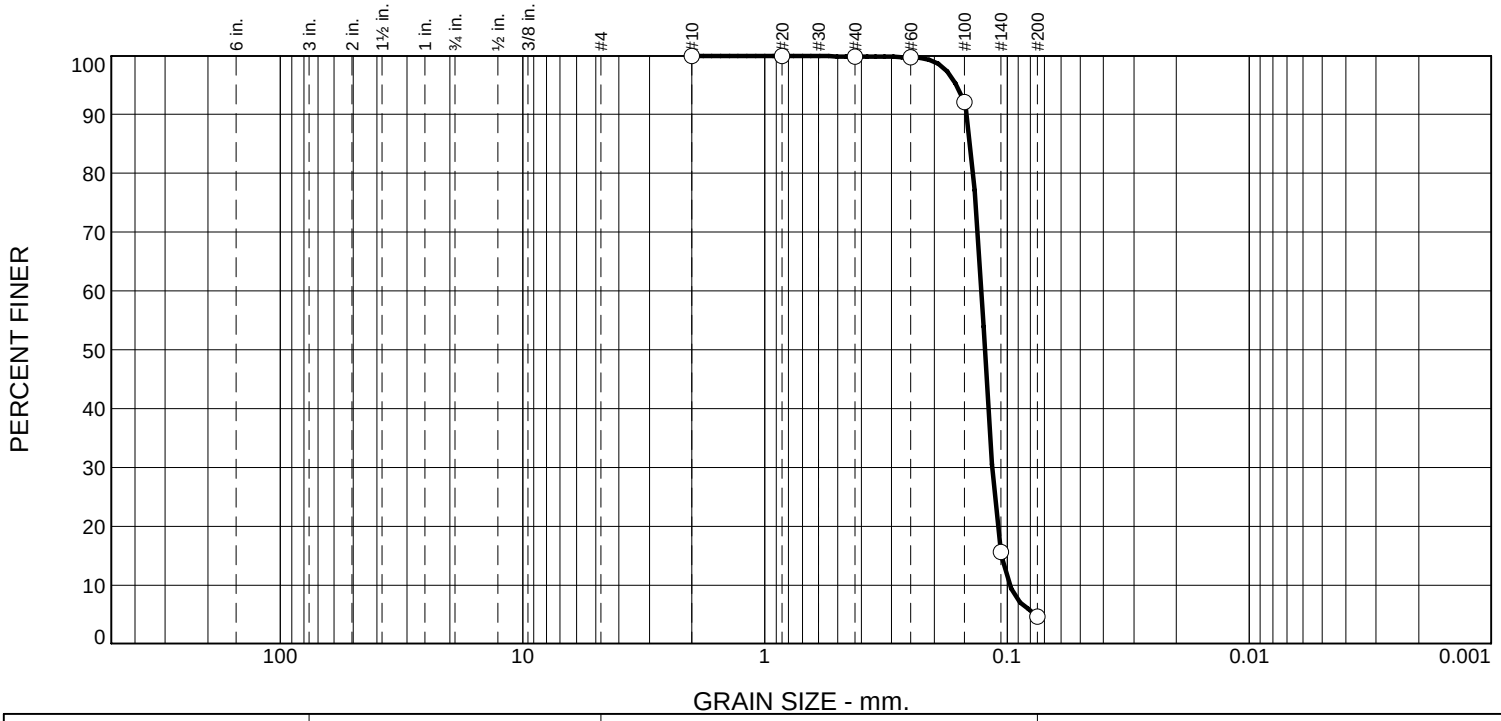
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	95.3	4.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.9		
#60	99.7		
#100	92.1		
#140	15.6		
#200	4.6		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1461 D_{85}= 0.1413

D_{60}= 0.1279 D_{50}= 0.1236

D_{30}= 0.1150 D_{15}= 0.1053

D_{10}= 0.0977

C_u= 1.31 C_c= 1.06

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

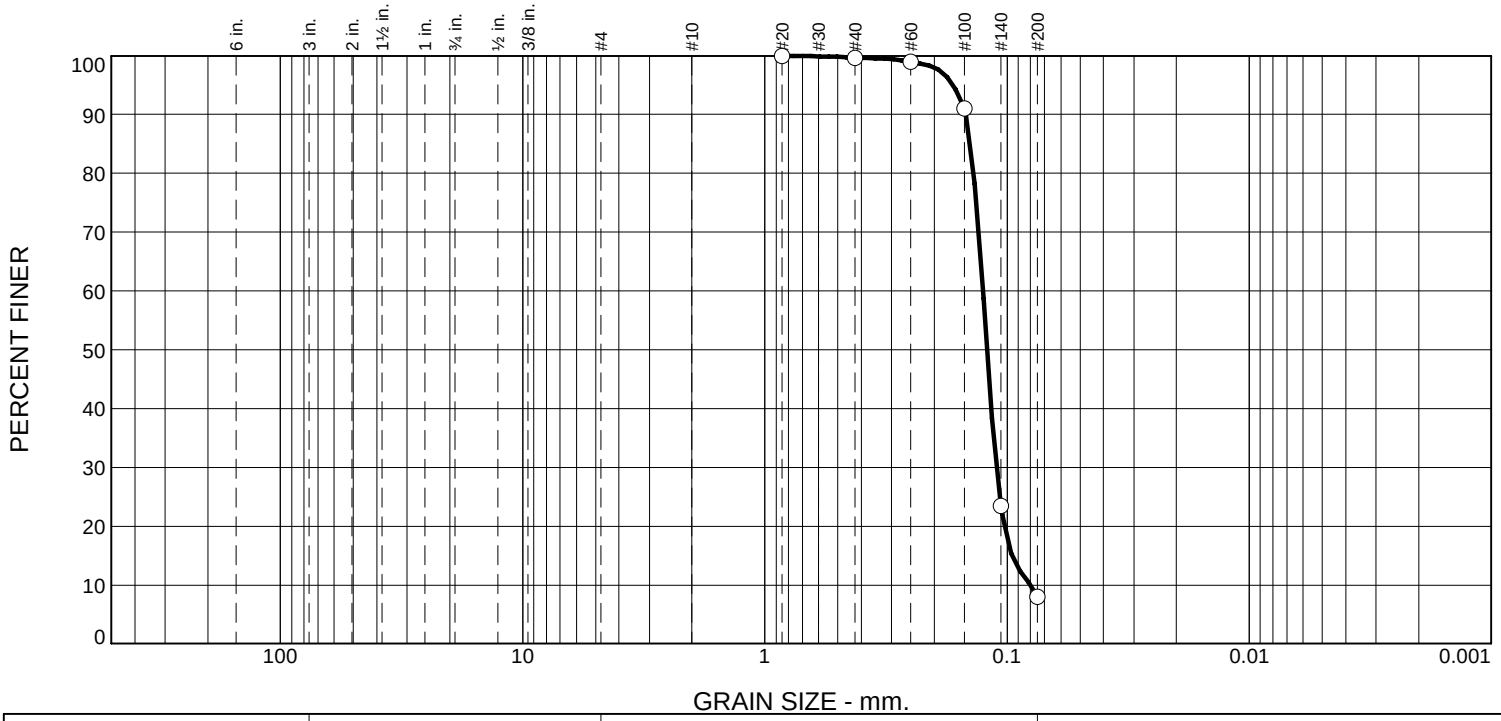
Source of Sample: PA23-1028S W-C
Sample Number: 5D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	91.8	7.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.7		
#60	98.9		
#100	91.0		
#140	23.5		
#200	7.9		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1476 D_{85}= 0.1414

D_{60}= 0.1259 D_{50}= 0.1210

D_{30}= 0.1106 D_{15}= 0.0955

D_{10}= 0.0796

C_u= 1.58 C_c= 1.22

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 5E

INSIGHT GROUP
A CHRISTOPHER COMPANY

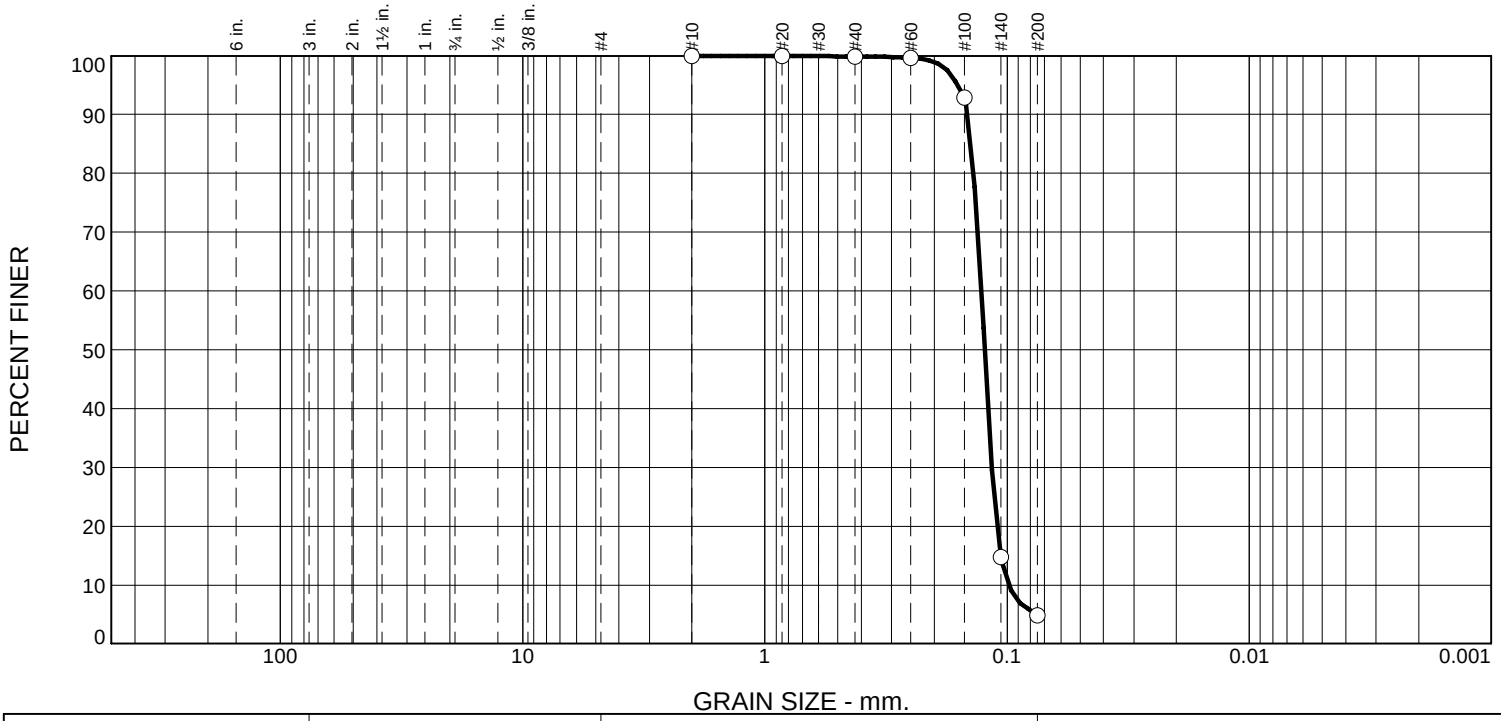
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	95.0	4.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.9		
#60	99.6		
#100	92.9		
#140	14.8		
#200	4.9		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1451 D_{85}= 0.1407

D_{60}= 0.1279 D_{50}= 0.1238

D_{30}= 0.1154 D_{15}= 0.1063

D_{10}= 0.0984

C_u= 1.30 C_c= 1.06

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

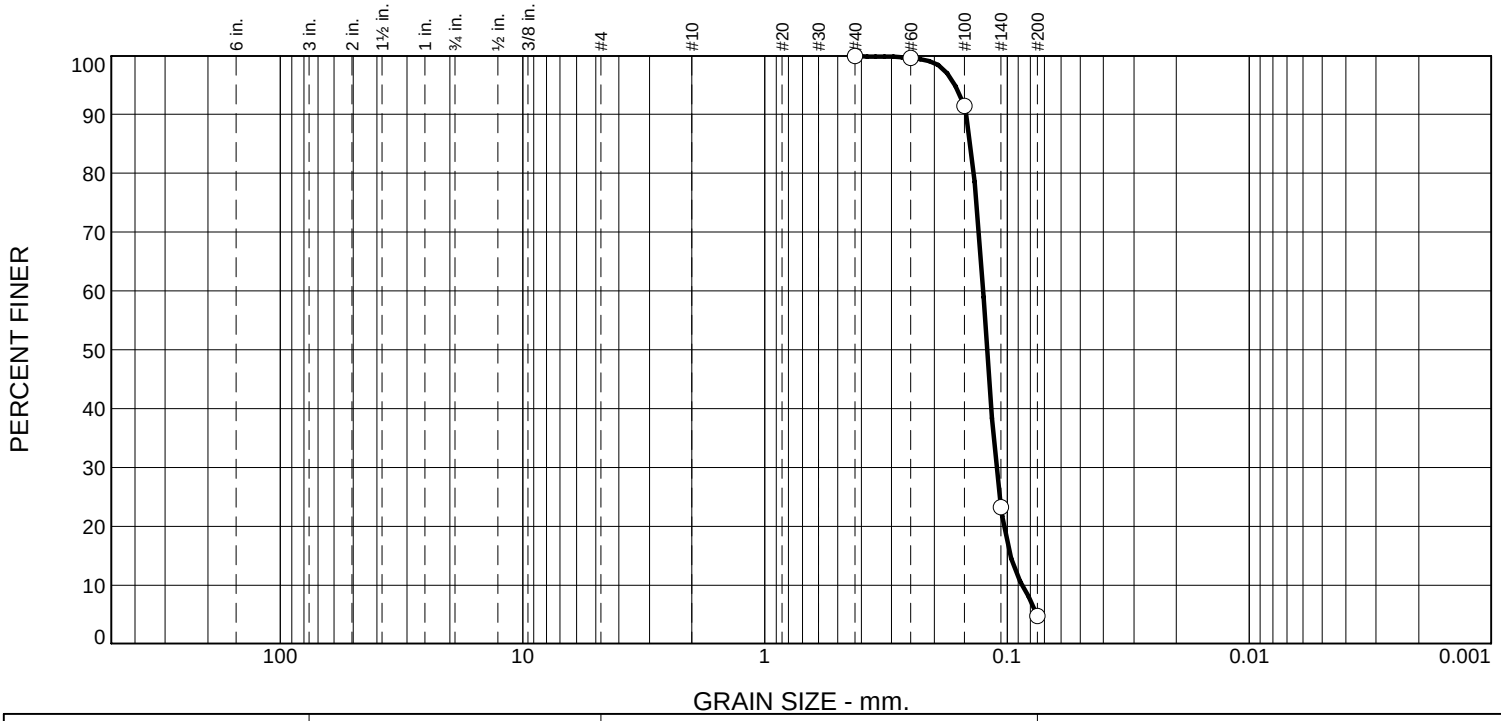
Source of Sample: PA23-1028S W-C
Sample Number: 5F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
					95.2	4.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#40	99.9		
#60	99.6		
#100	91.5		
#140	23.2		
#200	4.7		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1468 D_{85}= 0.1411

D_{60}= 0.1257 D_{50}= 0.1209

D_{30}= 0.1107 D_{15}= 0.0971

D_{10}= 0.0869

C_u= 1.45 C_c= 1.12

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

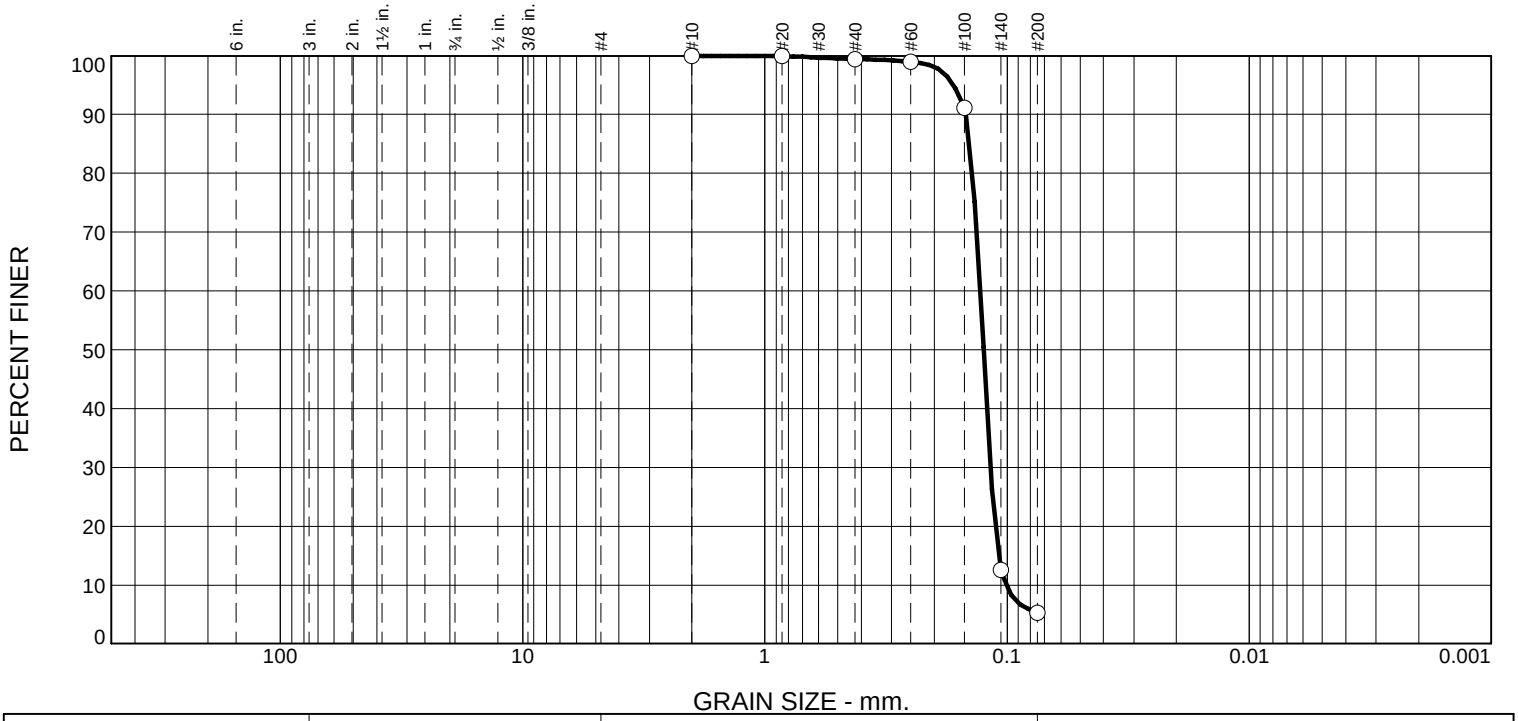
Source of Sample: PA23-1028S W-C
Sample Number: Comp 5

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	94.1	5.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.4		
#60	98.9		
#100	91.2		
#140	12.6		
#200	5.3		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1475 D_{85}= 0.1423

D_{60}= 0.1291 D_{50}= 0.1250

D_{30}= 0.1169 D_{15}= 0.1087

D_{10}= 0.1009

C_u= 1.28 C_c= 1.05

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 6A

INSIGHT GROUP
A CHRISTOPHER COMPANY

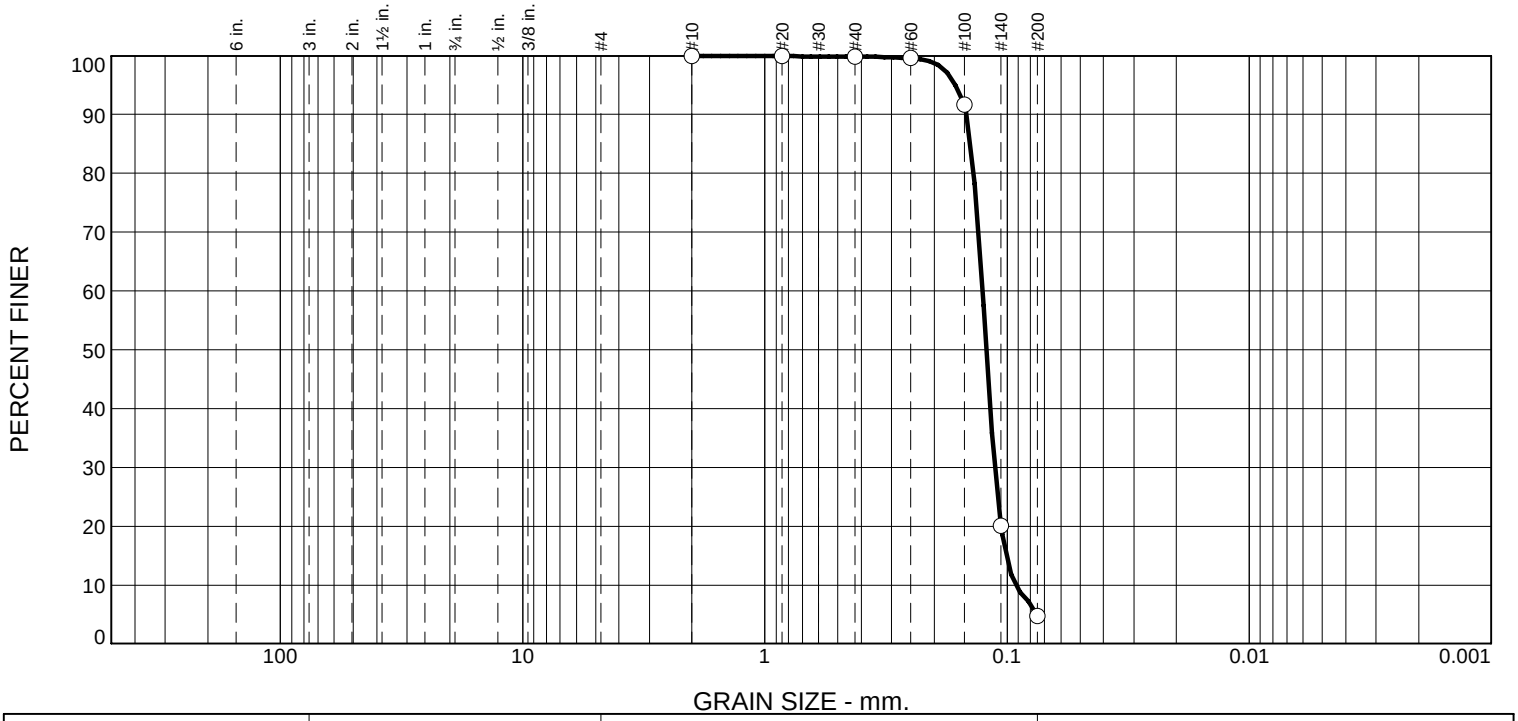
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	95.1	4.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.8		
#60	99.6		
#100	91.7		
#140	20.1		
#200	4.7		

* (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1465 D_{85}= 0.1411

D_{60}= 0.1264 D_{50}= 0.1218

D_{30}= 0.1123 D_{15}= 0.1009

D_{10}= 0.0925

C_u= 1.37 C_c= 1.08

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

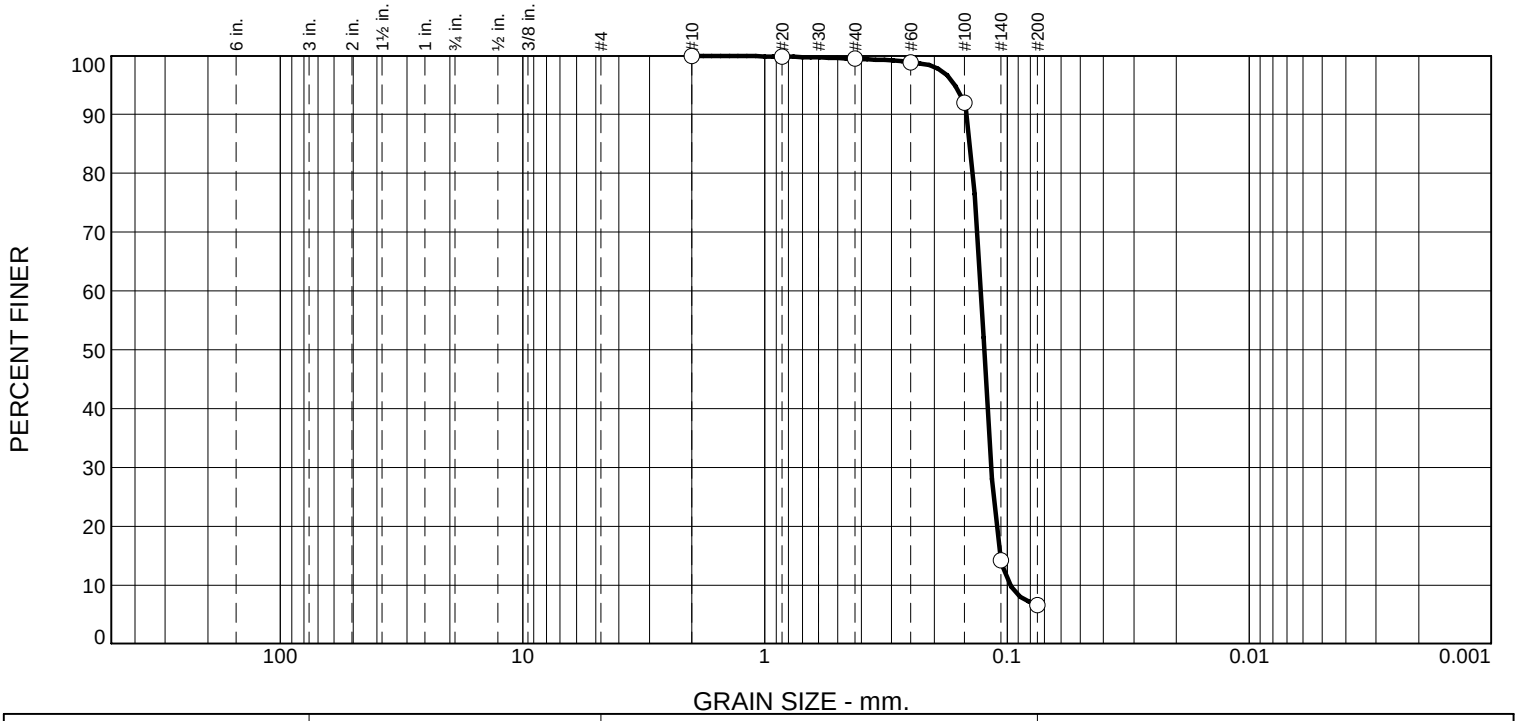
Source of Sample: PA23-1028S W-C
Sample Number: 6B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	92.9	6.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.5		
#60	98.9		
#100	92.0		
#140	14.1		
#200	6.6		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1461 D_{85}= 0.1414

D_{60}= 0.1285 D_{50}= 0.1244

D_{30}= 0.1161 D_{15}= 0.1071

D_{10}= 0.0972

C_u= 1.32 C_c= 1.08

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

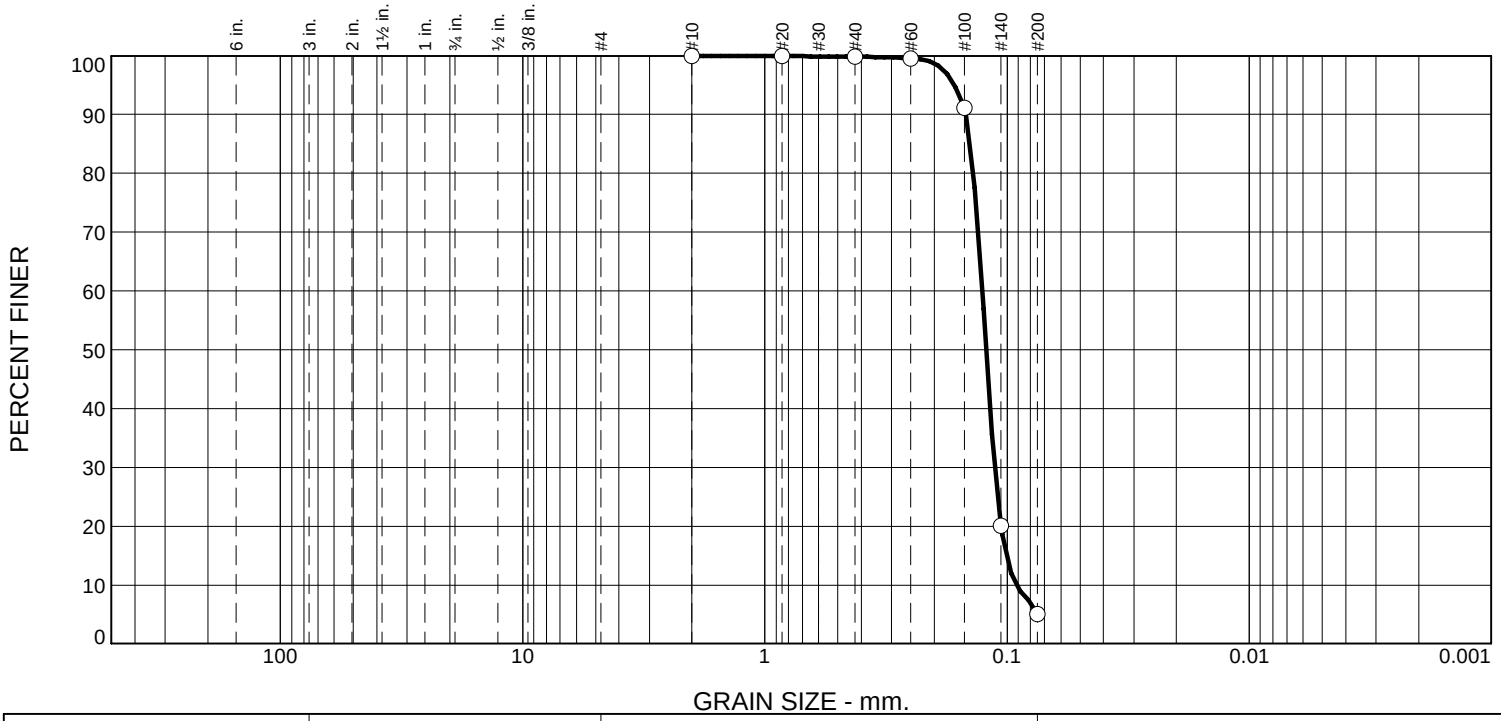
Source of Sample: PA23-1028S W-C
Sample Number: 6C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	94.7	5.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.8		
#60	99.6		
#100	91.1		
#140	20.1		
#200	5.1		

* (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1476 D_{85}= 0.1417

D_{60}= 0.1267 D_{50}= 0.1220

D_{30}= 0.1124 D_{15}= 0.1008

D_{10}= 0.0919

C_u= 1.38 C_c= 1.08

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

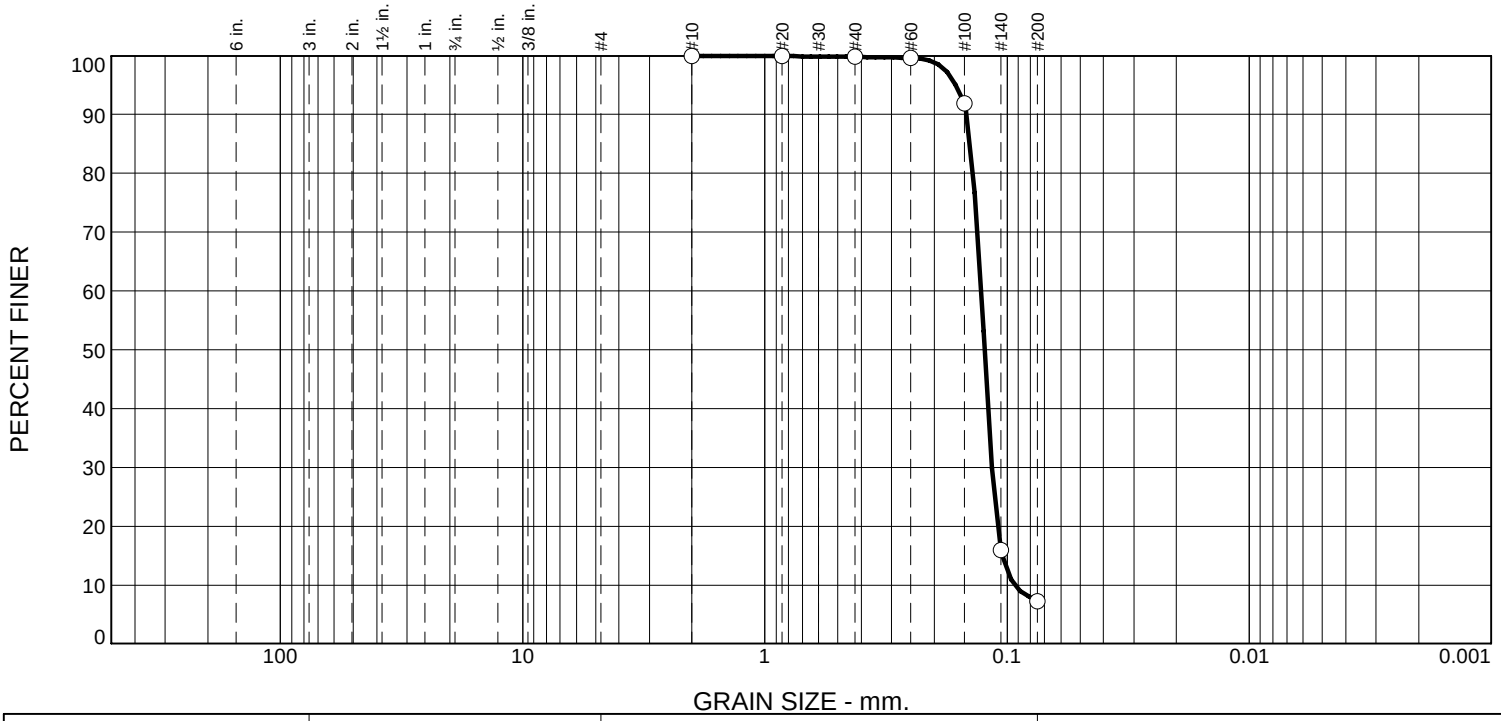
Source of Sample: PA23-1028S W-C
Sample Number: 6D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	92.6	7.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.8		
#60	99.6		
#100	91.9		
#140	16.0		
#200	7.2		

* (no specification provided)

Material Description

Grayish Brown with Black

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1463 D_{85}= 0.1415

D_{60}= 0.1281 D_{50}= 0.1239

D_{30}= 0.1153 D_{15}= 0.1045

D_{10}= 0.0934

C_u= 1.37 C_c= 1.11

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

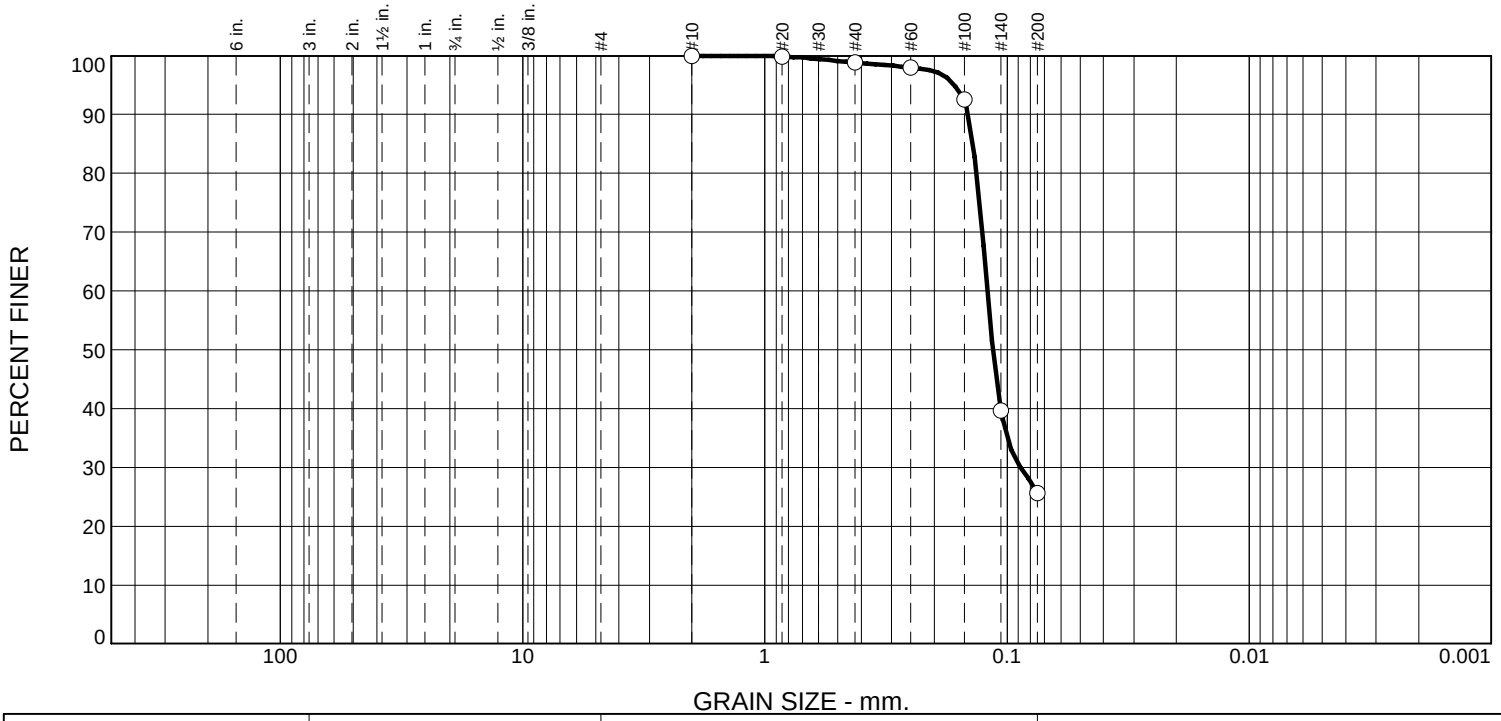
Source of Sample: PA23-1028S W-C
Sample Number: 6E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.2	73.2	25.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	98.8		
#60	98.0		
#100	92.6		
#140	39.7		
#200	25.6		

* (no specification provided)

Material Description

Grayish Brown with Black

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1440 D_{85}= 0.1381

D_{60}= 0.1205 D_{50}= 0.1142

D_{30}= 0.0884 D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

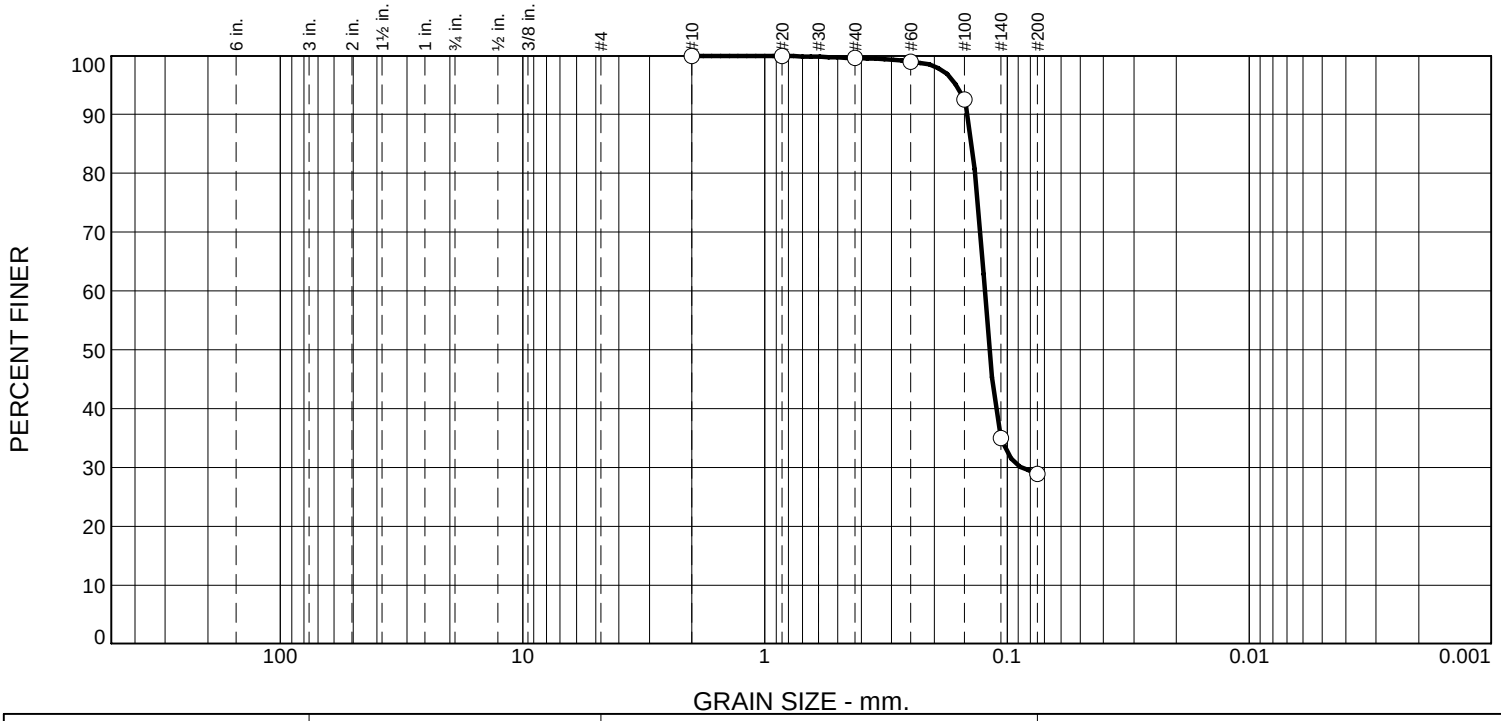
Source of Sample: PA23-1028S W-C
Sample Number: 6F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	70.7	28.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	99.0		
#100	92.5		
#140	35.0		
#200	28.9		

* (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1449 D_{85}= 0.1396

D_{60}= 0.1237 D_{50}= 0.1181

D_{30}= 0.0879 D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

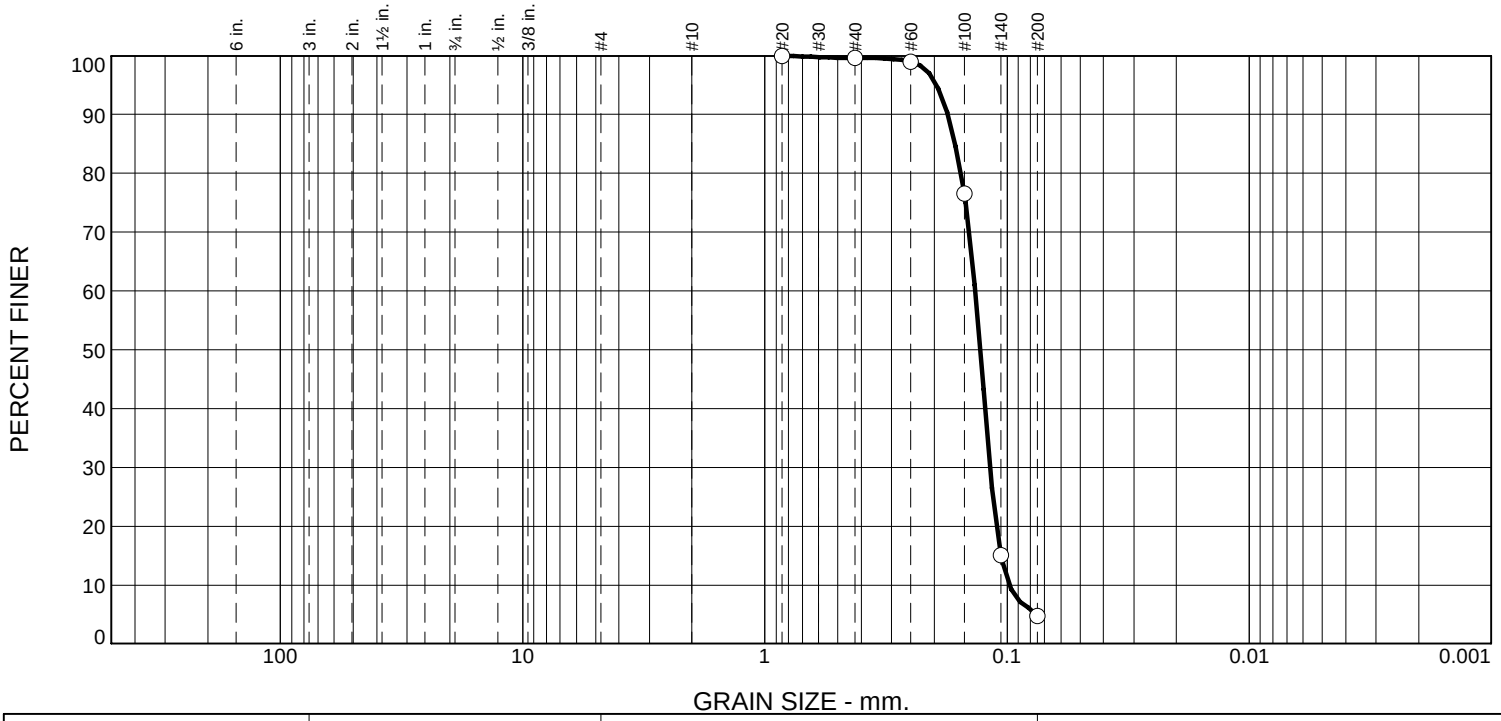
Source of Sample: PA23-1028S W-C
Sample Number: Comp 6

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	94.9	4.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.6		
#60	99.0		
#100	76.6		
#140	15.1		
#200	4.7		

· (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1760 D_{85}= 0.1639

D_{60}= 0.1355 D_{50}= 0.1292

D_{30}= 0.1174 D_{15}= 0.1059

D_{10}= 0.0980

C_u= 1.38 C_c= 1.04

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 7A

INSIGHT GROUP
A CHRISTOPHER COMPANY

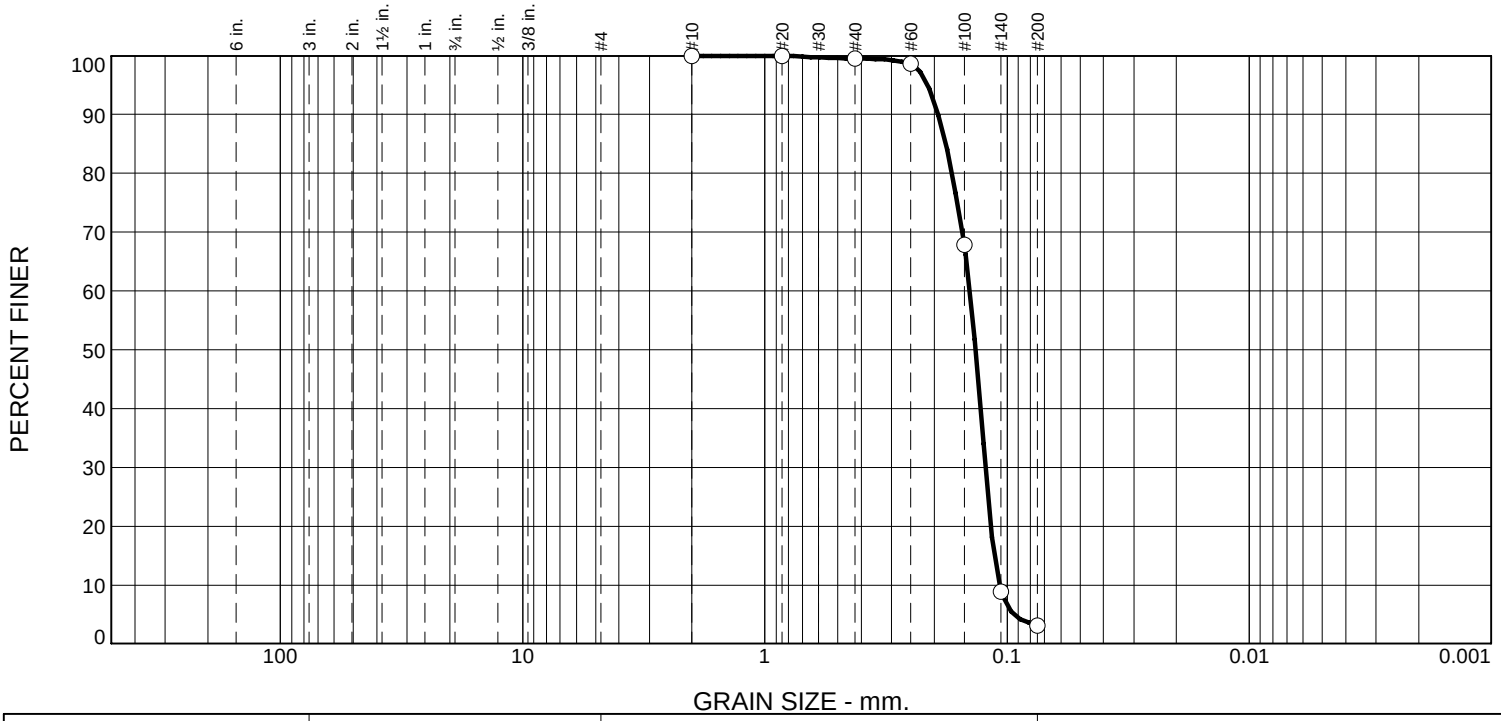
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	96.4	3.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.5		
#60	98.7		
#100	67.8		
#140	8.9		
#200	3.1		

· (no specification provided)

Source of Sample: PA23-1028S W-C
Sample Number: 7B

Material Description
Light Brown with Gray

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1927 D_{85}= 0.1794
D_{60}= 0.1422 D_{50}= 0.1350
D_{30}= 0.1228 D_{15}= 0.1129
D_{10}= 0.1078
C_u= 1.32 C_c= 0.98

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

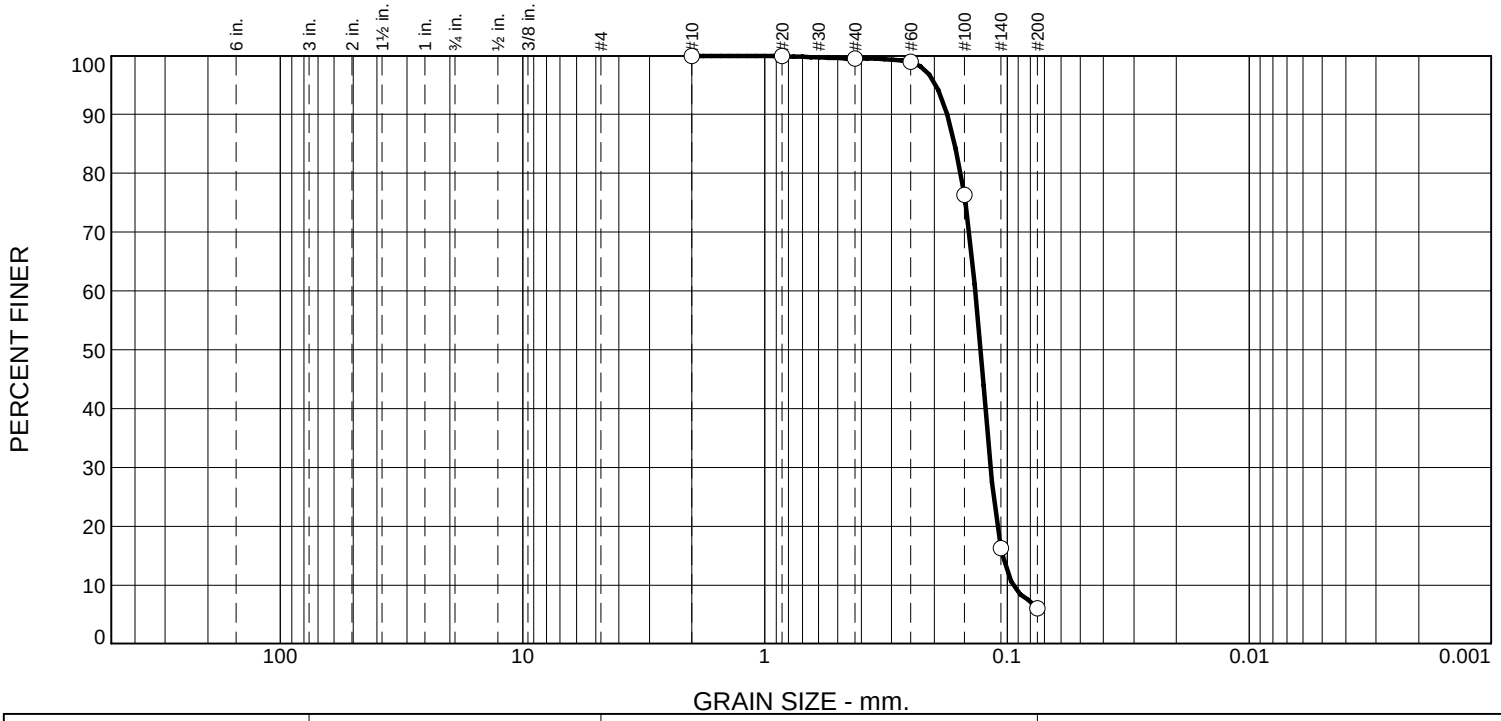
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	93.6	6.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	98.9		
#100	76.3		
#140	16.3		
#200	6.0		

· (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1770 D_{85}= 0.1646

D_{60}= 0.1354 D_{50}= 0.1289

D_{30}= 0.1168 D_{15}= 0.1043

D_{10}= 0.0948

C_u= 1.43 C_c= 1.06

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 7C

INSIGHT GROUP
A CHRISTOPHER COMPANY

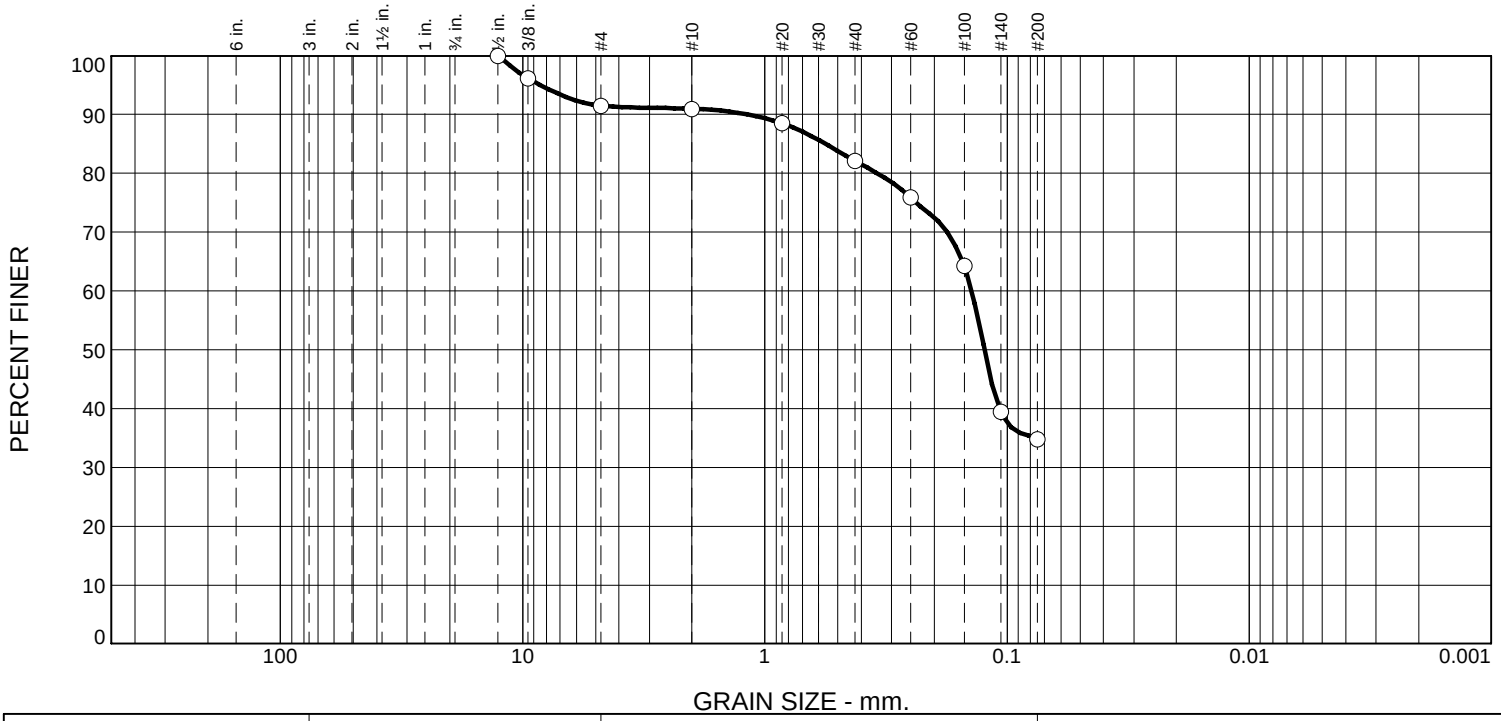
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	8.5	0.5	8.9	47.4	34.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	96.2		
#4	91.5		
#10	91.0		
#20	88.5		
#40	82.1		
#60	75.9		
#100	64.2		
#140	39.4		
#200	34.7		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 1.1674 D_{85}= 0.5593

D_{60}= 0.1400 D_{50}= 0.1240

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 7D

INSIGHT GROUP
A CHRISTOPHER COMPANY

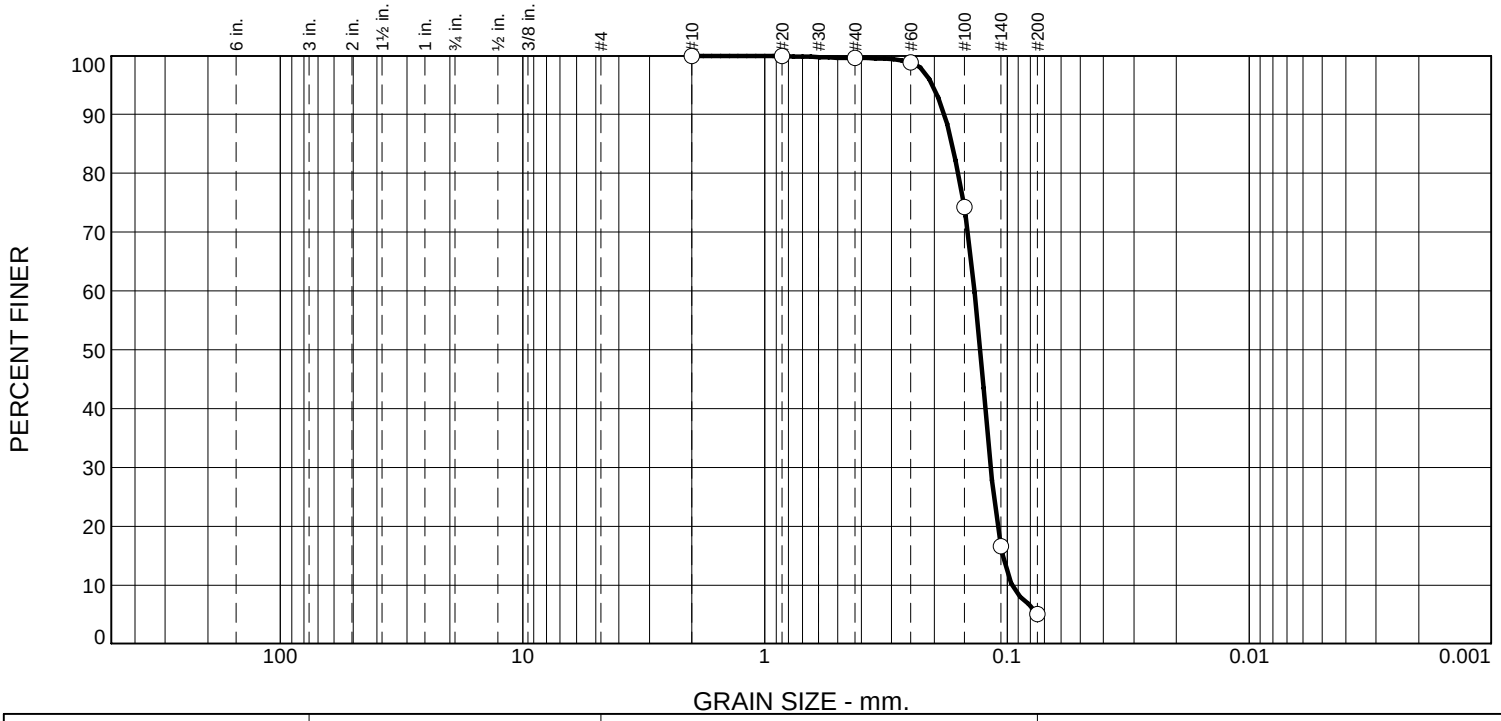
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	94.5	5.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	98.9		
#100	74.2		
#140	16.5		
#200	5.1		

* (no specification provided)

Material Description
Light Brown with Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1820 D_{85}= 0.1688
D_{60}= 0.1364 D_{50}= 0.1294
D_{30}= 0.1167 D_{15}= 0.1042
D_{10}= 0.0957
C_u= 1.43 C_c= 1.04

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

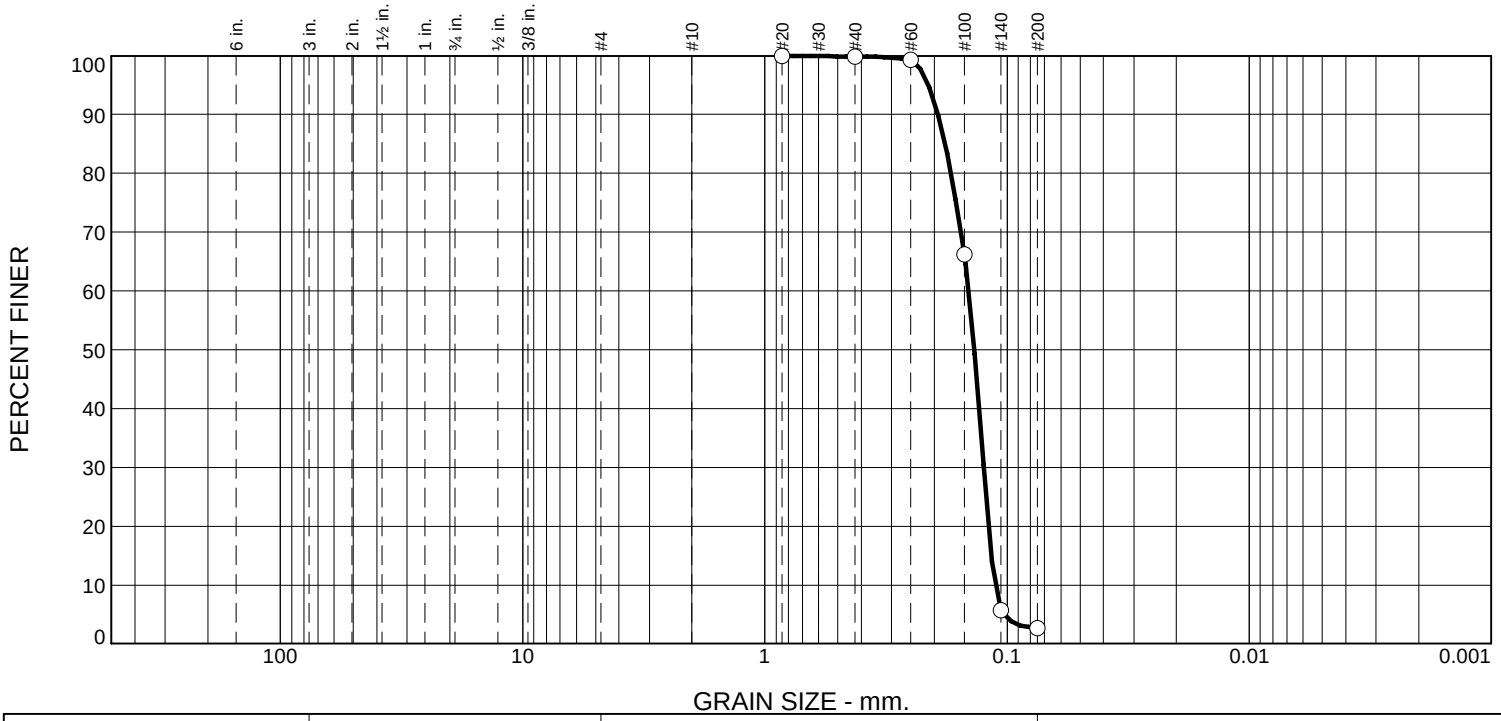
Source of Sample: PA23-1028S W-C
Sample Number: Comp 7

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	97.2	2.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.3		
#100	66.3		
#140	5.7		
#200	2.7		

· (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1931 D_{85}= 0.1806

D_{60}= 0.1438 D_{50}= 0.1366

D_{30}= 0.1250 D_{15}= 0.1160

D_{10}= 0.1121

C_u= 1.28 C_c= 0.97

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 8A

INSIGHT GROUP
A CHRISTOPHER COMPANY

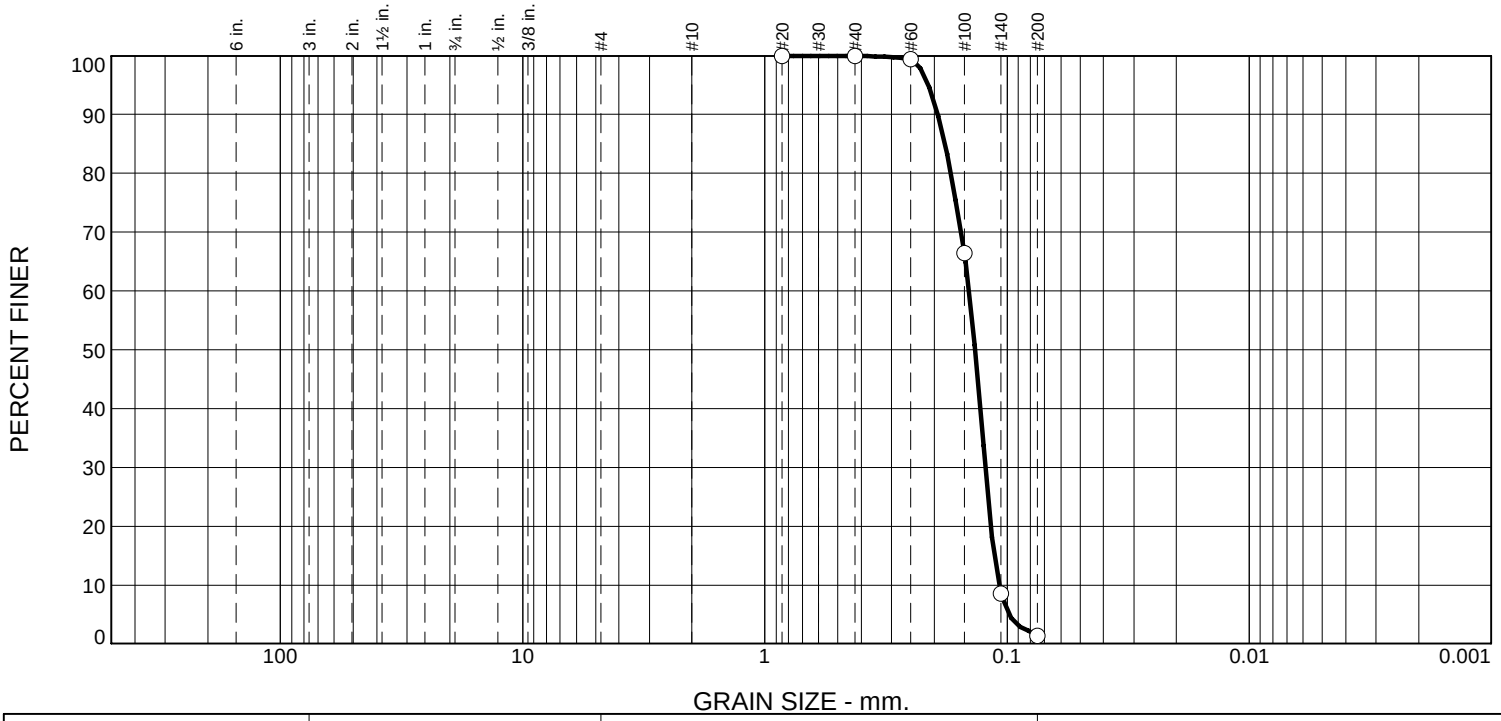
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	98.5	1.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.4		
#100	66.5		
#140	8.6		
#200	1.4		

· (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1933 D_{85}= 0.1808

D_{60}= 0.1433 D_{50}= 0.1356

D_{30}= 0.1230 D_{15}= 0.1128

D_{10}= 0.1081

C_u= 1.33 C_c= 0.98

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 8B

INSIGHT GROUP
A CHRISTOPHER COMPANY

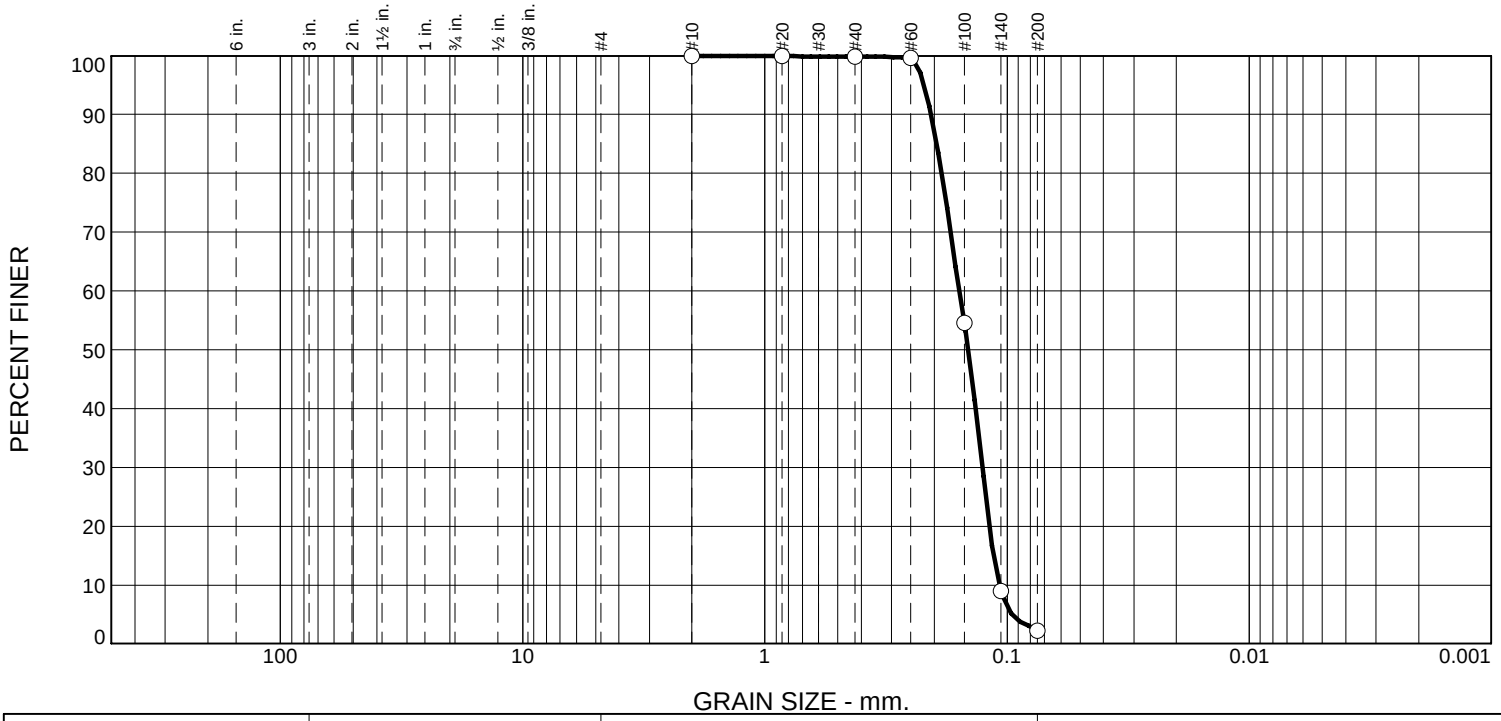
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	97.6	2.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.8		
#60	99.7		
#100	54.6		
#140	9.0		
#200	2.2		

· (no specification provided)

Material Description
Light Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2058 D_{85}= 0.1954
D_{60}= 0.1574 D_{50}= 0.1445
D_{30}= 0.1265 D_{15}= 0.1136
D_{10}= 0.1077
C_u= 1.46 C_c= 0.94

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)
SP

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

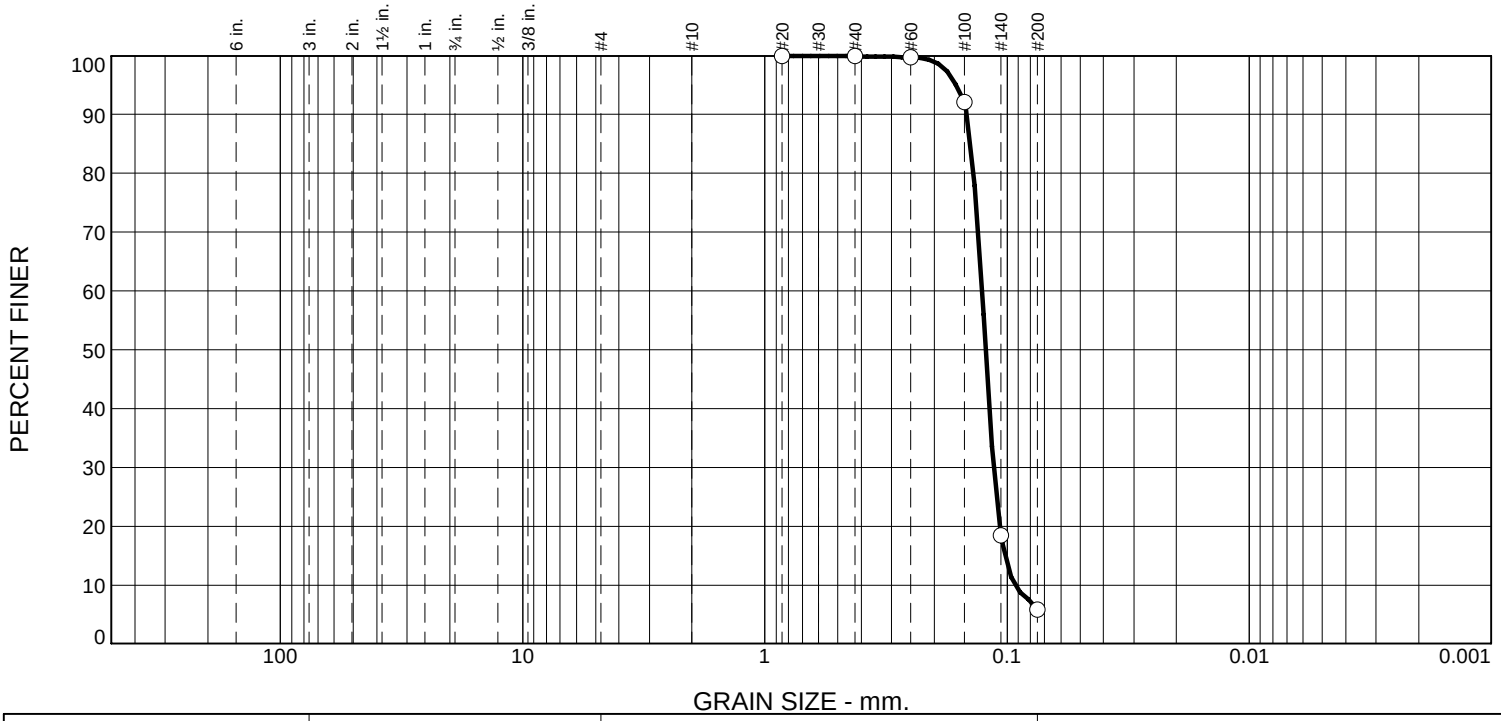
Source of Sample: PA23-1028S W-C
Sample Number: 8C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	94.1	5.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.7		
#100	92.1		
#140	18.5		
#200	5.8		

· (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1460 D_{85}= 0.1410

D_{60}= 0.1270 D_{50}= 0.1226

D_{30}= 0.1135 D_{15}= 0.1021

D_{10}= 0.0930

C_u= 1.37 C_c= 1.09

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 8D

INSIGHT GROUP
A CHRISTOPHER COMPANY

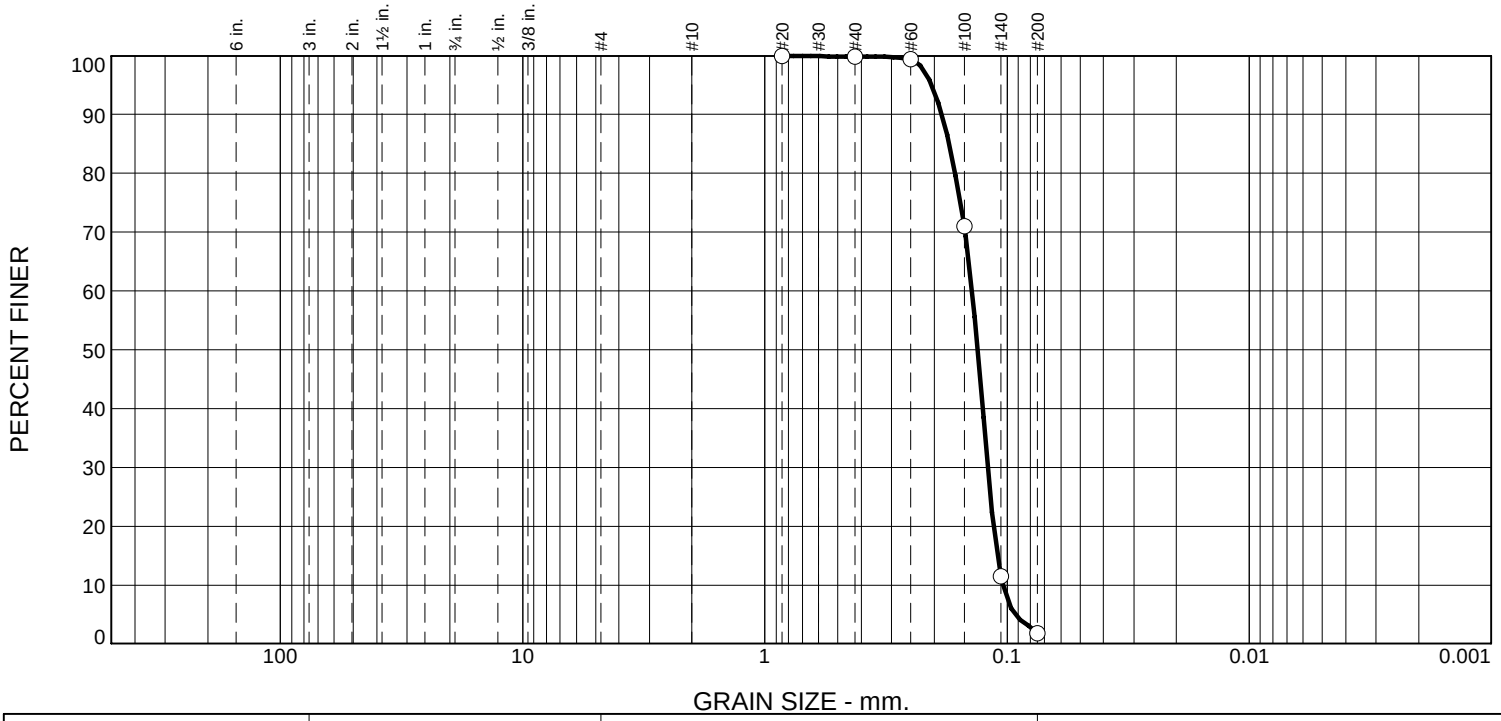
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	98.1	1.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.5		
#100	71.0		
#140	11.5		
#200	1.8		

· (no specification provided)

Material Description
Light Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1862 D_{85}= 0.1736
D_{60}= 0.1394 D_{50}= 0.1324
D_{30}= 0.1201 D_{15}= 0.1097
D_{10}= 0.1039
C_u= 1.34 C_c= 1.00

Sieve Test (ASTM D6913)

Test Date: 3/14/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)
SP

Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

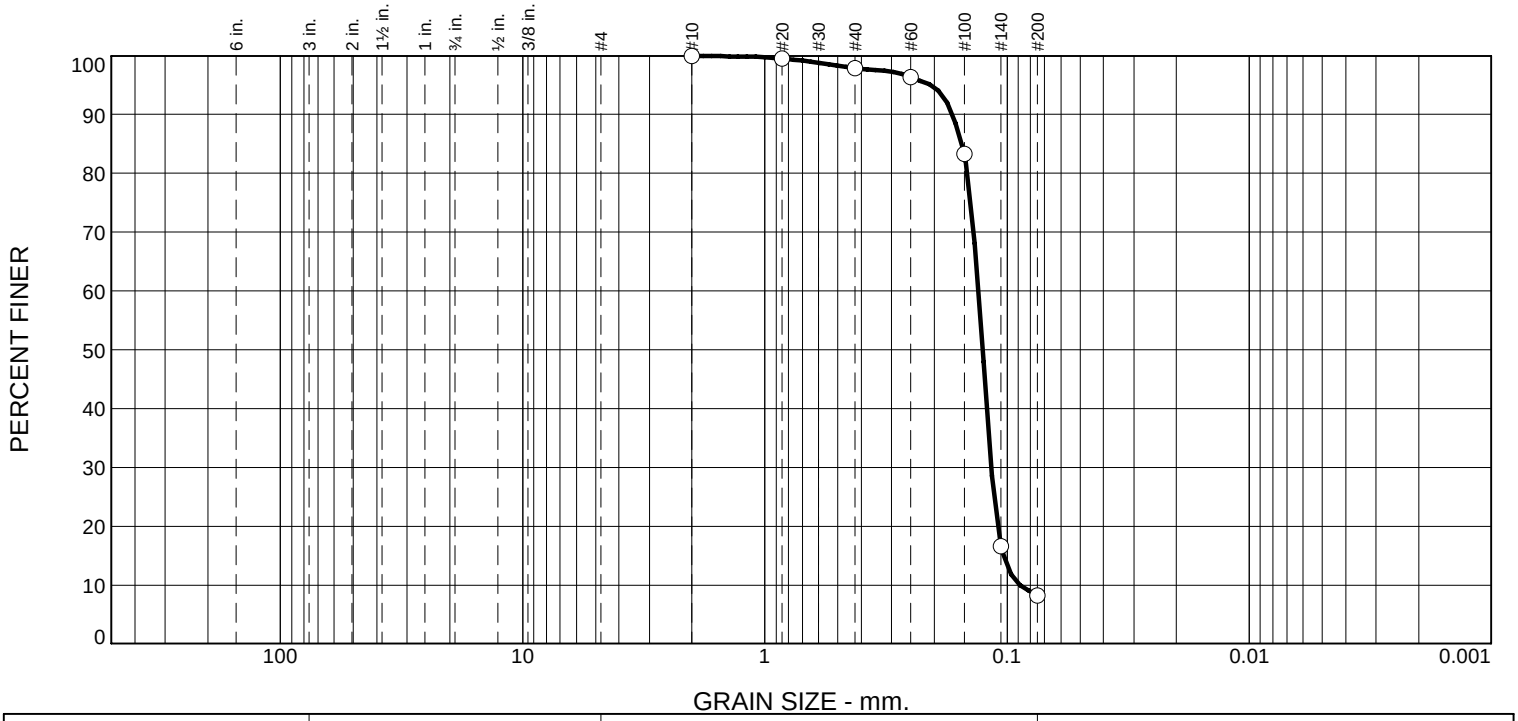
Source of Sample: PA23-1028S W-C
Sample Number: Comp 8

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.1	89.7	8.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.5		
#40	97.9		
#60	96.3		
#100	83.3		
#140	16.6		
#200	8.2		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1681 D_{85}= 0.1537

D_{60}= 0.1314 D_{50}= 0.1263

D_{30}= 0.1160 D_{15}= 0.1034

D_{10}= 0.0890

C_u= 1.48 C_c= 1.15

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 9A

INSIGHT GROUP
A CHRISTOPHER COMPANY

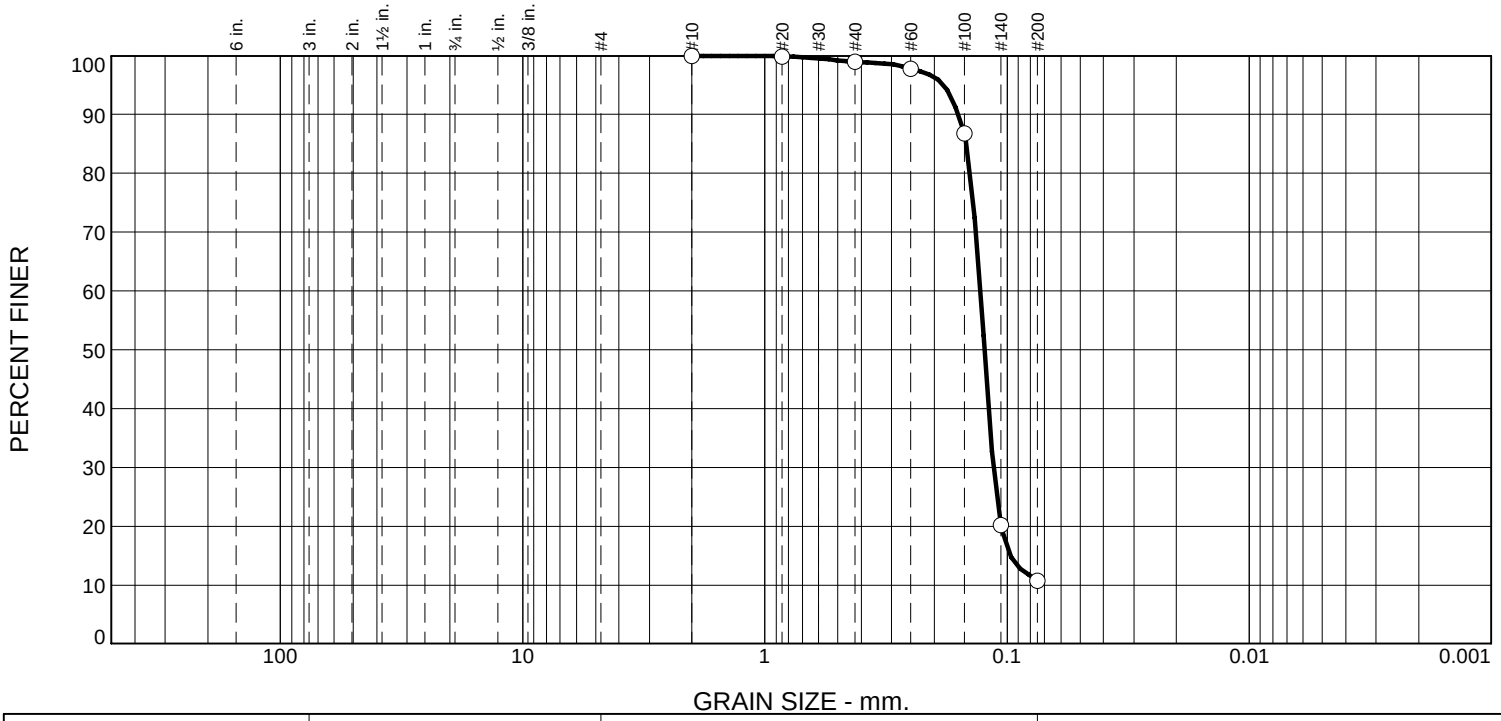
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.1	88.2	10.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	98.9		
#60	97.8		
#100	86.8		
#140	20.2		
#200	10.7		

· (no specification provided)

Source of Sample: PA23-1028S W-C
Sample Number: 9B

Material Description
Grayish Brown with Dark Brown

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1588 D_{85}= 0.1469
D_{60}= 0.1291 D_{50}= 0.1240
D_{30}= 0.1137 D_{15}= 0.0969
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

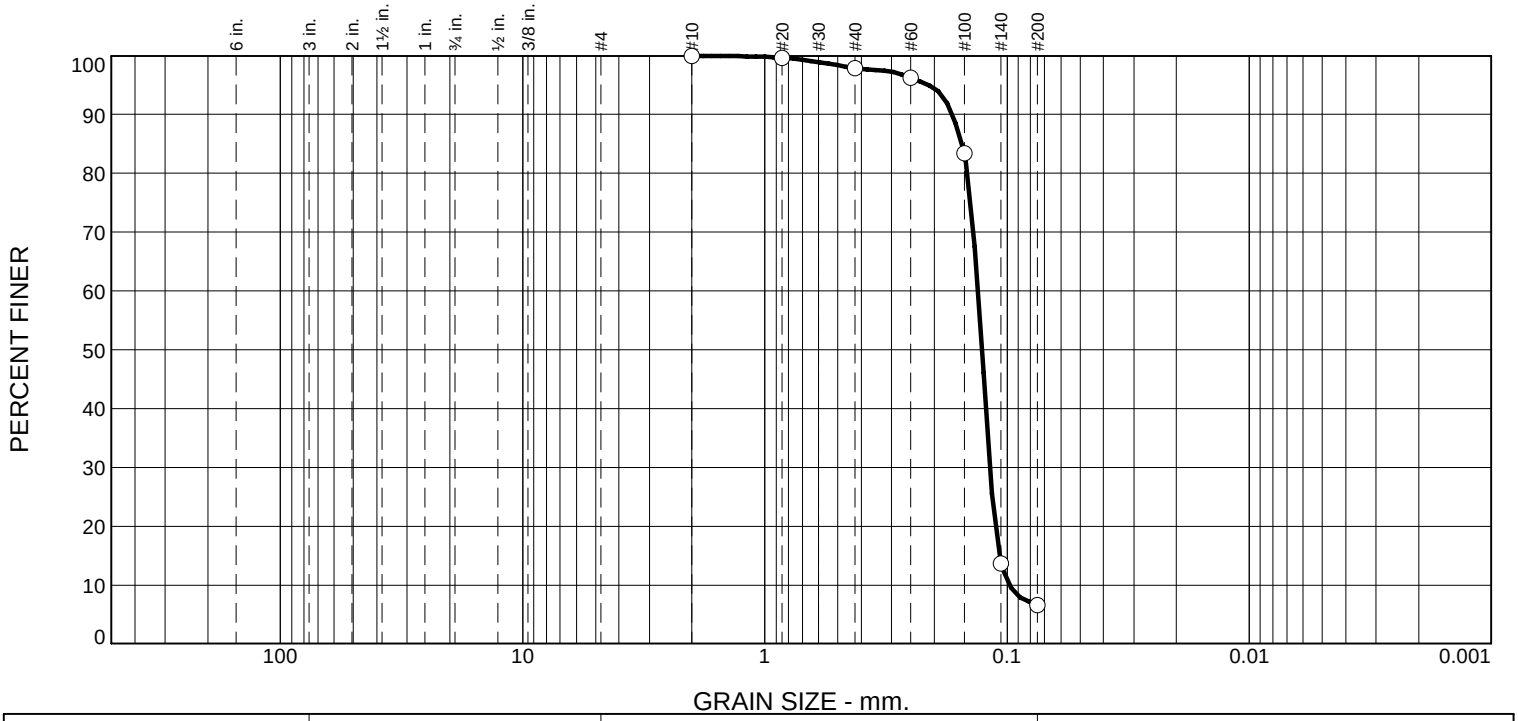
Date Sampled: 3/6/23
Date Received: 3/7/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.1	91.4	6.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	97.9		
#60	96.2		
#100	83.4		
#140	13.6		
#200	6.5		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1682 D_{85}= 0.1535

D_{60}= 0.1320 D_{50}= 0.1271

D_{30}= 0.1176 D_{15}= 0.1078

D_{10}= 0.0979

C_u= 1.35 C_c= 1.07

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 9C

INSIGHT GROUP
A CHRISTOPHER COMPANY

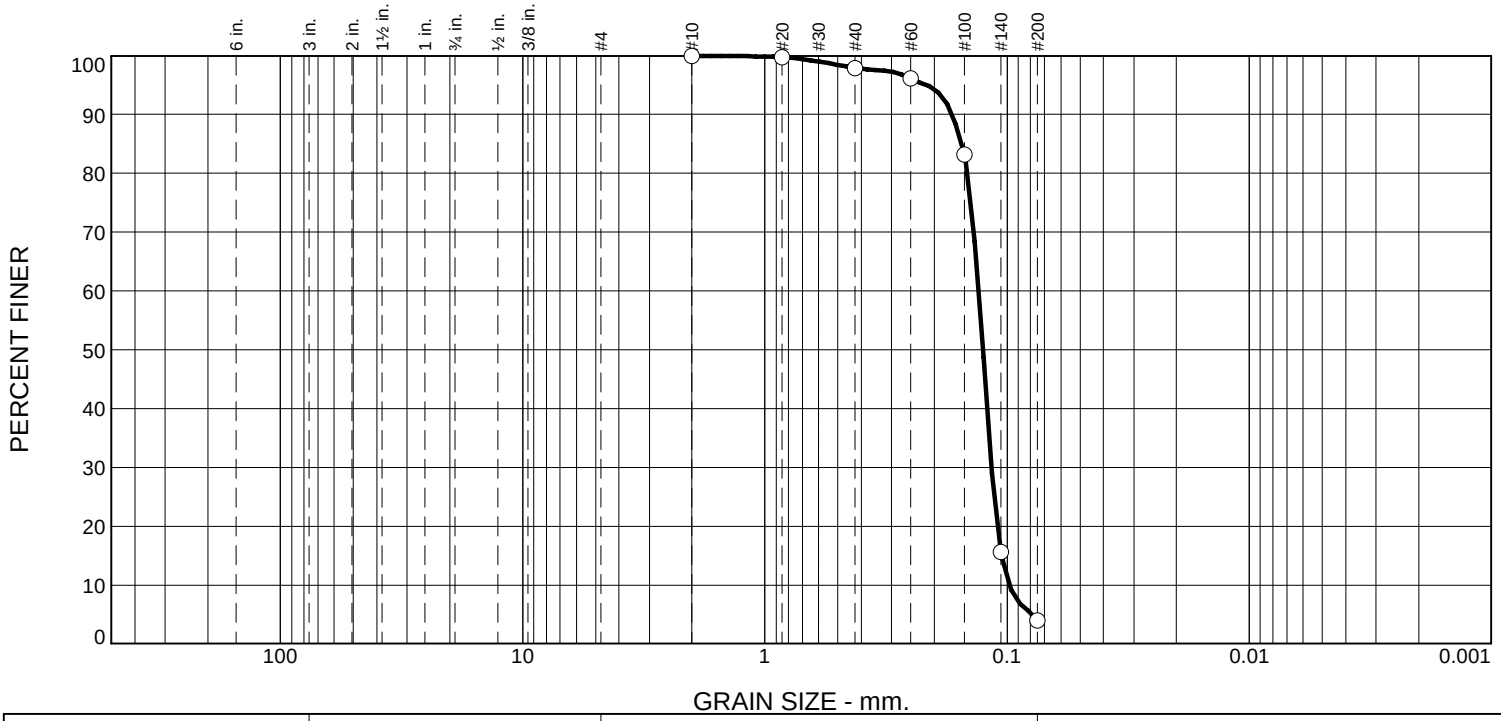
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.1	93.9	4.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	97.9		
#60	96.1		
#100	83.2		
#140	15.7		
#200	4.0		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1688 D_{85}= 0.1539

D_{60}= 0.1312 D_{50}= 0.1259

D_{30}= 0.1158 D_{15}= 0.1053

D_{10}= 0.0980

C_u= 1.34 C_c= 1.04

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr. Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 9D

INSIGHT GROUP
A CHRISTOPHER COMPANY

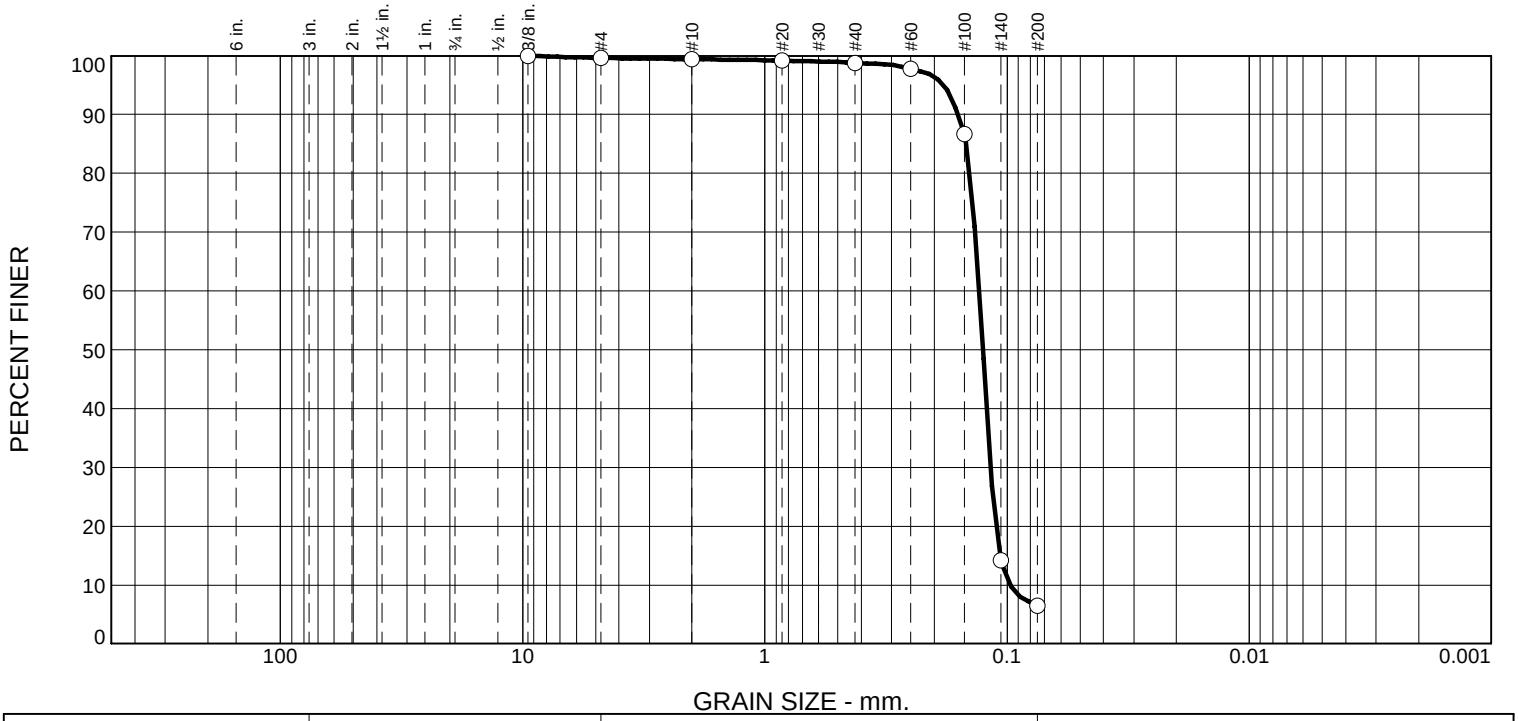
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.2	0.6	92.3	6.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.6		
#10	99.4		
#20	99.2		
#40	98.8		
#60	97.8		
#100	86.7		
#140	14.2		
#200	6.5		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1590 D_{85}= 0.1472

D_{60}= 0.1305 D_{50}= 0.1259

D_{30}= 0.1168 D_{15}= 0.1071

D_{10}= 0.0972

C_u= 1.34 C_c= 1.08

Sieve Test (ASTM D6913)

Test Date: 3/15/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/6/23

Date Received: 3/7/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1028S W-C

Sample Number: 9 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

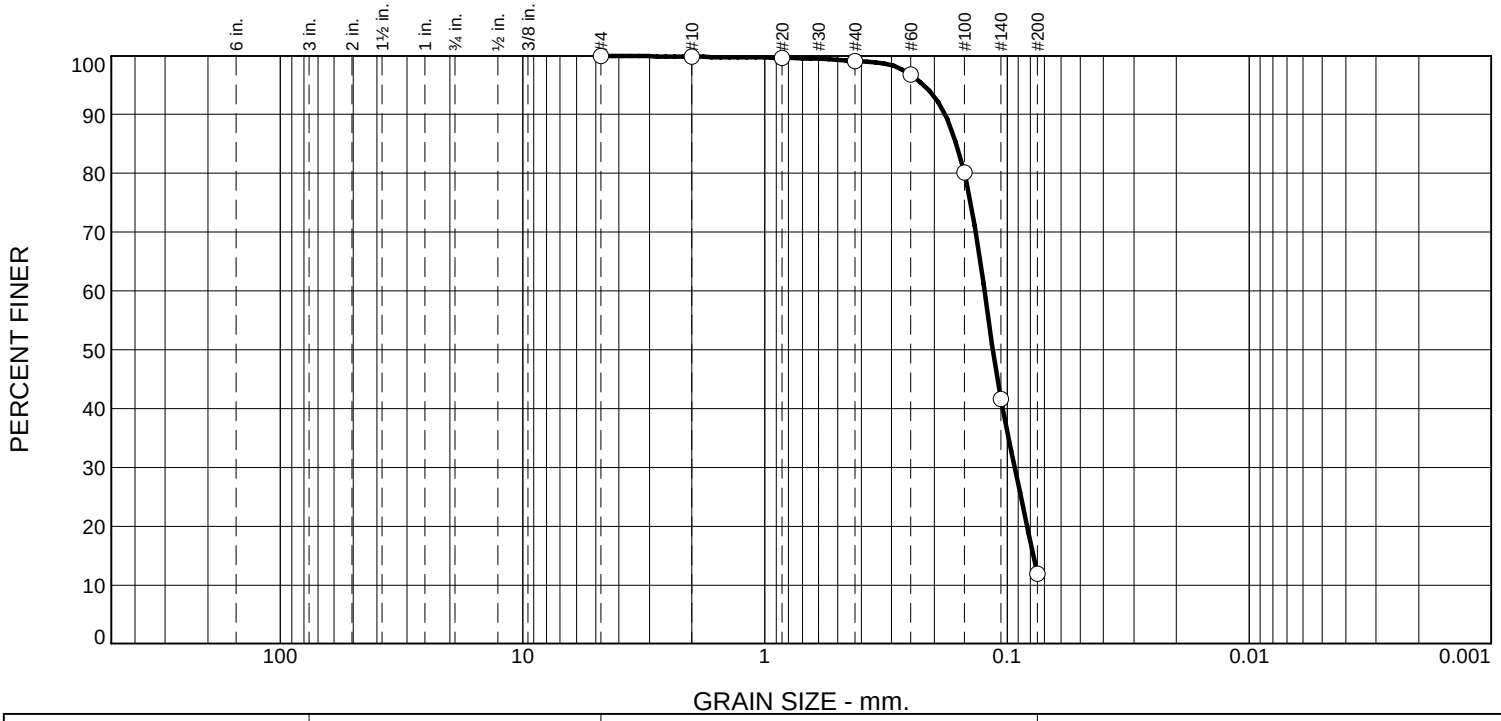
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.7	87.1	12.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.6		
#40	99.1		
#60	96.8		
#100	80.2		
#140	41.6		
#200	12.0		

* (no specification provided)

Material Description

Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1806 D_{85}= 0.1618

D_{60}= 0.1240 D_{50}= 0.1144

D_{30}= 0.0933 D_{15}= 0.0777

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 1A

INSIGHT GROUP
A CHRISTOPHER COMPANY

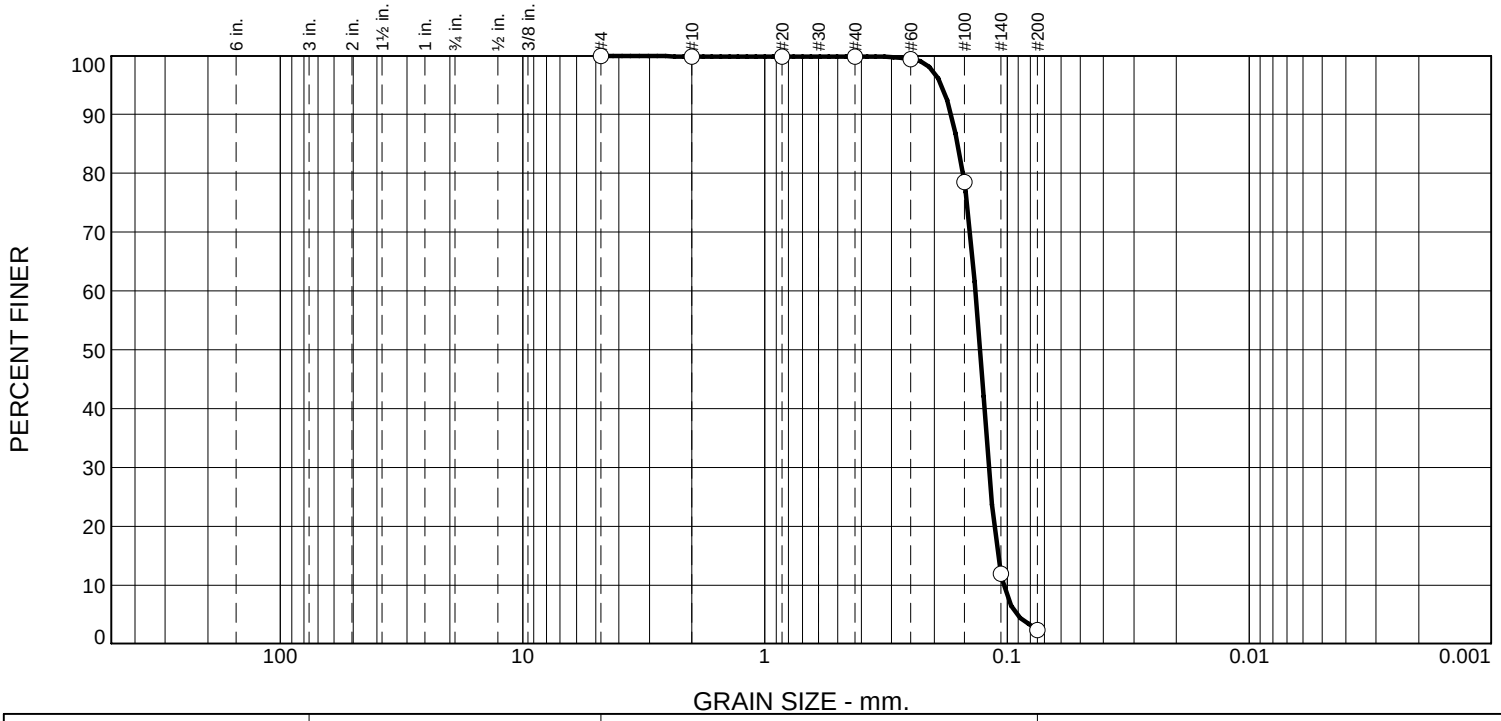
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.0	97.6	2.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.9		
#40	99.9		
#60	99.5		
#100	78.5		
#140	11.9		
#200	2.3		

· (no specification provided)

Material Description

Brown

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1702 D_{85}= 0.1597

D_{60}= 0.1352 D_{50}= 0.1295

D_{30}= 0.1188 D_{15}= 0.1092

D_{10}= 0.1033

C_u= 1.31 C_c= 1.01

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

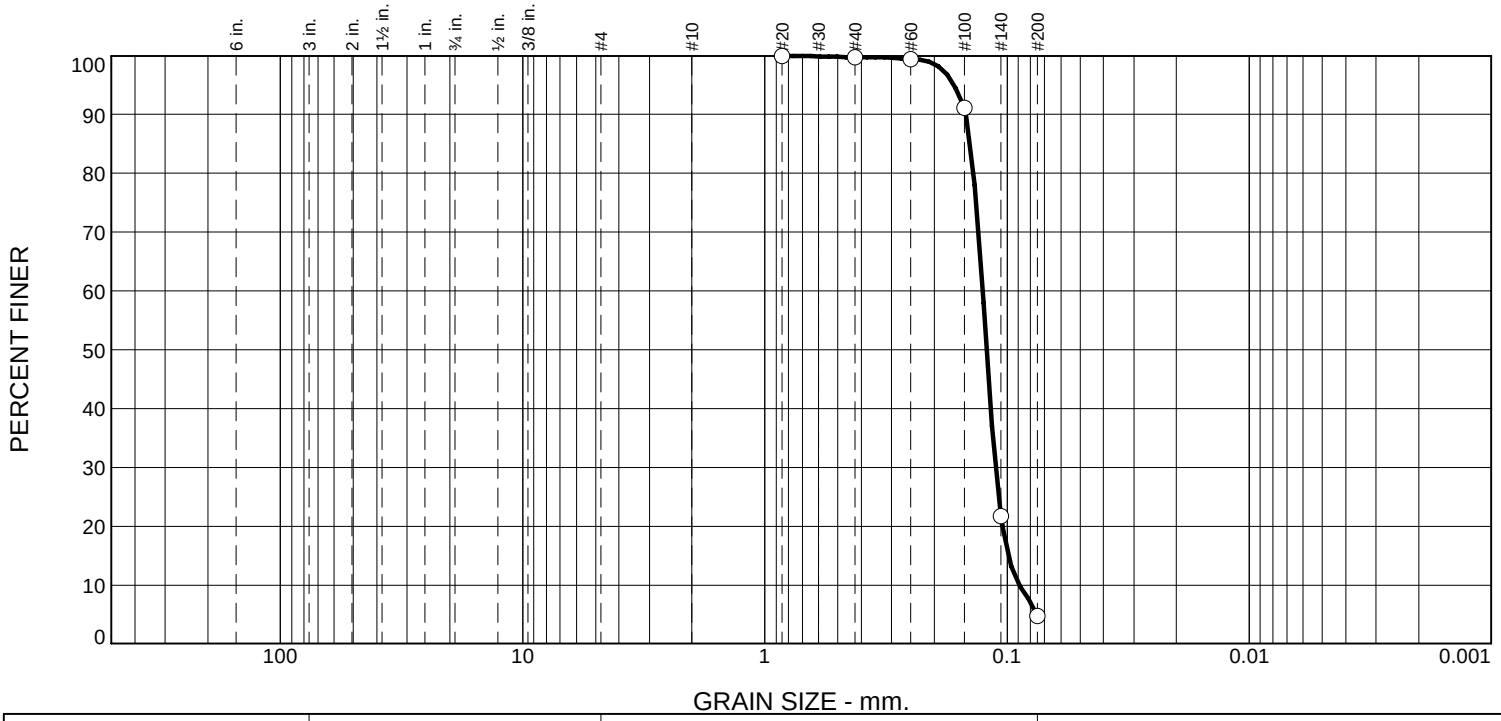
Source of Sample: PA23-1056S W-C
Sample Number: 1B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	95.1	4.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	99.4		
#100	91.2		
#140	21.7		
#200	4.7		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1474 D_{85}= 0.1415

D_{60}= 0.1262 D_{50}= 0.1214

D_{30}= 0.1115 D_{15}= 0.0990

D_{10}= 0.0894

C_u= 1.41 C_c= 1.10

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 1C

INSIGHT GROUP
A CHRISTOPHER COMPANY

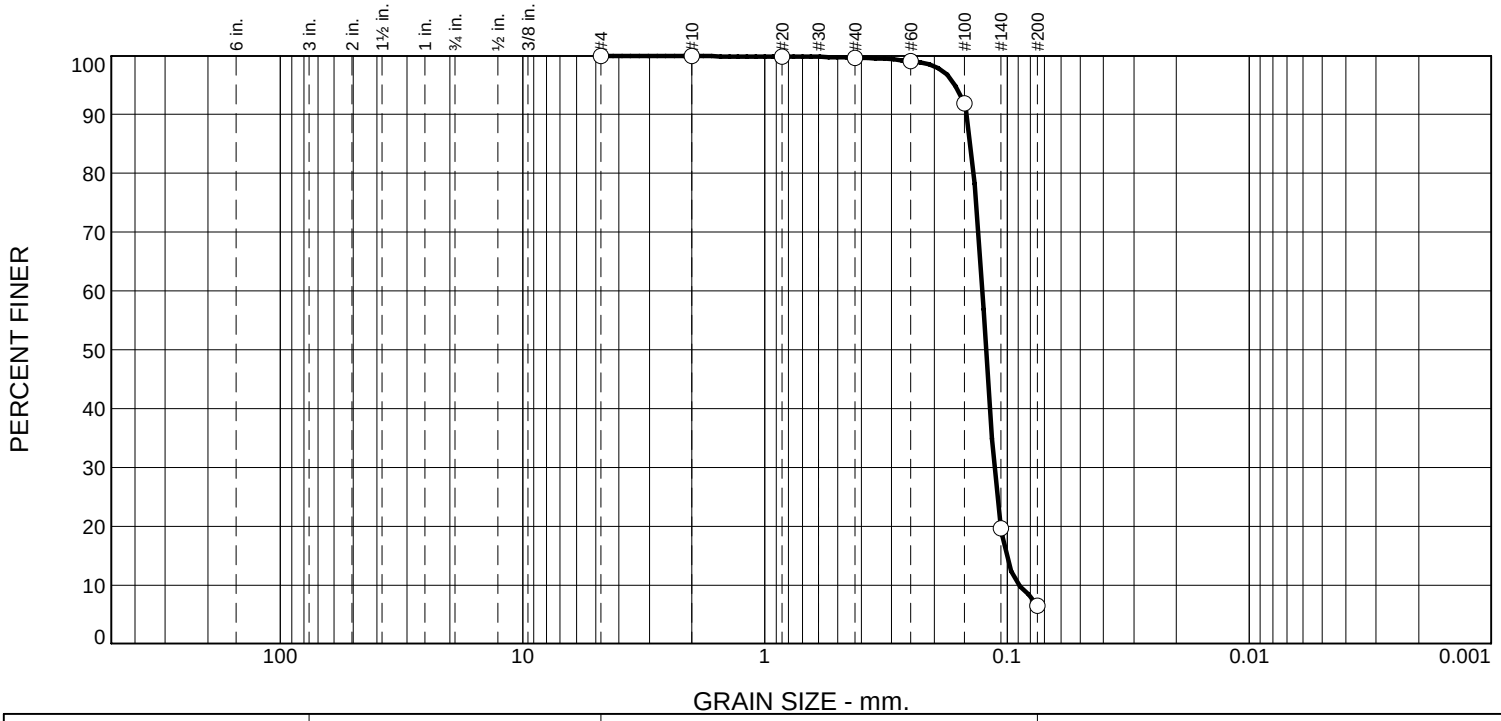
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.2	93.2	6.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.7		
#60	99.0		
#100	91.9		
#140	19.7		
#200	6.5		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1461 D_{85}= 0.1409
D_{60}= 0.1267 D_{50}= 0.1222
D_{30}= 0.1128 D_{15}= 0.1006
D_{10}= 0.0899
C_u= 1.41 C_c= 1.12

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

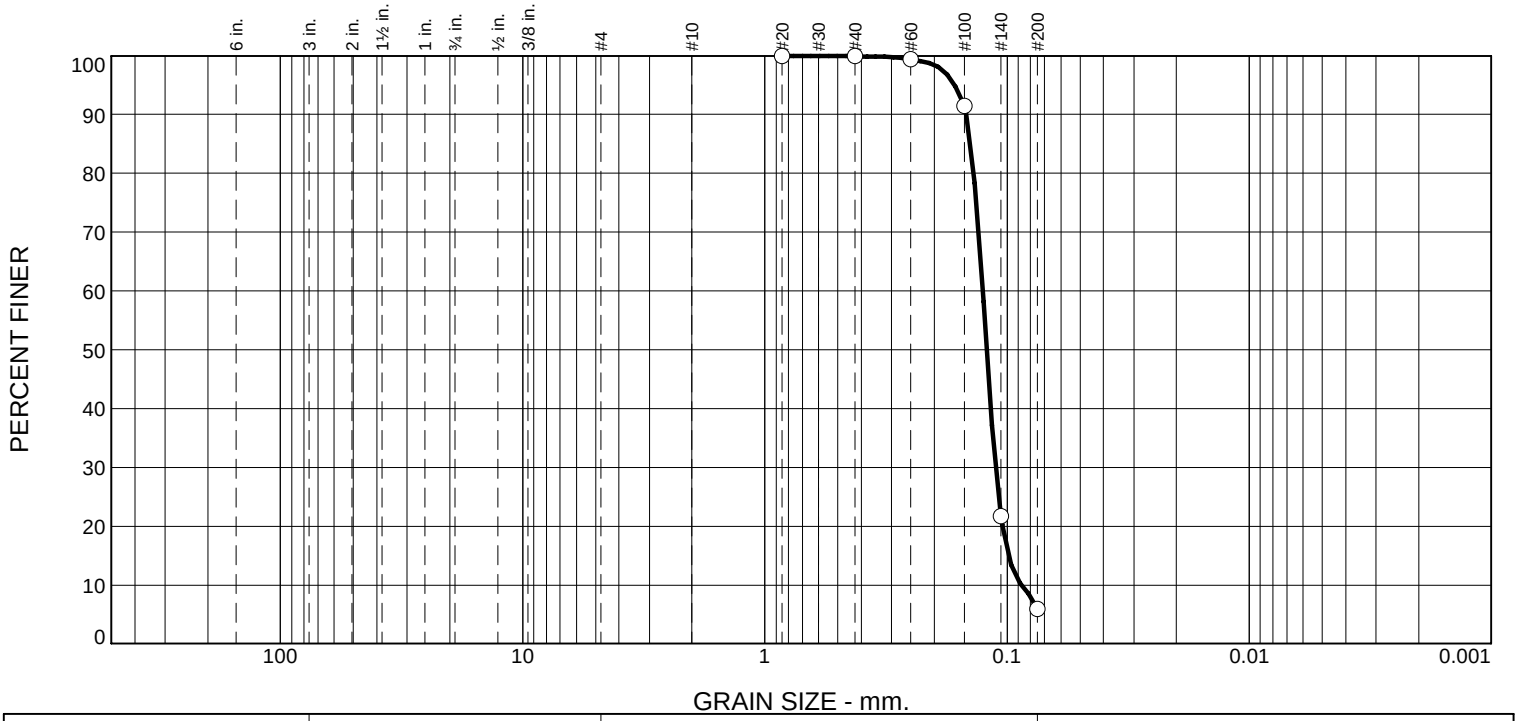
Source of Sample: PA23-1056S W-C
Sample Number: 1D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	94.0	5.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.4		
#100	91.5		
#140	21.7		
#200	5.9		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1468 D_{85}= 0.1412

D_{60}= 0.1261 D_{50}= 0.1214

D_{30}= 0.1115 D_{15}= 0.0987

D_{10}= 0.0875

C_u= 1.44 C_c= 1.13

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C
Sample Number: 1 Comp

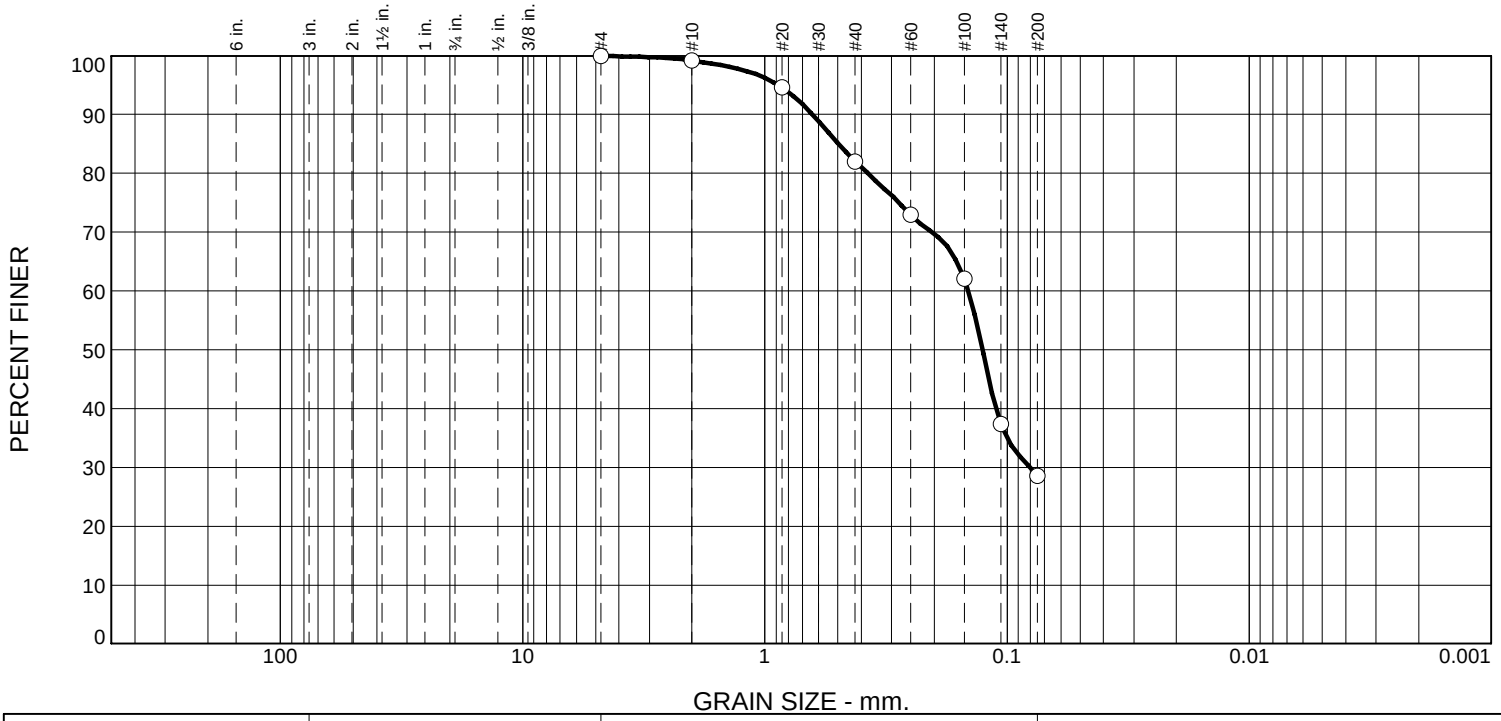
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.8	17.2	53.5	28.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.2		
#20	94.6		
#40	82.0		
#60	73.0		
#100	62.1		
#140	37.4		
#200	28.5		

· (no specification provided)

Material Description

Brown with Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.6374 D_{85}= 0.4967

D_{60}= 0.1443 D_{50}= 0.1263

D_{30}= 0.0802 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 10A

INSIGHT GROUP
A CHRISTOPHER COMPANY

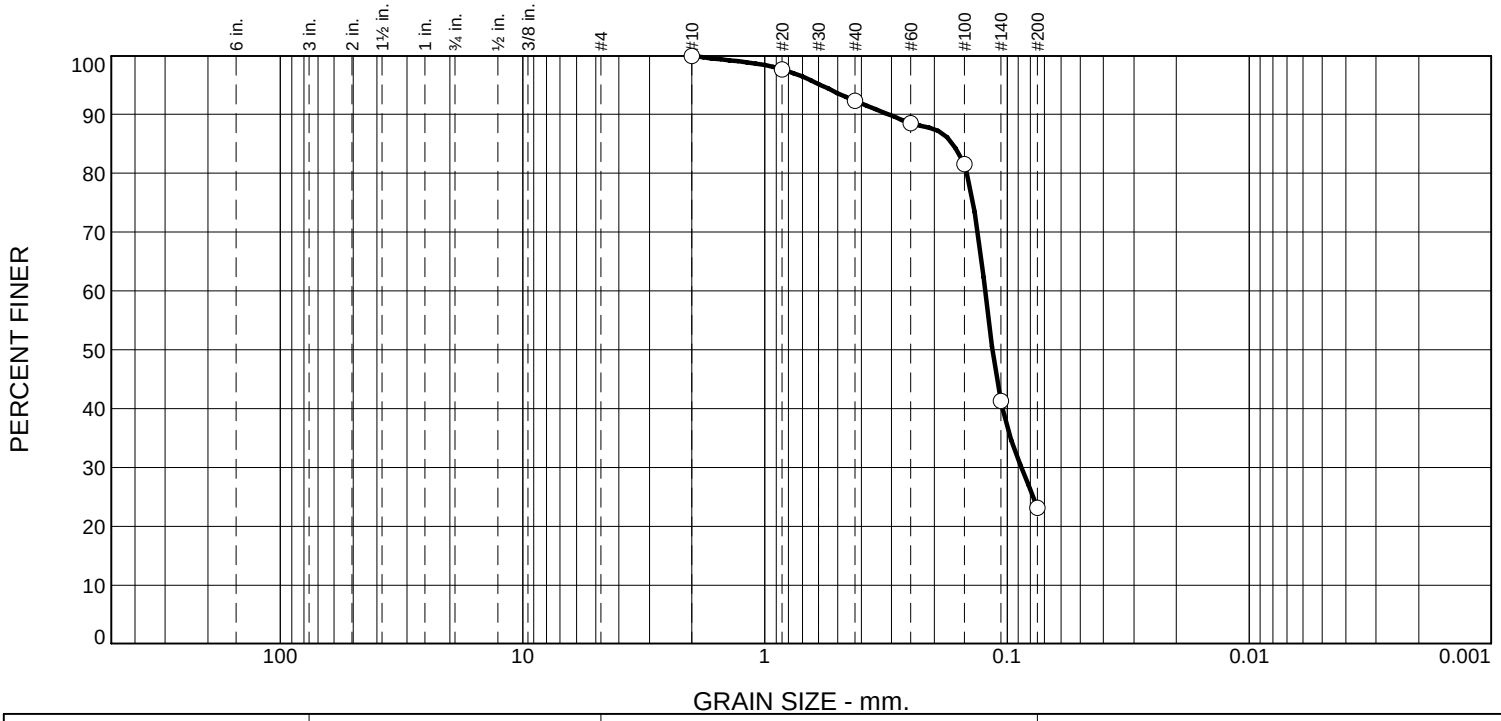
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	7.6	69.2	23.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.7		
#40	92.4		
#60	88.5		
#100	81.5		
#140	41.3		
#200	23.2		

* (no specification provided)

Material Description

Brown with Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.3085 D_{85}= 0.1675

D_{60}= 0.1233 D_{50}= 0.1147

D_{30}= 0.0875 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 10B

INSIGHT GROUP
A CHRISTOPHER COMPANY

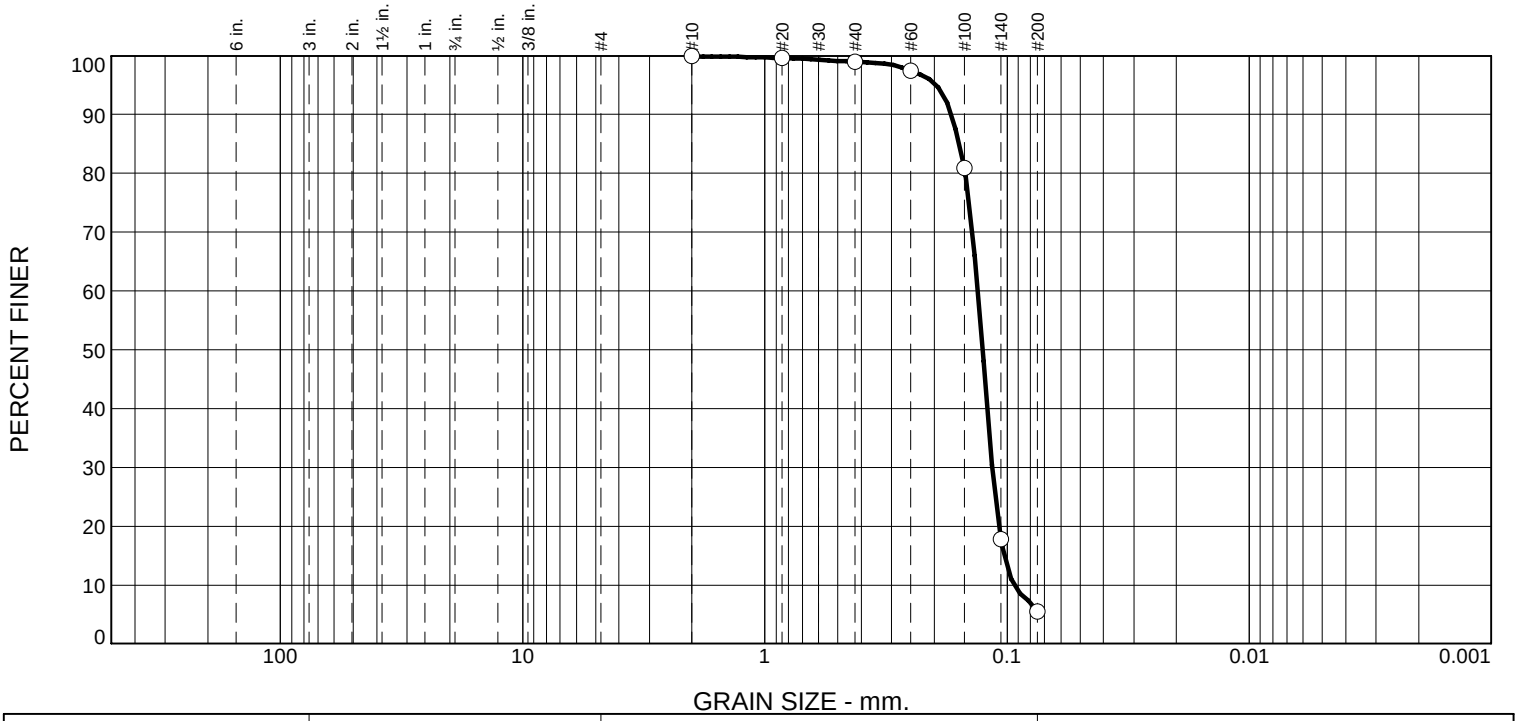
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
				0.9	93.5	5.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	99.9		
#20	99.6		
#40	99.0		
#60	97.5		
#100	80.9		
#140	17.8		
#200	5.5		

* (no specification provided)

Material Description
Brown with Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1698 D_{85}= 0.1572
D_{60}= 0.1322 D_{50}= 0.1263
D_{30}= 0.1150 D_{15}= 0.1028
D_{10}= 0.0939
C_u= 1.41 C_c= 1.07

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

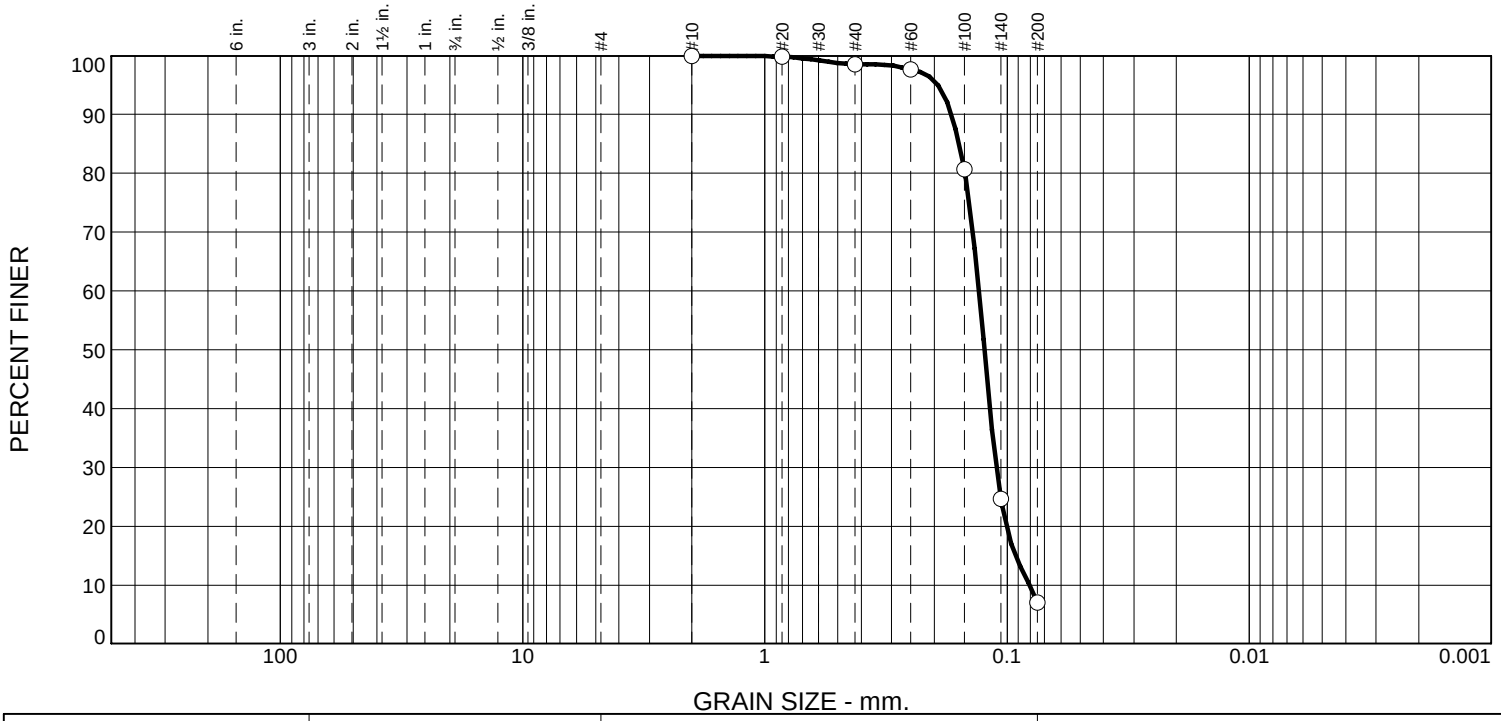
Source of Sample: PA23-1056S W-C
Sample Number: 10C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.4	91.6	7.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	98.6		
#60	97.7		
#100	80.7		
#140	24.7		
#200	7.0		

· (no specification provided)

Material Description

Brown with Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1698 D_{85}= 0.1576

D_{60}= 0.1308 D_{50}= 0.1241

D_{30}= 0.1106 D_{15}= 0.0926

D_{10}= 0.0805

C_u= 1.62 C_c= 1.16

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 10D

INSIGHT GROUP
A CHRISTOPHER COMPANY

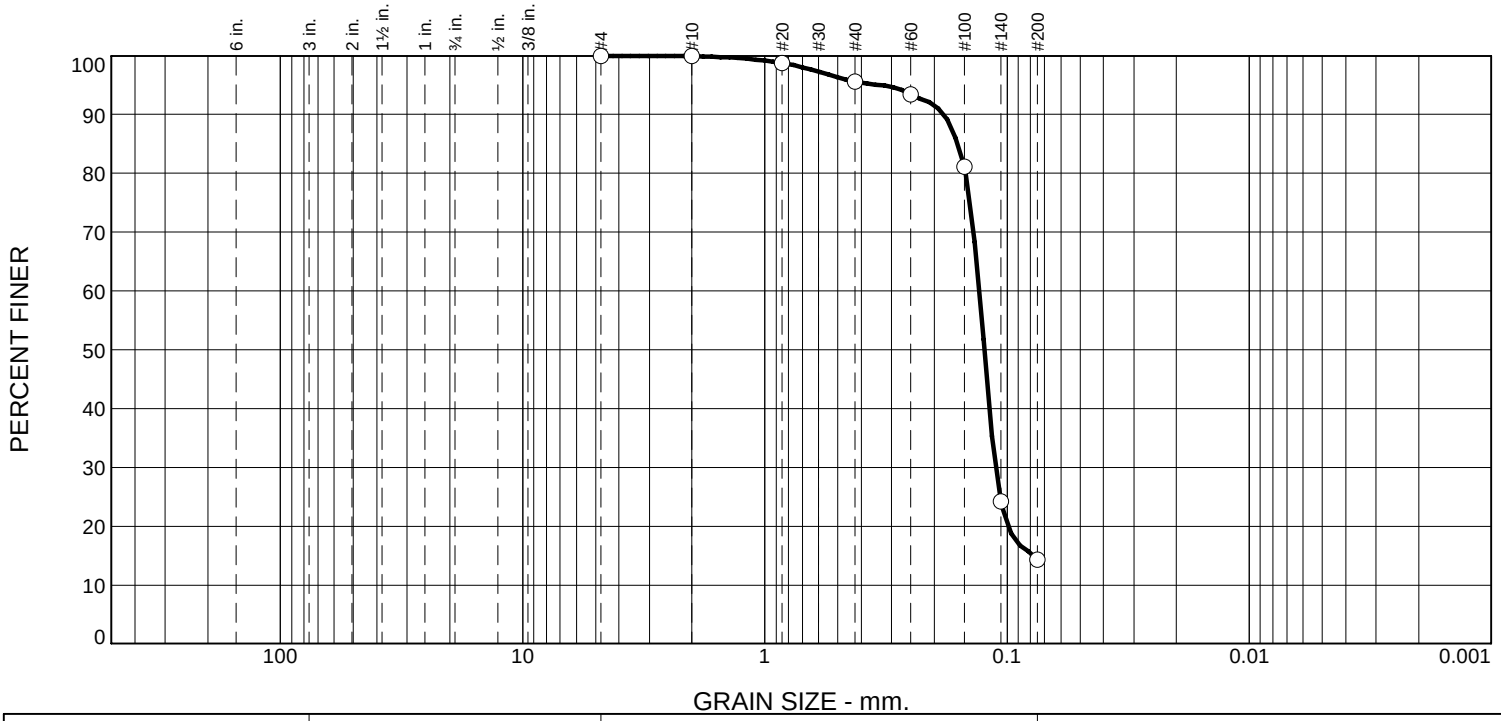
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	4.3	81.3	14.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	98.8		
#40	95.6		
#60	93.5		
#100	81.1		
#140	24.2		
#200	14.3		

· (no specification provided)

Material Description
Brown with Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1825 D_{85}= 0.1597
D_{60}= 0.1304 D_{50}= 0.1242
D_{30}= 0.1114 D_{15}= 0.0775
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

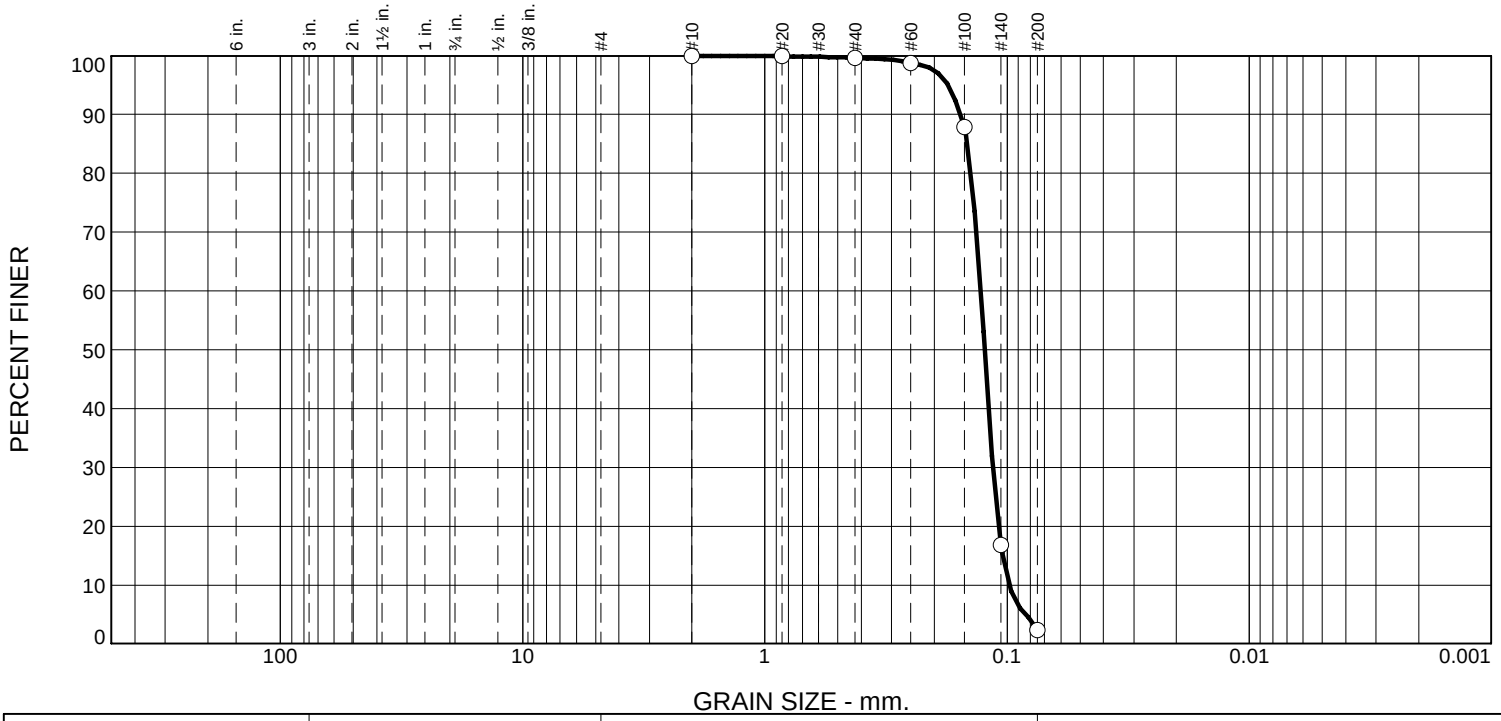
Source of Sample: PA23-1056S W-C
Sample Number: Comp 10

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	97.3	2.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	98.8		
#100	87.9		
#140	16.9		
#200	2.3		

· (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1554 D_{85}= 0.1455

D_{60}= 0.1287 D_{50}= 0.1238

D_{30}= 0.1142 D_{15}= 0.1043

D_{10}= 0.0981

C_u= 1.31 C_c= 1.03

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 11A

INSIGHT GROUP
A CHRISTOPHER COMPANY

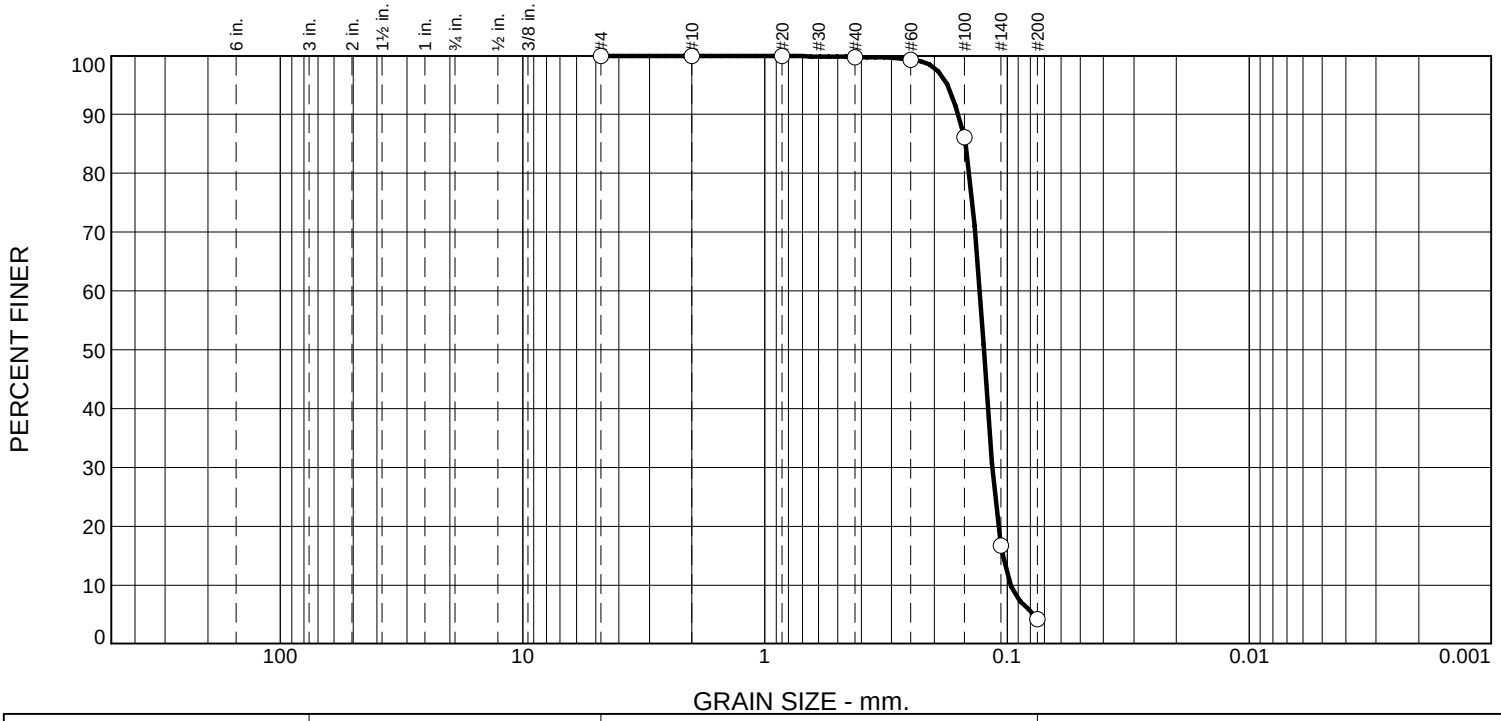
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.1	95.6	4.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.9		
#40	99.8		
#60	99.3		
#100	86.1		
#140	16.7		
#200	4.2		

* (no specification provided)

Material Description

Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1588 D_{85}= 0.1482

D_{60}= 0.1299 D_{50}= 0.1248

D_{30}= 0.1149 D_{15}= 0.1042

D_{10}= 0.0968

C_u= 1.34 C_c= 1.05

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 11C

INSIGHT GROUP
A CHRISTOPHER COMPANY

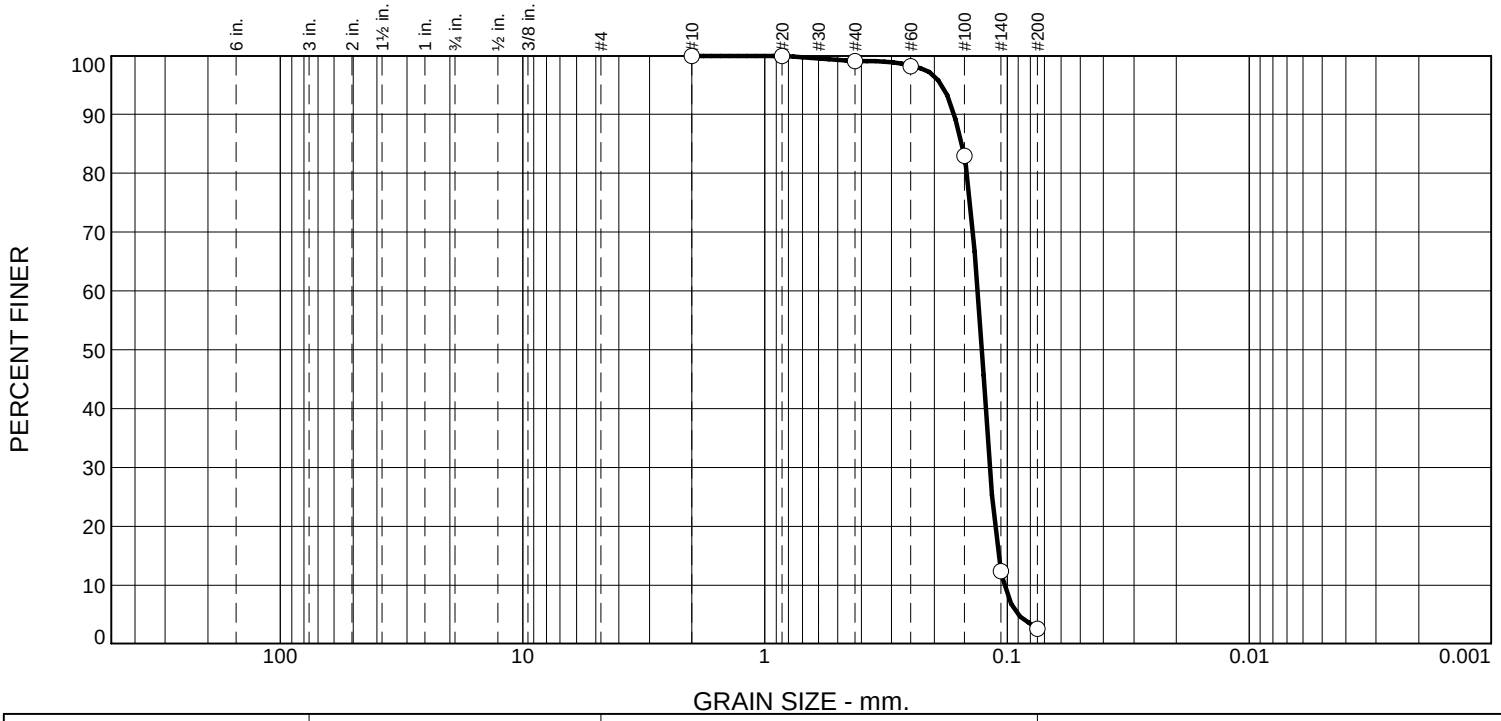
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	96.6	2.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.1		
#60	98.3		
#100	82.9		
#140	12.4		
#200	2.5		

· (no specification provided)

Source of Sample: PA23-1056S W-C
Sample Number: 11B

Material Description
Light Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1653 D_{85}= 0.1537
D_{60}= 0.1324 D_{50}= 0.1274
D_{30}= 0.1177 D_{15}= 0.1087
D_{10}= 0.1027
C_u= 1.29 C_c= 1.02

USCS (ASTM D2487)

SP

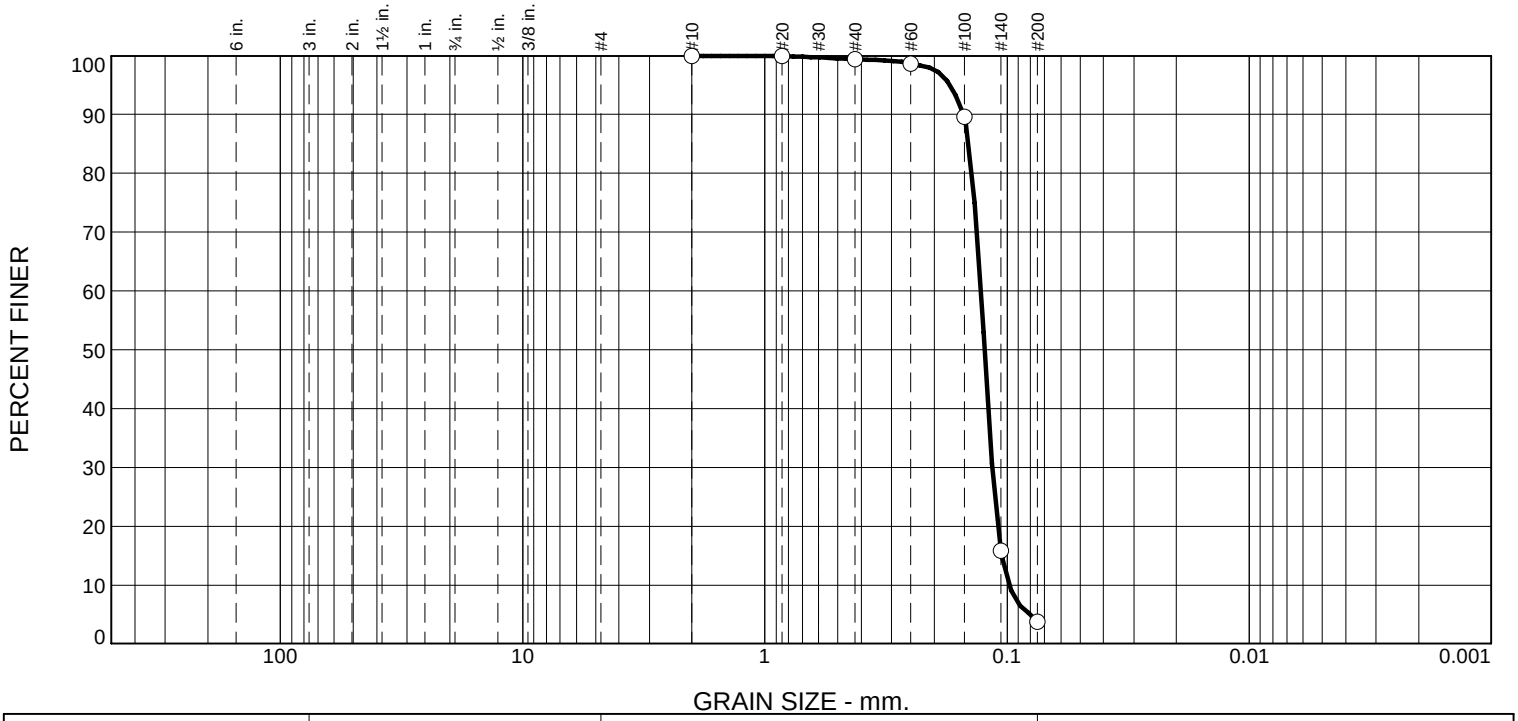
Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	95.7	3.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.4		
#60	98.7		
#100	89.6		
#140	15.8		
#200	3.7		

· (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1511 D_{85}= 0.1435

D_{60}= 0.1285 D_{50}= 0.1239

D_{30}= 0.1149 D_{15}= 0.1051

D_{10}= 0.0982

C_u= 1.31 C_c= 1.05

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

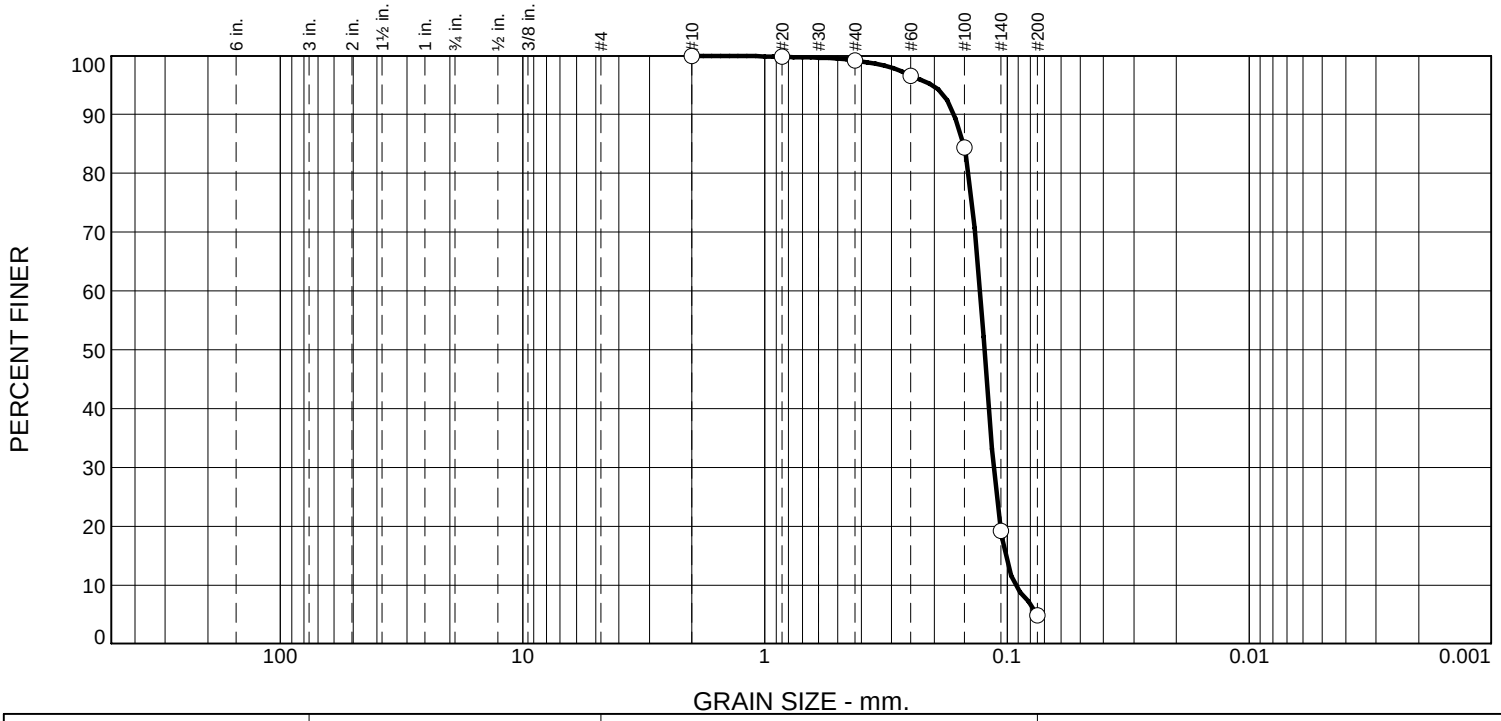
Source of Sample: PA23-1056S W-C
Sample Number: 11D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	94.3	4.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.2		
#60	96.6		
#100	84.4		
#140	19.2		
#200	4.9		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1655 D_{85}= 0.1512

D_{60}= 0.1295 D_{50}= 0.1241

D_{30}= 0.1134 D_{15}= 0.1015

D_{10}= 0.0927

C_u= 1.40 C_c= 1.07

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 11E

INSIGHT GROUP
A CHRISTOPHER COMPANY

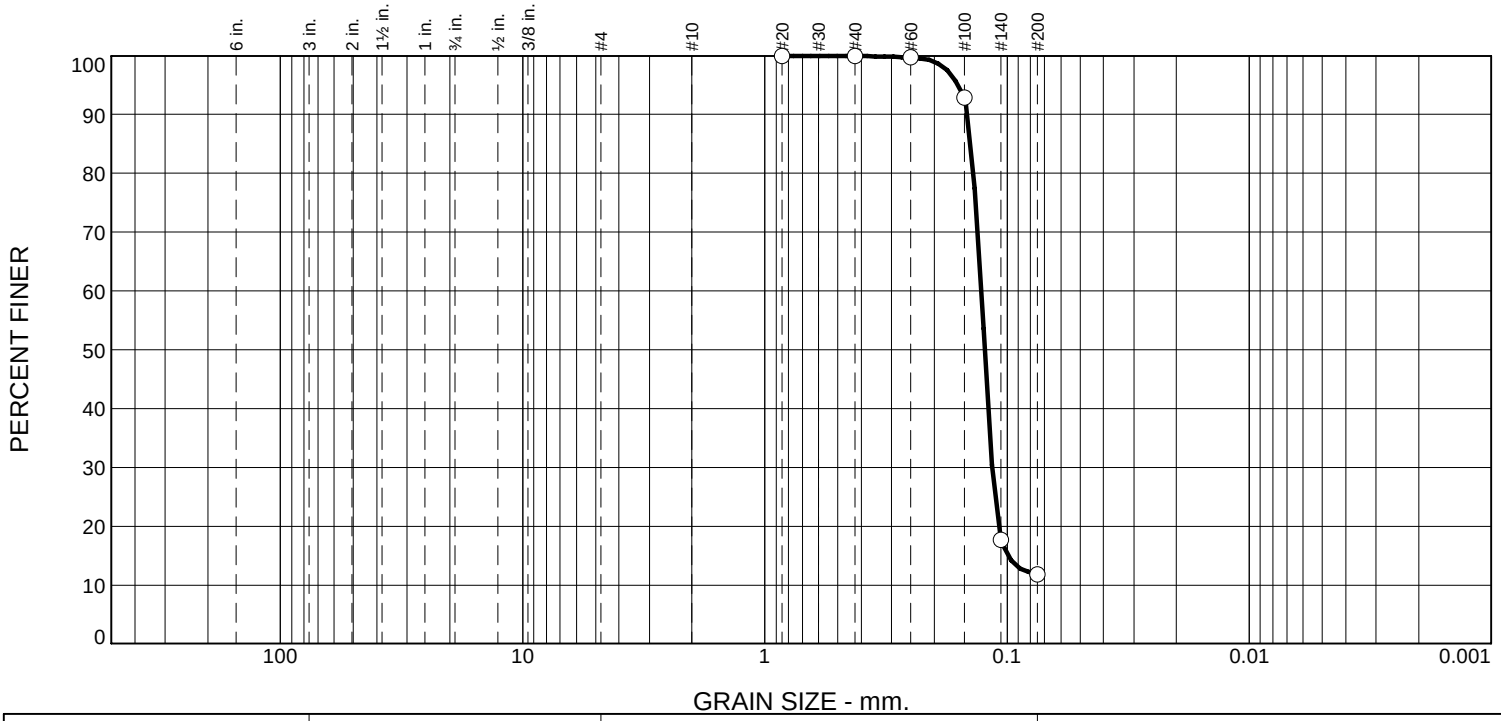
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	88.1	11.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.7		
#100	92.8		
#140	17.7		
#200	11.8		

· (no specification provided)

Material Description

Drak Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1451 D_{85}= 0.1408

D_{60}= 0.1279 D_{50}= 0.1237

D_{30}= 0.1150 D_{15}= 0.0992

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 11F

INSIGHT GROUP
A CHRISTOPHER COMPANY

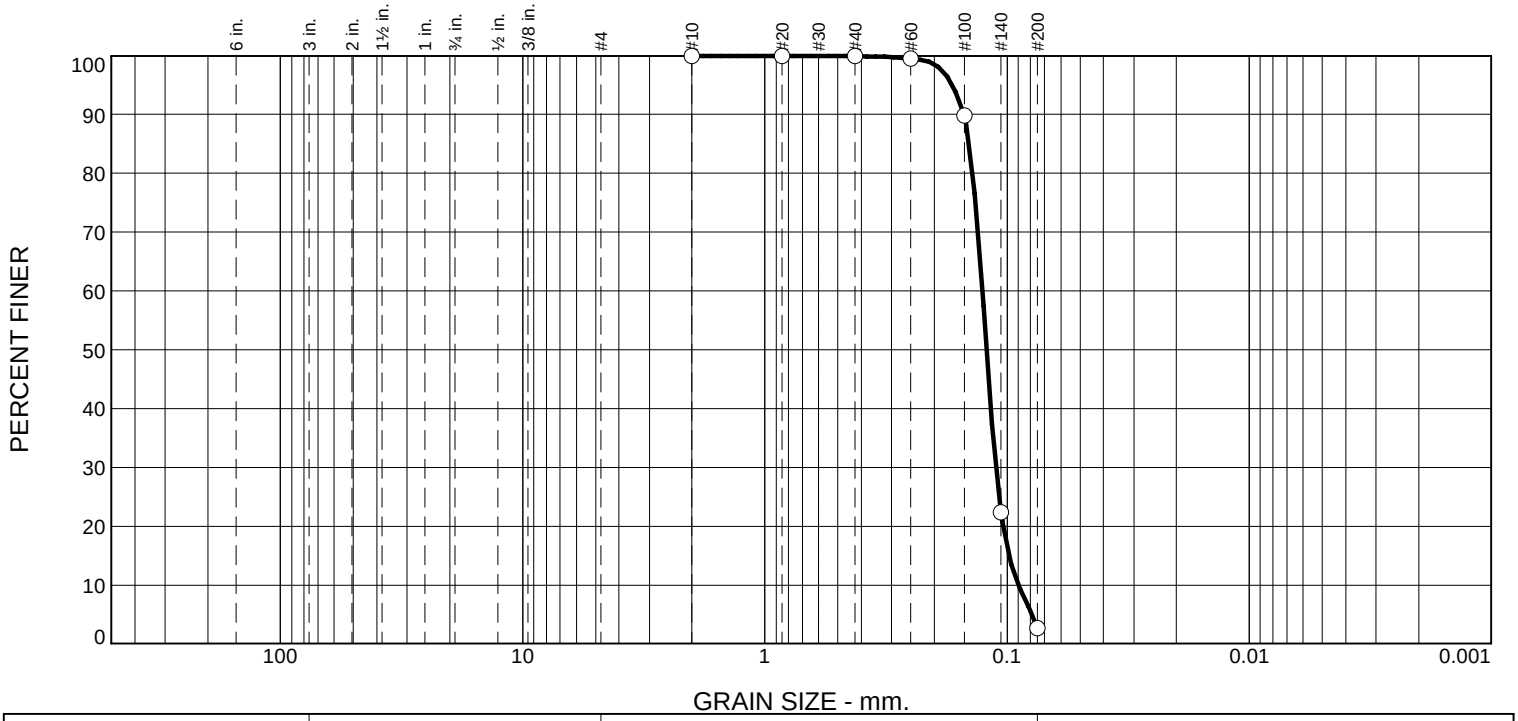
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	97.2	2.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.9		
#60	99.5		
#100	89.9		
#140	22.4		
#200	2.7		

* (no specification provided)

Source of Sample: PA23-1056S W-C
Sample Number: Comp 11

Material Description
Brown with Gray

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1504 D_{85}= 0.1429
D_{60}= 0.1265 D_{50}= 0.1215
D_{30}= 0.1112 D_{15}= 0.0984
D_{10}= 0.0901
C_u= 1.40 C_c= 1.08

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

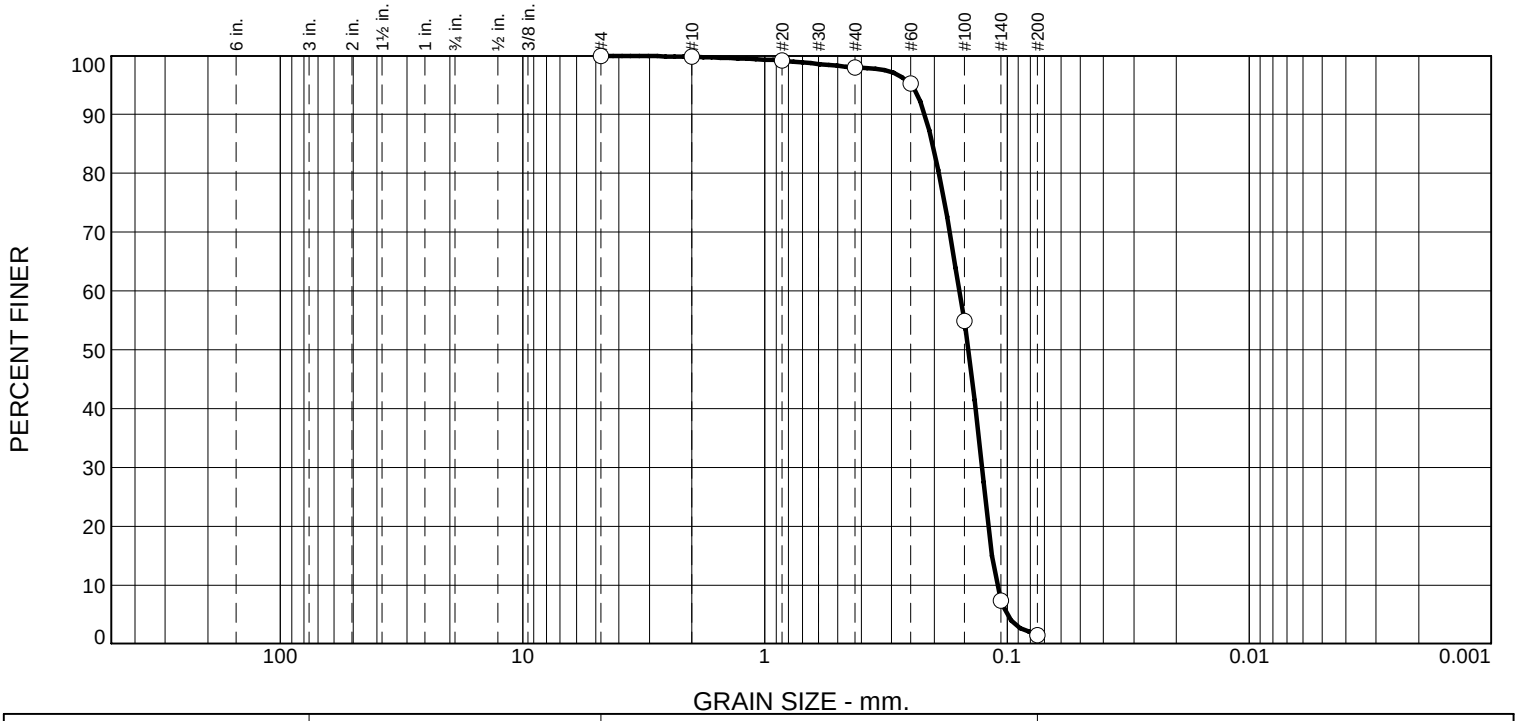
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.8	96.5	1.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.2		
#40	98.0		
#60	95.3		
#100	54.9		
#140	7.3		
#200	1.5		

· (no specification provided)

Material Description
Light Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2182 D_{85}= 0.2031
D_{60}= 0.1572 D_{50}= 0.1441
D_{30}= 0.1272 D_{15}= 0.1152
D_{10}= 0.1101
C_u= 1.43 C_c= 0.93

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)
SP

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

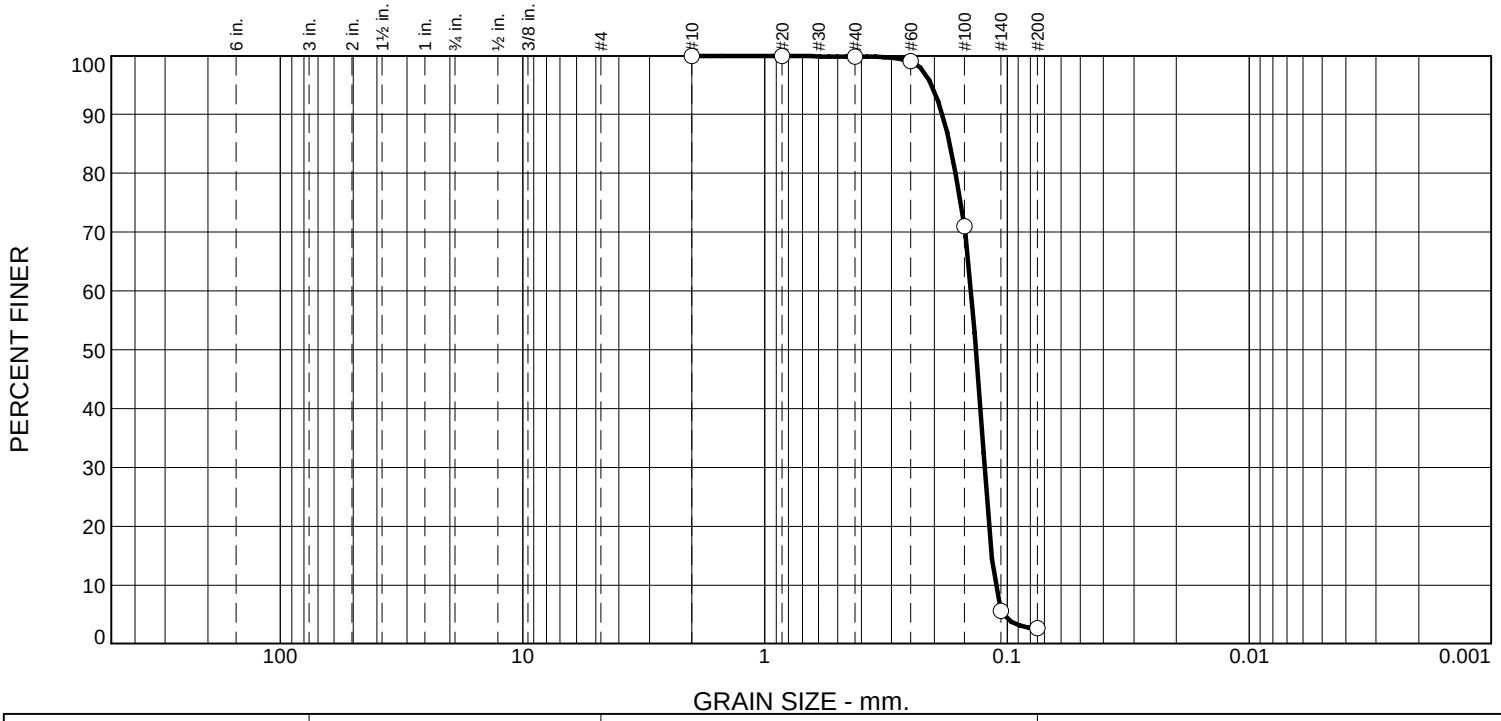
Source of Sample: PA23-1056S W-C
Sample Number: 12A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	97.3	2.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.9		
#60	99.1		
#100	71.0		
#140	5.6		
#200	2.6		

* (no specification provided)

Source of Sample: PA23-1056S W-C
Sample Number: 12B

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1852 D_{85}= 0.1725
D_{60}= 0.1406 D_{50}= 0.1345
D_{30}= 0.1240 D_{15}= 0.1156
D_{10}= 0.1119
C_u= 1.26 C_c= 0.98

USCS (ASTM D2487)
SP

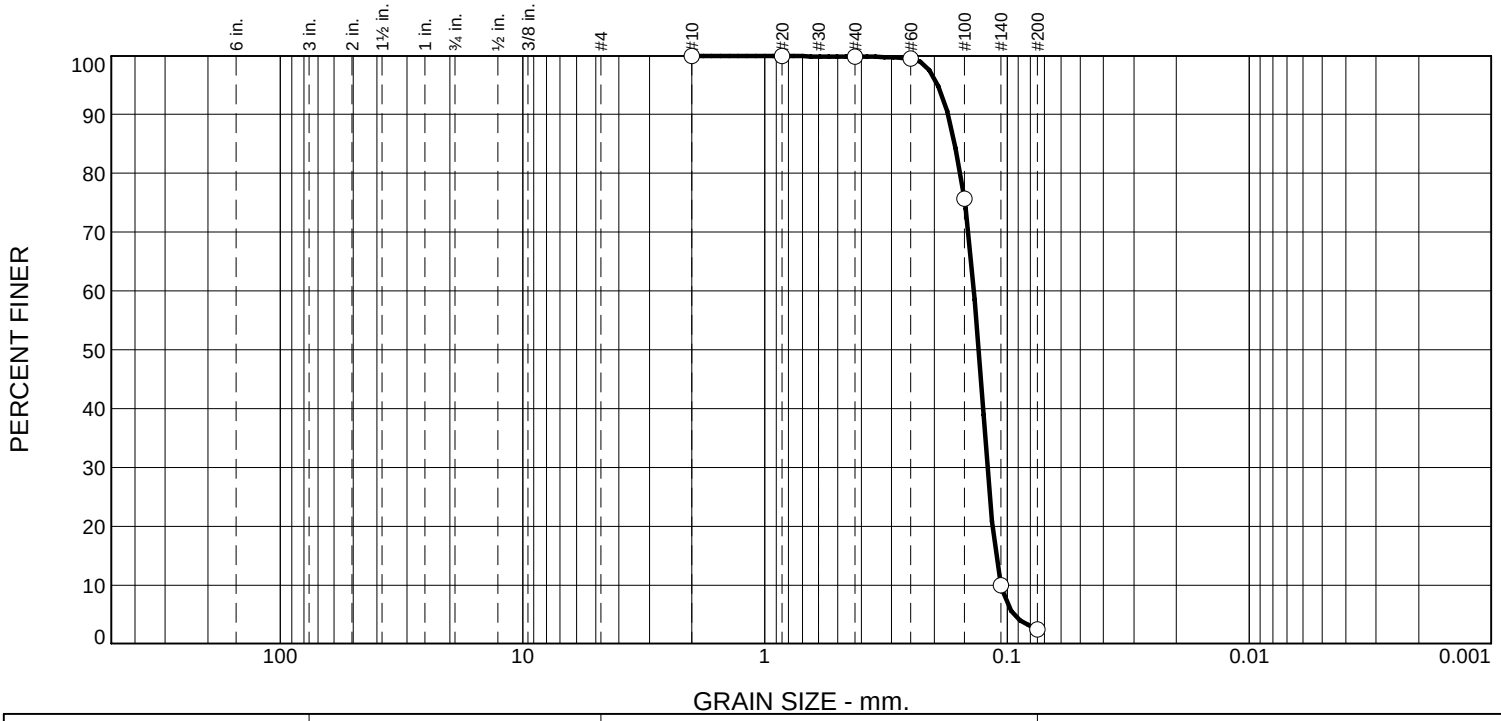
Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	97.4	2.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.8		
#60	99.5		
#100	75.7		
#140	10.0		
#200	2.4		

· (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1757 D_{85}= 0.1644

D_{60}= 0.1371 D_{50}= 0.1312

D_{30}= 0.1205 D_{15}= 0.1112

D_{10}= 0.1060

C_u= 1.29 C_c= 1.00

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C
Sample Number: 12C

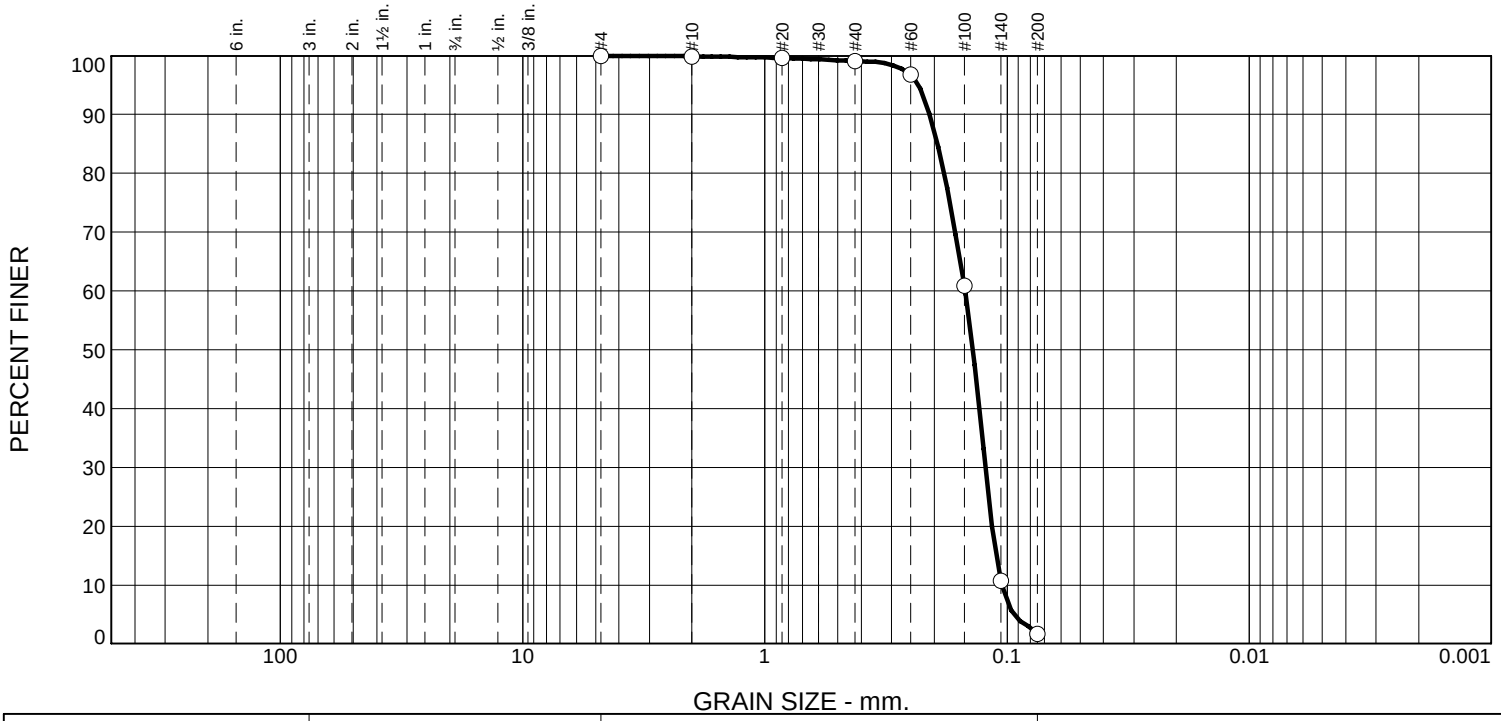
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.8	97.4	1.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	99.1		
#60	96.8		
#100	60.9		
#140	10.7		
#200	1.7		

· (no specification provided)

Material Description
Light Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2087 D_{85}= 0.1939
D_{60}= 0.1488 D_{50}= 0.1384
D_{30}= 0.1229 D_{15}= 0.1109
D_{10}= 0.1050
C_u= 1.42 C_c= 0.97

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)
SP

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

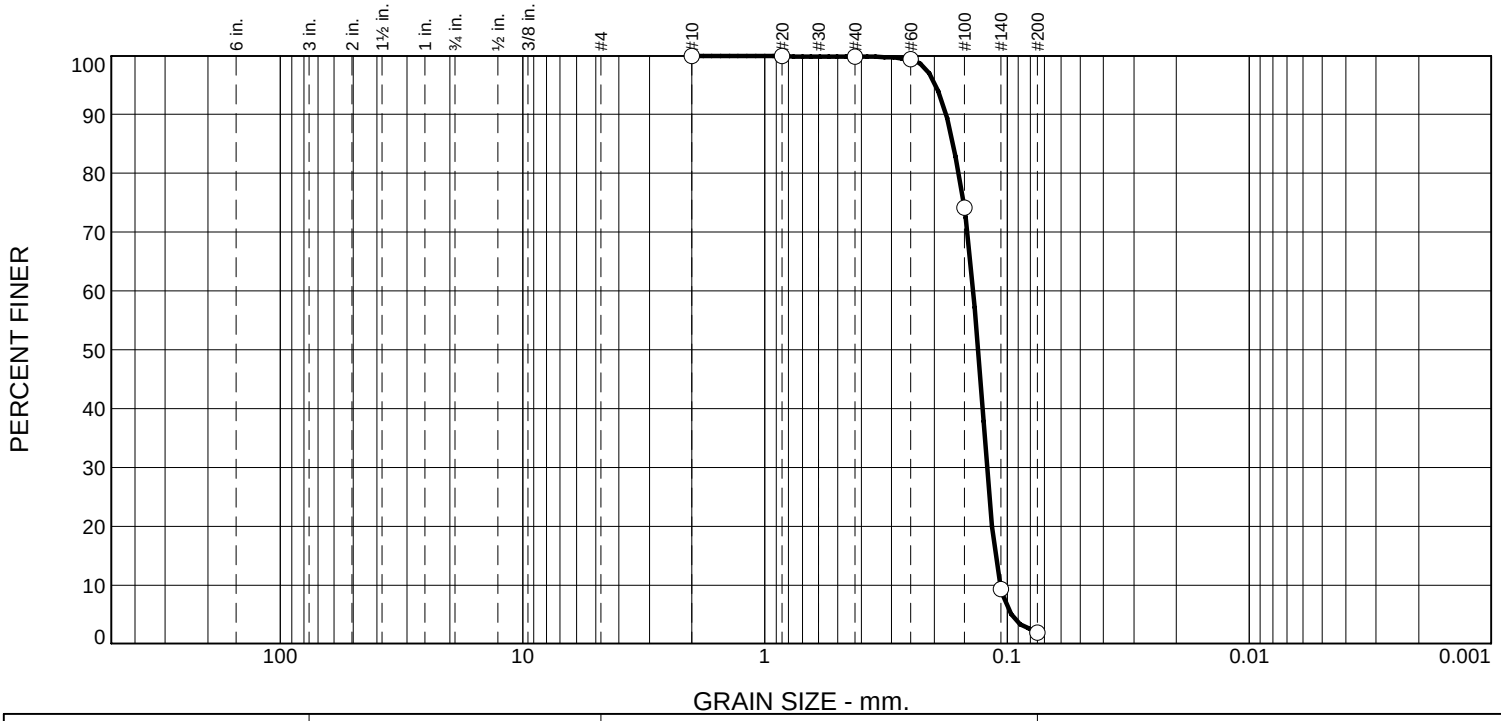
Source of Sample: PA23-1056S W-C
Sample Number: 12D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	97.9	1.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.8		
#60	99.4		
#100	74.2		
#140	9.3		
#200	1.9		

· (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1790 D_{85}= 0.1671

D_{60}= 0.1380 D_{50}= 0.1319

D_{30}= 0.1210 D_{15}= 0.1118

D_{10}= 0.1070

C_u= 1.29 C_c= 0.99

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

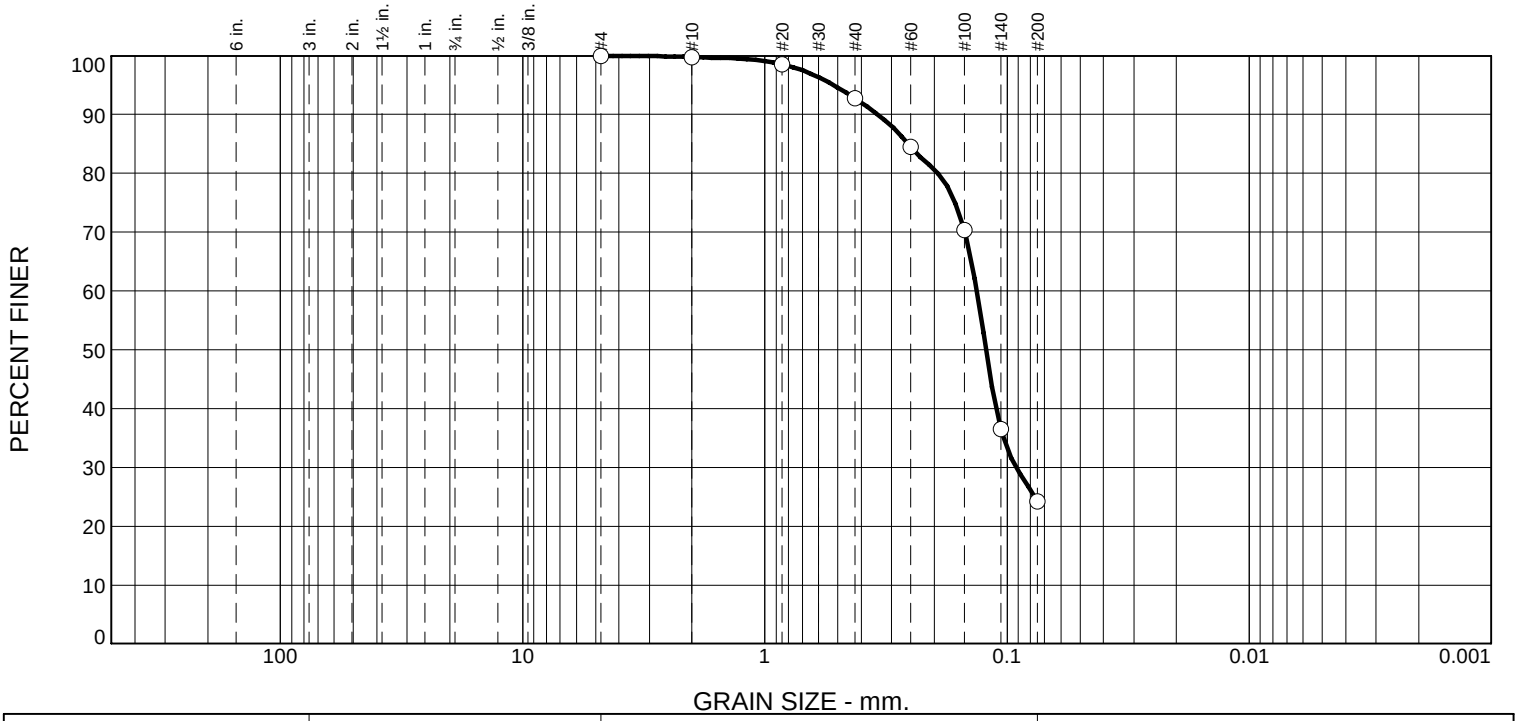
Source of Sample: PA23-1056S W-C
Sample Number: 12E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	7.0	68.5	24.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	98.6		
#40	92.8		
#60	84.5		
#100	70.4		
#140	36.6		
#200	24.3		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3426 D_{85}= 0.2557
D_{60}= 0.1335 D_{50}= 0.1221
D_{30}= 0.0920 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

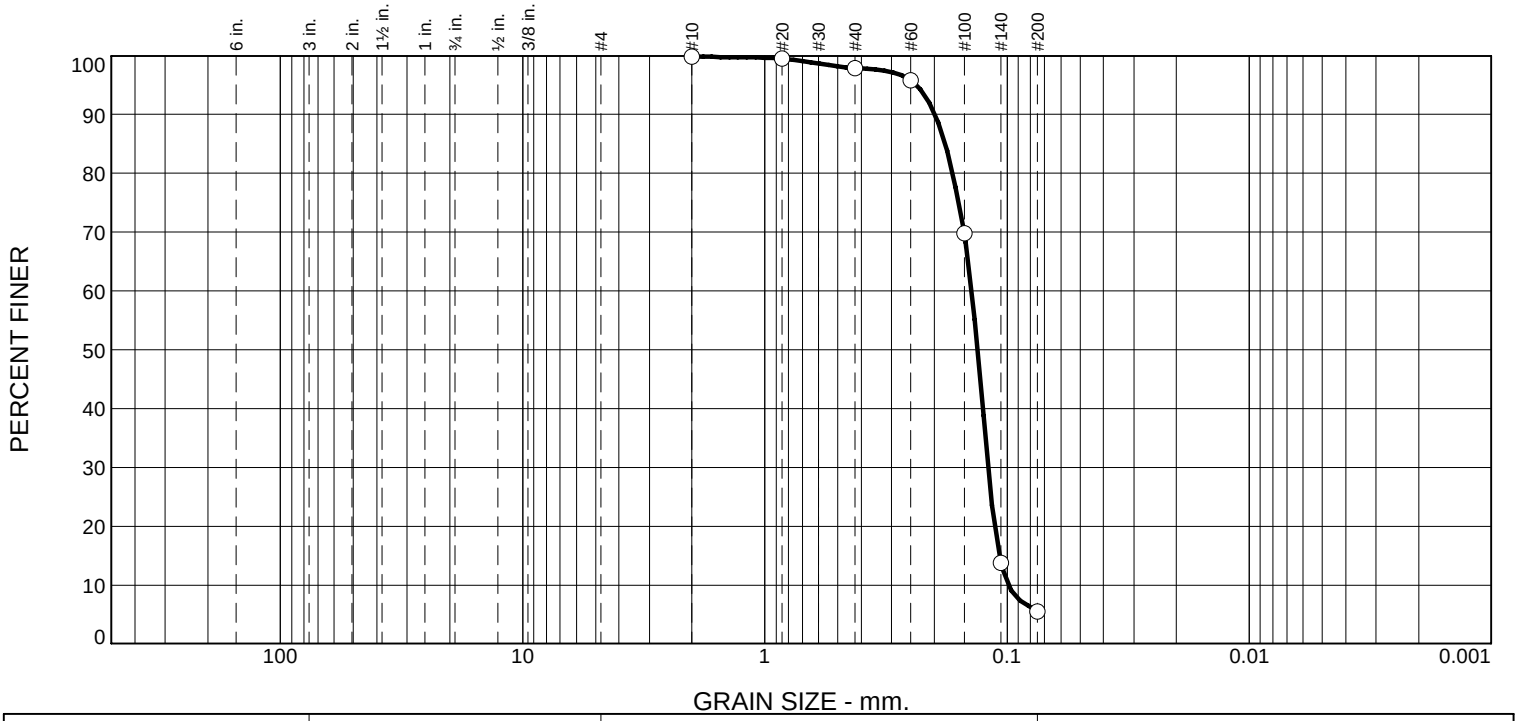
Source of Sample: PA23-1056S W-C
Sample Number: 12F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
				2.0	92.4	5.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	99.9		
#20	99.5		
#40	97.9		
#60	95.8		
#100	69.8		
#140	13.7		
#200	5.5		

* (no specification provided)

Material Description

Brown with Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1987 D_{85}= 0.1803

D_{60}= 0.1400 D_{50}= 0.1325

D_{30}= 0.1196 D_{15}= 0.1077

D_{10}= 0.0989

C_u= 1.41 C_c= 1.03

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: Comp 12

INSIGHT GROUP
A CHRISTOPHER COMPANY

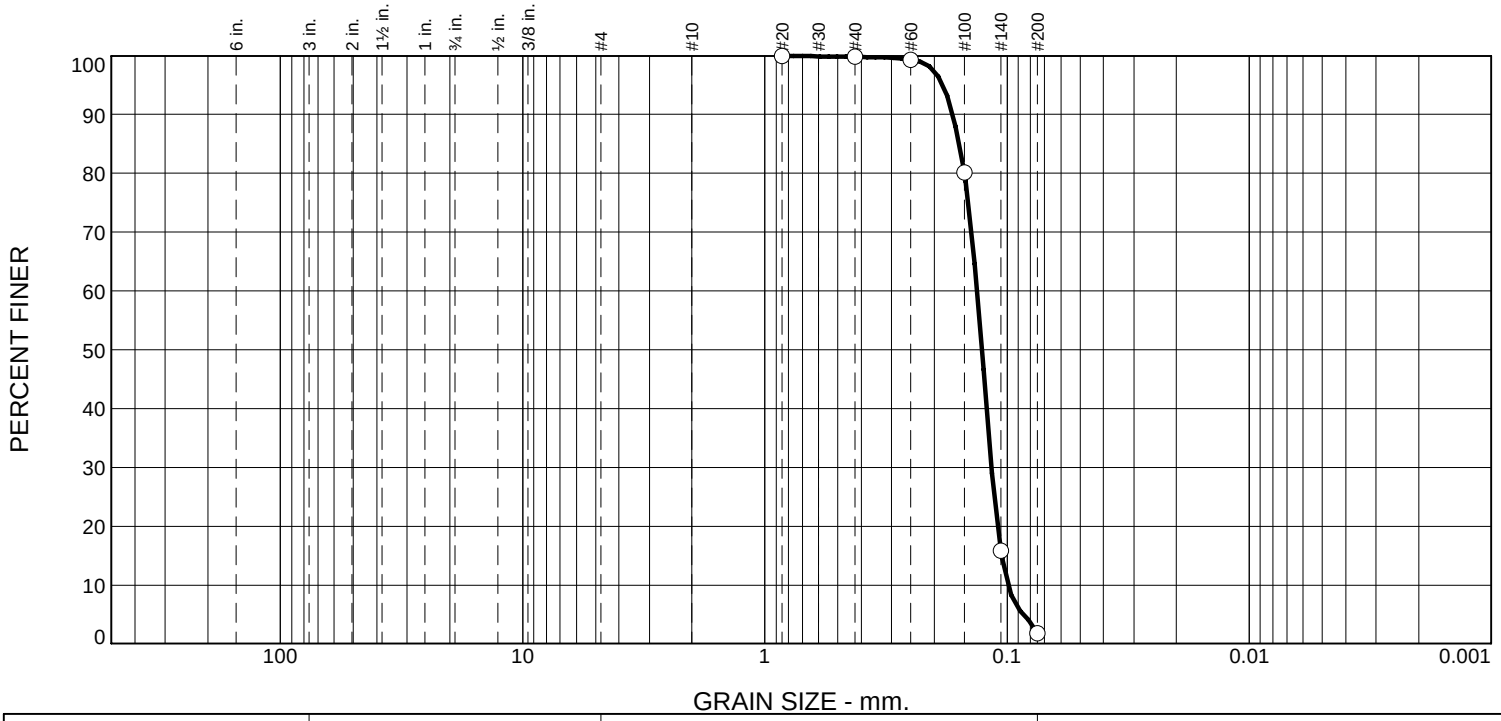
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	98.0	1.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	99.3		
#100	80.2		
#140	15.9		
#200	1.8		

· (no specification provided)

Source of Sample: PA23-1056S W-C
Sample Number: 13A

Material Description
Light Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1677 D_{85}= 0.1574
D_{60}= 0.1332 D_{50}= 0.1272
D_{30}= 0.1158 D_{15}= 0.1052
D_{10}= 0.0992
C_u= 1.34 C_c= 1.02

USCS (ASTM D2487)

SP

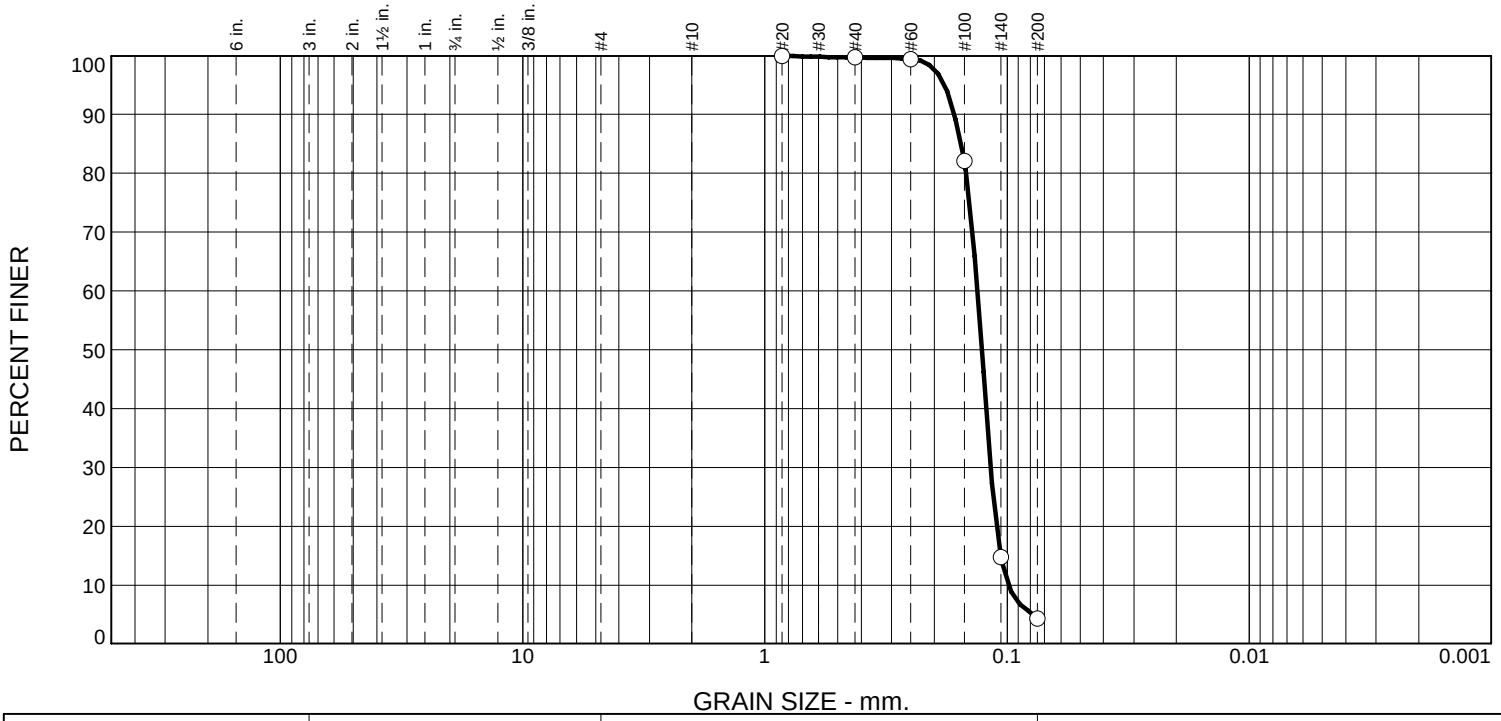
Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	95.4	4.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.7		
#60	99.4		
#100	82.1		
#140	14.8		
#200	4.3		

· (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1651 D_{85}= 0.1547

D_{60}= 0.1326 D_{50}= 0.1272

D_{30}= 0.1167 D_{15}= 0.1062

D_{10}= 0.0988

C_u= 1.34 C_c= 1.04

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 13B

INSIGHT GROUP
A CHRISTOPHER COMPANY

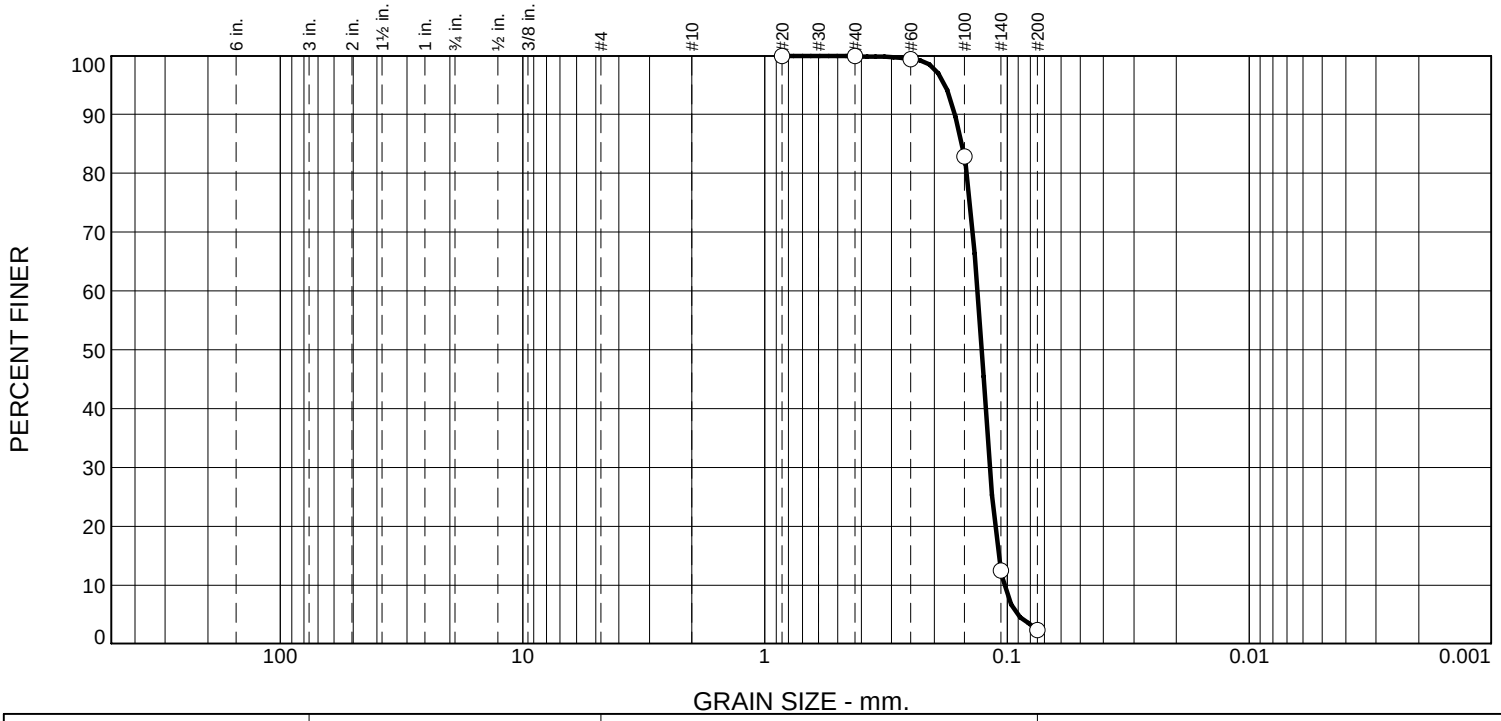
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	97.6	2.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.4		
#100	82.9		
#140	12.4		
#200	2.3		

· (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1639 D_{85}= 0.1535

D_{60}= 0.1326 D_{50}= 0.1275

D_{30}= 0.1177 D_{15}= 0.1086

D_{10}= 0.1027

C_u= 1.29 C_c= 1.02

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

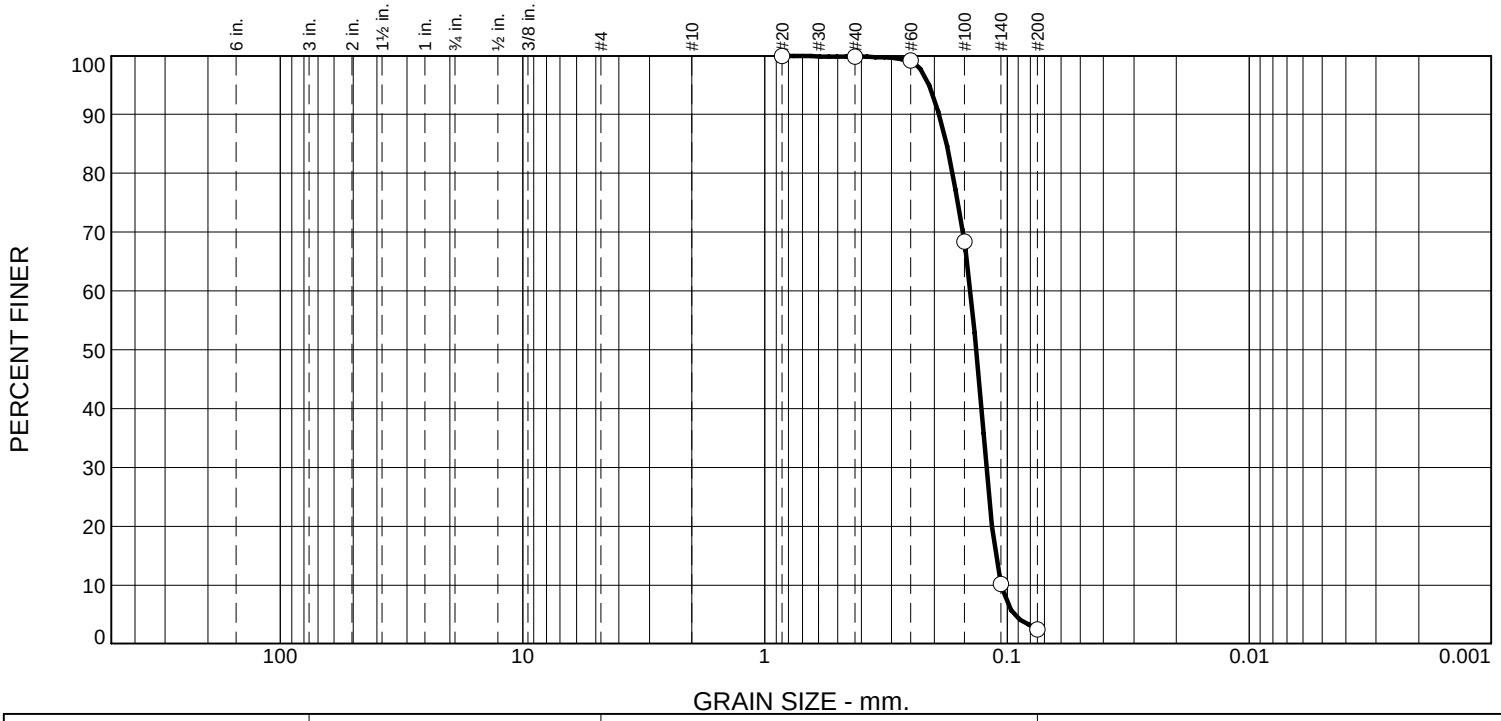
Source of Sample: PA23-1056S W-C
Sample Number: 13C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	97.3	2.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	99.1		
#100	68.4		
#140	10.1		
#200	2.5		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1912 D_{85}= 0.1782

D_{60}= 0.1416 D_{50}= 0.1342

D_{30}= 0.1218 D_{15}= 0.1114

D_{10}= 0.1058

C_u= 1.34 C_c= 0.99

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

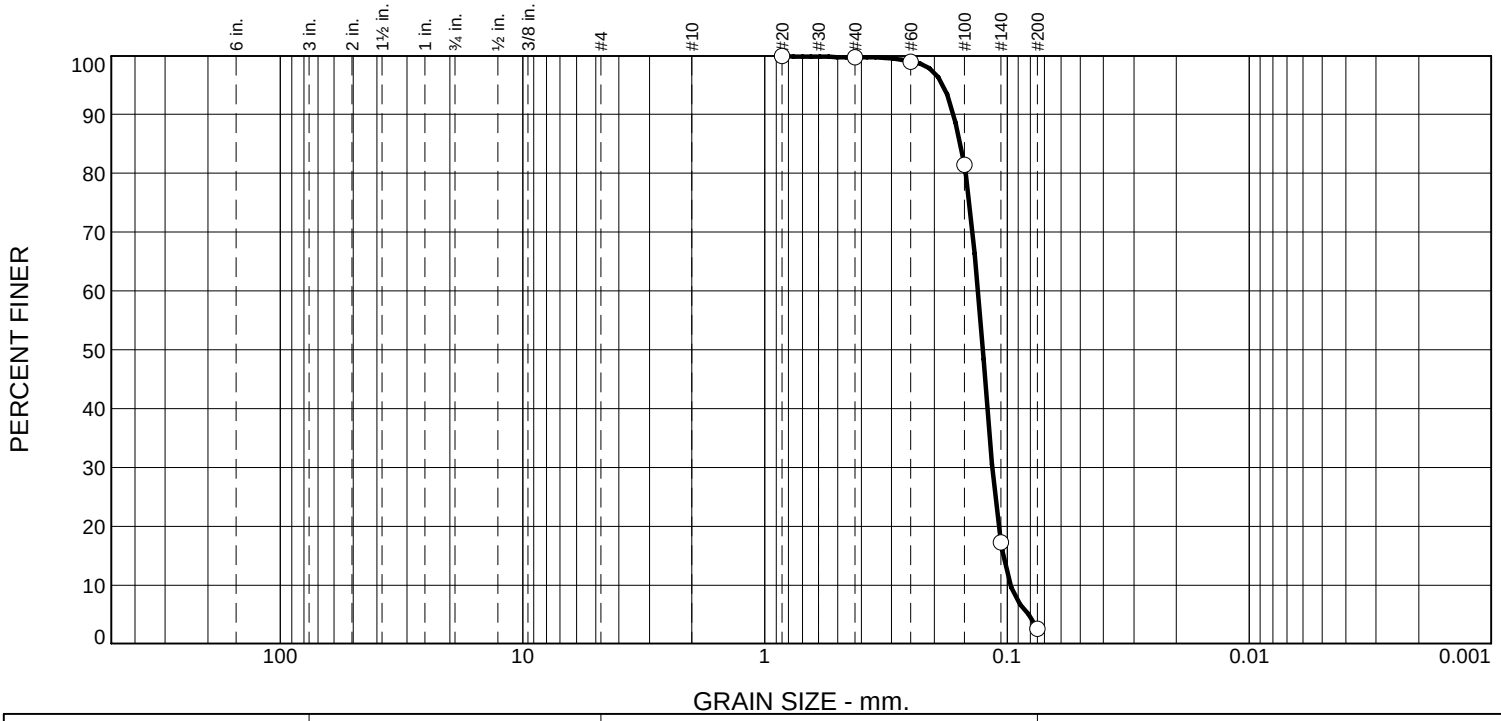
Source of Sample: PA23-1056S W-C
Sample Number: 13D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
					97.3	2.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	99.9		
#40	99.8		
#60	99.0		
#100	81.5		
#140	17.3		
#200	2.5		

* (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1664 D_{85}= 0.1557

D_{60}= 0.1320 D_{50}= 0.1261

D_{30}= 0.1149 D_{15}= 0.1037

D_{10}= 0.0970

C_u= 1.36 C_c= 1.03

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C
Sample Number: Comp 13

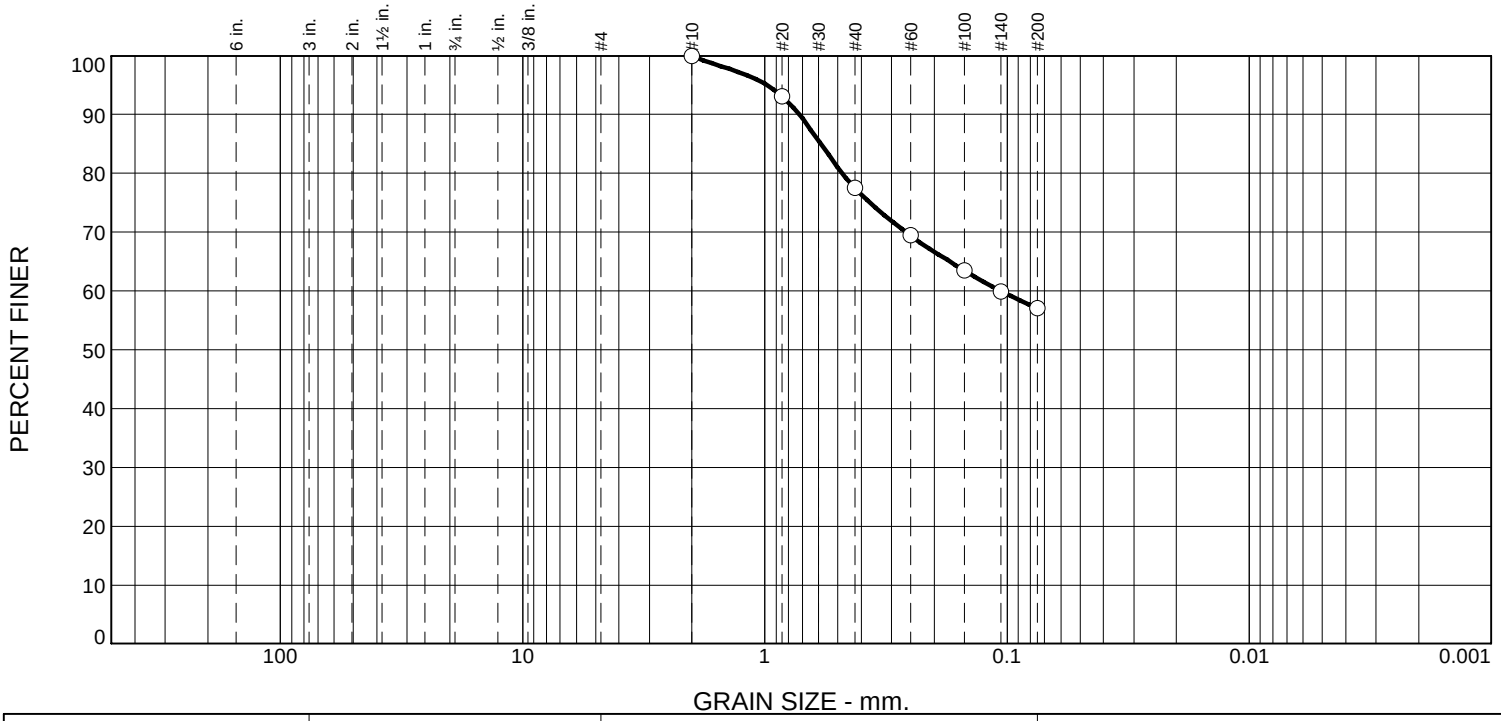
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	22.5	20.4	57.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	93.1		
#40	77.5		
#60	69.4		
#100	63.5		
#140	60.0		
#200	57.1		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7210 D_{85}= 0.5866

D_{60}= 0.1065 D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

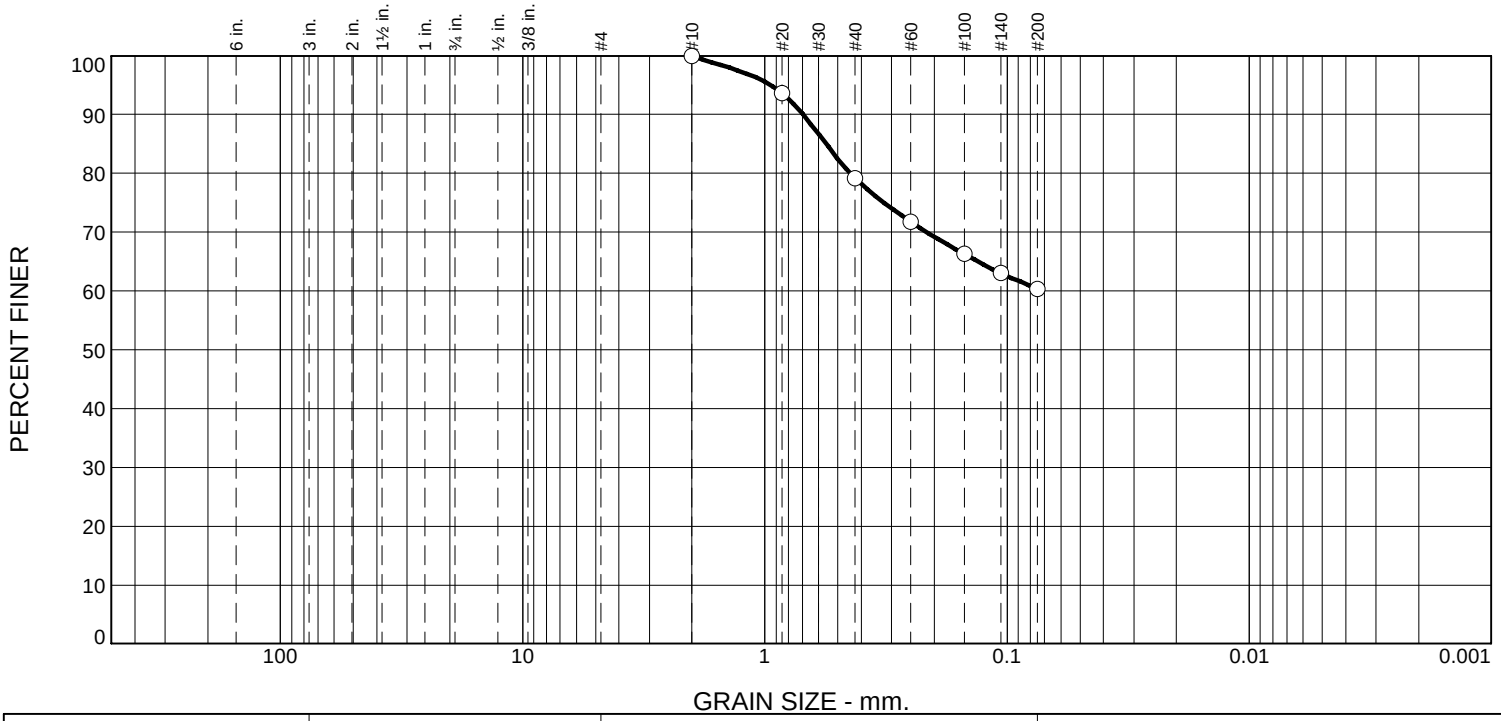
Source of Sample: PA23-1056S W-C
Sample Number: 14A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	20.8	18.8	60.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	93.7		
#40	79.2		
#60	71.8		
#100	66.3		
#140	63.0		
#200	60.4		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.6951 D_{85}= 0.5585

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 14B

INSIGHT GROUP
A CHRISTOPHER COMPANY

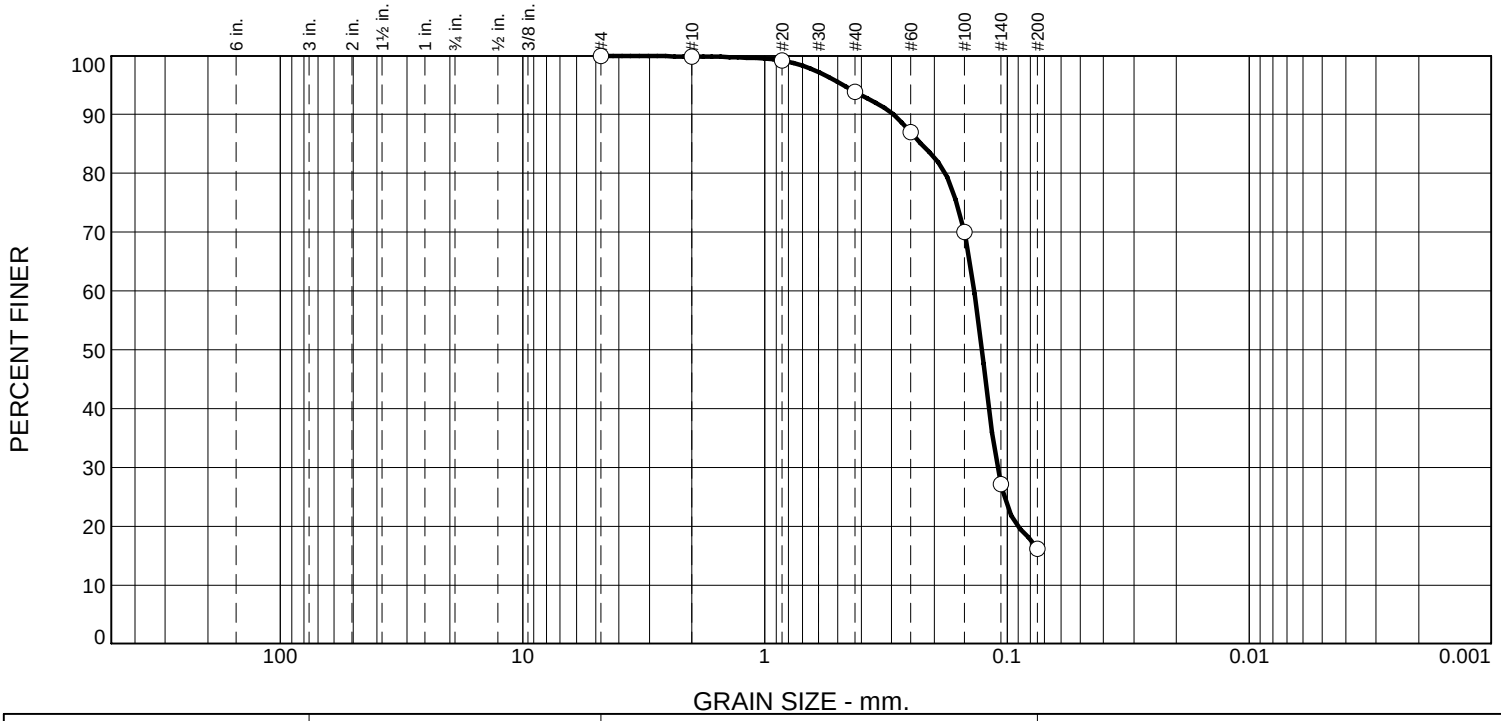
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	6.0	77.8	16.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.2		
#40	93.9		
#60	87.0		
#100	70.0		
#140	27.2		
#200	16.1		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2949 D_{85}= 0.2260
D_{60}= 0.1367 D_{50}= 0.1273
D_{30}= 0.1094 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

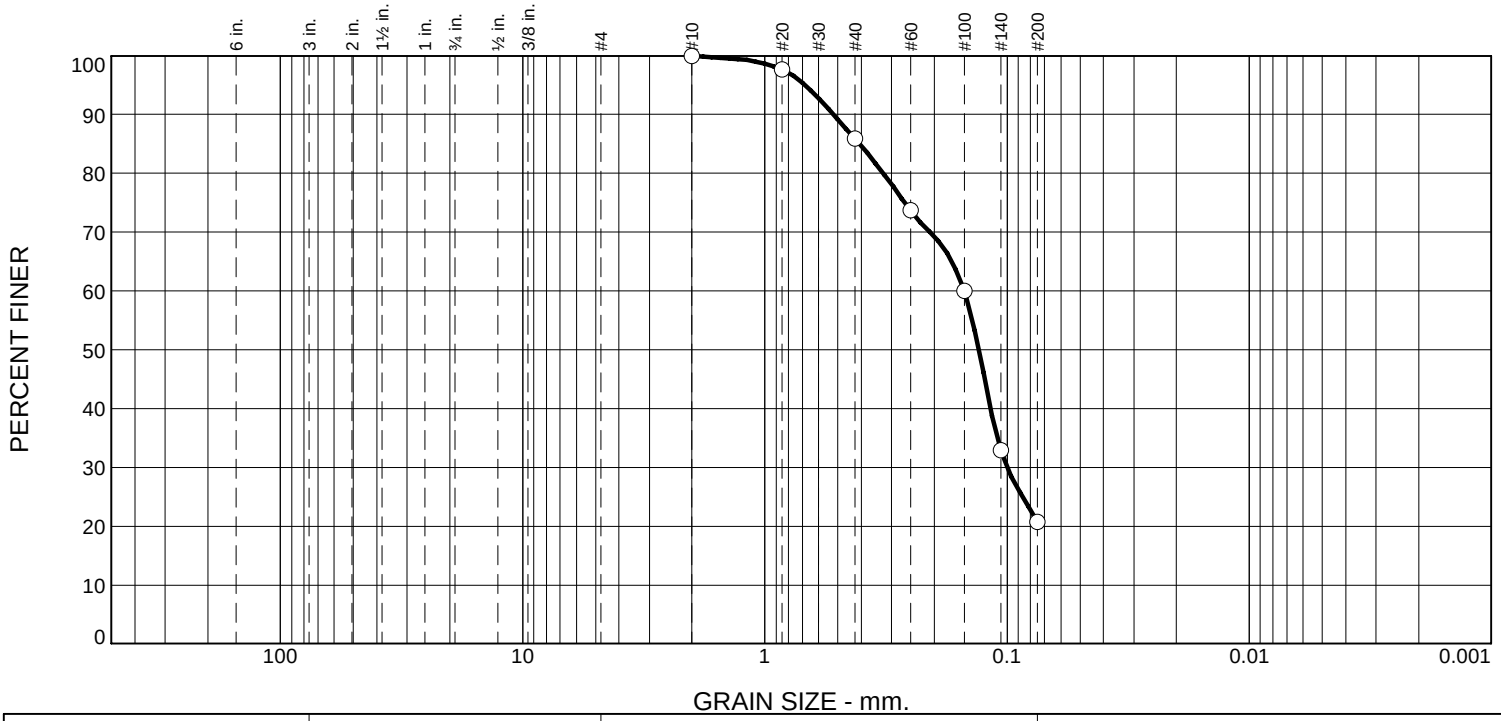
Source of Sample: PA23-1056S W-C
Sample Number: 14C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	14.1	65.2	20.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.6		
#40	85.9		
#60	73.7		
#100	60.0		
#140	32.9		
#200	20.7		

· (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.5203 D_{85}= 0.4069

D_{60}= 0.1500 D_{50}= 0.1309

D_{30}= 0.0999 D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

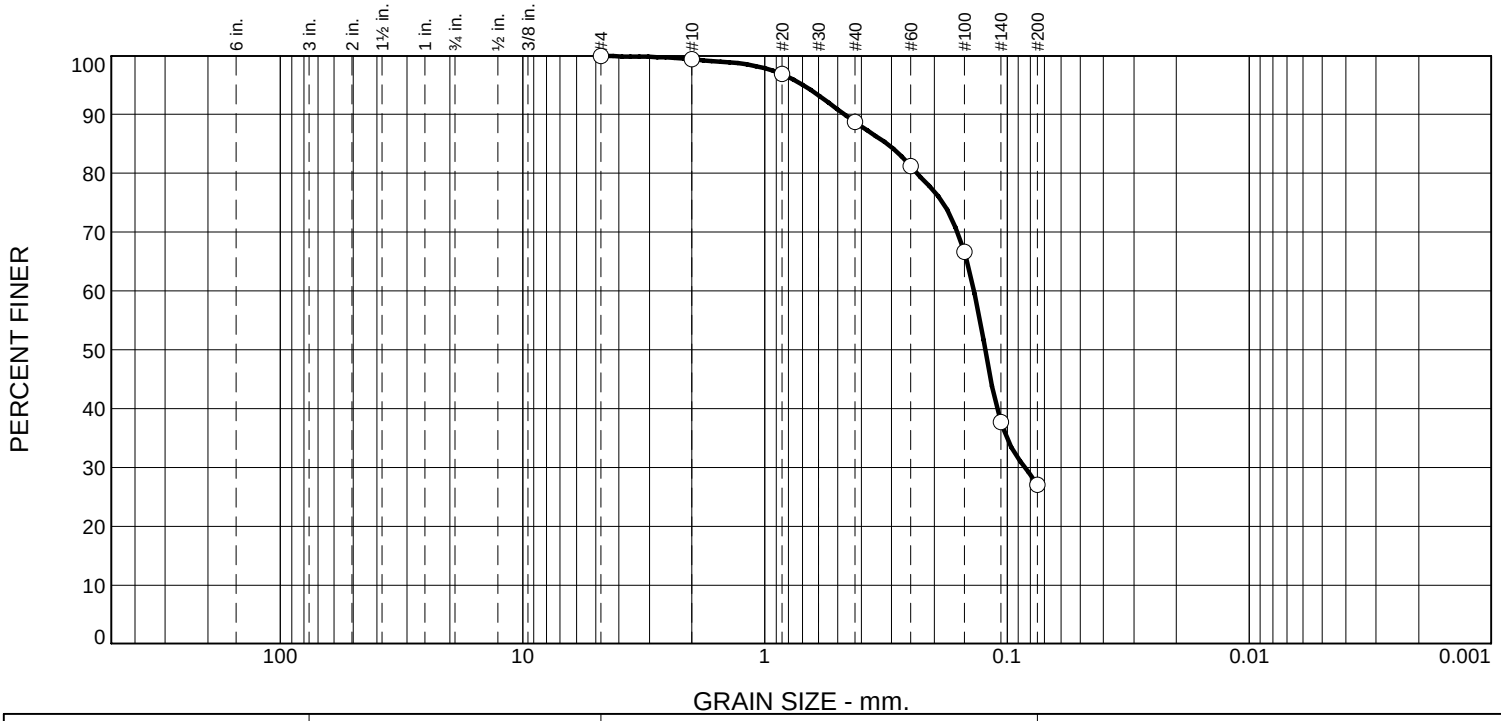
Source of Sample: PA23-1056S W-C
Sample Number: 14D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	10.7	61.7	27.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.4		
#20	96.9		
#40	88.7		
#60	81.3		
#100	66.7		
#140	37.7		
#200	27.0		

* (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.4691 D_{85}= 0.3128

D_{60}= 0.1369 D_{50}= 0.1232

D_{30}= 0.0844 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: Comp 14

INSIGHT GROUP
A CHRISTOPHER COMPANY

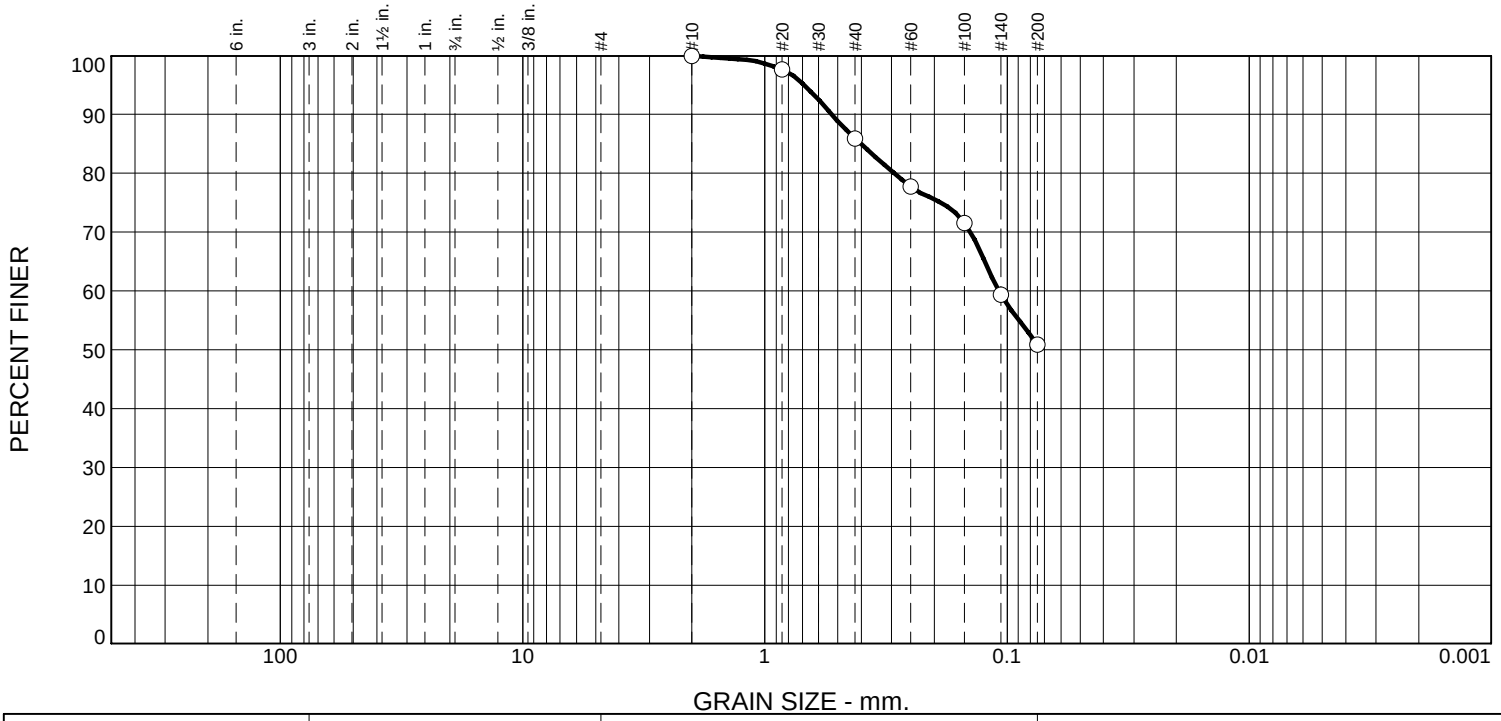
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	14.0	35.1	50.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.7		
#40	86.0		
#60	77.8		
#100	71.6		
#140	59.4		
#200	50.9		

· (no specification provided)

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.5286 D_{85}= 0.4006
D_{60}= 0.1080 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

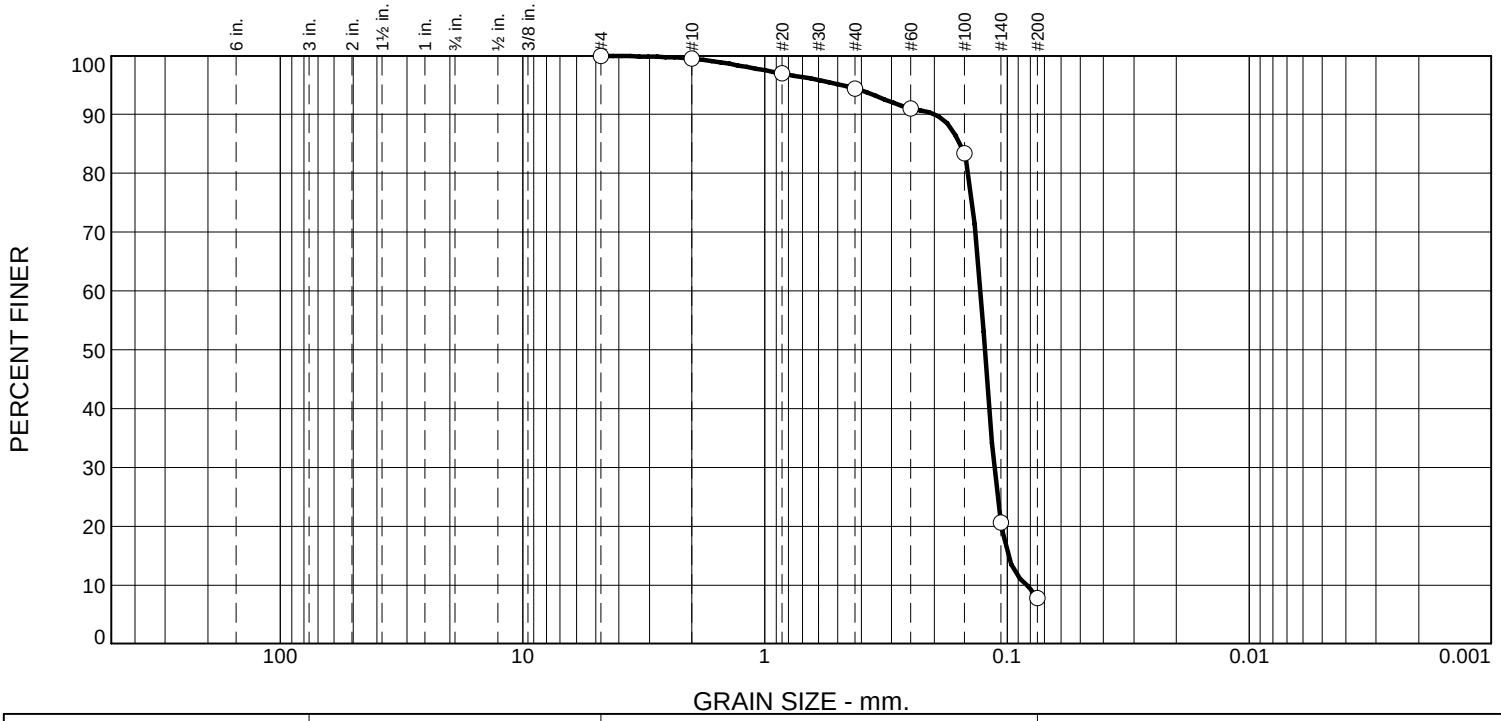
Source of Sample: PA23-1056S W-C
Sample Number: 15A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	5.0	86.7	7.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.5		
#20	97.0		
#40	94.5		
#60	91.0		
#100	83.5		
#140	20.6		
#200	7.8		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1991 D_{85}= 0.1558
D_{60}= 0.1290 D_{50}= 0.1236
D_{30}= 0.1128 D_{15}= 0.0989
D_{10}= 0.0828
C_u= 1.56 C_c= 1.19

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

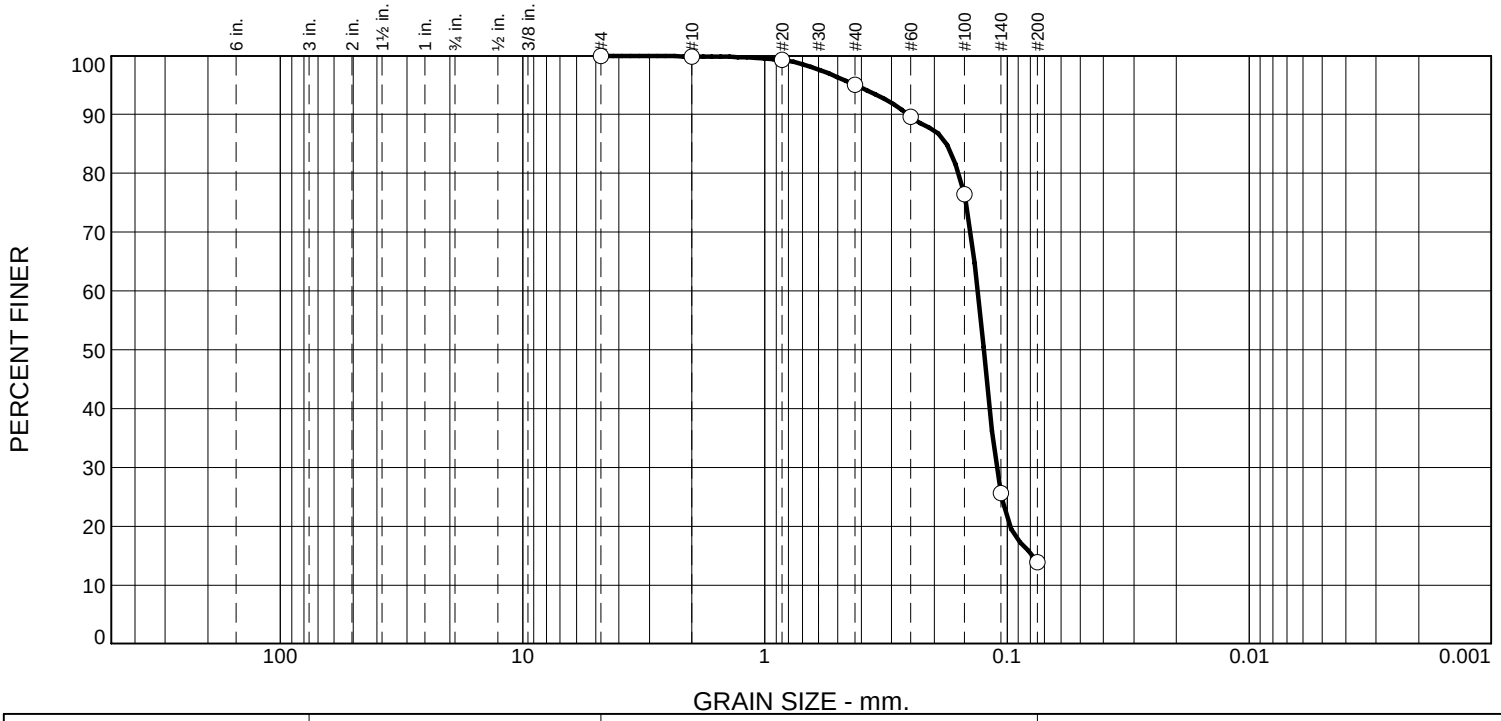
Source of Sample: PA23-1056S W-C
Sample Number: 15B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	4.9	81.1	13.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.3		
#40	95.0		
#60	89.6		
#100	76.4		
#140	25.6		
#200	13.9		

* (no specification provided)

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2565 D_{85}= 0.1780
D_{60}= 0.1323 D_{50}= 0.1249
D_{30}= 0.1103 D_{15}= 0.0780
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

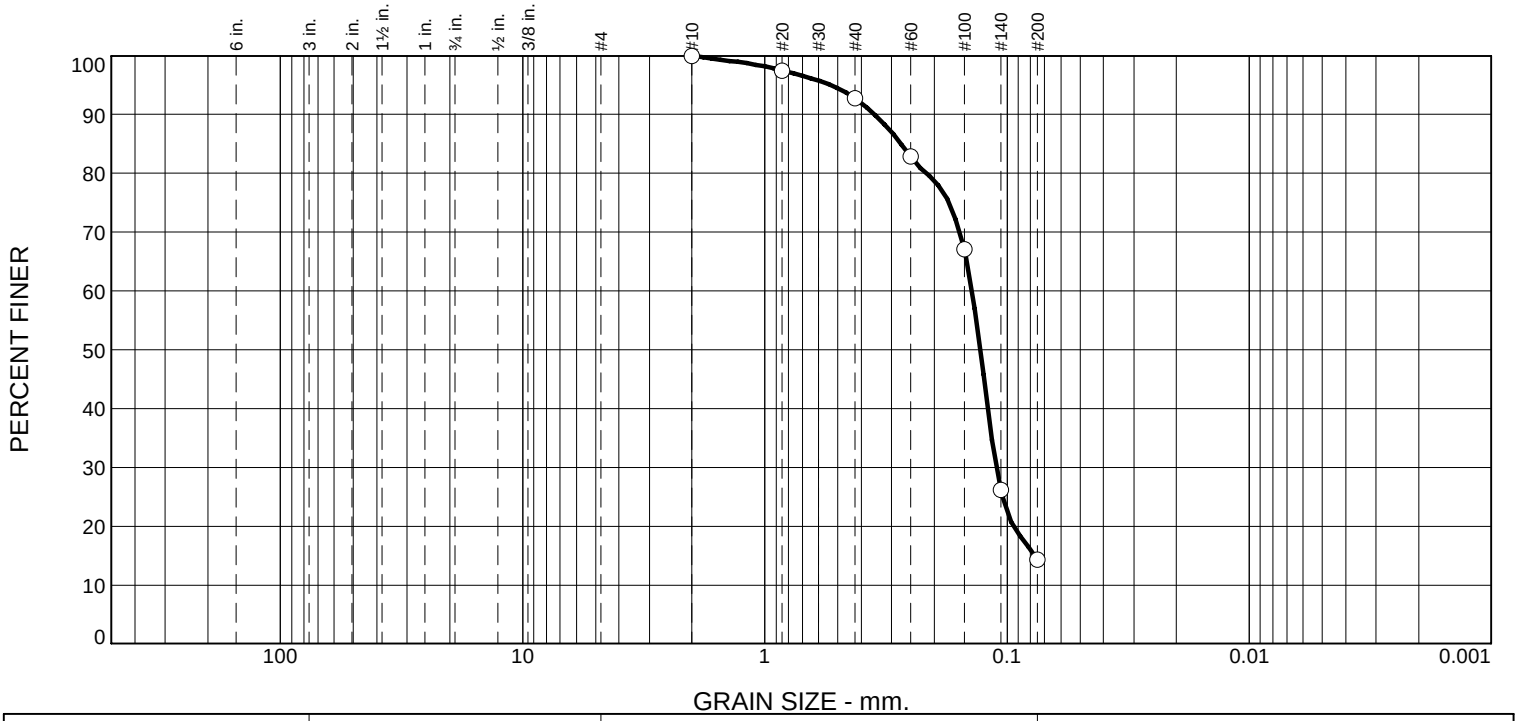
Source of Sample: PA23-1056S W-C
Sample Number: 15C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	7.2	78.5	14.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.5		
#40	92.8		
#60	82.9		
#100	67.1		
#140	26.1		
#200	14.3		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.3525 D_{85}= 0.2735

D_{60}= 0.1395 D_{50}= 0.1292

D_{30}= 0.1106 D_{15}= 0.0766

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

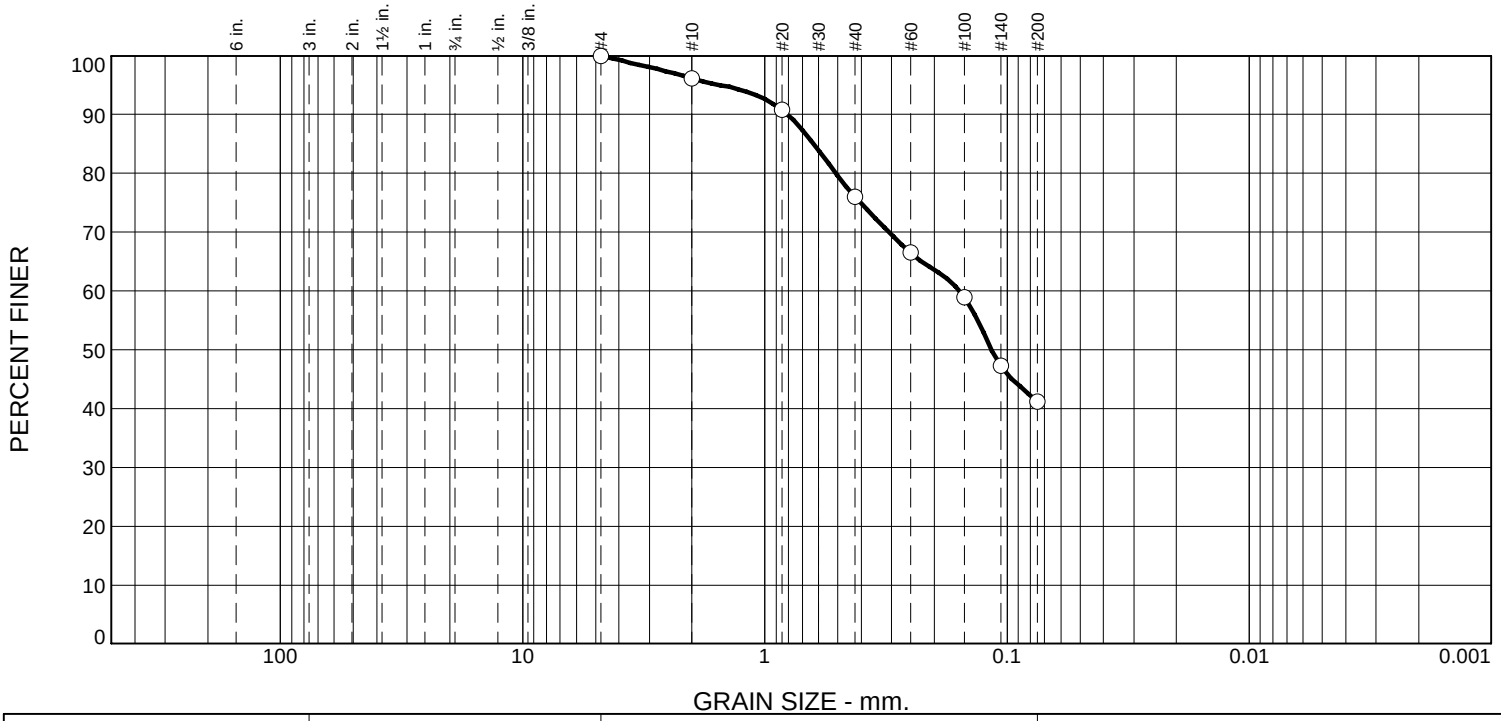
Source of Sample: PA23-1056S W-C
Sample Number: 15D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	3.9	20.1	34.8	41.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	96.1		
#20	90.8		
#40	76.0		
#60	66.5		
#100	59.0		
#140	47.2		
#200	41.2		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.8065 D_{85}= 0.6294
D_{60}= 0.1571 D_{50}= 0.1159
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Source of Sample: PA23-1056S W-C
Sample Number: Comp 15

Date Sampled: 3/2/3
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

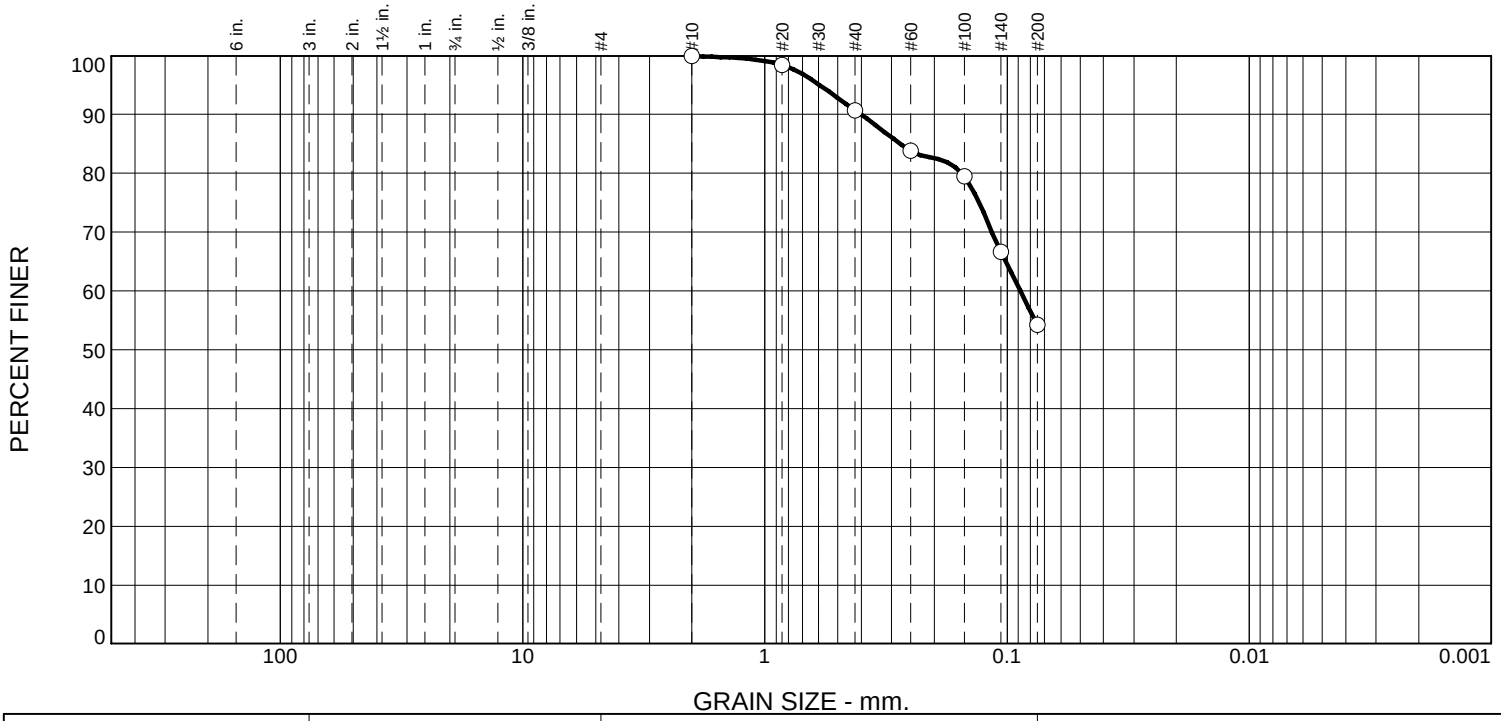
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	9.3	36.5	54.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.4		
#40	90.7		
#60	83.9		
#100	79.5		
#140	66.6		
#200	54.2		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4008 D_{85}= 0.2753
D_{60}= 0.0882 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

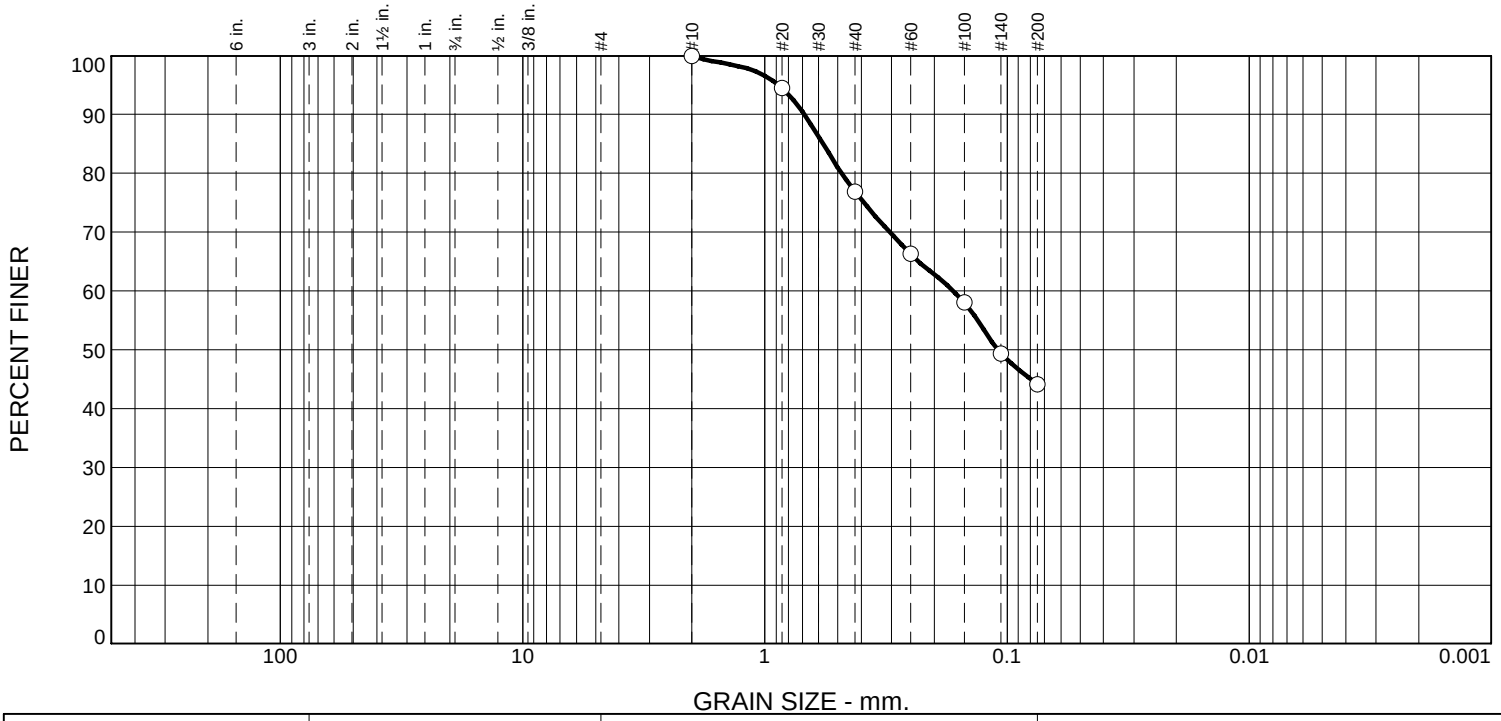
Source of Sample: PA23-1056S W-C
Sample Number: 16A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	23.1	32.8	44.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	94.5		
#40	76.9		
#60	66.3		
#100	58.0		
#140	49.4		
#200	44.1		

* (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.6879 D_{85}= 0.5744

D_{60}= 0.1668 D_{50}= 0.1091

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 16B

INSIGHT GROUP
A CHRISTOPHER COMPANY

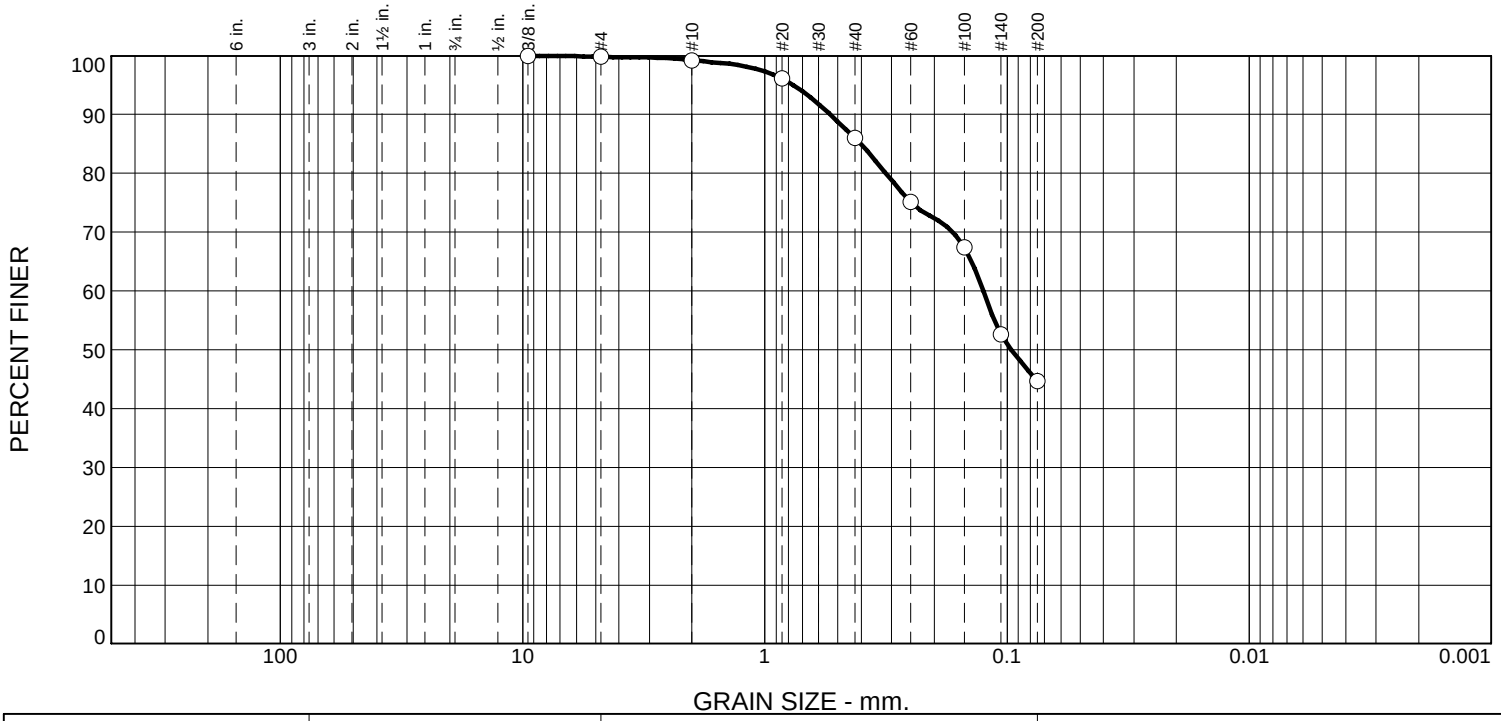
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.6	13.2	41.3	44.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.8		
#10	99.2		
#20	96.1		
#40	86.0		
#60	75.2		
#100	67.4		
#140	52.7		
#200	44.7		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.5369 D_{85}= 0.4025

D_{60}= 0.1255 D_{50}= 0.0965

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 16C

INSIGHT GROUP
A CHRISTOPHER COMPANY

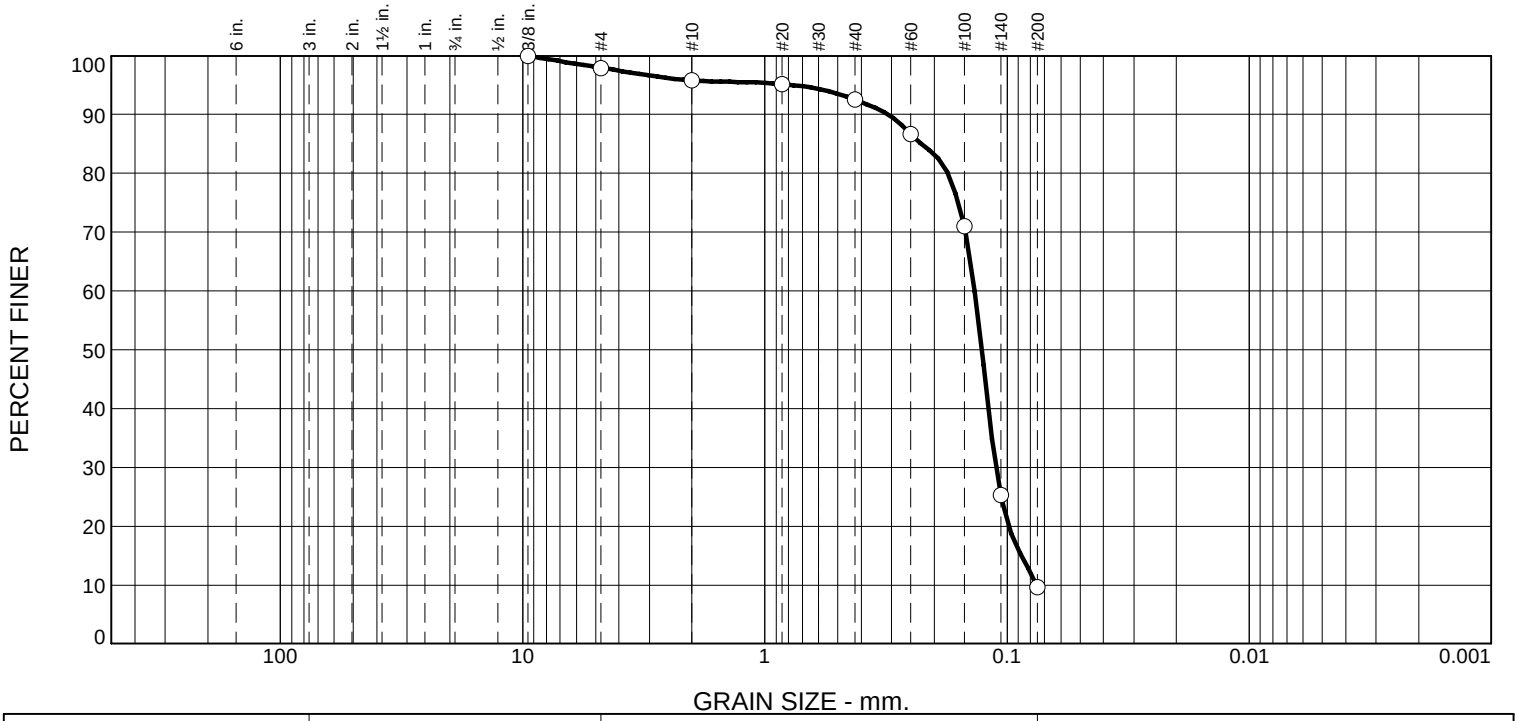
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.1	2.1	3.3	82.9	9.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	97.9		
#10	95.8		
#20	95.2		
#40	92.5		
#60	86.7		
#100	71.0		
#140	25.3		
#200	9.6		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3103 D_{85}= 0.2256
D_{60}= 0.1362 D_{50}= 0.1274
D_{30}= 0.1109 D_{15}= 0.0877
D_{10}= 0.0756
C_u= 1.80 C_c= 1.19

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

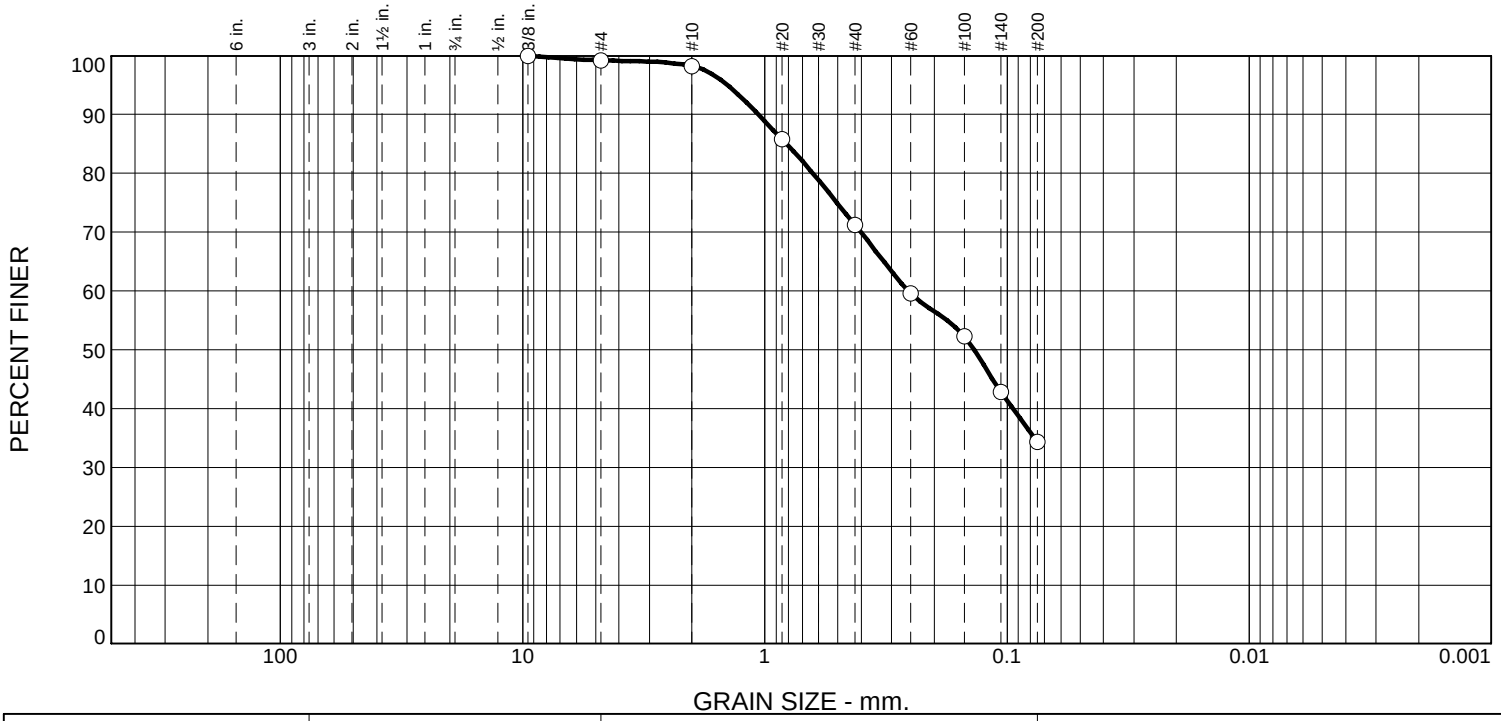
Source of Sample: PA23-1056S W-C
Sample Number: 16D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	0.9	27.0	36.9	34.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.2		
#10	98.3		
#20	85.8		
#40	71.3		
#60	59.6		
#100	52.3		
#140	42.8		
#200	34.4		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.0651 D_{85}= 0.8121
D_{60}= 0.2551 D_{50}= 0.1365
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/8/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

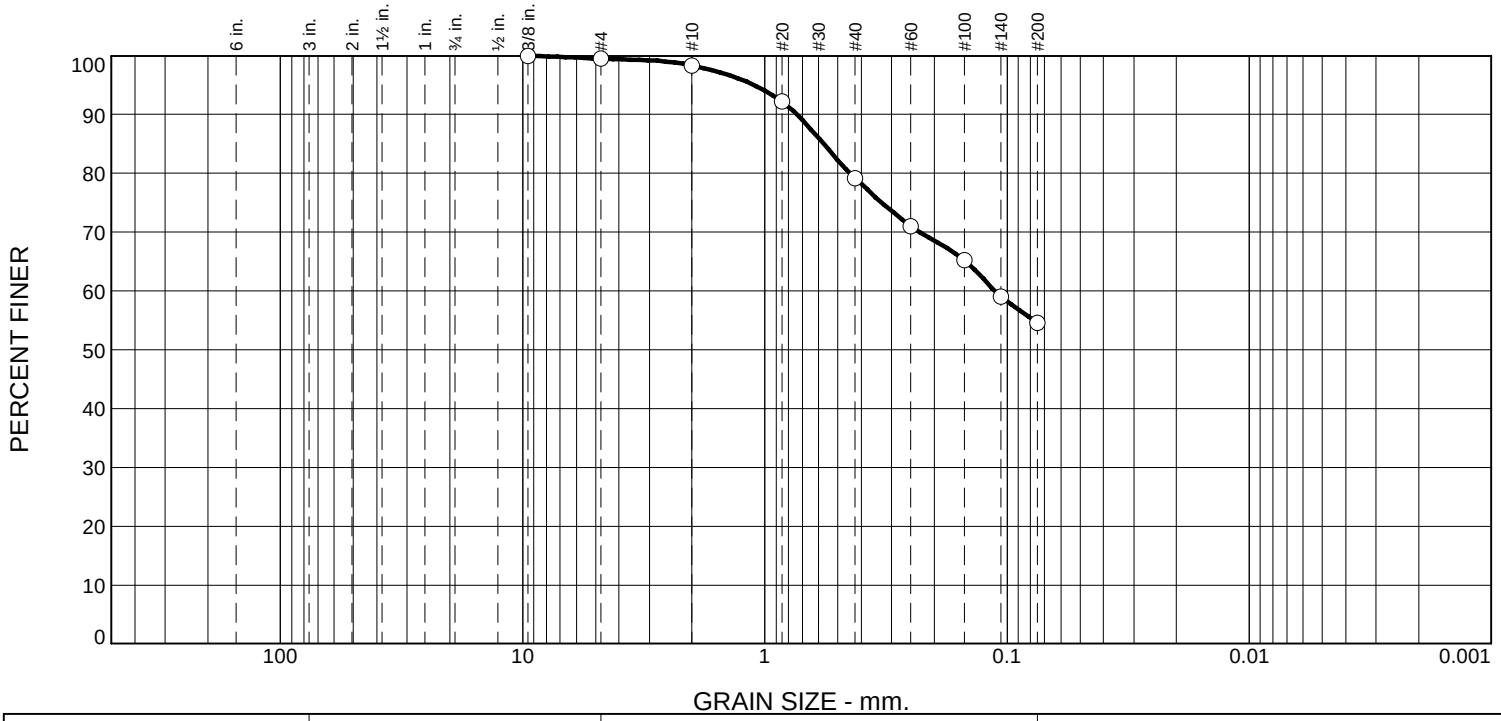
Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1056S W-C
Sample Number: Comp 16

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	1.2	19.1	24.6	54.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.5		
#10	98.3		
#20	92.2		
#40	79.2		
#60	71.0		
#100	65.2		
#140	59.1		
#200	54.6		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Sieve Test (ASTM D6913)

Test Date: 3/2/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.7375 D_{85}= 0.5715

D_{60}= 0.1122 D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

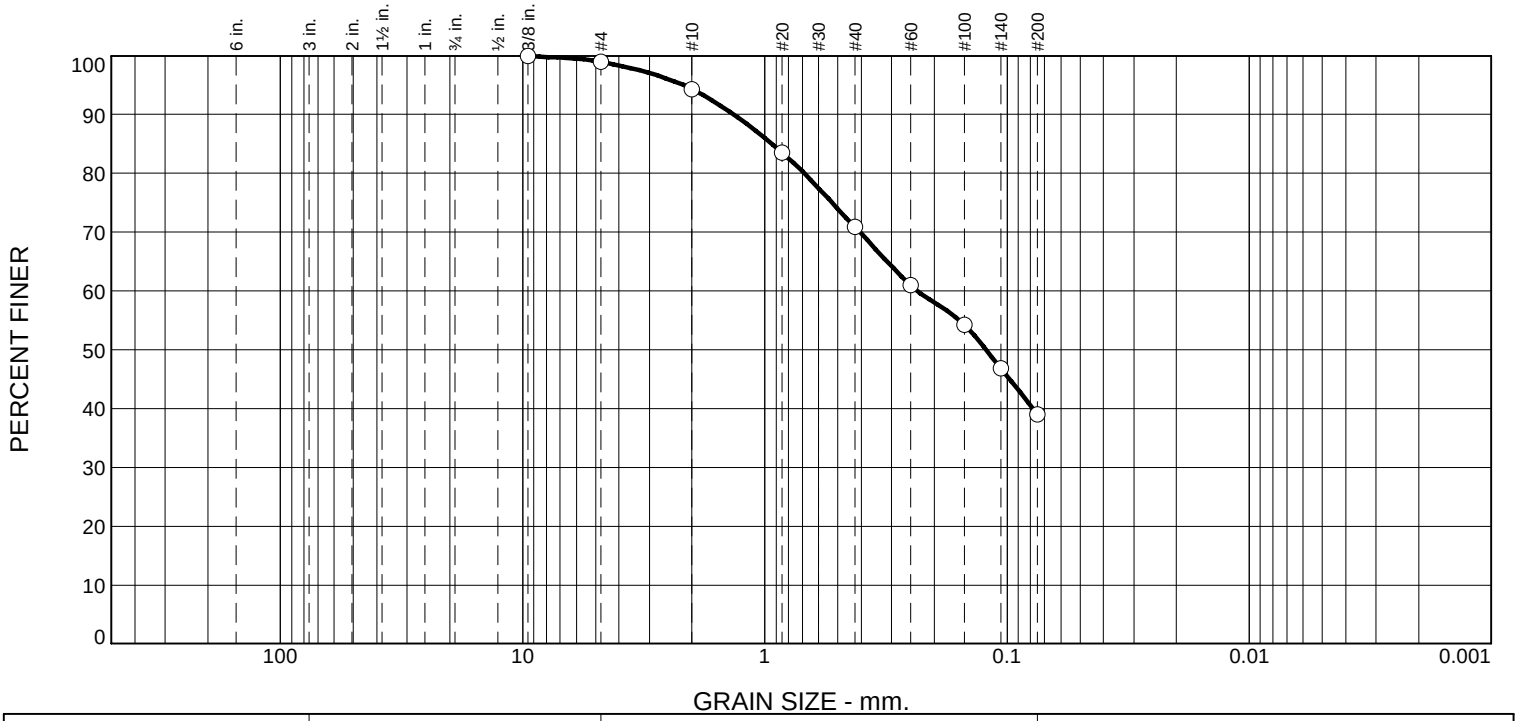
Source of Sample: PA23-1056S W-C
Sample Number: 17A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.1	4.6	23.4	31.9	39.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	98.9		
#10	94.3		
#20	83.5		
#40	70.9		
#60	61.0		
#100	54.2		
#140	46.8		
#200	39.0		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.3443 D_{85}= 0.9356
D_{60}= 0.2342 D_{50}= 0.1220
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

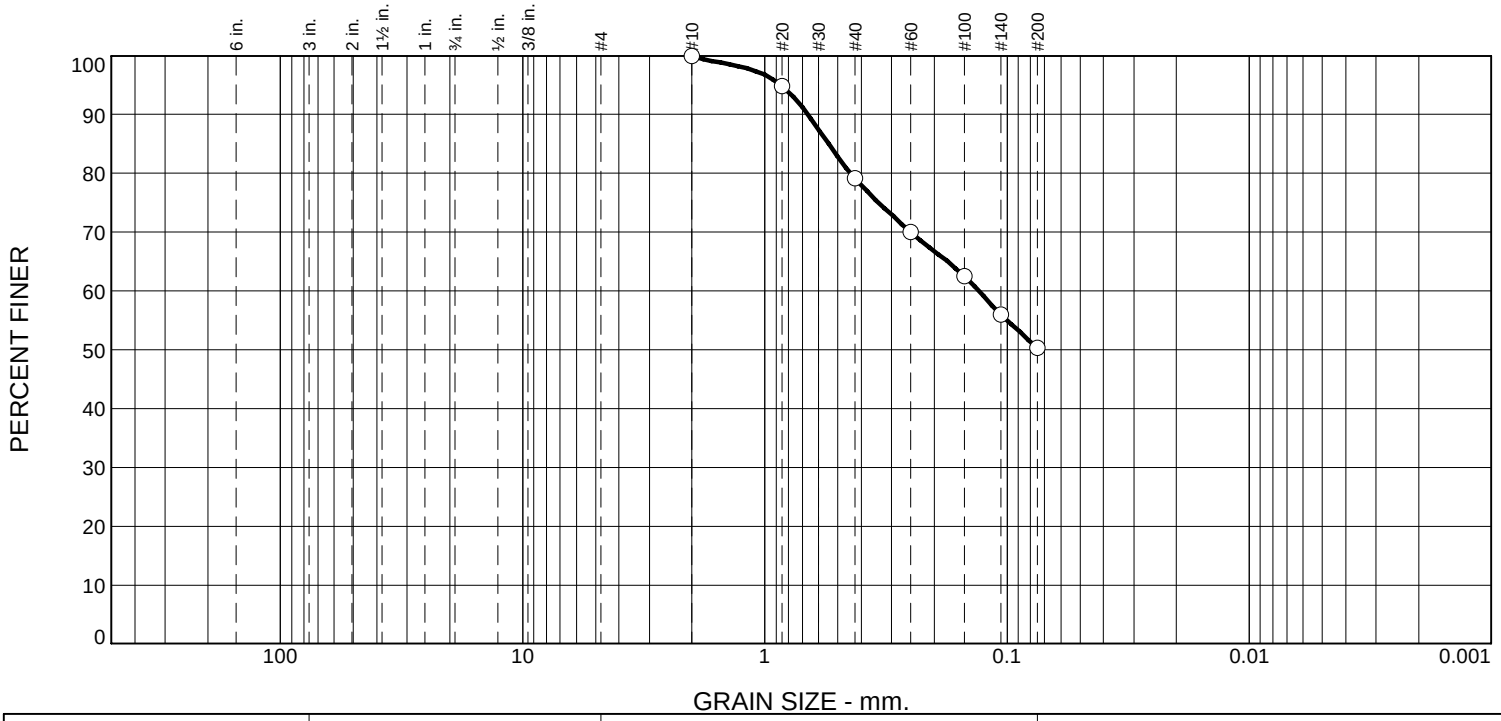
Source of Sample: PA23-1056S W-C
Sample Number: 17B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	20.8	28.8	50.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	94.8		
#40	79.2		
#60	70.0		
#100	62.5		
#140	56.0		
#200	50.4		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6653 D_{85}= 0.5453
D_{60}= 0.1308 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

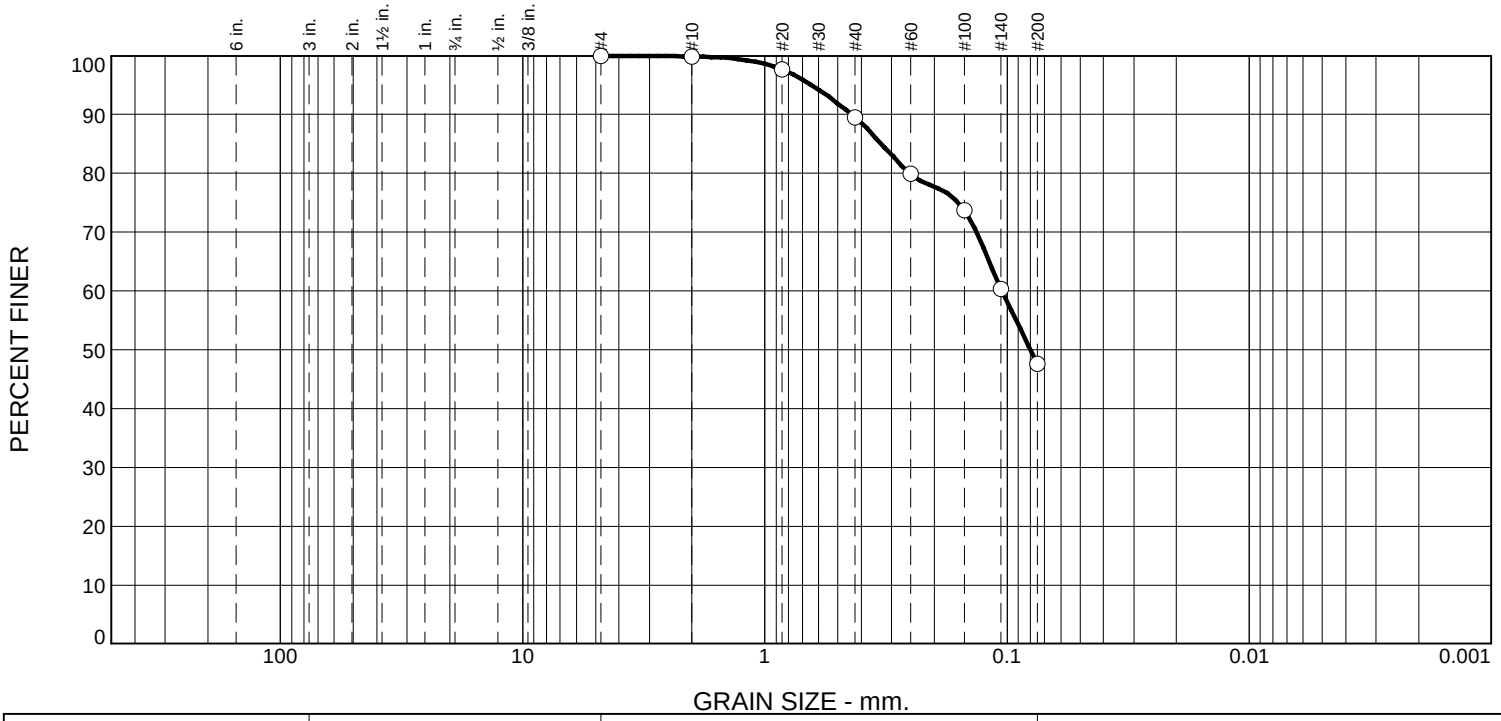
Source of Sample: PA23-1056S W-C
Sample Number: 17C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	10.4	41.9	47.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	97.6		
#40	89.5		
#60	79.9		
#100	73.8		
#140	60.4		
#200	47.6		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.4384 D_{85}= 0.3303

D_{60}= 0.1049 D_{50}= 0.0801

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 17D

INSIGHT GROUP
A CHRISTOPHER COMPANY

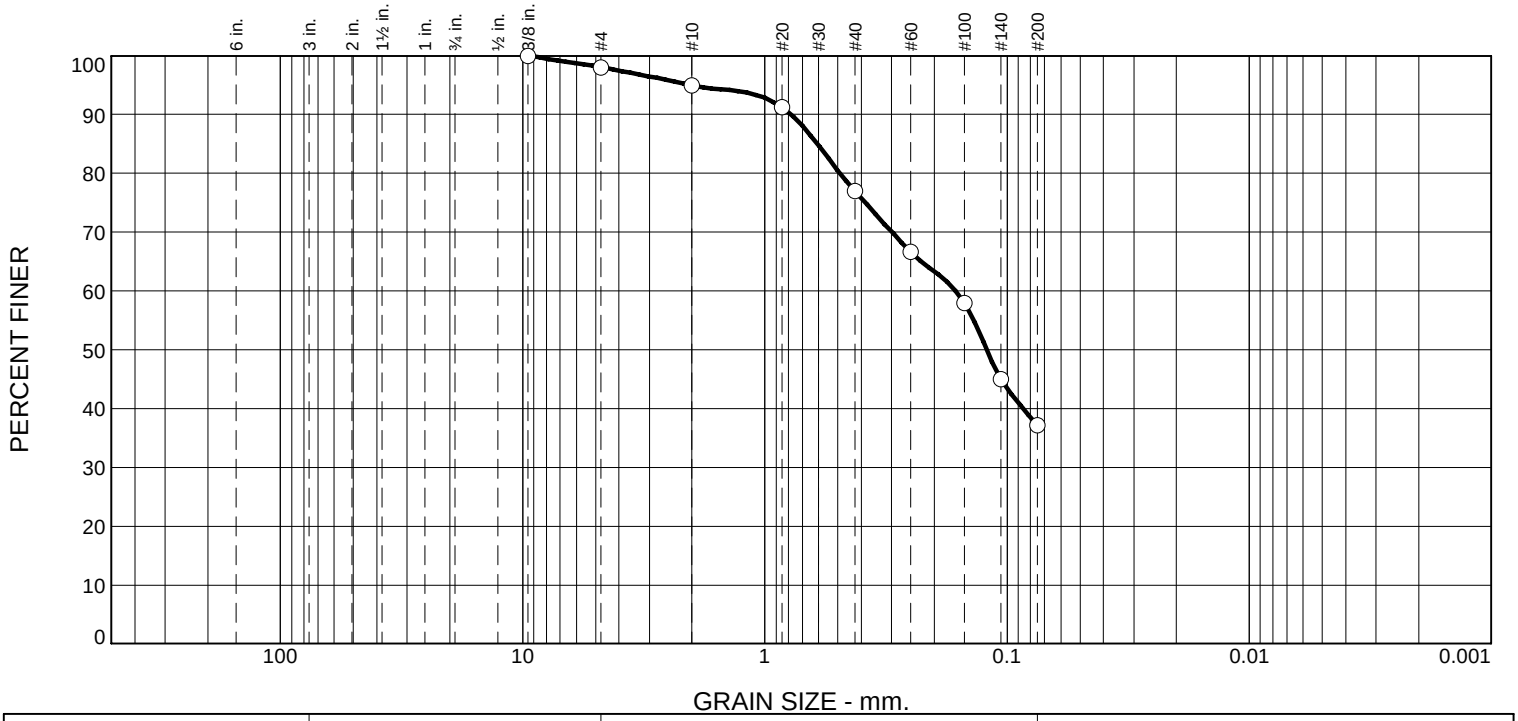
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.0	3.1	17.9	39.8	37.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	98.0		
#10	94.9		
#20	91.3		
#40	77.0		
#60	66.6		
#100	58.0		
#140	45.0		
#200	37.2		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.7787 D_{85}= 0.6066
D_{60}= 0.1631 D_{50}= 0.1213
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/8/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

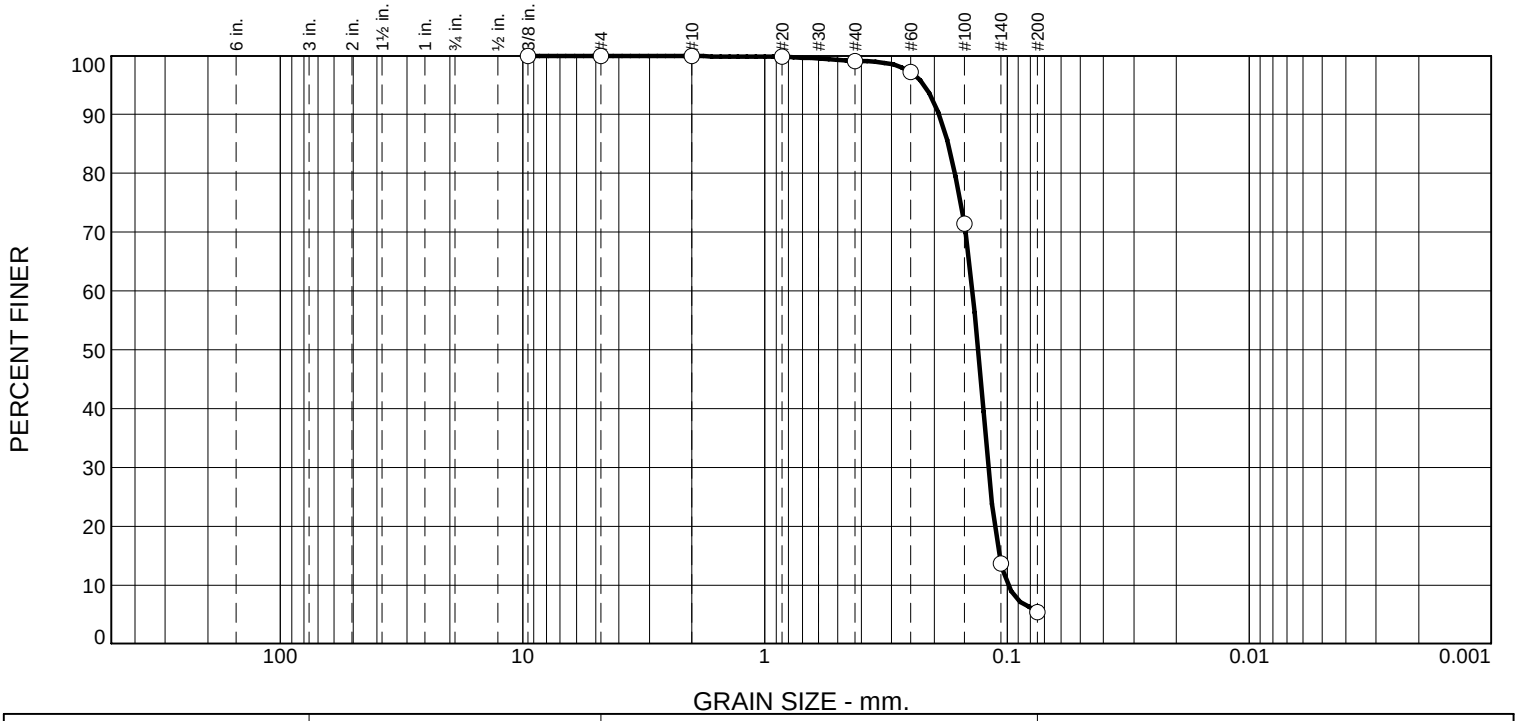
Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1056S W-C
Sample Number: Comp 17

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.0	0.8	93.7	5.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.9		
#10	99.9		
#20	99.8		
#40	99.1		
#60	97.3		
#100	71.4		
#140	13.6		
#200	5.4		

· (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1911 D_{85}= 0.1753

D_{60}= 0.1389 D_{50}= 0.1318

D_{30}= 0.1194 D_{15}= 0.1078

D_{10}= 0.0992

C_u= 1.40 C_c= 1.03

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 2A

INSIGHT GROUP
A CHRISTOPHER COMPANY

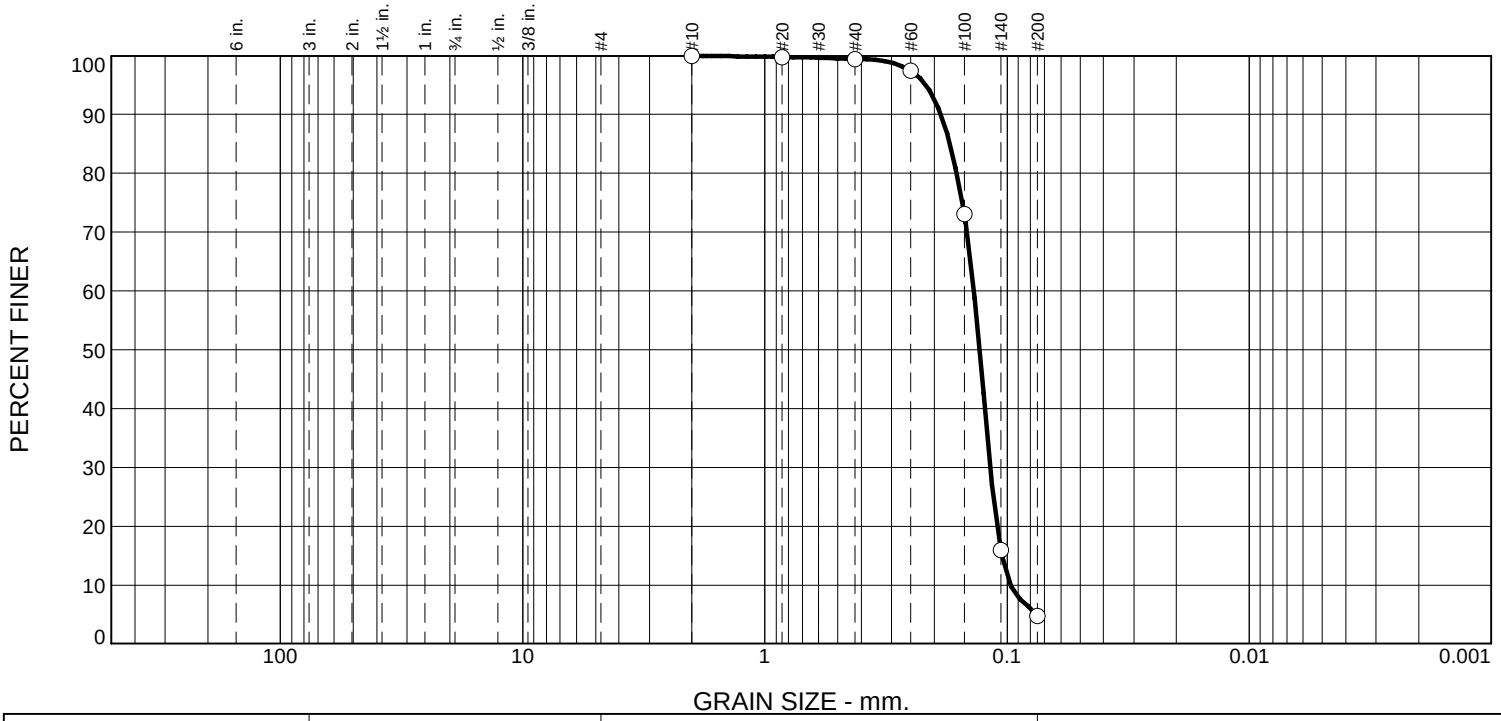
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	94.8	4.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.5		
#60	97.5		
#100	73.1		
#140	15.9		
#200	4.7		

· (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Coefficients

D_{90}= 0.1879 D_{85}= 0.1722

D_{60}= 0.1372 D_{50}= 0.1301

D_{30}= 0.1172 D_{15}= 0.1049

D_{10}= 0.0968

C_u= 1.42 C_c= 1.03

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 2B

INSIGHT GROUP
A CHRISTOPHER COMPANY

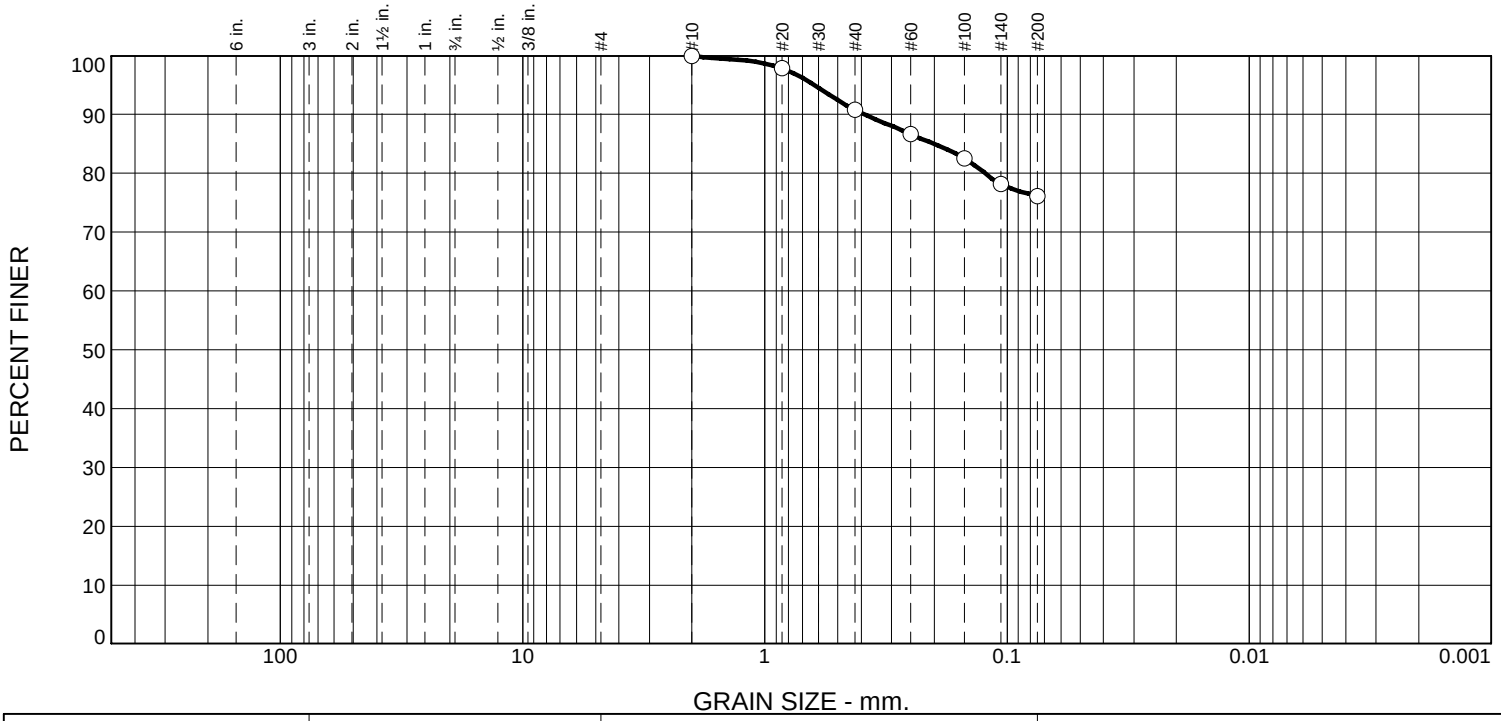
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	9.2	14.7	76.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.8		
#40	90.8		
#60	86.7		
#100	82.6		
#140	78.1		
#200	76.1		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3868 D_{85}= 0.1996
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

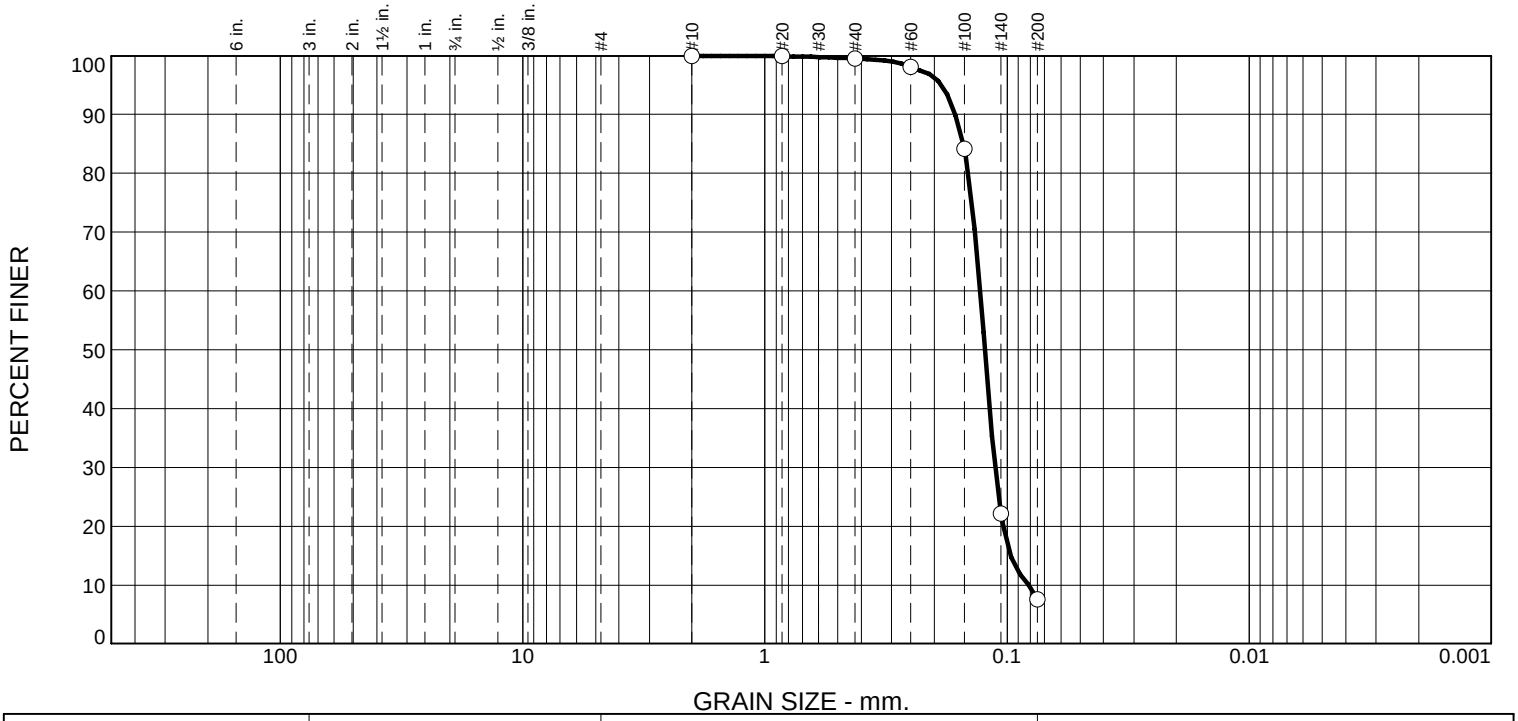
Source of Sample: PA23-1056S W-C
Sample Number: 2C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	91.9	7.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.5		
#60	98.1		
#100	84.2		
#140	22.2		
#200	7.6		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1637 D_{85}= 0.1516
D_{60}= 0.1293 D_{50}= 0.1236
D_{30}= 0.1120 D_{15}= 0.0969
D_{10}= 0.0813
C_u= 1.59 C_c= 1.19

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

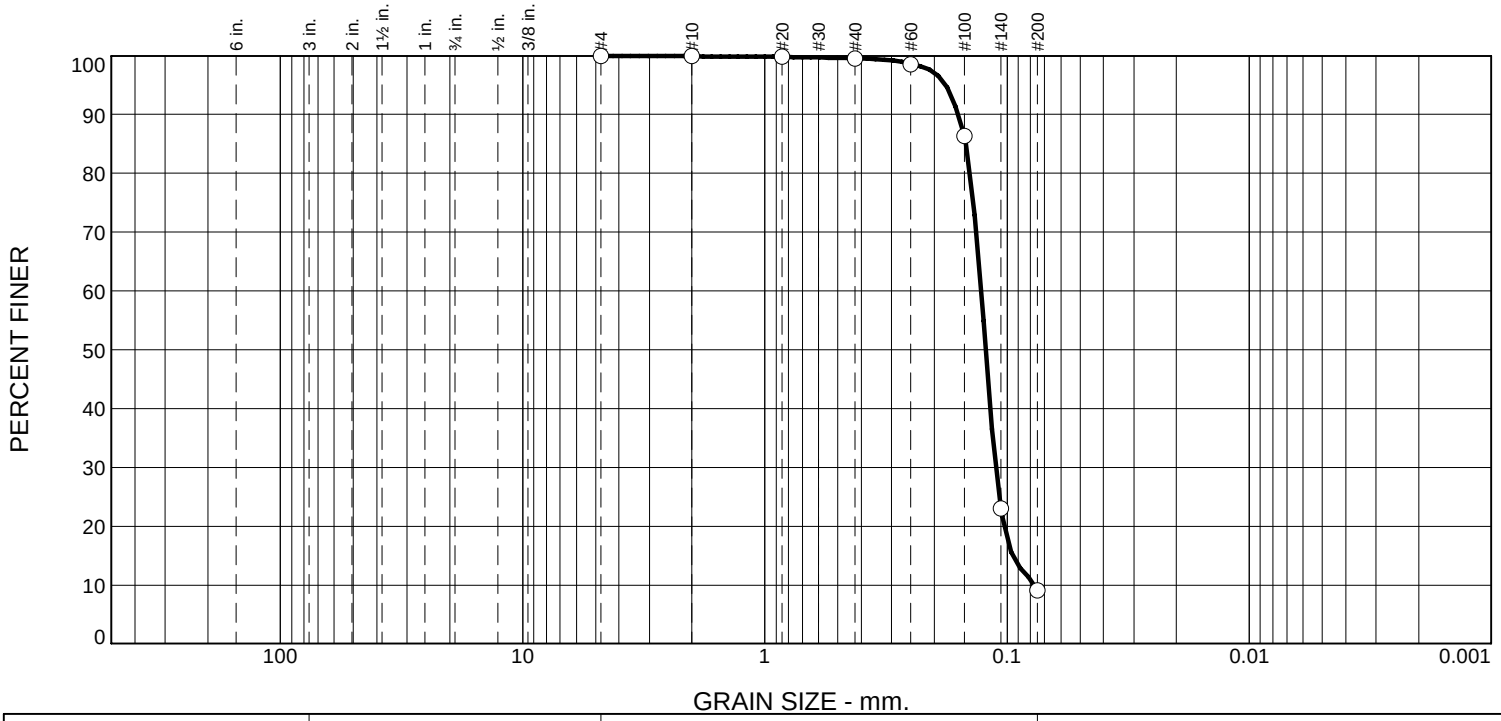
Source of Sample: PA23-1056S W-C
Sample Number: 2D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.4	90.4	9.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.5		
#60	98.6		
#100	86.4		
#140	23.0		
#200	9.1		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1589 D_{85}= 0.1476
D_{60}= 0.1281 D_{50}= 0.1226
D_{30}= 0.1113 D_{15}= 0.0950
D_{10}= 0.0769
C_u= 1.67 C_c= 1.26

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

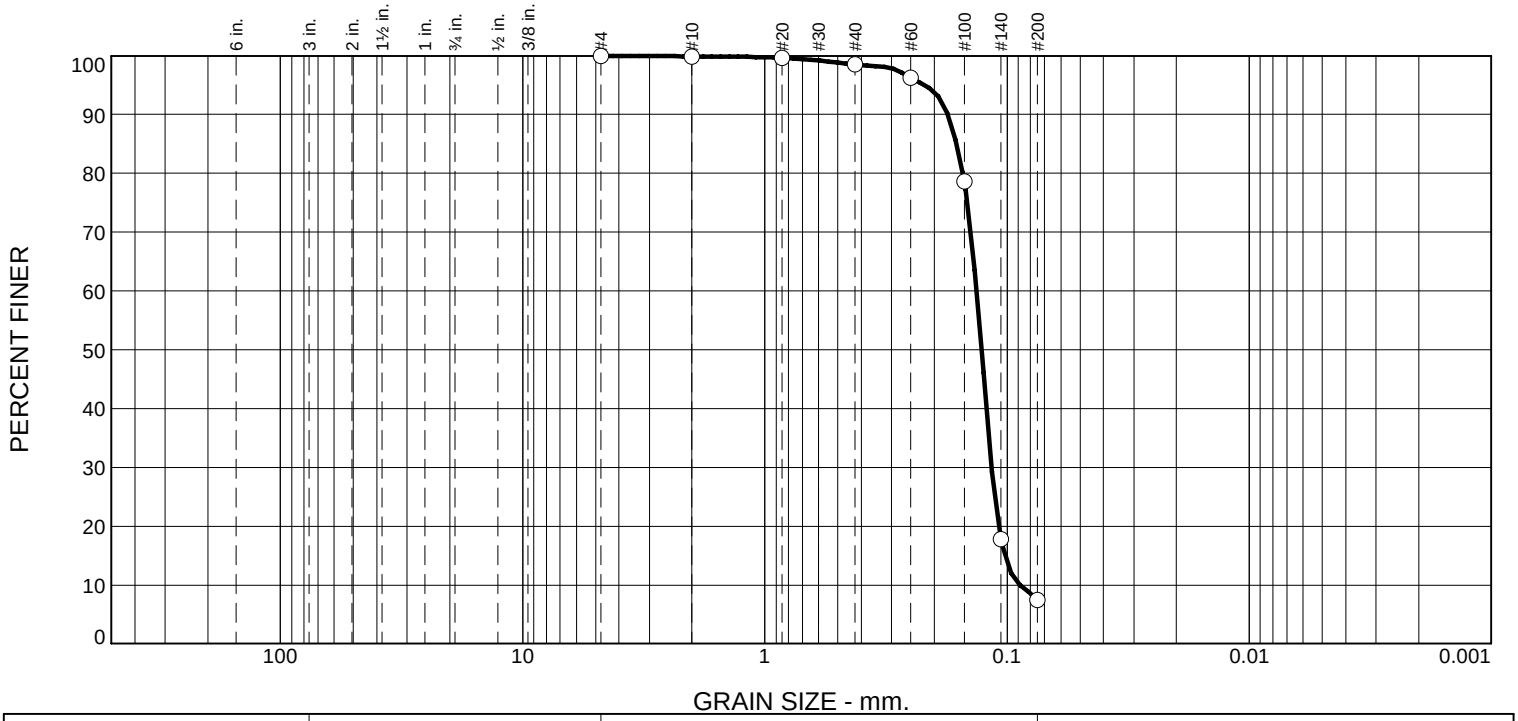
Source of Sample: PA23-1056S W-C
Sample Number: 2E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.4	91.0	7.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.5		
#60	96.3		
#100	78.6		
#140	17.8		
#200	7.5		

· (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1760 D_{85}= 0.1615

D_{60}= 0.1337 D_{50}= 0.1276

D_{30}= 0.1157 D_{15}= 0.1021

D_{10}= 0.0890

C_u= 1.50 C_c= 1.12

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 2F

INSIGHT GROUP
A CHRISTOPHER COMPANY

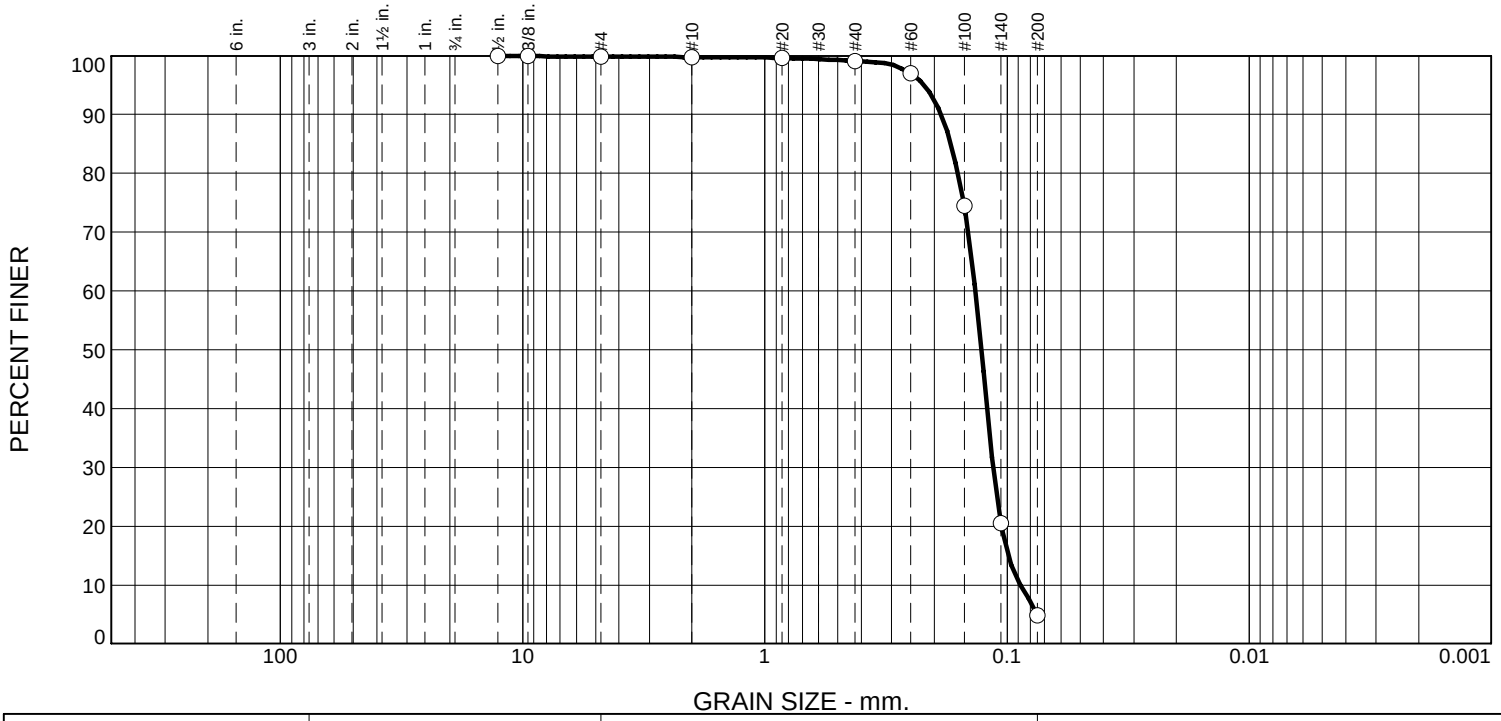
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	0.7	94.3	4.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	99.9		
#4	99.9		
#10	99.8		
#20	99.6		
#40	99.1		
#60	97.0		
#100	74.5		
#140	20.5		
#200	4.8		

* (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1874 D_{85}= 0.1708

D_{60}= 0.1352 D_{50}= 0.1278

D_{30}= 0.1140 D_{15}= 0.0990

D_{10}= 0.0884

C_u= 1.53 C_c= 1.09

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

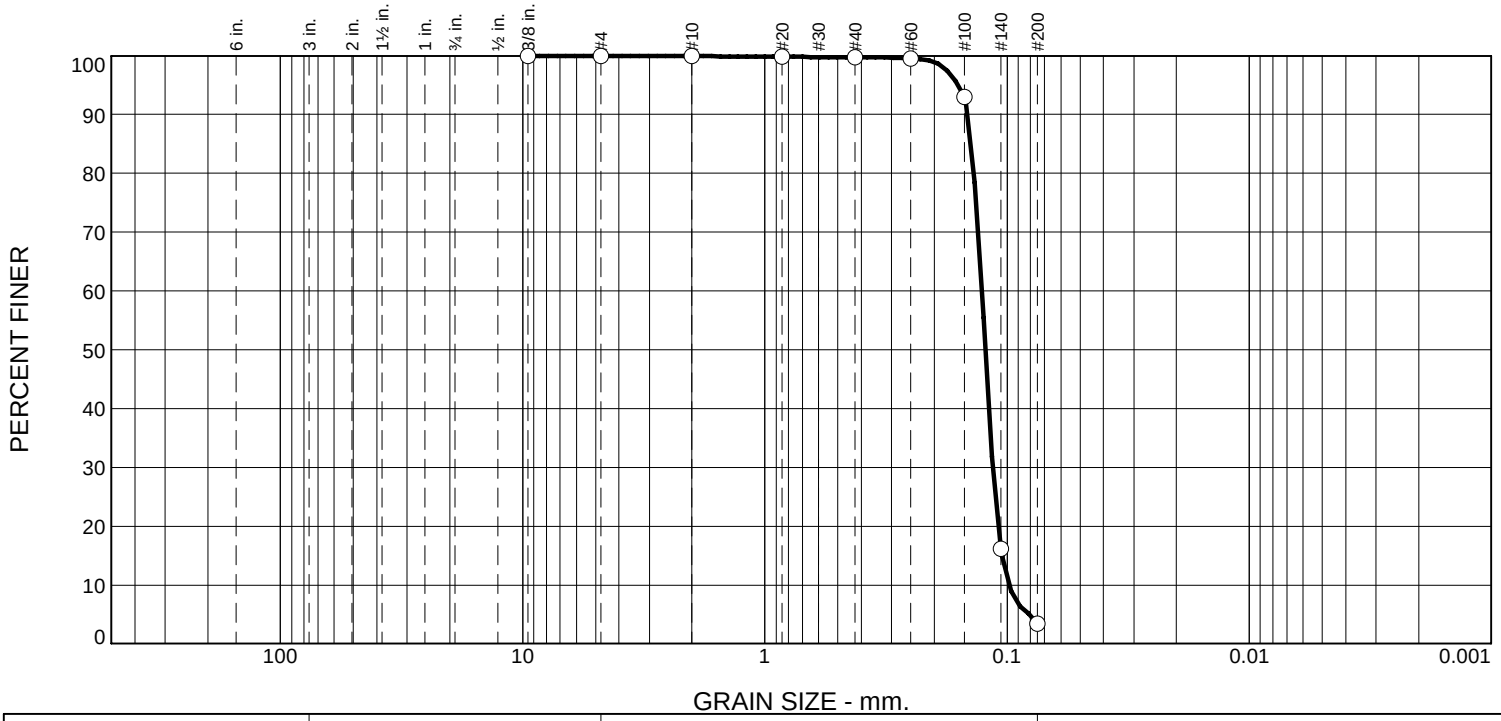
Source of Sample: PA23-1056S W-C
Sample Number: 2 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.0	0.2	96.3	3.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.9		
#10	99.9		
#20	99.8		
#40	99.7		
#60	99.5		
#100	93.0		
#140	16.1		
#200	3.4		

· (no specification provided)

Material Description
Light Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1448 D_{85}= 0.1403
D_{60}= 0.1272 D_{50}= 0.1230
D_{30}= 0.1144 D_{15}= 0.1048
D_{10}= 0.0982
C_u= 1.30 C_c= 1.05

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)
SP

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

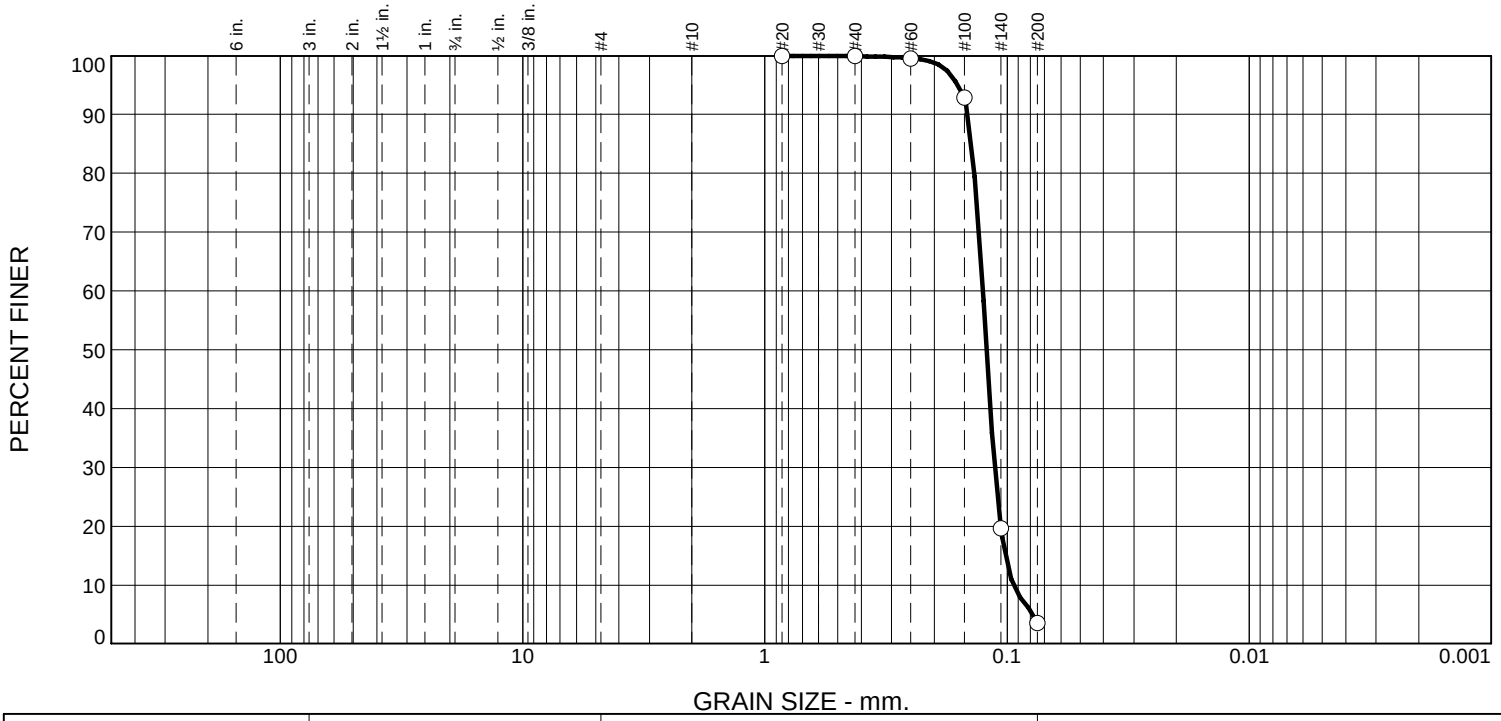
Source of Sample: PA23-1056S W-C
Sample Number: 3A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	96.4	3.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.6		
#100	92.9		
#140	19.6		
#200	3.5		

* (no specification provided)

Material Description

Light Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1448 D_{85}= 0.1400

D_{60}= 0.1260 D_{50}= 0.1216

D_{30}= 0.1124 D_{15}= 0.1016

D_{10}= 0.0944

C_u= 1.34 C_c= 1.06

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 3B

INSIGHT GROUP
A CHRISTOPHER COMPANY

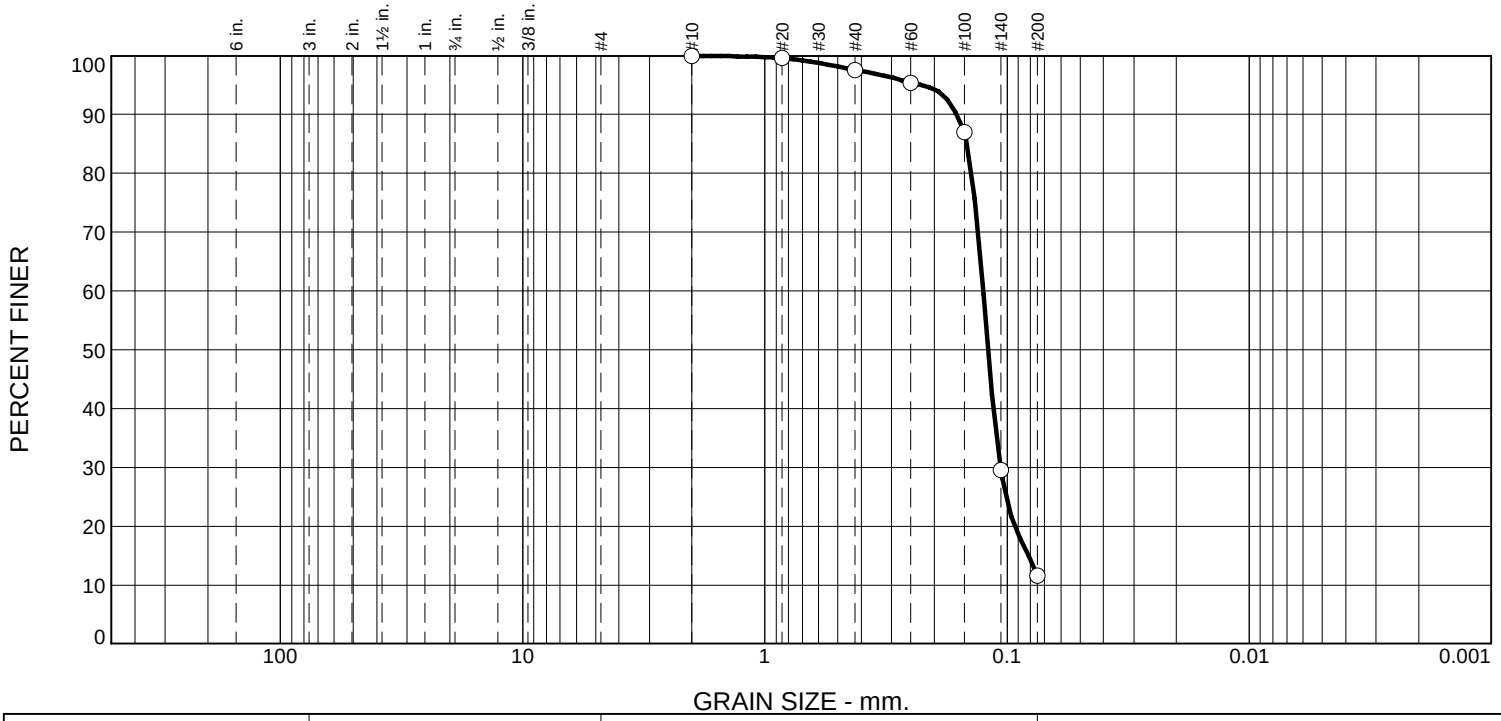
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.4	86.0	11.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.6		
#40	97.6		
#60	95.4		
#100	87.0		
#140	29.5		
#200	11.6		

· (no specification provided)

Material Description

Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1612 D_{85}= 0.1459

D_{60}= 0.1256 D_{50}= 0.1197

D_{30}= 0.1065 D_{15}= 0.0814

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

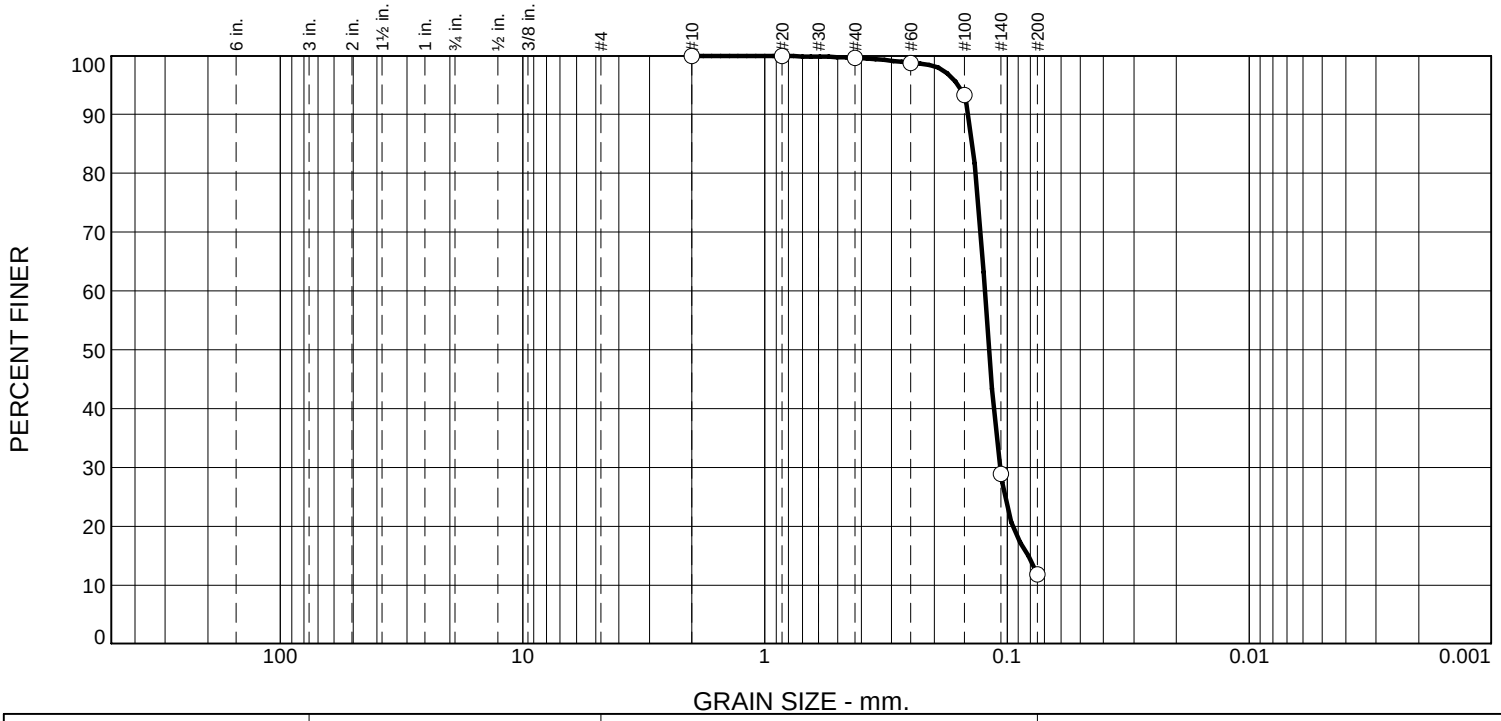
Source of Sample: PA23-1056S W-C
Sample Number: 3C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	87.7	11.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	98.8		
#100	93.3		
#140	28.8		
#200	11.9		

· (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1436 D_{85}= 0.1386

D_{60}= 0.1236 D_{50}= 0.1186

D_{30}= 0.1070 D_{15}= 0.0818

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 3D

INSIGHT GROUP
A CHRISTOPHER COMPANY

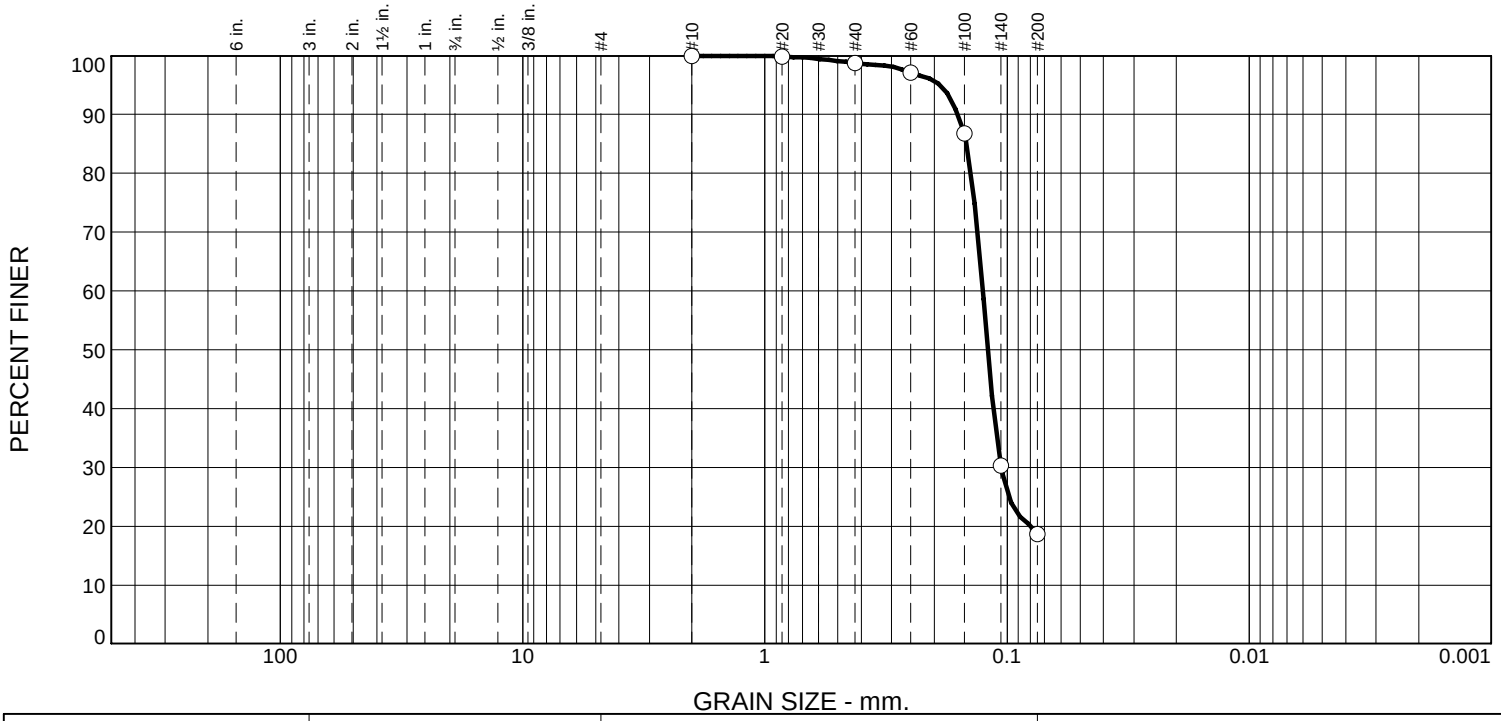
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.3	80.1	18.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	98.7		
#60	97.2		
#100	86.8		
#140	30.3		
#200	18.6		

· (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1595 D_{85}= 0.1466

D_{60}= 0.1261 D_{50}= 0.1200

D_{30}= 0.1057 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 3E

INSIGHT GROUP
A CHRISTOPHER COMPANY

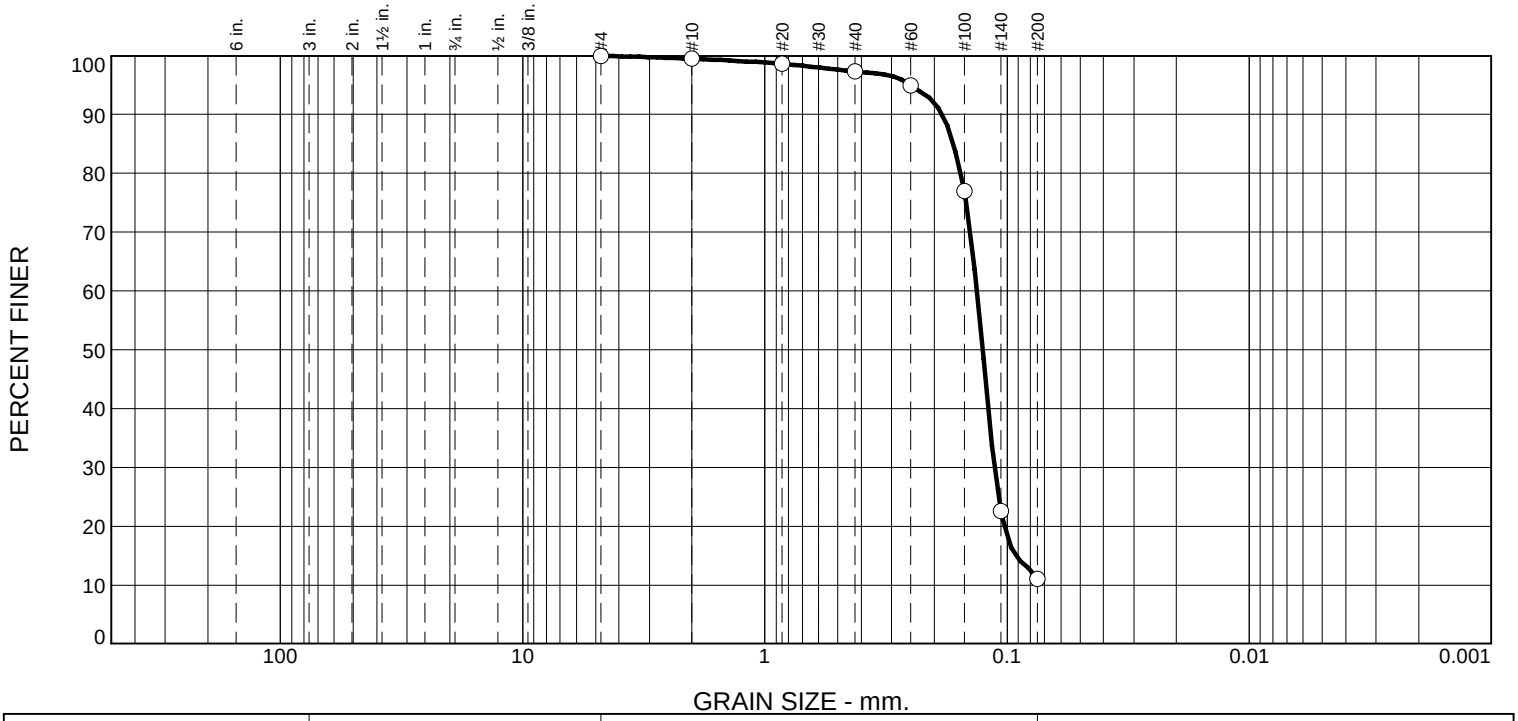
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	2.2	86.3	11.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.5		
#20	98.6		
#40	97.3		
#60	95.0		
#100	76.9		
#140	22.6		
#200	11.0		

· (no specification provided)

Material Description

Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1856 D_{85}= 0.1665

D_{60}= 0.1333 D_{50}= 0.1263

D_{30}= 0.1126 D_{15}= 0.0926

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 3F

INSIGHT GROUP
A CHRISTOPHER COMPANY

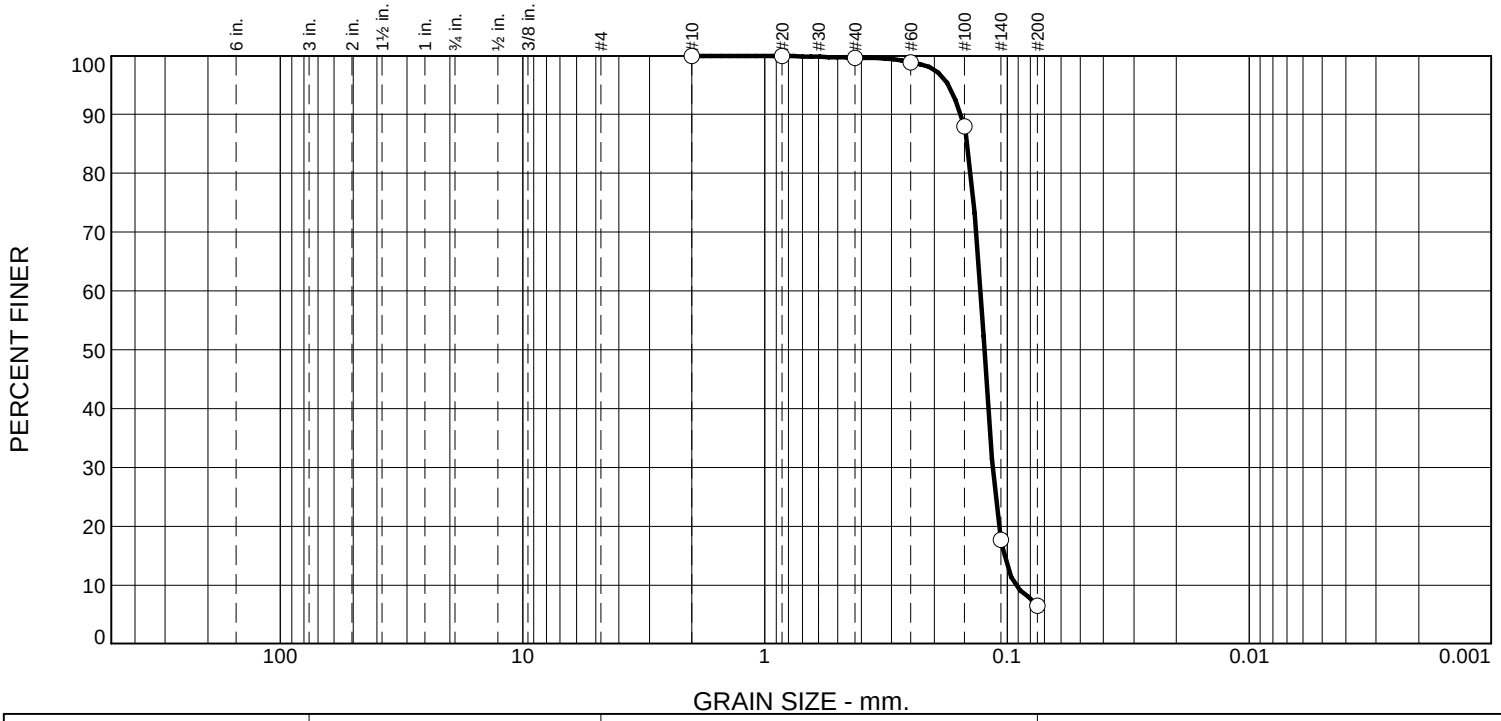
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	93.2	6.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.7		
#60	98.9		
#100	87.9		
#140	17.7		
#200	6.5		

· (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1553 D_{85}= 0.1455

D_{60}= 0.1290 D_{50}= 0.1242

D_{30}= 0.1145 D_{15}= 0.1026

D_{10}= 0.0925

C_u= 1.39 C_c= 1.10

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 3 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

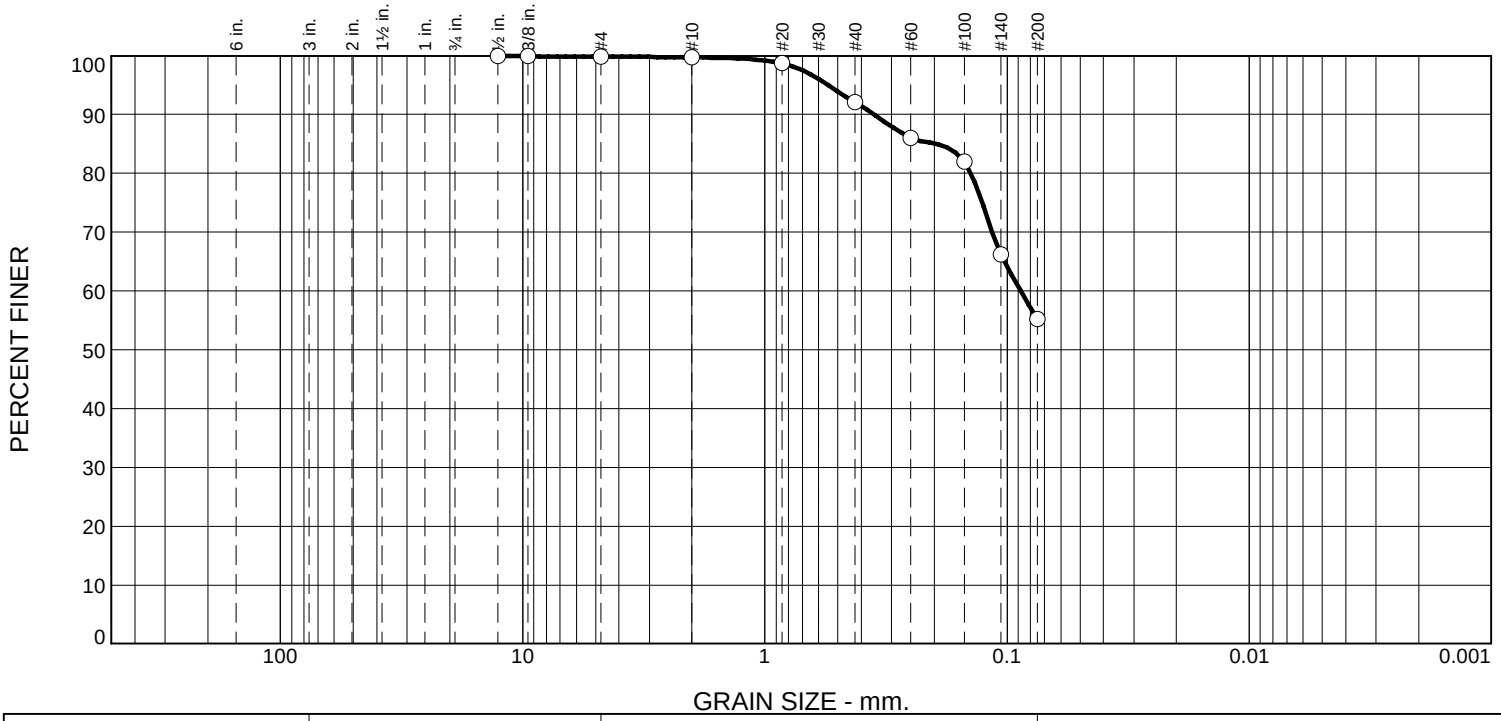
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.1	7.6	36.9	55.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	99.9		
#4	99.8		
#10	99.7		
#20	98.7		
#40	92.1		
#60	86.1		
#100	82.0		
#140	66.2		
#200	55.2		

* (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.3543 D_{85}= 0.1963

D_{60}= 0.0879 D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 4A

INSIGHT GROUP
A CHRISTOPHER COMPANY

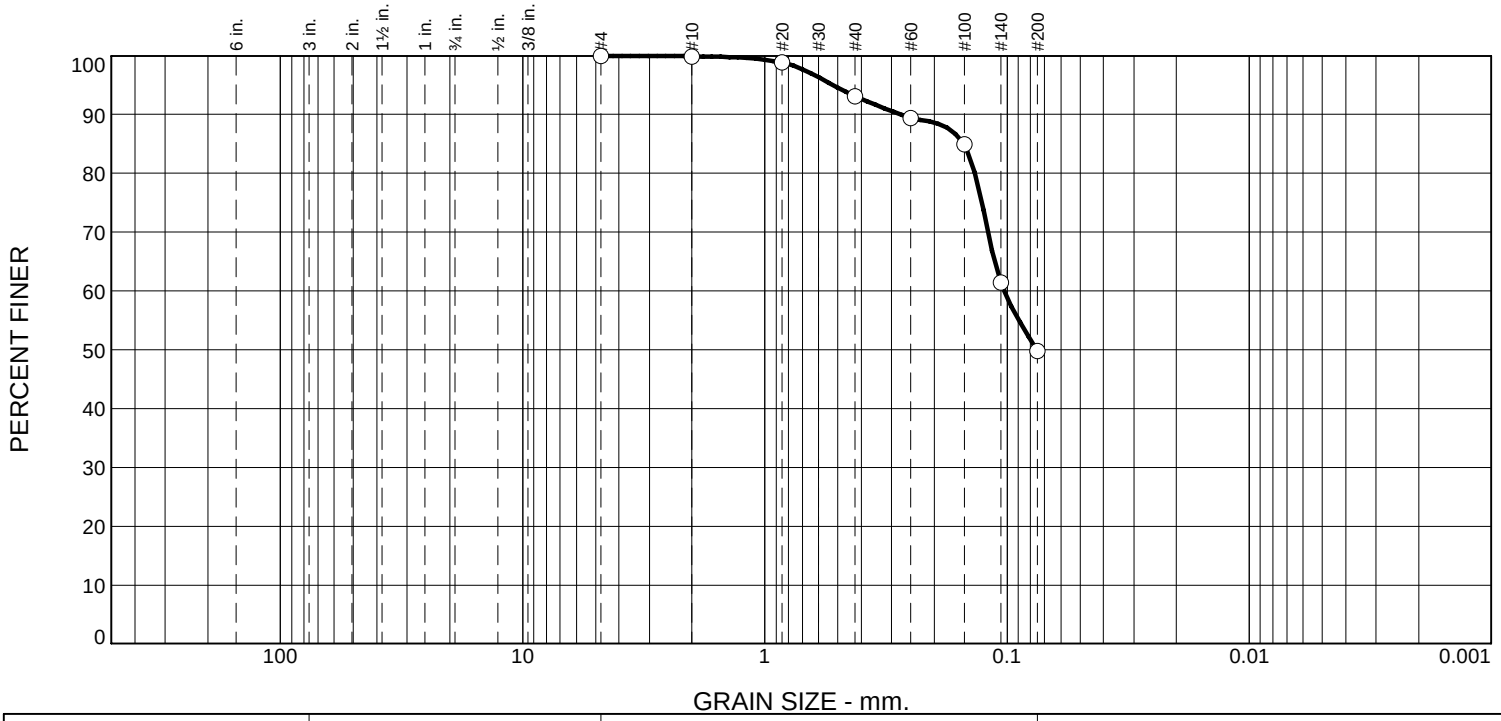
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	6.8	43.4	49.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	98.9		
#40	93.1		
#60	89.4		
#100	84.9		
#140	61.4		
#200	49.7		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2756 D_{85}= 0.1504
D_{60}= 0.1029 D_{50}= 0.0756
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/7/23 **Technician:** M. Moore
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

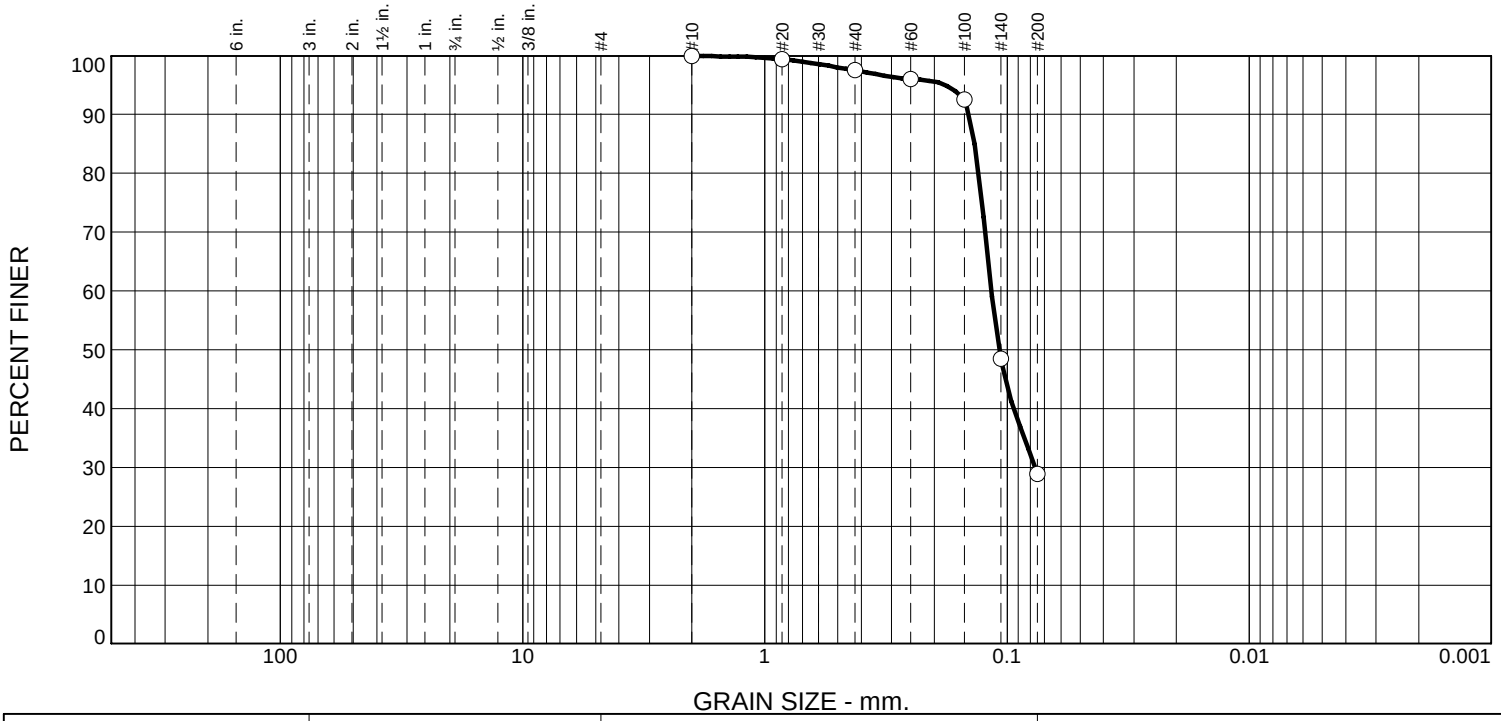
Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1056S W-C
Sample Number: 4B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.5	68.6	28.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.4		
#40	97.5		
#60	96.0		
#100	92.5		
#140	48.5		
#200	28.9		

· (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1429 D_{85}= 0.1362

D_{60}= 0.1160 D_{50}= 0.1076

D_{30}= 0.0765 D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

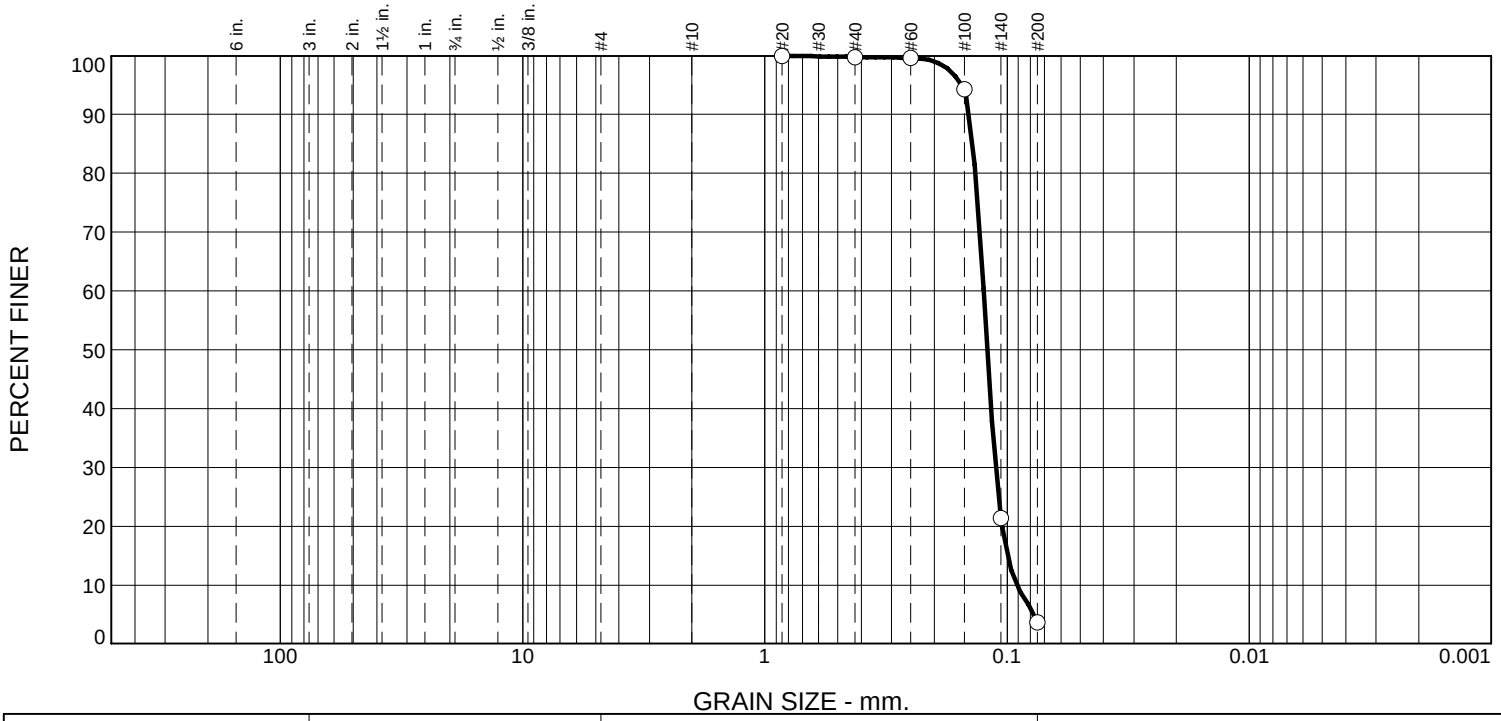
Source of Sample: PA23-1056S W-C
Sample Number: 4C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	96.1	3.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	99.6		
#100	94.3		
#140	21.4		
#200	3.7		

· (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1428 D_{85}= 0.1386

D_{60}= 0.1251 D_{50}= 0.1207

D_{30}= 0.1114 D_{15}= 0.0997

D_{10}= 0.0915

C_u= 1.37 C_c= 1.08

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C
Sample Number: 4D

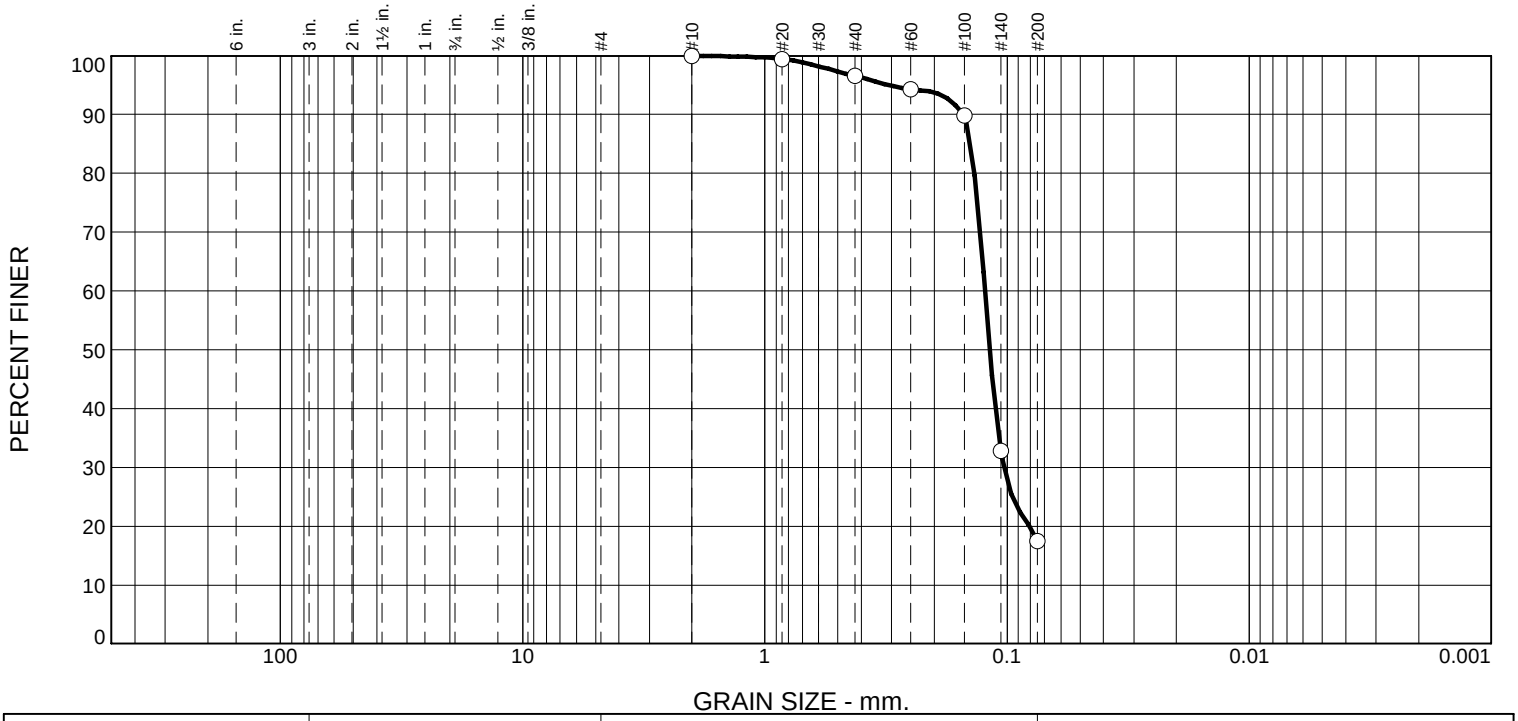
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.4	79.1	17.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.5		
#40	96.6		
#60	94.3		
#100	89.8		
#140	32.8		
#200	17.5		

* (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1512 D_{85}= 0.1412

D_{60}= 0.1234 D_{50}= 0.1177

D_{30}= 0.1029 D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

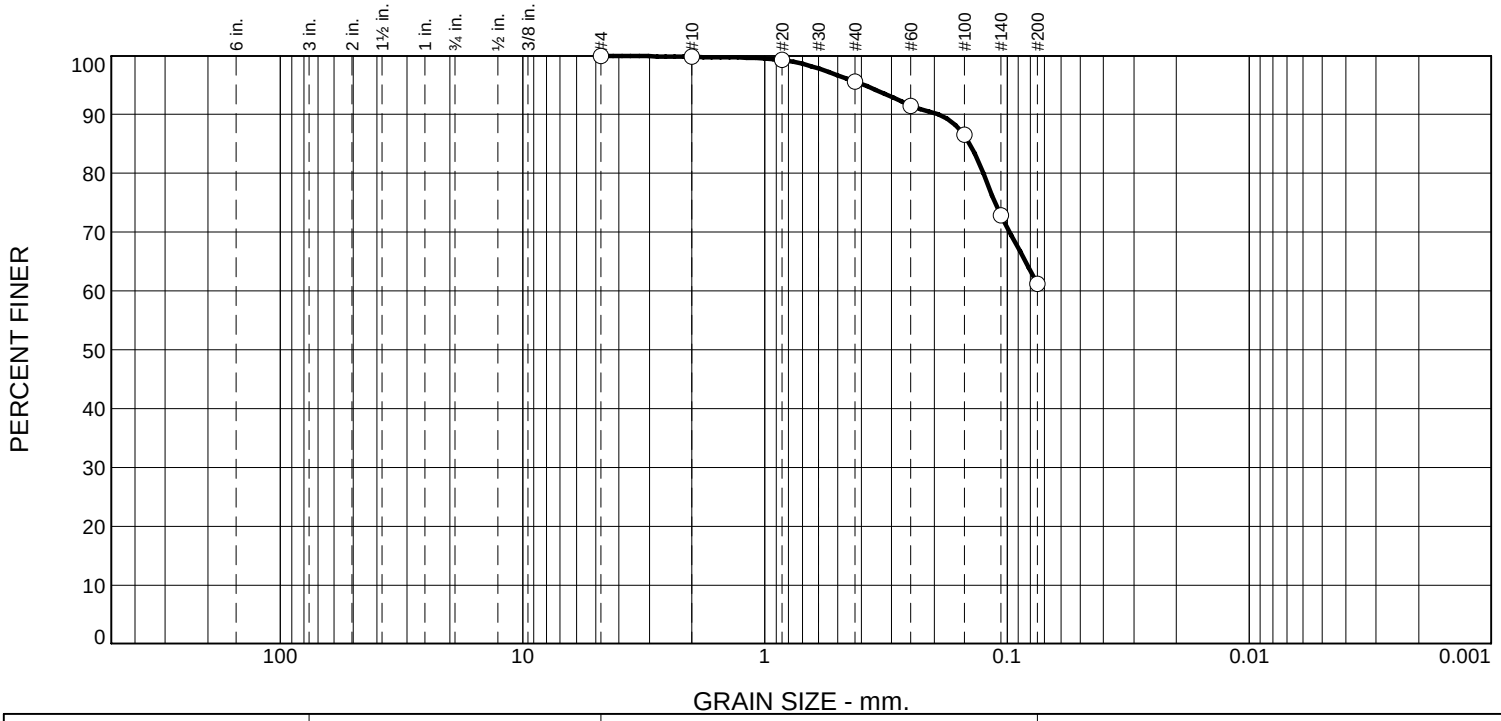
Source of Sample: PA23-1056S W-C
Sample Number: 4 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	4.2	34.3	61.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.3		
#40	95.6		
#60	91.5		
#100	86.5		
#140	72.9		
#200	61.3		

* (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1926 D_{85}= 0.1423

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 5A

INSIGHT GROUP
A CHRISTOPHER COMPANY

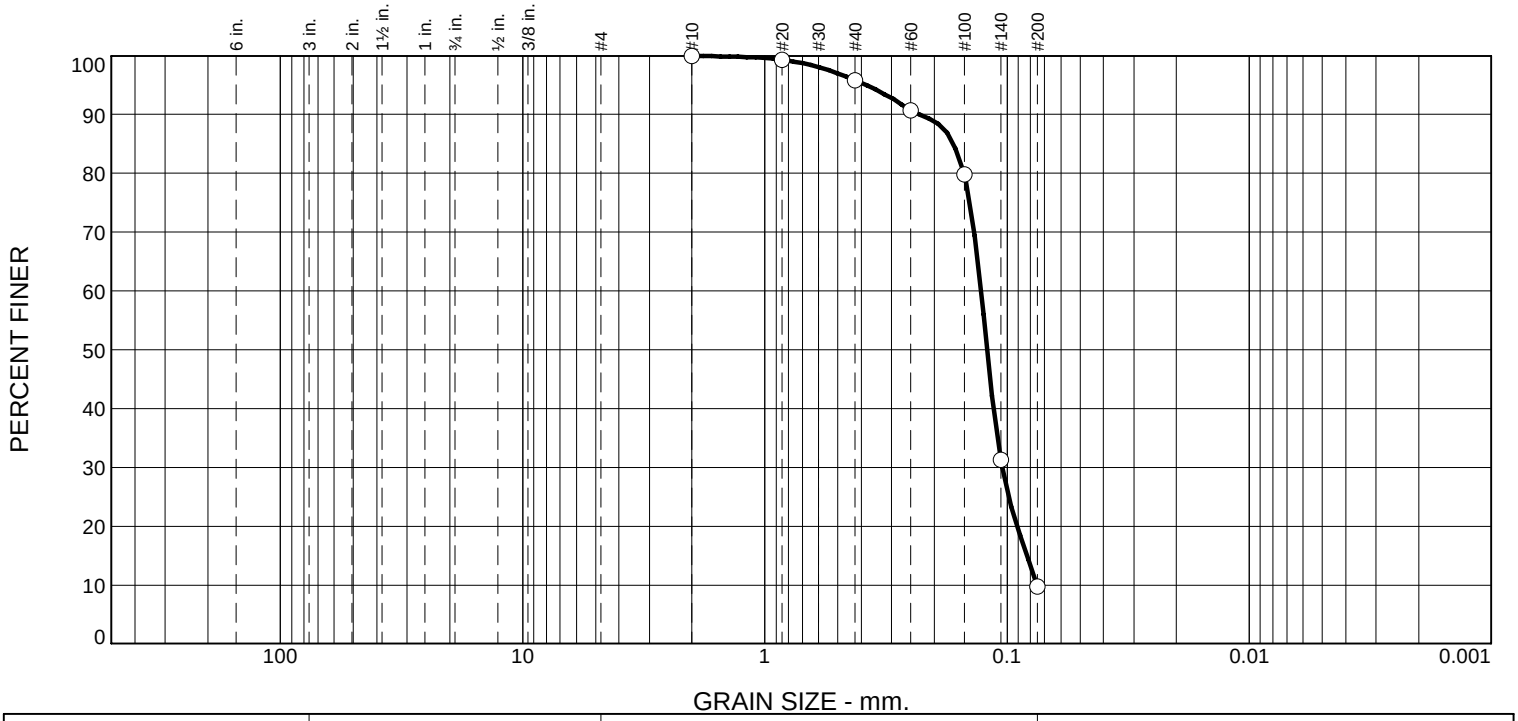
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.1	86.2	9.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.3		
#40	95.9		
#60	90.7		
#100	79.8		
#140	31.2		
#200	9.7		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2311 D_{85}= 0.1668
D_{60}= 0.1282 D_{50}= 0.1209
D_{30}= 0.1047 D_{15}= 0.0827
D_{10}= 0.0754
C_u= 1.70 C_c= 1.13

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

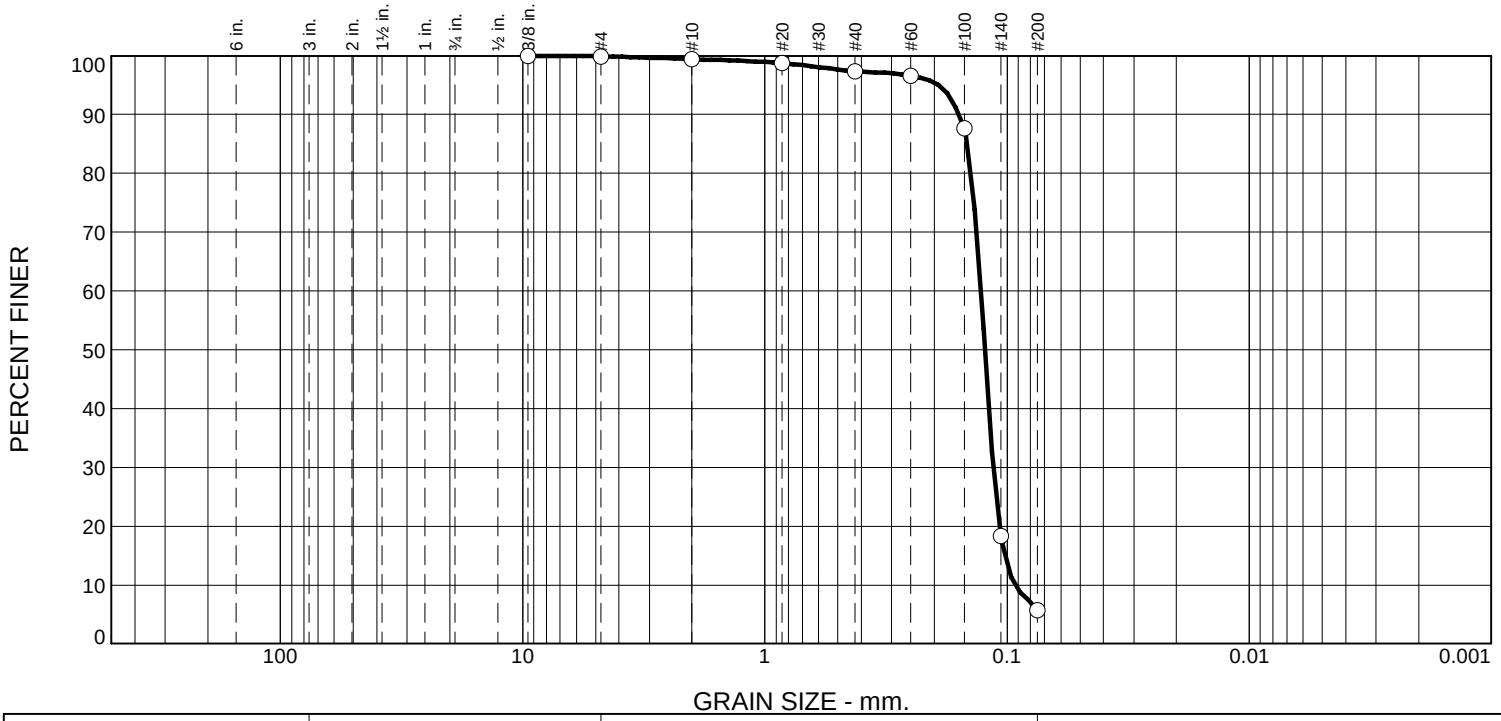
Source of Sample: PA23-1056S W-C
Sample Number: 5B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.5	2.1	91.6	5.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.9		
#10	99.4		
#20	98.7		
#40	97.3		
#60	96.5		
#100	87.6		
#140	18.4		
#200	5.7		

* (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1578 D_{85}= 0.1454

D_{60}= 0.1284 D_{50}= 0.1235

D_{30}= 0.1138 D_{15}= 0.1022

D_{10}= 0.0931

C_u= 1.38 C_c= 1.08

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 5C

INSIGHT GROUP
A CHRISTOPHER COMPANY

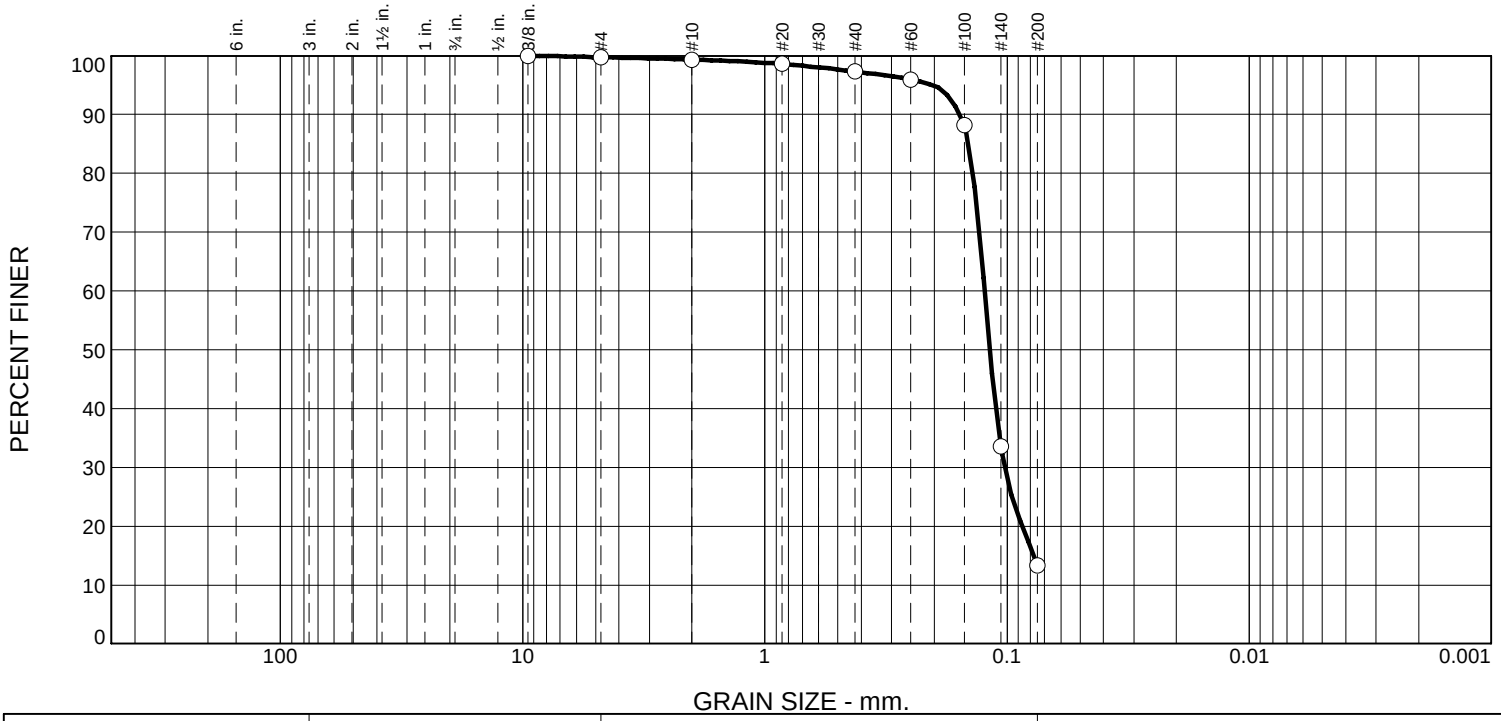
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.5	2.0	84.0	13.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.8		
#10	99.3		
#20	98.6		
#40	97.3		
#60	95.9		
#100	88.2		
#140	33.5		
#200	13.3		

* (no specification provided)

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1568 D_{85}= 0.1438
D_{60}= 0.1238 D_{50}= 0.1177
D_{30}= 0.1023 D_{15}= 0.0774
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

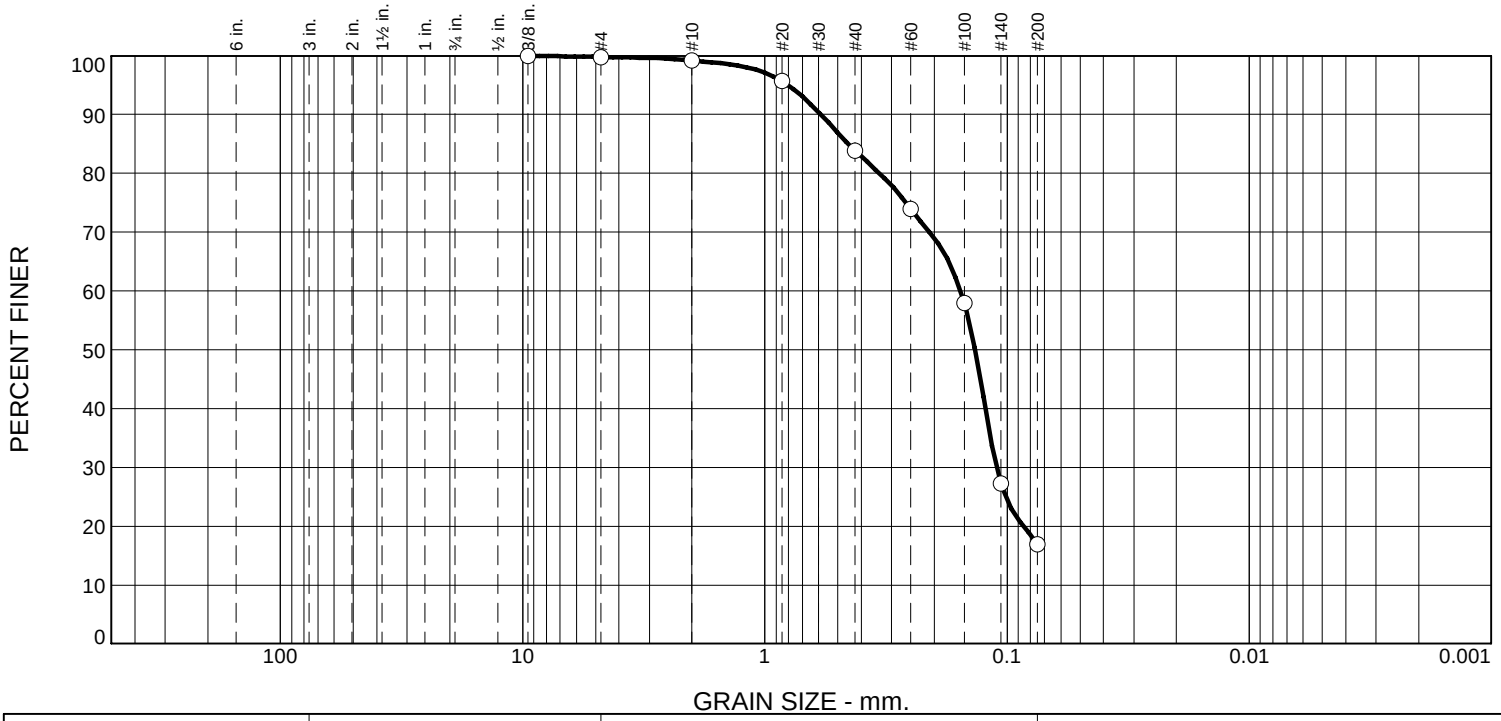
Source of Sample: PA23-1056S W-C
Sample Number: 5D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.6	15.3	67.0	16.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.8		
#10	99.2		
#20	95.7		
#40	83.9		
#60	74.0		
#100	58.0		
#140	27.3		
#200	16.9		

· (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.5875 D_{85}= 0.4515

D_{60}= 0.1554 D_{50}= 0.1357

D_{30}= 0.1103 D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 5E

INSIGHT GROUP
A CHRISTOPHER COMPANY

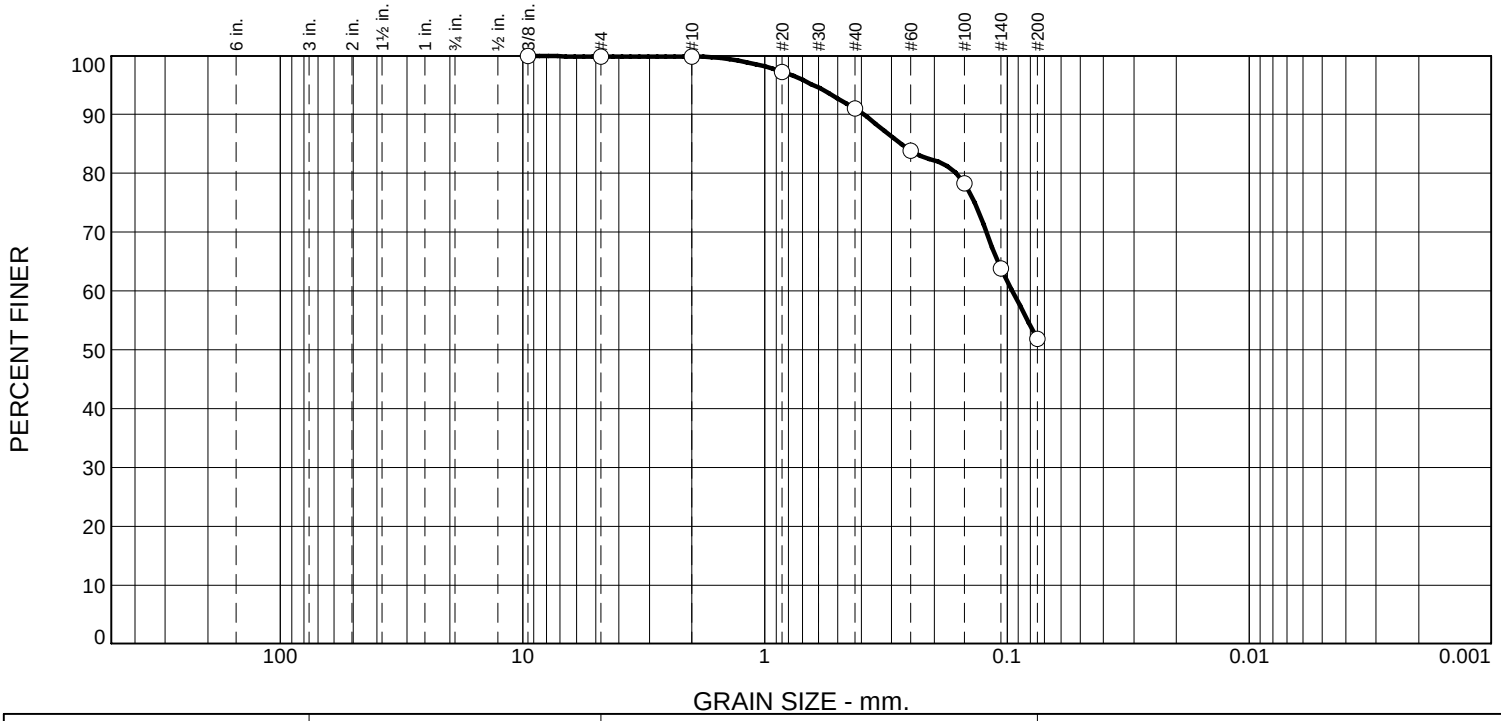
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.0	8.8	39.2	51.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.8		
#10	99.8		
#20	97.3		
#40	91.0		
#60	83.8		
#100	78.4		
#140	63.9		
#200	51.8		

· (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.3911 D_{85}= 0.2736

D_{60}= 0.0953 D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

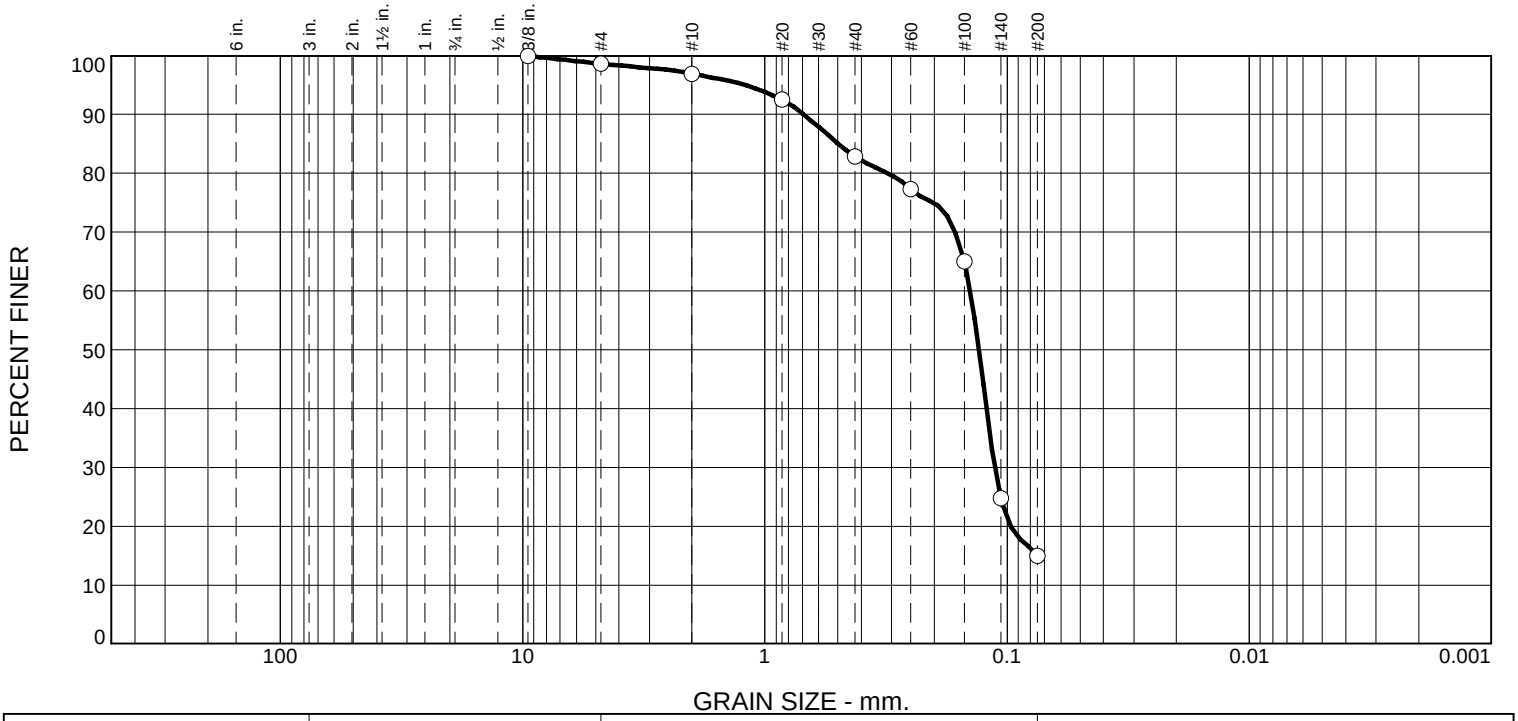
Source of Sample: PA23-1056S W-C
Sample Number: 5F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.4	1.6	14.1	67.9	15.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	98.6		
#10	97.0		
#20	92.5		
#40	82.9		
#60	77.3		
#100	65.0		
#140	24.7		
#200	15.0		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6903 D_{85}= 0.4962
D_{60}= 0.1418 D_{50}= 0.1308
D_{30}= 0.1123 D_{15}= 0.0751
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

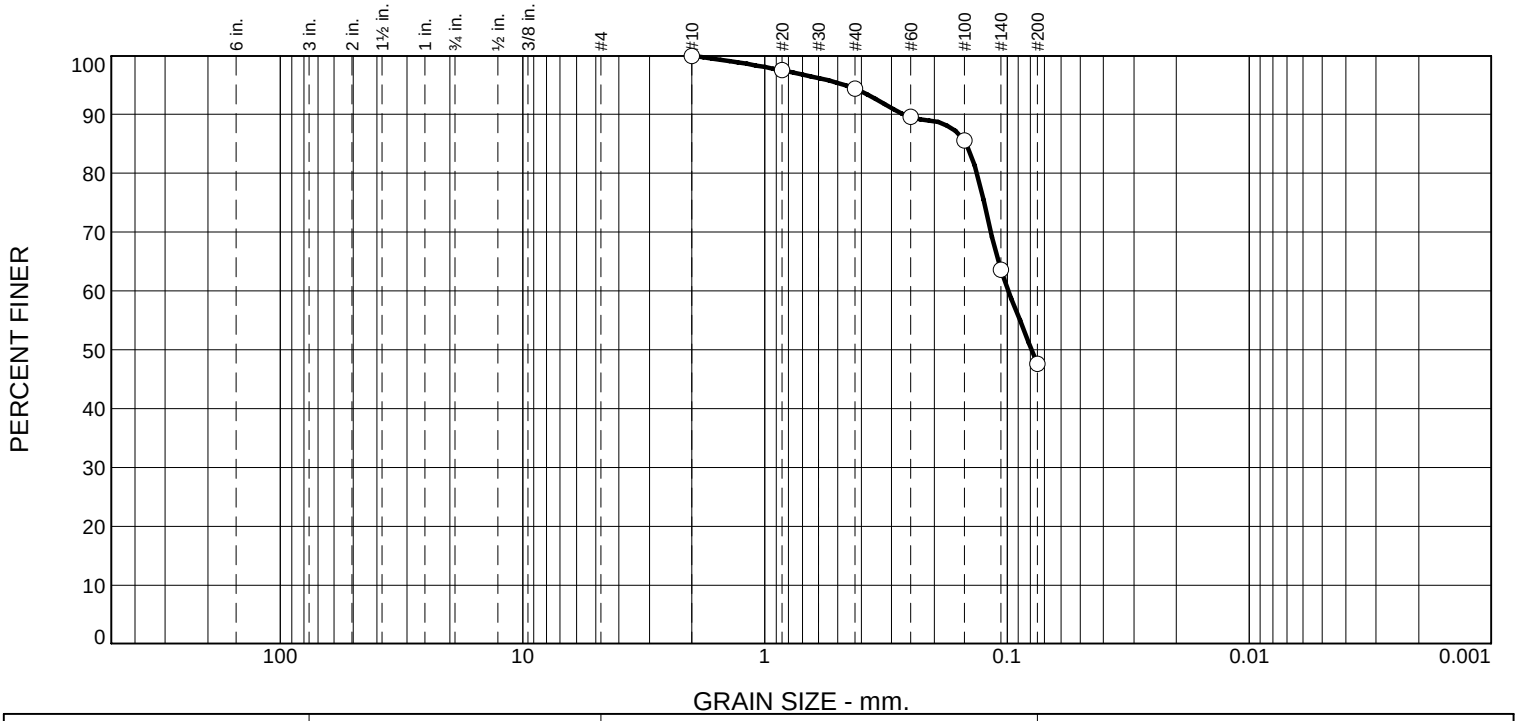
Source of Sample: PA23-1056S W-C
Sample Number: 5 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.6	46.8	47.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.5		
#40	94.4		
#60	89.6		
#100	85.6		
#140	63.6		
#200	47.6		

· (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2660 D_{85}= 0.1467

D_{60}= 0.0989 D_{50}= 0.0791

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 6A

INSIGHT GROUP
A CHRISTOPHER COMPANY

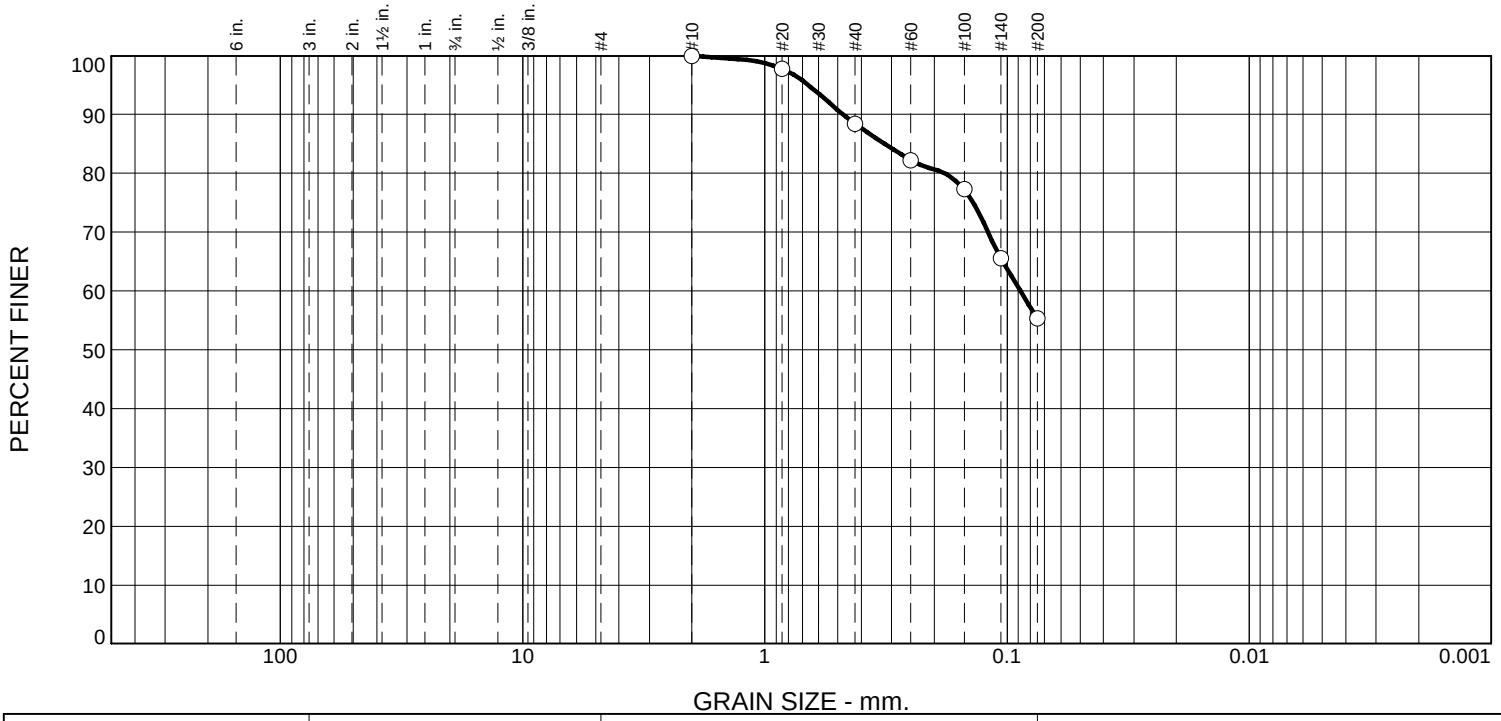
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	11.5	33.2	55.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.8		
#40	88.5		
#60	82.2		
#100	77.3		
#140	65.6		
#200	55.3		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4755 D_{85}= 0.3199
D_{60}= 0.0881 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

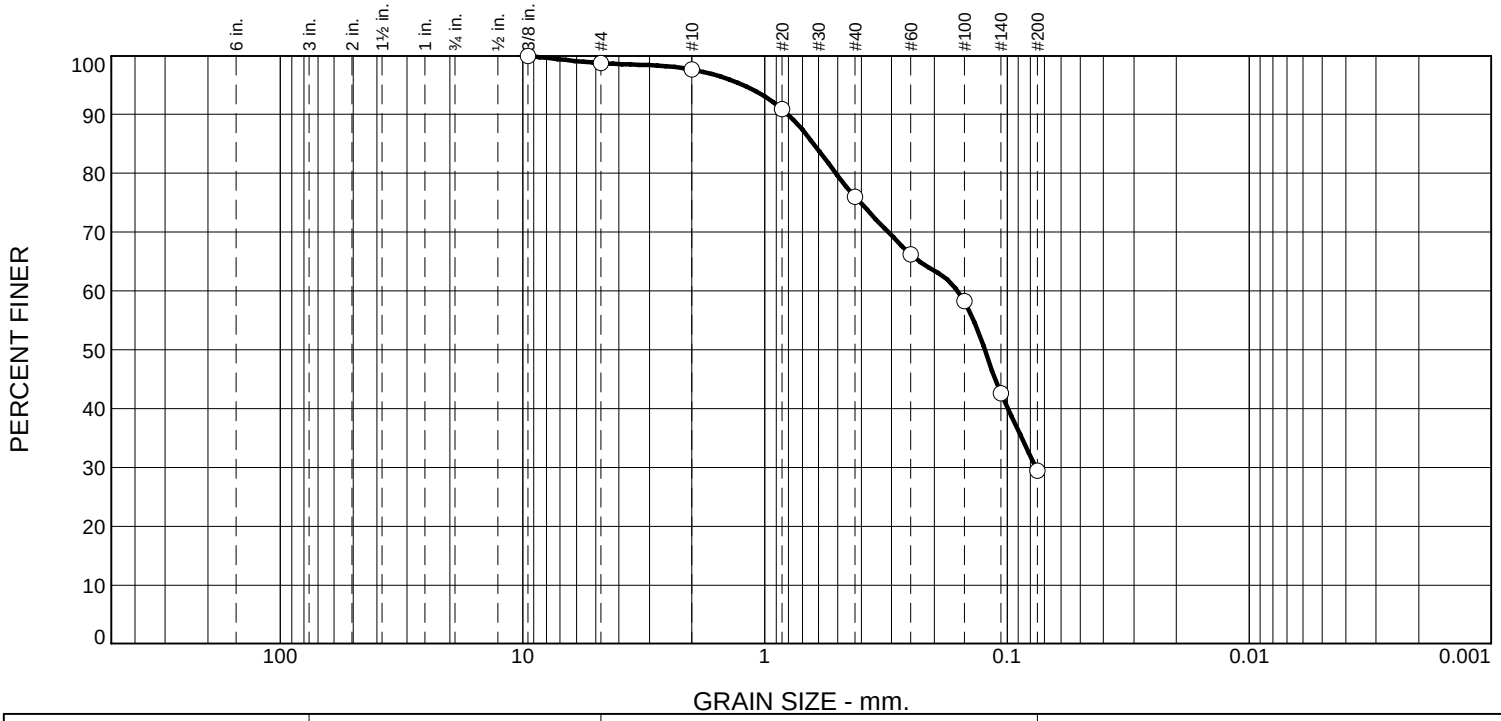
Source of Sample: PA23-1056S W-C
Sample Number: 6B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	1.1	21.6	46.6	29.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	98.7		
#10	97.6		
#20	90.9		
#40	76.0		
#60	66.2		
#100	58.3		
#140	42.6		
#200	29.4		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.8019 D_{85}= 0.6288
D_{60}= 0.1601 D_{50}= 0.1237
D_{30}= 0.0762 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

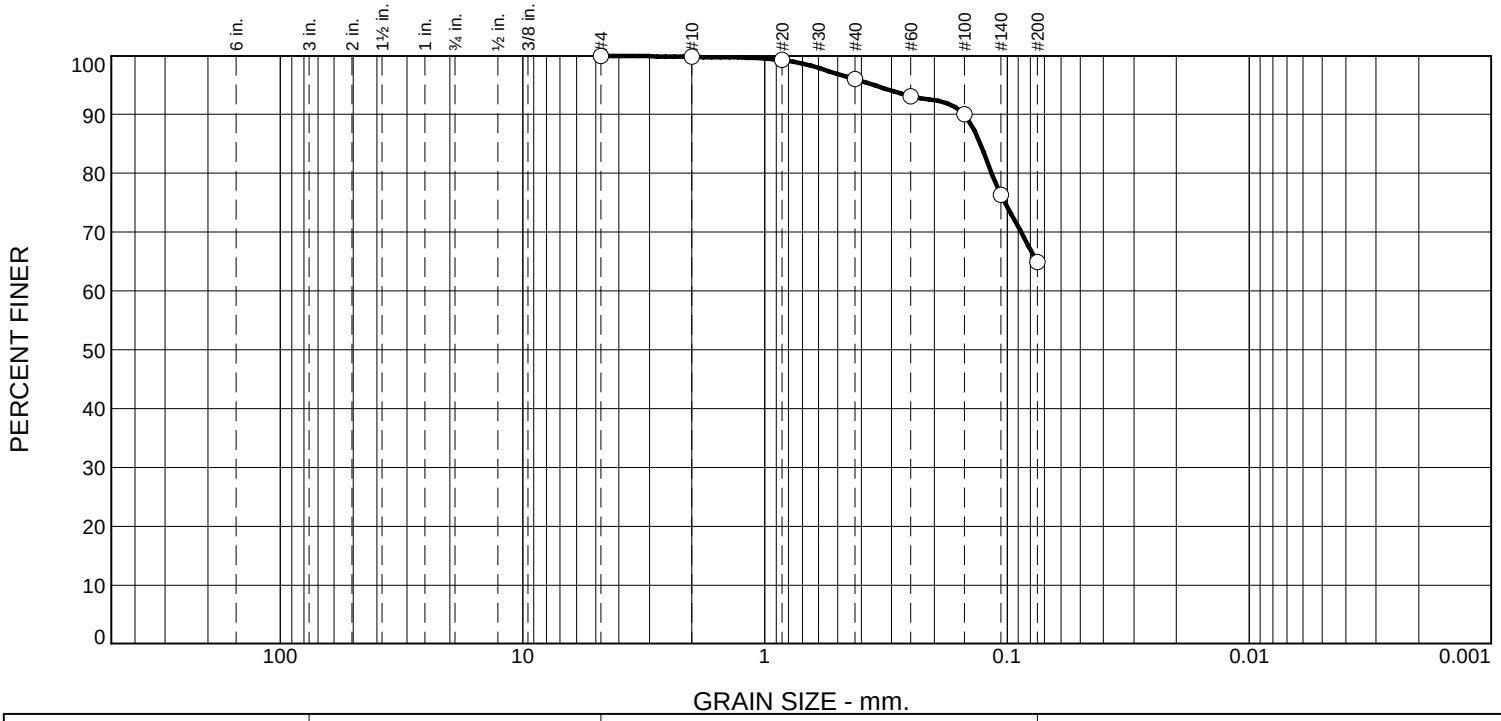
Source of Sample: PA23-1056S W-C
Sample Number: 6C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	3.8	31.1	64.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.3		
#40	96.0		
#60	93.1		
#100	90.0		
#140	76.4		
#200	64.9		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1500 D_{85}= 0.1290
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

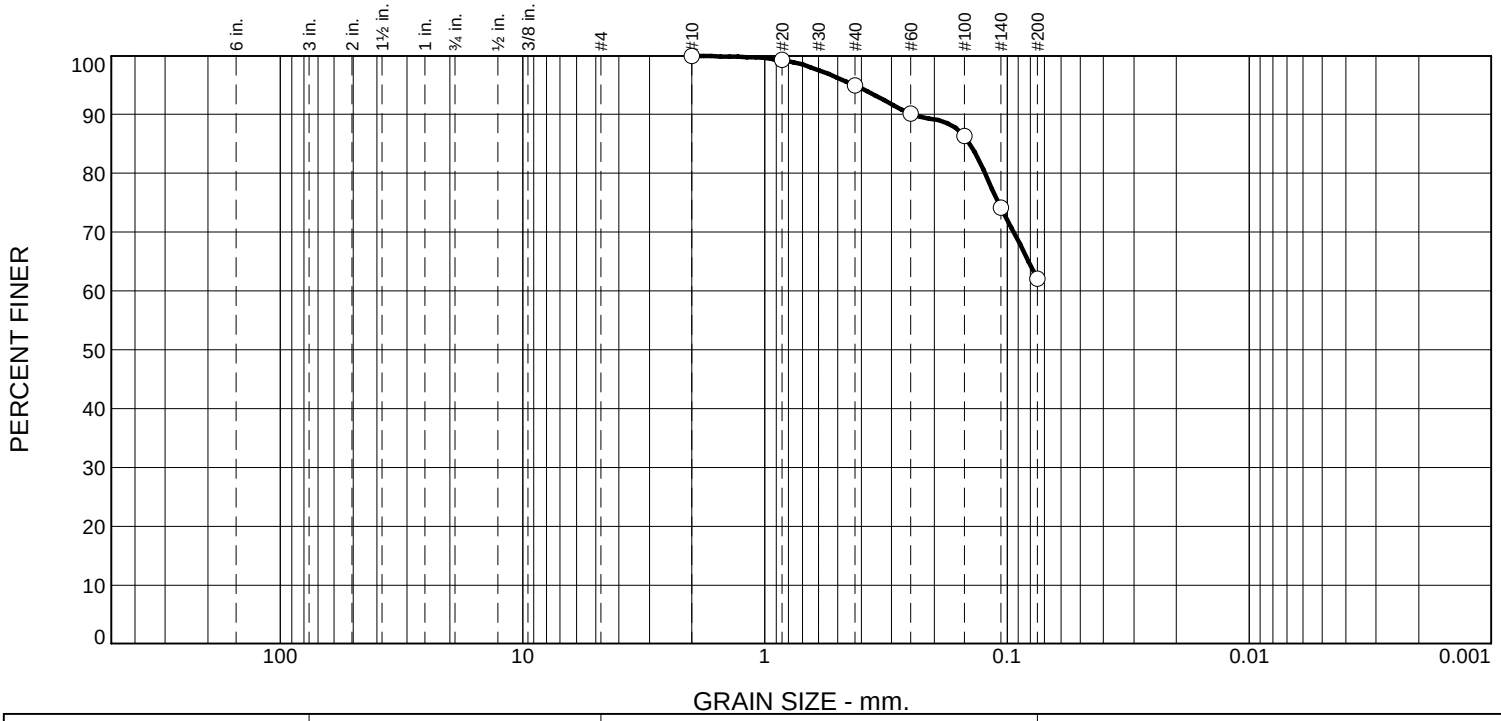
Source of Sample: PA23-1056S W-C
Sample Number: 6D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.0	32.9	62.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.3		
#40	95.0		
#60	90.1		
#100	86.4		
#140	74.1		
#200	62.1		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2459 D_{85}= 0.1420
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

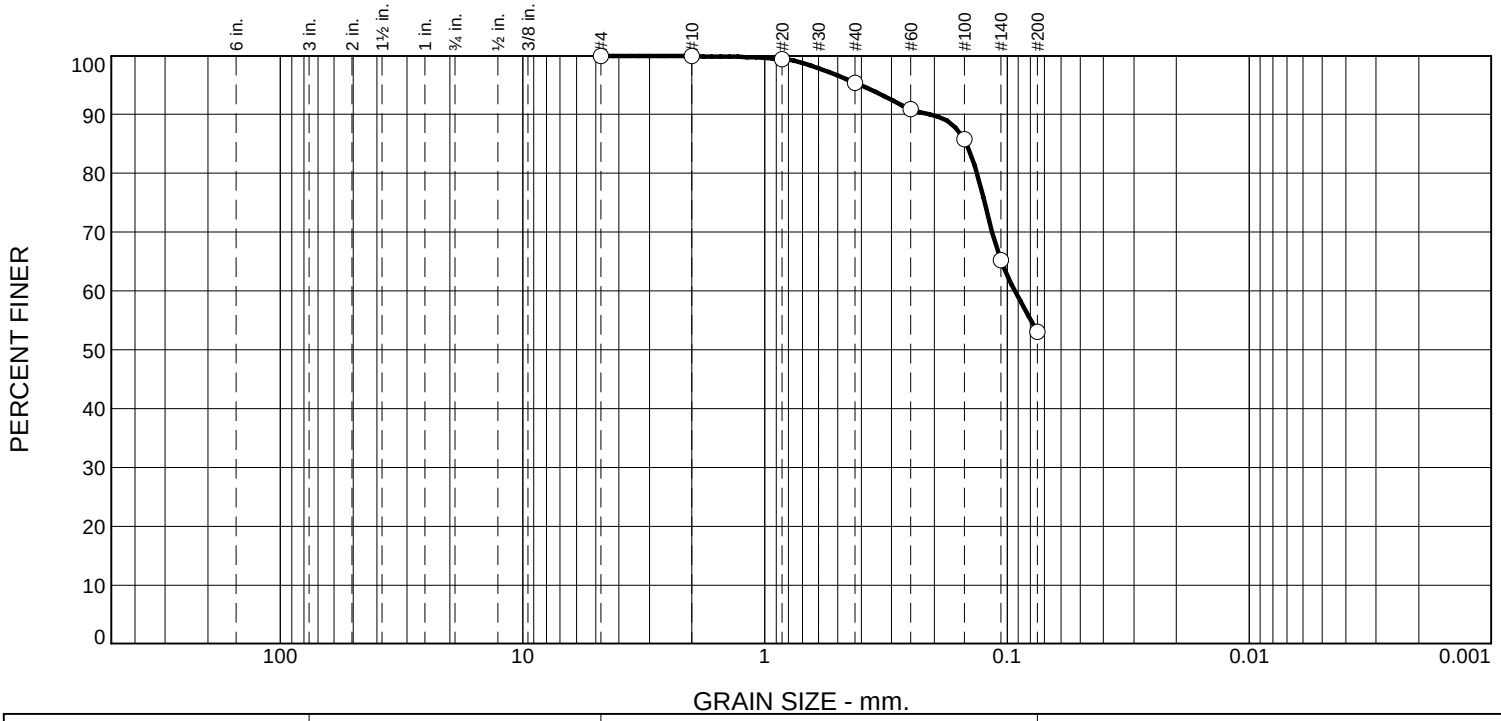
Source of Sample: PA23-1056S W-C
Sample Number: 6 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	4.5	42.3	53.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.4		
#40	95.4		
#60	90.9		
#100	85.8		
#140	65.2		
#200	53.1		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2060 D_{85}= 0.1466

D_{60}= 0.0930 D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 7A

INSIGHT GROUP
A CHRISTOPHER COMPANY

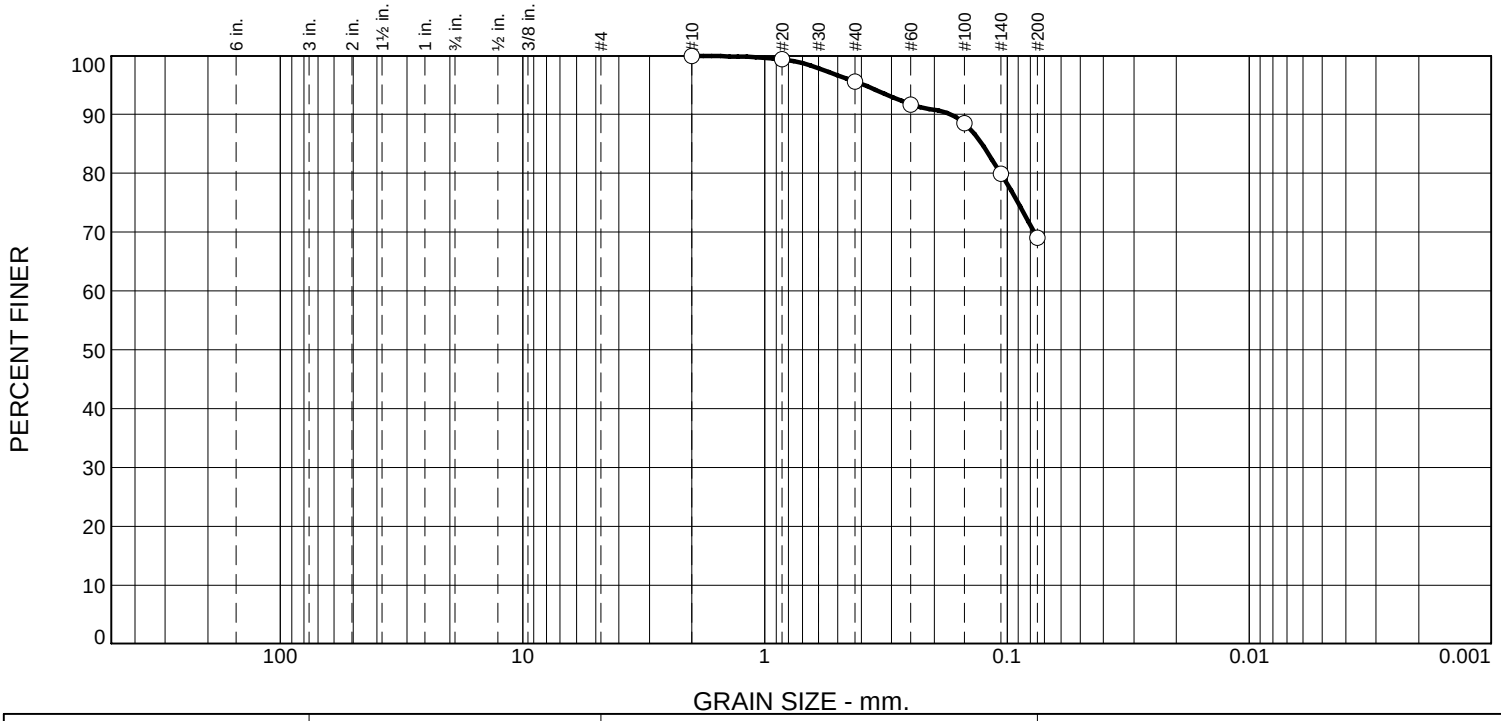
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.4	26.5	69.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.4		
#40	95.6		
#60	91.7		
#100	88.6		
#140	79.9		
#200	69.1		

· (no specification provided)

Source of Sample: PA23-1056S W-C
Sample Number: 7B

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1704 D_{85}= 0.1272
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

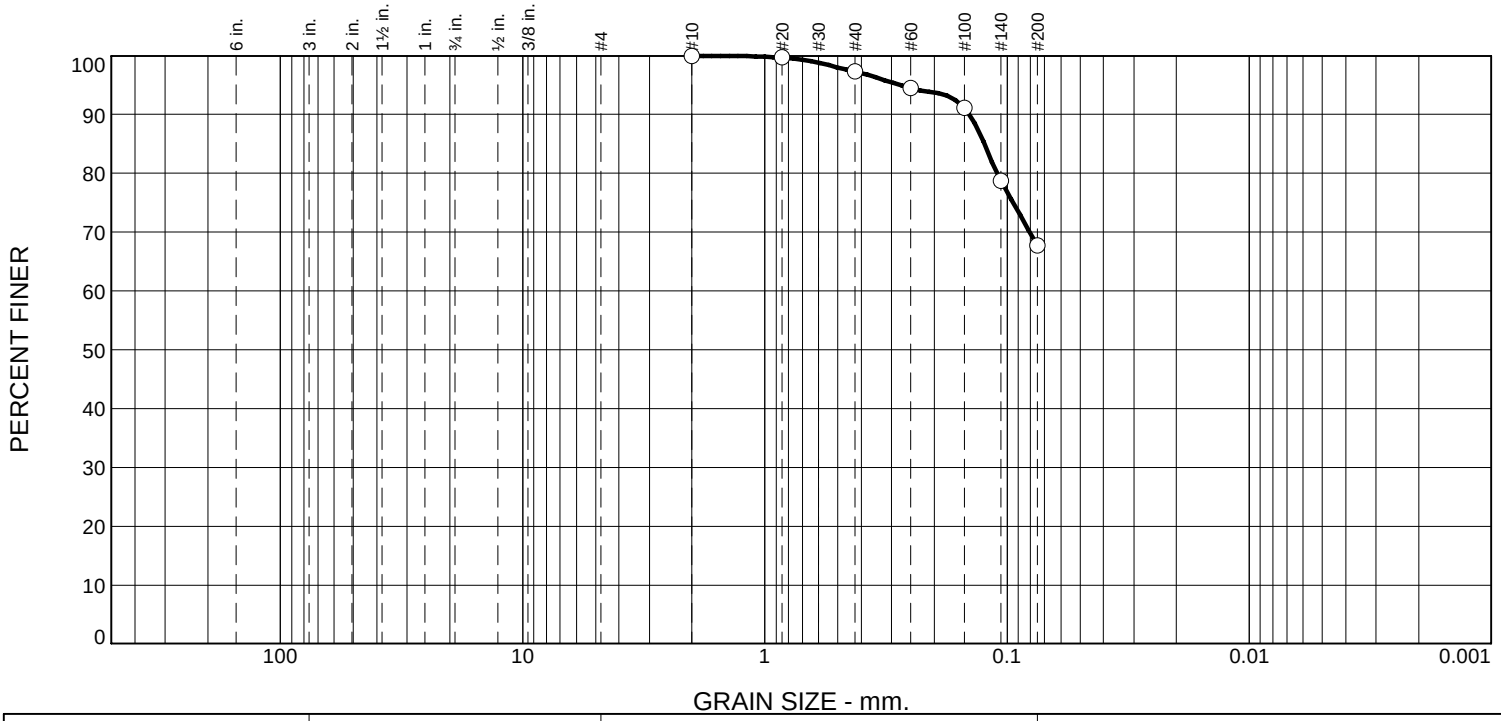
Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.7	29.6	67.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	97.3		
#60	94.5		
#100	91.2		
#140	78.8		
#200	67.7		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1426 D_{85}= 0.1241

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C
Sample Number: 7C

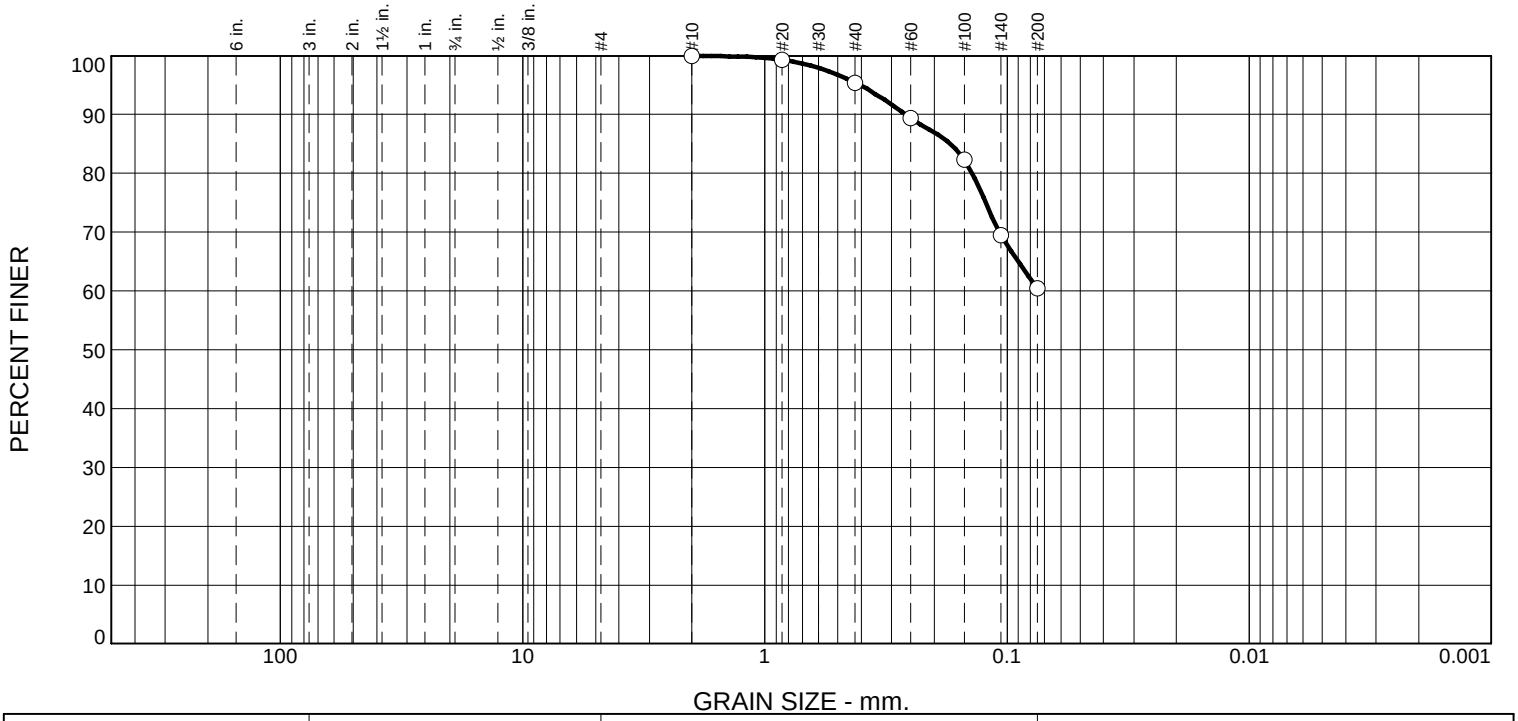
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.6	35.0	60.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.3		
#40	95.4		
#60	89.4		
#100	82.3		
#140	69.5		
#200	60.4		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2622 D_{85}= 0.1714
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/2/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

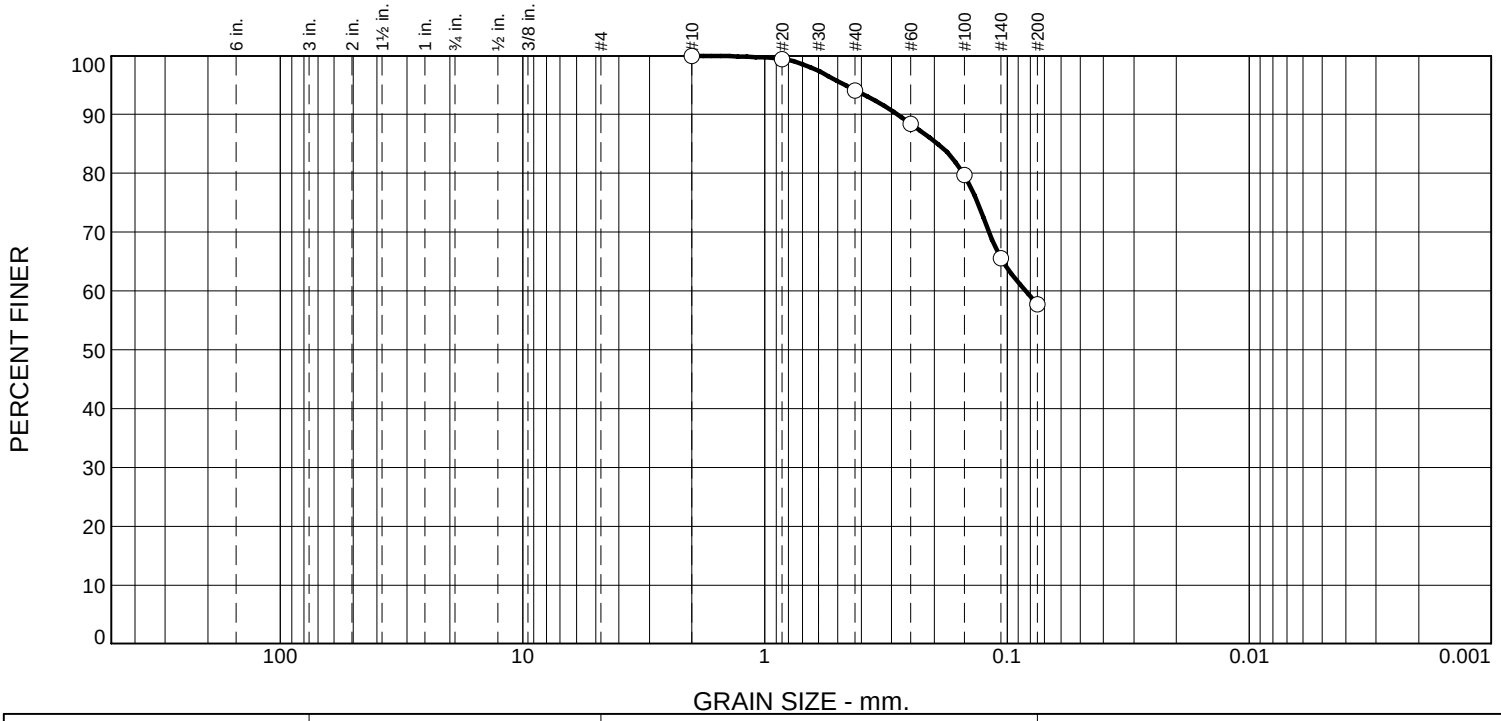
Source of Sample: PA23-1056S W-C
Sample Number: 7D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.9	36.3	57.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.4		
#40	94.1		
#60	88.4		
#100	79.7		
#140	65.5		
#200	57.8		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2821 D_{85}= 0.1929
D_{60}= 0.0837 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/7/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

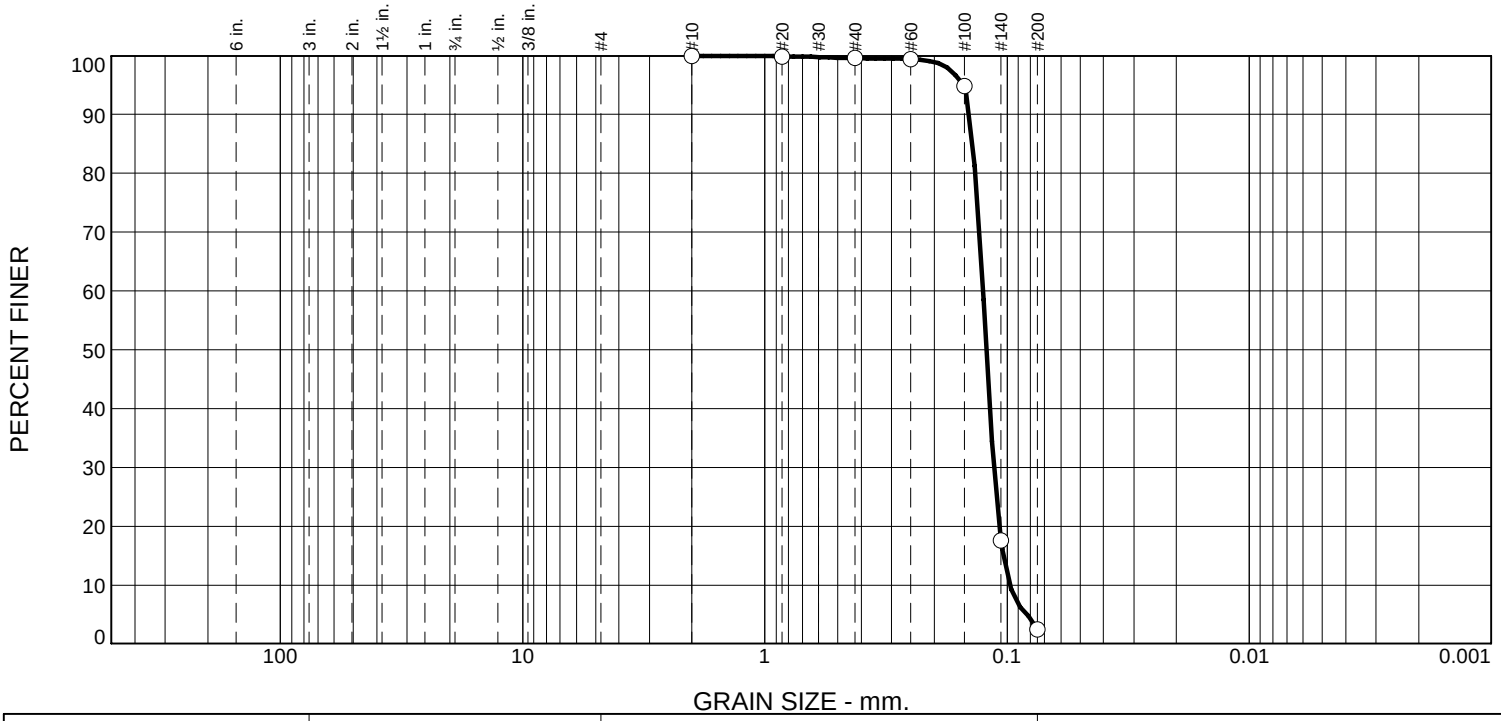
Source of Sample: PA23-1056S W-C
Sample Number: 7 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	97.1	2.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	99.4		
#100	94.9		
#140	17.6		
#200	2.5		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1424 D_{85}= 0.1385

D_{60}= 0.1259 D_{50}= 0.1217

D_{30}= 0.1132 D_{15}= 0.1036

D_{10}= 0.0975

C_u= 1.29 C_c= 1.04

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

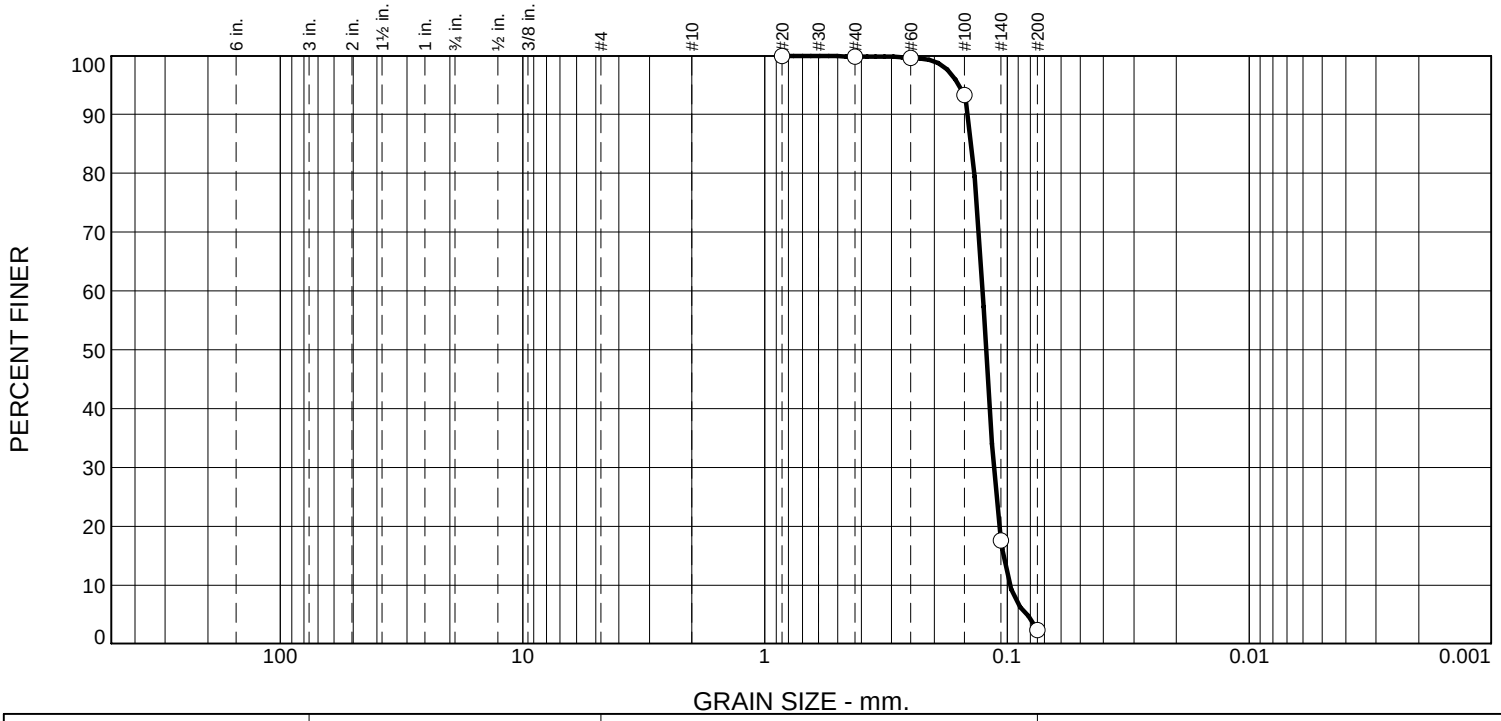
Source of Sample: PA23-1056S W-C
Sample Number: 8A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	97.5	2.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.6		
#100	93.3		
#140	17.6		
#200	2.4		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1443 D_{85}= 0.1398

D_{60}= 0.1264 D_{50}= 0.1221

D_{30}= 0.1133 D_{15}= 0.1036

D_{10}= 0.0975

C_u= 1.30 C_c= 1.04

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 8B

INSIGHT GROUP
A CHRISTOPHER COMPANY

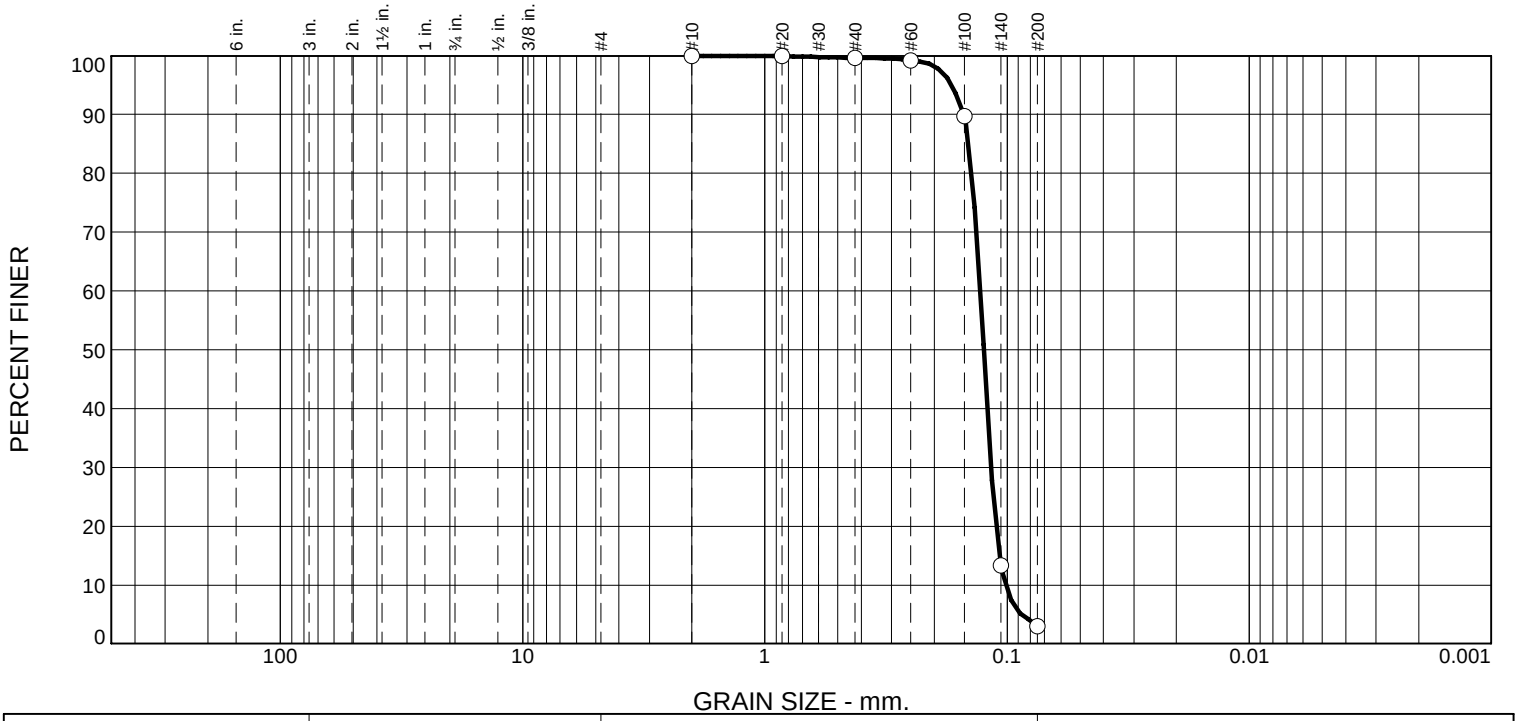
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	96.6	3.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	99.2		
#100	89.8		
#140	13.3		
#200	3.0		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1506 D_{85}= 0.1436

D_{60}= 0.1292 D_{50}= 0.1249

D_{30}= 0.1163 D_{15}= 0.1077

D_{10}= 0.1014

C_u= 1.27 C_c= 1.03

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

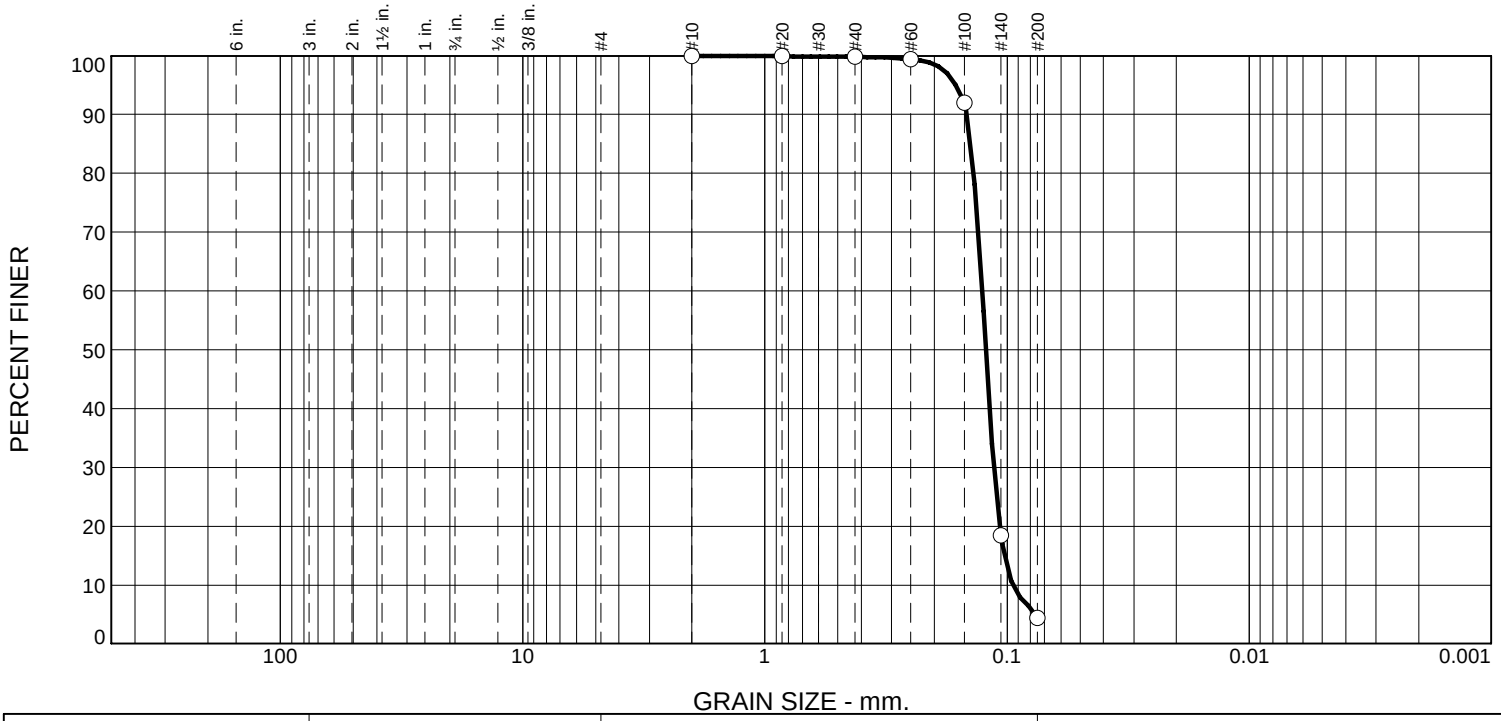
Source of Sample: PA23-1056S W-C
Sample Number: 8C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	95.4	4.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.8		
#60	99.4		
#100	92.0		
#140	18.4		
#200	4.4		

· (no specification provided)

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1460 D_{85}= 0.1409
D_{60}= 0.1268 D_{50}= 0.1224
D_{30}= 0.1132 D_{15}= 0.1025
D_{10}= 0.0949
C_u= 1.34 C_c= 1.07

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

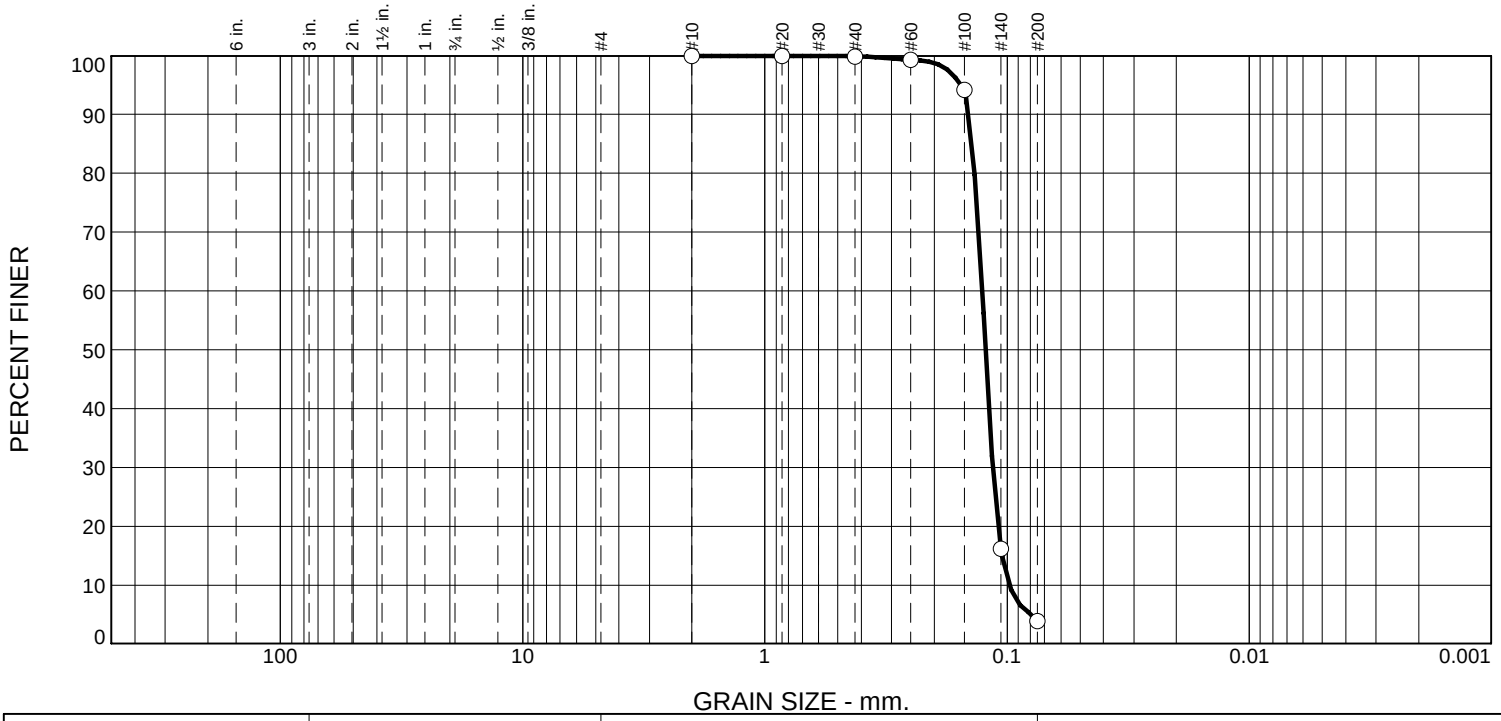
Source of Sample: PA23-1056S W-C
Sample Number: 8D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	96.1	3.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.9		
#60	99.3		
#100	94.1		
#140	16.1		
#200	3.8		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1434 D_{85}= 0.1394

D_{60}= 0.1268 D_{50}= 0.1227

D_{30}= 0.1143 D_{15}= 0.1048

D_{10}= 0.0979

C_u= 1.30 C_c= 1.05

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C
Sample Number: Comp 8

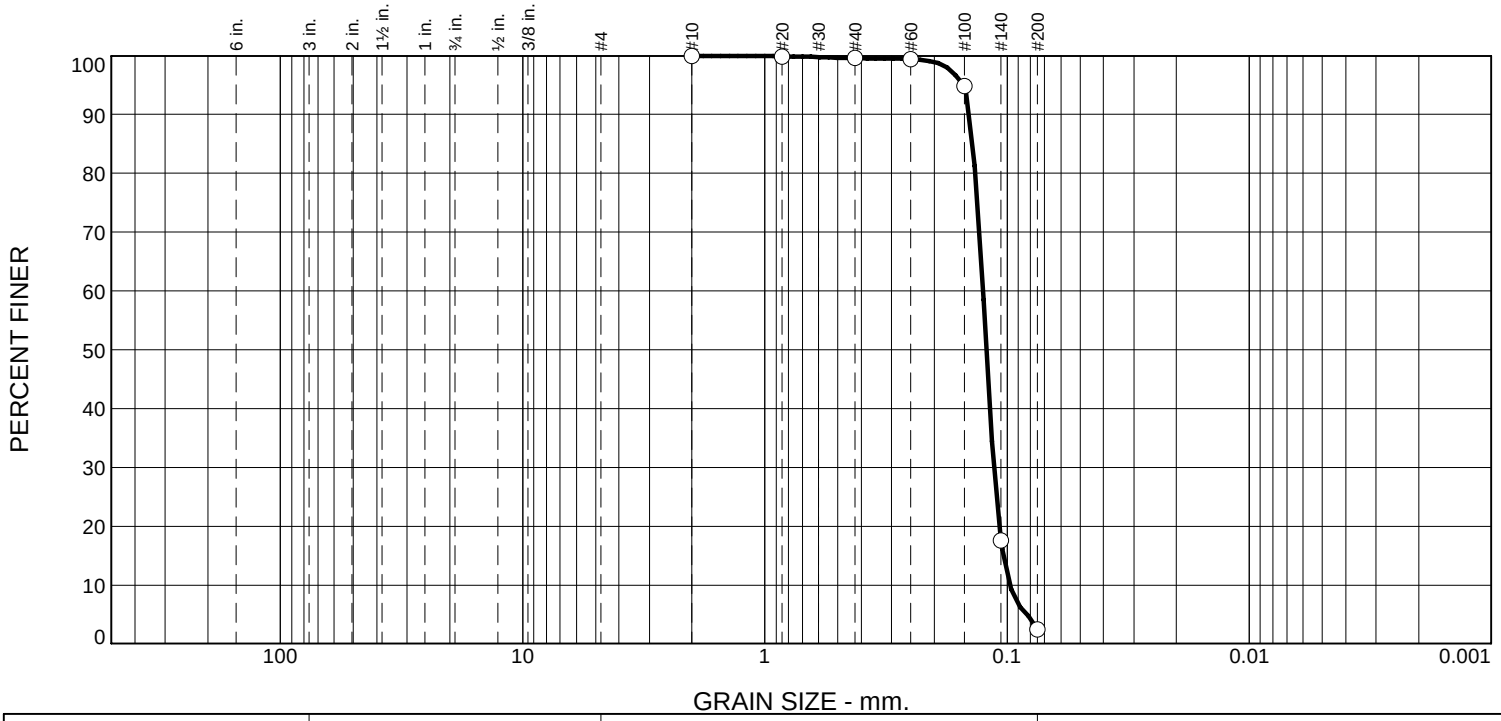
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	97.1	2.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	99.4		
#100	94.9		
#140	17.6		
#200	2.5		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1424 D_{85}= 0.1385

D_{60}= 0.1259 D_{50}= 0.1217

D_{30}= 0.1132 D_{15}= 0.1036

D_{10}= 0.0975

C_u= 1.29 C_c= 1.04

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

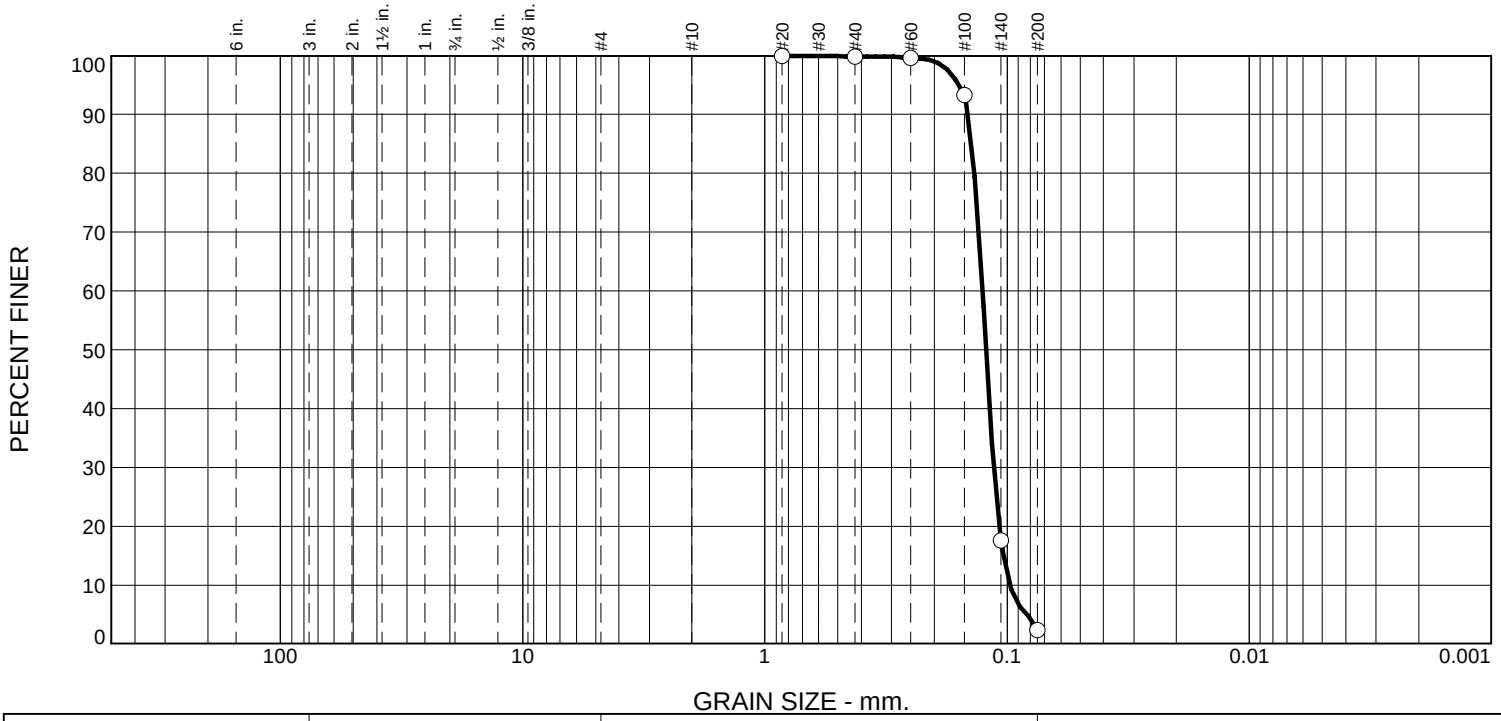
Source of Sample: PA23-1056S W-C
Sample Number: 8A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	97.5	2.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.6		
#100	93.3		
#140	17.6		
#200	2.4		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1443 D_{85}= 0.1398

D_{60}= 0.1264 D_{50}= 0.1221

D_{30}= 0.1133 D_{15}= 0.1036

D_{10}= 0.0975

C_u= 1.30 C_c= 1.04

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

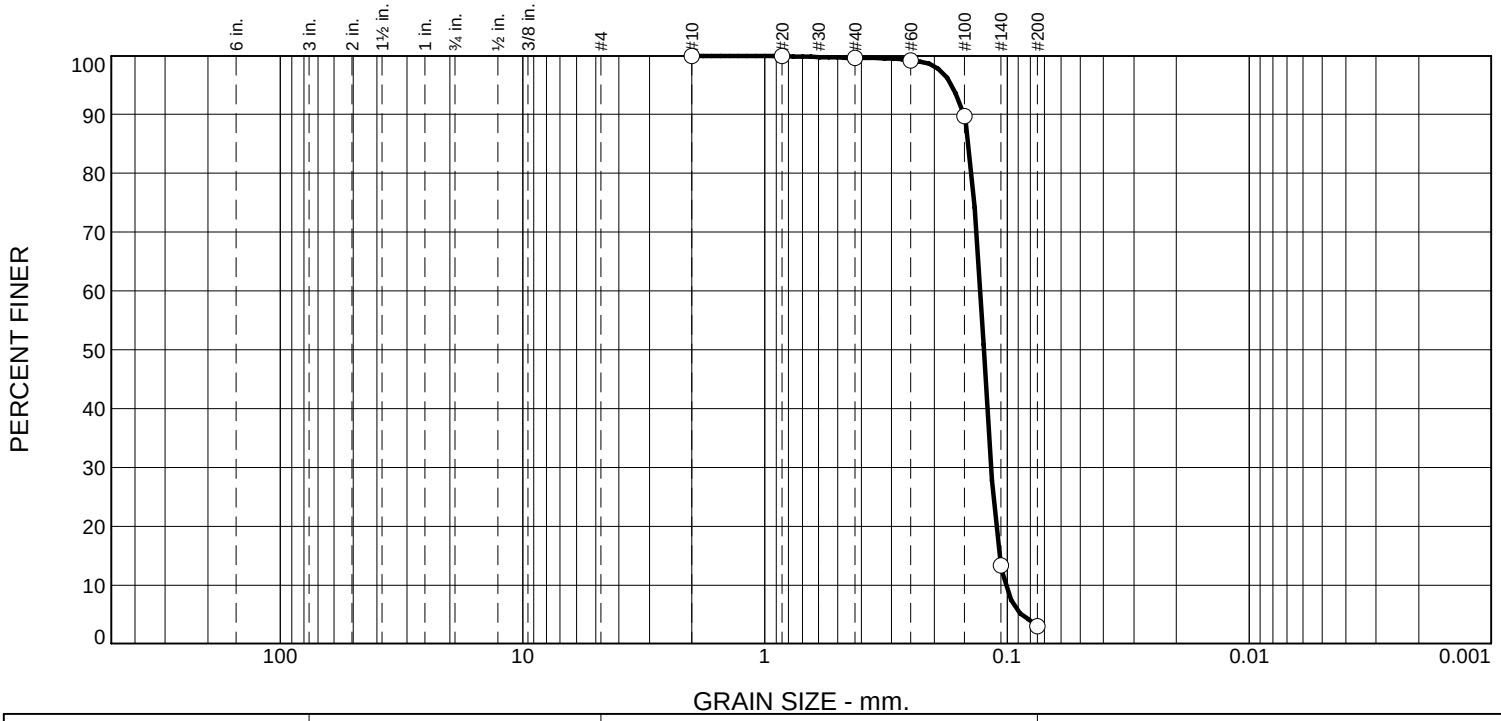
Source of Sample: PA23-1056S W-C
Sample Number: 8B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	96.6	3.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	99.2		
#100	89.8		
#140	13.3		
#200	3.0		

· (no specification provided)

Source of Sample: PA23-1056S W-C
Sample Number: 8C

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1506 D_{85}= 0.1436
D_{60}= 0.1292 D_{50}= 0.1249
D_{30}= 0.1163 D_{15}= 0.1077
D_{10}= 0.1014
C_u= 1.27 C_c= 1.03

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

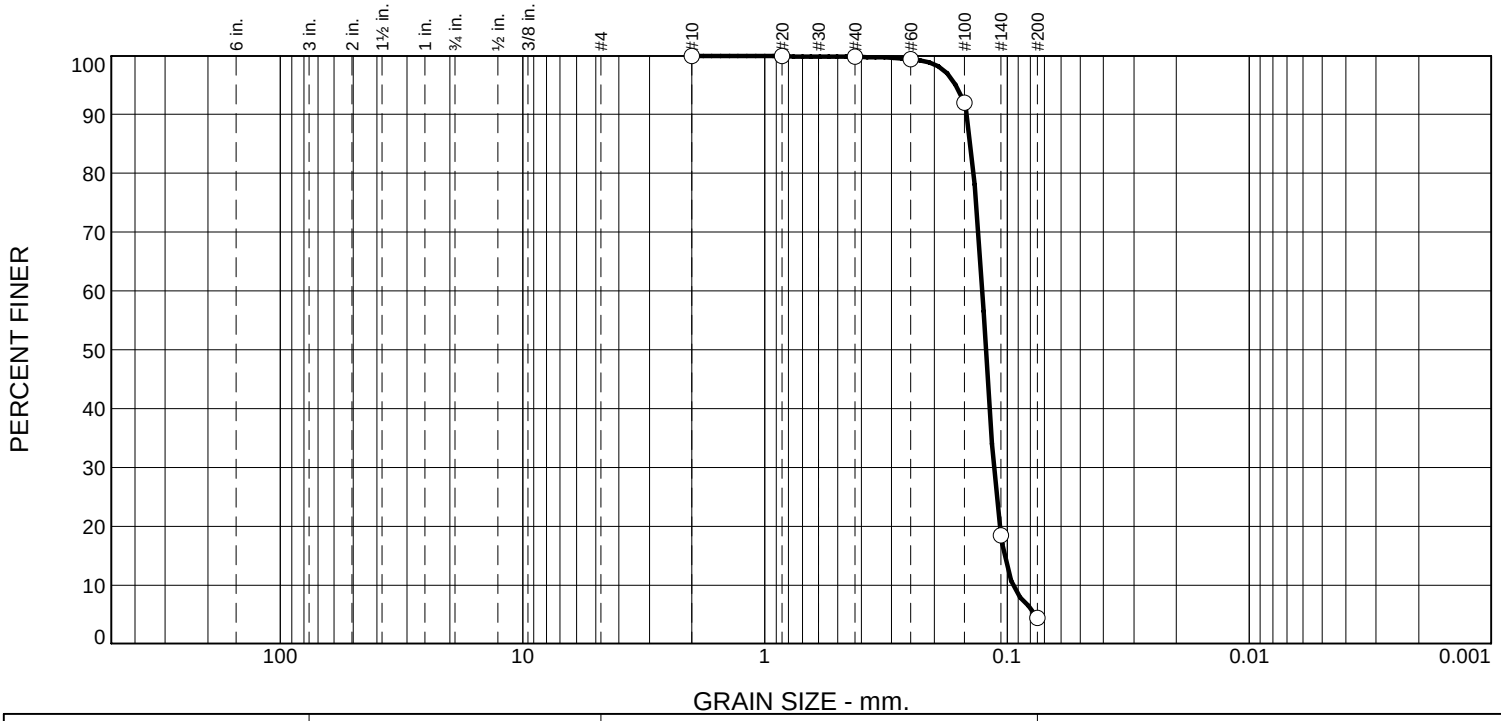
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	95.4	4.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.8		
#60	99.4		
#100	92.0		
#140	18.4		
#200	4.4		

· (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1460 D_{85}= 0.1409

D_{60}= 0.1268 D_{50}= 0.1224

D_{30}= 0.1132 D_{15}= 0.1025

D_{10}= 0.0949

C_u= 1.34 C_c= 1.07

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 8D

INSIGHT GROUP
A CHRISTOPHER COMPANY

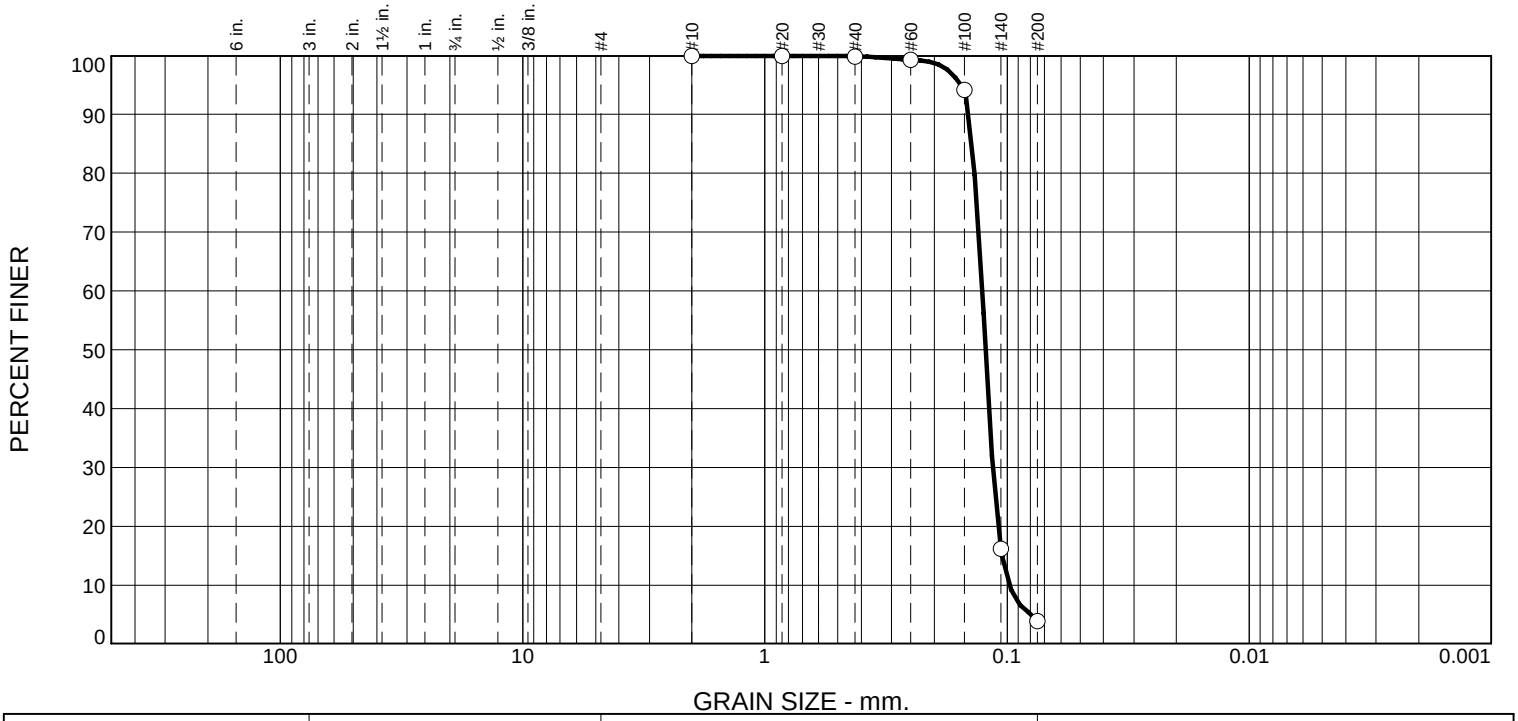
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	96.1	3.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.9		
#60	99.3		
#100	94.1		
#140	16.1		
#200	3.8		

* (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1434 D_{85}= 0.1394

D_{60}= 0.1268 D_{50}= 0.1227

D_{30}= 0.1143 D_{15}= 0.1048

D_{10}= 0.0979

C_u= 1.30 C_c= 1.05

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

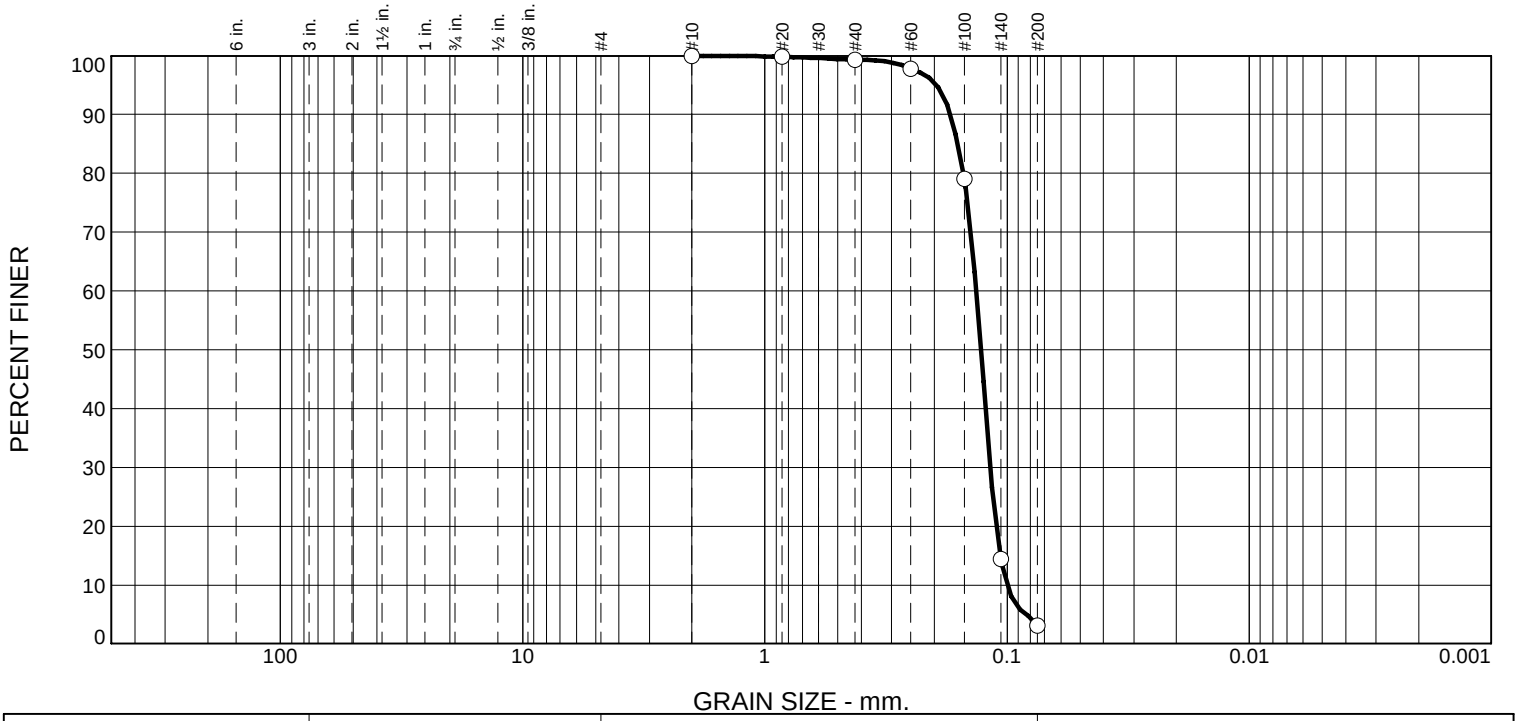
Source of Sample: PA23-1056S W-C
Sample Number: Comp 8

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	96.2	3.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.3		
#60	97.8		
#100	79.1		
#140	14.4		
#200	3.1		

· (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1717 D_{85}= 0.1597

D_{60}= 0.1341 D_{50}= 0.1283

D_{30}= 0.1172 D_{15}= 0.1067

D_{10}= 0.1000

C_u= 1.34 C_c= 1.02

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 9A

INSIGHT GROUP
A CHRISTOPHER COMPANY

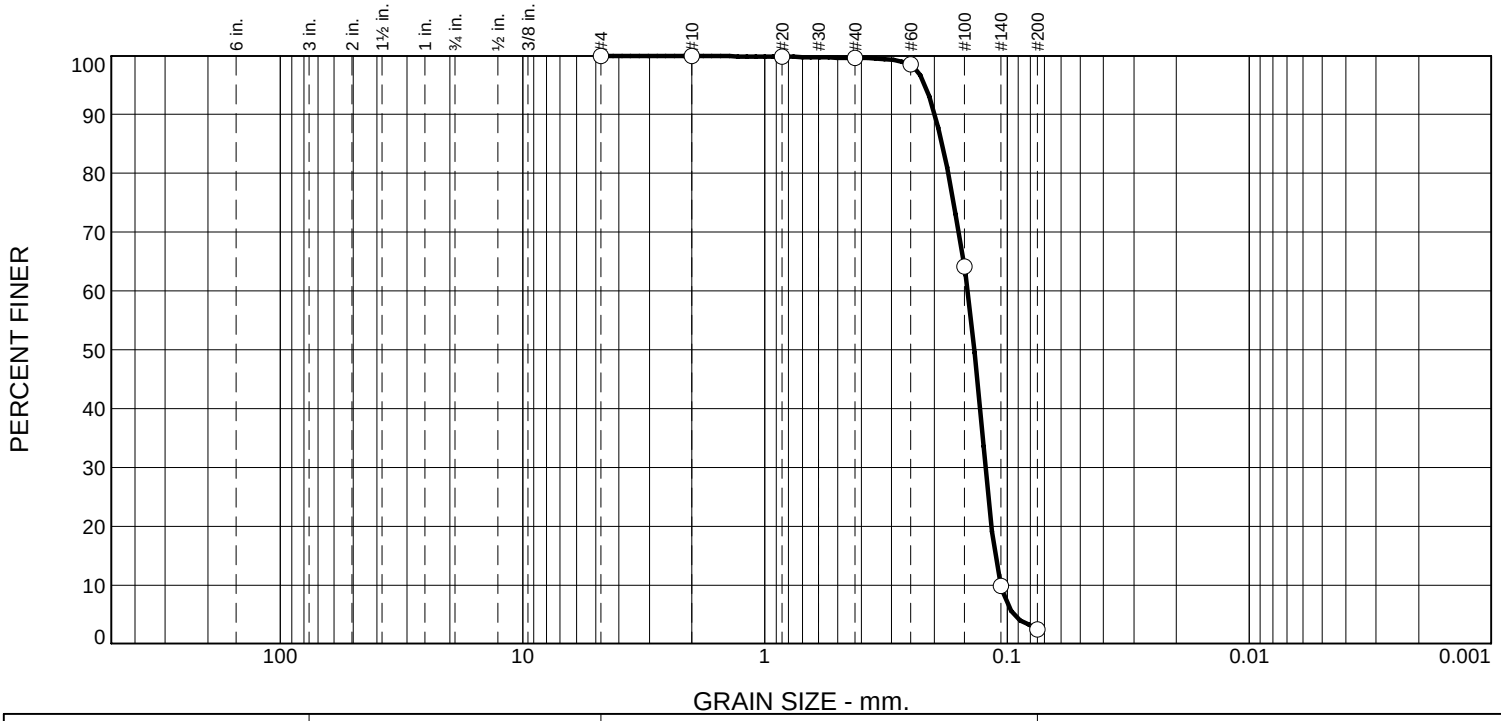
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.3	97.2	2.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.6		
#60	98.5		
#100	64.2		
#140	9.8		
#200	2.4		

* (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1990 D_{85}= 0.1858

D_{60}= 0.1452 D_{50}= 0.1366

D_{30}= 0.1229 D_{15}= 0.1119

D_{10}= 0.1063

C_u= 1.37 C_c= 0.98

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 9B

INSIGHT GROUP
A CHRISTOPHER COMPANY

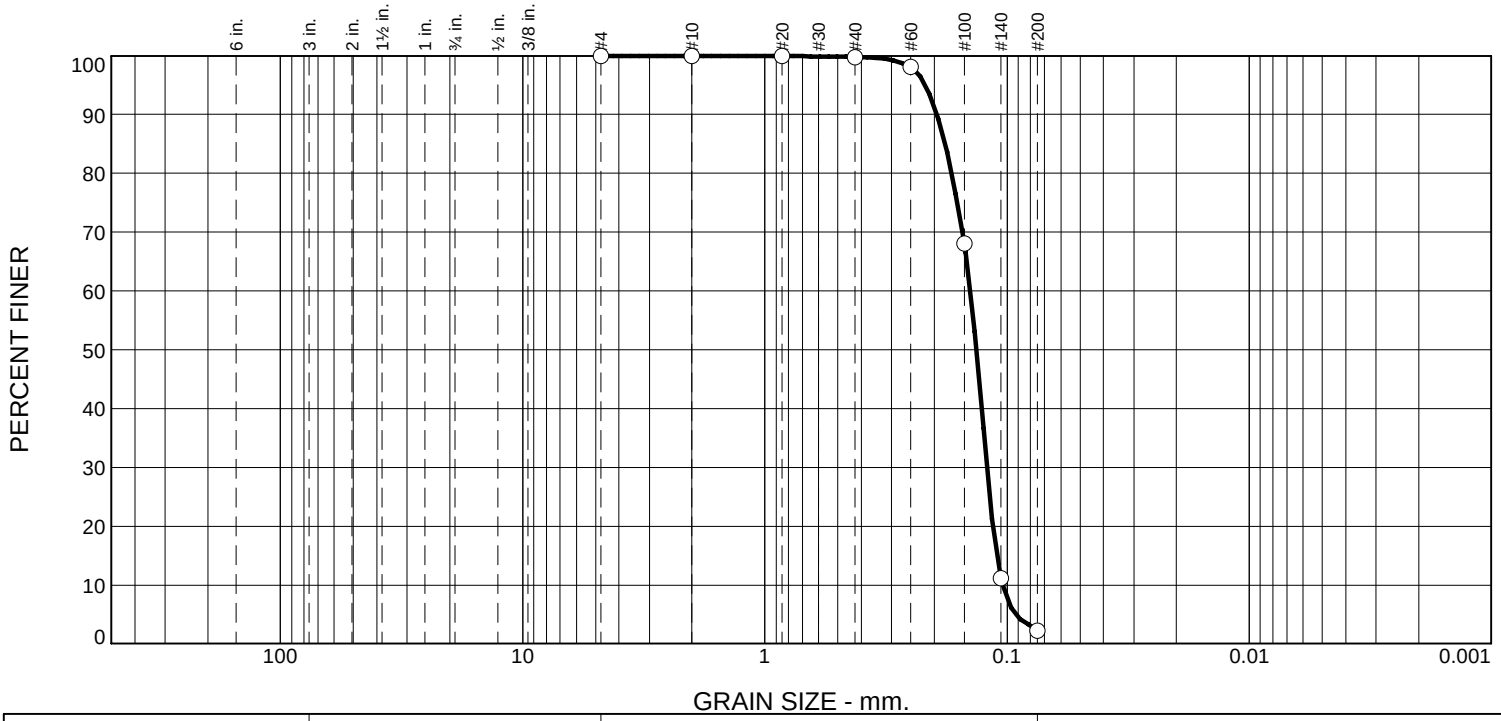
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.1	97.6	2.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.9		
#40	99.8		
#60	98.1		
#100	68.0		
#140	11.1		
#200	2.2		

· (no specification provided)

Material Description

Brown

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1950 D_{85}= 0.1805

D_{60}= 0.1416 D_{50}= 0.1340

D_{30}= 0.1210 D_{15}= 0.1102

D_{10}= 0.1043

C_u= 1.36 C_c= 0.99

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

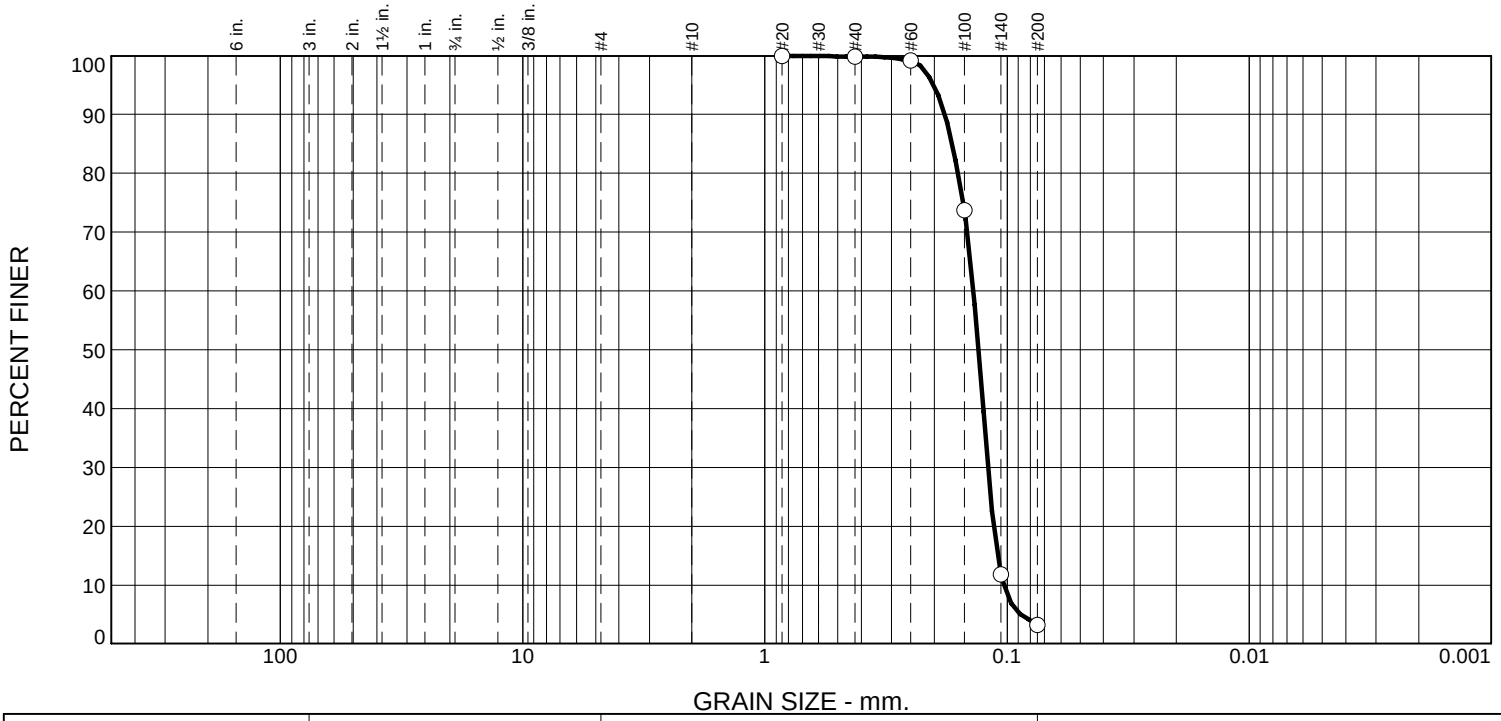
Source of Sample: PA23-1056S W-C
Sample Number: 9C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	96.7	3.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.2		
#100	73.8		
#140	11.8		
#200	3.2		

· (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1811 D_{85}= 0.1686

D_{60}= 0.1377 D_{50}= 0.1314

D_{30}= 0.1198 D_{15}= 0.1096

D_{10}= 0.1032

C_u= 1.34 C_c= 1.01

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 9D

INSIGHT GROUP
A CHRISTOPHER COMPANY

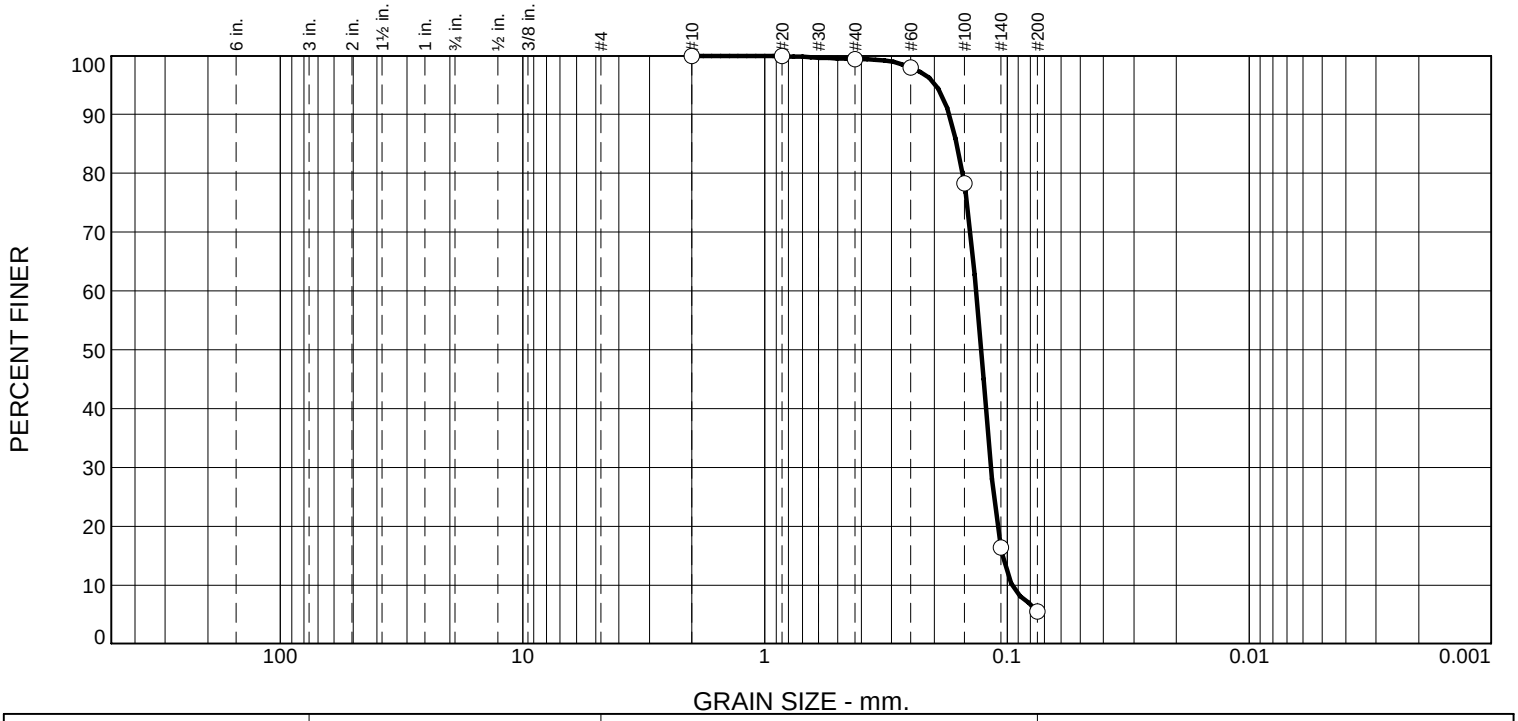
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	93.9	5.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.4		
#60	98.0		
#100	78.3		
#140	16.3		
#200	5.5		

· (no specification provided)

Material Description

Brown with Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1735 D_{85}= 0.1611

D_{60}= 0.1343 D_{50}= 0.1281

D_{30}= 0.1165 D_{15}= 0.1044

D_{10}= 0.0956

C_u= 1.40 C_c= 1.06

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 9E

INSIGHT GROUP
A CHRISTOPHER COMPANY

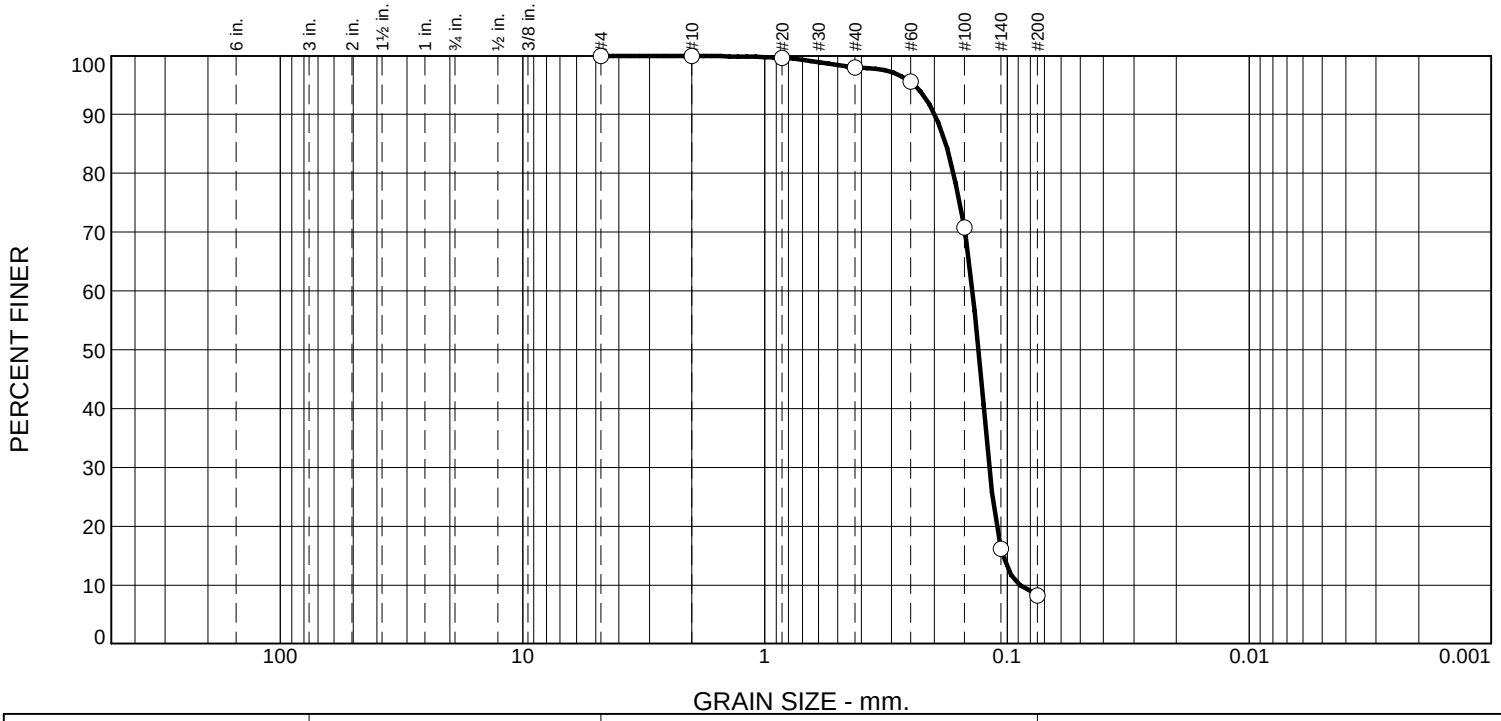
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.9	89.8	8.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.0		
#60	95.6		
#100	70.8		
#140	16.2		
#200	8.2		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1989 D_{85}= 0.1794

D_{60}= 0.1389 D_{50}= 0.1315

D_{30}= 0.1182 D_{15}= 0.1040

D_{10}= 0.0889

C_u= 1.56 C_c= 1.13

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C

Sample Number: 9F

INSIGHT GROUP
A CHRISTOPHER COMPANY

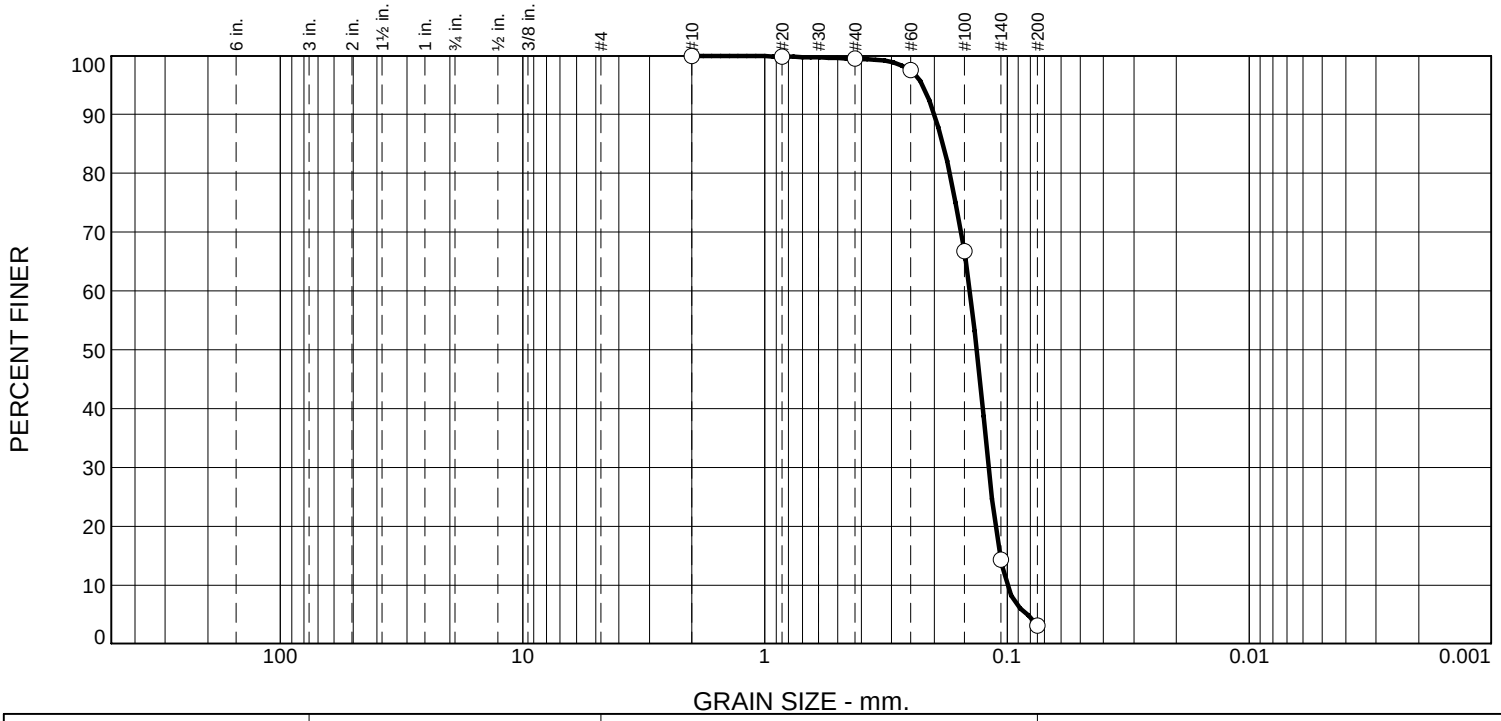
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	96.4	3.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.5		
#60	97.6		
#100	66.7		
#140	14.3		
#200	3.1		

· (no specification provided)

Material Description

Light Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1996 D_{85}= 0.1844

D_{60}= 0.1422 D_{50}= 0.1336

D_{30}= 0.1191 D_{15}= 0.1068

D_{10}= 0.1000

C_u= 1.42 C_c= 1.00

Sieve Test (ASTM D6913)

Test Date: 3/8/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/2/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1056S W-C
Sample Number: Comp 9

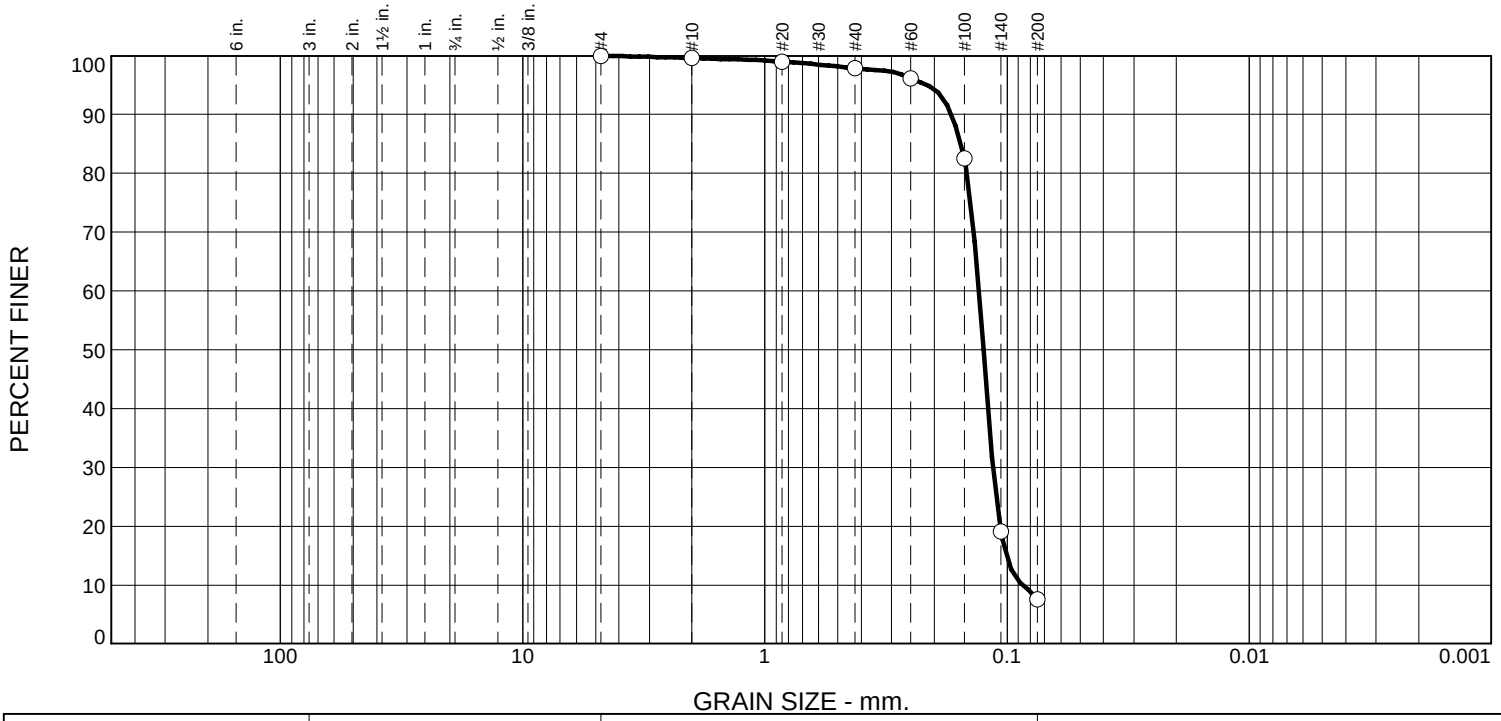
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	1.8	90.2	7.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.6		
#20	99.0		
#40	97.8		
#60	96.2		
#100	82.6		
#140	19.1		
#200	7.6		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1698 D_{85}= 0.1550

D_{60}= 0.1309 D_{50}= 0.1253

D_{30}= 0.1142 D_{15}= 0.1006

D_{10}= 0.0866

C_u= 1.51 C_c= 1.15

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

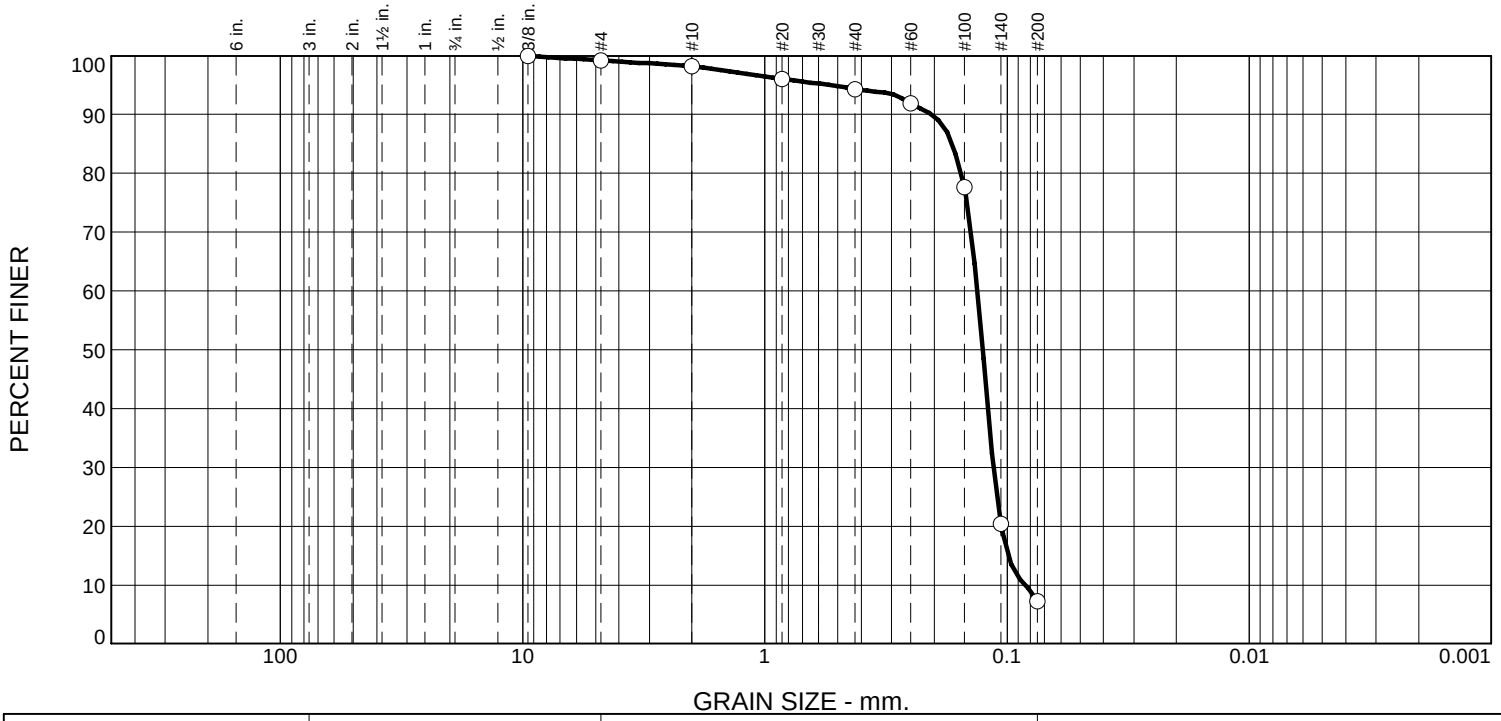
Source of Sample: PA23-1088S W-C
Sample Number: 1A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	1.0	3.9	87.0	7.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.2		
#10	98.2		
#20	96.1		
#40	94.3		
#60	91.9		
#100	77.6		
#140	20.4		
#200	7.3		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2042 D_{85}= 0.1685

D_{60}= 0.1328 D_{50}= 0.1262

D_{30}= 0.1137 D_{15}= 0.0990

D_{10}= 0.0841

C_u= 1.58 C_c= 1.16

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 1B

INSIGHT GROUP
A CHRISTOPHER COMPANY

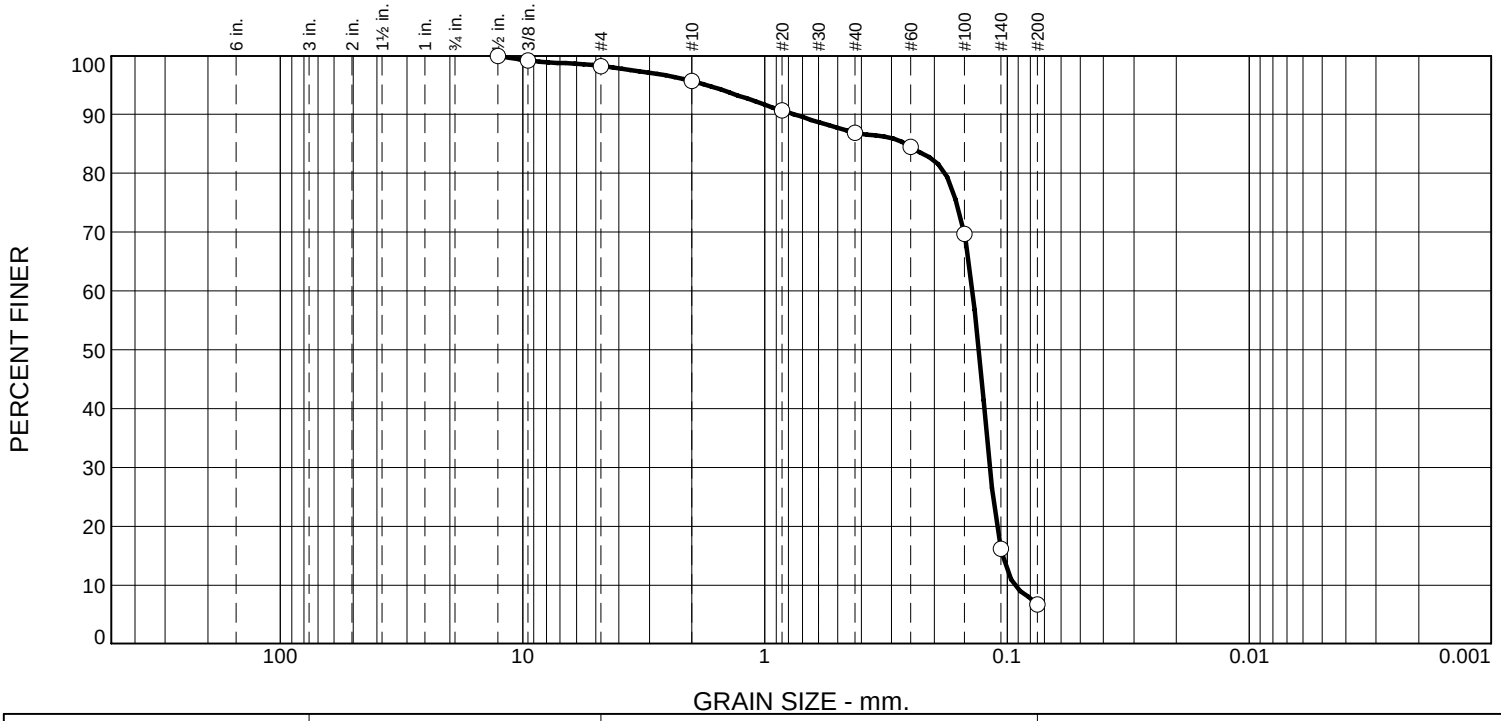
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.8	2.5	8.8	80.3	6.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	99.2		
#4	98.2		
#10	95.7		
#20	90.7		
#40	86.9		
#60	84.5		
#100	69.7		
#140	16.2		
#200	6.6		

· (no specification provided)

Material Description

Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7504 D_{85}= 0.2614

D_{60}= 0.1388 D_{50}= 0.1311

D_{30}= 0.1177 D_{15}= 0.1043

D_{10}= 0.0935

C_u= 1.48 C_c= 1.07

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 1C

INSIGHT GROUP
A CHRISTOPHER COMPANY

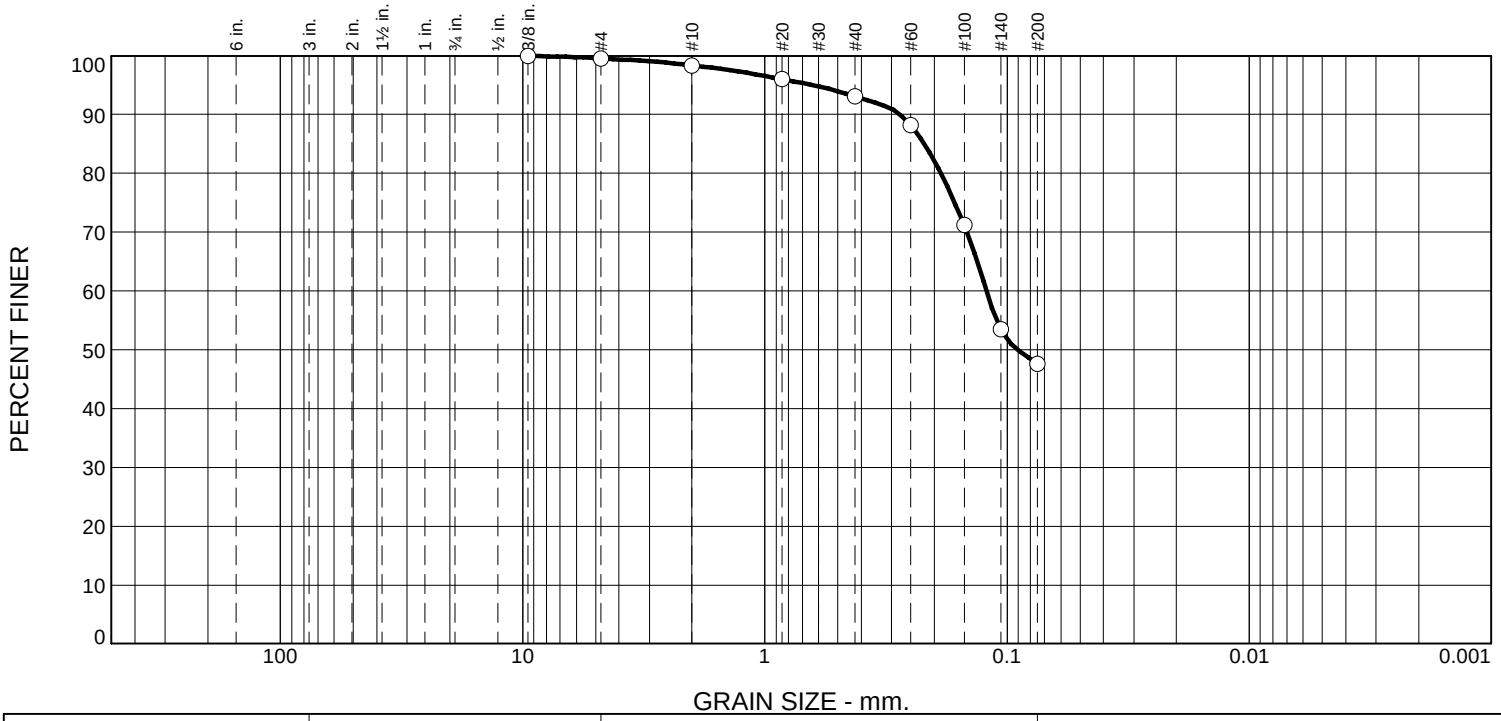
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	1.2	5.3	45.5	47.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.6		
#10	98.4		
#20	96.0		
#40	93.1		
#60	88.2		
#100	71.2		
#140	53.5		
#200	47.6		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2767 D_{85}= 0.2196

D_{60}= 0.1217 D_{50}= 0.0905

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 1D

INSIGHT GROUP
A CHRISTOPHER COMPANY

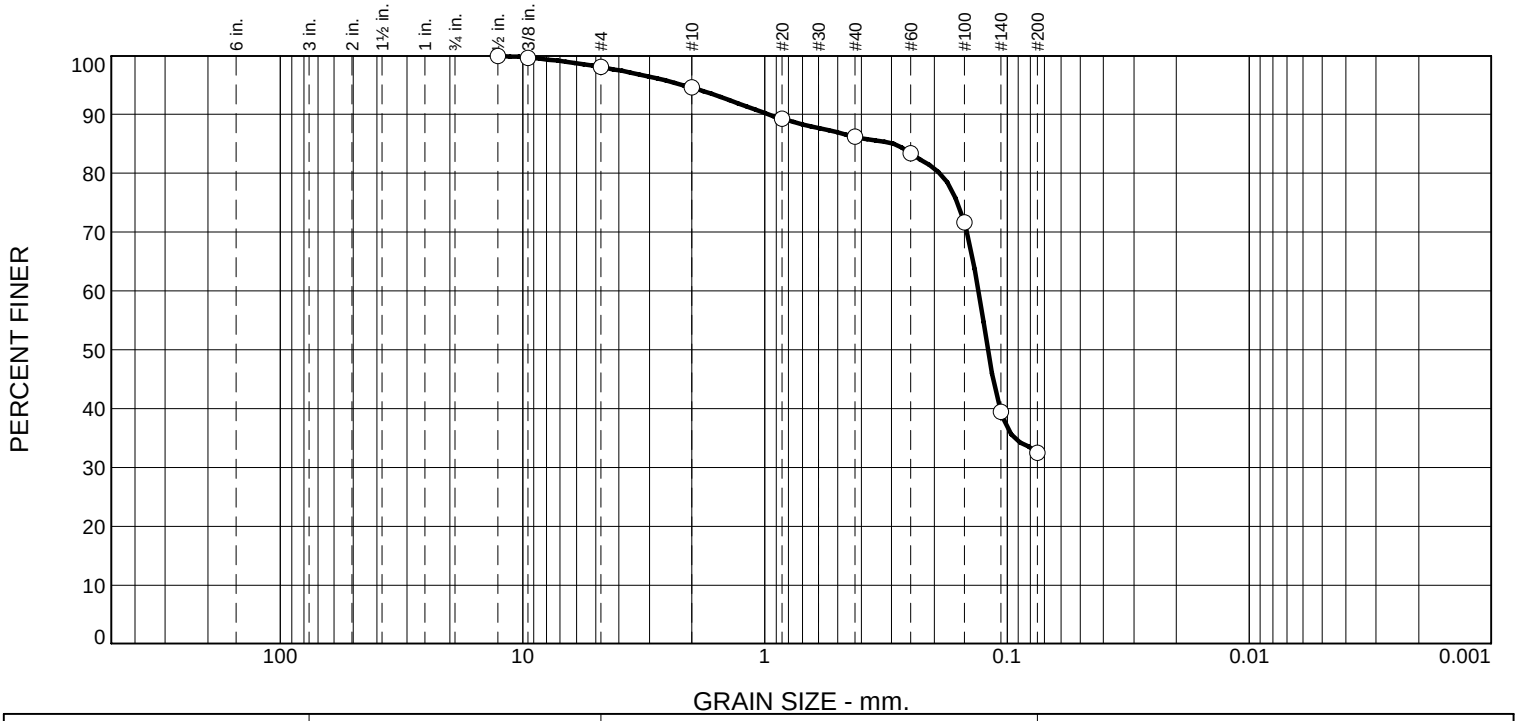
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.9	3.5	8.4	53.8	32.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	99.7		
#4	98.1		
#10	94.6		
#20	89.3		
#40	86.2		
#60	83.4		
#100	71.7		
#140	39.4		
#200	32.4		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.9619 D_{85}= 0.2948

D_{60}= 0.1314 D_{50}= 0.1199

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 1E

INSIGHT GROUP
A CHRISTOPHER COMPANY

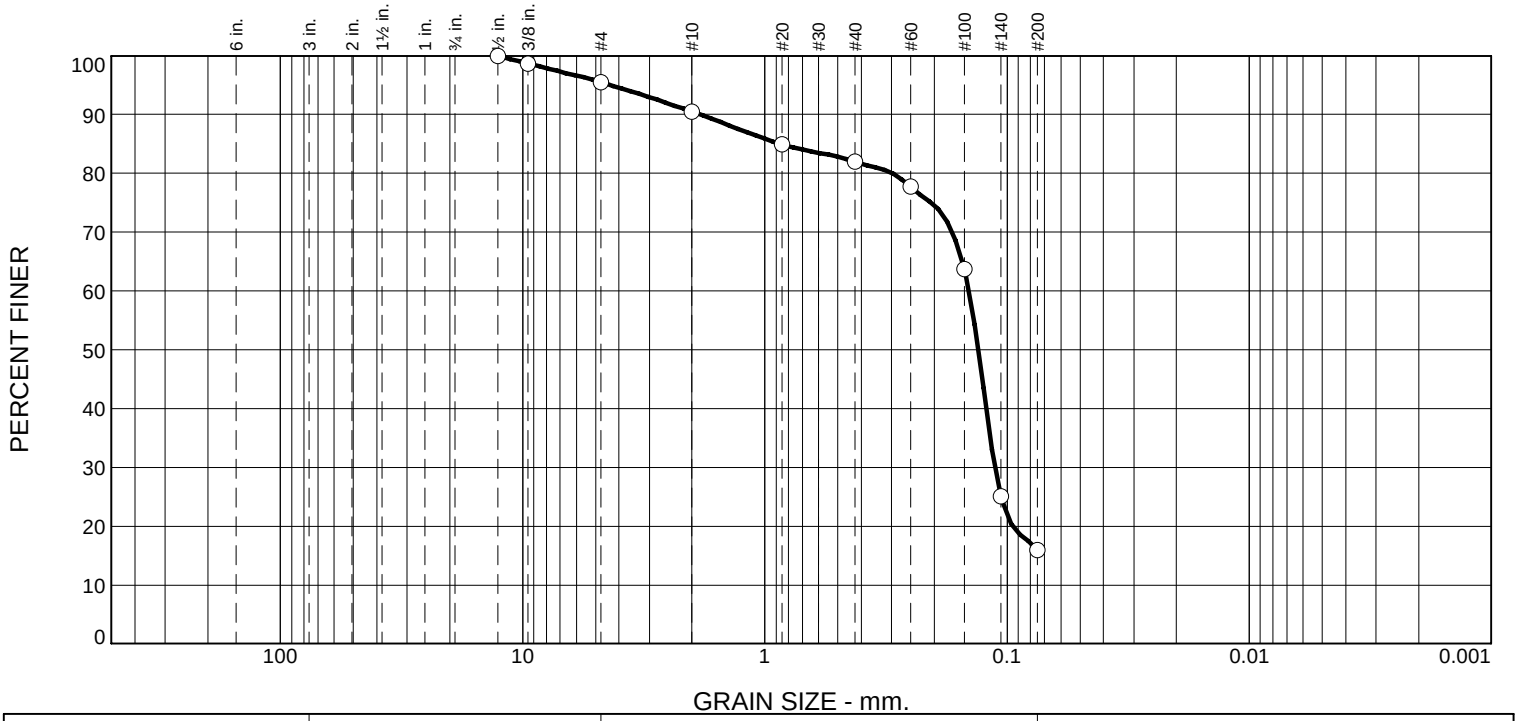
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.5	5.0	8.5	66.1	15.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	98.7		
#4	95.5		
#10	90.5		
#20	84.9		
#40	82.0		
#60	77.7		
#100	63.7		
#140	25.1		
#200	15.9		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 1.8502 D_{85}= 0.8652
D_{60}= 0.1435 D_{50}= 0.1316
D_{30}= 0.1121 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

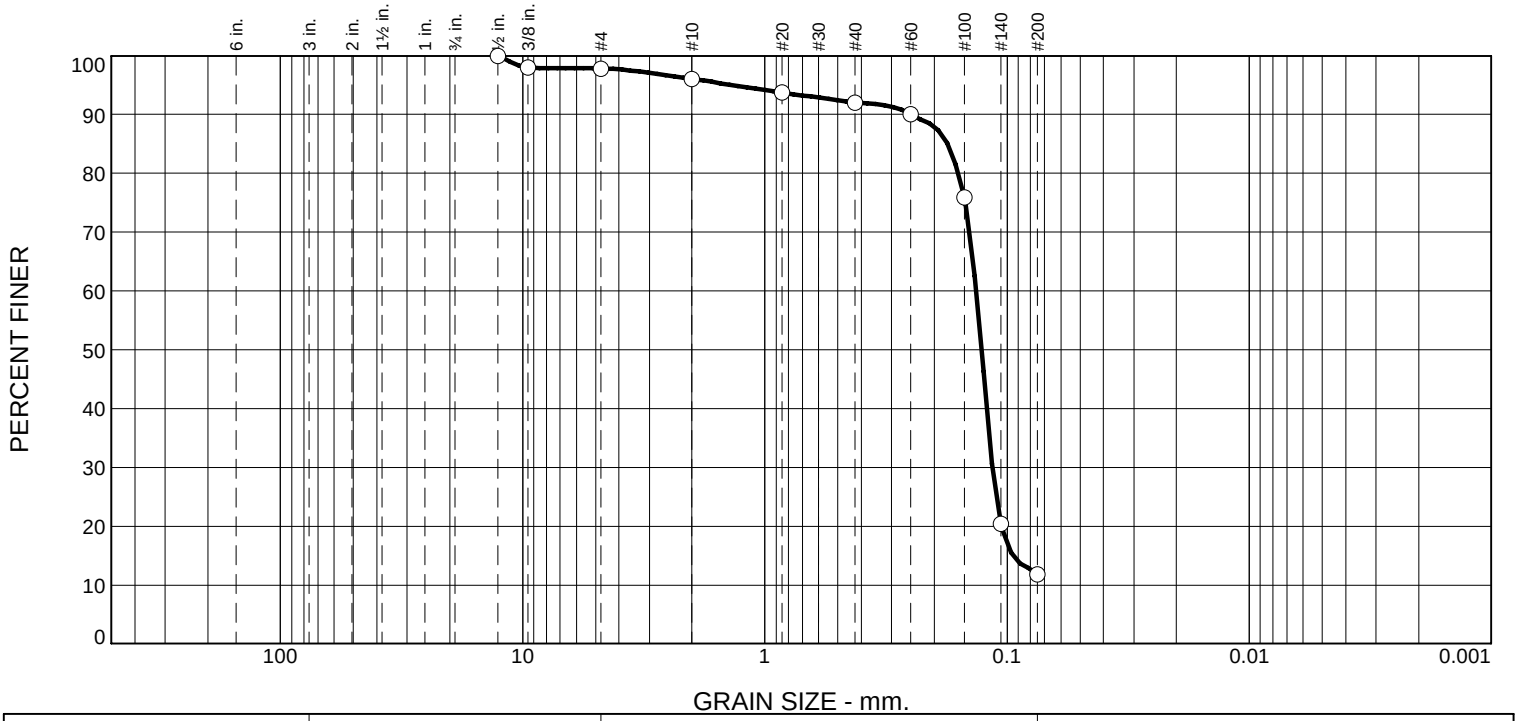
Source of Sample: PA23-1088S W-C
Sample Number: 1F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.2	1.8	3.9	80.3	11.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	98.0		
#4	97.8		
#10	96.0		
#20	93.7		
#40	92.1		
#60	90.0		
#100	75.9		
#140	20.4		
#200	11.8		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2497 D_{85}= 0.1763
D_{60}= 0.1342 D_{50}= 0.1276
D_{30}= 0.1148 D_{15}= 0.0946
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Source of Sample: PA23-1088S W-C
Sample Number: 1 Comp

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

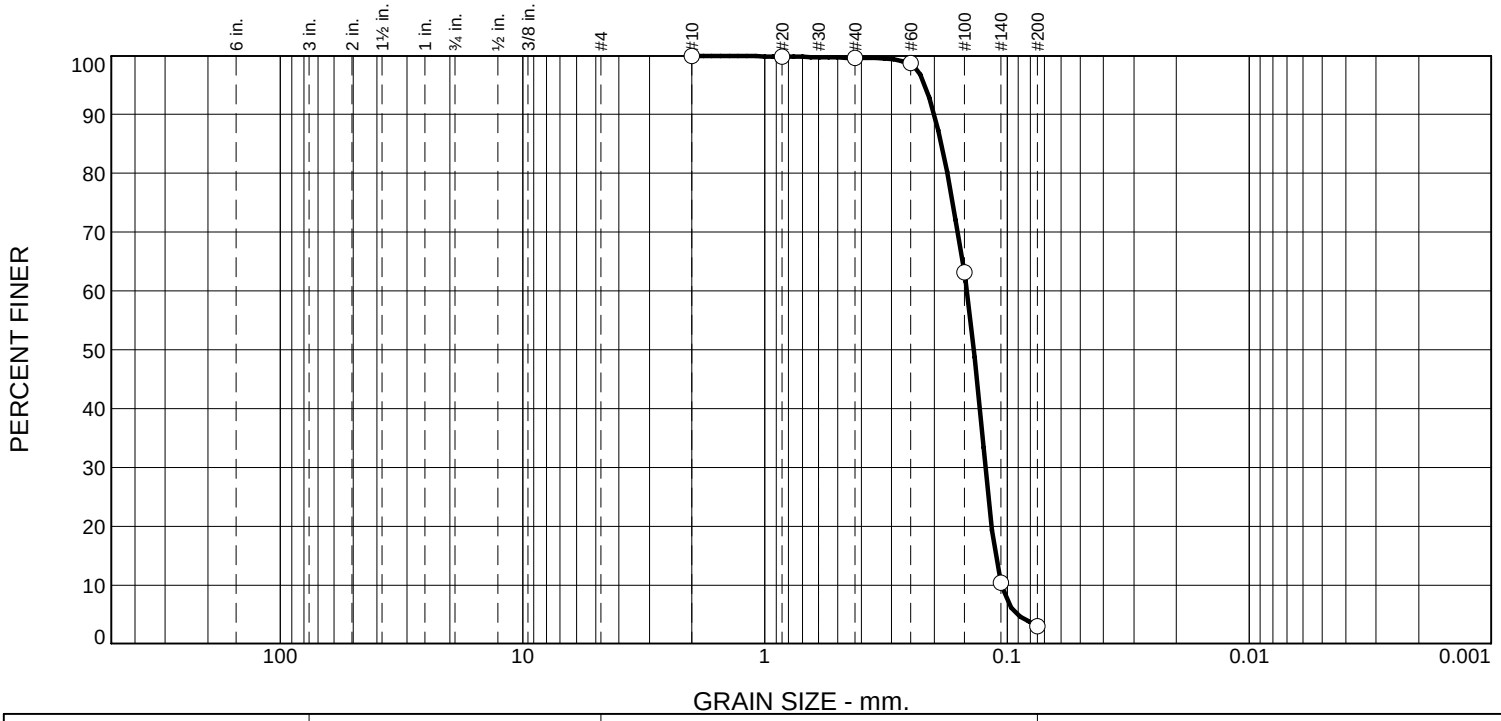
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	96.7	3.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.7		
#60	98.8		
#100	63.1		
#140	10.4		
#200	3.0		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1999 D_{85}= 0.1872

D_{60}= 0.1462 D_{50}= 0.1372

D_{30}= 0.1230 D_{15}= 0.1115

D_{10}= 0.1054

C_u= 1.39 C_c= 0.98

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C
Sample Number: 10A

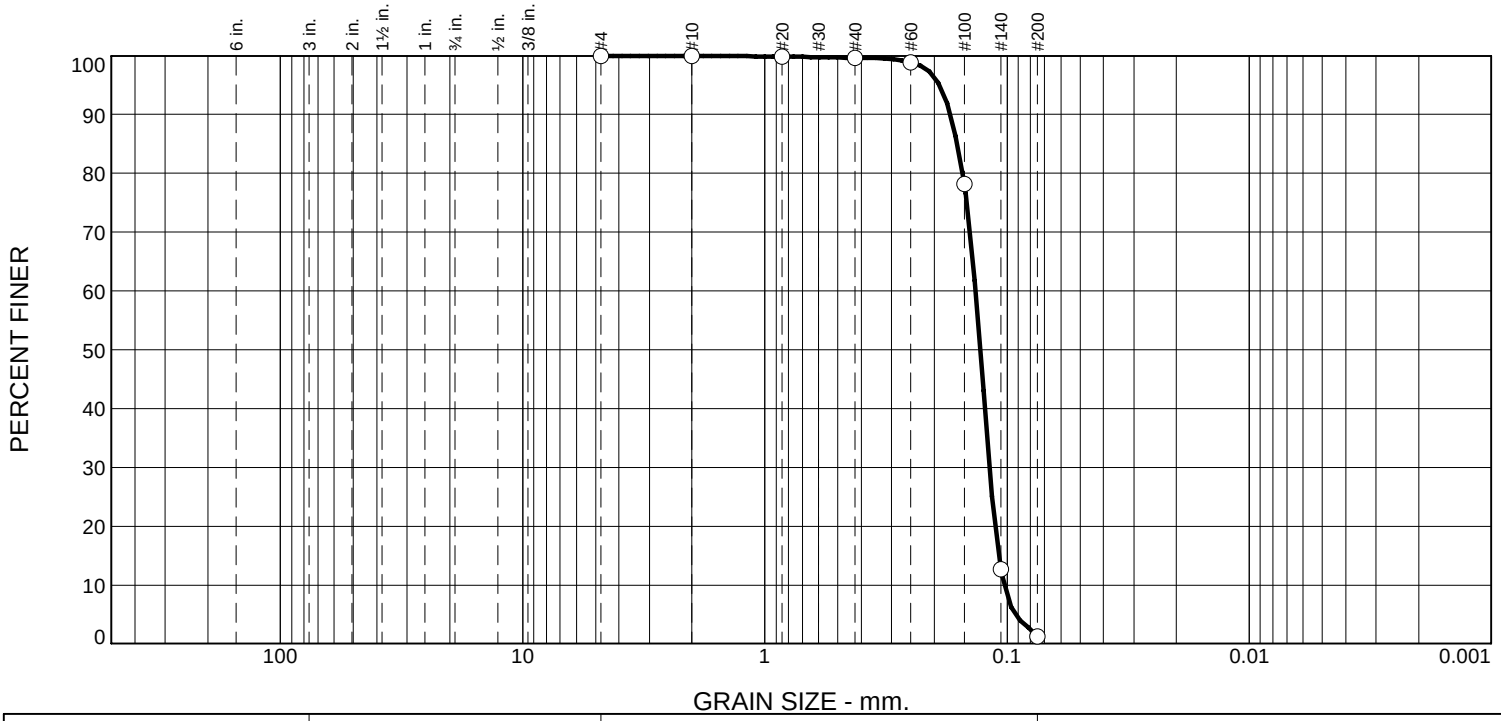
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.2	98.5	1.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.9		
#40	99.7		
#60	98.8		
#100	78.2		
#140	12.7		
#200	1.2		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1716 D_{85}= 0.1605
D_{60}= 0.1350 D_{50}= 0.1291
D_{30}= 0.1181 D_{15}= 0.1083
D_{10}= 0.1027
C_u= 1.31 C_c= 1.01

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

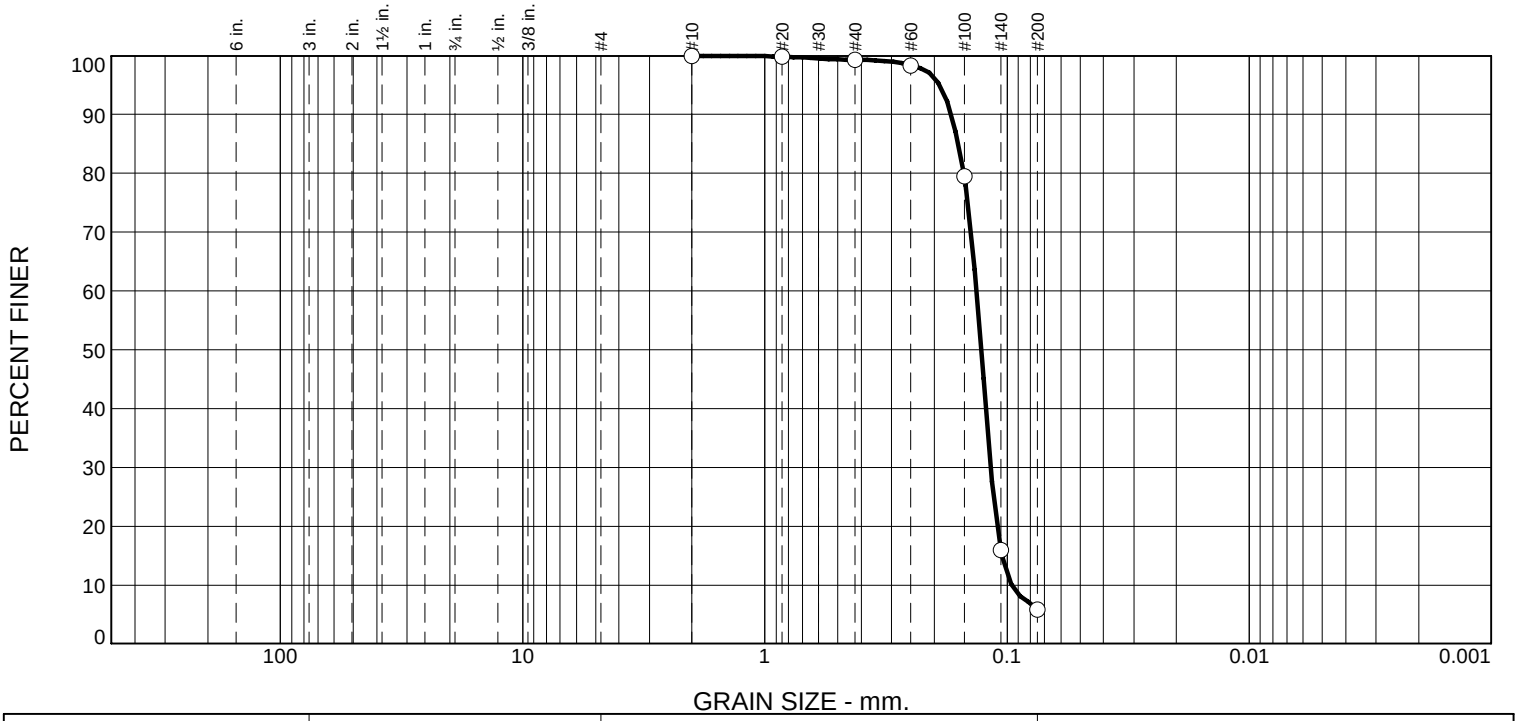
Source of Sample: PA23-1088S W-C
Sample Number: 10B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	93.5	5.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.3		
#60	98.3		
#100	79.5		
#140	15.9		
#200	5.8		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1700 D_{85}= 0.1587
D_{60}= 0.1339 D_{50}= 0.1280
D_{30}= 0.1167 D_{15}= 0.1048
D_{10}= 0.0958
C_u= 1.40 C_c= 1.06

USCS (ASTM D2487)

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

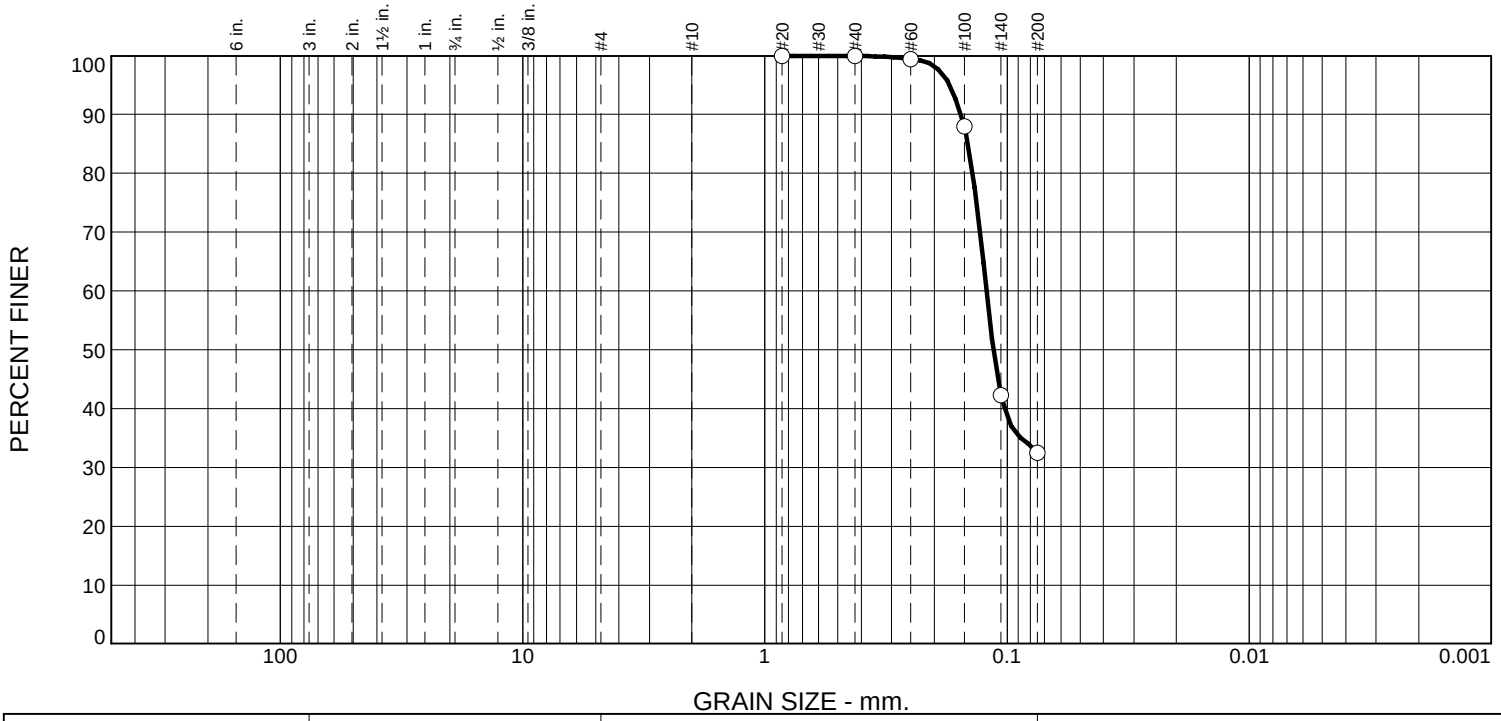
Source of Sample: PA23-1088S W-C
Sample Number: 10C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	67.5	32.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.4		
#100	88.0		
#140	42.3		
#200	32.4		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1550 D_{85}= 0.1448
D_{60}= 0.1217 D_{50}= 0.1137
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/6/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

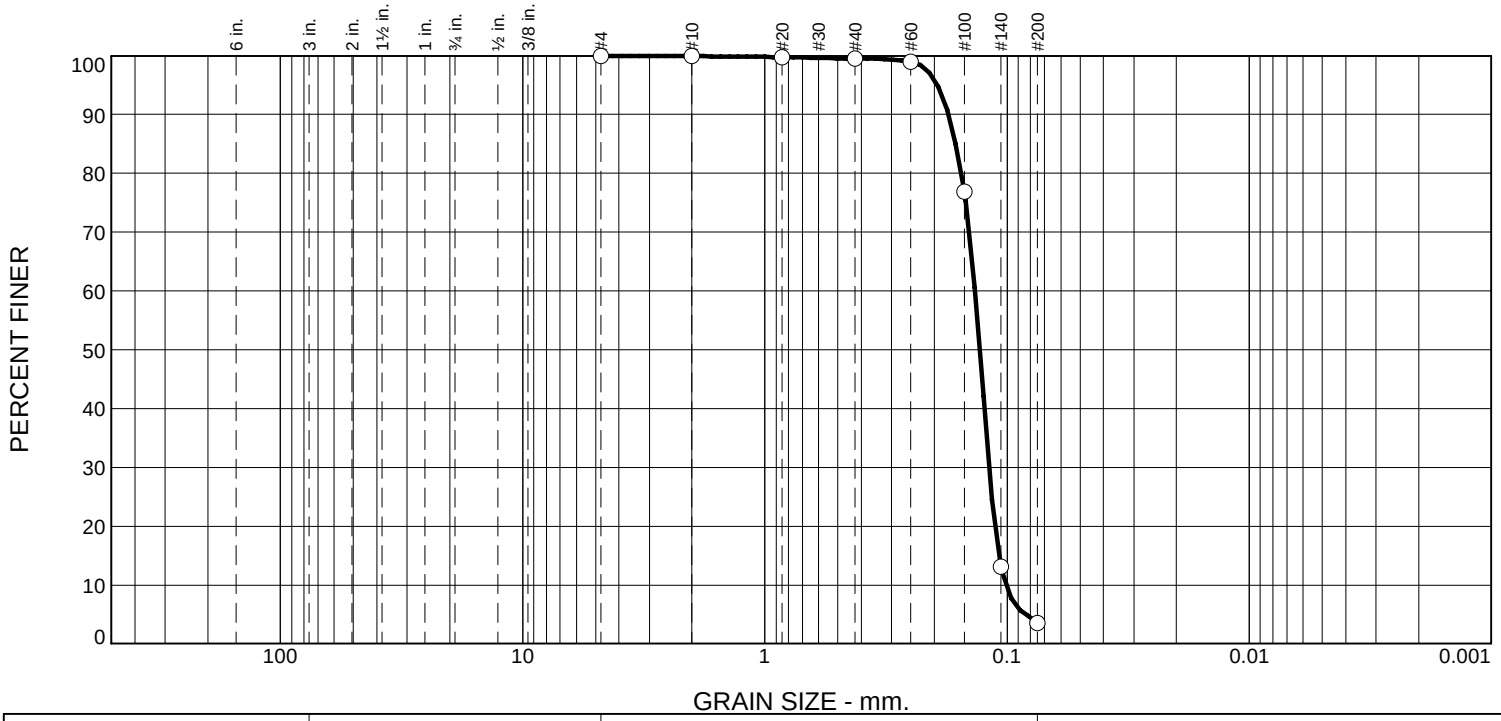
Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1088S W-C
Sample Number: 10D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.4	95.9	3.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.5		
#60	98.9		
#100	76.9		
#140	13.1		
#200	3.6		

* (no specification provided)

Source of Sample: PA23-1088S W-C
Sample Number: 10 Comp

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1747 D_{85}= 0.1630
D_{60}= 0.1357 D_{50}= 0.1297
D_{30}= 0.1185 D_{15}= 0.1081
D_{10}= 0.1012
C_u= 1.34 C_c= 1.02

USCS (ASTM D2487)

SP

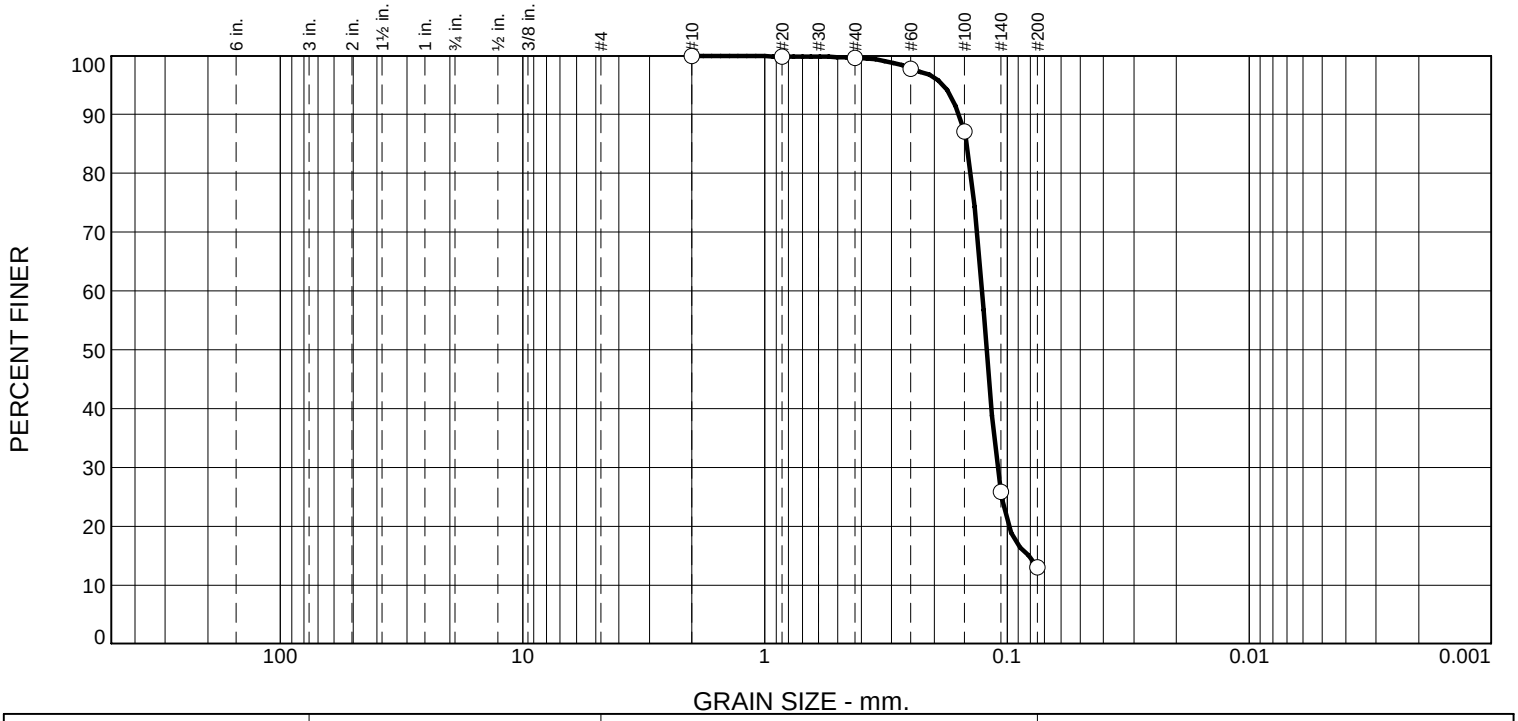
Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	86.7	13.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.7		
#60	97.8		
#100	87.1		
#140	25.8		
#200	13.0		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1580 D_{85}= 0.1463

D_{60}= 0.1271 D_{50}= 0.1215

D_{30}= 0.1095 D_{15}= 0.0814

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C
Sample Number: 2A

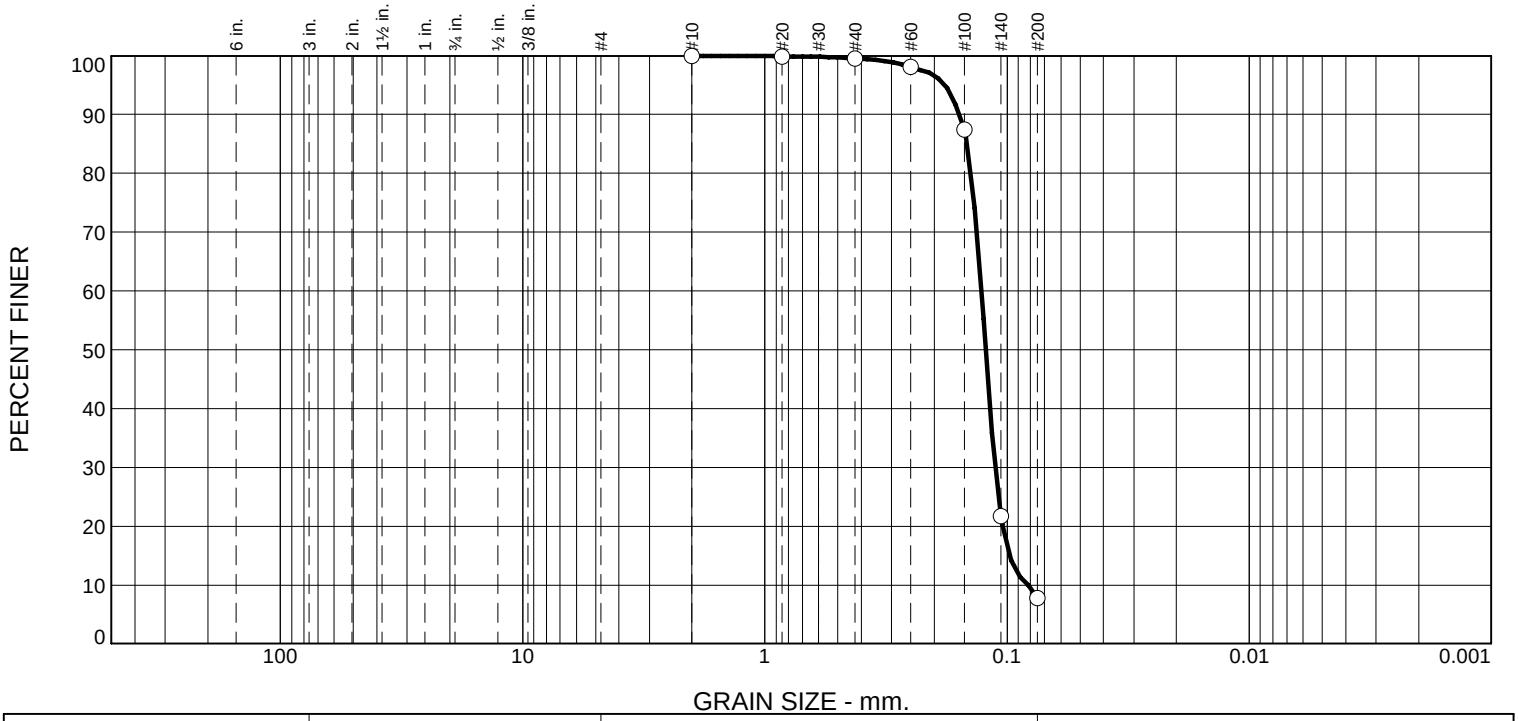
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	91.8	7.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.5		
#60	98.1		
#100	87.4		
#140	21.7		
#200	7.7		

· (no specification provided)

Material Description

Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1570 D_{85}= 0.1459

D_{60}= 0.1278 D_{50}= 0.1225

D_{30}= 0.1119 D_{15}= 0.0979

D_{10}= 0.0817

C_u= 1.56 C_c= 1.20

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 2B

INSIGHT GROUP
A CHRISTOPHER COMPANY

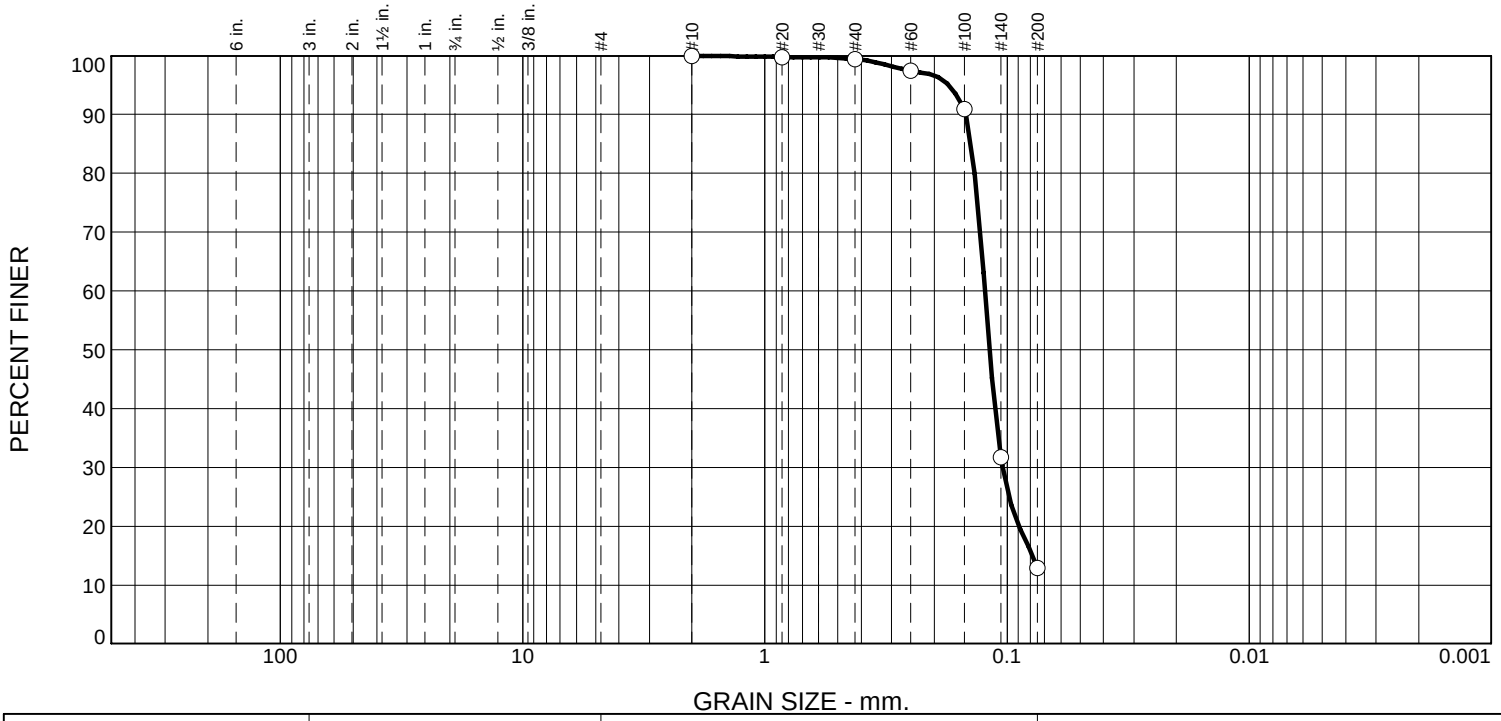
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	86.6	12.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.5		
#60	97.4		
#100	90.9		
#140	31.7		
#200	12.9		

* (no specification provided)

Source of Sample: PA23-1088S W-C
Sample Number: 2C

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1475 D_{85}= 0.1406
D_{60}= 0.1235 D_{50}= 0.1180
D_{30}= 0.1043 D_{15}= 0.0783
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

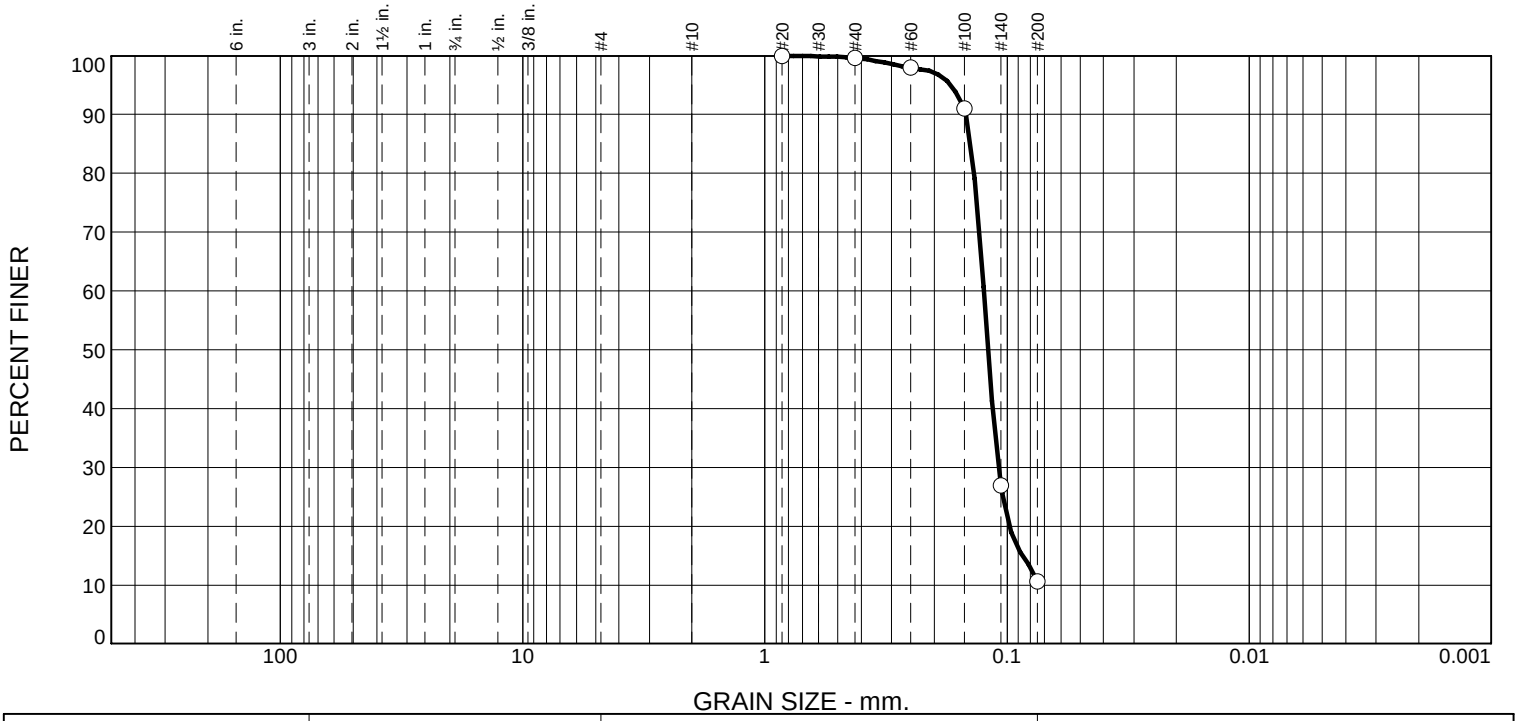
Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	89.0	10.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.6		
#60	98.0		
#100	91.0		
#140	27.0		
#200	10.6		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1473 D_{85}= 0.1410
D_{60}= 0.1249 D_{50}= 0.1198
D_{30}= 0.1084 D_{15}= 0.0865
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

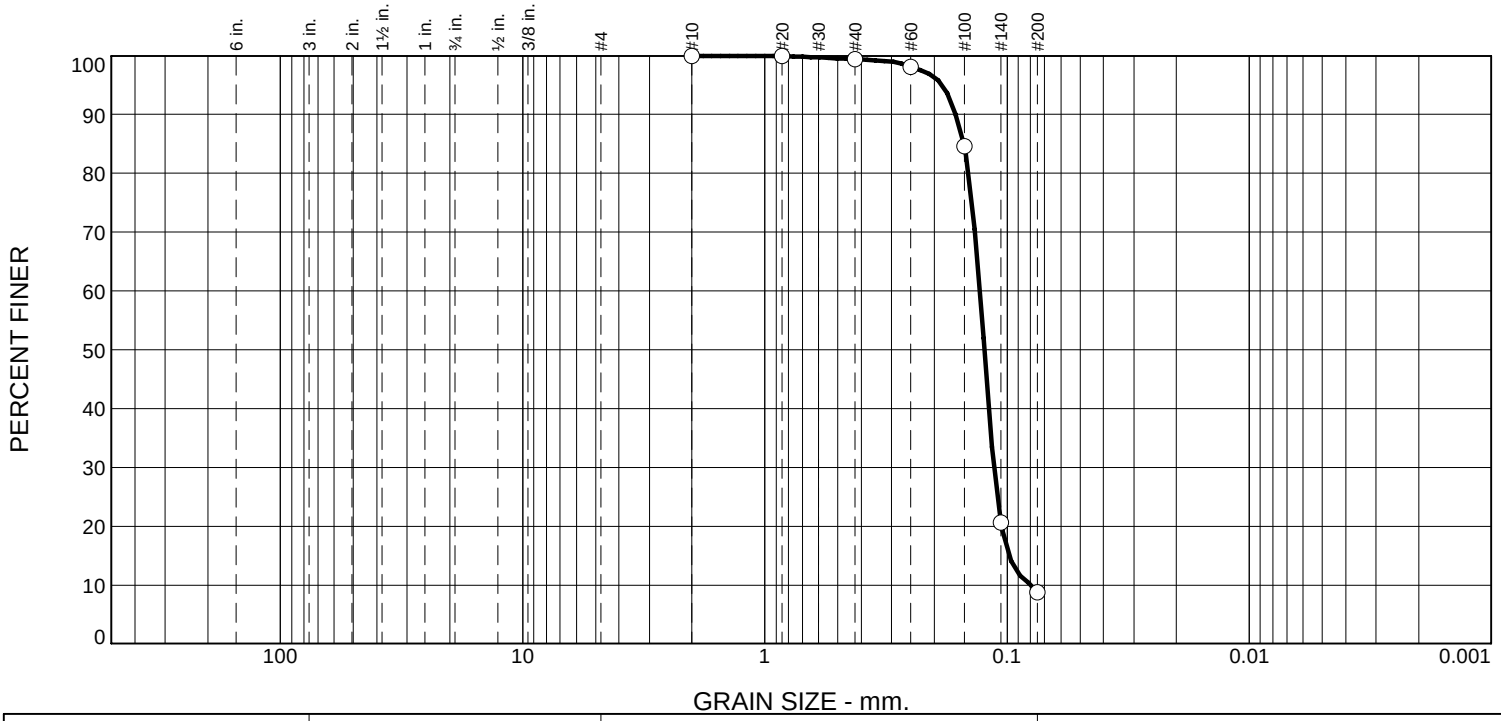
Source of Sample: PA23-1088S W-C
Sample Number: 2D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	90.7	8.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.4		
#60	98.1		
#100	84.6		
#140	20.6		
#200	8.7		

· (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1628 D_{85}= 0.1507

D_{60}= 0.1297 D_{50}= 0.1242

D_{30}= 0.1131 D_{15}= 0.0983

D_{10}= 0.0792

C_u= 1.64 C_c= 1.25

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 2E

INSIGHT GROUP
A CHRISTOPHER COMPANY

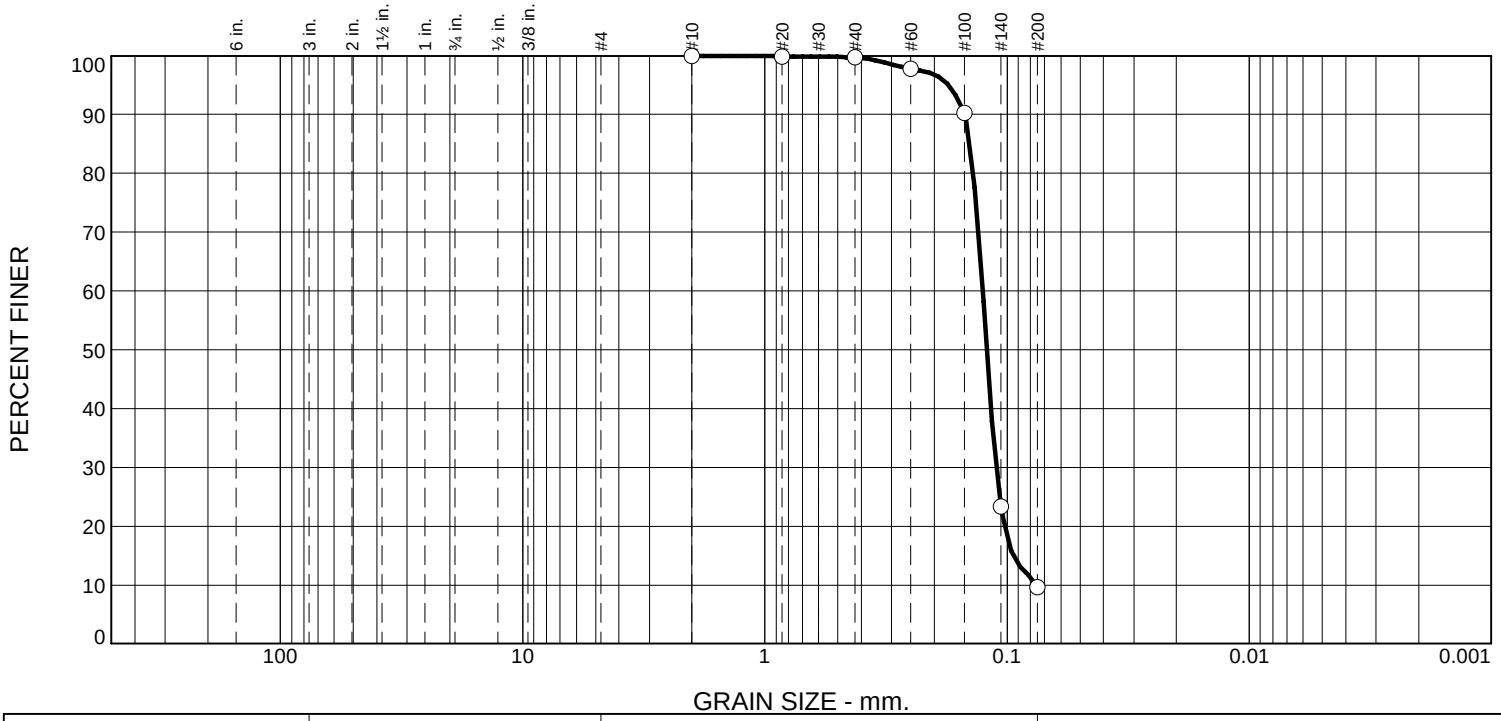
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	90.1	9.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.7		
#60	97.7		
#100	90.3		
#140	23.3		
#200	9.6		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1491 D_{85}= 0.1421
D_{60}= 0.1262 D_{50}= 0.1213
D_{30}= 0.1108 D_{15}= 0.0945
D_{10}= 0.0758
C_u= 1.66 C_c= 1.28

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

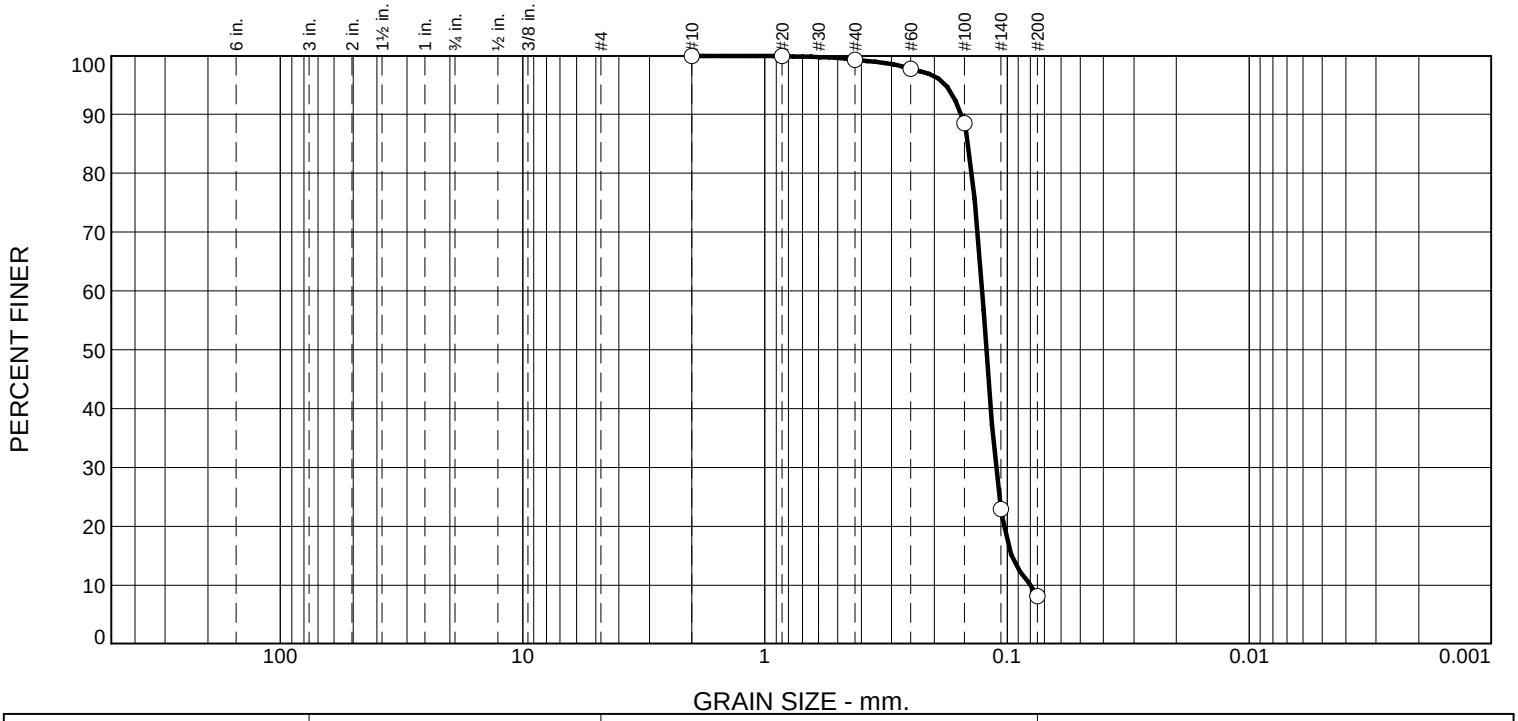
Source of Sample: PA23-1088S W-C
Sample Number: 2F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	91.2	8.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.3		
#60	97.8		
#100	88.5		
#140	22.9		
#200	8.1		

· (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1544 D_{85}= 0.1442

D_{60}= 0.1269 D_{50}= 0.1218

D_{30}= 0.1111 D_{15}= 0.0960

D_{10}= 0.0796

C_u= 1.60 C_c= 1.22

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

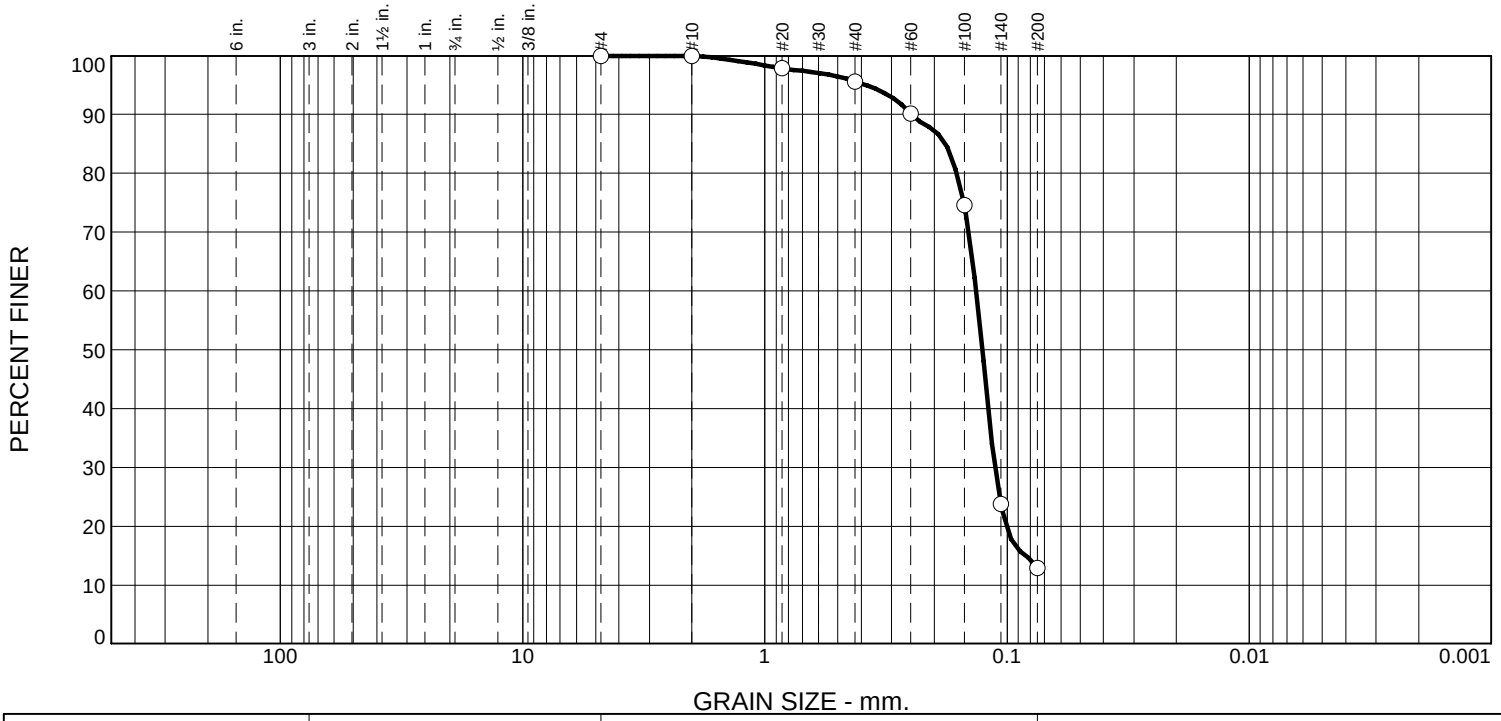
Source of Sample: PA23-1088S W-C
Sample Number: 2 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	4.3	82.7	12.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	97.9		
#40	95.6		
#60	90.2		
#100	74.6		
#140	23.7		
#200	12.9		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2475 D_{85}= 0.1801

D_{60}= 0.1343 D_{50}= 0.1267

D_{30}= 0.1120 D_{15}= 0.0842

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

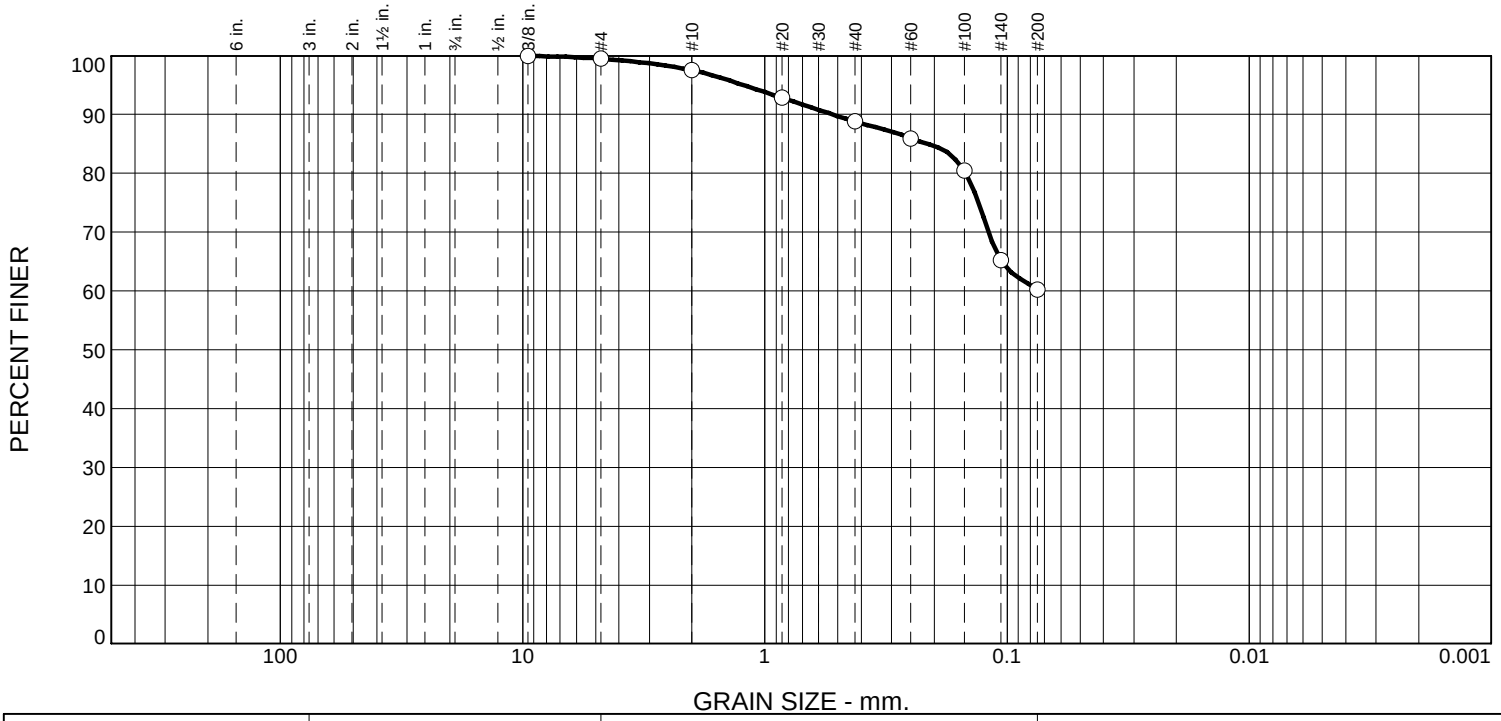
Source of Sample: PA23-1088S W-C
Sample Number: 3A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	2.0	8.7	28.5	60.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.5		
#10	97.5		
#20	92.8		
#40	88.8		
#60	85.9		
#100	80.5		
#140	65.2		
#200	60.3		

· (no specification provided)

Material Description
Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.5233 D_{85}= 0.2132
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

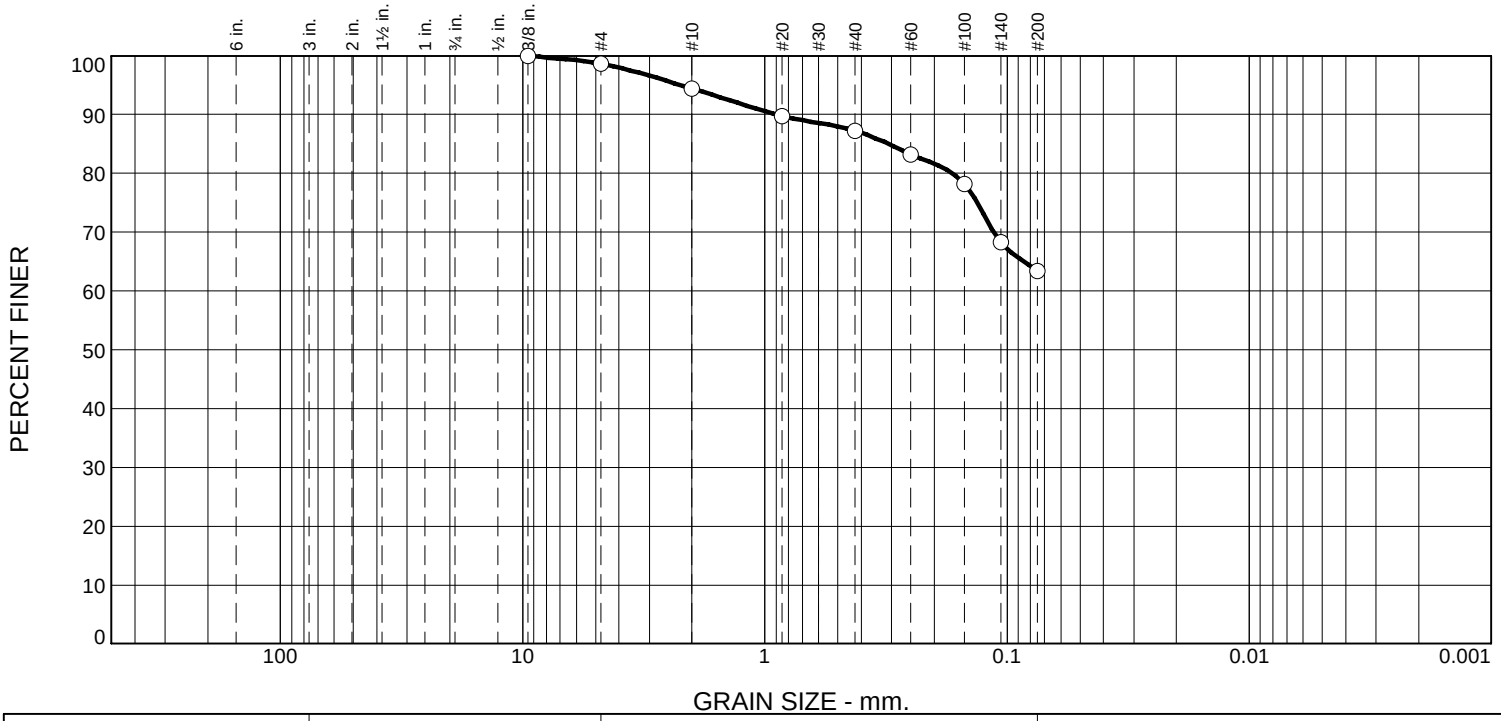
Source of Sample: PA23-1088S W-C
Sample Number: 3B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	4.3	7.2	23.8	63.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	98.7		
#10	94.4		
#20	89.7		
#40	87.2		
#60	83.2		
#100	78.2		
#140	68.3		
#200	63.4		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.8983 D_{85}= 0.3085

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C
Sample Number: 3C

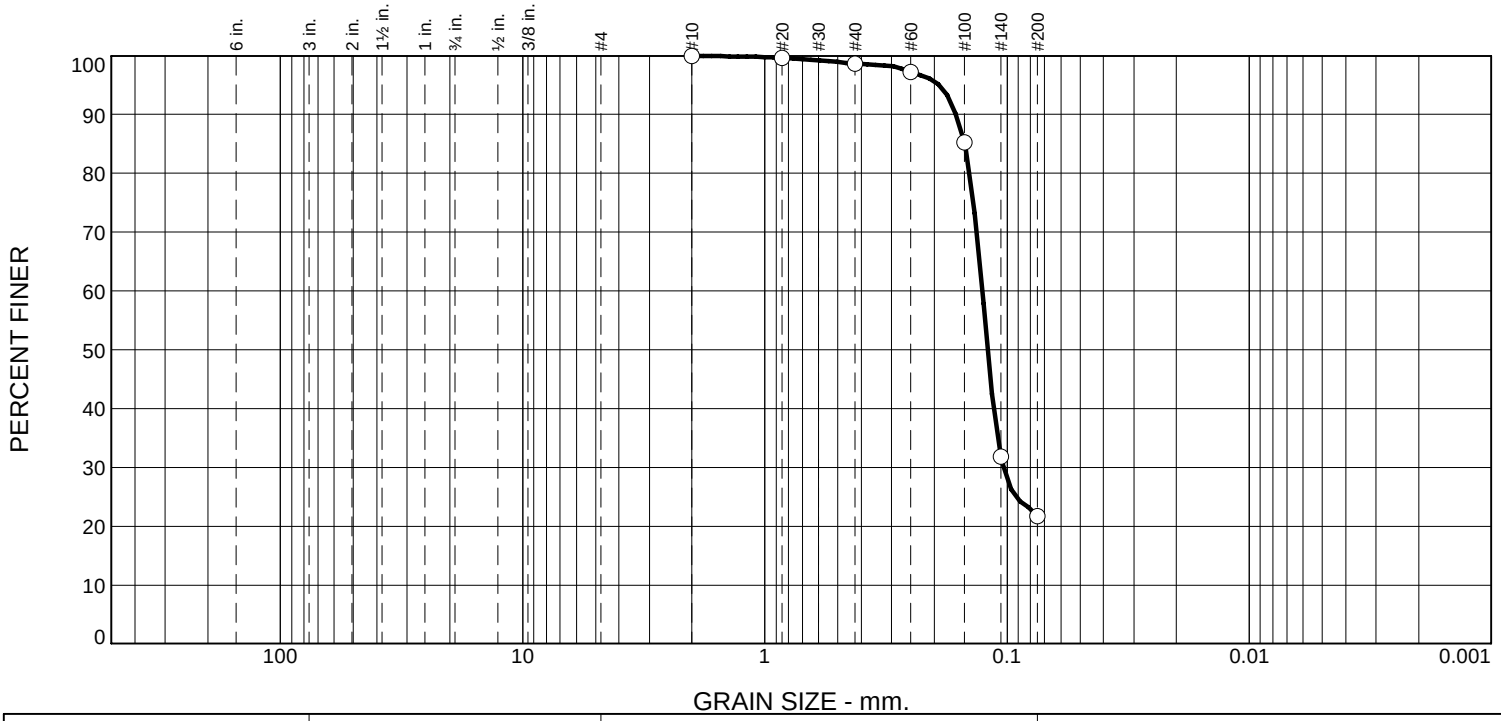
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.3	76.9	21.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	98.7		
#60	97.3		
#100	85.3		
#140	31.8		
#200	21.8		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1627 D_{85}= 0.1494

D_{60}= 0.1267 D_{50}= 0.1202

D_{30}= 0.1035 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 3D

INSIGHT GROUP
A CHRISTOPHER COMPANY

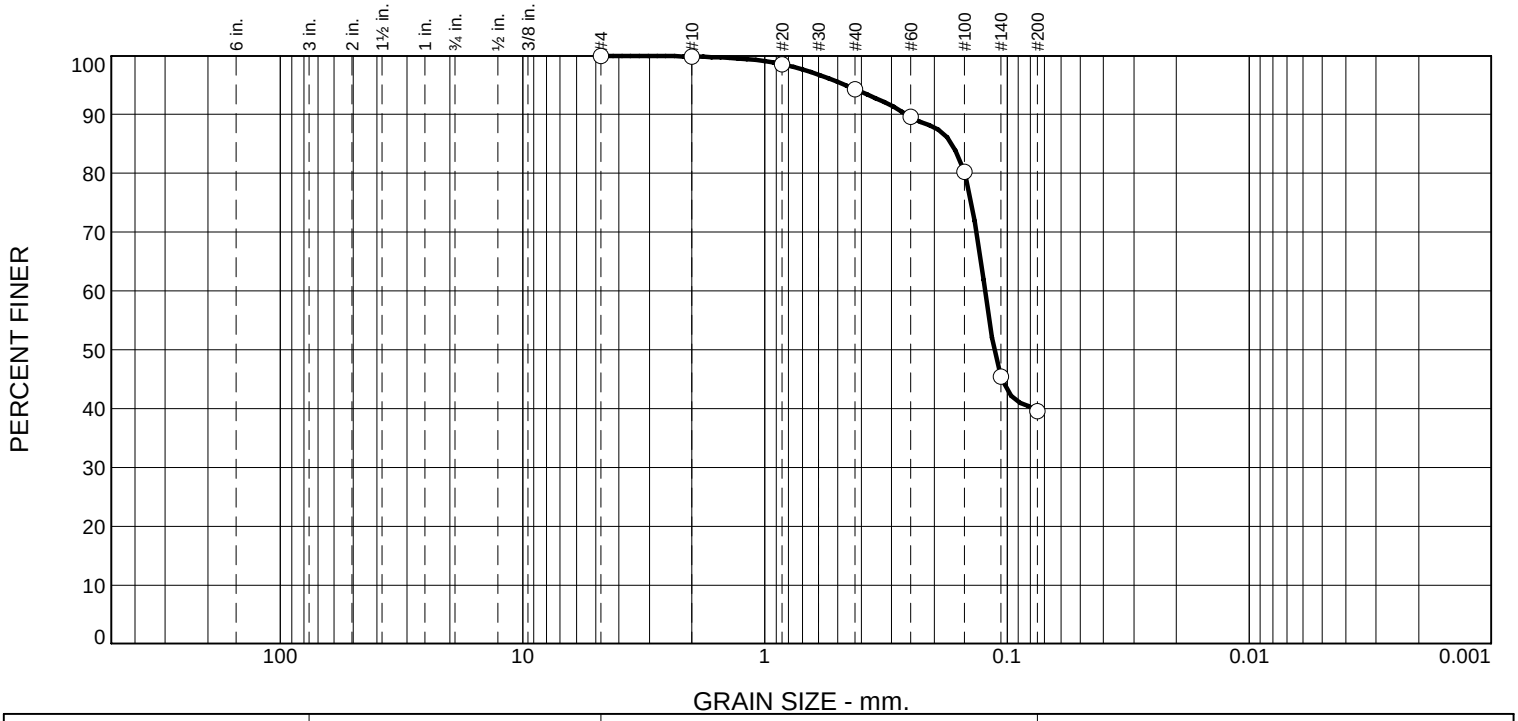
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	5.6	54.7	39.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	98.5		
#40	94.3		
#60	89.6		
#100	80.2		
#140	45.5		
#200	39.6		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2593 D_{85}= 0.1690

D_{60}= 0.1234 D_{50}= 0.1128

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: 3/5/23

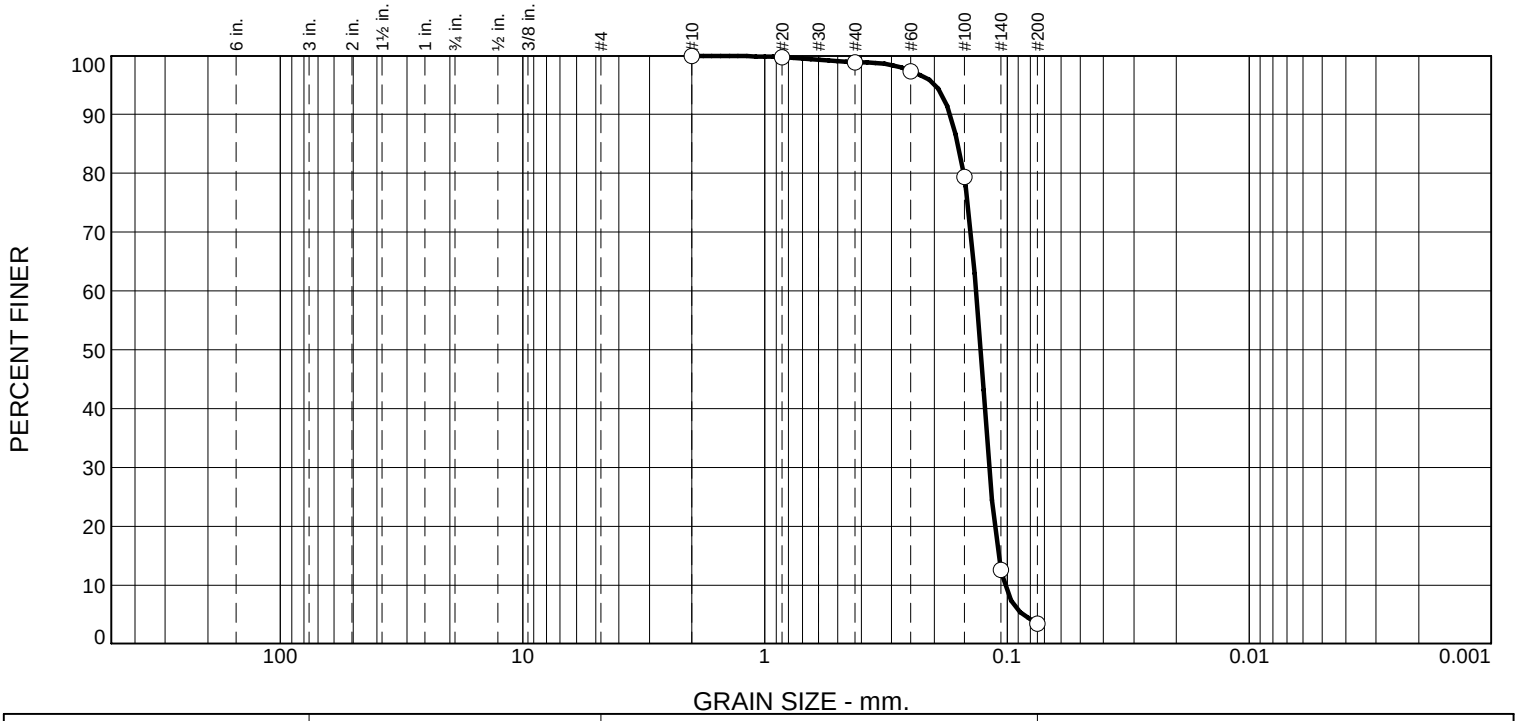
Source of Sample: PA23-1088S W-C
Sample Number: 3 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.1	95.5	3.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	98.9		
#60	97.4		
#100	79.4		
#140	12.6		
#200	3.4		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1721 D_{85}= 0.1595

D_{60}= 0.1344 D_{50}= 0.1288

D_{30}= 0.1183 D_{15}= 0.1086

D_{10}= 0.1020

C_u= 1.32 C_c= 1.02

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

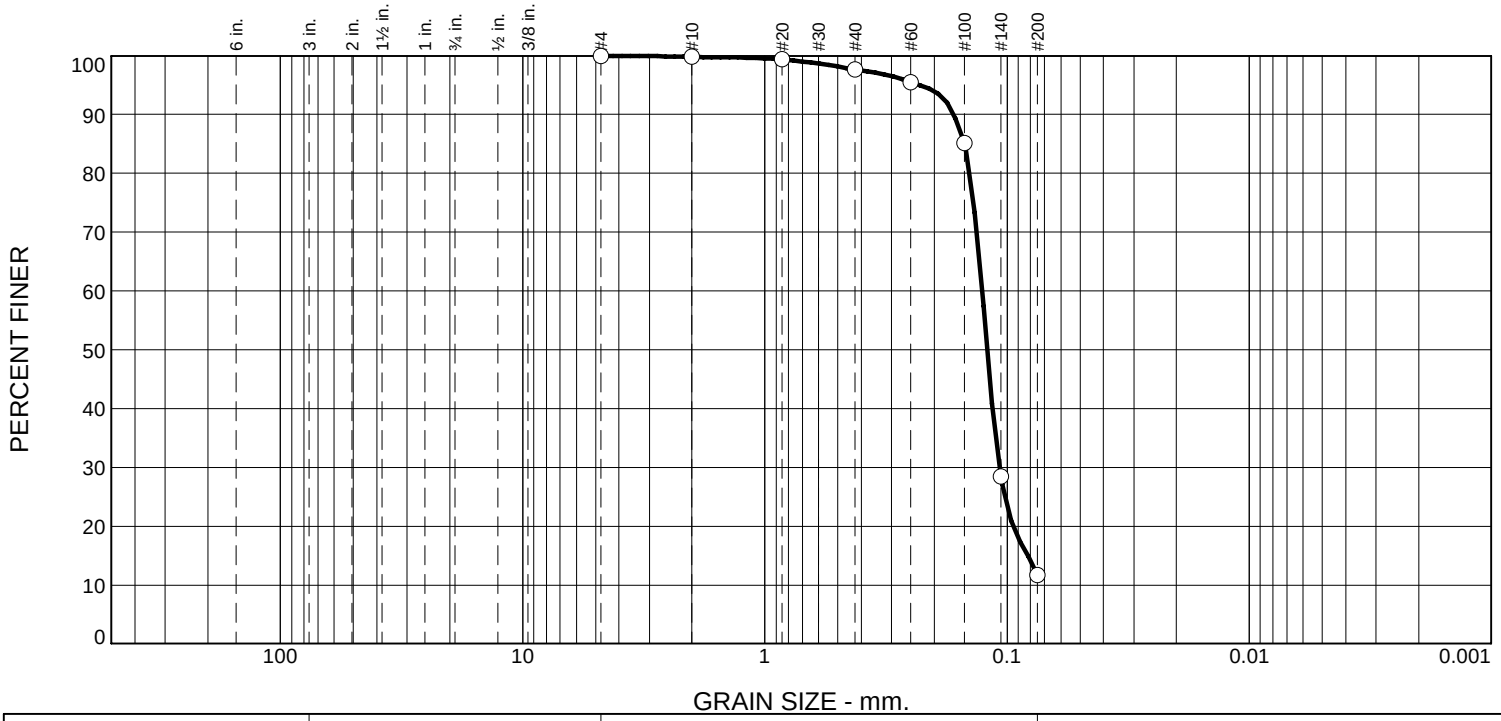
Source of Sample: PA23-1088S W-C
Sample Number: 4A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	2.1	86.0	11.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.4		
#40	97.7		
#60	95.5		
#100	85.1		
#140	28.4		
#200	11.7		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1661 D_{85}= 0.1497

D_{60}= 0.1269 D_{50}= 0.1208

D_{30}= 0.1075 D_{15}= 0.0818

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 4B

INSIGHT GROUP
A CHRISTOPHER COMPANY

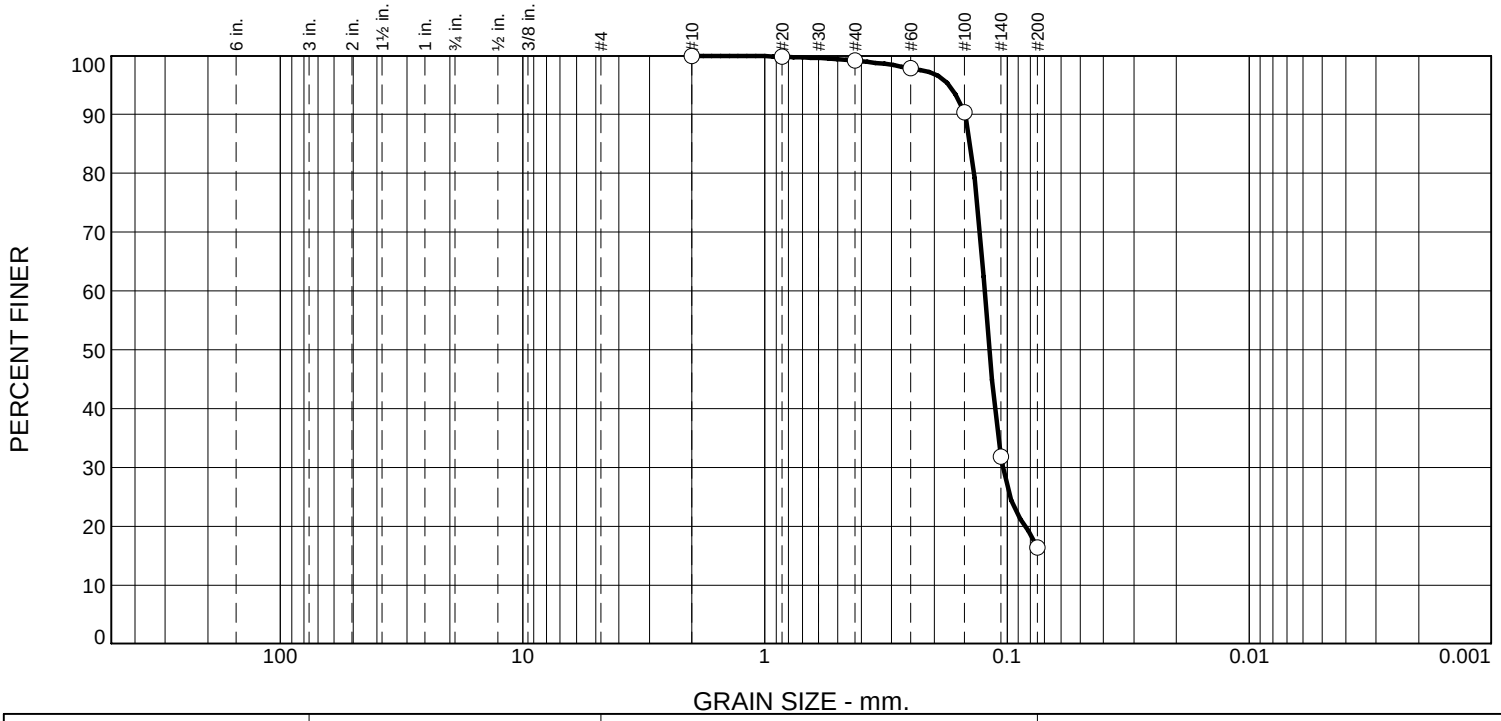
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	82.8	16.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.2		
#60	97.8		
#100	90.4		
#140	31.9		
#200	16.4		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1488 D_{85}= 0.1414
D_{60}= 0.1239 D_{50}= 0.1182
D_{30}= 0.1040 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

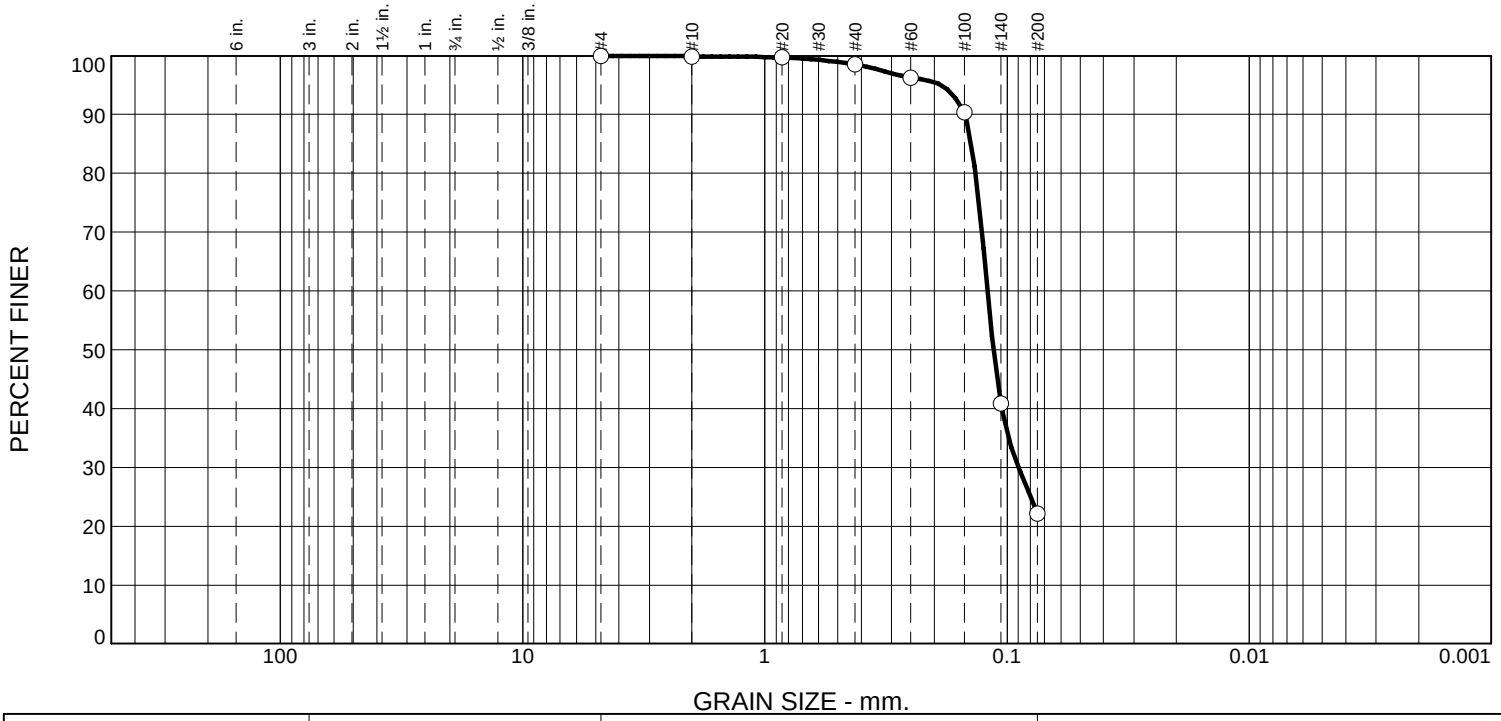
Source of Sample: PA23-1088S W-C
Sample Number: 4C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.4	76.3	22.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.5		
#60	96.3		
#100	90.4		
#140	40.8		
#200	22.2		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1485 D_{85}= 0.1401
D_{60}= 0.1204 D_{50}= 0.1136
D_{30}= 0.0900 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

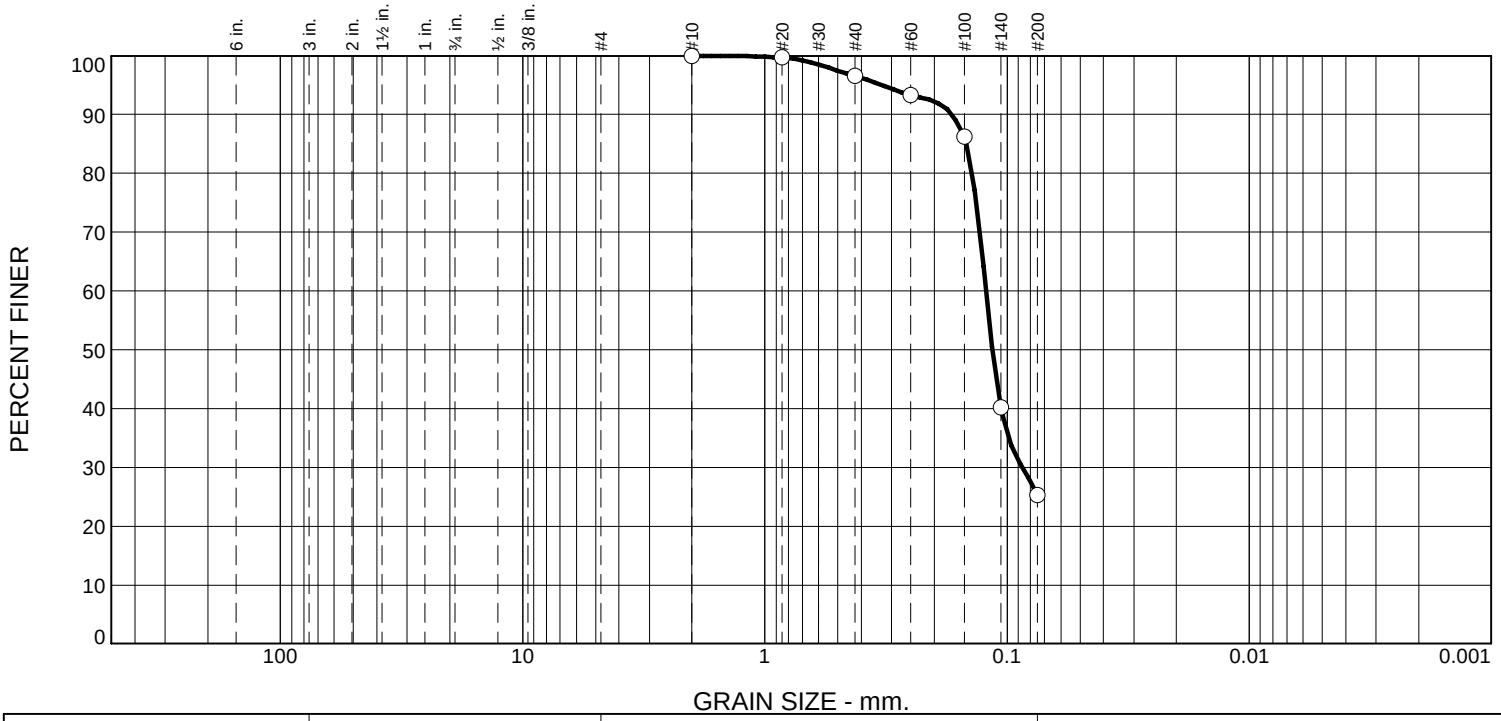
Source of Sample: PA23-1088S W-C
Sample Number: 4D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.5	71.2	25.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	96.5		
#60	93.3		
#100	86.2		
#140	40.2		
#200	25.3		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1694 D_{85}= 0.1467
D_{60}= 0.1222 D_{50}= 0.1148
D_{30}= 0.0868 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

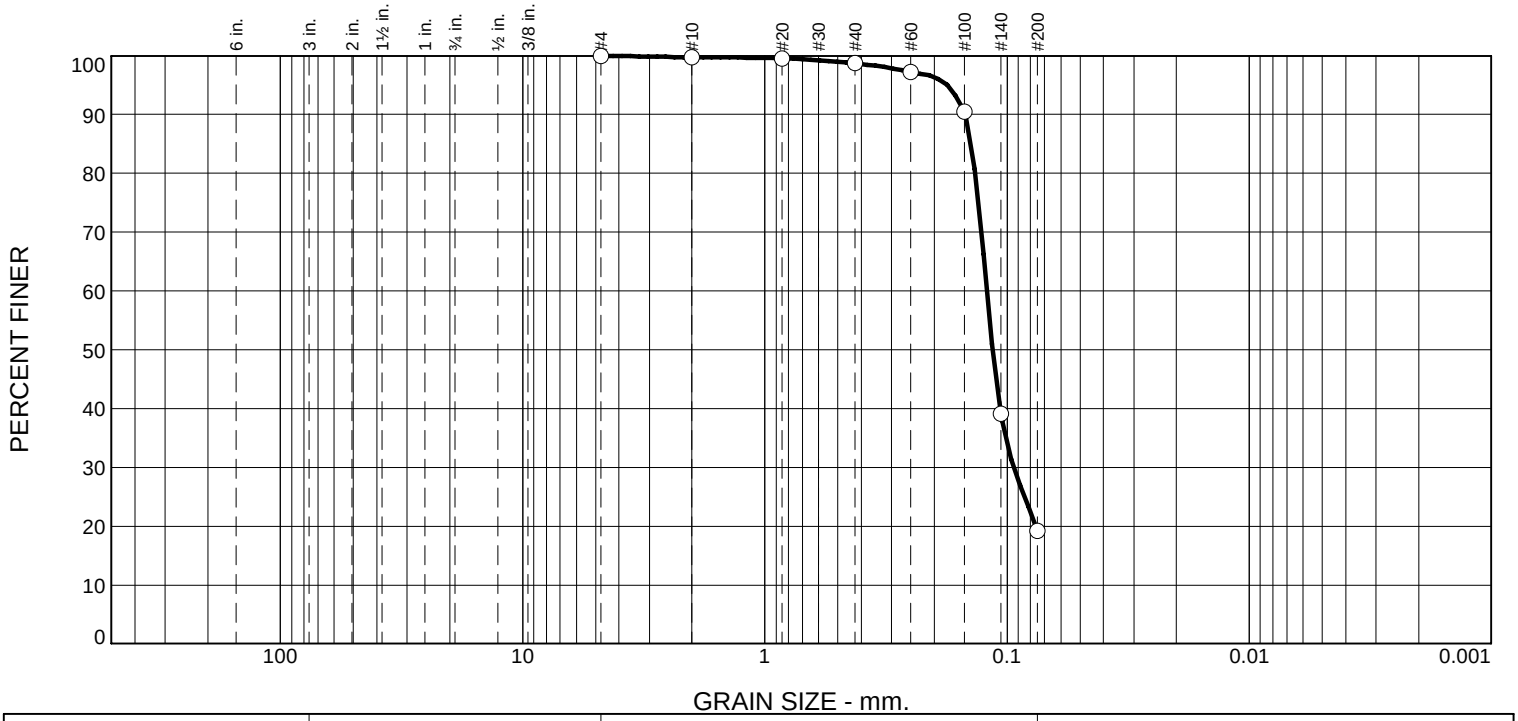
Source of Sample: PA23-1088S W-C
Sample Number: 4E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.0	79.5	19.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	99.6		
#40	98.7		
#60	97.2		
#100	90.4		
#140	39.2		
#200	19.2		

· (no specification provided)

Material Description

Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1486 D_{85}= 0.1405

D_{60}= 0.1211 D_{50}= 0.1146

D_{30}= 0.0941 D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

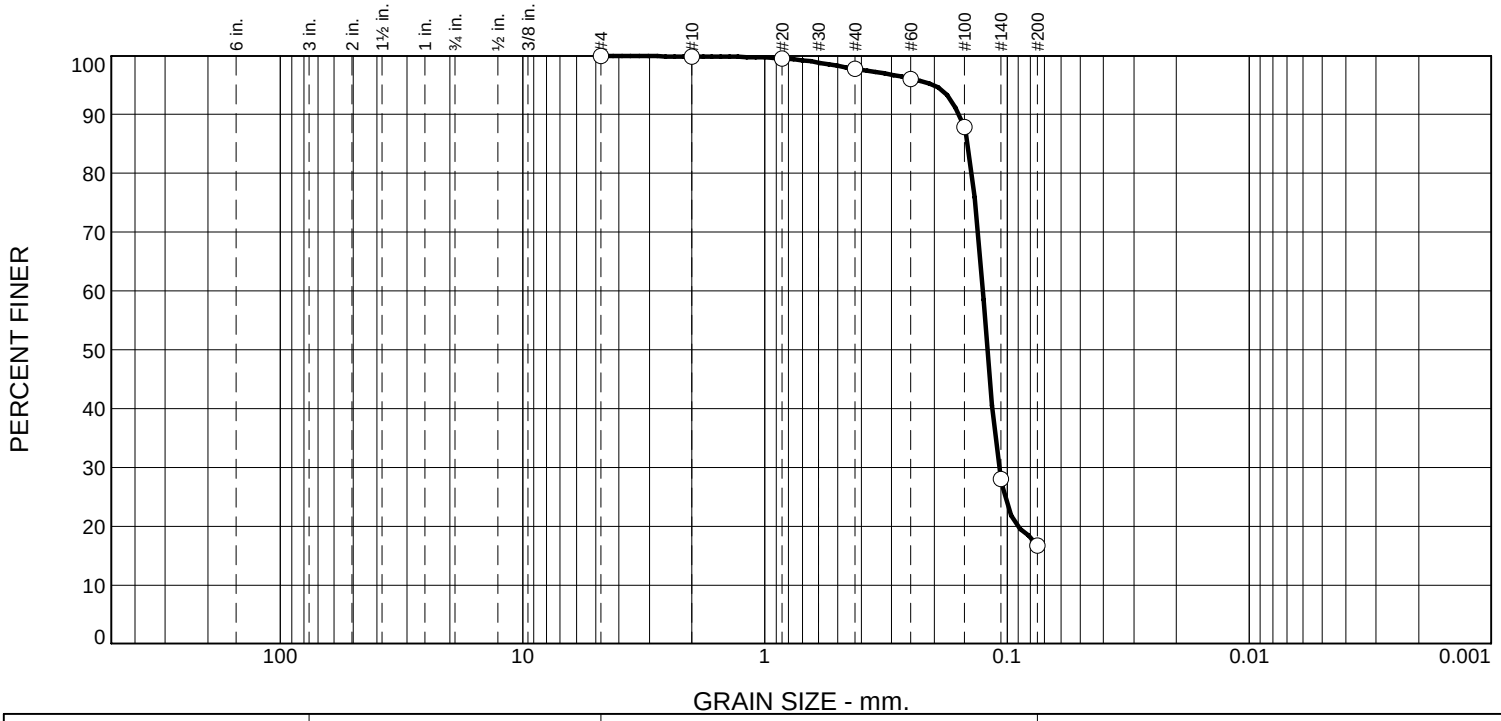
Source of Sample: PA23-1088S W-C
Sample Number: 4F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.1	81.1	16.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	97.8		
#60	96.1		
#100	87.9		
#140	28.1		
#200	16.7		

· (no specification provided)

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1576 D_{85}= 0.1447
D_{60}= 0.1261 D_{50}= 0.1206
D_{30}= 0.1079 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

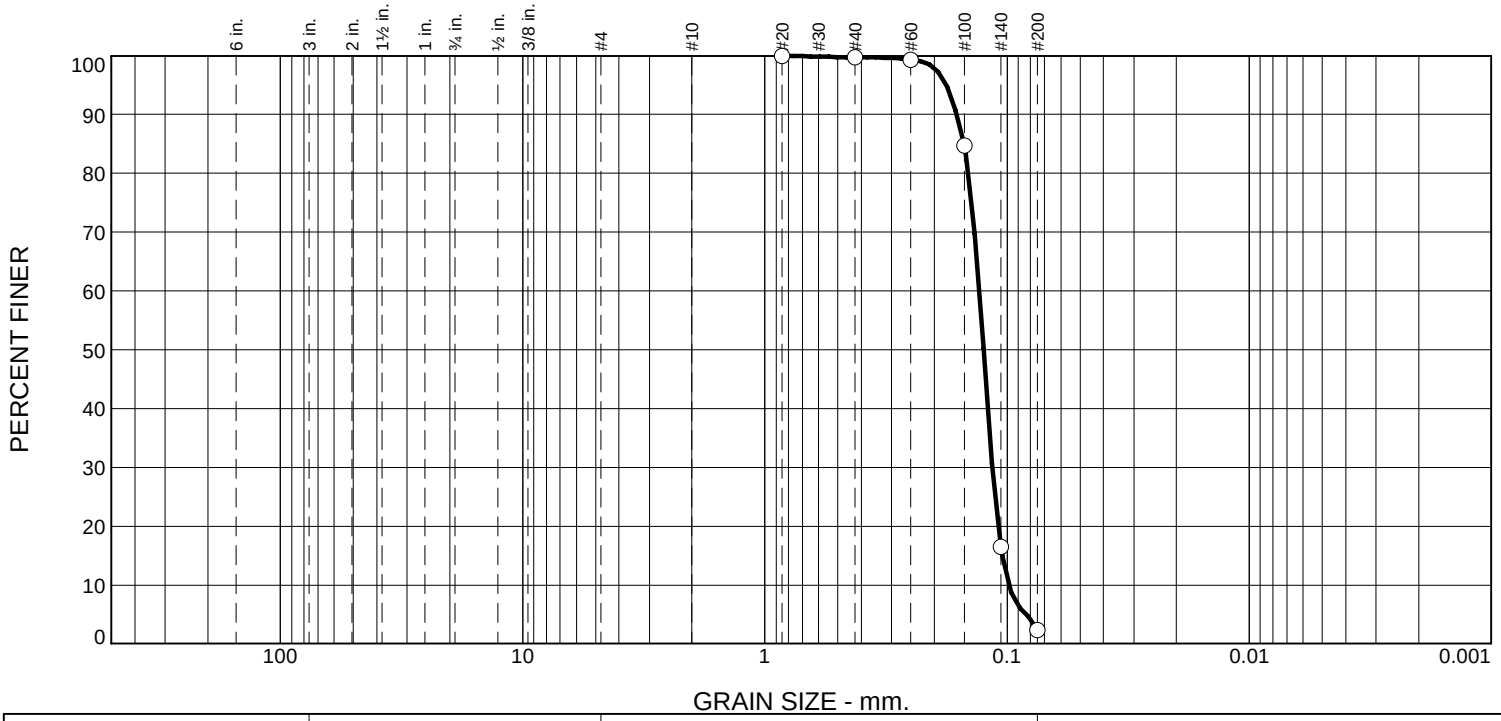
Source of Sample: PA23-1088S W-C
Sample Number: 4 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	97.3	2.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.7		
#60	99.3		
#100	84.7		
#140	16.5		
#200	2.4		

· (no specification provided)

Material Description
Light Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1612 D_{85}= 0.1505
D_{60}= 0.1304 D_{50}= 0.1251
D_{30}= 0.1149 D_{15}= 0.1046
D_{10}= 0.0984
C_u= 1.32 C_c= 1.03

Sieve Test (ASTM D6913)
Test Date: 3/6/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)
SP

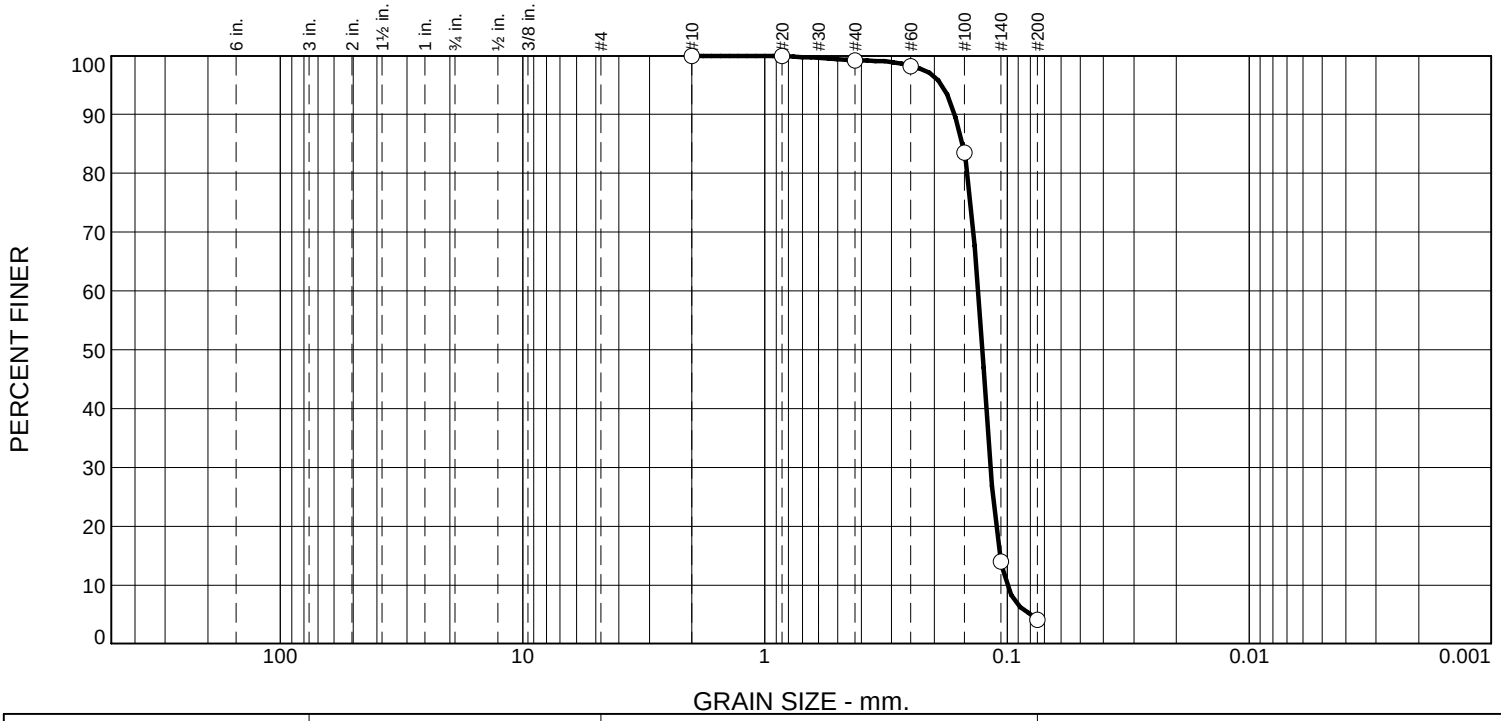
Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1088S W-C
Sample Number: 5A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	95.1	4.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.2		
#60	98.2		
#100	83.6		
#140	14.0		
#200	4.1		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1644 D_{85}= 0.1526

D_{60}= 0.1318 D_{50}= 0.1267

D_{30}= 0.1169 D_{15}= 0.1072

D_{10}= 0.0999

C_u= 1.32 C_c= 1.04

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 5B

INSIGHT GROUP
A CHRISTOPHER COMPANY

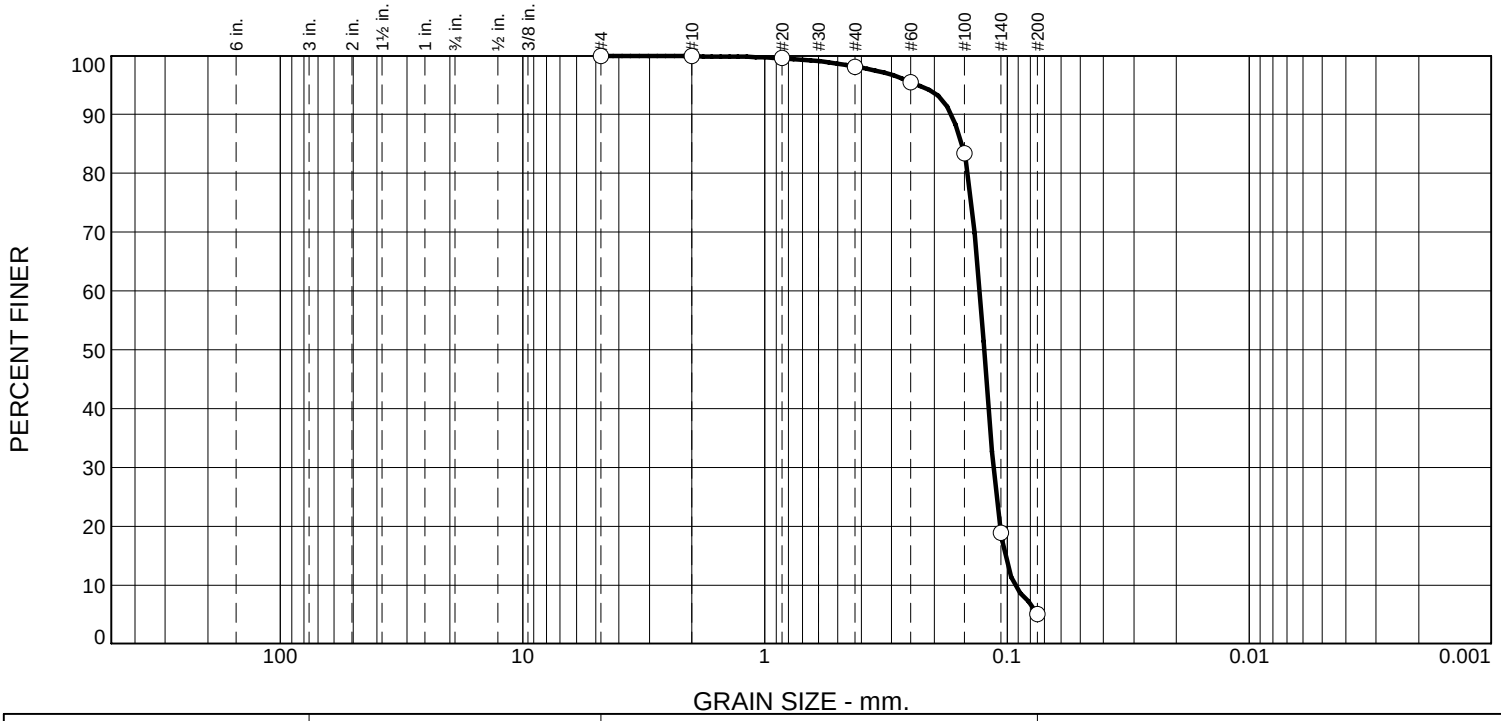
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.7	93.2	5.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.2		
#60	95.5		
#100	83.4		
#140	18.9		
#200	5.0		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1699 D_{85}= 0.1536
D_{60}= 0.1300 D_{50}= 0.1245
D_{30}= 0.1137 D_{15}= 0.1018
D_{10}= 0.0931
C_u= 1.40 C_c= 1.07

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

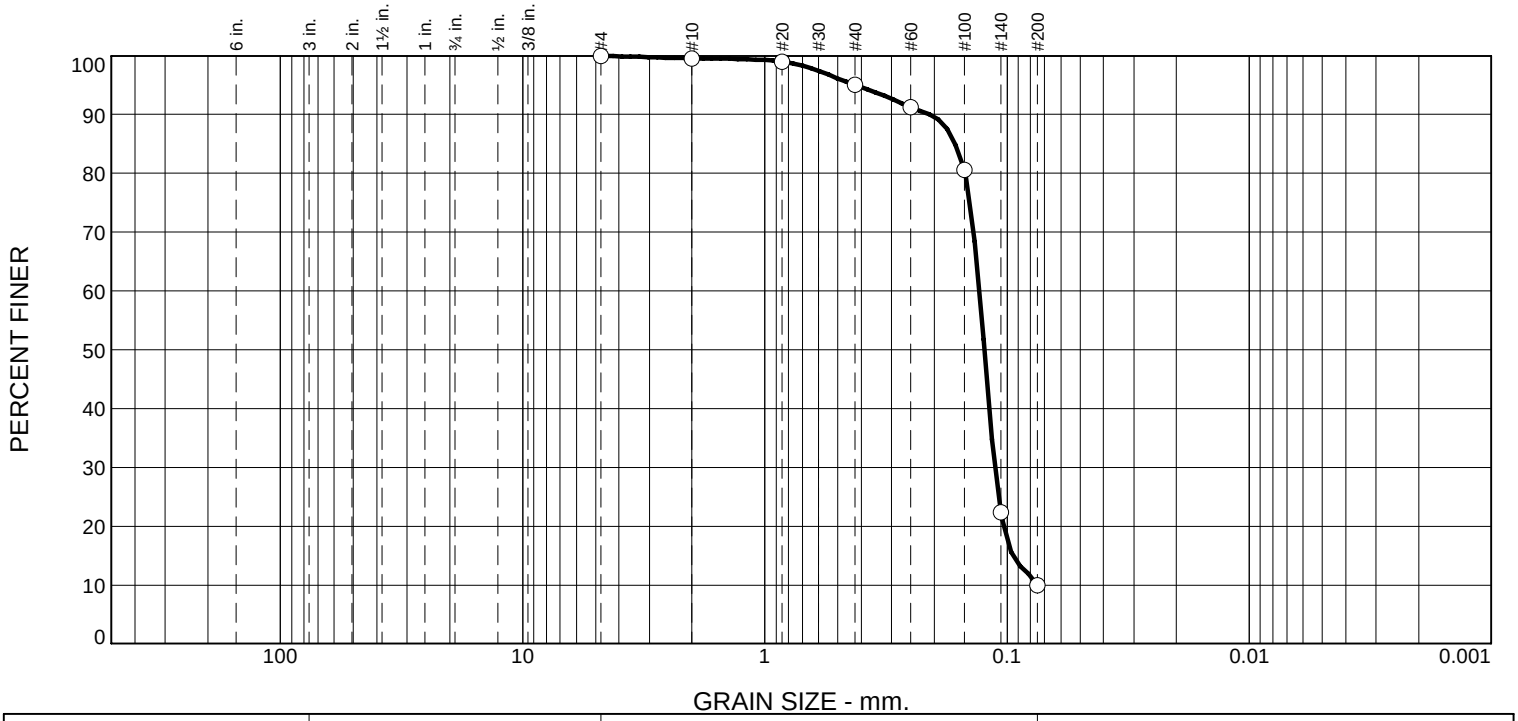
Source of Sample: PA23-1088S W-C
Sample Number: 5C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	4.6	85.1	9.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.6		
#20	99.0		
#40	95.0		
#60	91.2		
#100	80.6		
#140	22.4		
#200	9.9		

· (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2079 D_{85}= 0.1636

D_{60}= 0.1303 D_{50}= 0.1242

D_{30}= 0.1121 D_{15}= 0.0948

D_{10}= 0.0752

C_u= 1.73 C_c= 1.28

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 5D

INSIGHT GROUP
A CHRISTOPHER COMPANY

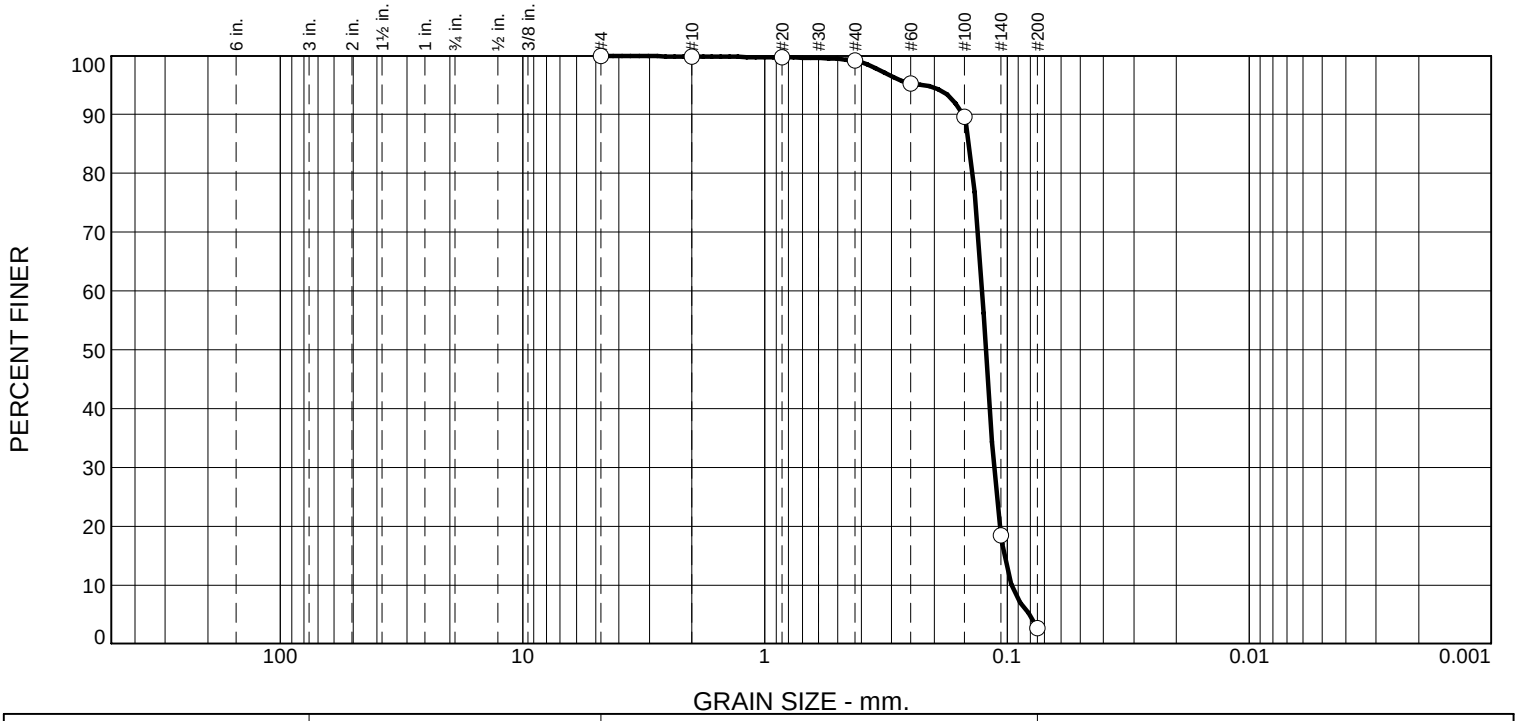
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.7	96.6	2.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.7		
#40	99.2		
#60	95.3		
#100	89.6		
#140	18.5		
#200	2.6		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1520 D_{85}= 0.1426
D_{60}= 0.1270 D_{50}= 0.1224
D_{30}= 0.1131 D_{15}= 0.1027
D_{10}= 0.0961
C_u= 1.32 C_c= 1.05

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

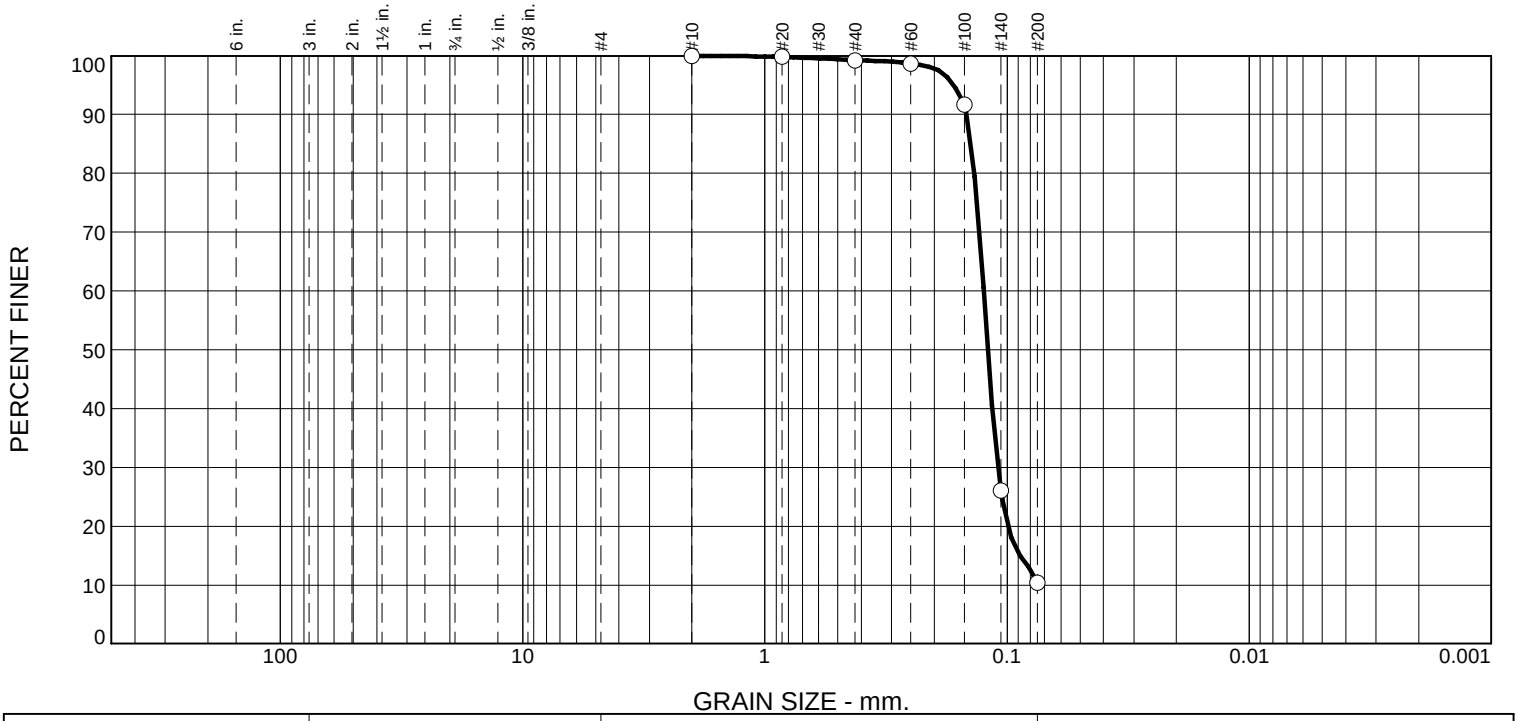
Source of Sample: PA23-1088S W-C
Sample Number: 5E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	88.8	10.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.2		
#60	98.7		
#100	91.7		
#140	26.0		
#200	10.4		

· (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1462 D_{85}= 0.1405

D_{60}= 0.1250 D_{50}= 0.1200

D_{30}= 0.1091 D_{15}= 0.0889

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 5F

INSIGHT GROUP
A CHRISTOPHER COMPANY

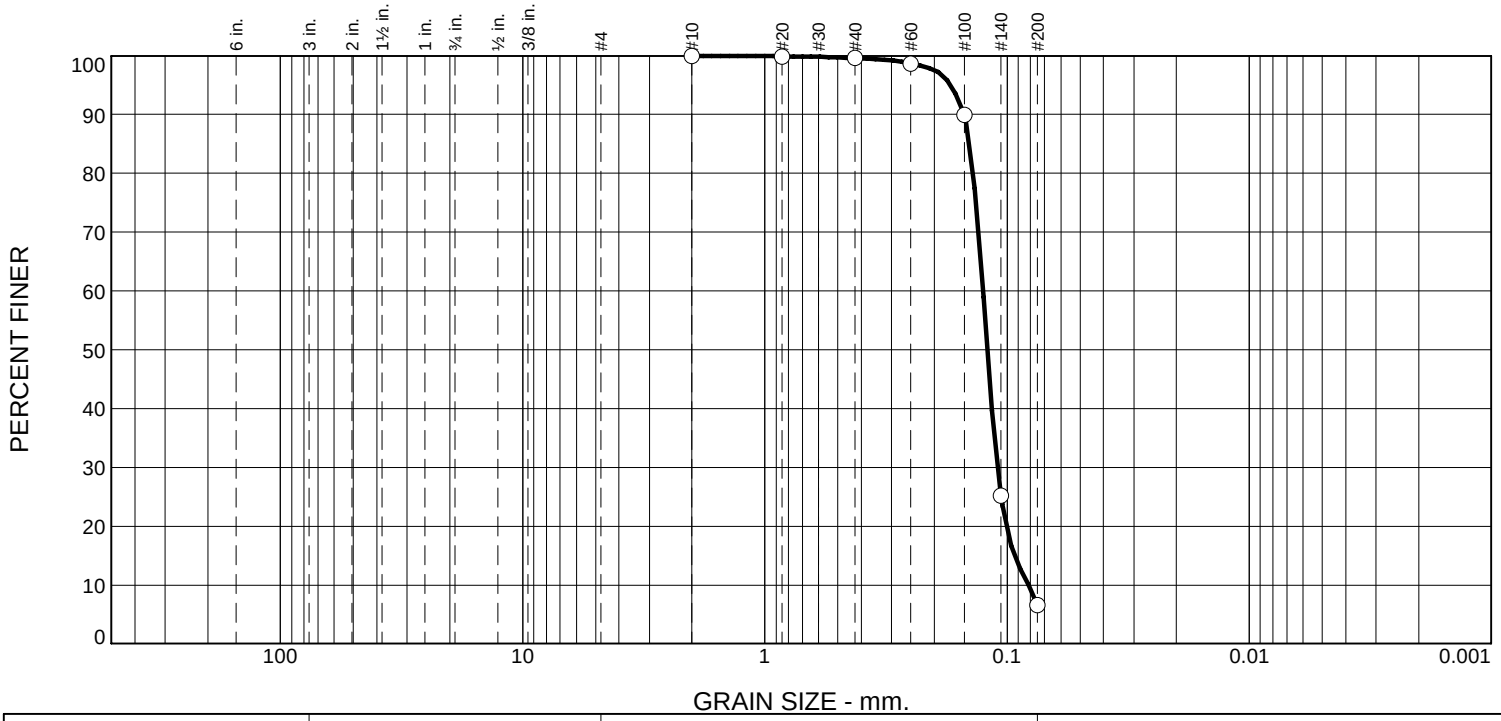
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	93.0	6.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	98.7		
#100	89.9		
#140	25.2		
#200	6.6		

· (no specification provided)

Material Description

Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1502 D_{85}= 0.1425

D_{60}= 0.1258 D_{50}= 0.1206

D_{30}= 0.1096 D_{15}= 0.0933

D_{10}= 0.0814

C_u= 1.55 C_c= 1.17

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C
Sample Number: 5 Comp

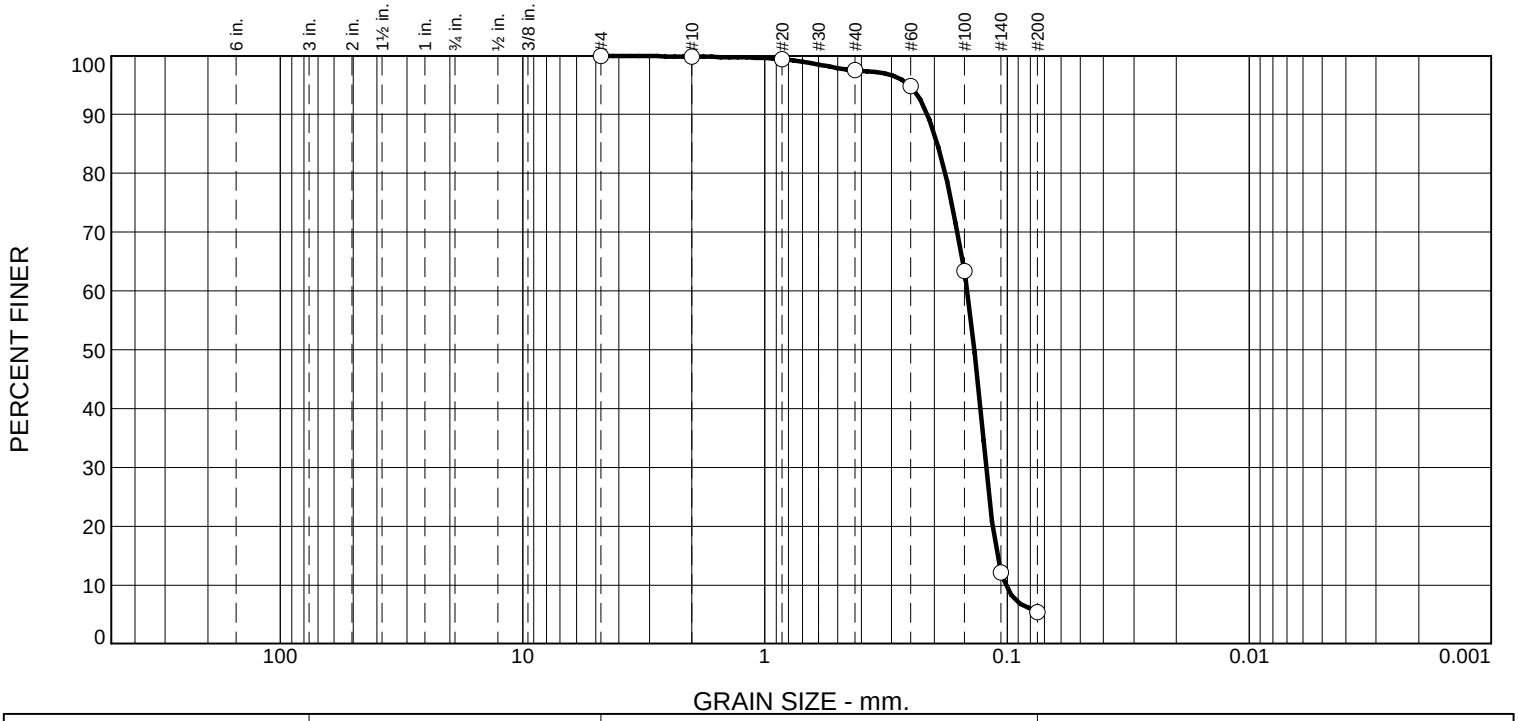
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	2.3	92.2	5.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.4		
#40	97.5		
#60	94.8		
#100	63.4		
#140	12.2		
#200	5.3		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2133 D_{85}= 0.1943

D_{60}= 0.1458 D_{50}= 0.1365

D_{30}= 0.1221 D_{15}= 0.1098

D_{10}= 0.1014

C_u= 1.44 C_c= 1.01

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

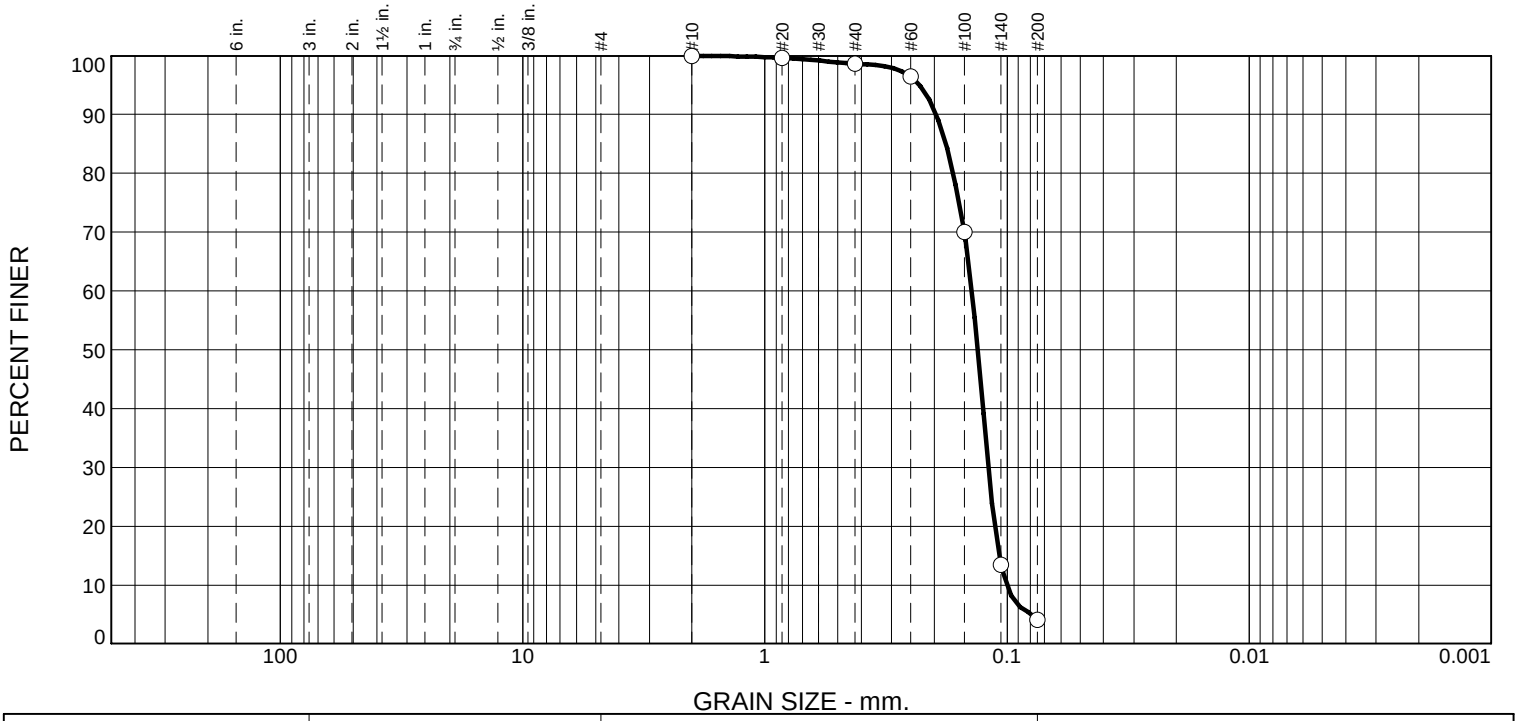
Source of Sample: PA23-1088S W-C
Sample Number: 6A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.4	94.5	4.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	98.6		
#60	96.5		
#100	70.1		
#140	13.5		
#200	4.1		

* (no specification provided)

Source of Sample: PA23-1088S W-C
Sample Number: 6B

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1965 D_{85}= 0.1791
D_{60}= 0.1397 D_{50}= 0.1323
D_{30}= 0.1194 D_{15}= 0.1078
D_{10}= 0.1004
C_u= 1.39 C_c= 1.02

USCS (ASTM D2487)
SP

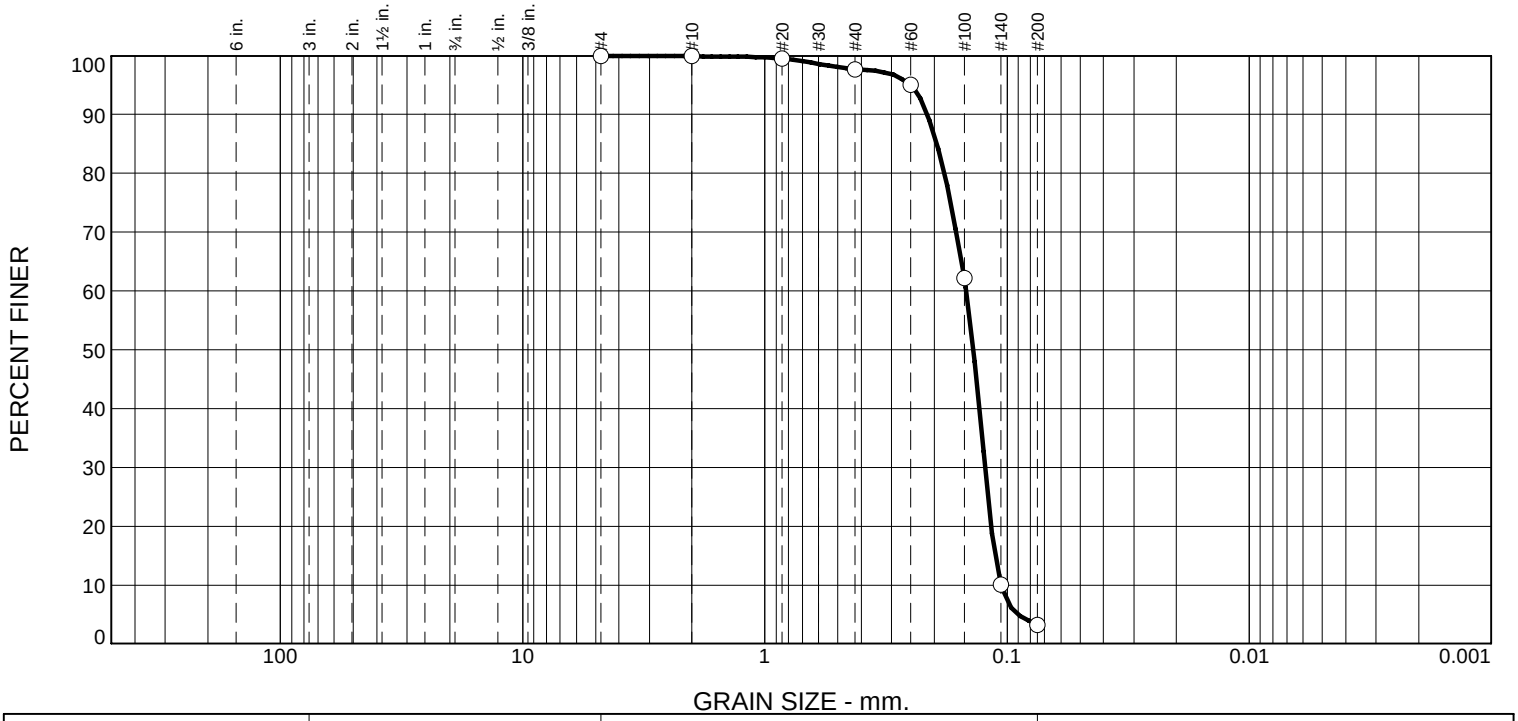
Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.2	94.4	3.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.5		
#40	97.7		
#60	95.1		
#100	62.2		
#140	10.1		
#200	3.3		

· (no specification provided)

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2131 D_{85}= 0.1951
D_{60}= 0.1472 D_{50}= 0.1378
D_{30}= 0.1234 D_{15}= 0.1120
D_{10}= 0.1059
C_u= 1.39 C_c= 0.98

USCS (ASTM D2487)
SP

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

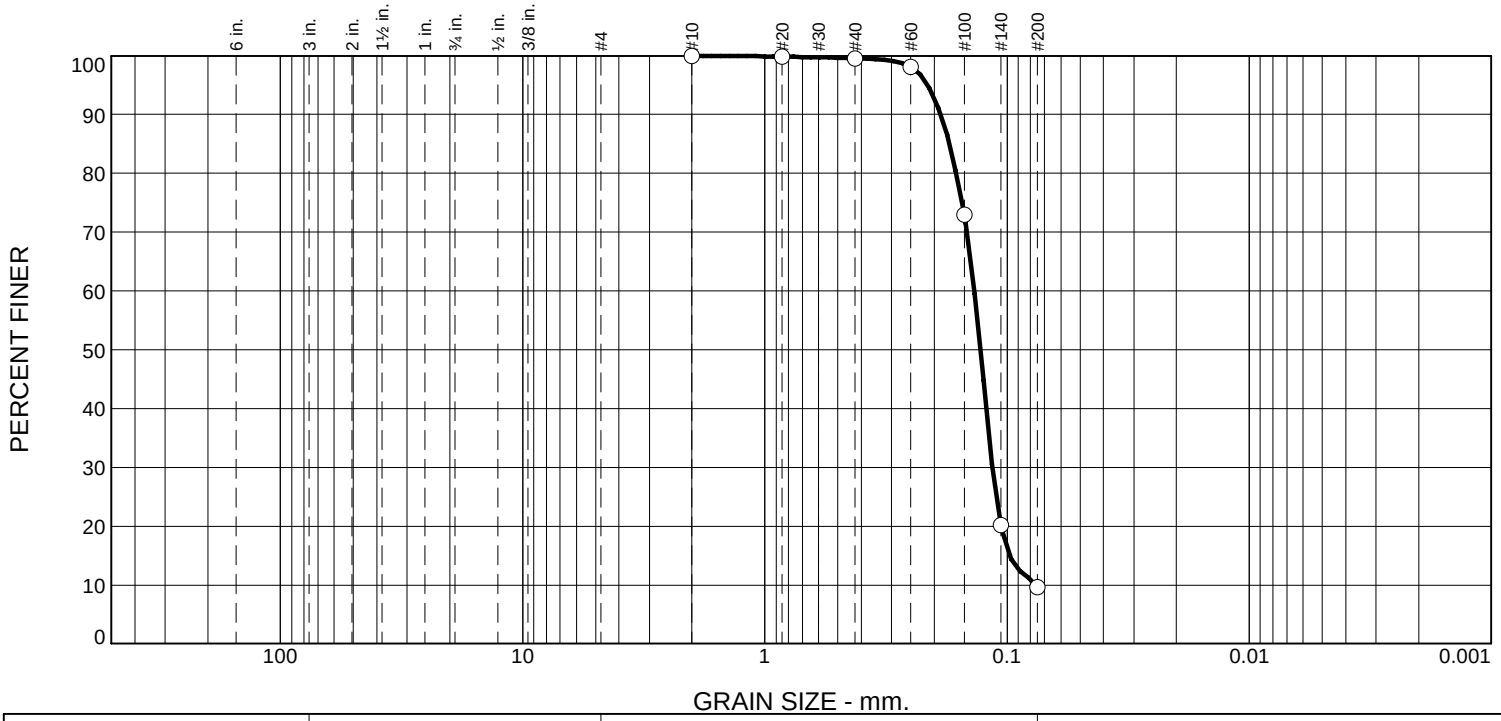
Source of Sample: PA23-1088S W-C
Sample Number: 6C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	90.0	9.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	98.1		
#100	72.9		
#140	20.2		
#200	9.6		

· (no specification provided)

Source of Sample: PA23-1088S W-C
Sample Number: 6D

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1881 D_{85}= 0.1731
D_{60}= 0.1365 D_{50}= 0.1289
D_{30}= 0.1148 D_{15}= 0.0977
D_{10}= 0.0761
C_u= 1.79 C_c= 1.27

USCS (ASTM D2487)

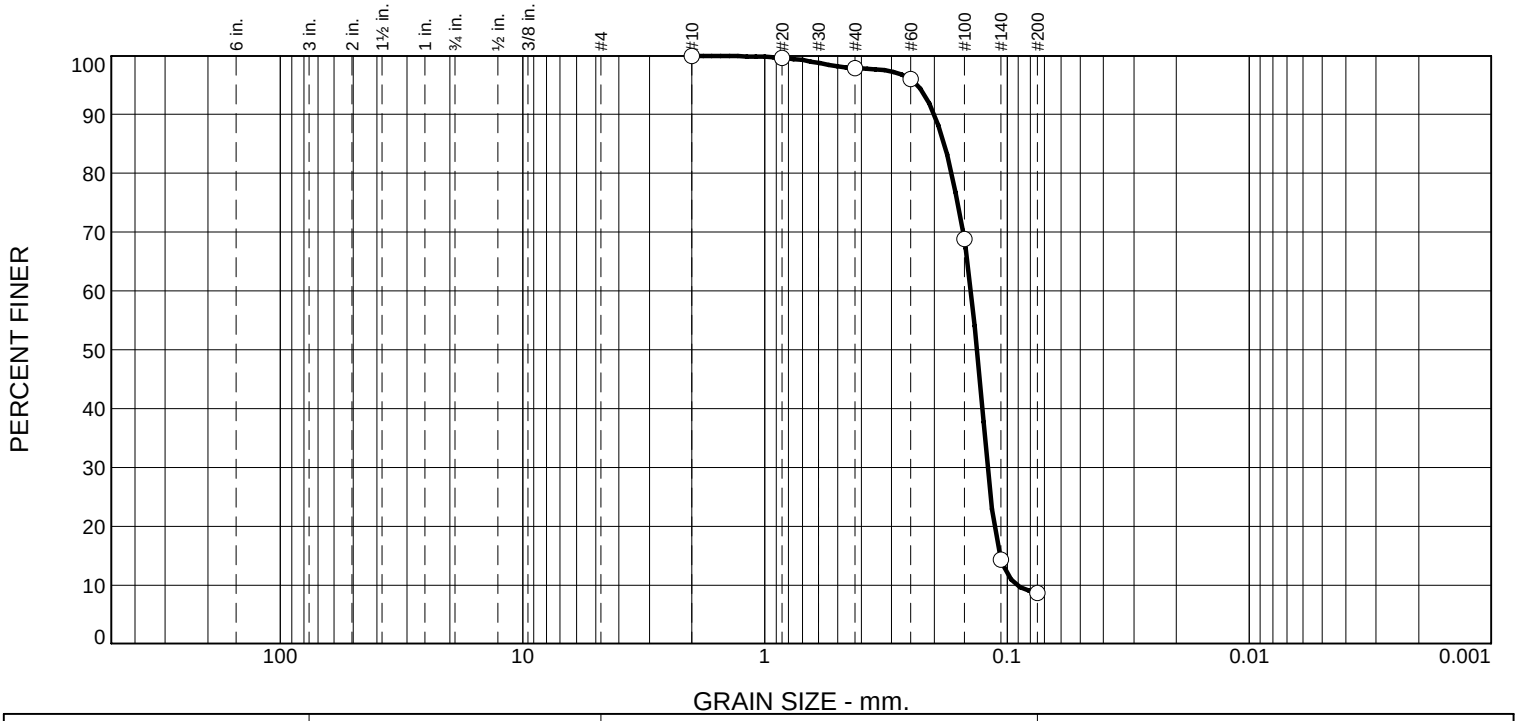
Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.1	89.3	8.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	97.9		
#60	96.0		
#100	68.8		
#140	14.3		
#200	8.6		

· (no specification provided)

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2001 D_{85}= 0.1823
D_{60}= 0.1408 D_{50}= 0.1333
D_{30}= 0.1202 D_{15}= 0.1074
D_{10}= 0.0912
C_u= 1.54 C_c= 1.13

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

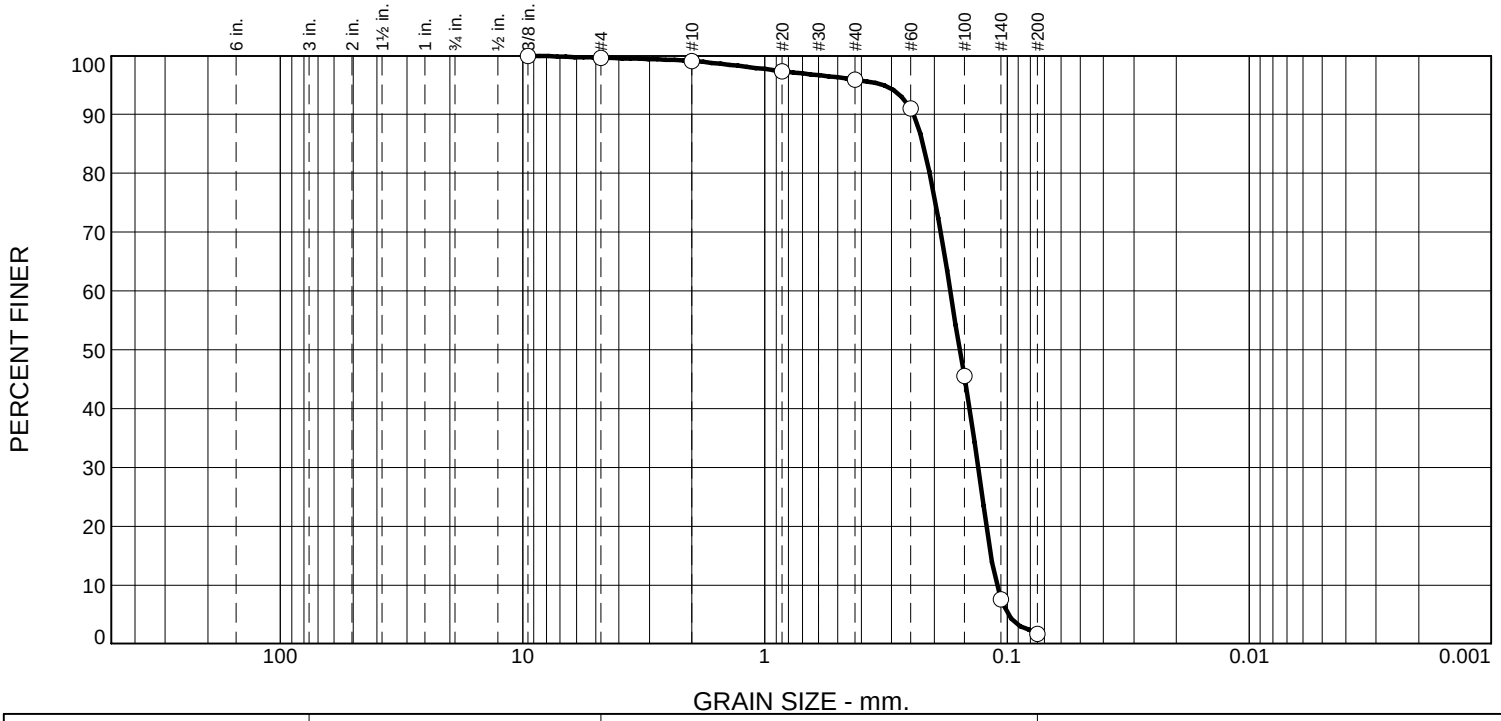
Source of Sample: PA23-1088S W-C
Sample Number: 6 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.6	3.2	94.2	1.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.7		
#10	99.1		
#20	97.4		
#40	95.9		
#60	91.1		
#100	45.5		
#140	7.6		
#200	1.7		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2422 D_{85}= 0.2218
D_{60}= 0.1718 D_{50}= 0.1567
D_{30}= 0.1317 D_{15}= 0.1164
D_{10}= 0.1102
C_u= 1.56 C_c= 0.92

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)
SP

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

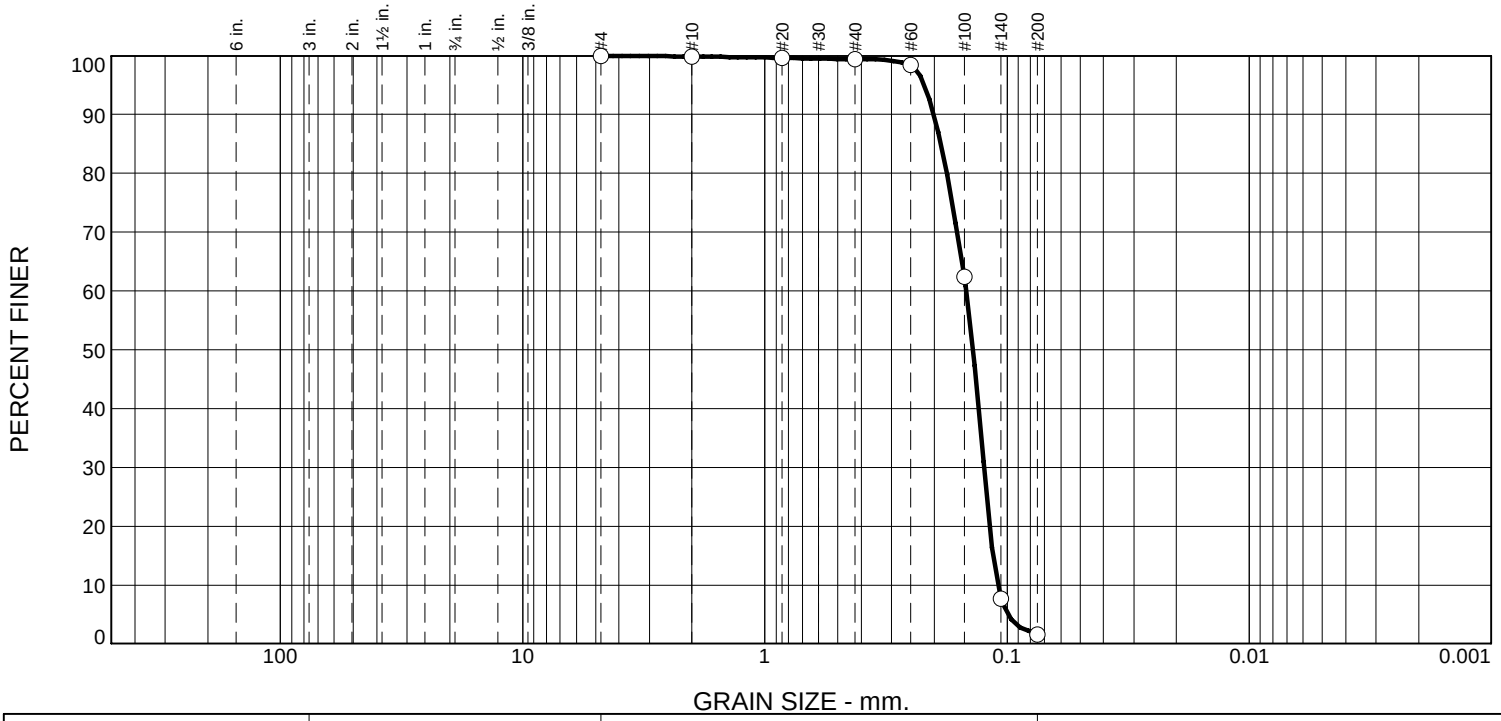
Source of Sample: PA23-1088S W-C
Sample Number: 7A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.5	97.8	1.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	99.4		
#60	98.5		
#100	62.4		
#140	7.7		
#200	1.6		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2008 D_{85}= 0.1879

D_{60}= 0.1471 D_{50}= 0.1382

D_{30}= 0.1246 D_{15}= 0.1141

D_{10}= 0.1094

C_u= 1.34 C_c= 0.96

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C
Sample Number: 7B

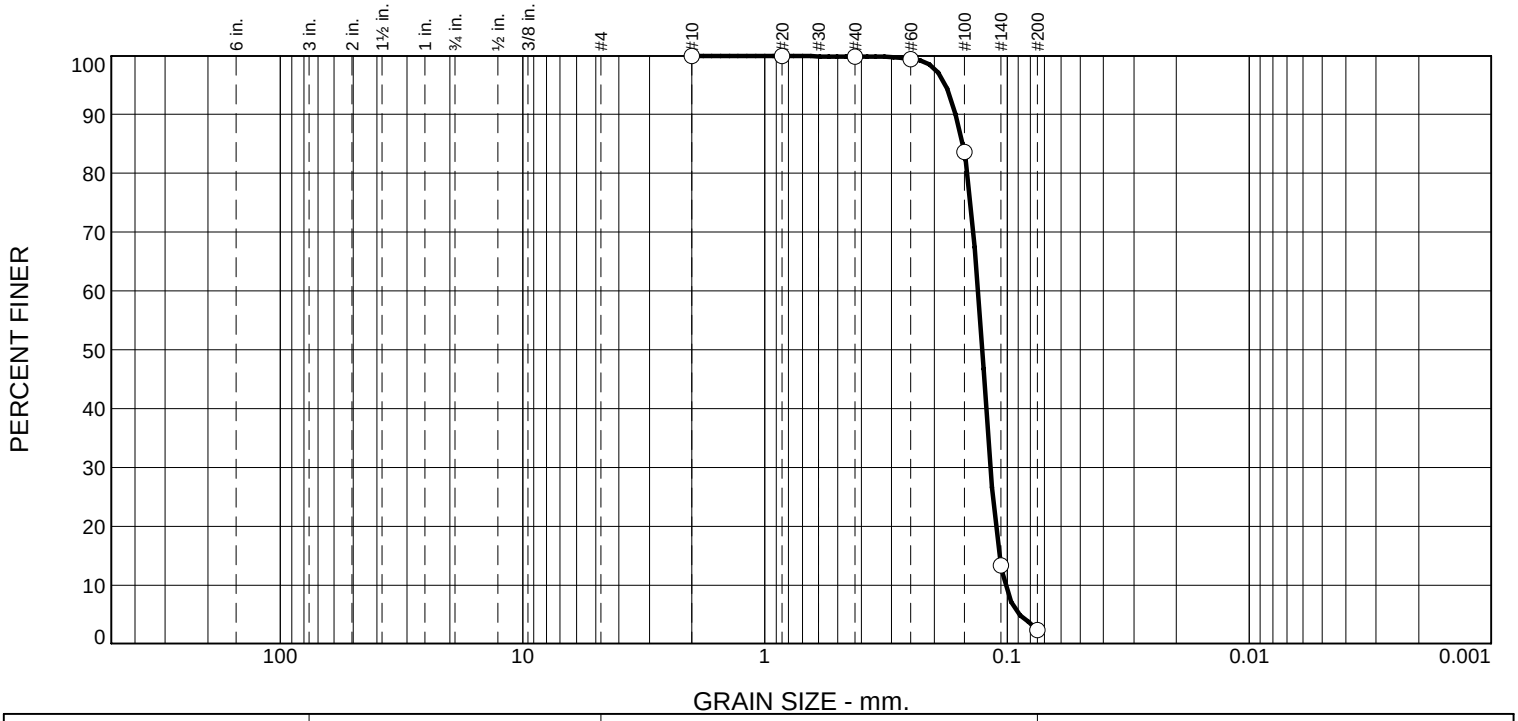
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	97.6	2.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.9		
#60	99.4		
#100	83.6		
#140	13.4		
#200	2.3		

· (no specification provided)

Source of Sample: PA23-1088S W-C
Sample Number: 7C

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)
PL= **LL=** **PI=**

Coefficients
D_{90}= 0.1628 D_{85}= 0.1523
D_{60}= 0.1319 D_{50}= 0.1268
D_{30}= 0.1170 D_{15}= 0.1076
D_{10}= 0.1016
C_u= 1.30 C_c= 1.02

USCS (ASTM D2487)
SP

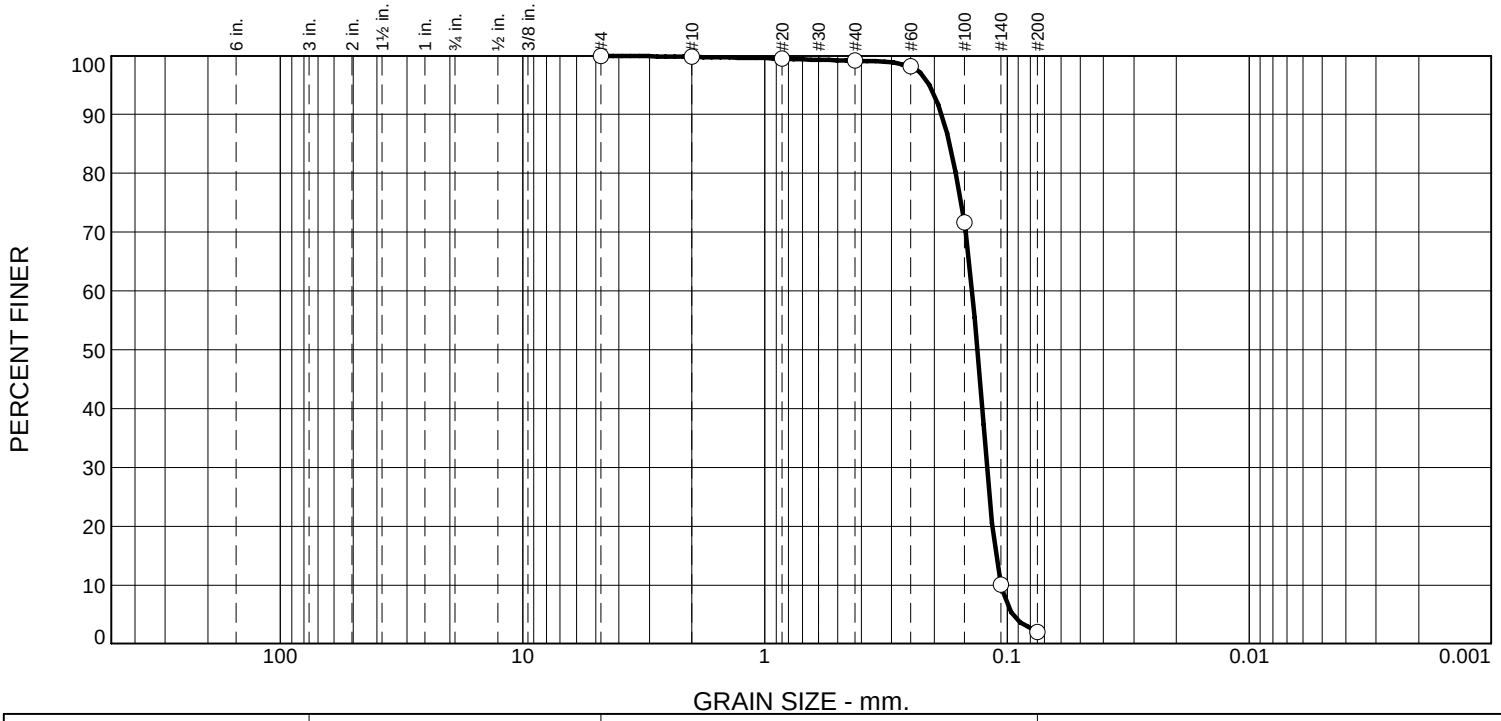
Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.7	97.1	2.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.5		
#40	99.1		
#60	98.2		
#100	71.7		
#140	10.0		
#200	2.0		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1865 D_{85}= 0.1728

D_{60}= 0.1393 D_{50}= 0.1327

D_{30}= 0.1210 D_{15}= 0.1112

D_{10}= 0.1060

C_u= 1.31 C_c= 0.99

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 7D

INSIGHT GROUP
A CHRISTOPHER COMPANY

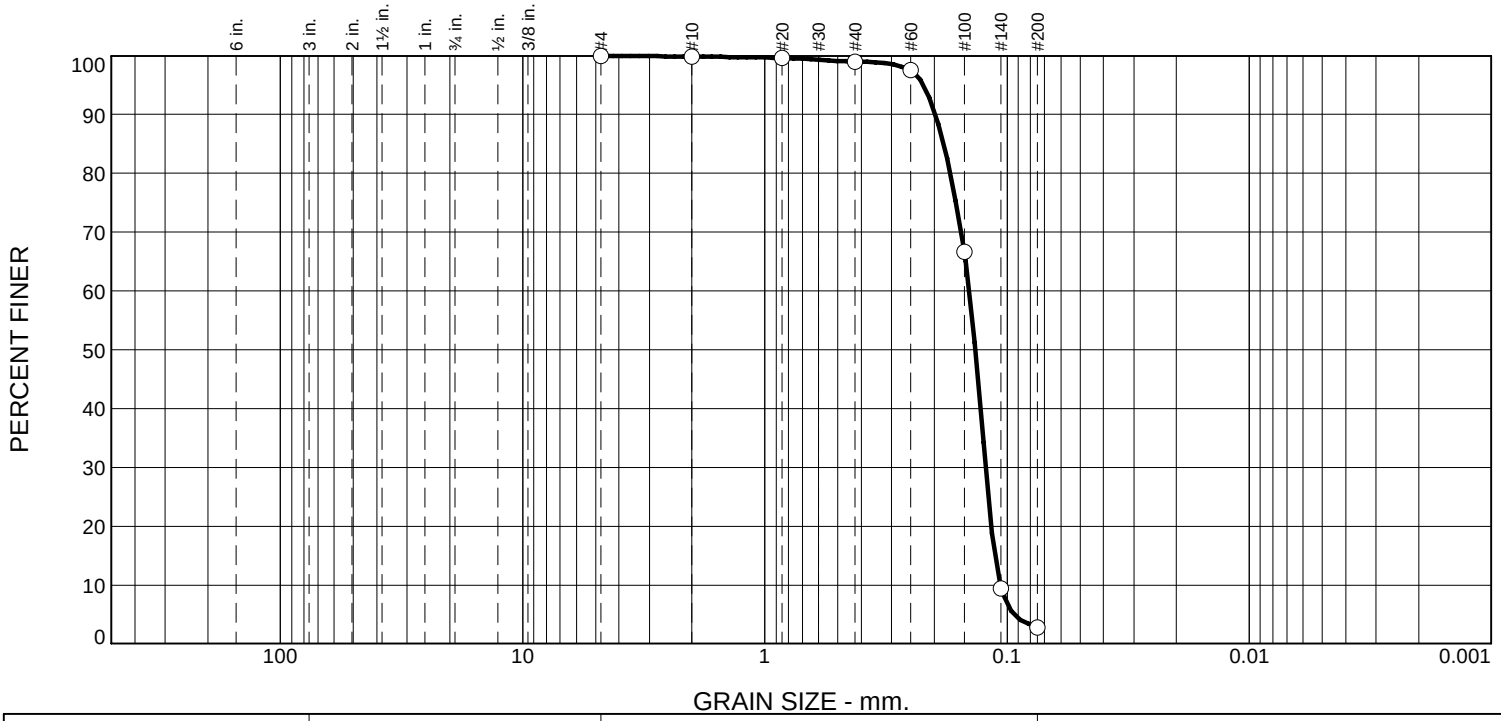
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.8	96.3	2.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.6		
#40	99.0		
#60	97.6		
#100	66.6		
#140	9.4		
#200	2.7		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1977 D_{85}= 0.1830

D_{60}= 0.1430 D_{50}= 0.1353

D_{30}= 0.1226 D_{15}= 0.1123

D_{10}= 0.1069

C_u= 1.34 C_c= 0.98

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C
Sample Number: 7E

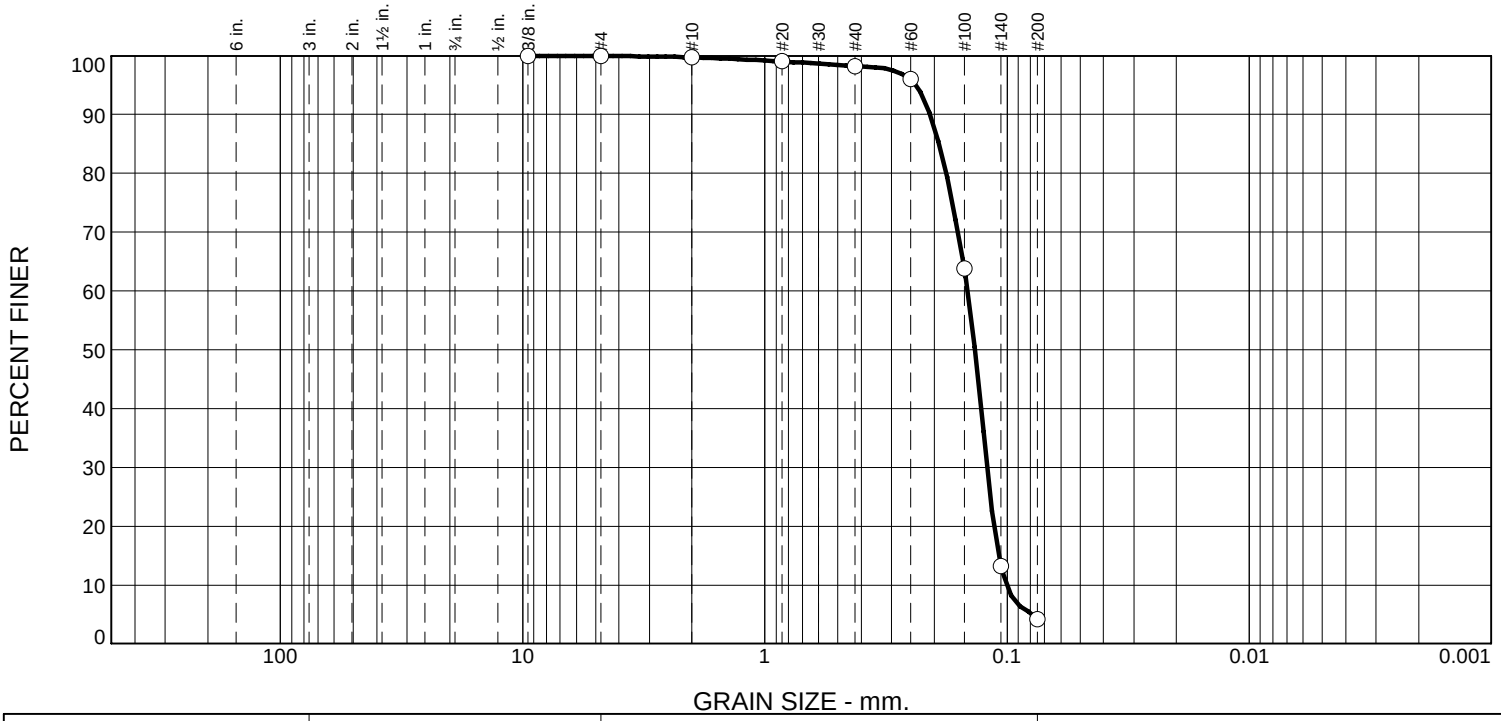
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	1.5	94.0	4.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.9		
#10	99.7		
#20	99.0		
#40	98.2		
#60	96.0		
#100	63.8		
#140	13.2		
#200	4.2		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2079 D_{85}= 0.1913

D_{60}= 0.1452 D_{50}= 0.1358

D_{30}= 0.1208 D_{15}= 0.1082

D_{10}= 0.1006

C_u= 1.44 C_c= 1.00

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C
Sample Number: 7 Comp

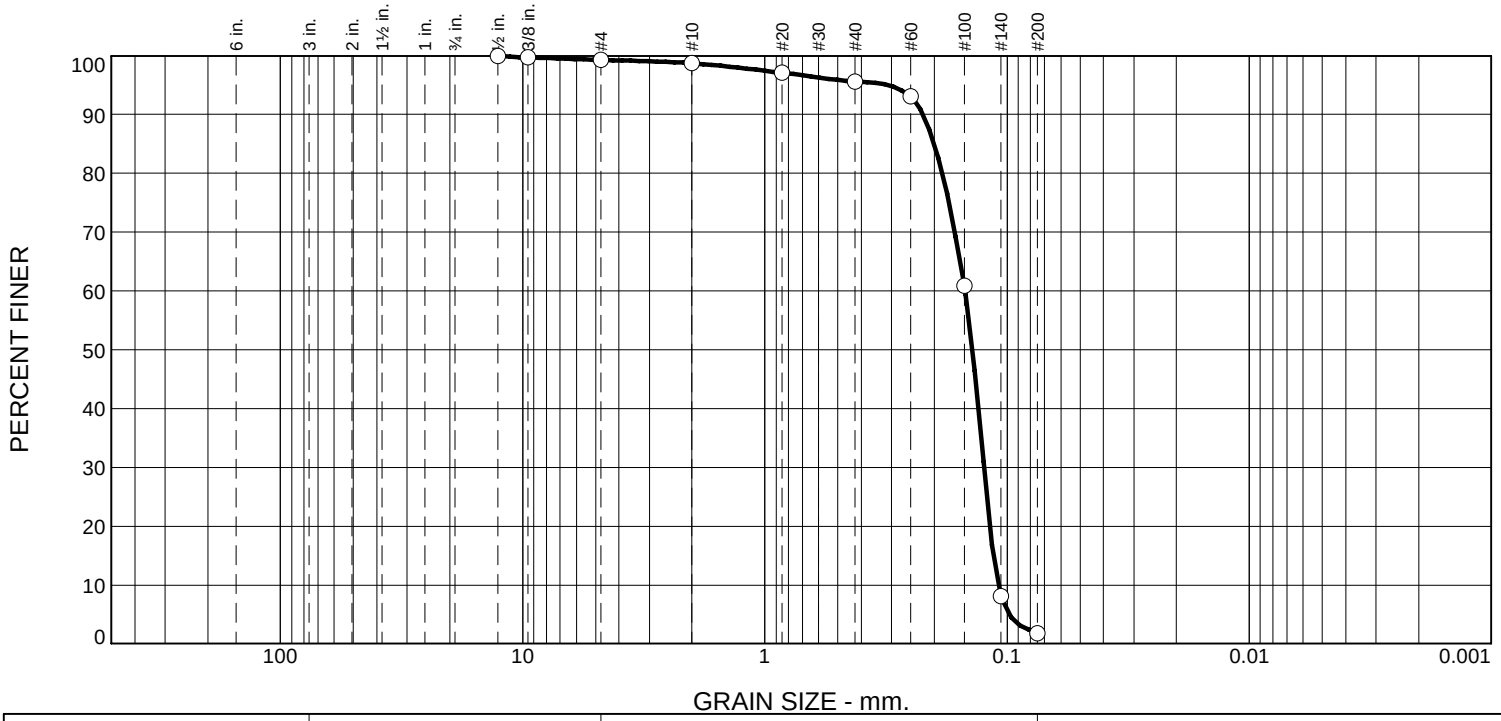
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	0.6	3.1	93.8	1.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	99.7		
#4	99.3		
#10	98.7		
#20	97.1		
#40	95.6		
#60	93.1		
#100	60.9		
#140	8.2		
#200	1.8		

* (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2220 D_{85}= 0.2002

D_{60}= 0.1489 D_{50}= 0.1389

D_{30}= 0.1246 D_{15}= 0.1138

D_{10}= 0.1088

C_u= 1.37 C_c= 0.96

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 8A

INSIGHT GROUP
A CHRISTOPHER COMPANY

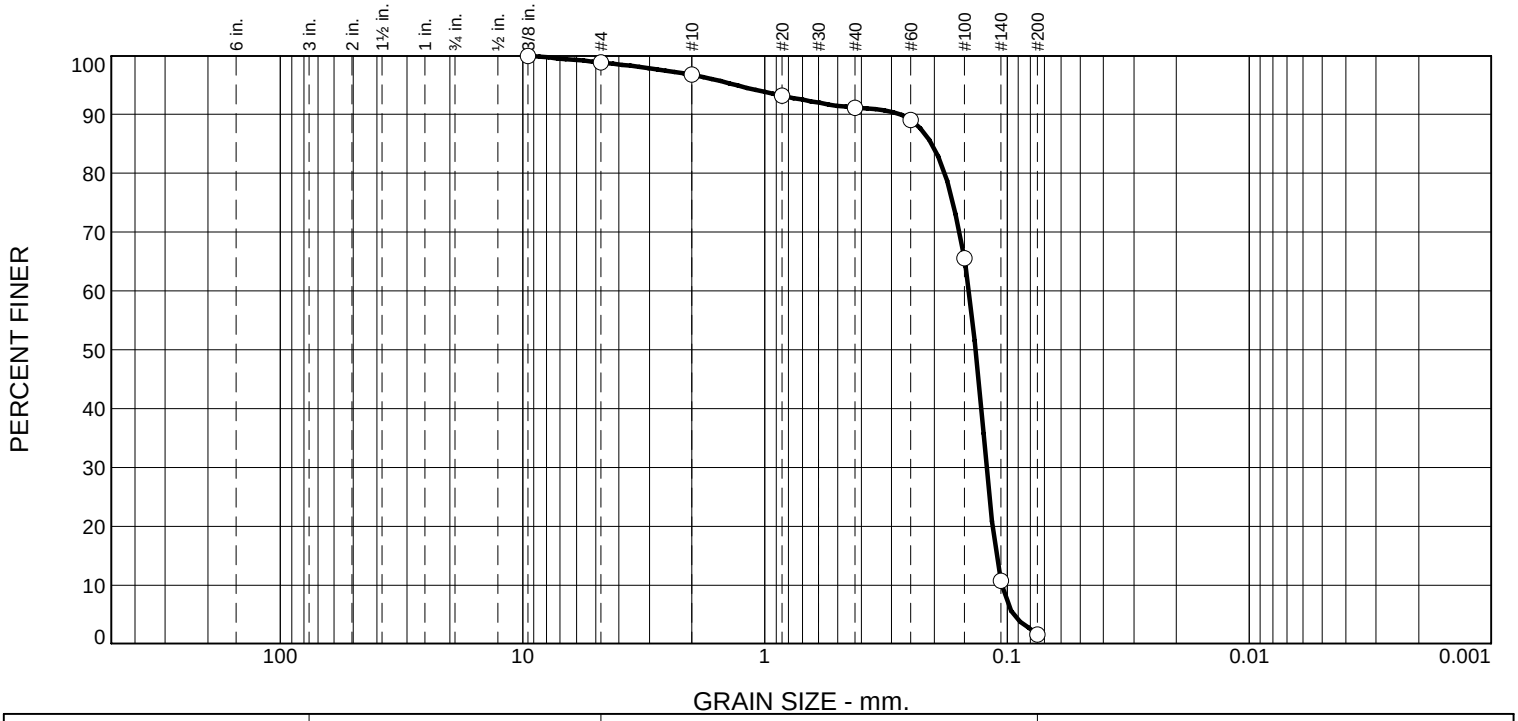
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.1	2.1	5.6	89.6	1.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	98.9		
#10	96.8		
#20	93.2		
#40	91.2		
#60	89.1		
#100	65.6		
#140	10.8		
#200	1.6		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2756 D_{85}= 0.2042

D_{60}= 0.1435 D_{50}= 0.1350

D_{30}= 0.1215 D_{15}= 0.1106

D_{10}= 0.1049

C_u= 1.37 C_c= 0.98

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 8B

INSIGHT GROUP
A CHRISTOPHER COMPANY

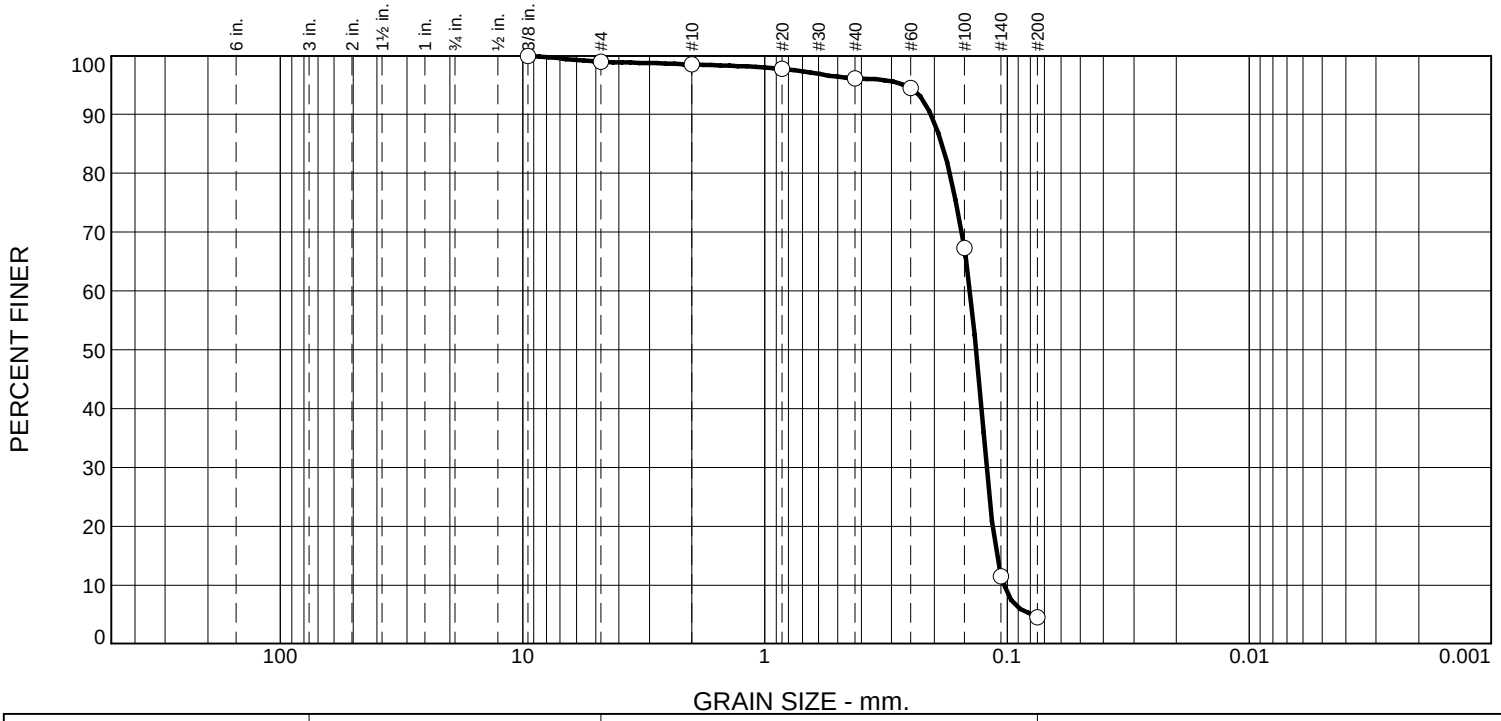
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	0.5	2.3	91.7	4.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.0		
#10	98.5		
#20	97.8		
#40	96.2		
#60	94.5		
#100	67.3		
#140	11.5		
#200	4.5		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2061 D_{85}= 0.1860

D_{60}= 0.1421 D_{50}= 0.1344

D_{30}= 0.1215 D_{15}= 0.1104

D_{10}= 0.1031

C_u= 1.38 C_c= 1.01

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 8C

INSIGHT GROUP
A CHRISTOPHER COMPANY

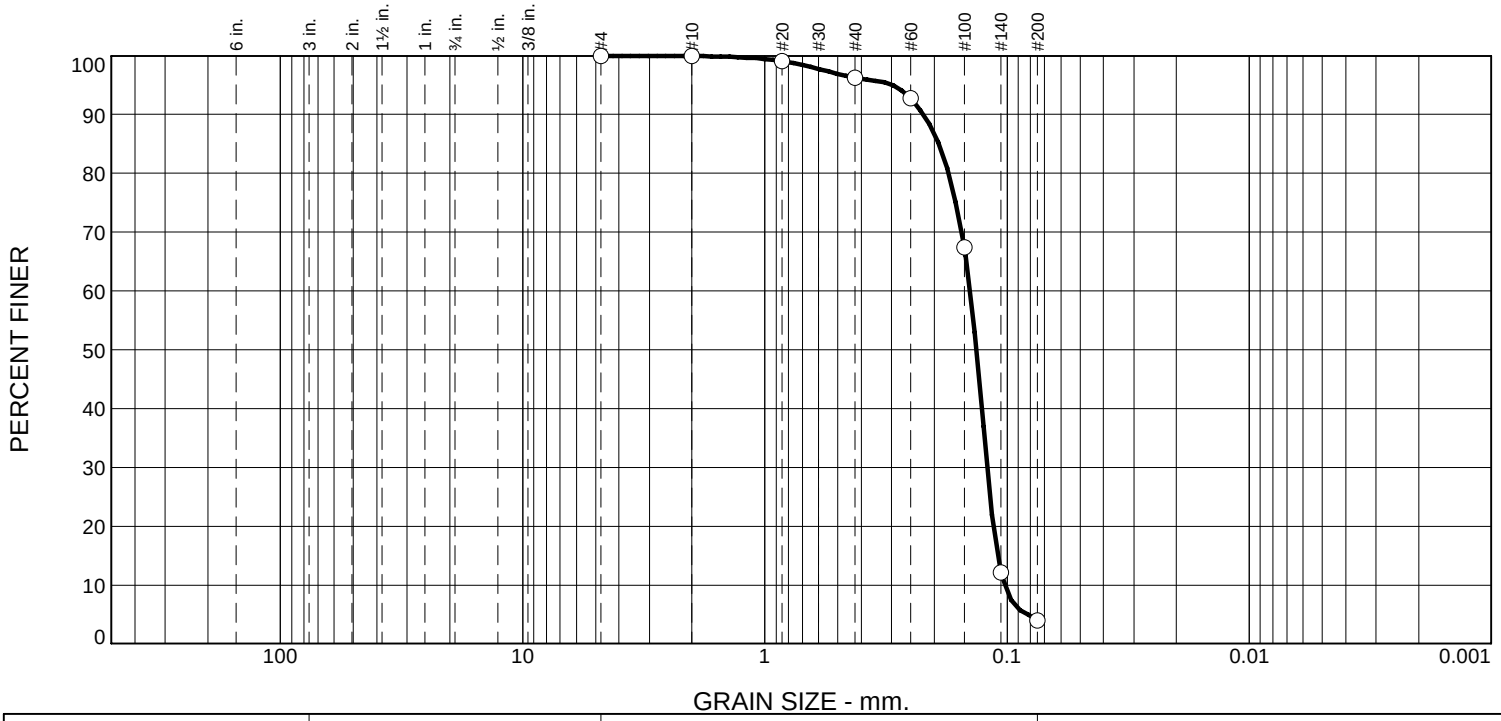
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	3.7	92.3	3.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.1		
#40	96.2		
#60	92.7		
#100	67.4		
#140	12.1		
#200	3.9		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2209 D_{85}= 0.1914
D_{60}= 0.1419 D_{50}= 0.1340
D_{30}= 0.1208 D_{15}= 0.1094
D_{10}= 0.1023
C_u= 1.39 C_c= 1.00

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

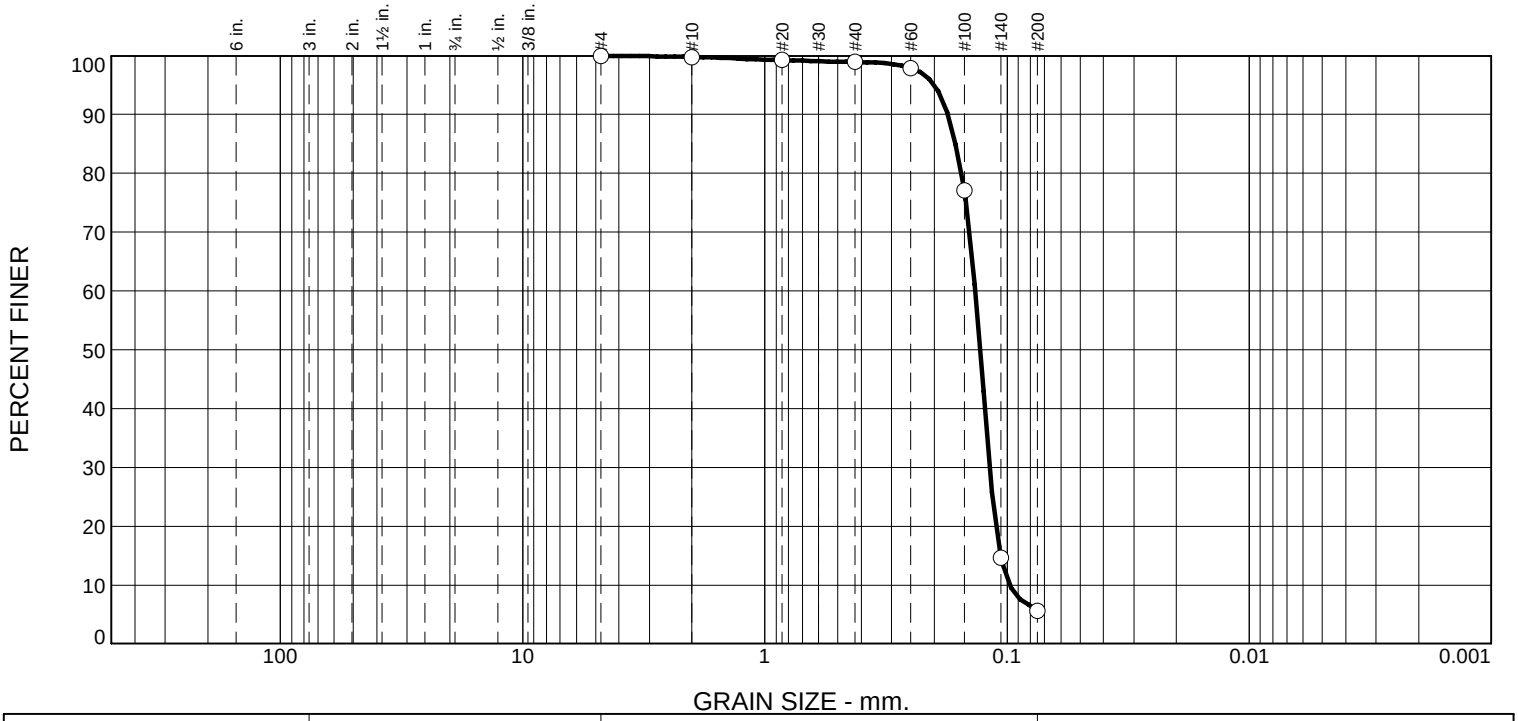
Source of Sample: PA23-1088S W-C
Sample Number: 8D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.9	93.3	5.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.3		
#40	98.9		
#60	97.9		
#100	77.1		
#140	14.7		
#200	5.6		

· (no specification provided)

Material Description

Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1758 D_{85}= 0.1631

D_{60}= 0.1354 D_{50}= 0.1293

D_{30}= 0.1179 D_{15}= 0.1065

D_{10}= 0.0976

C_u= 1.39 C_c= 1.05

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

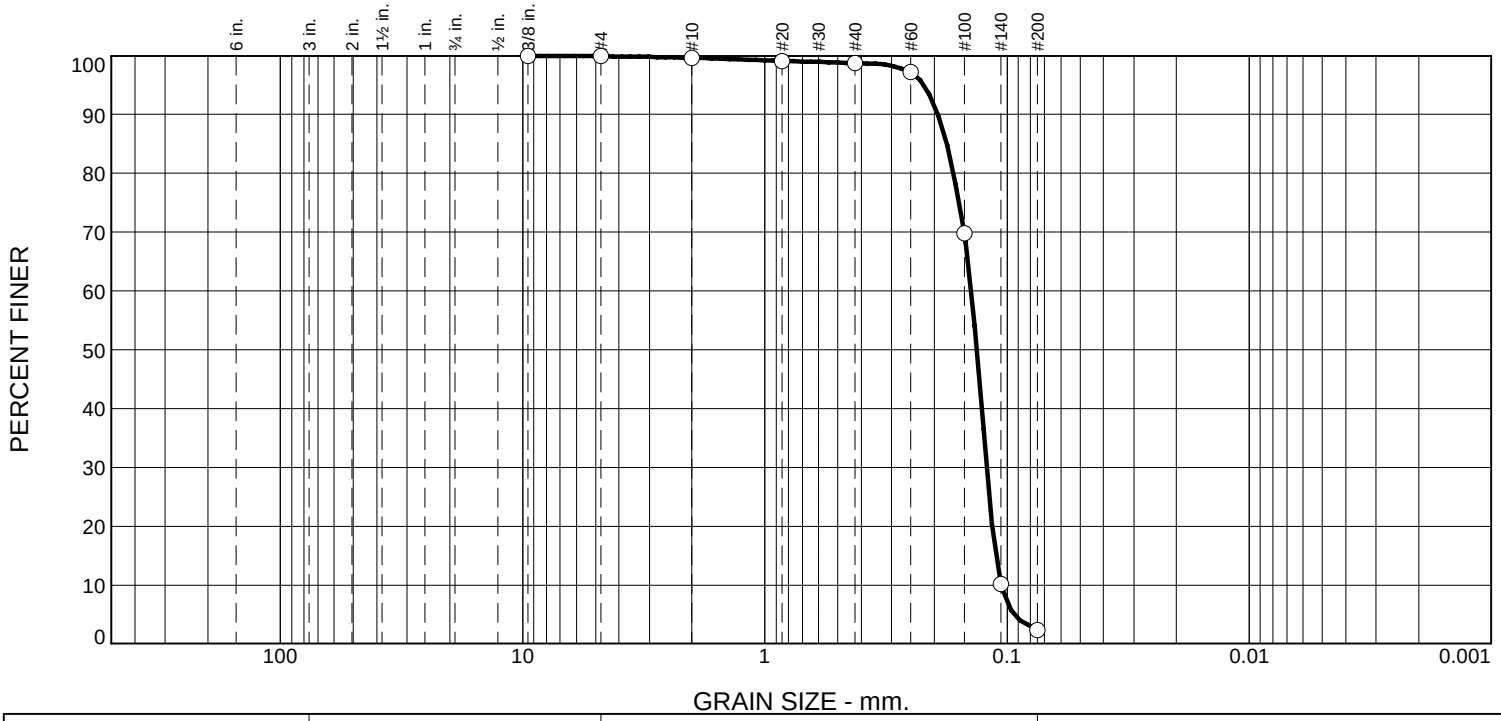
Source of Sample: PA23-1088S W-C
Sample Number: 8E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	0.8	96.5	2.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.9		
#10	99.6		
#20	99.1		
#40	98.8		
#60	97.2		
#100	69.8		
#140	10.2		
#200	2.3		

· (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1931 D_{85}= 0.1776

D_{60}= 0.1405 D_{50}= 0.1334

D_{30}= 0.1214 D_{15}= 0.1112

D_{10}= 0.1057

C_u= 1.33 C_c= 0.99

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 8F

INSIGHT GROUP
A CHRISTOPHER COMPANY

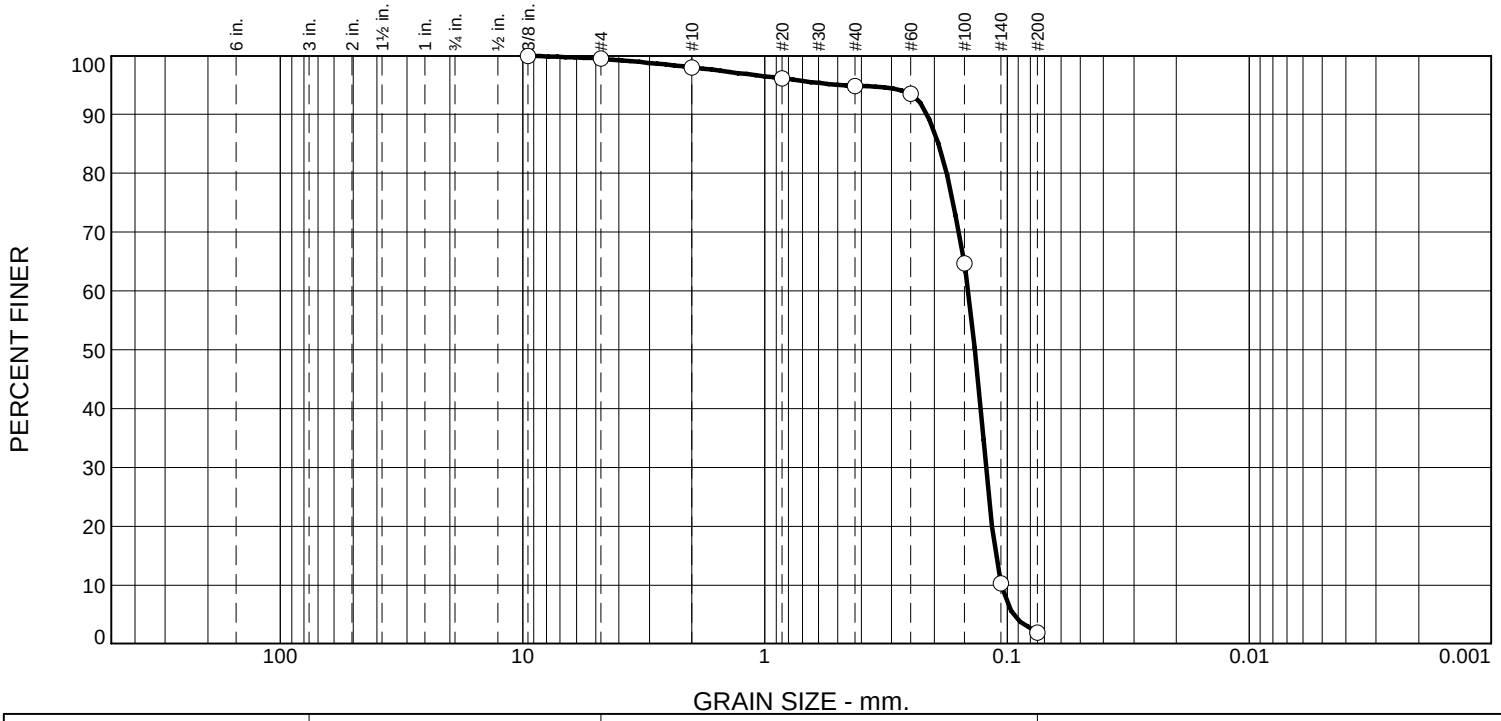
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	1.5	3.1	93.0	1.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.5		
#10	98.0		
#20	96.2		
#40	94.9		
#60	93.5		
#100	64.7		
#140	10.3		
#200	1.9		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2136 D_{85}= 0.1922

D_{60}= 0.1445 D_{50}= 0.1359

D_{30}= 0.1222 D_{15}= 0.1112

D_{10}= 0.1055

C_u= 1.37 C_c= 0.98

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

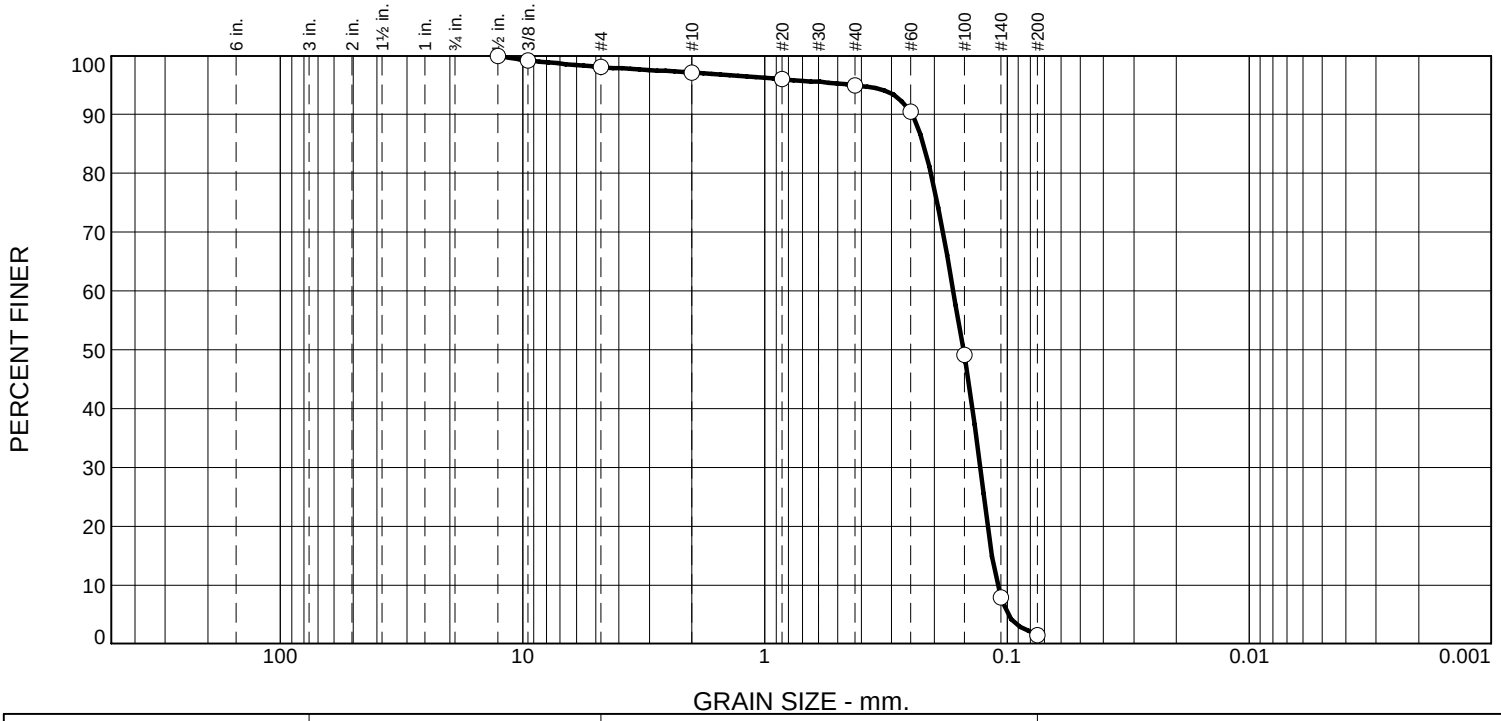
Source of Sample: PA23-1088S W-C
Sample Number: 8 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.9	1.0	2.2	93.5	1.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	99.2		
#4	98.1		
#10	97.1		
#20	96.0		
#40	94.9		
#60	90.5		
#100	49.1		
#140	7.8		
#200	1.4		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2453 D_{85}= 0.2211

D_{60}= 0.1668 D_{50}= 0.1513

D_{30}= 0.1293 D_{15}= 0.1153

D_{10}= 0.1095

C_u= 1.52 C_c= 0.92

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

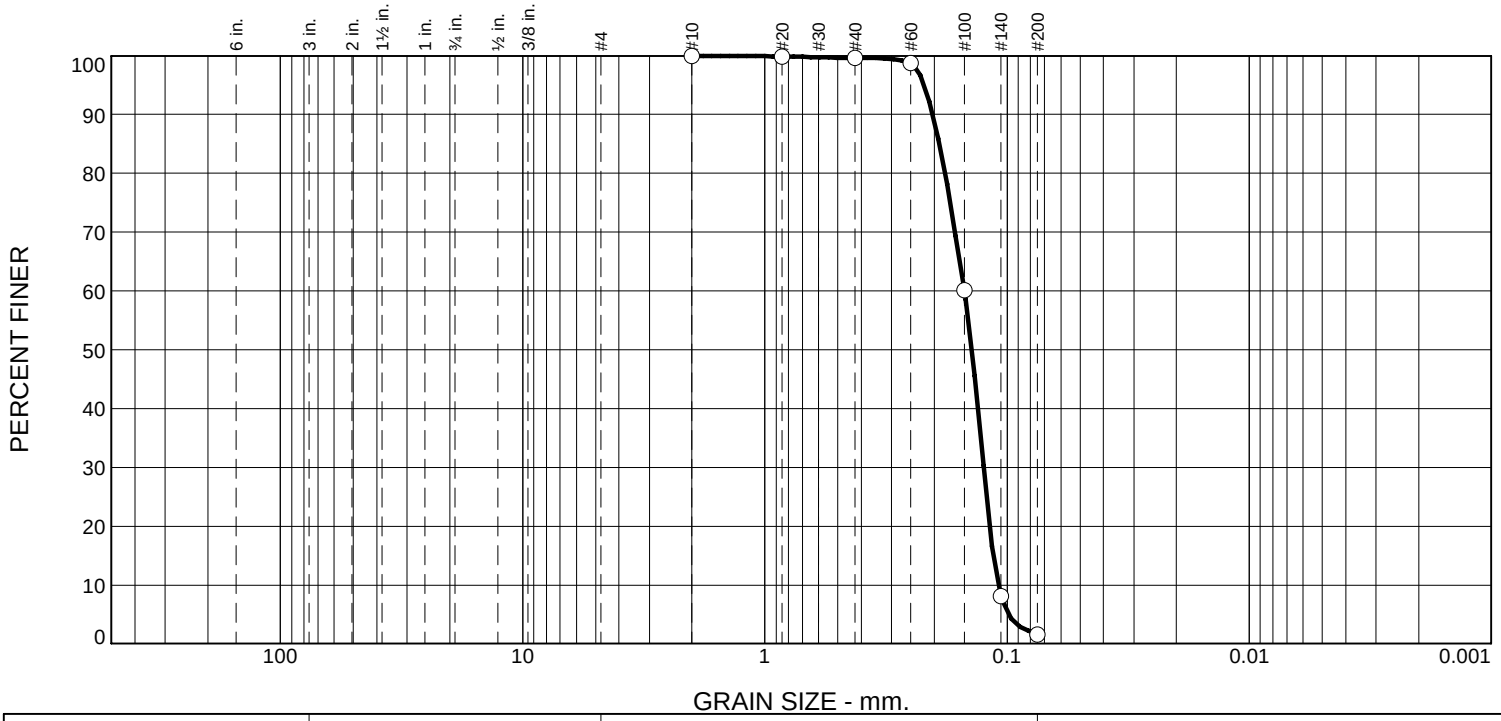
Source of Sample: PA23-1088S W-C
Sample Number: 9A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	98.1	1.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	98.8		
#100	60.1		
#140	8.1		
#200	1.5		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2028 D_{85}= 0.1906

D_{60}= 0.1499 D_{50}= 0.1397

D_{30}= 0.1250 D_{15}= 0.1139

D_{10}= 0.1089

C_u= 1.38 C_c= 0.96

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 9B

INSIGHT GROUP
A CHRISTOPHER COMPANY

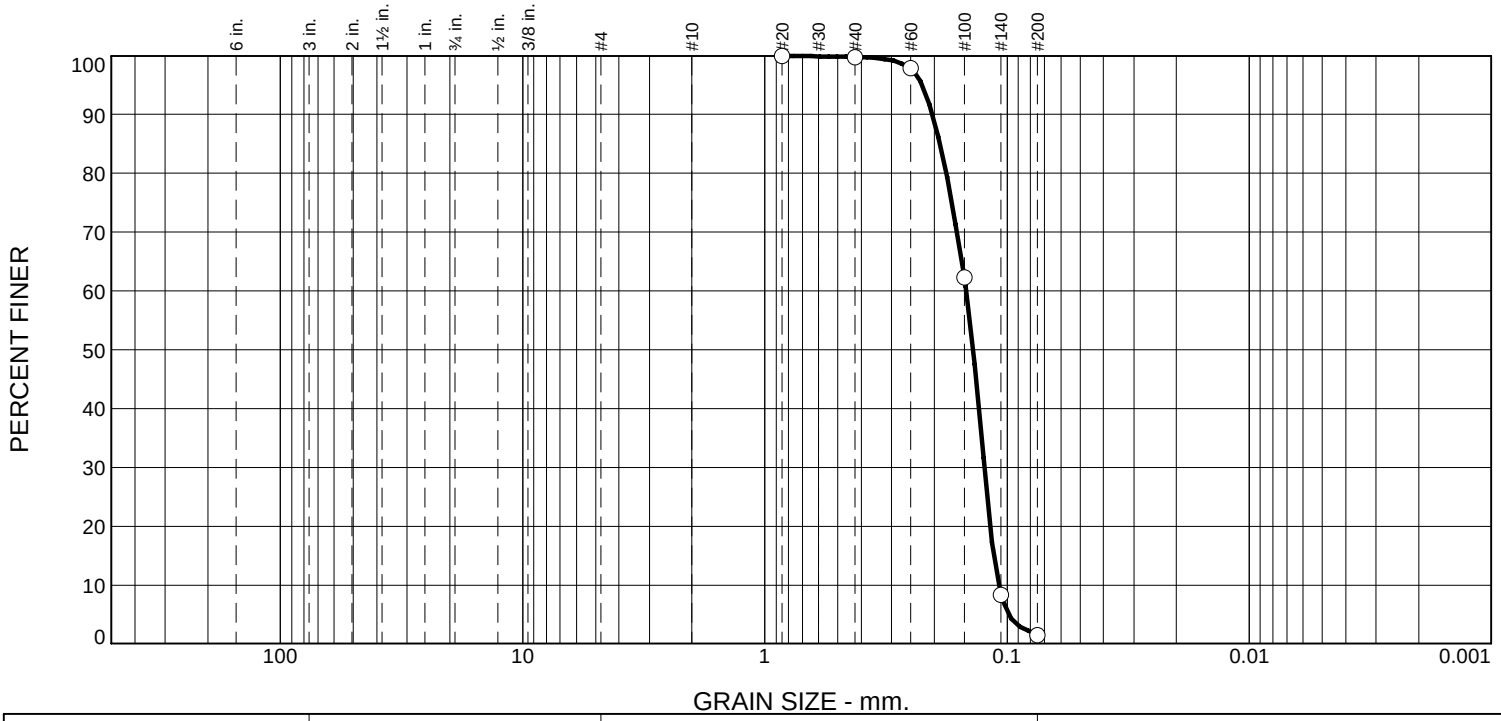
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	98.4	1.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	97.9		
#100	62.3		
#140	8.3		
#200	1.4		

· (no specification provided)

Material Description

Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2033 D_{85}= 0.1894

D_{60}= 0.1472 D_{50}= 0.1380

D_{30}= 0.1242 D_{15}= 0.1134

D_{10}= 0.1085

C_u= 1.36 C_c= 0.97

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 9C

INSIGHT GROUP
A CHRISTOPHER COMPANY

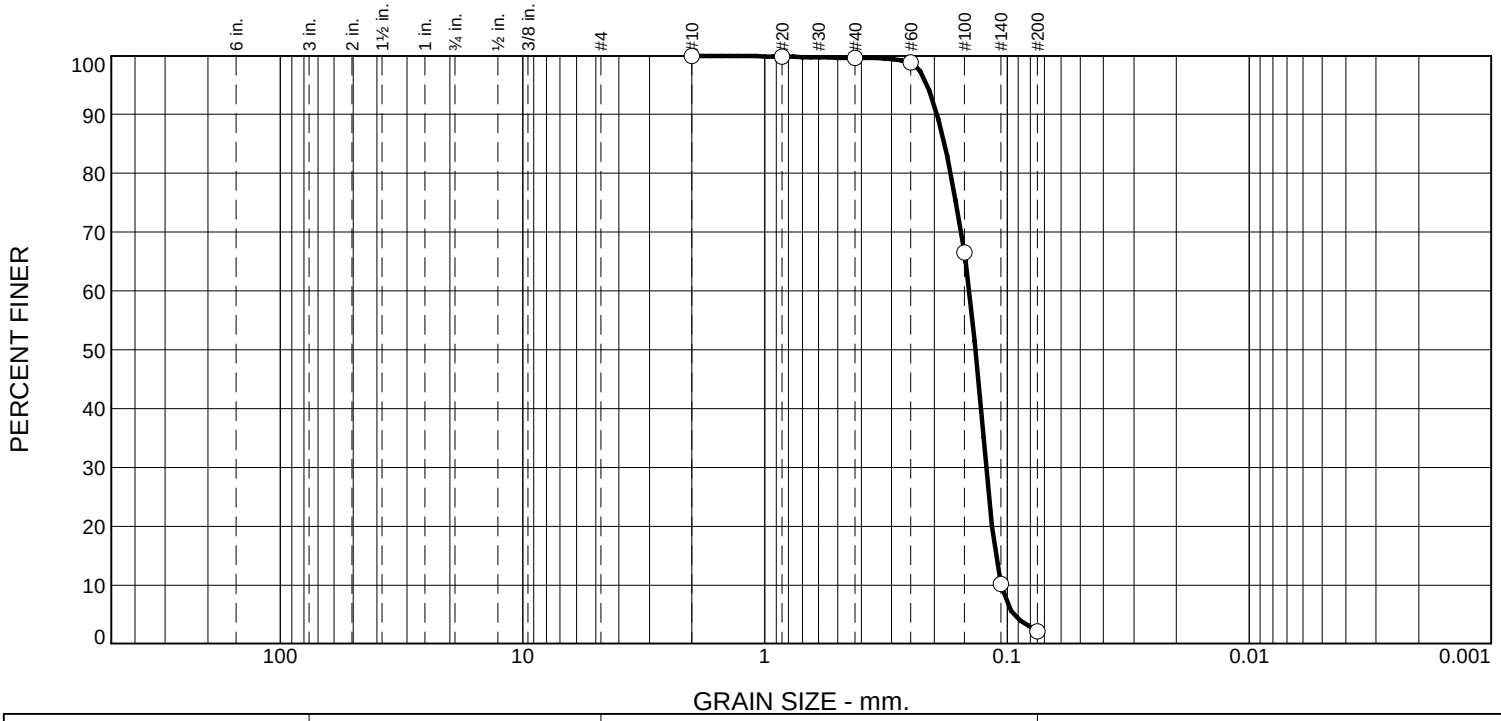
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	97.4	2.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	98.9		
#100	66.5		
#140	10.2		
#200	2.2		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1948 D_{85}= 0.1817
D_{60}= 0.1430 D_{50}= 0.1351
D_{30}= 0.1220 D_{15}= 0.1113
D_{10}= 0.1056
C_u= 1.35 C_c= 0.99

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)
SP

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

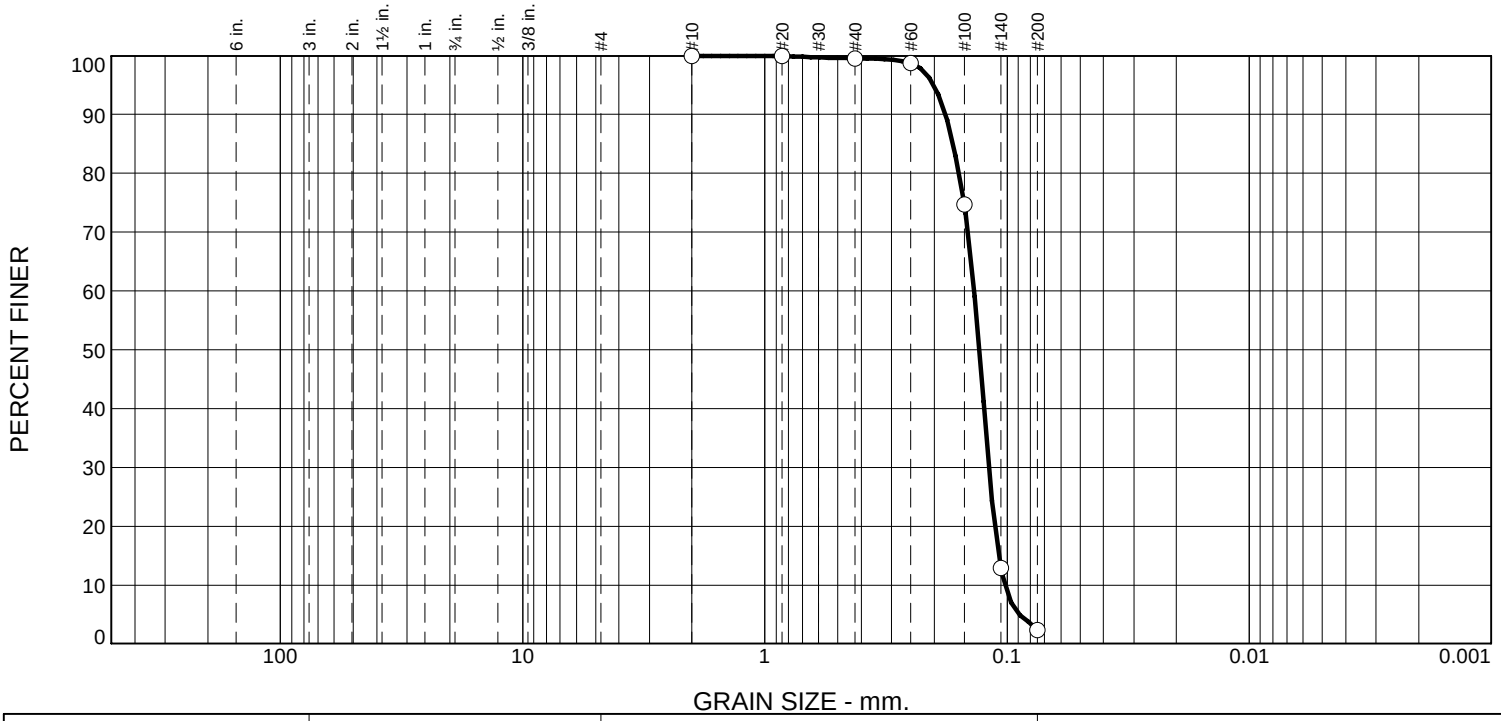
Source of Sample: PA23-1088S W-C
Sample Number: 9D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	97.3	2.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	98.8		
#100	74.8		
#140	12.8		
#200	2.3		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1799 D_{85}= 0.1671
D_{60}= 0.1368 D_{50}= 0.1304
D_{30}= 0.1187 D_{15}= 0.1083
D_{10}= 0.1021
C_u= 1.34 C_c= 1.01

Sieve Test (ASTM D6913)
Test Date: 3/6/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)
SP

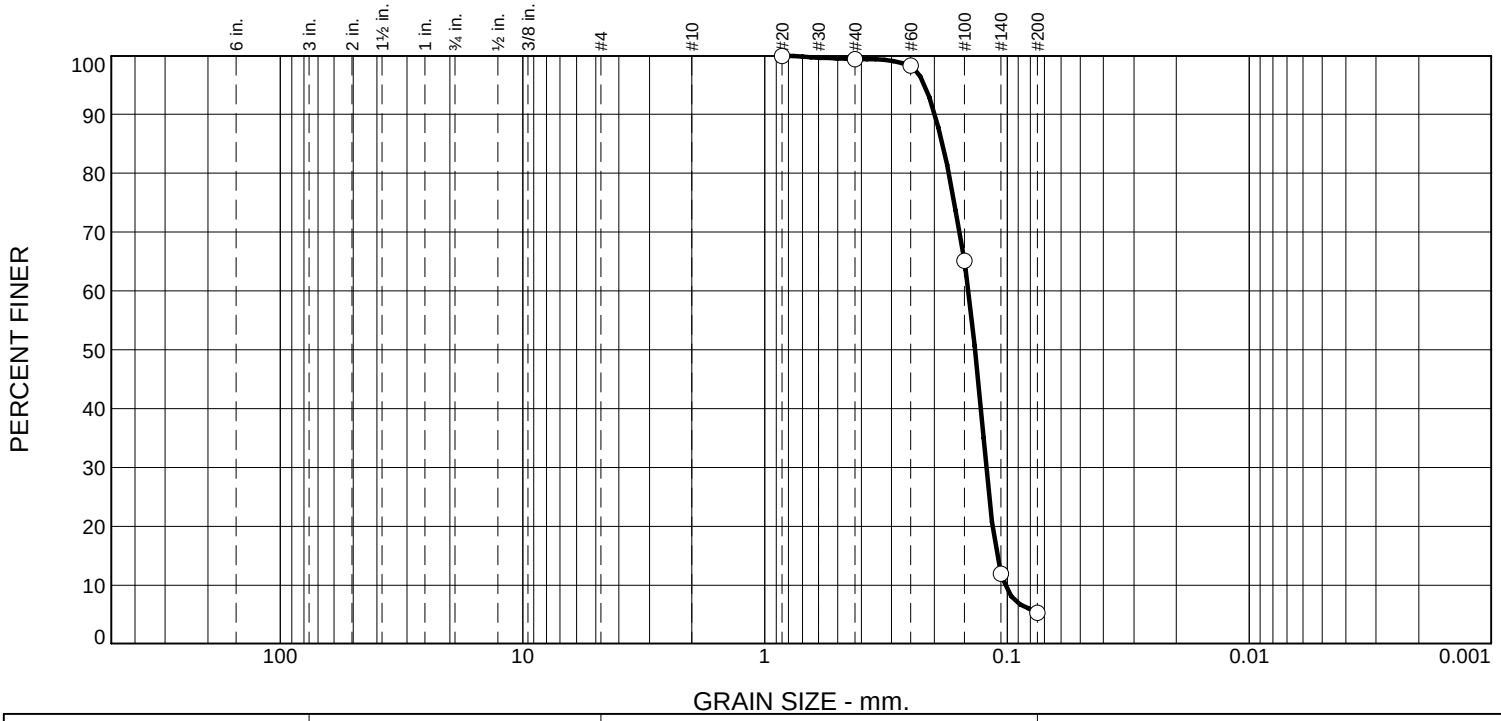
Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1088S W-C
Sample Number: 9E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	94.2	5.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.5		
#60	98.3		
#100	65.1		
#140	11.9		
#200	5.3		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1989 D_{85}= 0.1852
D_{60}= 0.1441 D_{50}= 0.1357
D_{30}= 0.1219 D_{15}= 0.1101
D_{10}= 0.1019
C_u= 1.41 C_c= 1.01

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

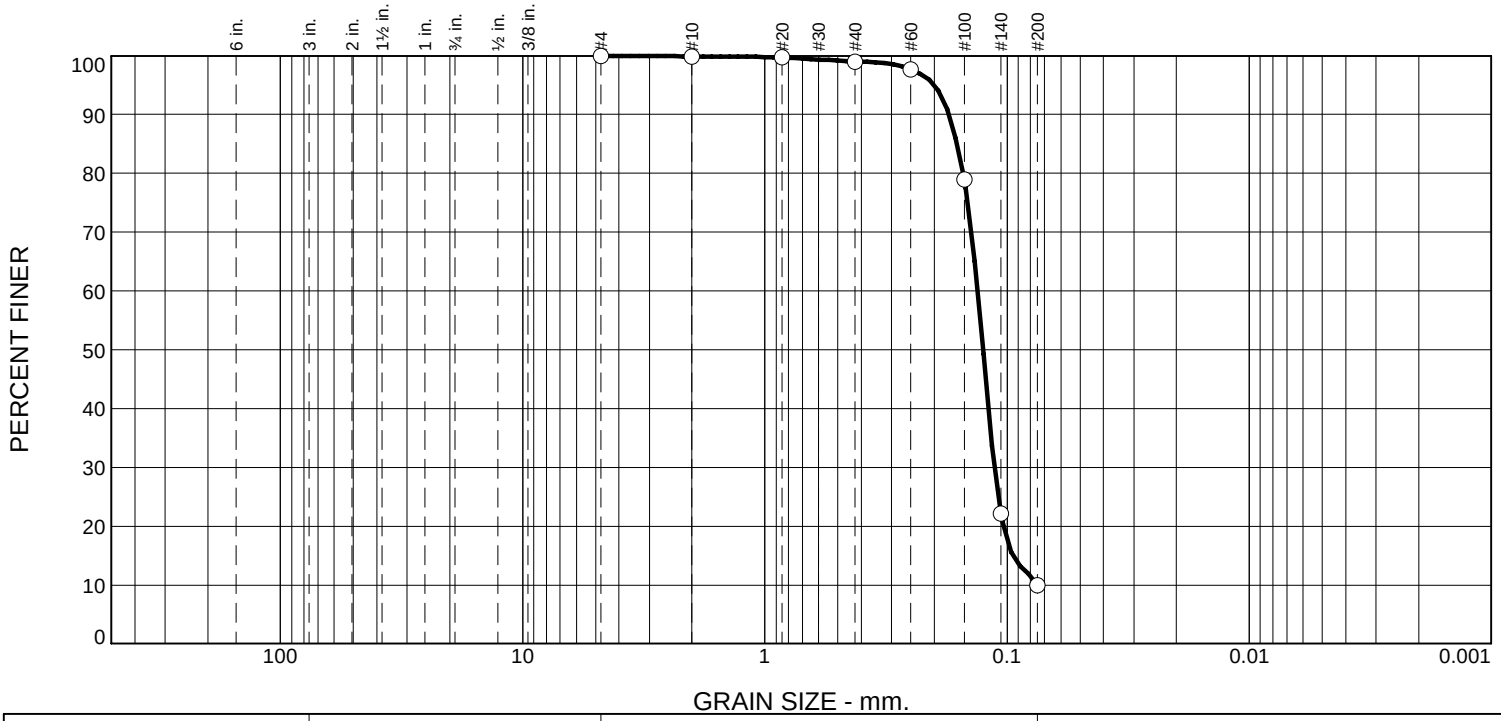
Source of Sample: PA23-1088S W-C
Sample Number: 9F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.9	89.0	10.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.7		
#40	99.0		
#60	97.7		
#100	78.9		
#140	22.2		
#200	10.0		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1740 D_{85}= 0.1608

D_{60}= 0.1324 D_{50}= 0.1258

D_{30}= 0.1126 D_{15}= 0.0949

D_{10}= 0.0751

C_u= 1.76 C_c= 1.28

Sieve Test (ASTM D6913)

Test Date: 3/6/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/1/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1088S W-C

Sample Number: 9 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

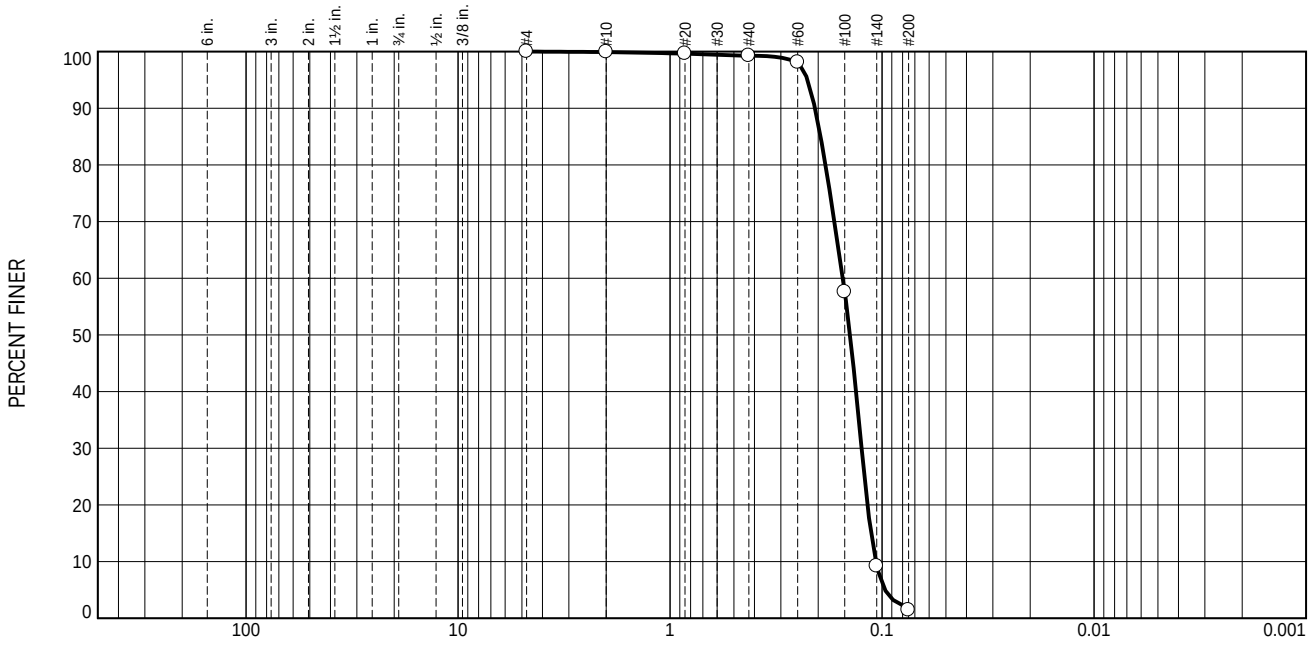
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.6	97.9	1.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	99.3		
#60	98.1		
#100	57.6		
#140	9.2		
#200	1.4		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 1A

Material Description
Light Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2073 D_{85}= 0.1950
D_{60}= 0.1533 D_{50}= 0.1414
D_{30}= 0.1250 D_{15}= 0.1128
D_{10}= 0.1072
C_u= 1.43 C_c= 0.95

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

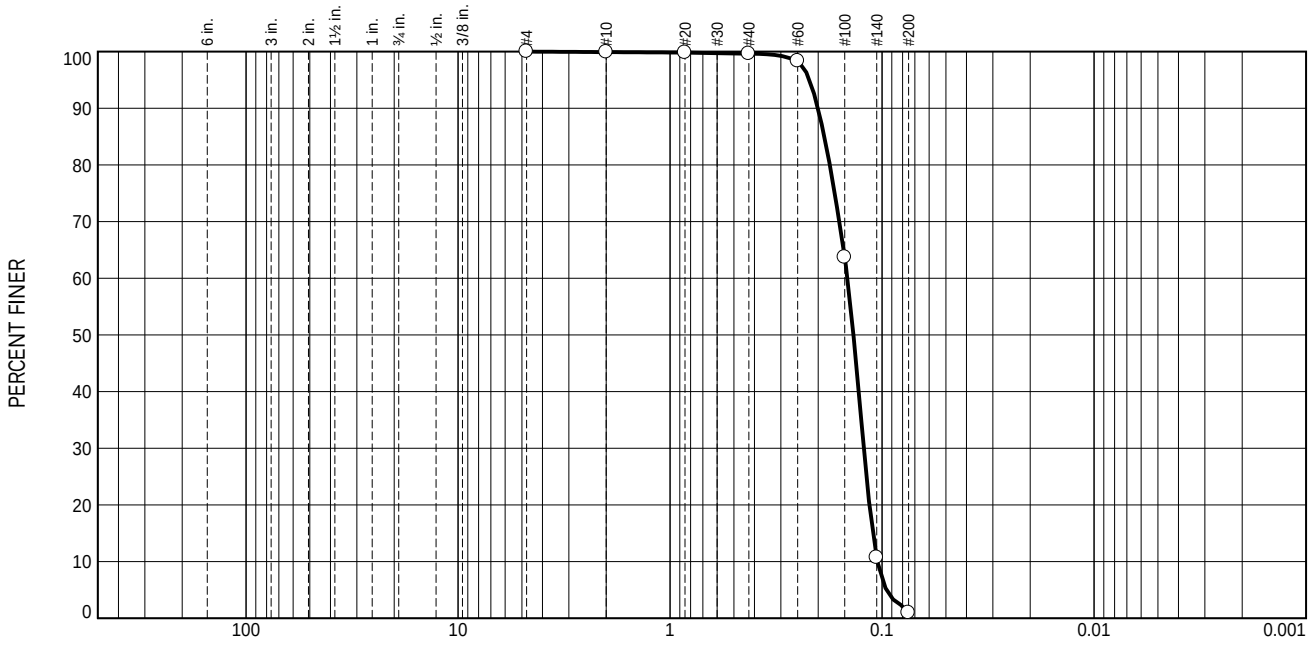
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.3	98.7	0.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.6		
#60	98.3		
#100	63.7		
#140	10.7		
#200	0.9		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 1B

Material Description
Light Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2006 D_{85}= 0.1872
D_{60}= 0.1456 D_{50}= 0.1364
D_{30}= 0.1220 D_{15}= 0.1106
D_{10}= 0.1051
C_u= 1.39 C_c= 0.97

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

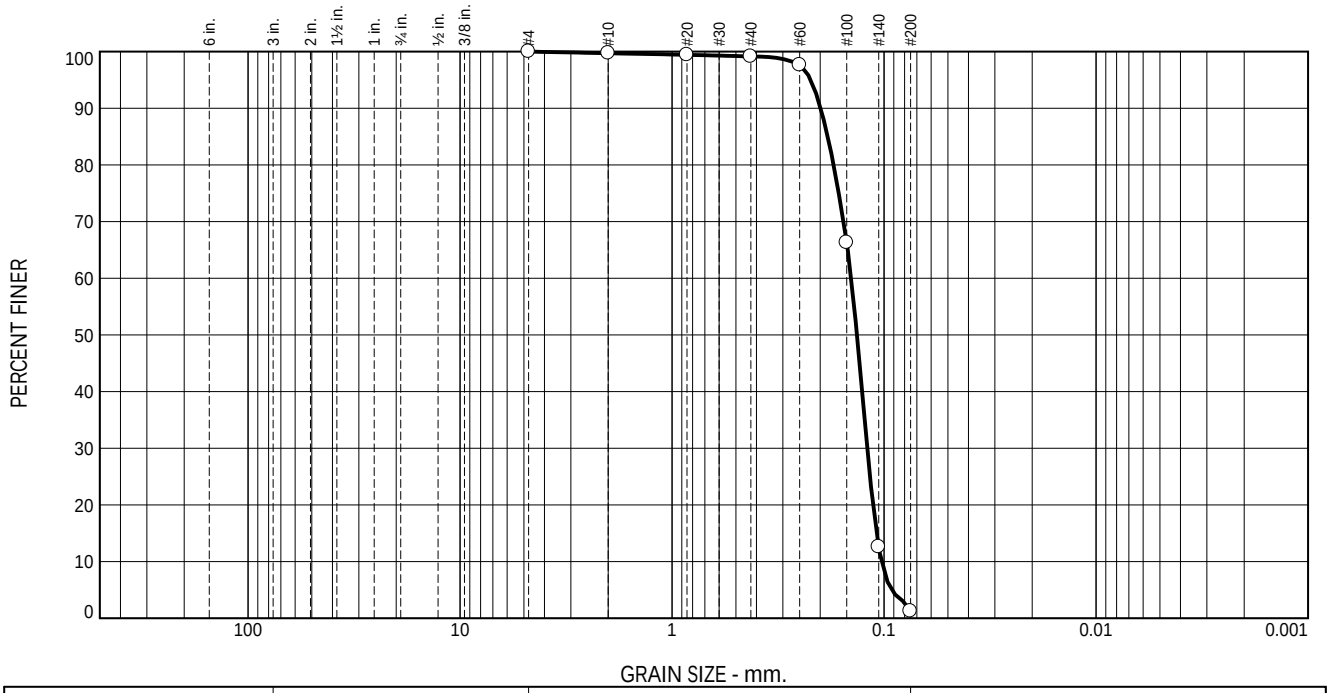
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	0.5	98.0	1.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	99.4		
#40	99.2		
#60	97.6		
#100	66.3		
#140	12.6		
#200	1.2		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 1C

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1991 D_{85}= 0.1844
D_{60}= 0.1428 D_{50}= 0.1342
D_{30}= 0.1201 D_{15}= 0.1085
D_{10}= 0.1028
C_u= 1.39 C_c= 0.98

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	1.9	4.0	92.7	1.1	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.7		
#10	97.8		
#20	95.4		
#40	93.8		
#60	89.5		
#100	53.5		
#140	9.2		
#200	1.1		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 1D

Material Description
Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2552 D_{85}= 0.2219
D_{60}= 0.1603 D_{50}= 0.1452
D_{30}= 0.1261 D_{15}= 0.1130
D_{10}= 0.1072
C_u= 1.49 C_c= 0.93

Sieve Test (ASTM D6913)
Test Date: 3/4/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

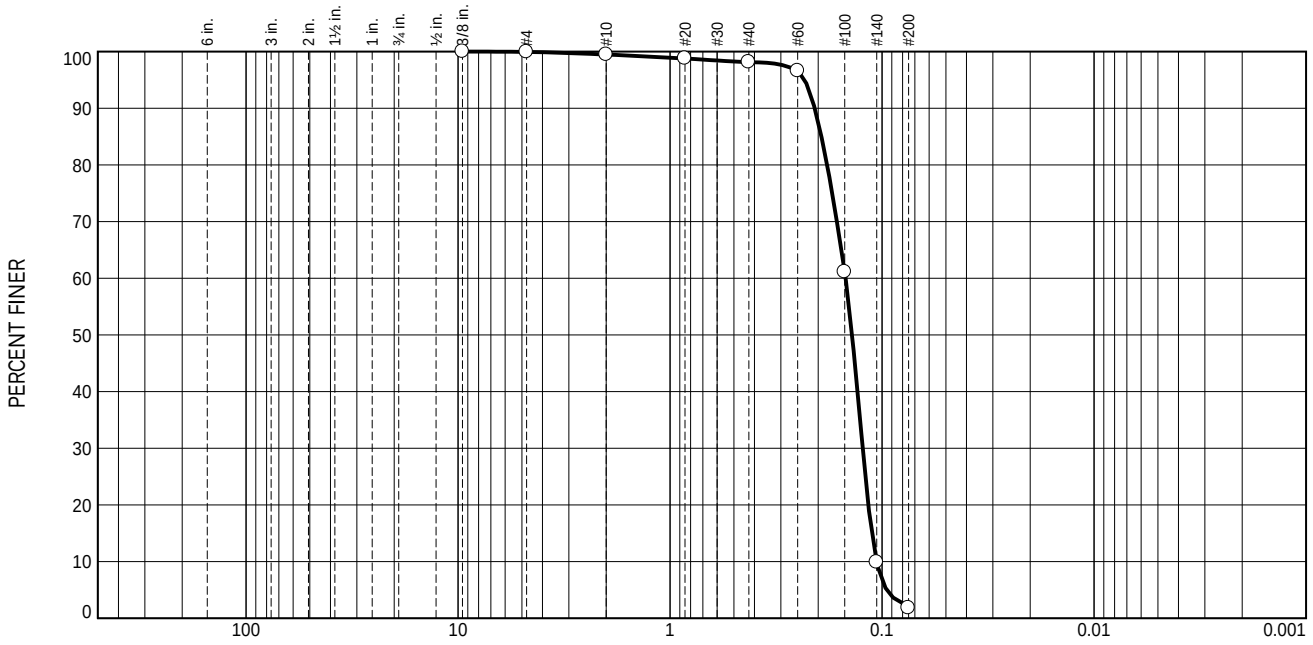
USCS (ASTM D2487)
SP

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.4	1.4	96.3	1.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.9		
#10	99.5		
#20	98.8		
#40	98.1		
#60	96.6		
#100	61.1		
#140	9.9		
#200	1.8		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 1E

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2079 D_{85}= 0.1931
D_{60}= 0.1486 D_{50}= 0.1385
D_{30}= 0.1235 D_{15}= 0.1118
D_{10}= 0.1062
C_u= 1.40 C_c= 0.97

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

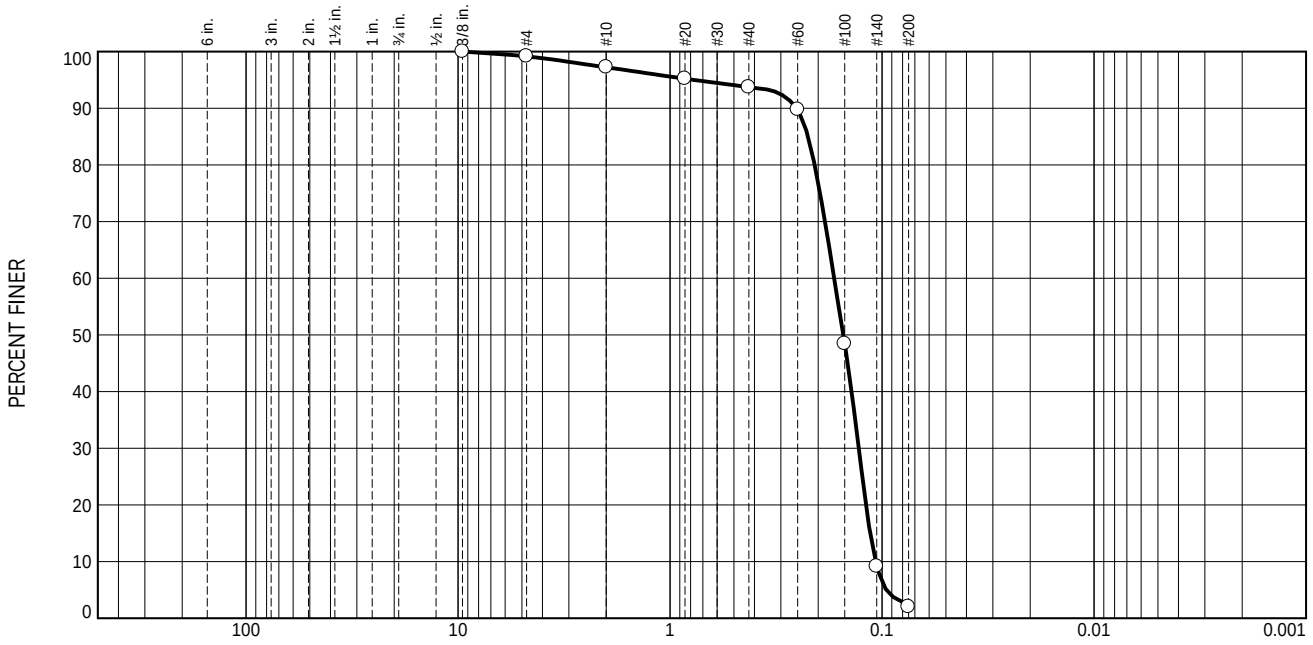
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	2.0	3.5	91.7	2.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.2		
#10	97.2		
#20	95.2		
#40	93.7		
#60	89.8		
#100	48.4		
#140	9.2		
#200	2.0		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 1F

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2528 D_{85}= 0.2235
D_{60}= 0.1682 D_{50}= 0.1524
D_{30}= 0.1288 D_{15}= 0.1139
D_{10}= 0.1074
C_u= 1.57 C_c= 0.92

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hacth
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	1.8	3.7	88.9	5.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.4		
#10	97.6		
#20	95.4		
#40	93.9		
#60	91.1		
#100	52.5		
#140	10.7		
#200	5.0		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 1 Comp

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2386 D_{85}= 0.2153
D_{60}= 0.1617 D_{50}= 0.1464
D_{30}= 0.1266 D_{15}= 0.1124
D_{10}= 0.1045
C_u= 1.55 C_c= 0.95

USCS (ASTM D2487)

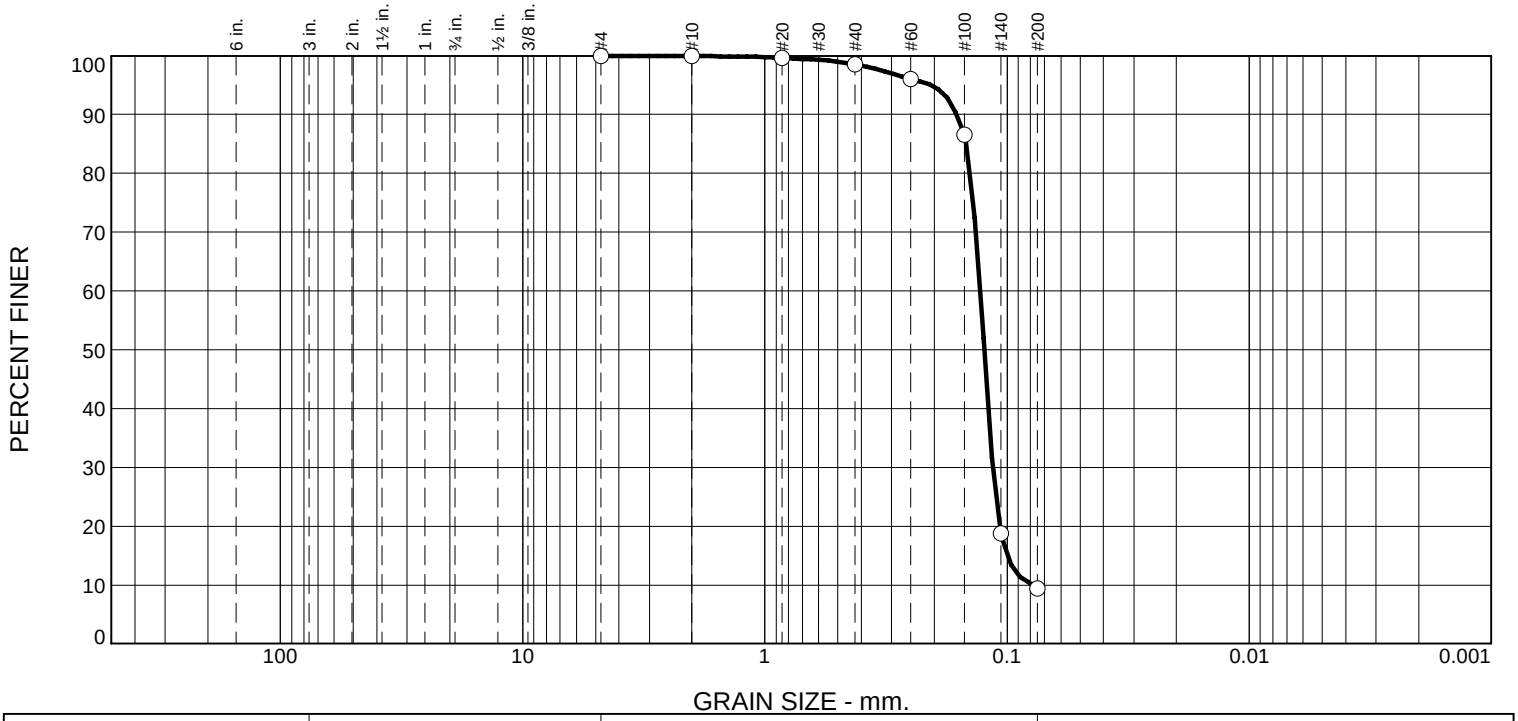
Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.3	89.2	9.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.6		
#60	96.0		
#100	86.6		
#140	18.8		
#200	9.4		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1614 D_{85}= 0.1470

D_{60}= 0.1292 D_{50}= 0.1243

D_{30}= 0.1143 D_{15}= 0.0999

D_{10}= 0.0780

C_u= 1.66 C_c= 1.30

Sieve Test (ASTM D6913)

Test Date: 4/3/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/29/23

Date Received: 3/30/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 10A

INSIGHT GROUP
A CHRISTOPHER COMPANY

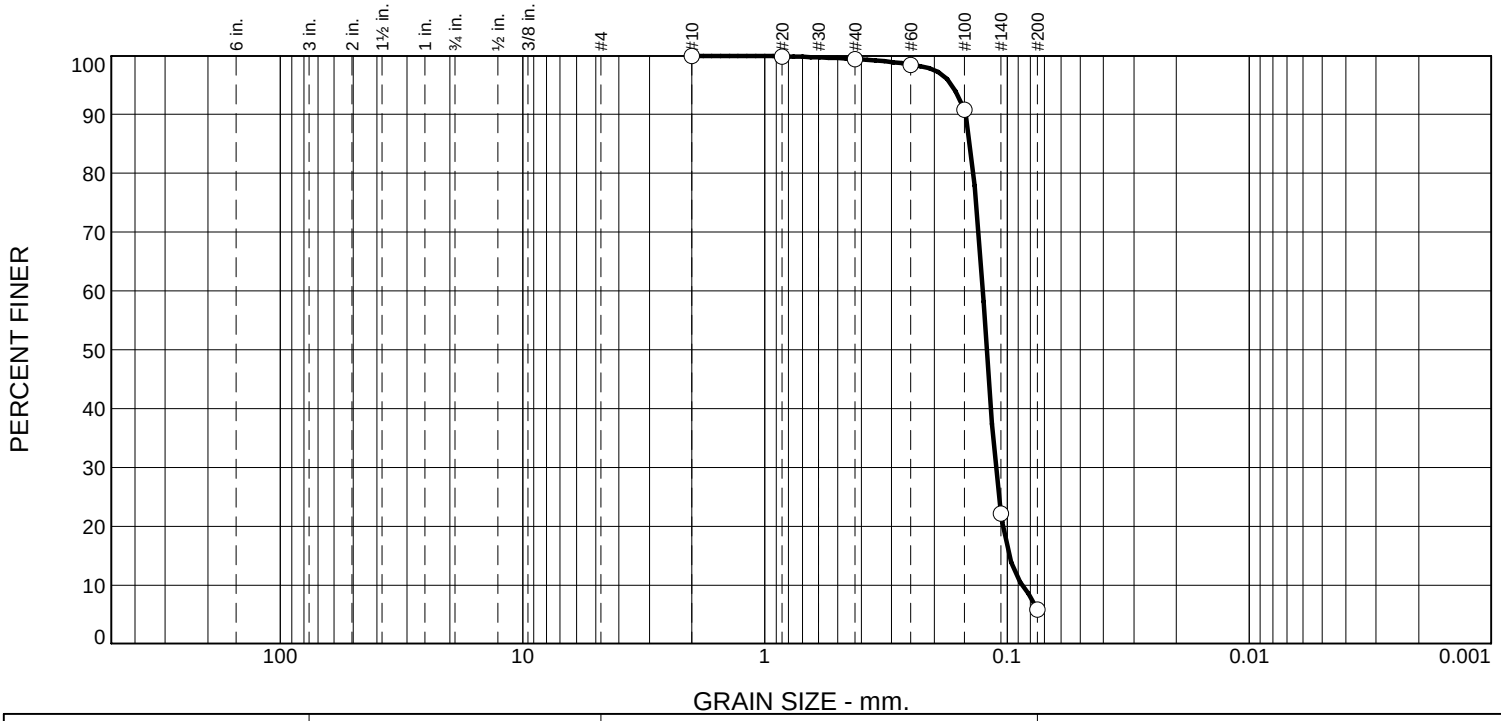
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	93.6	5.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.4		
#60	98.5		
#100	90.8		
#140	22.2		
#200	5.8		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1479 D_{85}= 0.1416

D_{60}= 0.1262 D_{50}= 0.1213

D_{30}= 0.1113 D_{15}= 0.0981

D_{10}= 0.0867

C_u= 1.45 C_c= 1.13

Sieve Test (ASTM D6913)

Test Date: 4/3/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/29/23

Date Received: 3/30/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 10B

INSIGHT GROUP
A CHRISTOPHER COMPANY

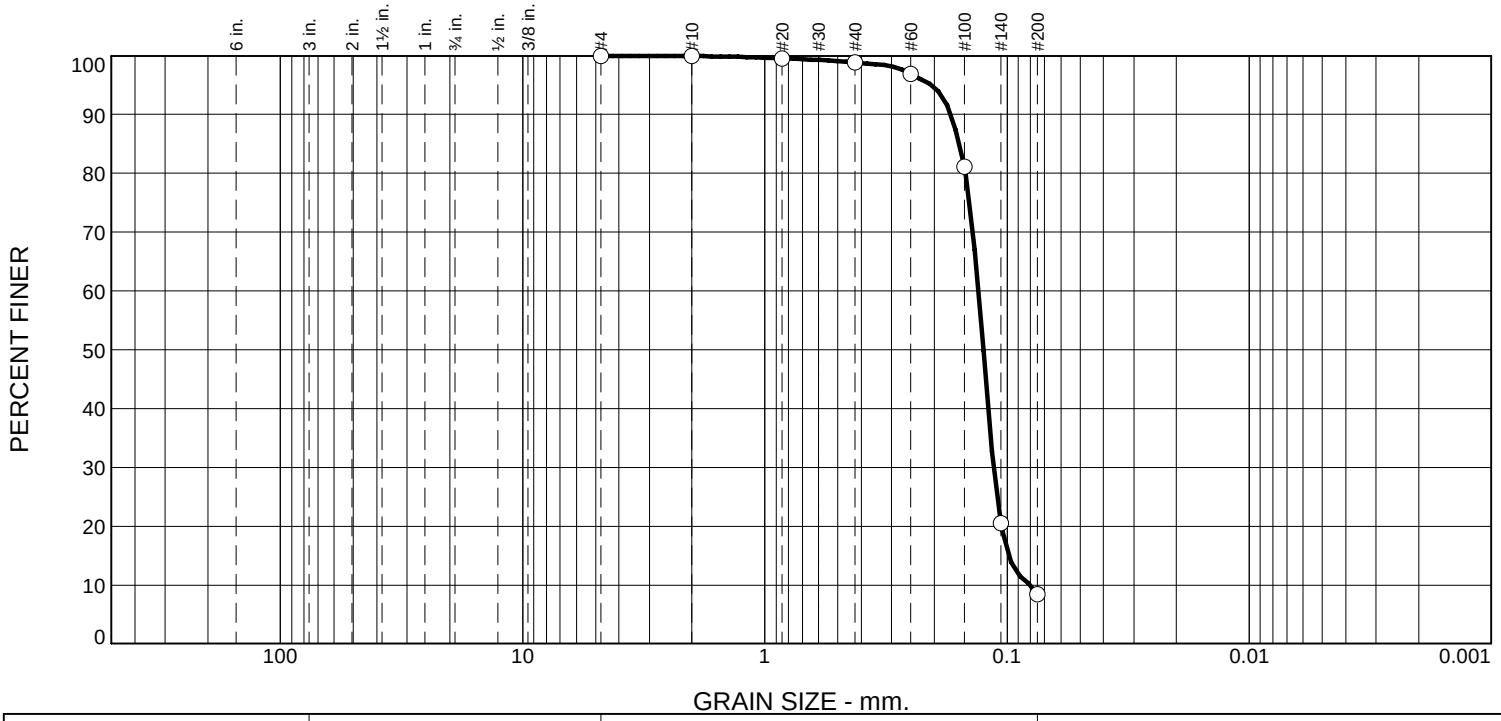
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.1	90.4	8.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.8		
#60	96.9		
#100	81.1		
#140	20.5		
#200	8.4		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 4/3/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1709 D_{85}= 0.1572

D_{60}= 0.1315 D_{50}= 0.1254

D_{30}= 0.1135 D_{15}= 0.0985

D_{10}= 0.0801

C_u= 1.64 C_c= 1.22

USCS (ASTM D2487)

Date Sampled: 3/29/23

Date Received: 3/30/23

Checked By: J. Hatch

Title: Sr Engineer

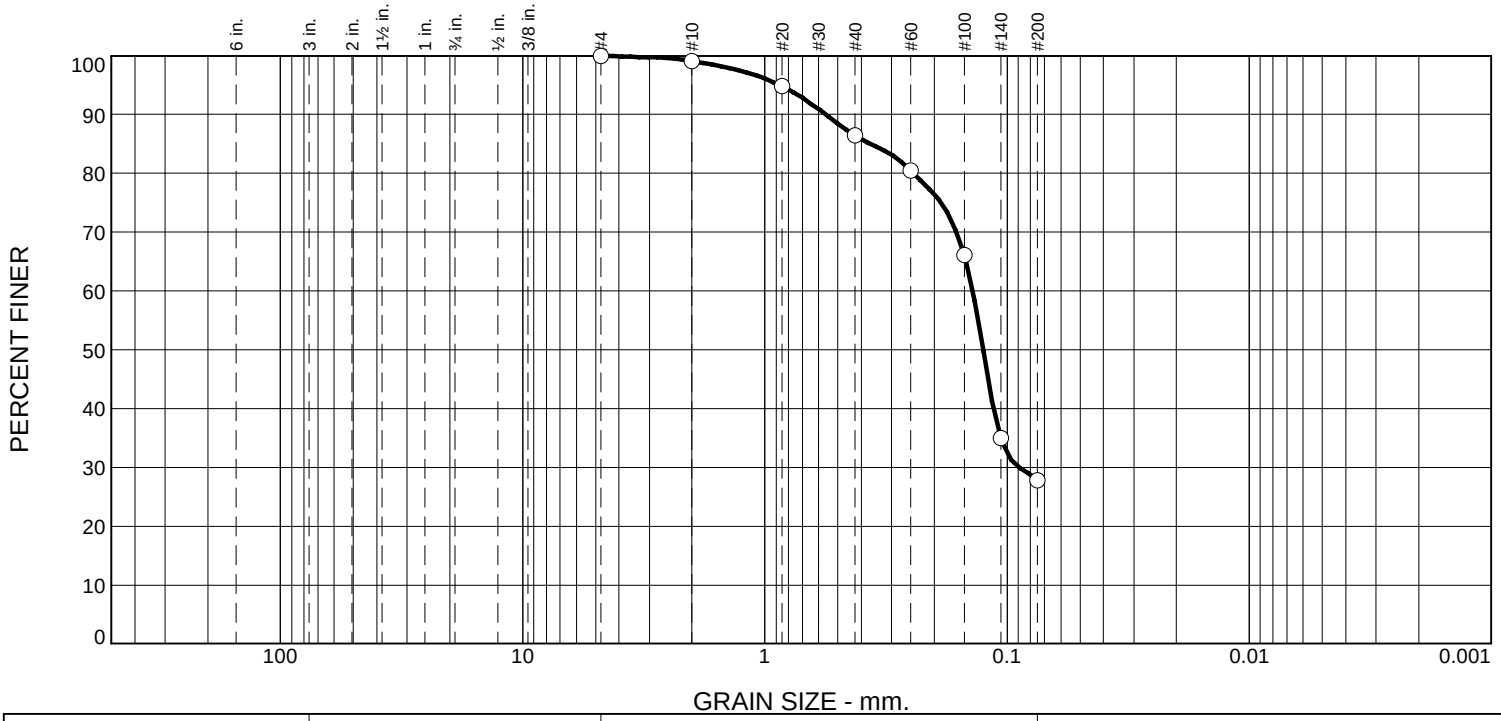
Source of Sample: PA23-1110S W-C
Sample Number: 10C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.9	12.6	58.7	27.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.1		
#20	94.9		
#40	86.5		
#60	80.5		
#100	66.1		
#140	35.0		
#200	27.8		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.5602 D_{85}= 0.3660

D_{60}= 0.1386 D_{50}= 0.1256

D_{30}= 0.0898 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 4/3/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/29/23

Date Received: 3/30/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 10D

INSIGHT GROUP
A CHRISTOPHER COMPANY

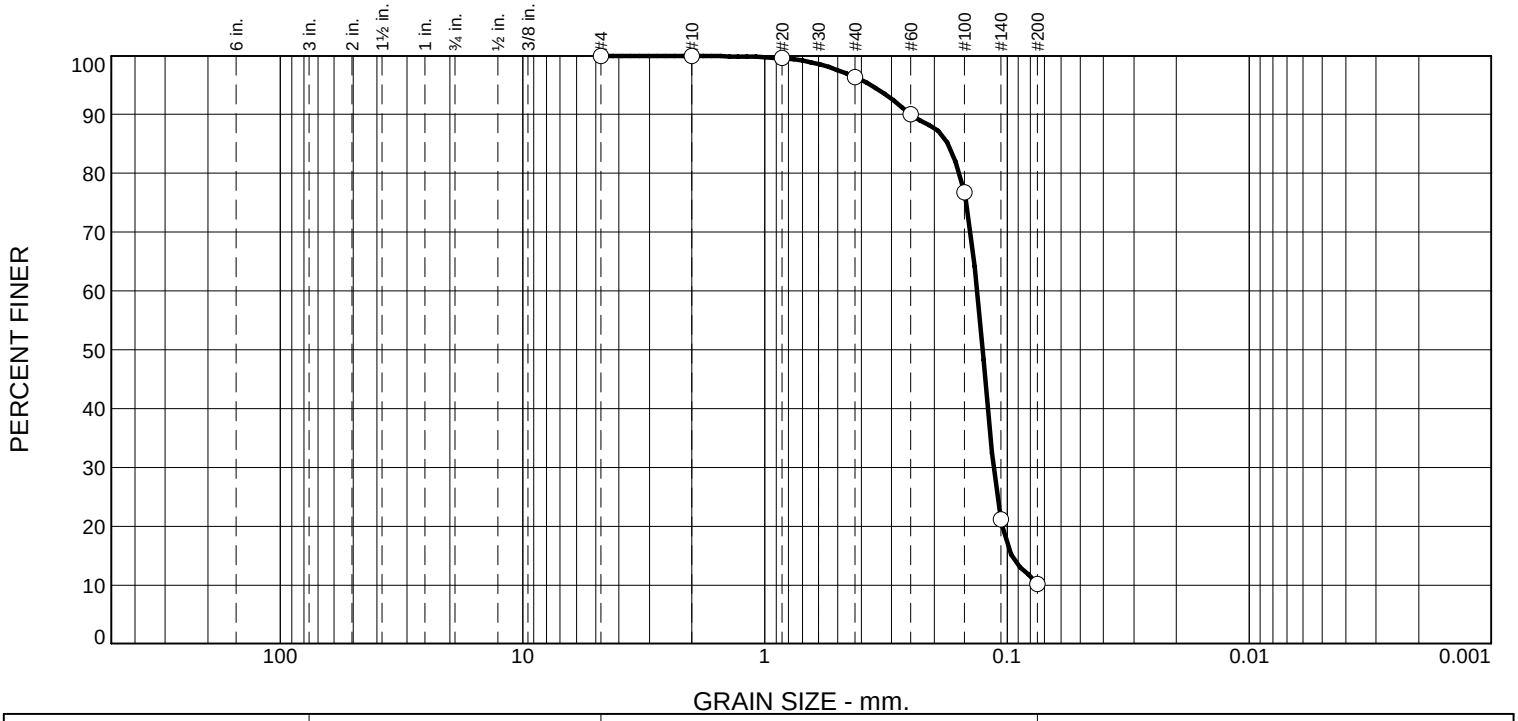
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	3.5	86.2	10.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	96.4		
#60	90.0		
#100	76.8		
#140	21.2		
#200	10.2		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 4/3/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2493 D_{85}= 0.1755

D_{60}= 0.1330 D_{50}= 0.1263

D_{30}= 0.1135 D_{15}= 0.0959

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/29/23

Date Received: 3/30/23

Checked By: J. Hatch

Title: Sr Engineer

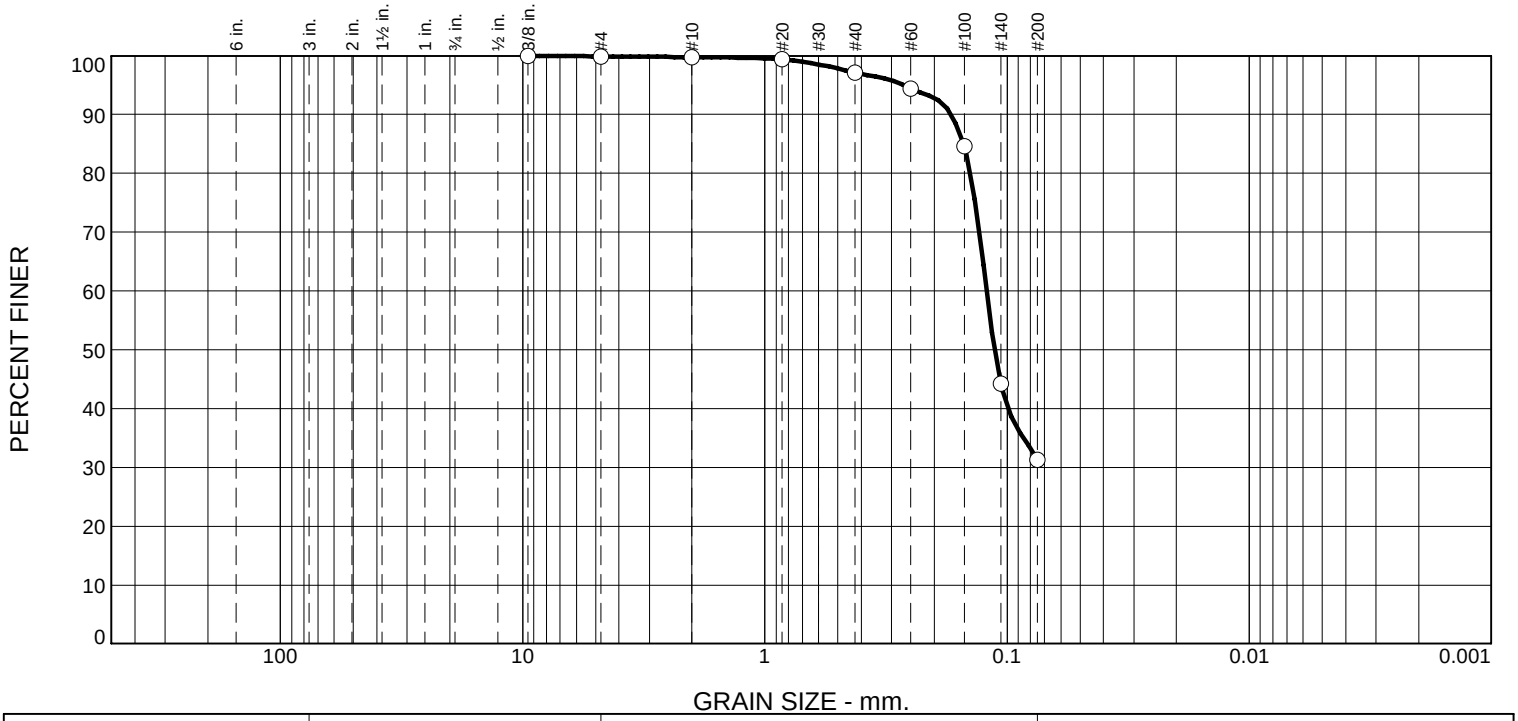
Source of Sample: PA23-1110S W-C
Sample Number: 10 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	2.6	65.9	31.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375	100.0		
#4	99.9		
#10	99.8		
#20	99.4		
#40	97.2		
#60	94.4		
#100	84.7		
#140	44.2		
#200	31.3		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1704 D_{85}= 0.1509
D_{60}= 0.1215 D_{50}= 0.1125
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/5/23 **Technician:** D. Carter
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

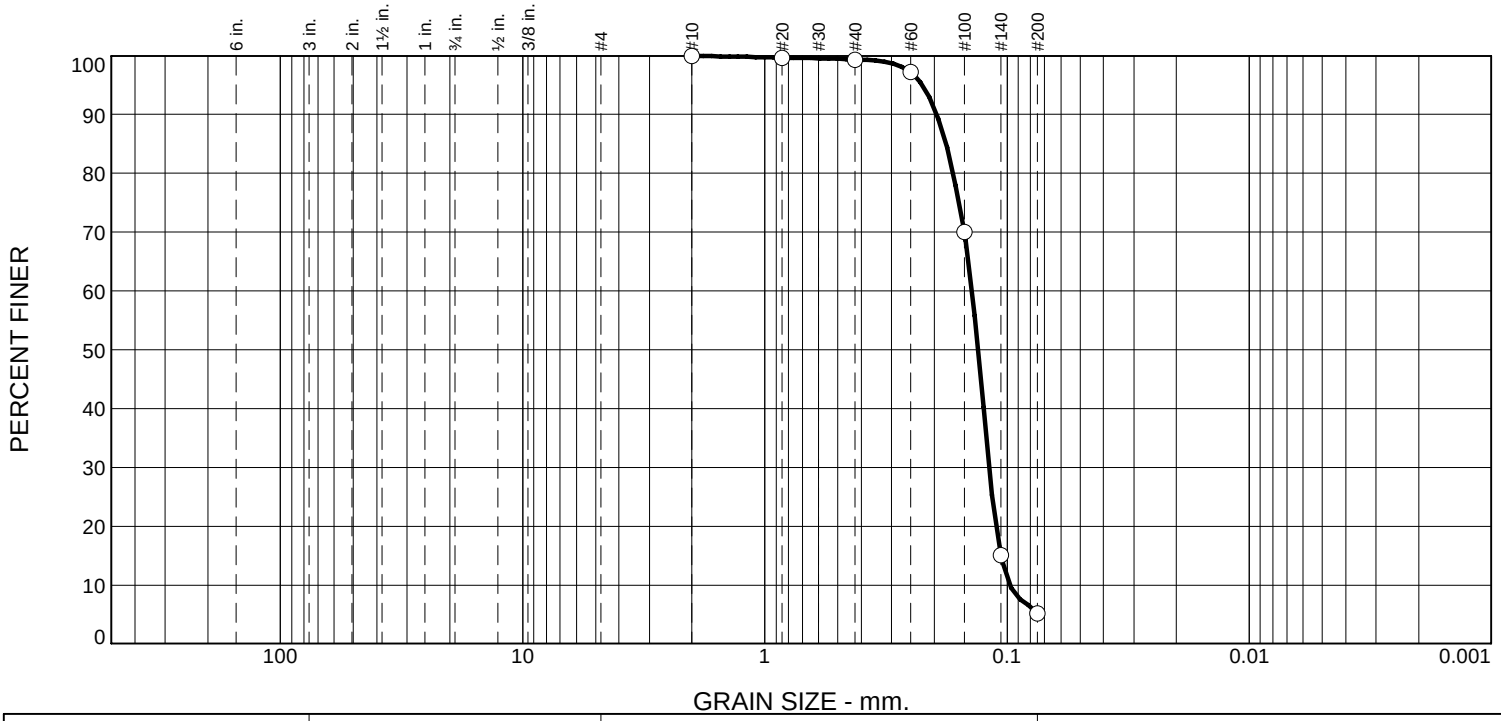
Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA23-1110S W-C
Sample Number: 11A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	94.1	5.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	99.3		
#60	97.2		
#100	70.0		
#140	15.0		
#200	5.2		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1952 D_{85}= 0.1788

D_{60}= 0.1395 D_{50}= 0.1319

D_{30}= 0.1185 D_{15}= 0.1060

D_{10}= 0.0974

C_u= 1.43 C_c= 1.03

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C
Sample Number: 11B

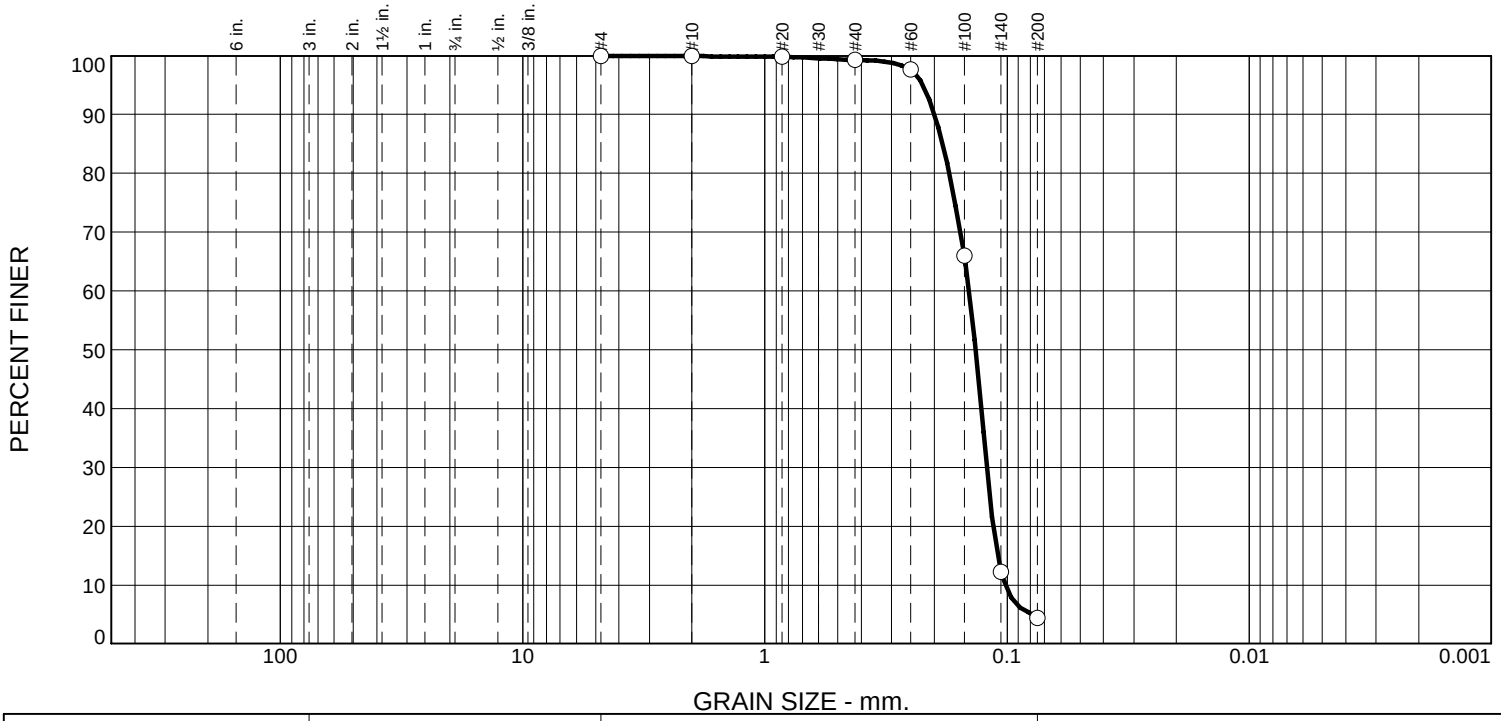
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.6	94.8	4.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.3		
#60	97.7		
#100	66.0		
#140	12.3		
#200	4.5		

* (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1995 D_{85}= 0.1848

D_{60}= 0.1433 D_{50}= 0.1349

D_{30}= 0.1212 D_{15}= 0.1094

D_{10}= 0.1018

C_u= 1.41 C_c= 1.01

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

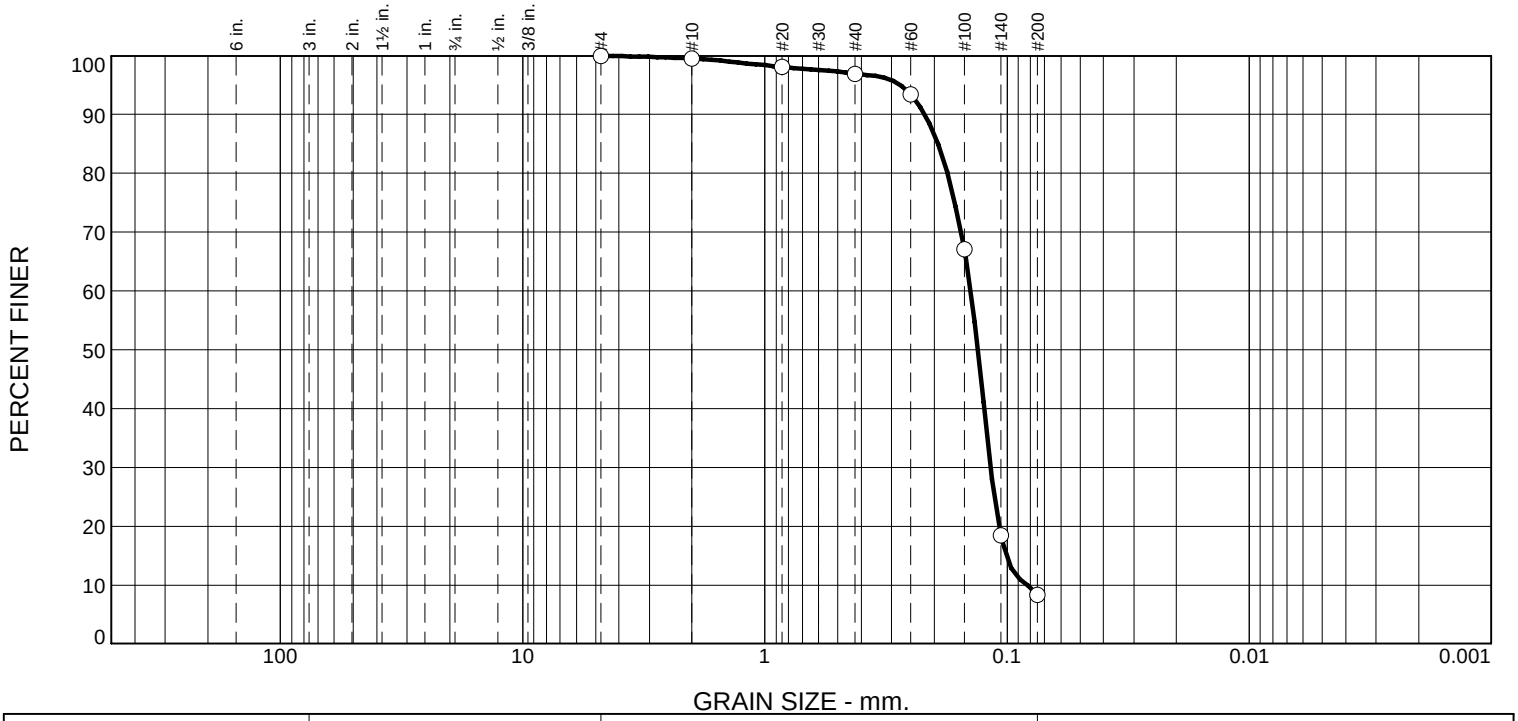
Source of Sample: PA23-1110S W-C
Sample Number: 11C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	2.5	88.7	8.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.5		
#20	98.1		
#40	97.0		
#60	93.4		
#100	67.1		
#140	18.4		
#200	8.3		

· (no specification provided)

Material Description

Dark Grayish Brown with Black

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2186 D_{85}= 0.1931

D_{60}= 0.1412 D_{50}= 0.1322

D_{30}= 0.1168 D_{15}= 0.1008

D_{10}= 0.0824

C_u= 1.71 C_c= 1.17

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

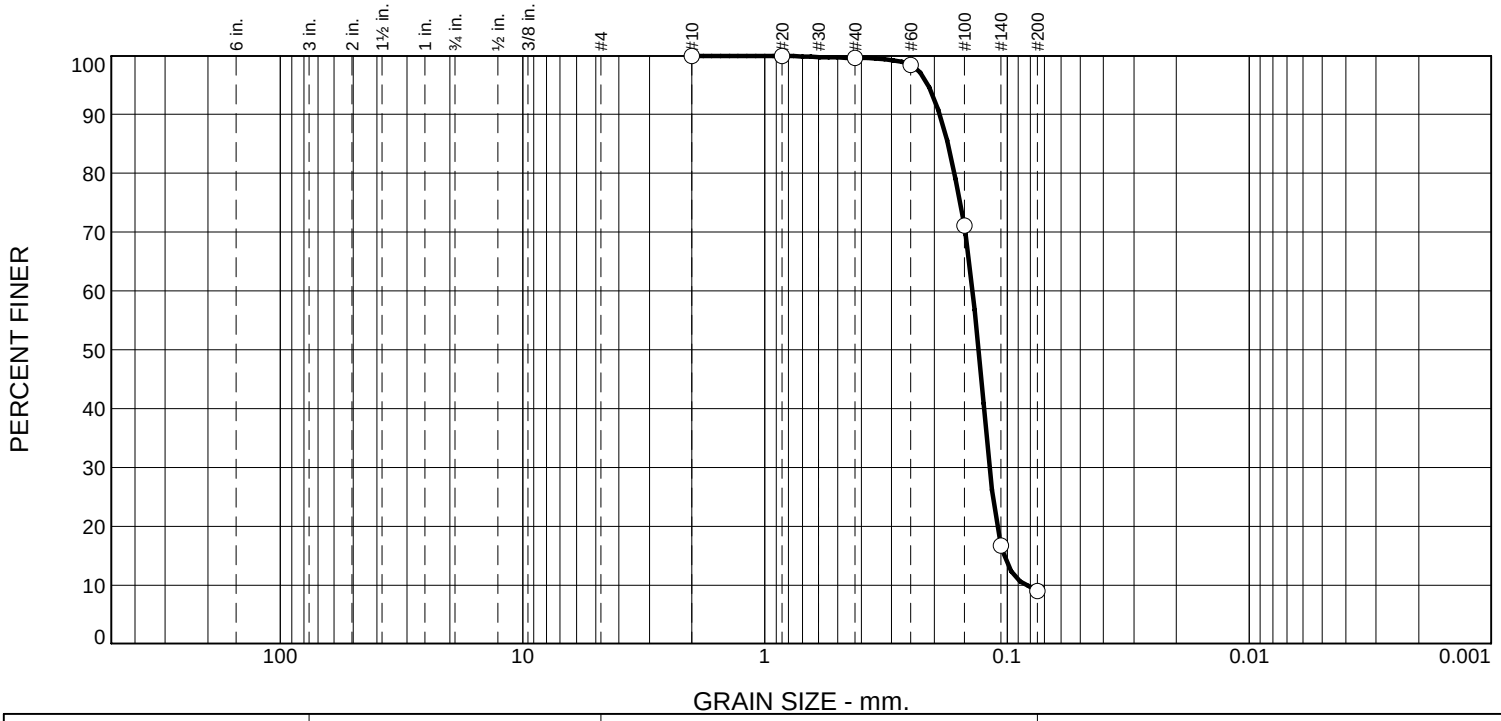
Source of Sample: PA23-1110S W-C
Sample Number: 11D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	90.7	8.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	98.5		
#100	71.1		
#140	16.8		
#200	8.9		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1900 D_{85}= 0.1757
D_{60}= 0.1387 D_{50}= 0.1313
D_{30}= 0.1180 D_{15}= 0.1029
D_{10}= 0.0828
C_u= 1.67 C_c= 1.21

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

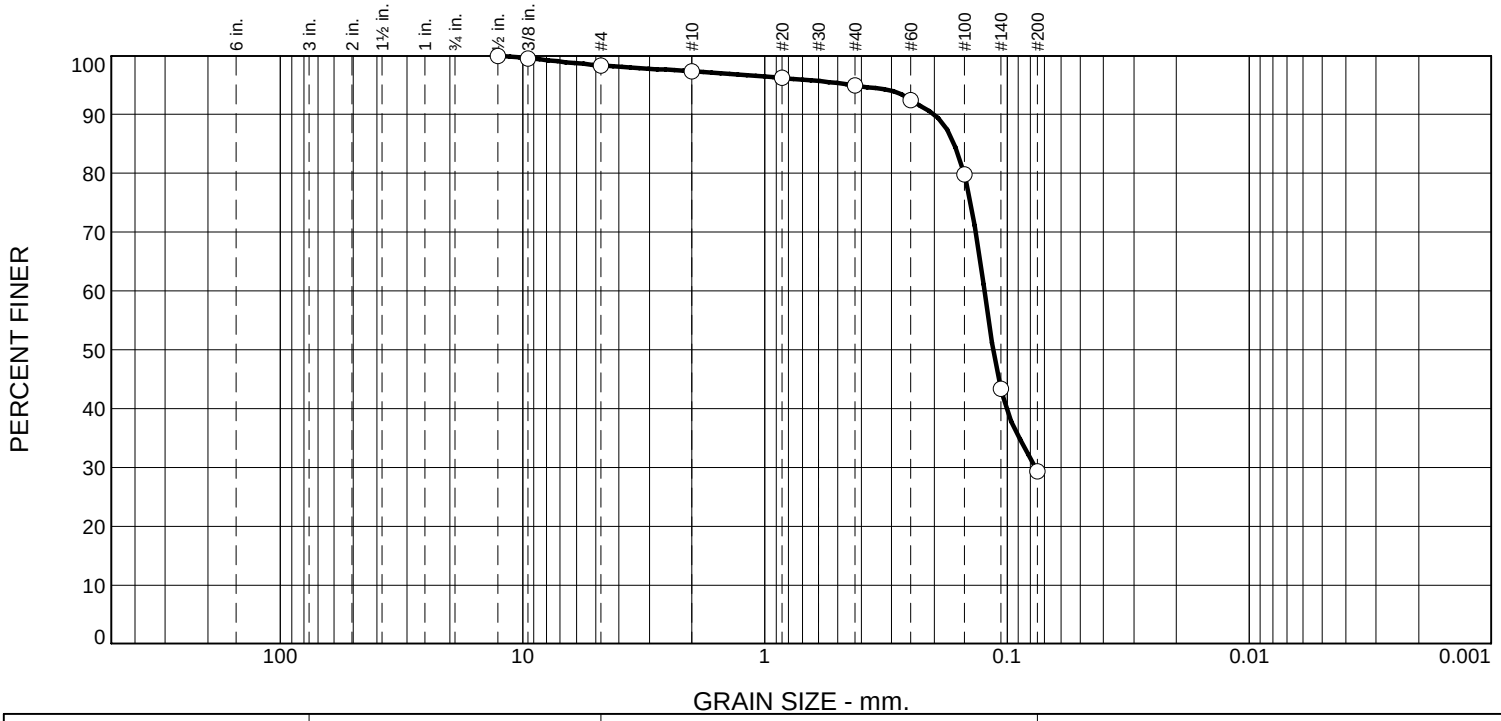
Source of Sample: PA23-1110S W-C
Sample Number: 11 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.7	1.0	2.4	65.6	29.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5	100.0		
0.375	99.6		
#4	98.3		
#10	97.3		
#20	96.2		
#40	94.9		
#60	92.5		
#100	79.9		
#140	43.4		
#200	29.3		

· (no specification provided)

Material Description

Brown

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2004 D_{85}= 0.1653

D_{60}= 0.1241 D_{50}= 0.1140

D_{30}= 0.0763 D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

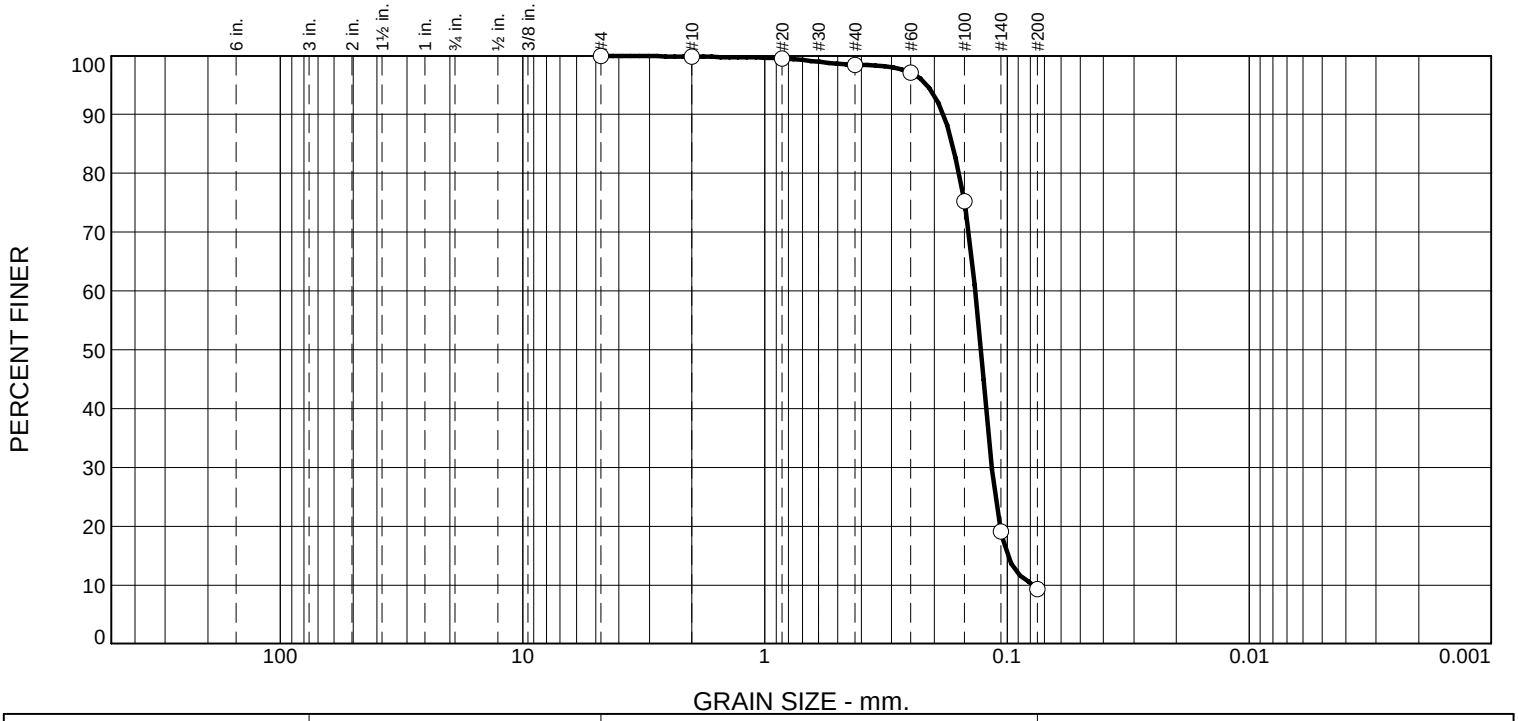
Source of Sample: PA23-1110S W-C
Sample Number: 12A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.3	89.2	9.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.5		
#40	98.5		
#60	97.1		
#100	75.2		
#140	19.1		
#200	9.3		

· (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1837 D_{85}= 0.1684

D_{60}= 0.1354 D_{50}= 0.1285

D_{30}= 0.1155 D_{15}= 0.0995

D_{10}= 0.0779

C_u= 1.74 C_c= 1.27

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 12B

INSIGHT GROUP
A CHRISTOPHER COMPANY

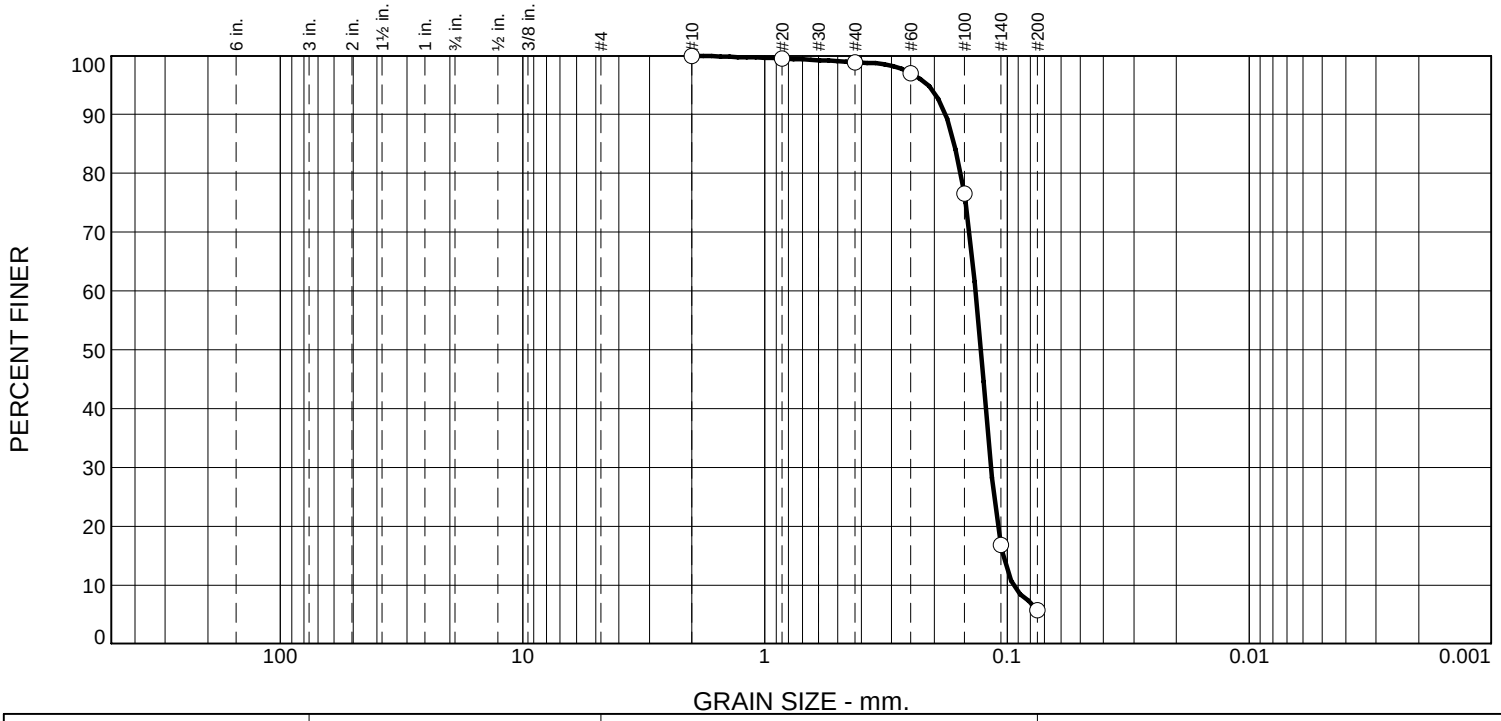
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.1	93.1	5.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.5		
#40	98.9		
#60	97.0		
#100	76.5		
#140	16.8		
#200	5.8		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1798 D_{85}= 0.1652

D_{60}= 0.1350 D_{50}= 0.1285

D_{30}= 0.1163 D_{15}= 0.1038

D_{10}= 0.0945

C_u= 1.43 C_c= 1.06

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

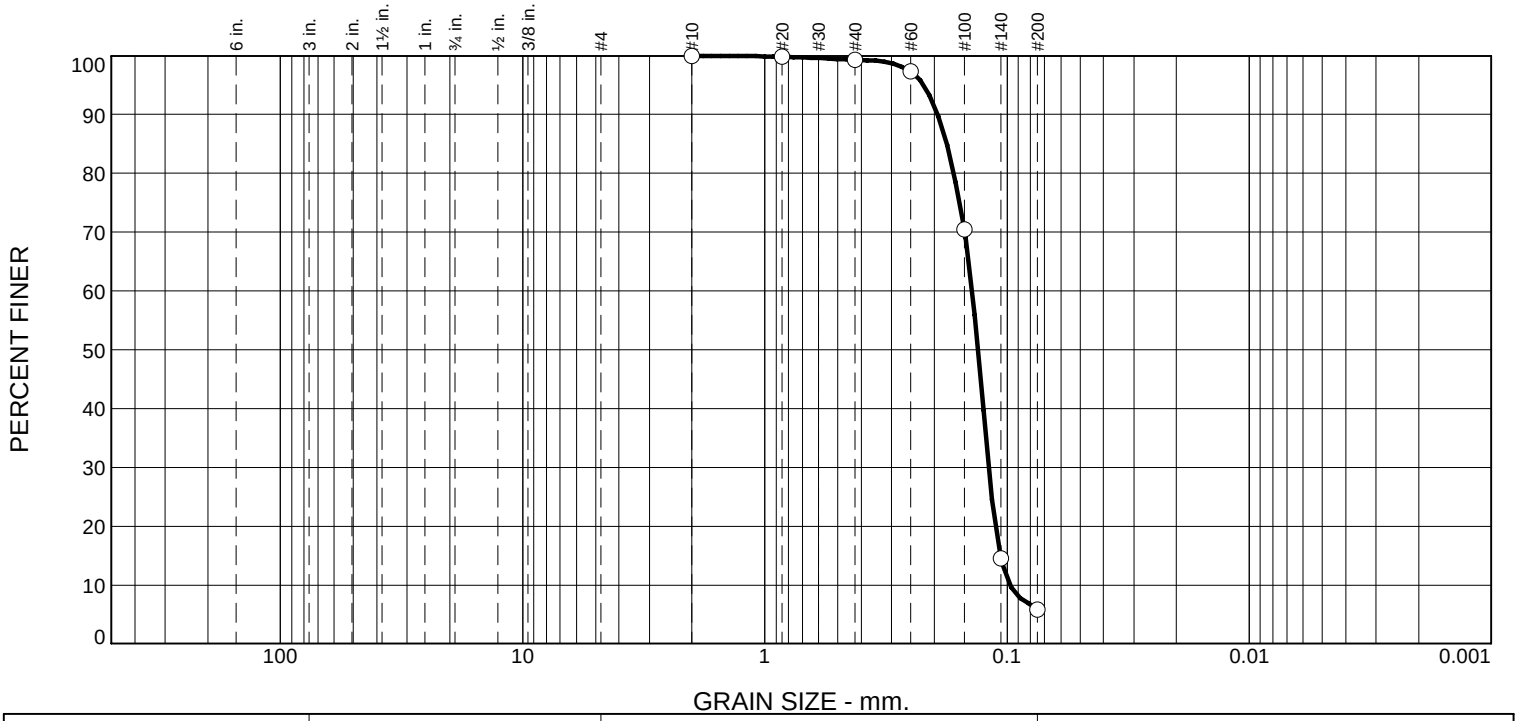
Source of Sample: PA23-1110S W-C
Sample Number: 12C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	93.4	5.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.3		
#60	97.4		
#100	70.5		
#140	14.5		
#200	5.9		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 12D

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1935 D_{85}= 0.1776
D_{60}= 0.1394 D_{50}= 0.1320
D_{30}= 0.1190 D_{15}= 0.1067
D_{10}= 0.0973
C_u= 1.43 C_c= 1.04

USCS (ASTM D2487)

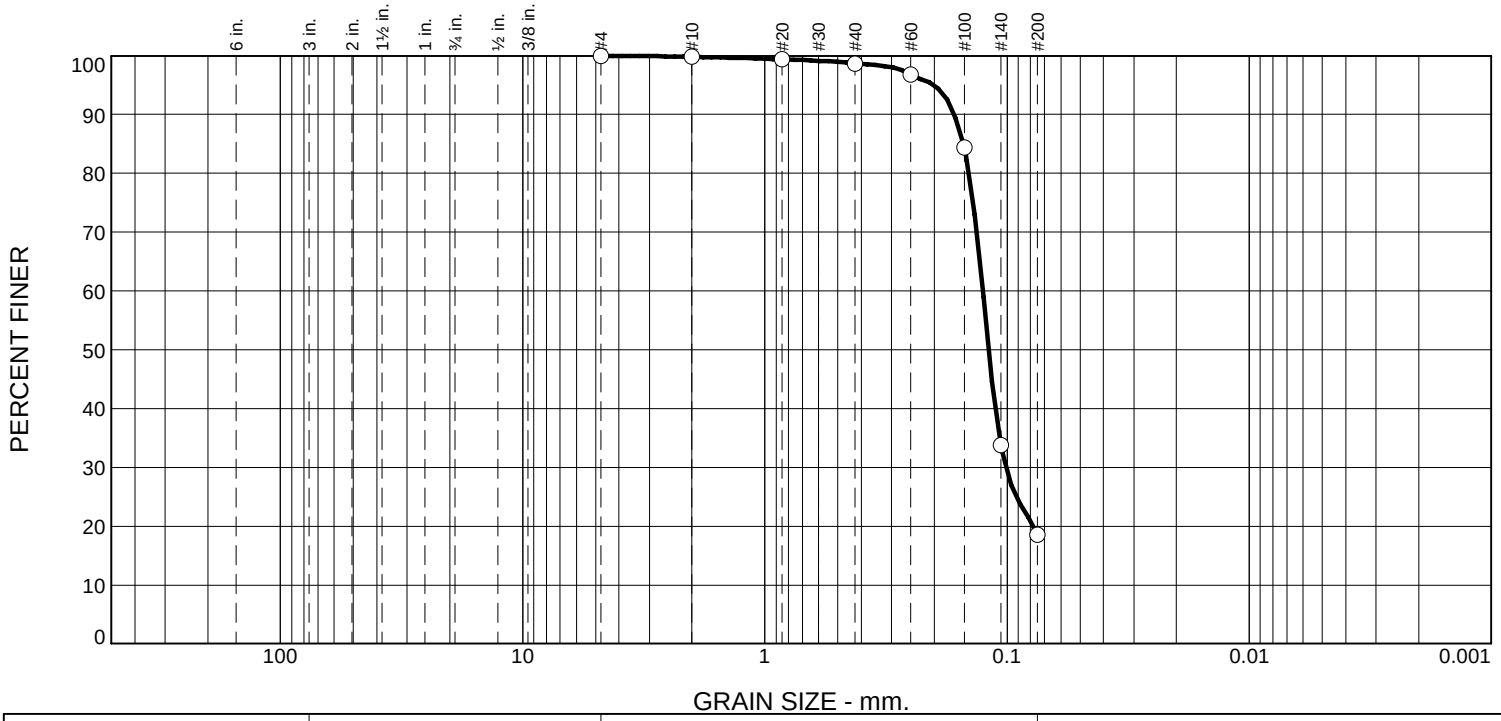
Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.1	80.2	18.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.4		
#40	98.7		
#60	96.8		
#100	84.4		
#140	33.8		
#200	18.5		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1653 D_{85}= 0.1513

D_{60}= 0.1260 D_{50}= 0.1190

D_{30}= 0.1012 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 12E

INSIGHT GROUP
A CHRISTOPHER COMPANY

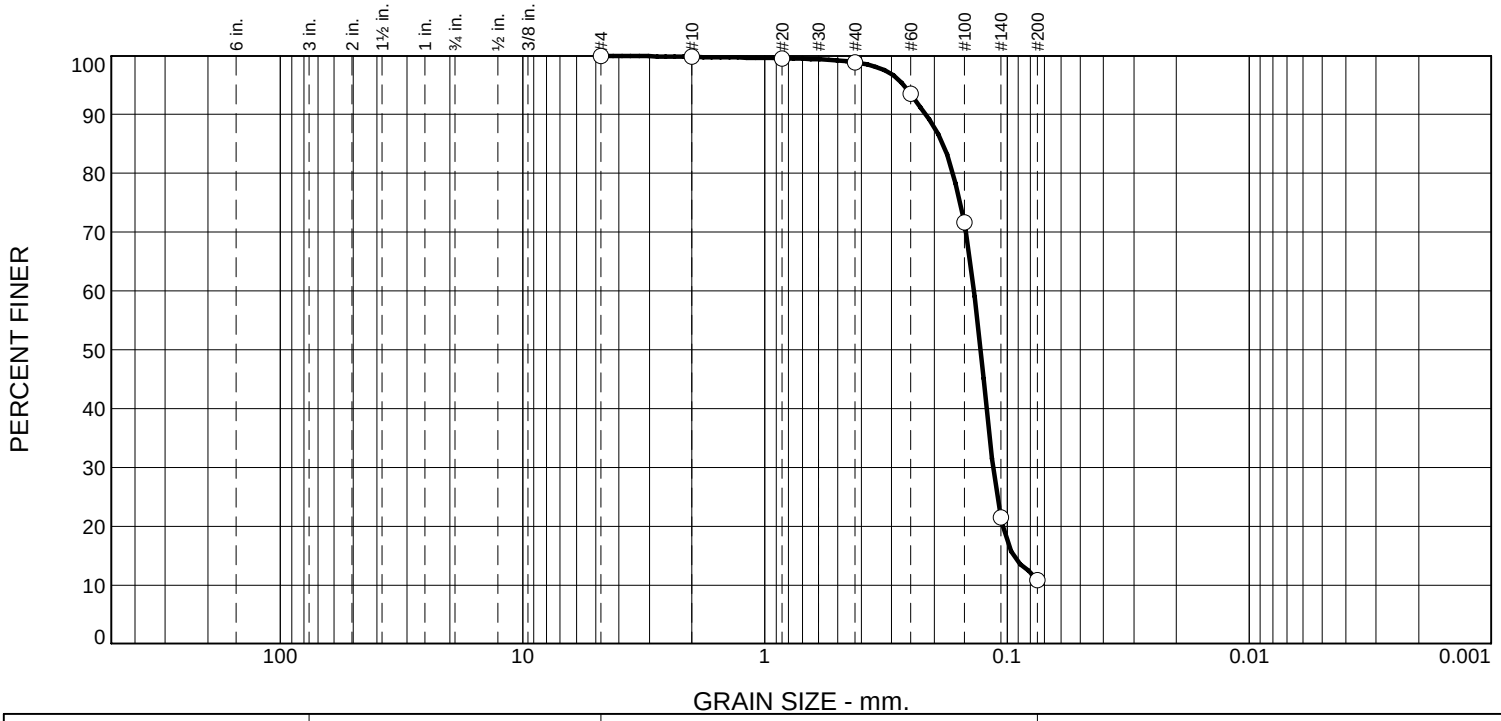
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.0	88.0	10.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.6		
#40	98.8		
#60	93.5		
#100	71.6		
#140	21.5		
#200	10.8		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2160 D_{85}= 0.1844

D_{60}= 0.1370 D_{50}= 0.1289

D_{30}= 0.1140 D_{15}= 0.0944

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 12F

INSIGHT GROUP
A CHRISTOPHER COMPANY

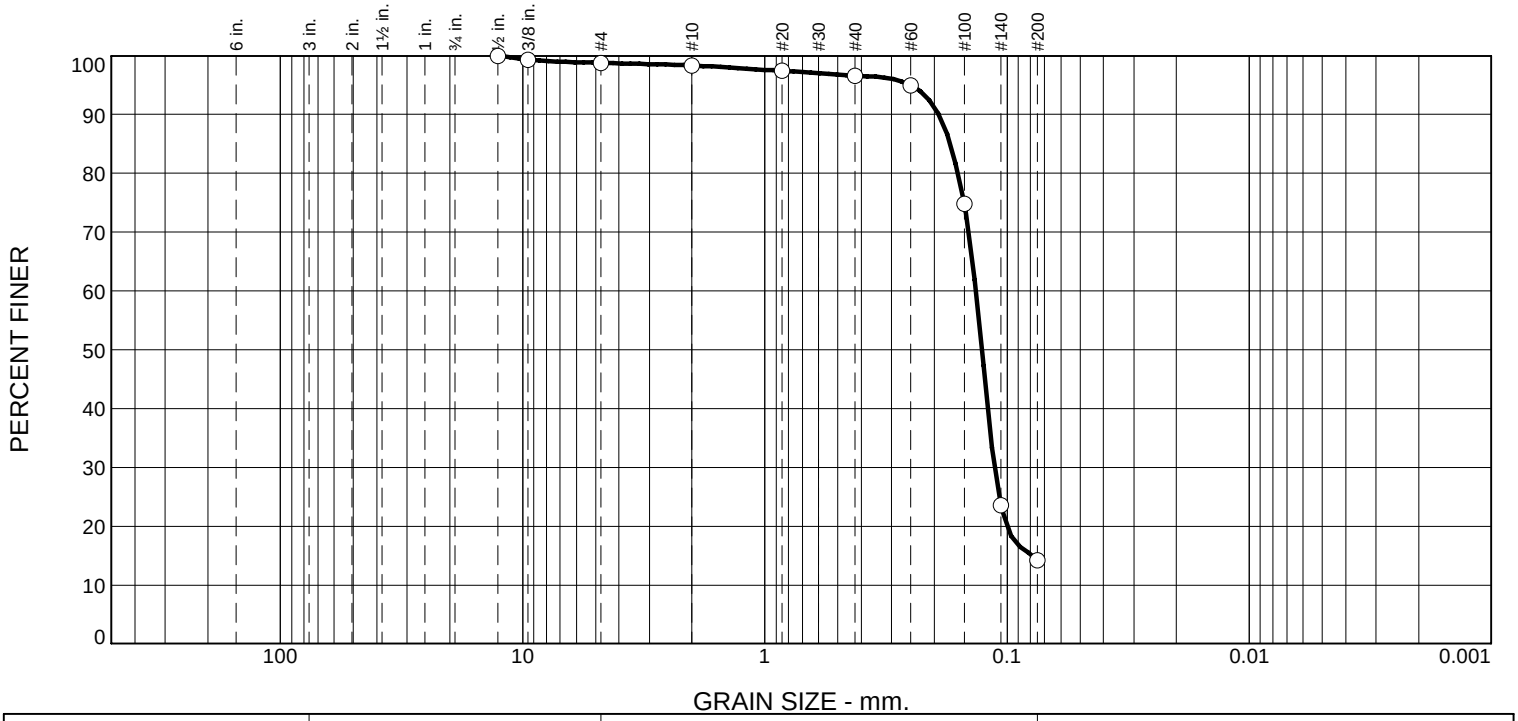
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.2	0.5	1.7	82.4	14.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5	100.0		
0.375	99.3		
#4	98.8		
#10	98.3		
#20	97.4		
#40	96.6		
#60	95.0		
#100	74.8		
#140	23.6		
#200	14.2		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1918 D_{85}= 0.1719

D_{60}= 0.1346 D_{50}= 0.1271

D_{30}= 0.1125 D_{15}= 0.0783

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C
Sample Number: 12 Comp

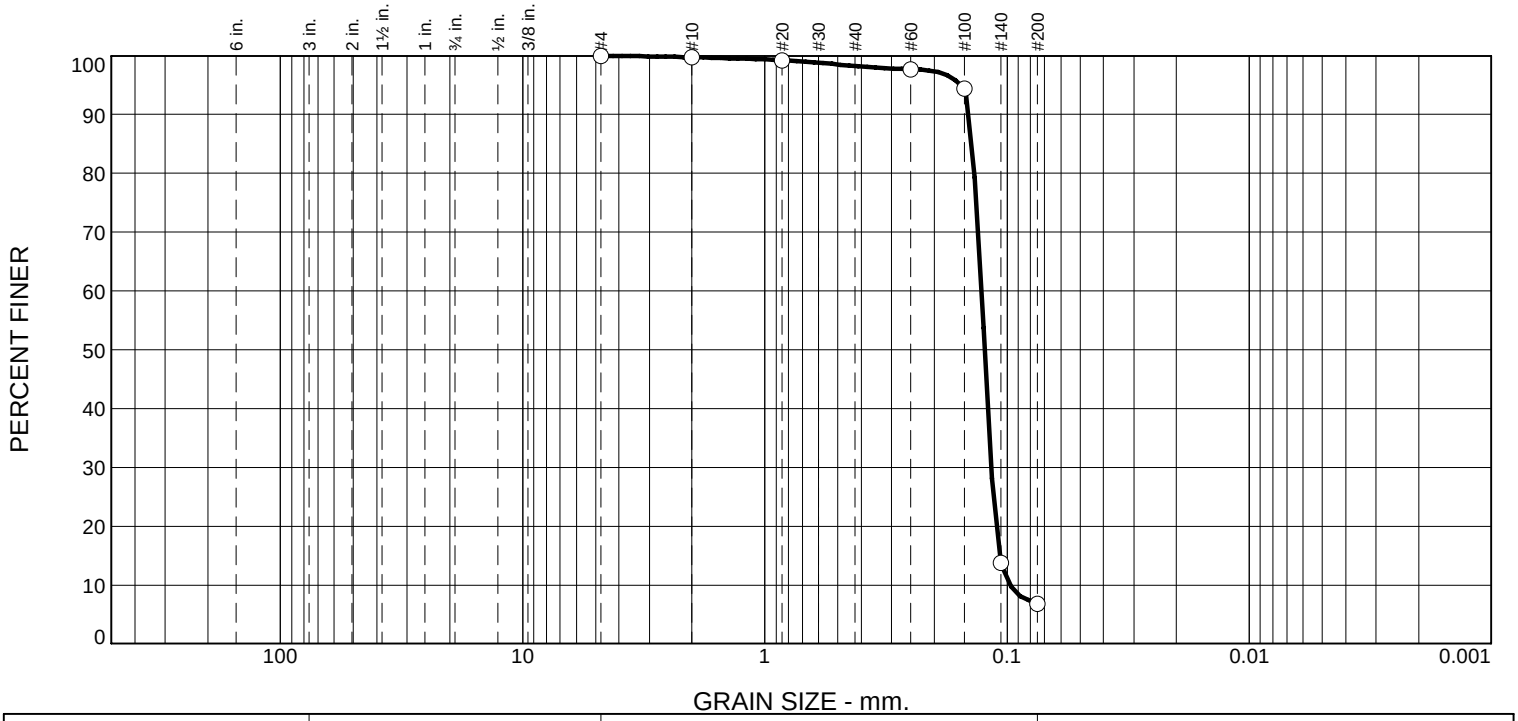
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.4	91.5	6.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	99.2		
#60	97.7		
#100	94.5		
#140	13.8		
#200	6.8		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1430 D_{85}= 0.1394

D_{60}= 0.1277 D_{50}= 0.1239

D_{30}= 0.1160 D_{15}= 0.1075

D_{10}= 0.0973

C_u= 1.31 C_c= 1.08

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 13A

INSIGHT GROUP
A CHRISTOPHER COMPANY

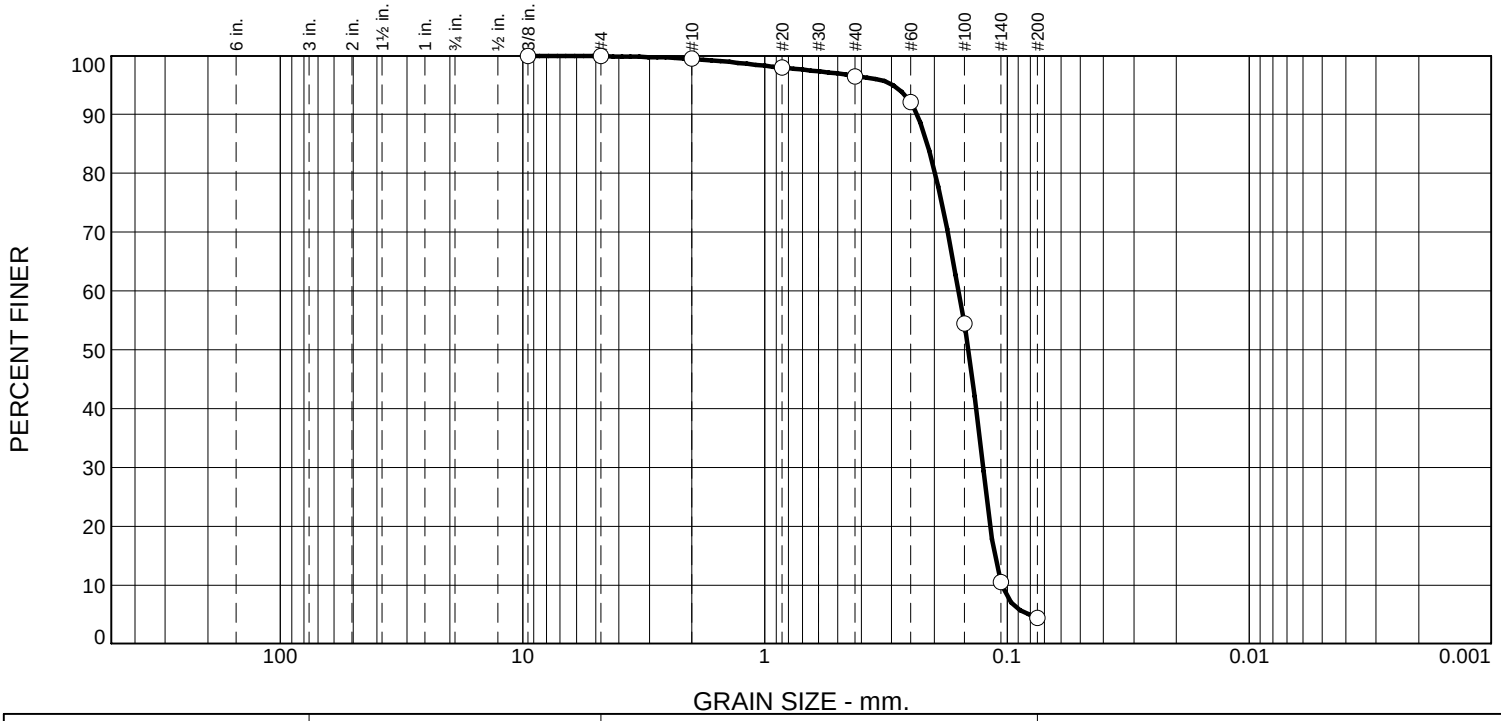
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.4	3.0	92.1	4.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.9		
#10	99.5		
#20	98.0		
#40	96.5		
#60	92.1		
#100	54.5		
#140	10.5		
#200	4.4		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2344 D_{85}= 0.2131

D_{60}= 0.1586 D_{50}= 0.1442

D_{30}= 0.1258 D_{15}= 0.1123

D_{10}= 0.1050

C_u= 1.51 C_c= 0.95

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 13B

INSIGHT GROUP
A CHRISTOPHER COMPANY

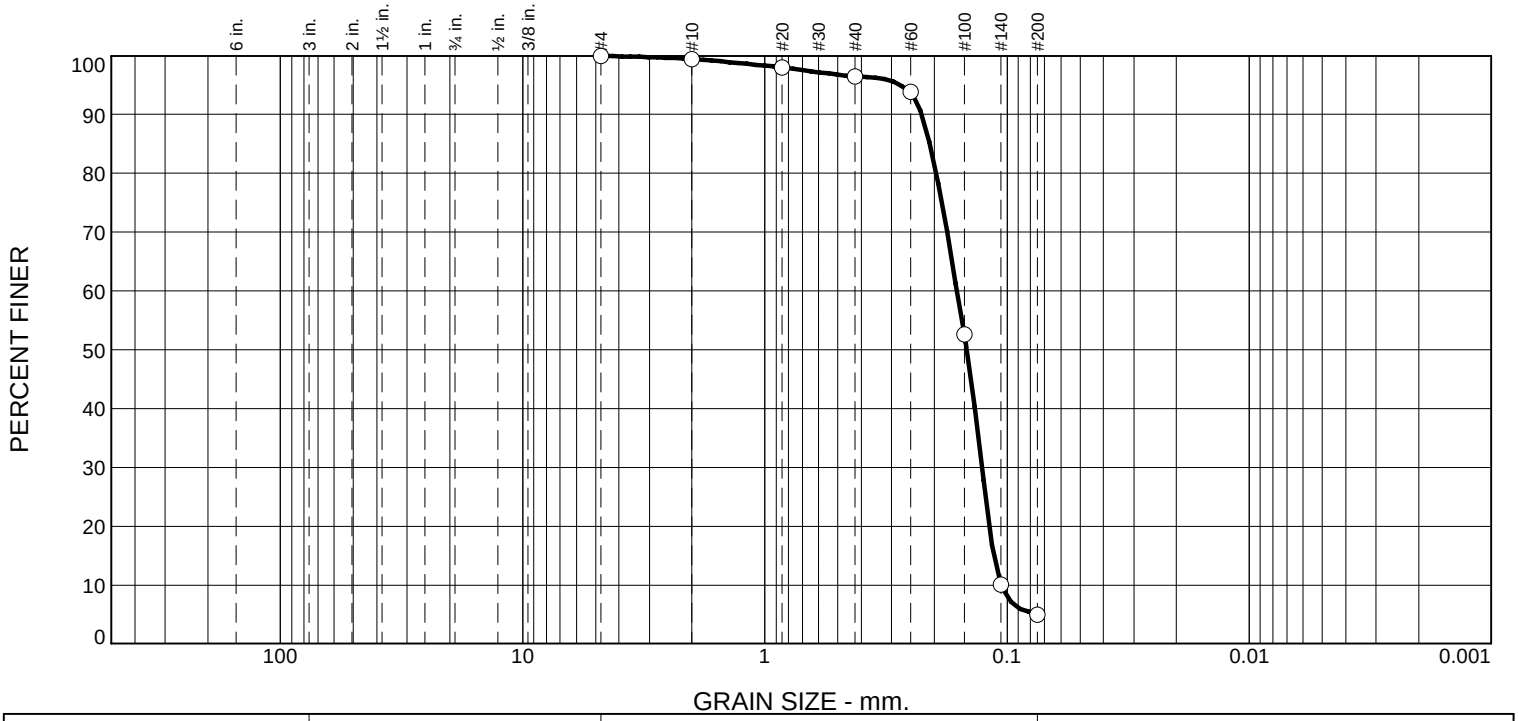
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	2.9	91.6	4.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.4		
#20	98.0		
#40	96.5		
#60	93.8		
#100	52.7		
#140	10.1		
#200	4.9		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2247 D_{85}= 0.2084

D_{60}= 0.1610 D_{50}= 0.1464

D_{30}= 0.1271 D_{15}= 0.1133

D_{10}= 0.1058

C_u= 1.52 C_c= 0.95

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 13C

INSIGHT GROUP
A CHRISTOPHER COMPANY

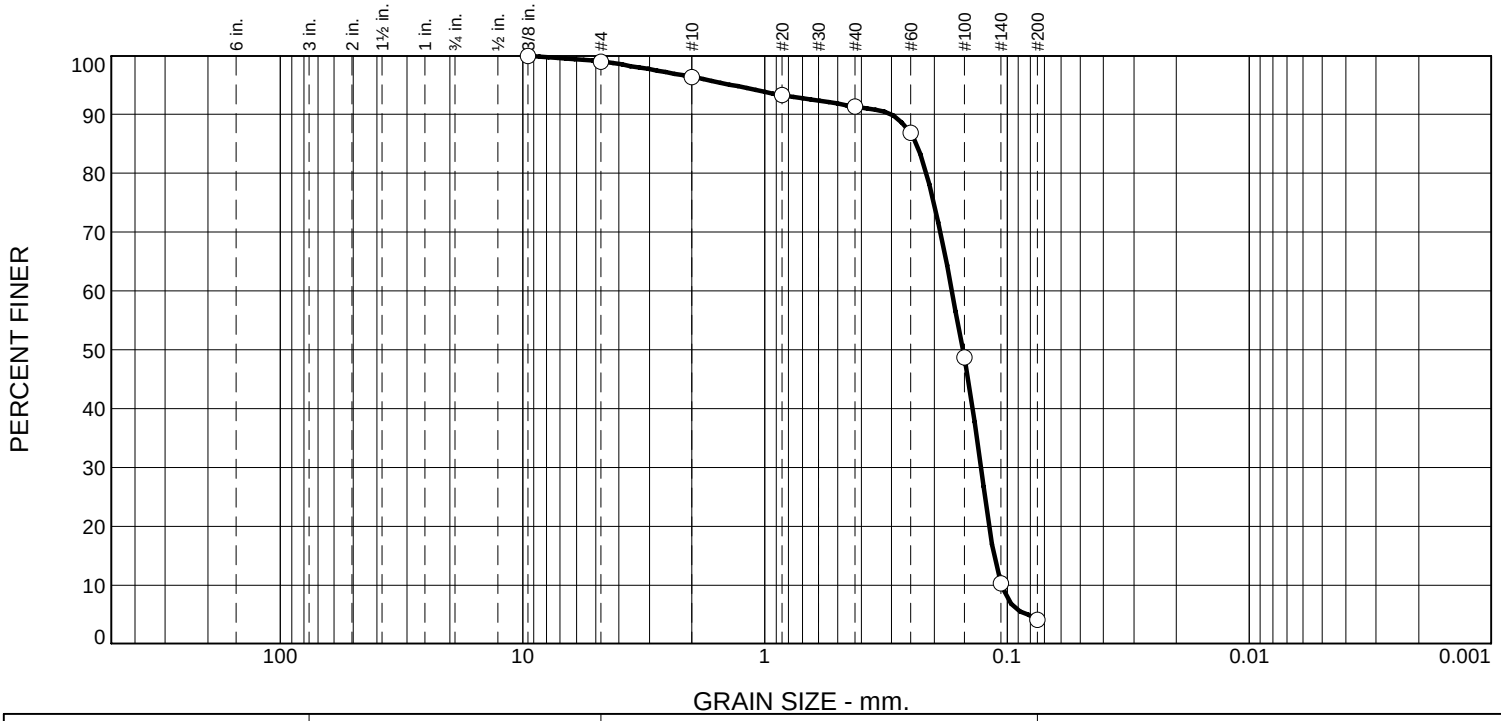
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	2.6	5.0	87.3	4.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.0		
#10	96.4		
#20	93.3		
#40	91.4		
#60	86.9		
#100	48.7		
#140	10.2		
#200	4.1		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.3017 D_{85}= 0.2362

D_{60}= 0.1692 D_{50}= 0.1522

D_{30}= 0.1284 D_{15}= 0.1131

D_{10}= 0.1055

C_u= 1.60 C_c= 0.92

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 13D

INSIGHT GROUP
A CHRISTOPHER COMPANY

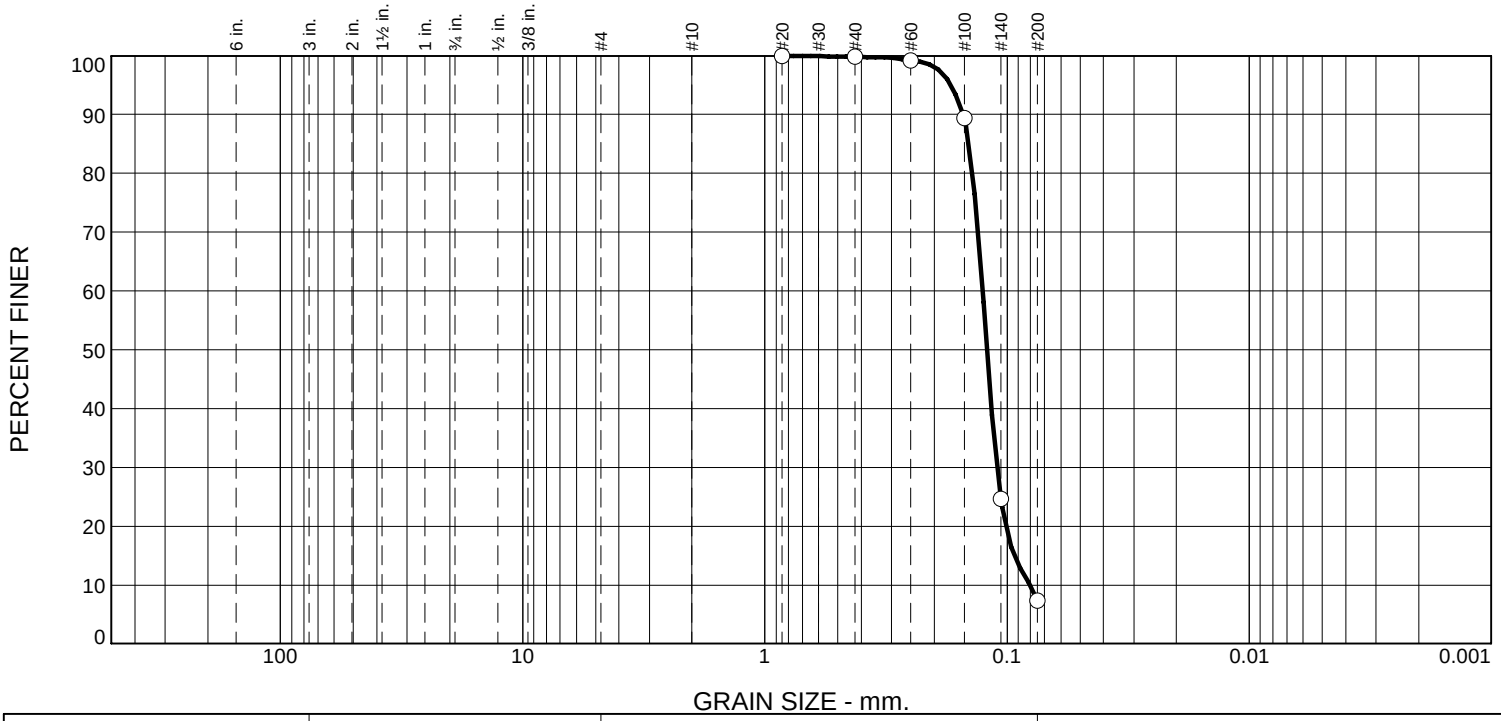
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	92.4	7.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	99.2		
#100	89.4		
#140	24.7		
#200	7.4		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1517 D_{85}= 0.1434

D_{60}= 0.1263 D_{50}= 0.1211

D_{30}= 0.1100 D_{15}= 0.0937

D_{10}= 0.0802

C_u= 1.57 C_c= 1.19

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 13E

INSIGHT GROUP
A CHRISTOPHER COMPANY

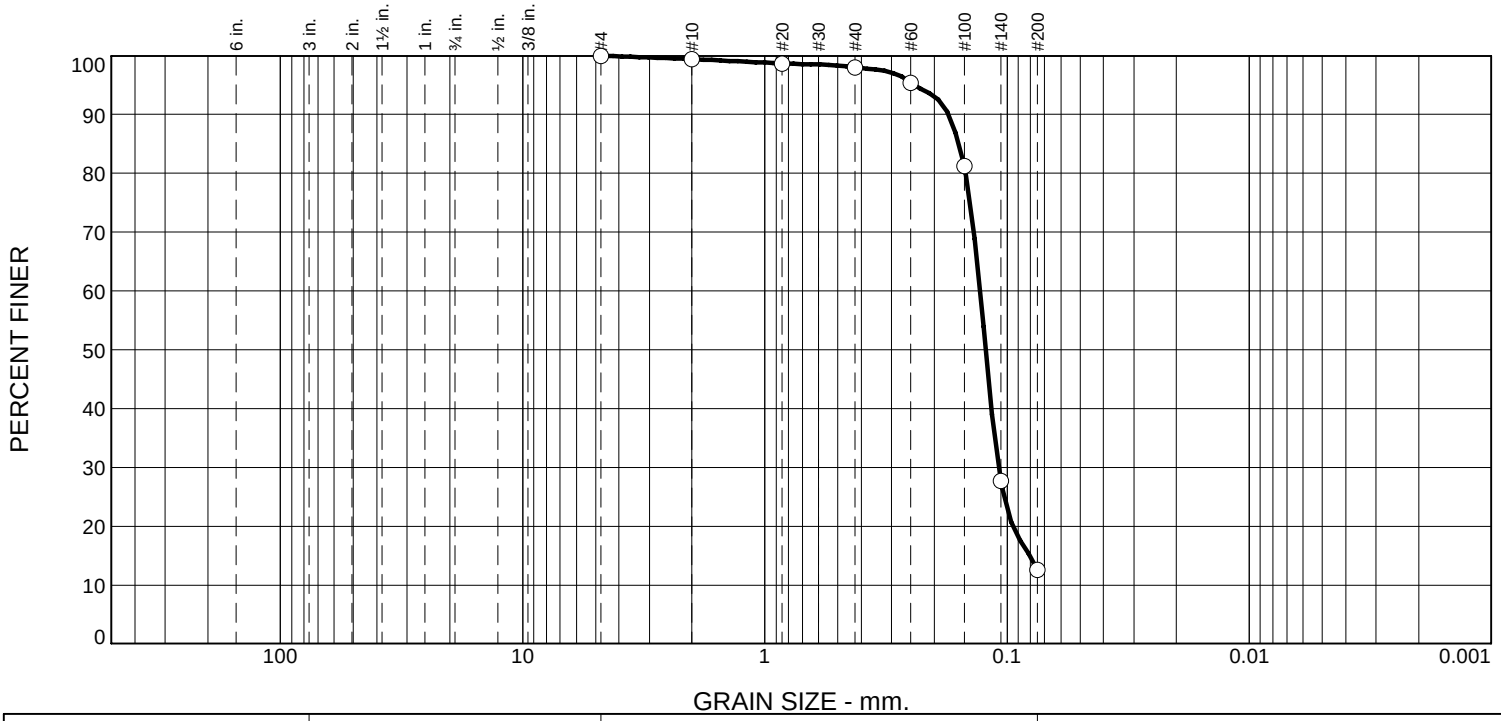
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	1.4	85.5	12.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.4		
#20	98.7		
#40	98.0		
#60	95.4		
#100	81.2		
#140	27.7		
#200	12.5		

· (no specification provided)

Material Description

Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1750 D_{85}= 0.1580

D_{60}= 0.1294 D_{50}= 0.1226

D_{30}= 0.1083 D_{15}= 0.0805

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

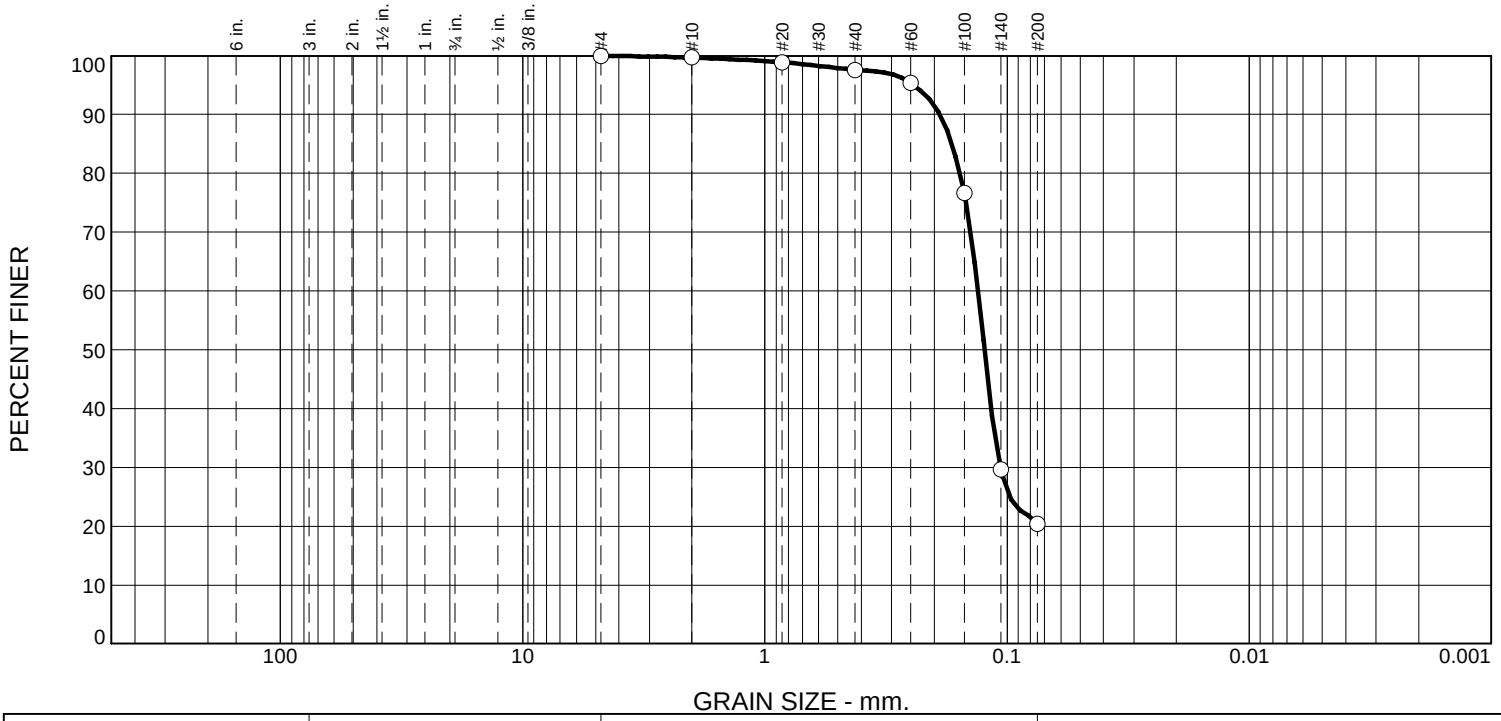
Source of Sample: PA23-1110S W-C
Sample Number: 13F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	2.1	77.2	20.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	98.9		
#40	97.6		
#60	95.4		
#100	76.6		
#140	29.6		
#200	20.4		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1896 D_{85}= 0.1691

D_{60}= 0.1319 D_{50}= 0.1240

D_{30}= 0.1065 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C
Sample Number: 13 Comp

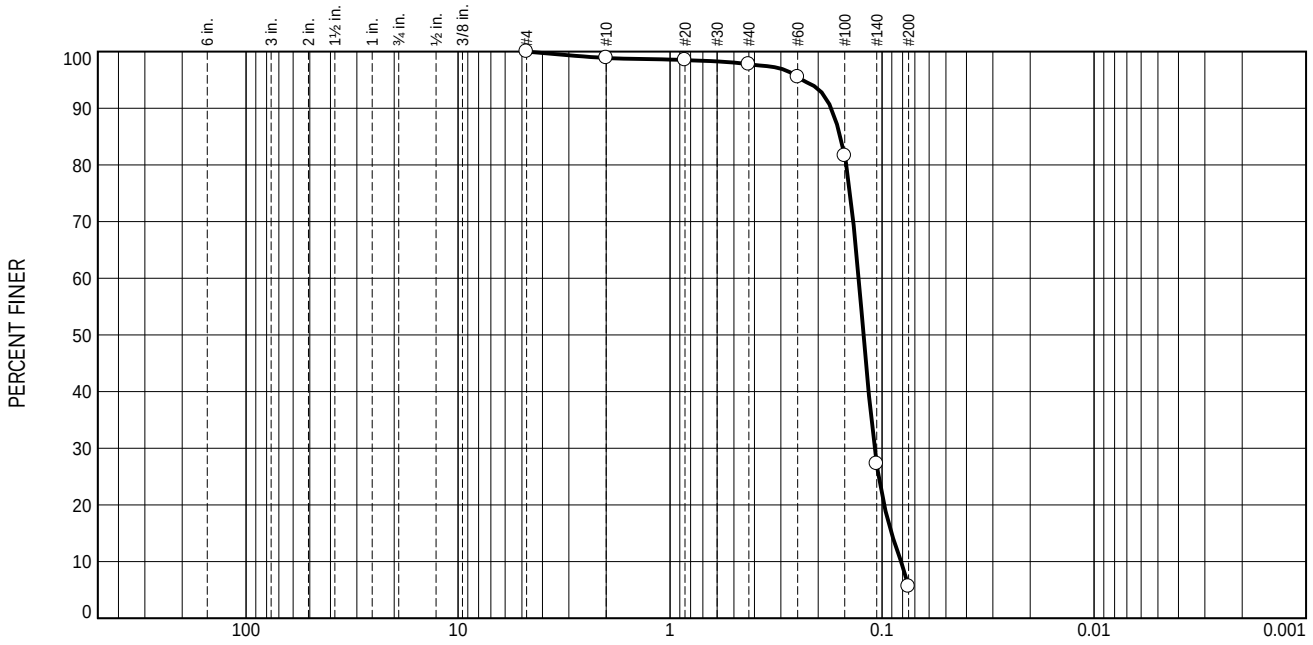
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.1	1.1	92.2	5.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	98.9		
#20	98.5		
#40	97.8		
#60	95.5		
#100	81.6		
#140	27.2		
#200	5.6		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 2A

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1736 D_{85}= 0.1572
D_{60}= 0.1290 D_{50}= 0.1223
D_{30}= 0.1085 D_{15}= 0.0902
D_{10}= 0.0813
C_u= 1.59 C_c= 1.12

USCS (ASTM D2487)

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

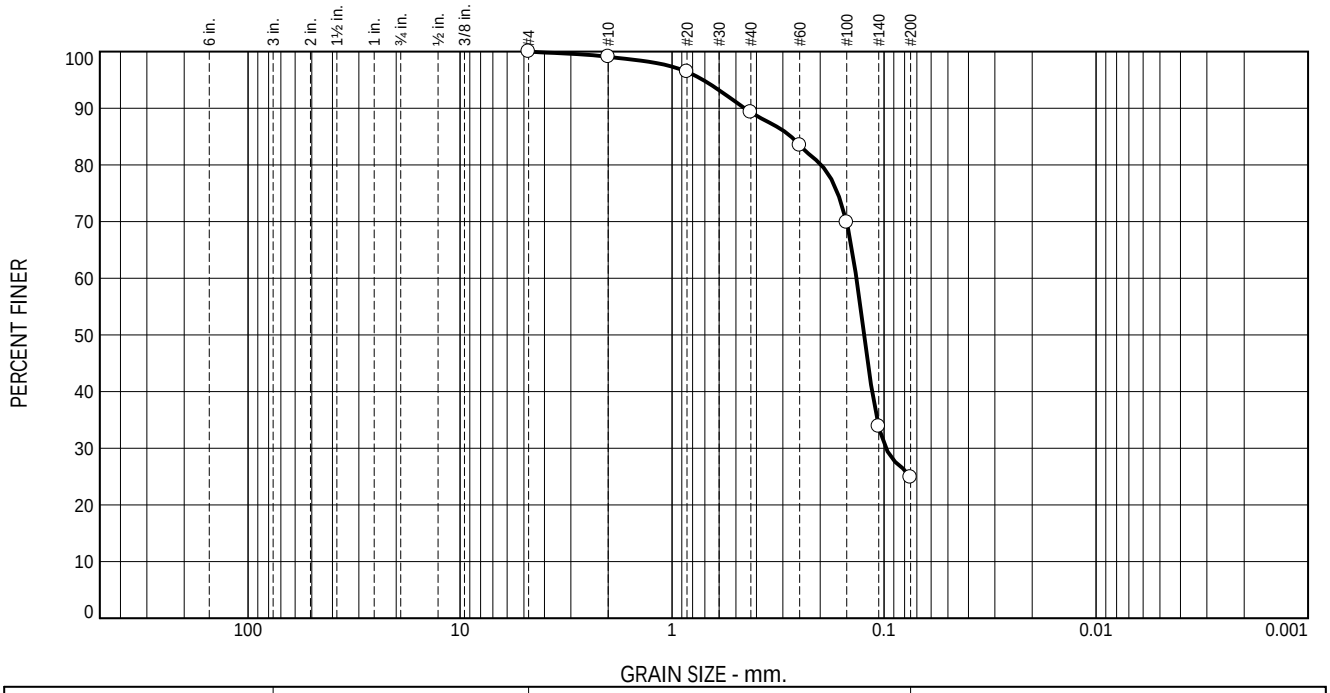
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.9	9.8	64.4	24.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.1		
#20	96.4		
#40	89.3		
#60	83.5		
#100	69.8		
#140	33.9		
#200	24.9		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 2B

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.4538 D_{85}= 0.2746
D_{60}= 0.1350 D_{50}= 0.1242
D_{30}= 0.0980 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

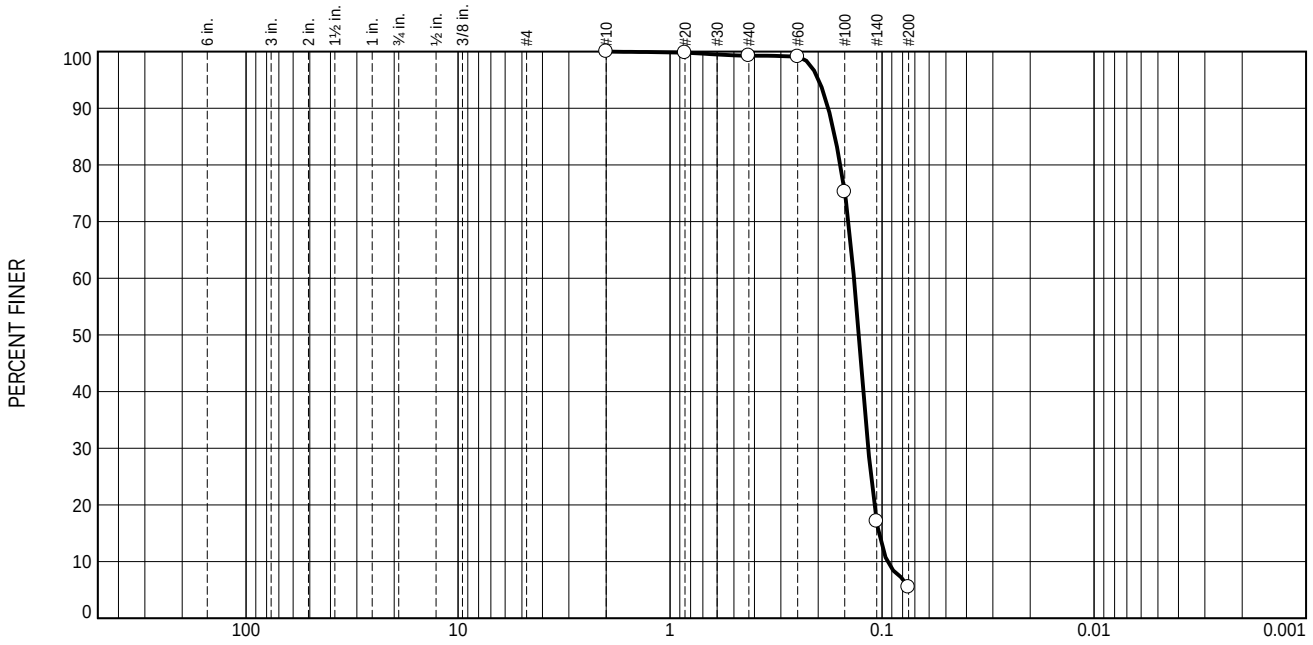
Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	93.8	5.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.3		
#60	99.1		
#100	75.2		
#140	17.1		
#200	5.5		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 2C

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1794 D_{85}= 0.1668
D_{60}= 0.1357 D_{50}= 0.1289
D_{30}= 0.1162 D_{15}= 0.1035
D_{10}= 0.0944
C_u= 1.44 C_c= 1.05

USCS (ASTM D2487)

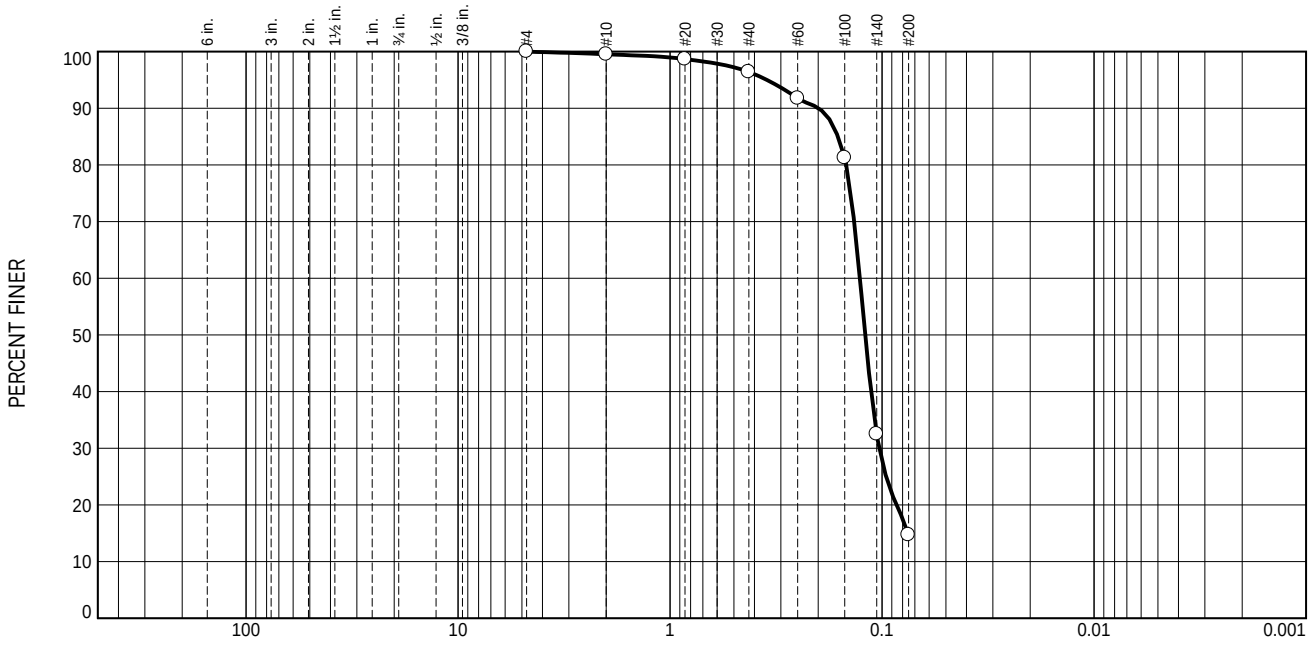
Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	3.1	81.7	14.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.5		
#20	98.7		
#40	96.4		
#60	91.8		
#100	81.2		
#140	32.5		
#200	14.7		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 2D

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1991 D_{85}= 0.1614
D_{60}= 0.1273 D_{50}= 0.1201
D_{30}= 0.1031 D_{15}= 0.0755
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hacth
Title: Sr Engineer

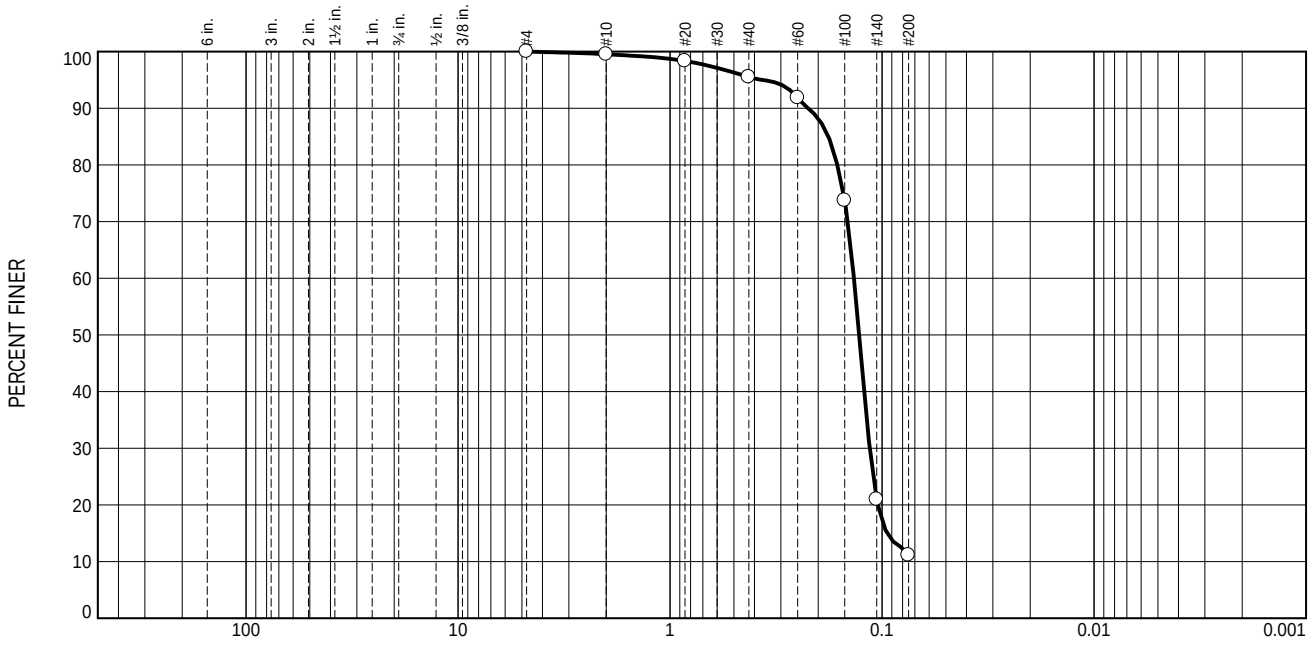
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	4.0	84.4	11.1	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.5		
#20	98.3		
#40	95.5		
#60	91.8		
#100	73.7		
#140	21.0		
#200	11.1		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 2 Comp

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2233 D_{85}= 0.1791
D_{60}= 0.1357 D_{50}= 0.1283
D_{30}= 0.1144 D_{15}= 0.0947
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

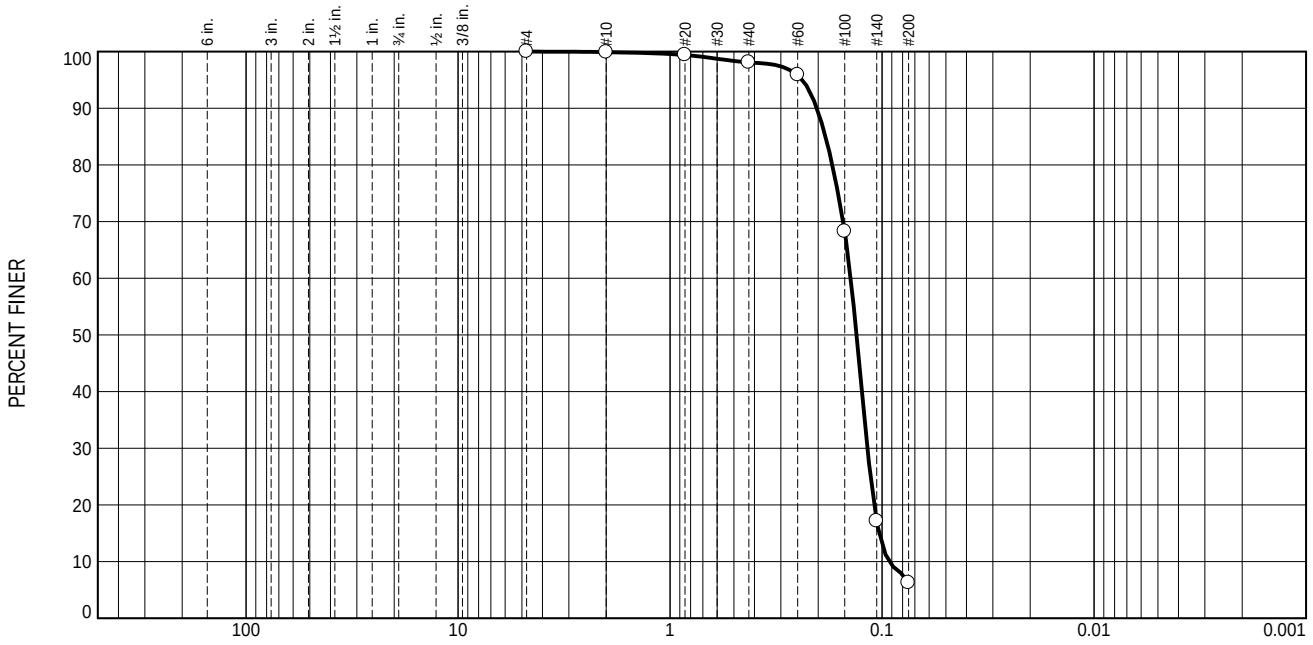
Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.8	91.8	6.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.4		
#40	98.1		
#60	95.9		
#100	68.2		
#140	17.1		
#200	6.3		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 3A

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2031 D_{85}= 0.1847
D_{60}= 0.1405 D_{50}= 0.1319
D_{30}= 0.1172 D_{15}= 0.1032
D_{10}= 0.0926
C_u= 1.52 C_c= 1.06

Sieve Test (ASTM D6913)
Test Date: 3/4/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

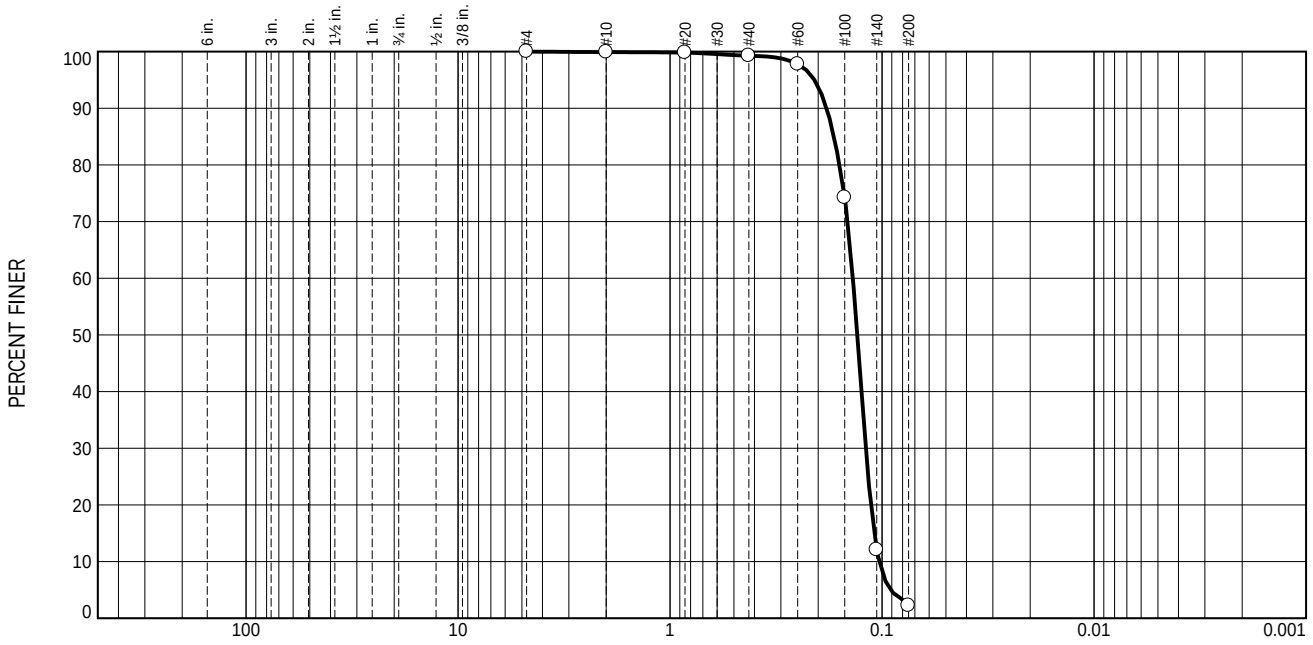
USCS (ASTM D2487)

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.6	97.1	2.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.3		
#60	97.8		
#100	74.2		
#140	12.0		
#200	2.2		

* (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 3B

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1826 D_{85}= 0.1686
D_{60}= 0.1373 D_{50}= 0.1309
D_{30}= 0.1193 D_{15}= 0.1091
D_{10}= 0.1031
C_u= 1.33 C_c= 1.01

USCS (ASTM D2487)

SP

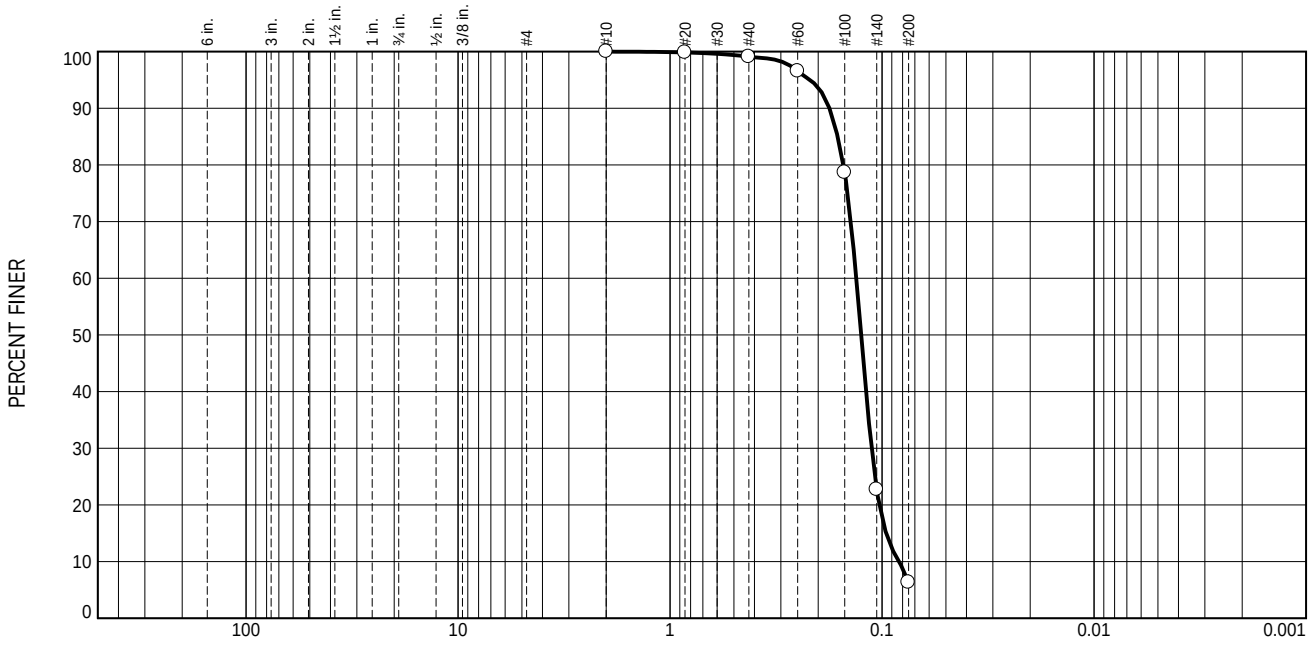
Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hacth
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	92.8	6.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.1		
#60	96.5		
#100	78.6		
#140	22.7		
#200	6.3		

* (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 3C

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1771 D_{85}= 0.1619
D_{60}= 0.1323 D_{50}= 0.1255
D_{30}= 0.1121 D_{15}= 0.0957
D_{10}= 0.0832
C_u= 1.59 C_c= 1.14

USCS (ASTM D2487)

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.1	8.7	69.1	21.1	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	98.9		
#20	96.2		
#40	90.2		
#60	82.9		
#100	65.8		
#140	30.3		
#200	21.1		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 3D

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.4191 D_{85}= 0.2767
D_{60}= 0.1401 D_{50}= 0.1283
D_{30}= 0.1055 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

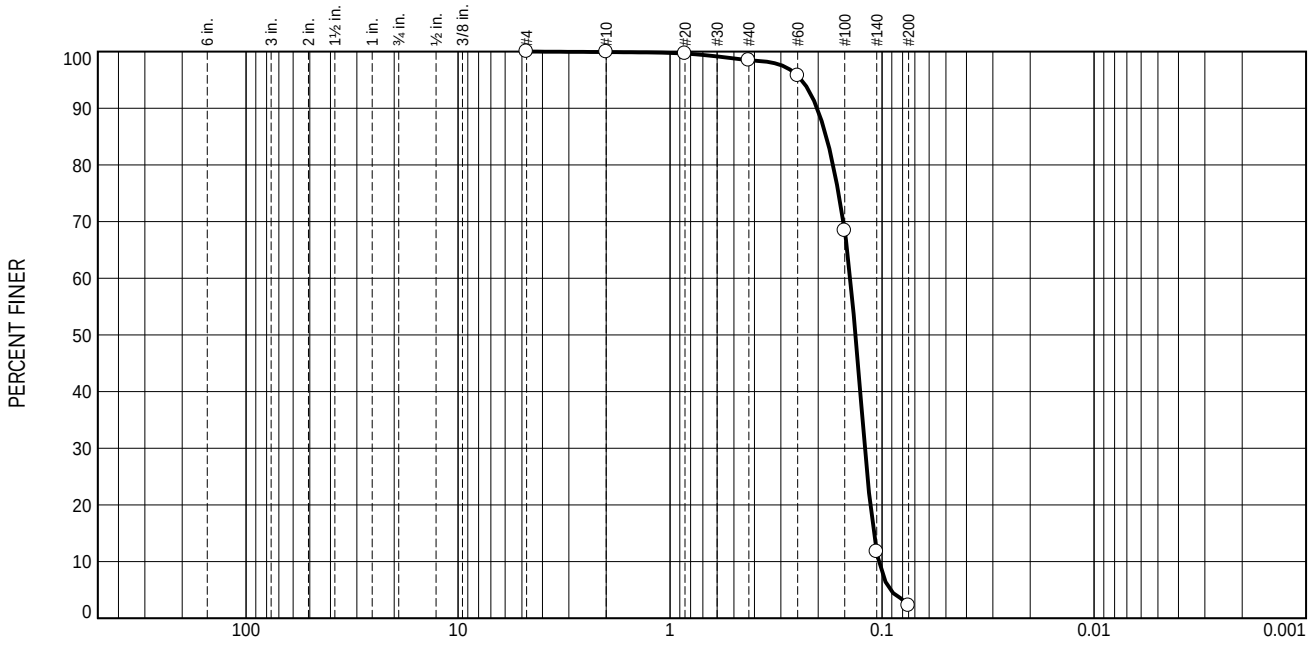
Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.4	96.3	2.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.5		
#60	95.7		
#100	68.4		
#140	11.7		
#200	2.2		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 3 Comp

Material Description
Gray and Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2024 D_{85}= 0.1833
D_{60}= 0.1412 D_{50}= 0.1335
D_{30}= 0.1205 D_{15}= 0.1096
D_{10}= 0.1035
C_u= 1.36 C_c= 0.99

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

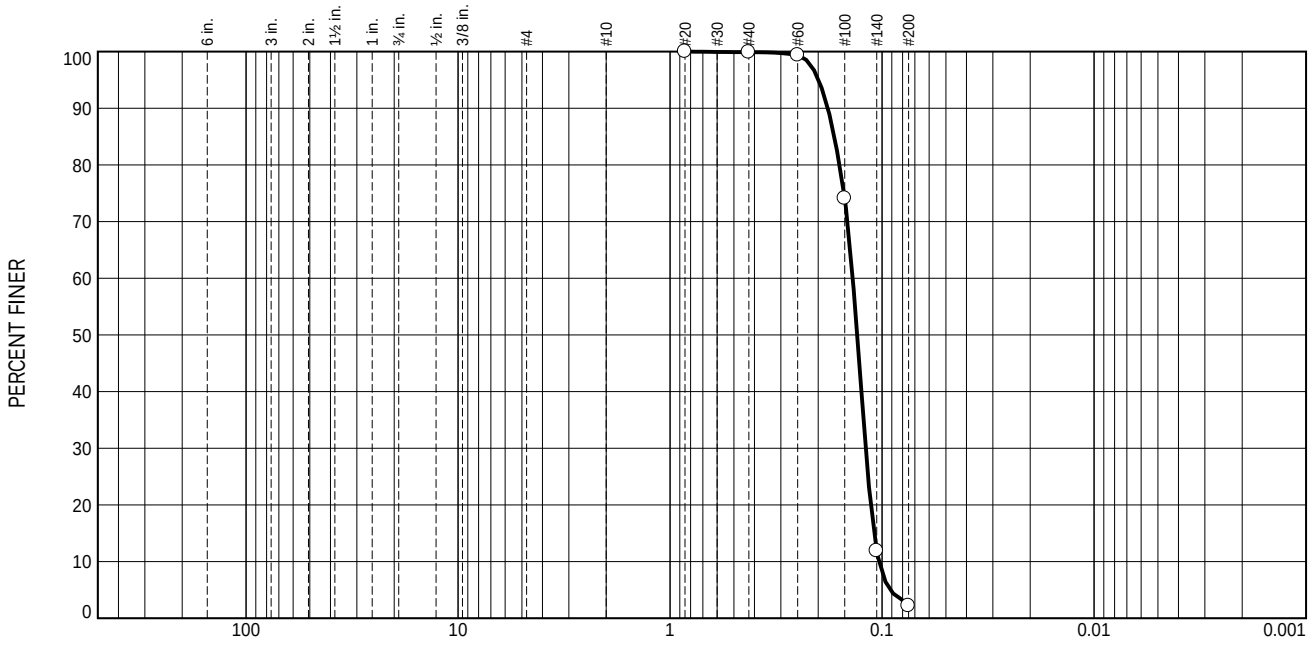
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	97.7	2.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.4		
#100	74.1		
#140	11.9		
#200	2.2		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 4A

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1802 D_{85}= 0.1679
D_{60}= 0.1375 D_{50}= 0.1310
D_{30}= 0.1194 D_{15}= 0.1093
D_{10}= 0.1034
C_u= 1.33 C_c= 1.00

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

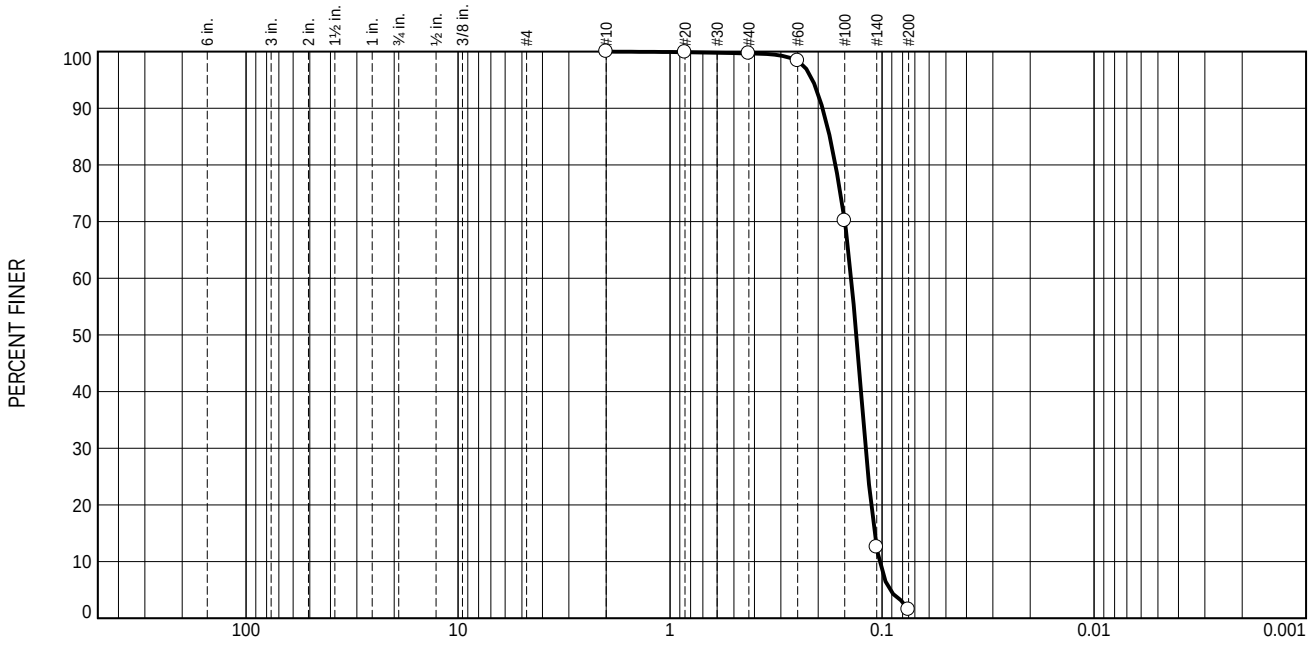
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	98.2	1.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.7		
#60	98.4		
#100	70.1		
#140	12.5		
#200	1.5		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 4B

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1907 D_{85}= 0.1765
D_{60}= 0.1397 D_{50}= 0.1323
D_{30}= 0.1195 D_{15}= 0.1085
D_{10}= 0.1027
C_u= 1.36 C_c= 0.99

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

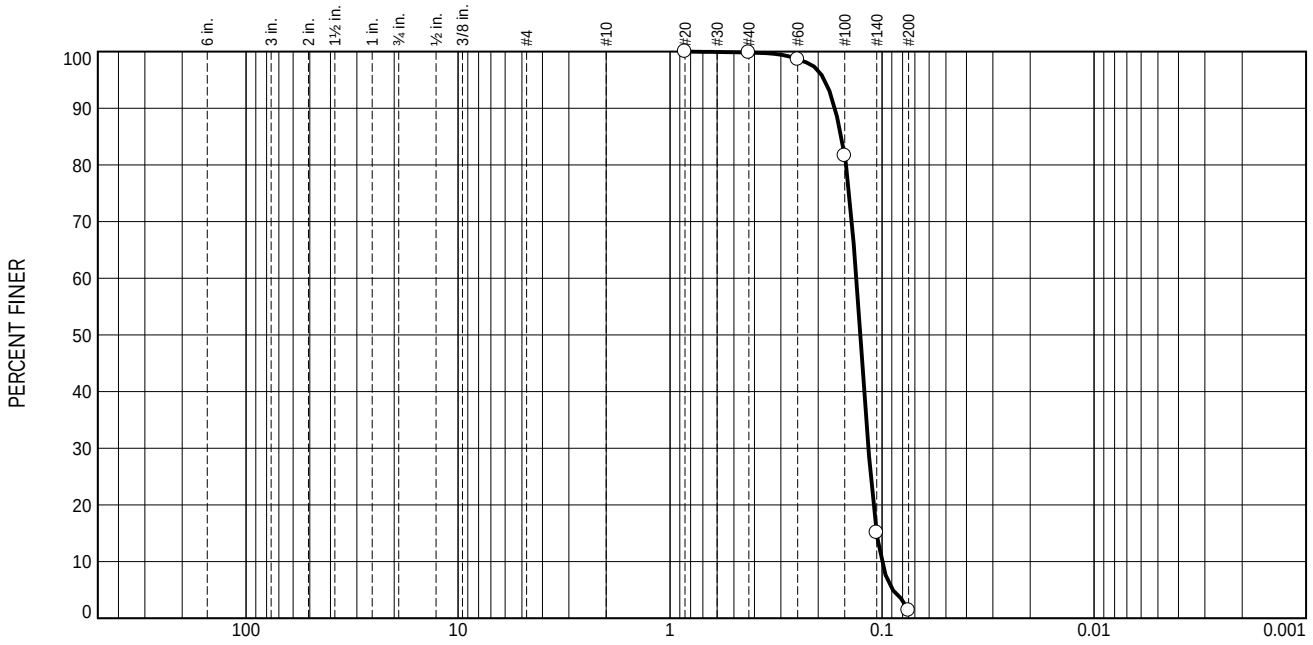
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	98.4	1.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	98.6		
#100	81.6		
#140	15.1		
#200	1.4		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 4C

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1669 D_{85}= 0.1557
D_{60}= 0.1323 D_{50}= 0.1267
D_{30}= 0.1160 D_{15}= 0.1059
D_{10}= 0.1002
C_u= 1.32 C_c= 1.01

USCS (ASTM D2487)
SP

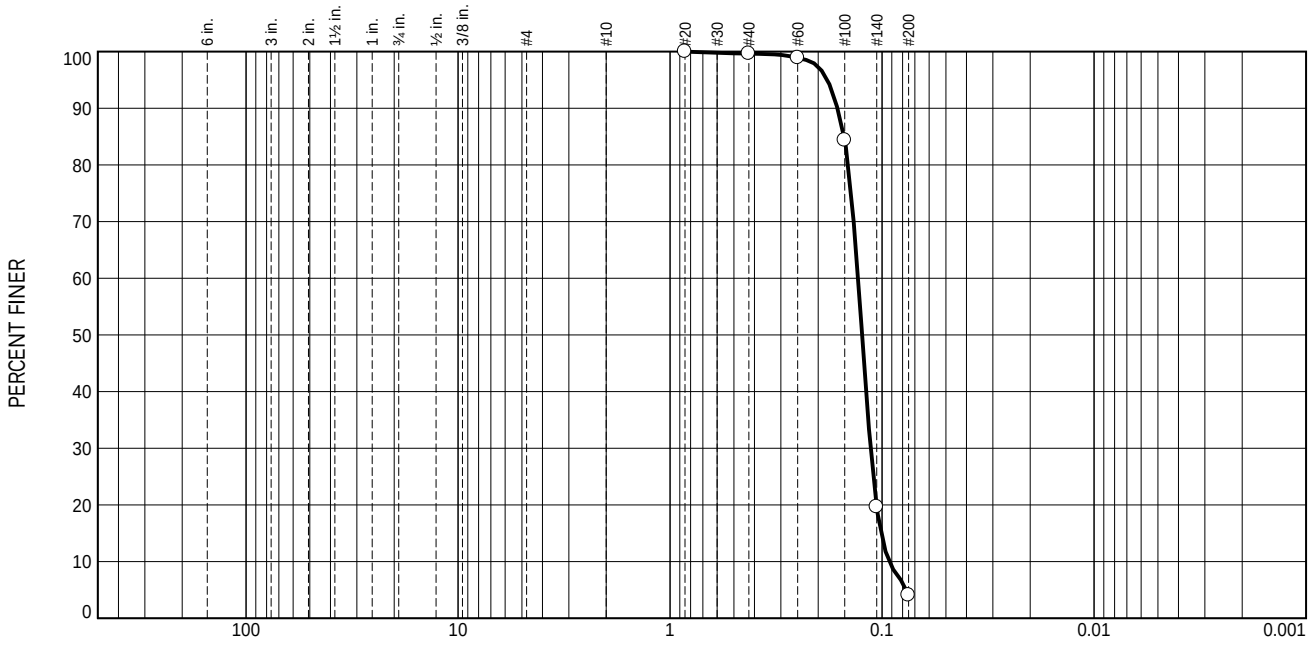
Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	95.5	4.1	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.6		
#60	98.9		
#100	84.4		
#140	19.6		
#200	4.1		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 4D

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1623 D_{85}= 0.1512
D_{60}= 0.1298 D_{50}= 0.1243
D_{30}= 0.1133 D_{15}= 0.1011
D_{10}= 0.0926
C_u= 1.40 C_c= 1.07

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

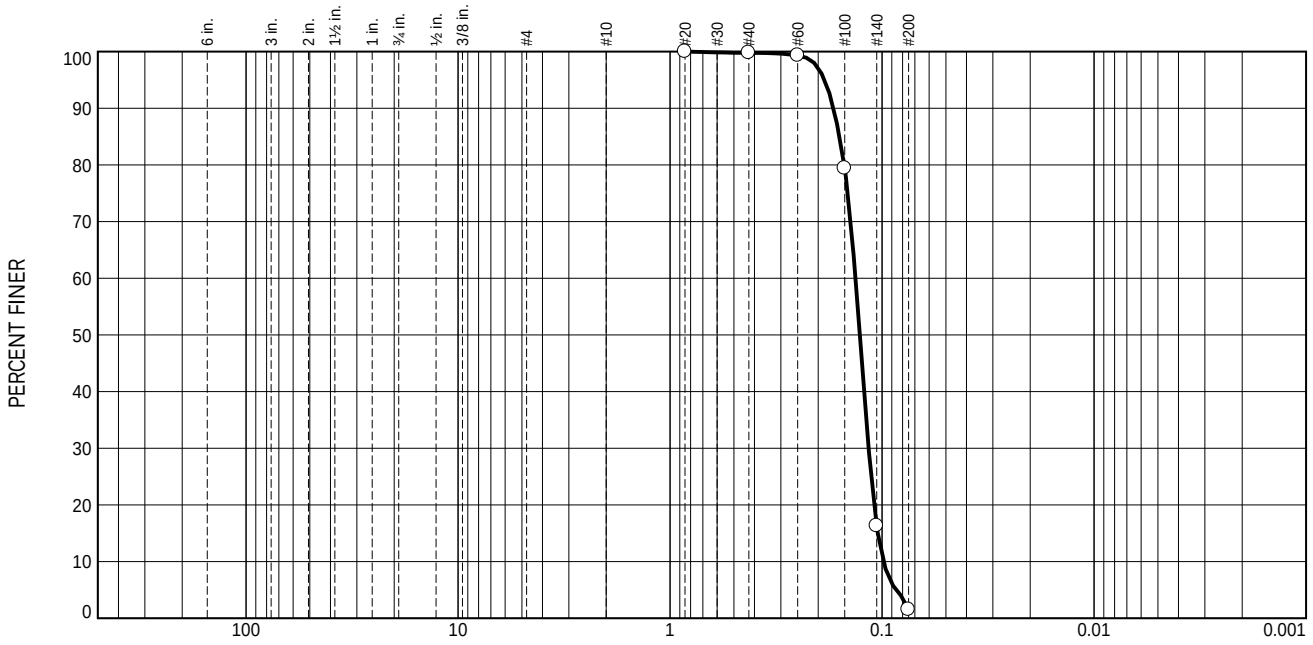
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	98.3	1.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	99.3		
#100	79.4		
#140	16.3		
#200	1.5		

· (no specification provided)

Source of Sample: PA23-1110S W-C
Sample Number: 4 Comp

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/4/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1694 D_{85}= 0.1587
D_{60}= 0.1334 D_{50}= 0.1273
D_{30}= 0.1157 D_{15}= 0.1047
D_{10}= 0.0985
C_u= 1.35 C_c= 1.02

USCS (ASTM D2487)
SP

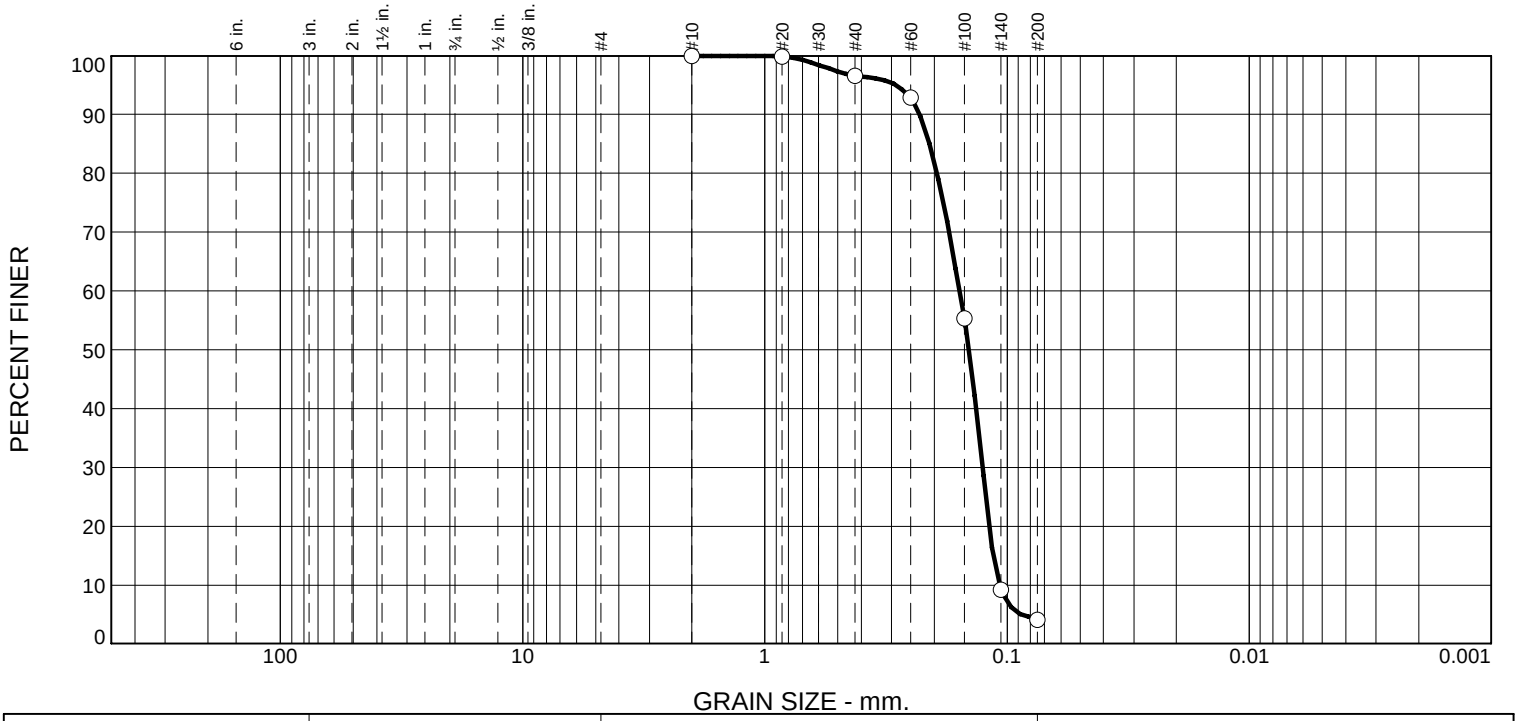
Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.4	92.5	4.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	96.6		
#60	92.9		
#100	55.4		
#140	9.2		
#200	4.1		

· (no specification provided)

Material Description
Light Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2288 D_{85}= 0.2091
D_{60}= 0.1569 D_{50}= 0.1435
D_{30}= 0.1264 D_{15}= 0.1139
D_{10}= 0.1077
C_u= 1.46 C_c= 0.94

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)
SP

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

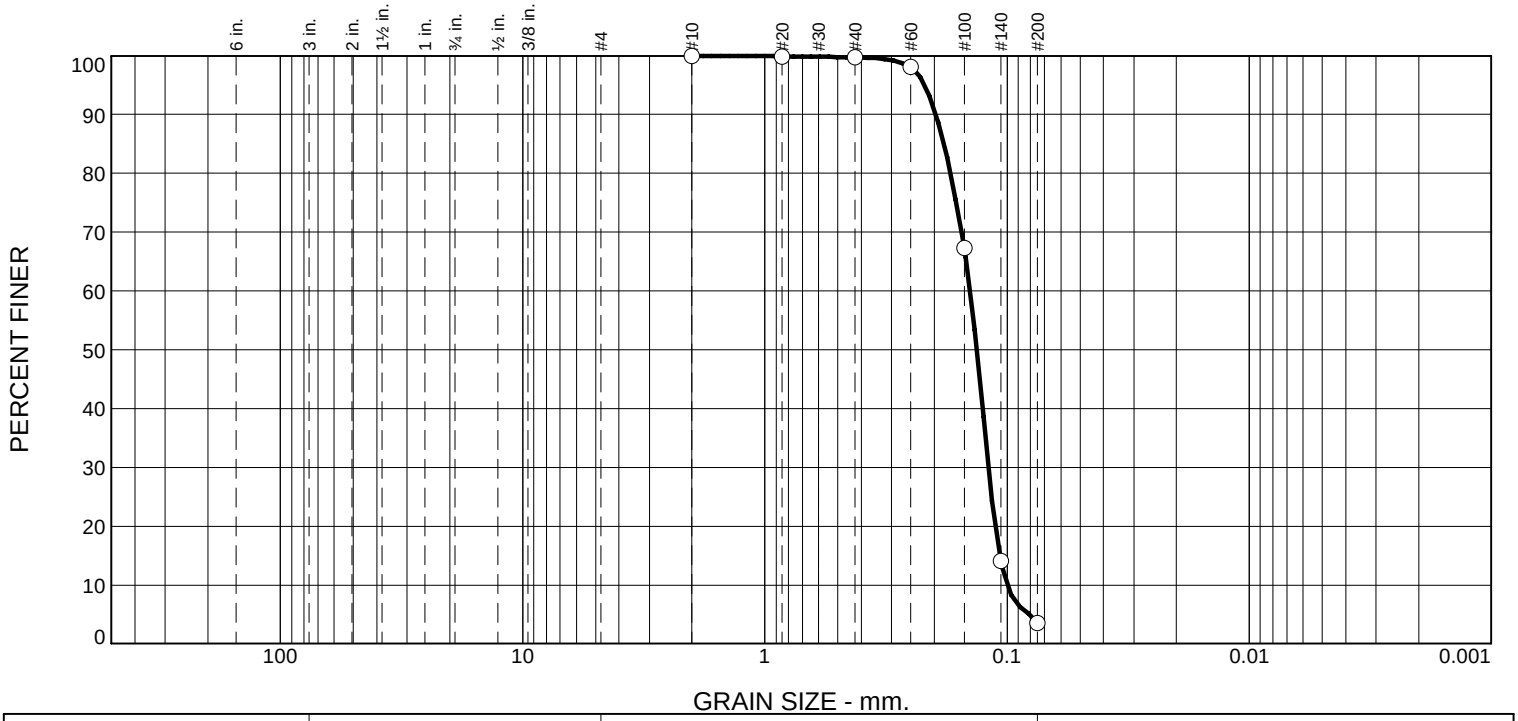
Source of Sample: PA23-1110S W-C
Sample Number: 5A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	96.1	3.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.7		
#60	98.1		
#100	67.3		
#140	14.0		
#200	3.6		

· (no specification provided)

Material Description

Light Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1971 D_{85}= 0.1826

D_{60}= 0.1418 D_{50}= 0.1335

D_{30}= 0.1193 D_{15}= 0.1071

D_{10}= 0.1000

C_u= 1.42 C_c= 1.00

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 5B

INSIGHT GROUP
A CHRISTOPHER COMPANY

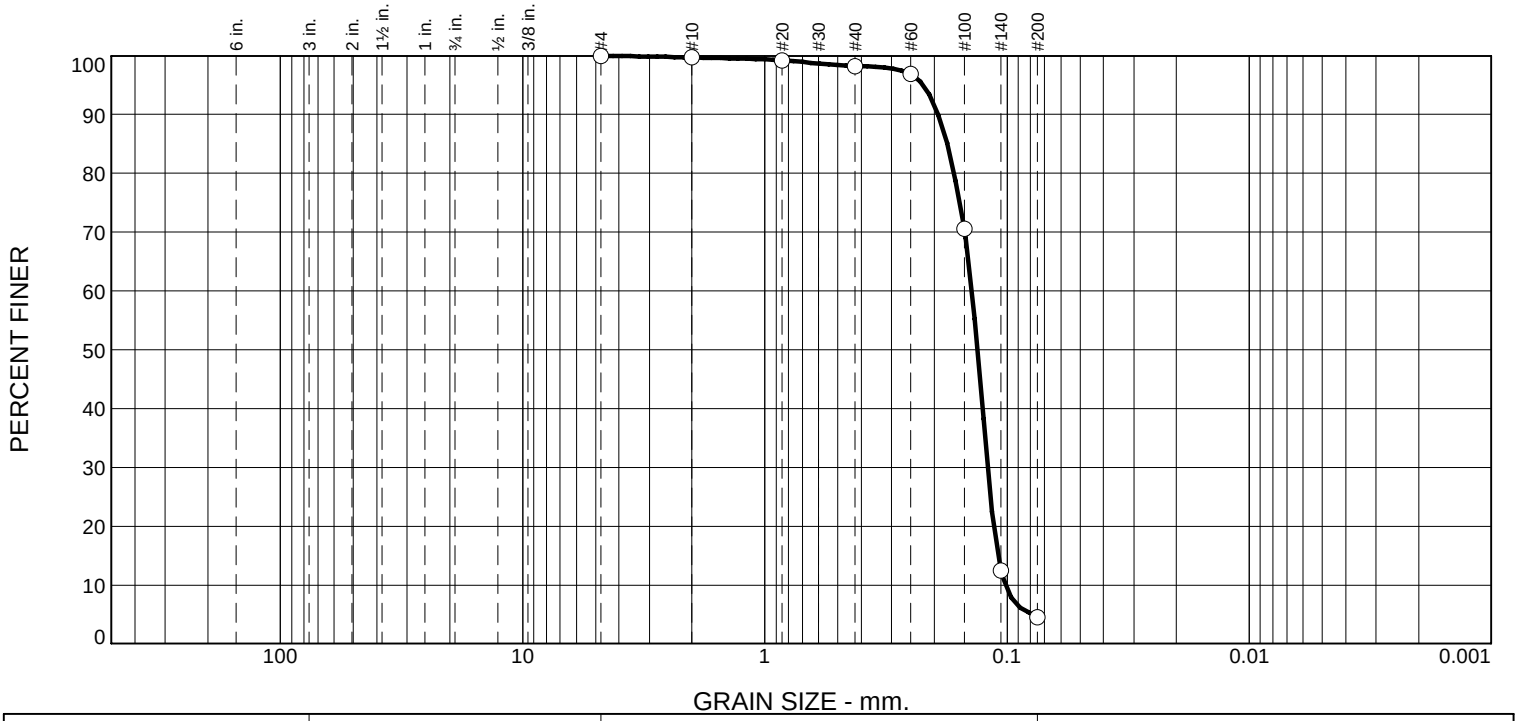
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.5	93.7	4.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	99.2		
#40	98.2		
#60	96.9		
#100	70.5		
#140	12.4		
#200	4.5		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1928 D_{85}= 0.1769
D_{60}= 0.1396 D_{50}= 0.1326
D_{30}= 0.1202 D_{15}= 0.1092
D_{10}= 0.1016
C_u= 1.37 C_c= 1.02

USCS (ASTM D2487)
SP

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

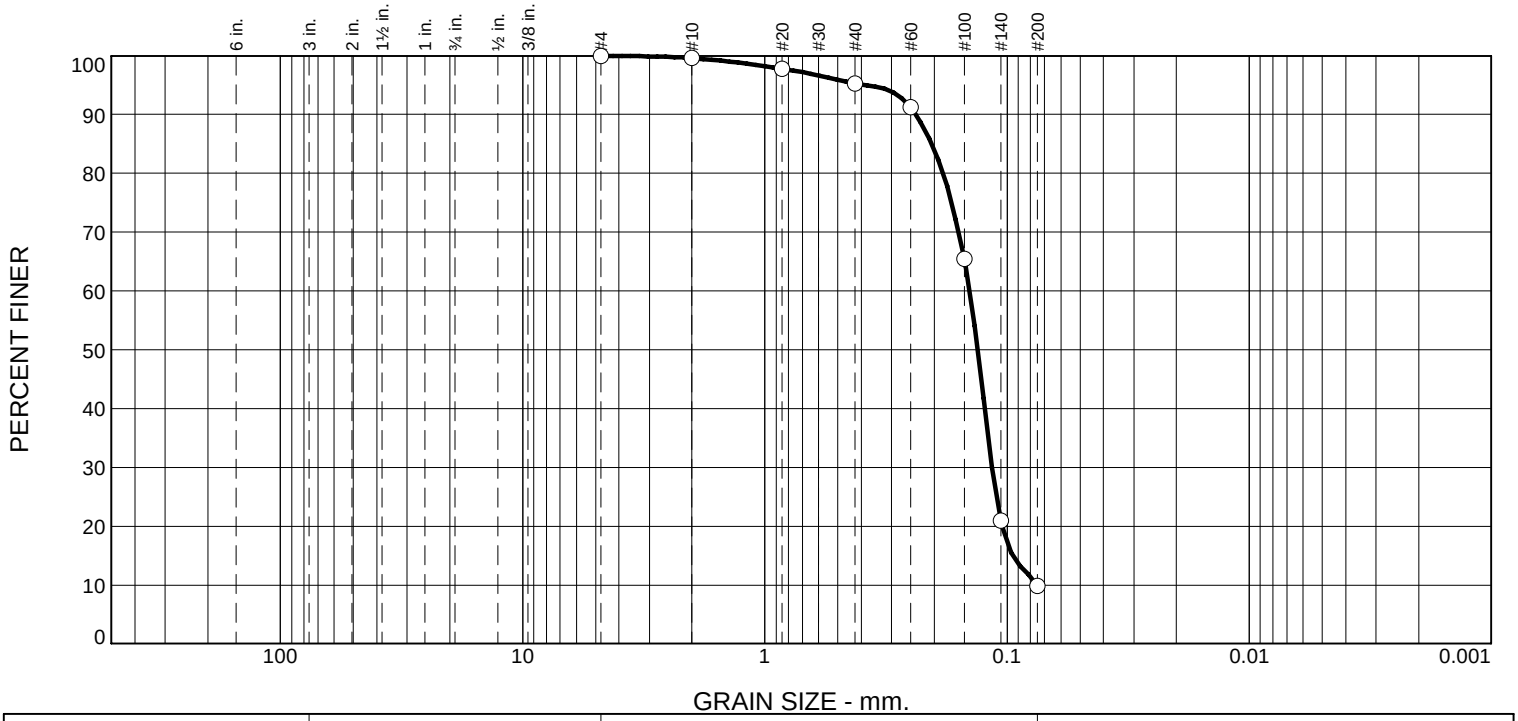
Source of Sample: PA23-1110S W-C
Sample Number: 5C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	4.3	85.4	9.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.6		
#20	97.8		
#40	95.3		
#60	91.2		
#100	65.4		
#140	21.0		
#200	9.9		

· (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2376 D_{85}= 0.2044
D_{60}= 0.1425 D_{50}= 0.1324
D_{30}= 0.1153 D_{15}= 0.0950
D_{10}= 0.0753
C_u= 1.89 C_c= 1.24

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

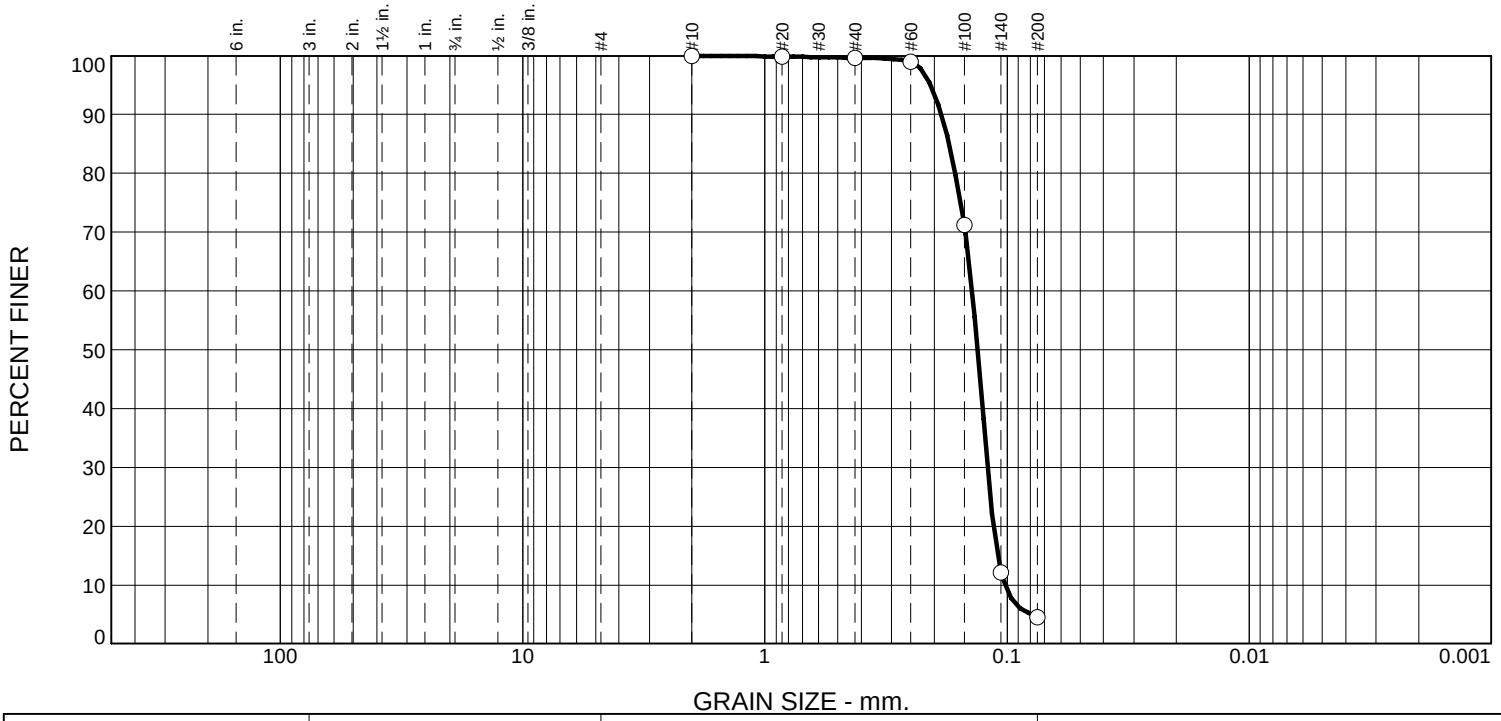
Source of Sample: PA23-1110S W-C
Sample Number: 5D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	95.2	4.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.7		
#60	99.0		
#100	71.2		
#140	12.2		
#200	4.5		

* (no specification provided)

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1869 D_{85}= 0.1737
D_{60}= 0.1393 D_{50}= 0.1324
D_{30}= 0.1203 D_{15}= 0.1094
D_{10}= 0.1020
C_u= 1.37 C_c= 1.02

USCS (ASTM D2487)
SP

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

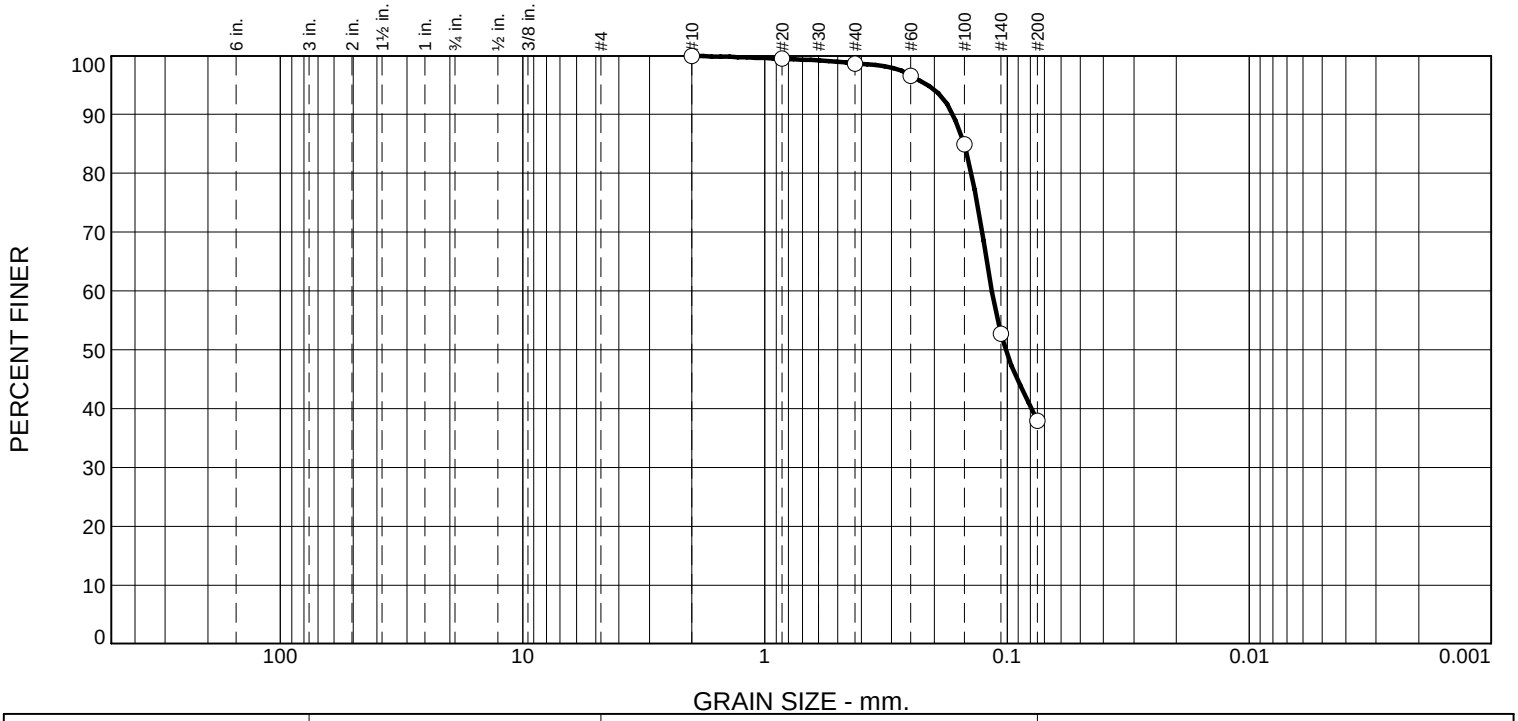
Source of Sample: PA23-1110S W-C
Sample Number: 5 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.3	60.8	37.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.5		
#40	98.7		
#60	96.6		
#100	84.9		
#140	52.7		
#200	37.9		

· (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1675 D_{85}= 0.1503

D_{60}= 0.1155 D_{50}= 0.1014

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 6A

INSIGHT GROUP
A CHRISTOPHER COMPANY

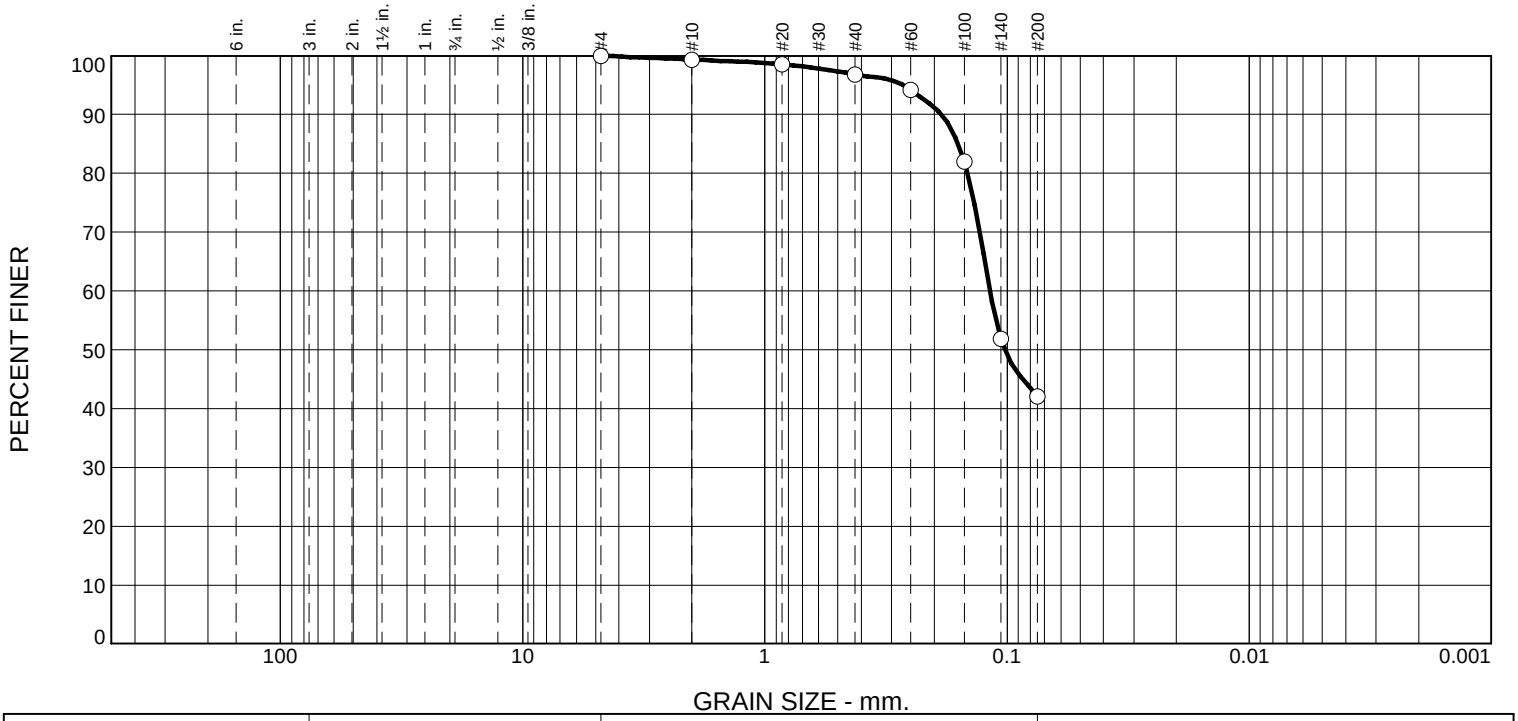
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	2.5	54.8	42.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.3		
#20	98.5		
#40	96.8		
#60	94.1		
#100	82.0		
#140	51.9		
#200	42.0		

· (no specification provided)

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1867 D_{85}= 0.1593
D_{60}= 0.1175 D_{50}= 0.1023
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

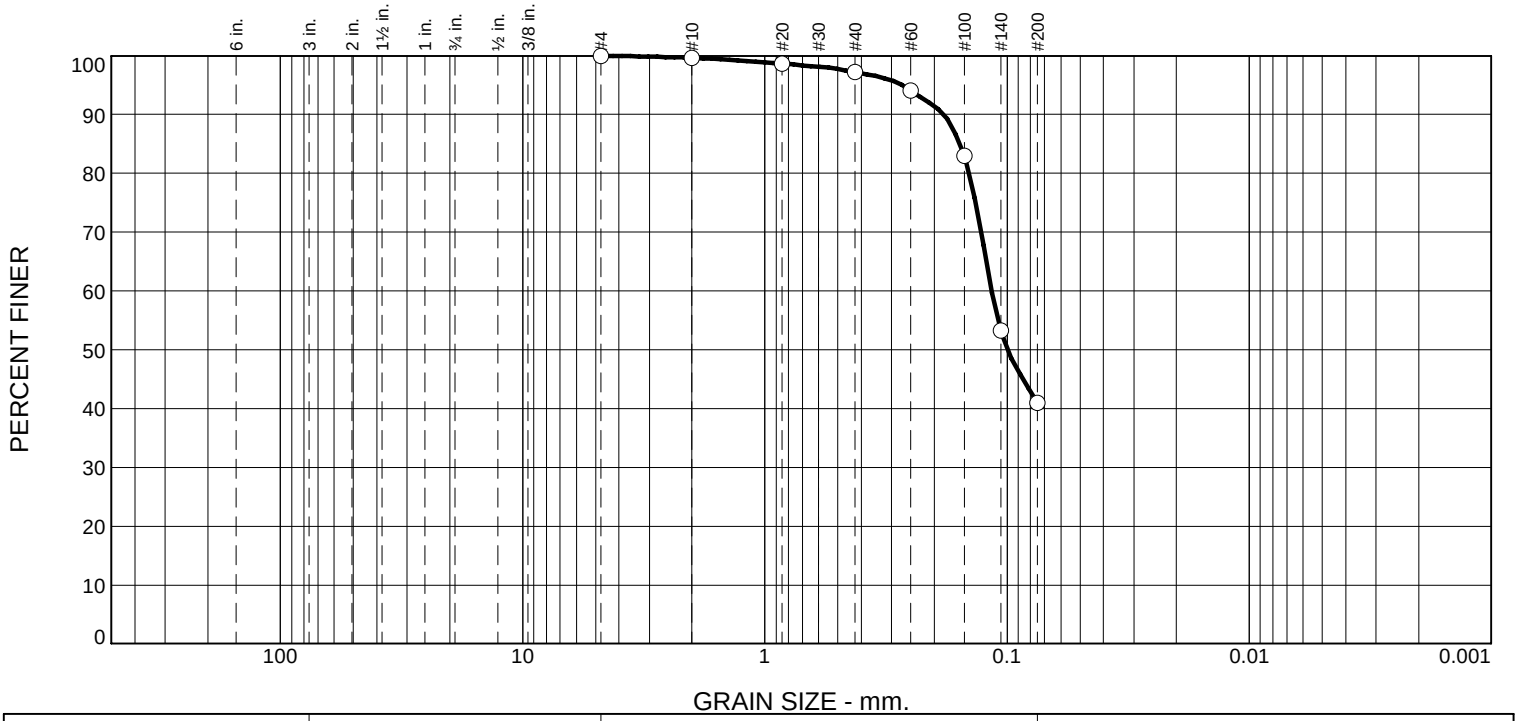
Source of Sample: PA23-1110S W-C
Sample Number: 6B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	2.4	56.3	40.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.6		
#20	98.7		
#40	97.2		
#60	94.0		
#100	82.9		
#140	53.2		
#200	40.9		

· (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1830 D_{85}= 0.1564

D_{60}= 0.1157 D_{50}= 0.0997

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 6C

INSIGHT GROUP
A CHRISTOPHER COMPANY

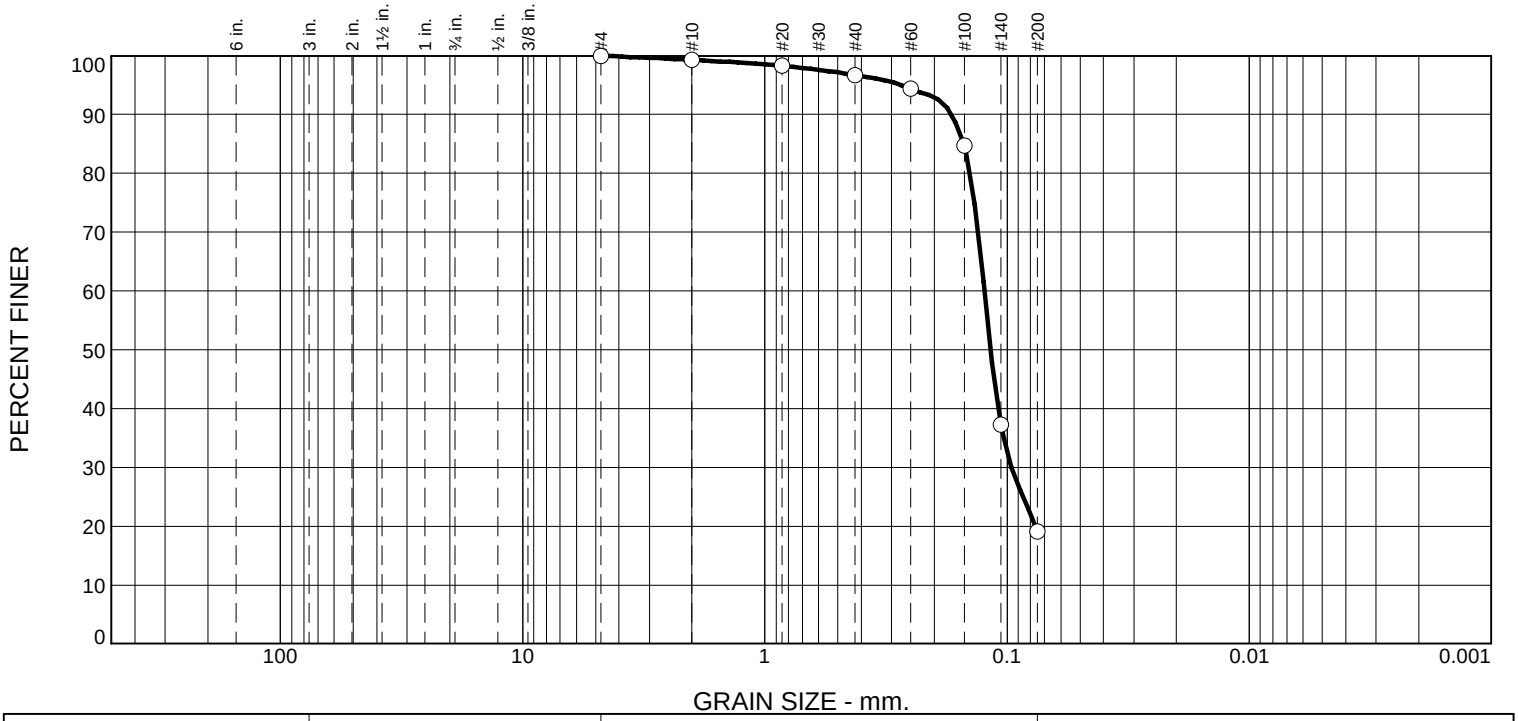
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	2.6	77.6	19.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.3		
#20	98.3		
#40	96.7		
#60	94.4		
#100	84.7		
#140	37.3		
#200	19.1		

· (no specification provided)

Material Description

Dark Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1700 D_{85}= 0.1507

D_{60}= 0.1241 D_{50}= 0.1168

D_{30}= 0.0961 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 6D

INSIGHT GROUP
A CHRISTOPHER COMPANY

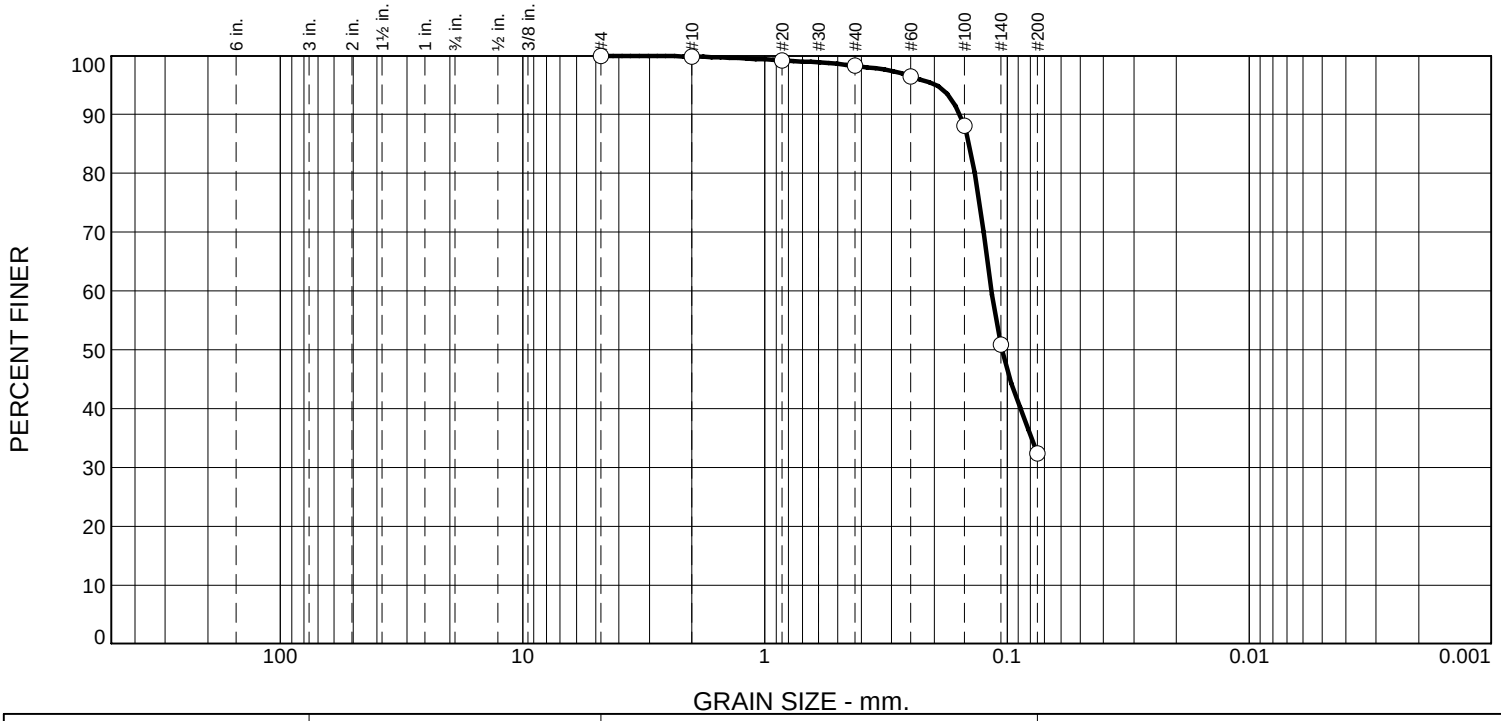
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.6	65.9	32.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.2		
#40	98.3		
#60	96.4		
#100	88.1		
#140	50.9		
#200	32.4		

* (no specification provided)

Material Description
Dark Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1565 D_{85}= 0.1431
D_{60}= 0.1158 D_{50}= 0.1049
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

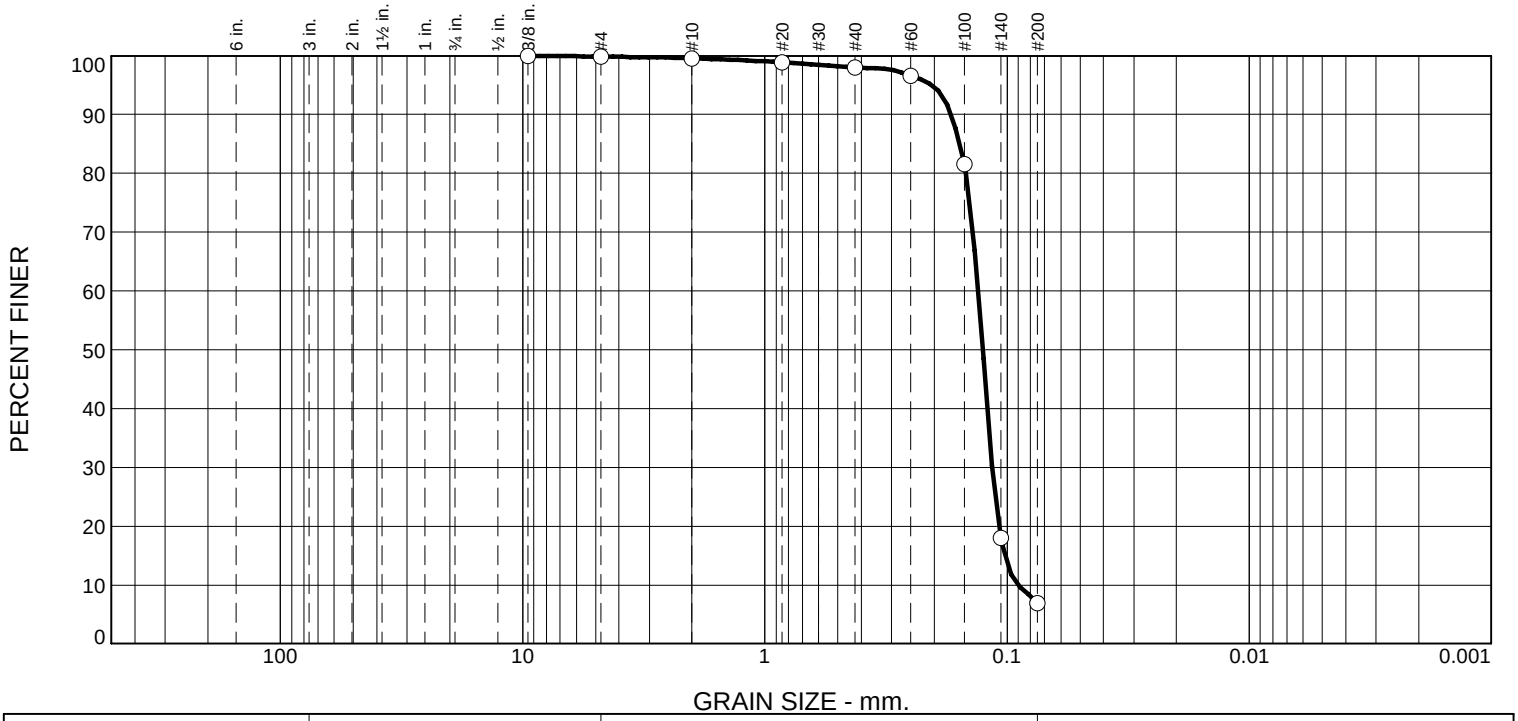
Source of Sample: PA23-1110S W-C
Sample Number: 6 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	1.6	91.0	7.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
.375	100.0		
#4	99.9		
#10	99.6		
#20	98.9		
#40	98.0		
#60	96.6		
#100	81.6		
#140	18.0		
#200	7.0		

· (no specification provided)

Material Description

Brown

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1705 D_{85}= 0.1566

D_{60}= 0.1318 D_{50}= 0.1261

D_{30}= 0.1150 D_{15}= 0.1021

D_{10}= 0.0906

C_u= 1.46 C_c= 1.11

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

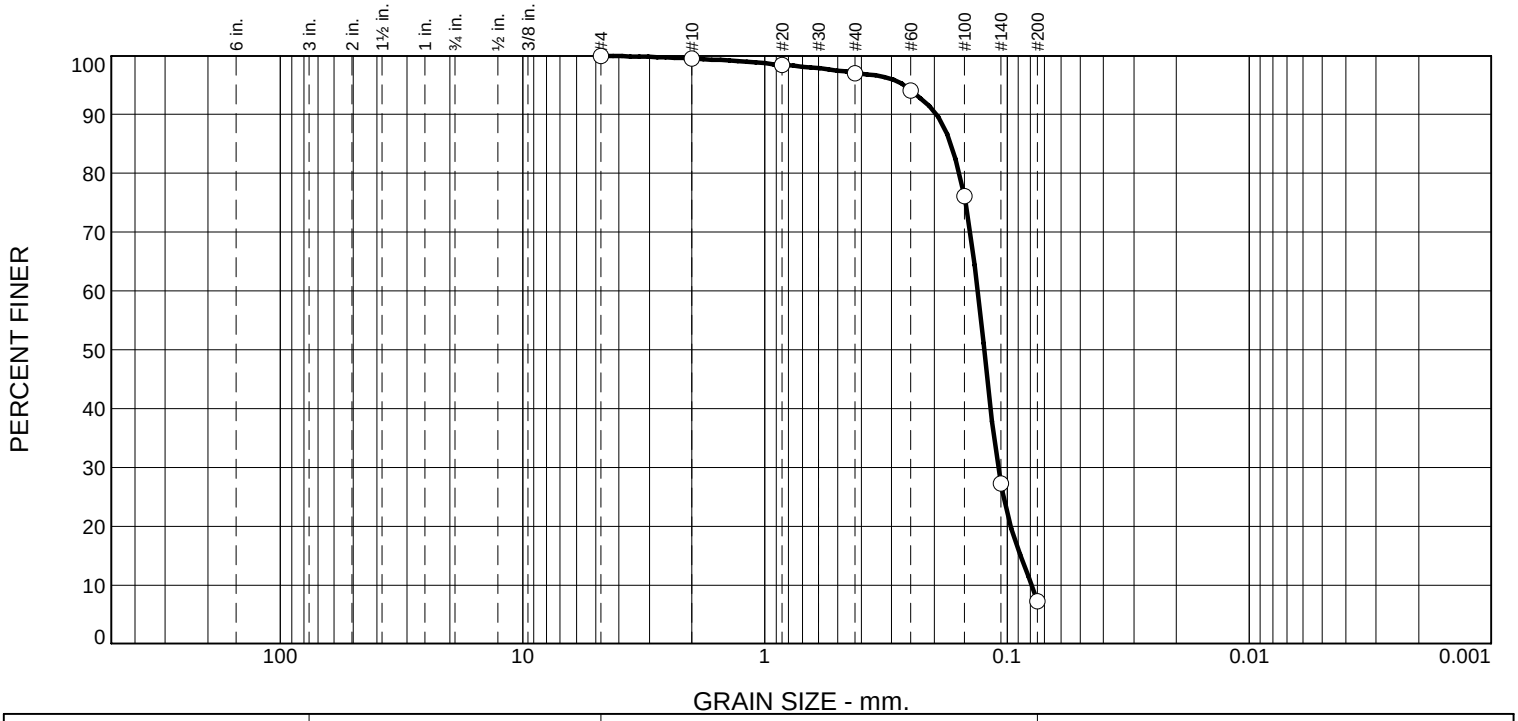
Source of Sample: PA23-1110S W-C
Sample Number: 7A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	2.4	89.8	7.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.5		
#20	98.5		
#40	97.1		
#60	94.1		
#100	76.2		
#140	27.2		
#200	7.3		

* (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1958 D_{85}= 0.1708

D_{60}= 0.1323 D_{50}= 0.1244

D_{30}= 0.1087 D_{15}= 0.0883

D_{10}= 0.0790

C_u= 1.67 C_c= 1.13

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 7B

INSIGHT GROUP
A CHRISTOPHER COMPANY

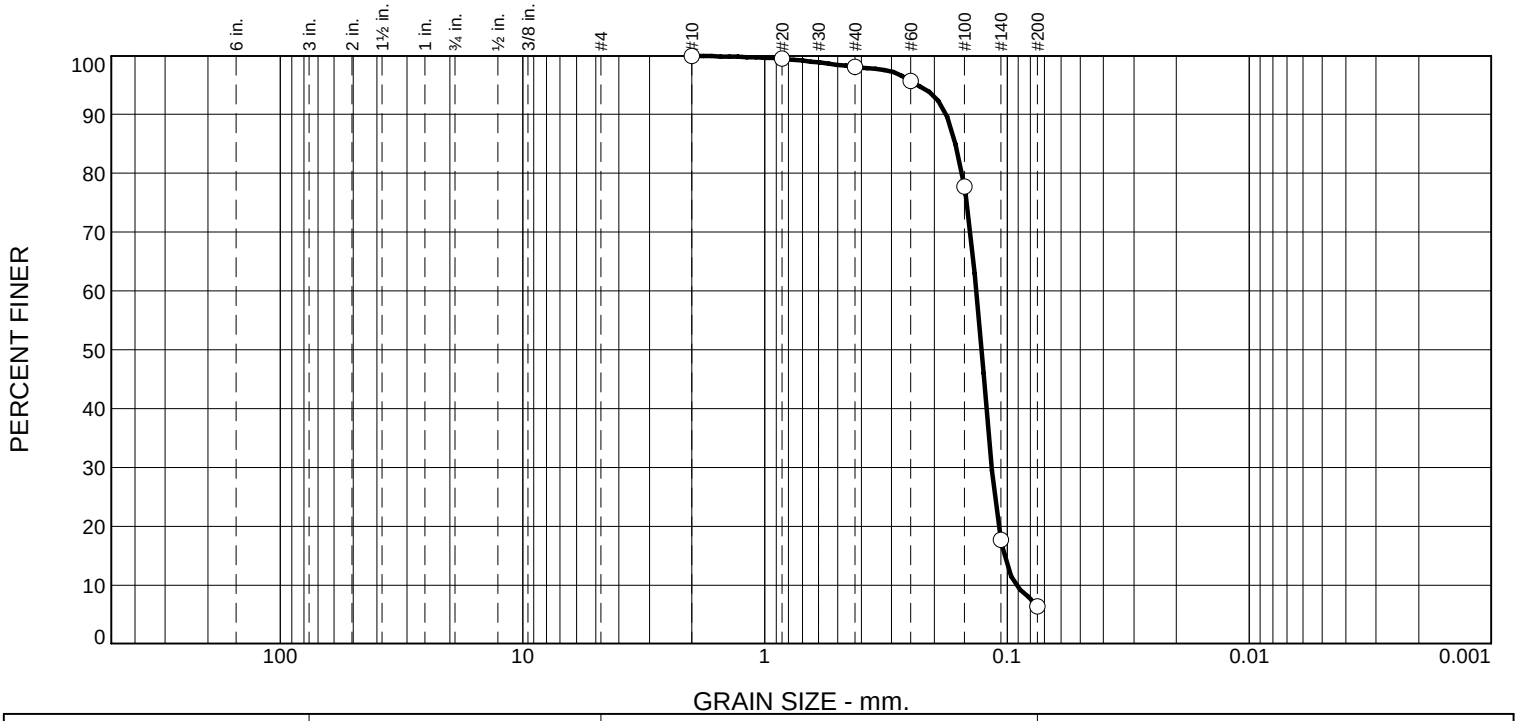
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.9	91.7	6.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.5		
#40	98.1		
#60	95.7		
#100	77.8		
#140	17.7		
#200	6.4		

· (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1791 D_{85}= 0.1632

D_{60}= 0.1340 D_{50}= 0.1277

D_{30}= 0.1156 D_{15}= 0.1026

D_{10}= 0.0921

C_u= 1.46 C_c= 1.08

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 7C

INSIGHT GROUP
A CHRISTOPHER COMPANY

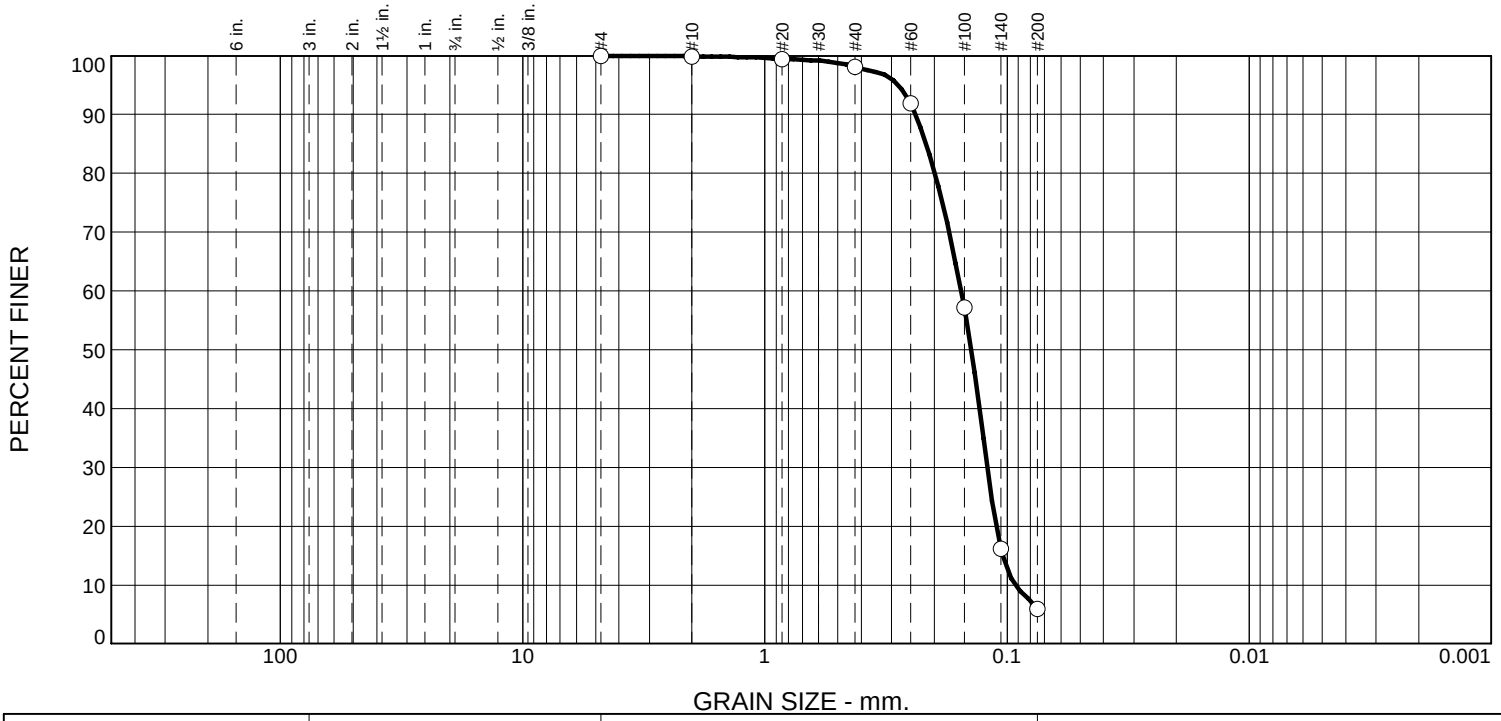
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.8	92.2	5.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.5		
#40	98.1		
#60	91.9		
#100	57.2		
#140	16.2		
#200	5.9		

* (no specification provided)

Material Description

Brown

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2382 D_{85}= 0.2154

D_{60}= 0.1547 D_{50}= 0.1404

D_{30}= 0.1207 D_{15}= 0.1042

D_{10}= 0.0928

C_u= 1.67 C_c= 1.01

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 7D

INSIGHT GROUP
A CHRISTOPHER COMPANY

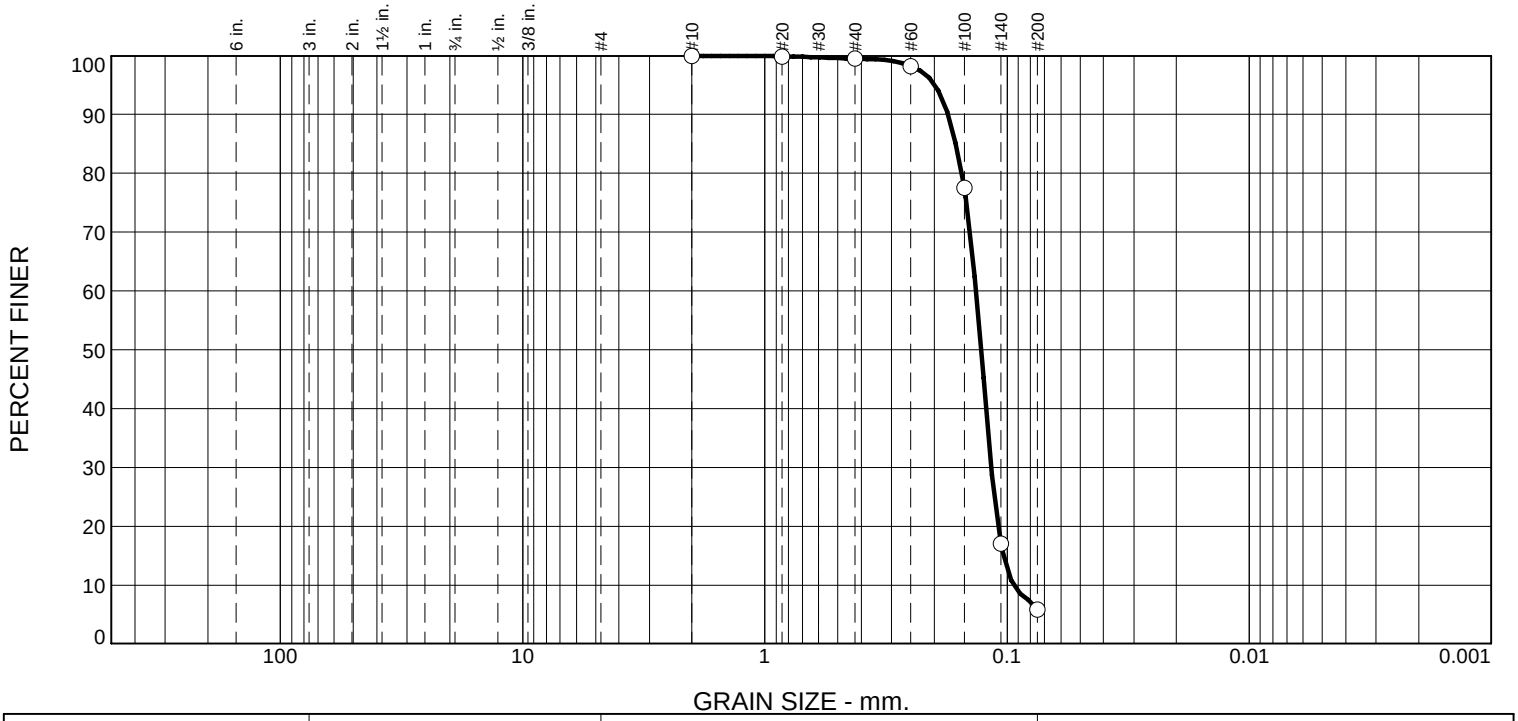
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	93.7	5.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.5		
#60	98.2		
#100	77.5		
#140	17.0		
#200	5.8		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1755 D_{85}= 0.1627

D_{60}= 0.1345 D_{50}= 0.1281

D_{30}= 0.1161 D_{15}= 0.1035

D_{10}= 0.0942

C_u= 1.43 C_c= 1.06

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 7E

INSIGHT GROUP
A CHRISTOPHER COMPANY

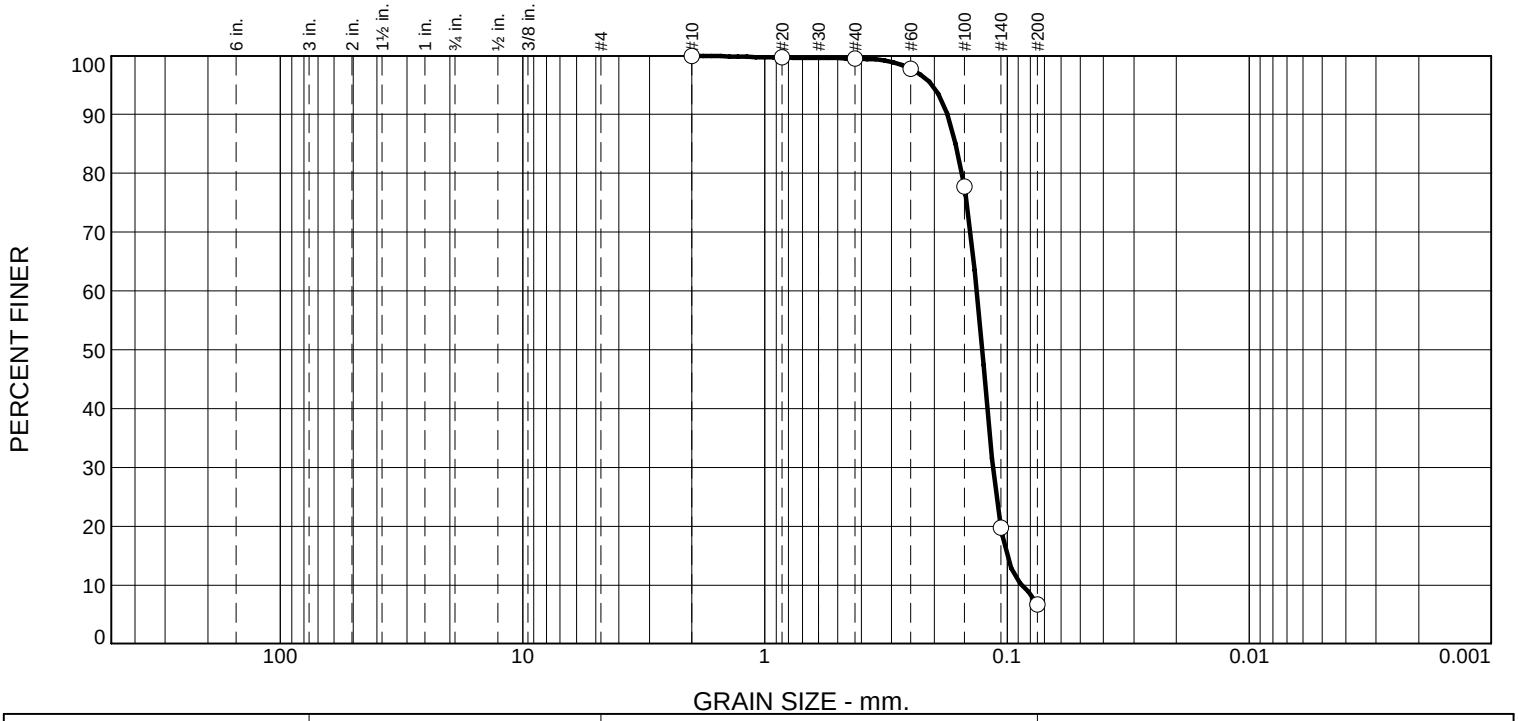
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	92.8	6.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	99.5		
#60	97.8		
#100	77.7		
#140	19.7		
#200	6.7		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1766 D_{85}= 0.1629

D_{60}= 0.1336 D_{50}= 0.1269

D_{30}= 0.1142 D_{15}= 0.1001

D_{10}= 0.0872

C_u= 1.53 C_c= 1.12

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 7F

INSIGHT GROUP
A CHRISTOPHER COMPANY

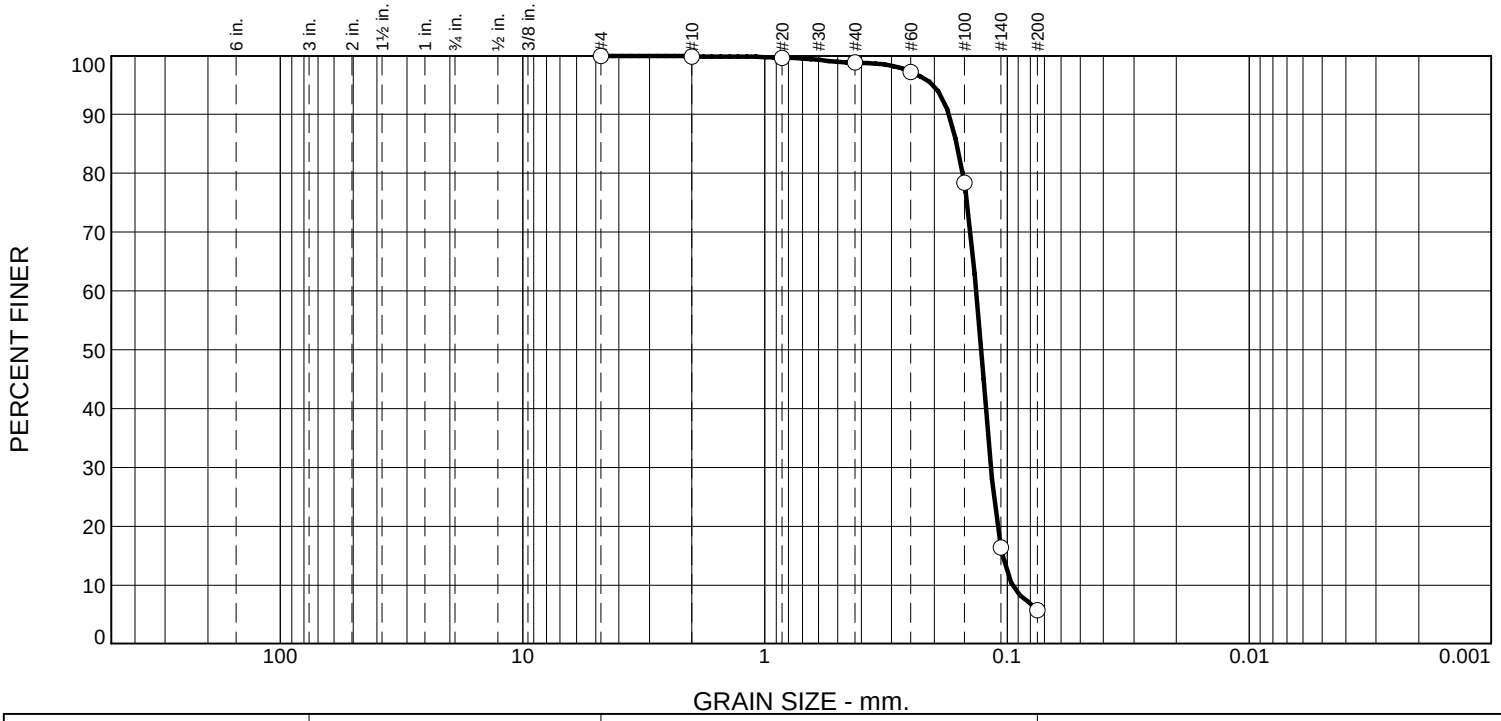
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.1	93.1	5.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.8		
#60	97.2		
#100	78.4		
#140	16.3		
#200	5.7		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1739 D_{85}= 0.1610

D_{60}= 0.1342 D_{50}= 0.1281

D_{30}= 0.1165 D_{15}= 0.1043

D_{10}= 0.0953

C_u= 1.41 C_c= 1.06

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 7 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

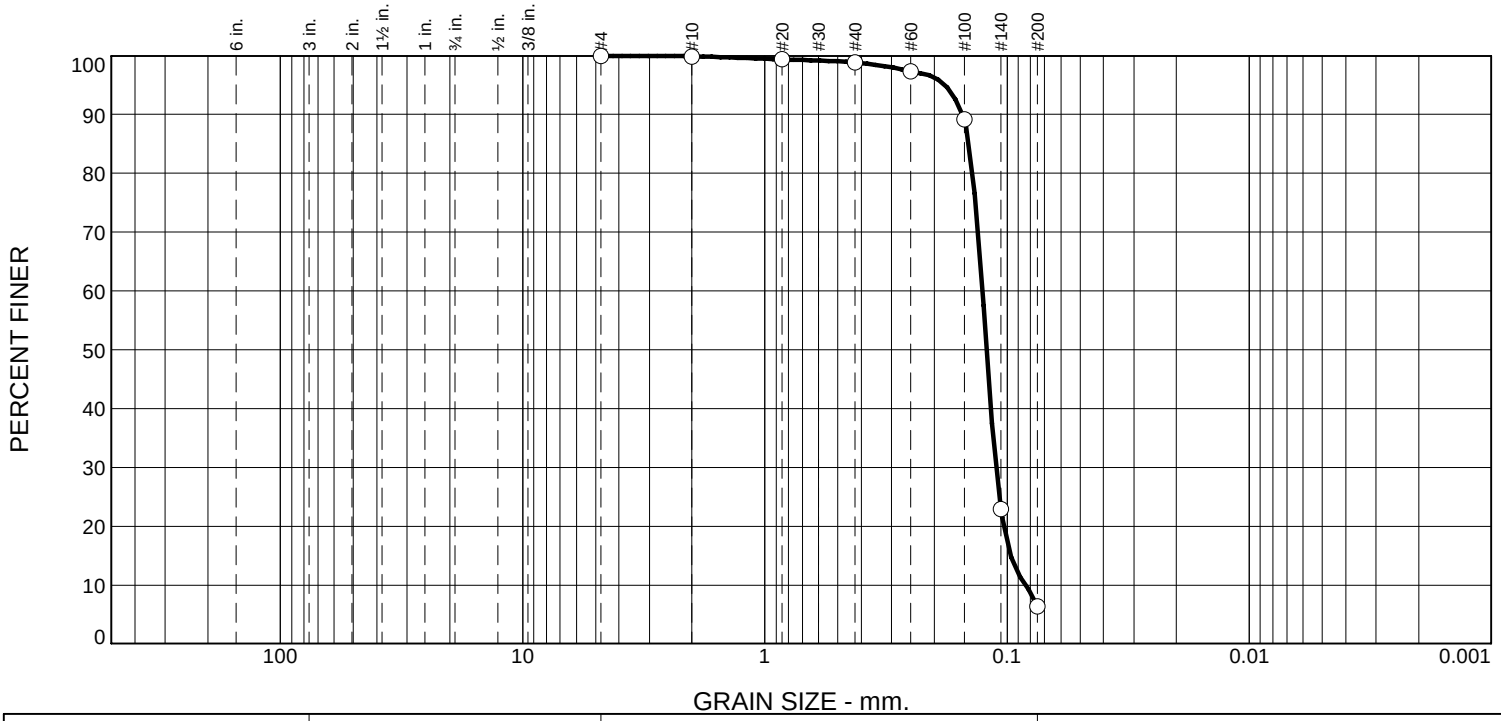
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.1	92.4	6.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.4		
#40	98.8		
#60	97.3		
#100	89.2		
#140	22.9		
#200	6.4		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1526 D_{85}= 0.1432

D_{60}= 0.1265 D_{50}= 0.1215

D_{30}= 0.1110 D_{15}= 0.0968

D_{10}= 0.0840

C_u= 1.51 C_c= 1.16

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 8A

INSIGHT GROUP
A CHRISTOPHER COMPANY

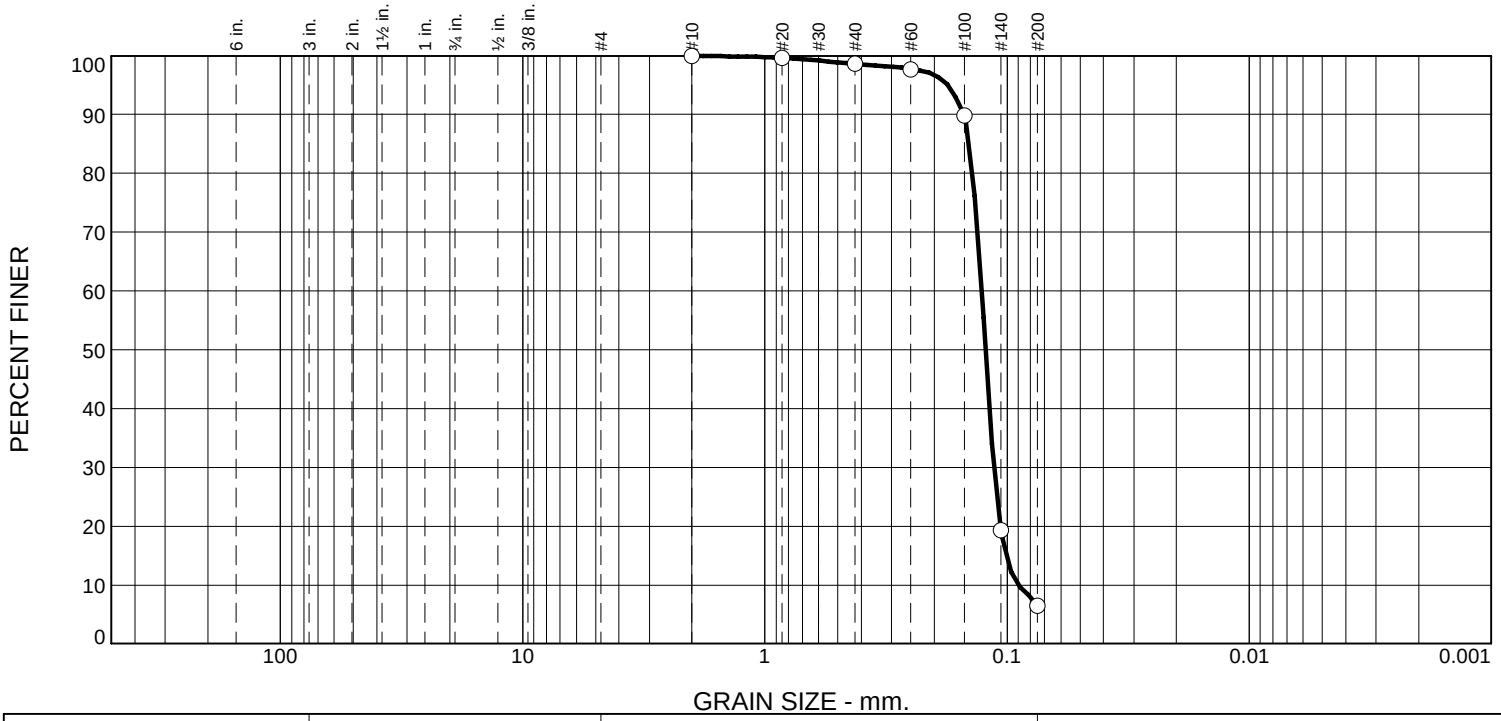
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.4	92.1	6.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.6		
#40	98.6		
#60	97.7		
#100	89.8		
#140	19.3		
#200	6.5		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1506 D_{85}= 0.1428

D_{60}= 0.1274 D_{50}= 0.1227

D_{30}= 0.1132 D_{15}= 0.1010

D_{10}= 0.0903

C_u= 1.41 C_c= 1.11

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 8B

INSIGHT GROUP
A CHRISTOPHER COMPANY

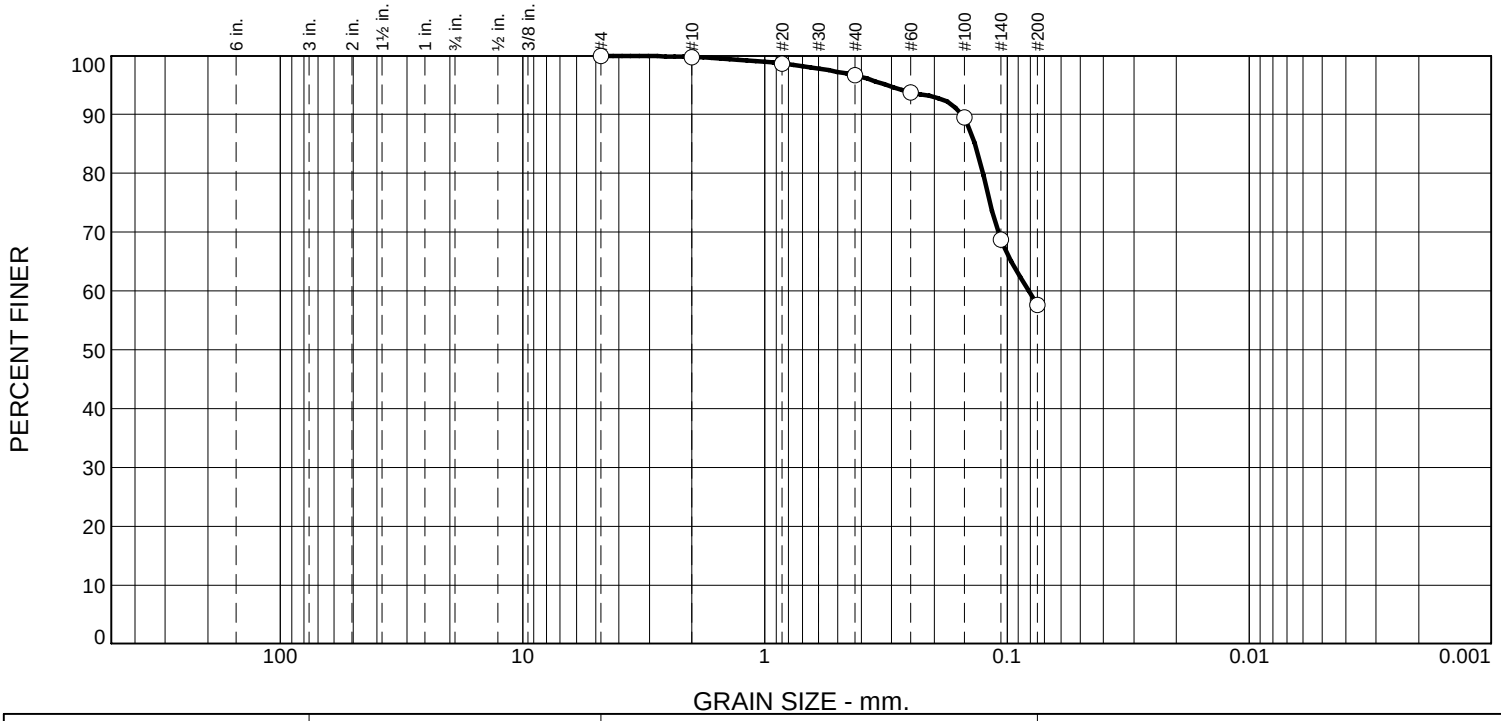
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	3.2	38.9	57.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	98.7		
#40	96.6		
#60	93.7		
#100	89.5		
#140	68.8		
#200	57.7		

· (no specification provided)

Material Description

Dark Gray with Red

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1534 D_{85}= 0.1357

D_{60}= 0.0811 D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

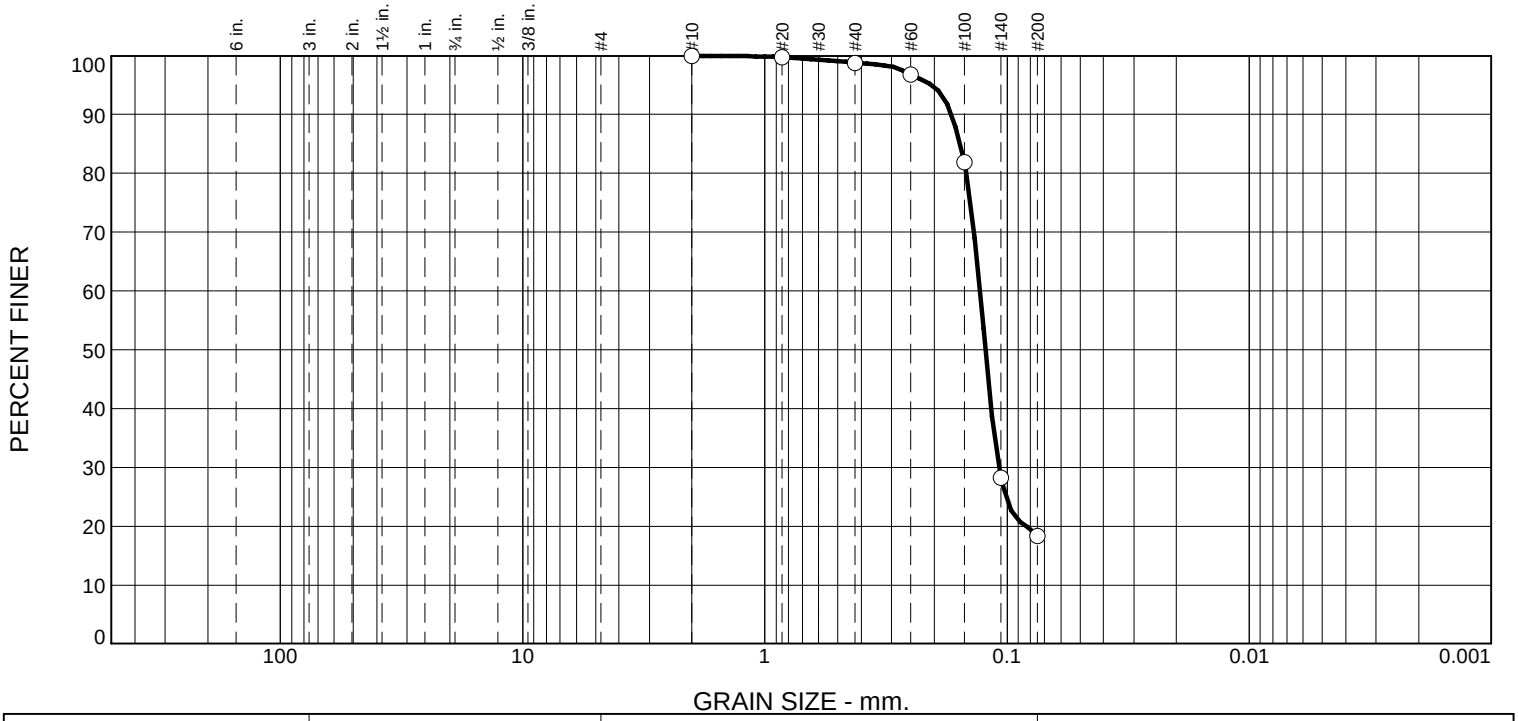
Source of Sample: PA23-1110S W-C
Sample Number: 8C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.2	80.5	18.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	98.8		
#60	96.8		
#100	81.9		
#140	28.2		
#200	18.3		

· (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1698 D_{85}= 0.1559

D_{60}= 0.1295 D_{50}= 0.1229

D_{30}= 0.1081 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 8D

INSIGHT GROUP
A CHRISTOPHER COMPANY

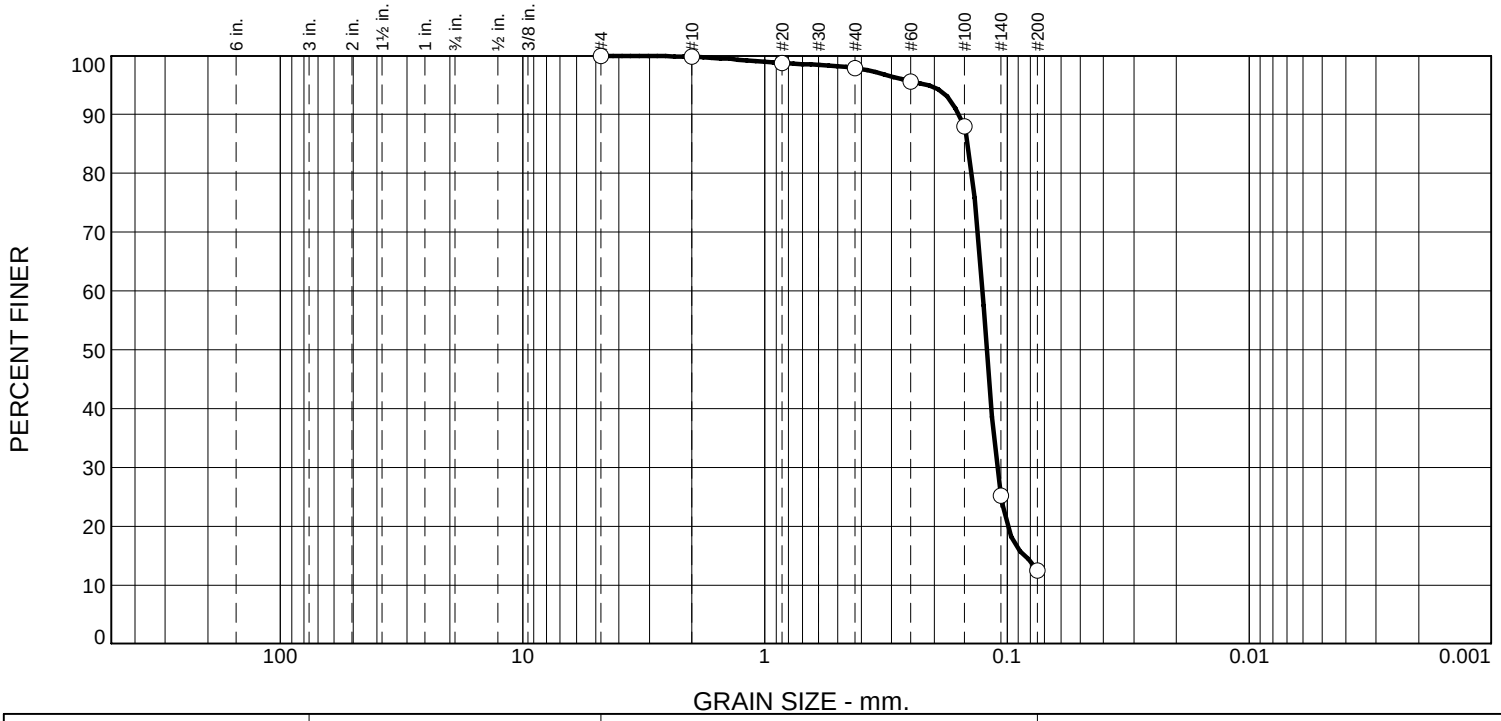
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.9	85.4	12.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	98.8		
#40	97.9		
#60	95.6		
#100	87.9		
#140	25.2		
#200	12.5		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1579 D_{85}= 0.1446

D_{60}= 0.1266 D_{50}= 0.1213

D_{30}= 0.1100 D_{15}= 0.0848

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/5/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/28/23

Date Received: 3/1/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 8 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

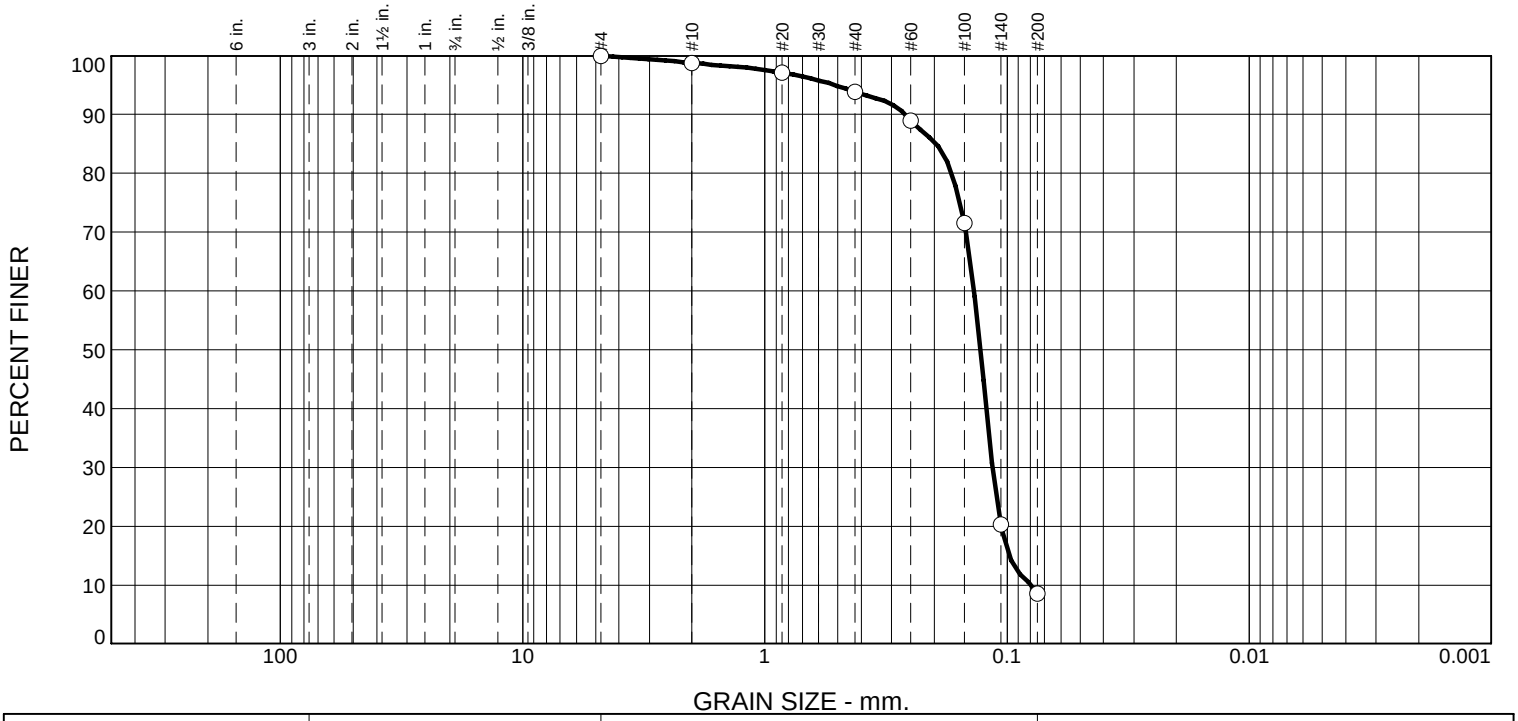
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.2	4.9	85.4	8.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	98.8		
#20	97.1		
#40	93.9		
#60	89.0		
#100	71.6		
#140	20.3		
#200	8.5		

* (no specification provided)

Material Description

Light Gray

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2629 D_{85}= 0.1962

D_{60}= 0.1370 D_{50}= 0.1290

D_{30}= 0.1146 D_{15}= 0.0980

D_{10}= 0.0793

C_u= 1.73 C_c= 1.21

Sieve Test (ASTM D6913)

Test Date: 4/3/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/29/23

Date Received: 3/30/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 9A

INSIGHT GROUP
A CHRISTOPHER COMPANY

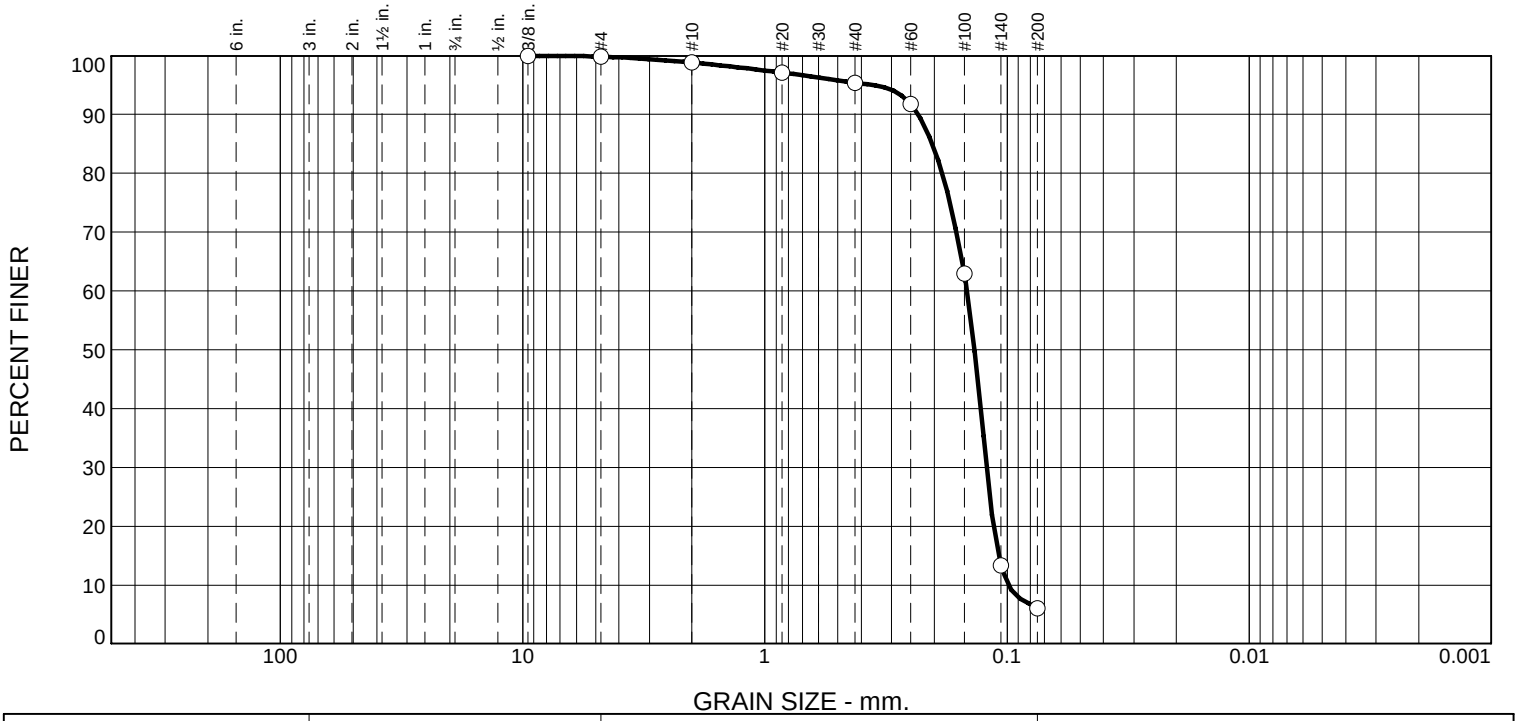
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.9	3.5	89.3	6.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.8		
#10	98.9		
#20	97.1		
#40	95.4		
#60	91.8		
#100	63.0		
#140	13.3		
#200	6.1		

* (no specification provided)

Material Description
Light Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2323 D_{85}= 0.2035
D_{60}= 0.1460 D_{50}= 0.1364
D_{30}= 0.1214 D_{15}= 0.1085
D_{10}= 0.0988
C_u= 1.48 C_c= 1.02

Sieve Test (ASTM D6913)

Test Date: 4/3/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/29/23
Date Received: 3/30/23
Checked By: J. Hatch
Title: Sr Engineer

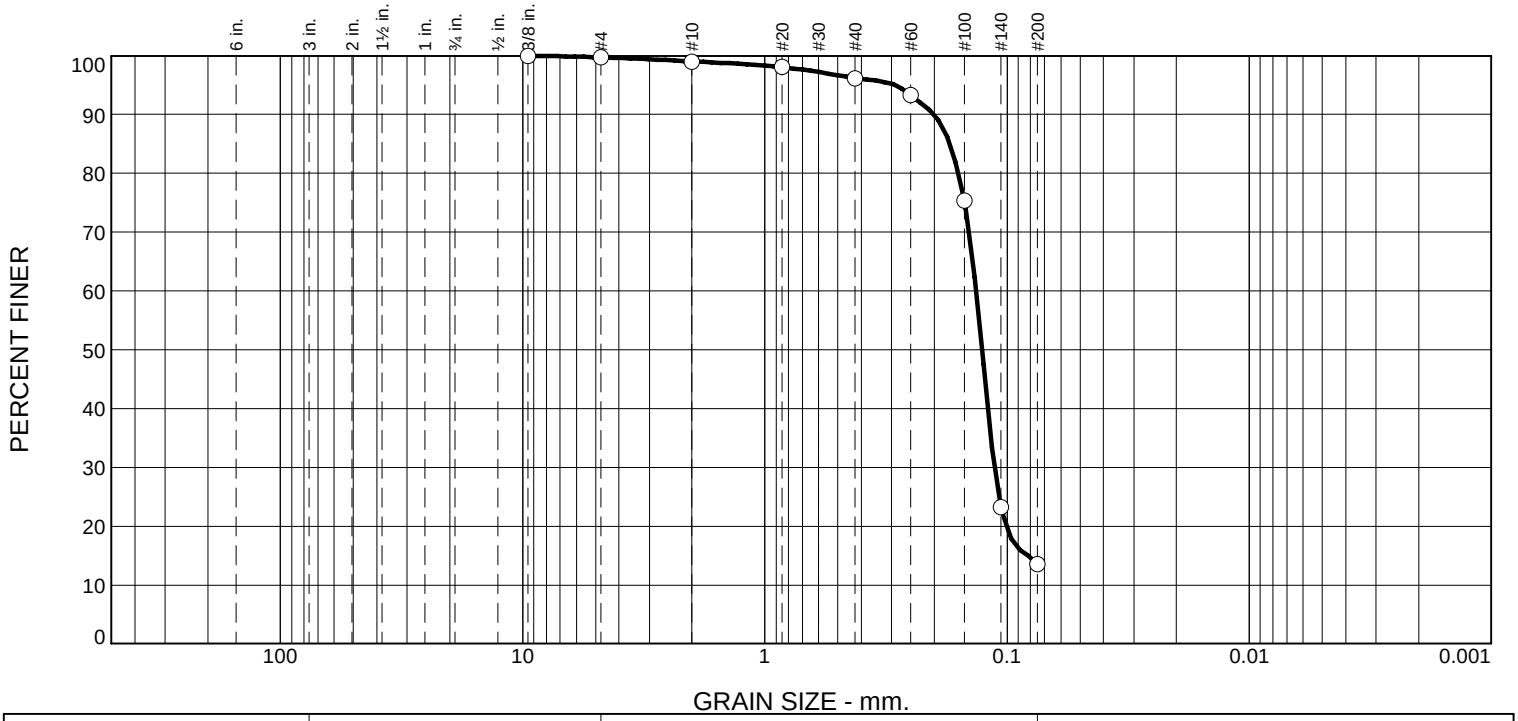
Source of Sample: PA23-1110S W-C
Sample Number: 9B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.7	2.8	82.6	13.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.7		
#10	99.0		
#20	98.1		
#40	96.2		
#60	93.3		
#100	75.3		
#140	23.3		
#200	13.6		

* (no specification provided)

Material Description

Light Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 4/3/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.2002 D_{85}= 0.1724

D_{60}= 0.1343 D_{50}= 0.1269

D_{30}= 0.1126 D_{15}= 0.0815

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 3/29/23

Date Received: 3/30/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 9C

INSIGHT GROUP
A CHRISTOPHER COMPANY

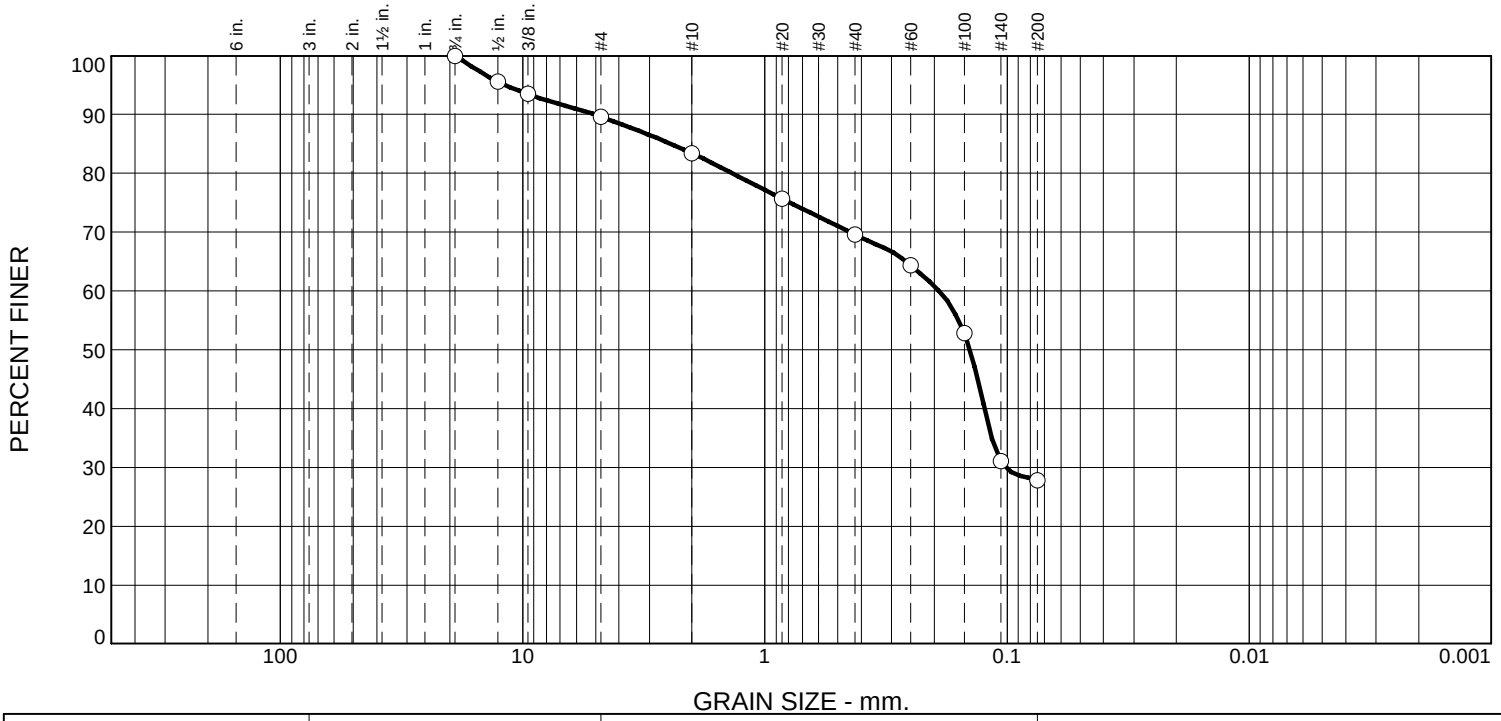
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	10.4	6.2	13.8	41.8	27.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.75"	100.0		
0.5"	95.6		
0.375"	93.5		
#4	89.6		
#10	83.4		
#20	75.7		
#40	69.6		
#60	64.3		
#100	52.8		
#140	31.1		
#200	27.8		

* (no specification provided)

Material Description
Light Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 5.0545 D_{85}= 2.4497
D_{60}= 0.1910 D_{50}= 0.1422
D_{30}= 0.1013 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 4/3/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/29/23
Date Received: 3/30/23
Checked By: J. Hatch
Title: Sr Engineer

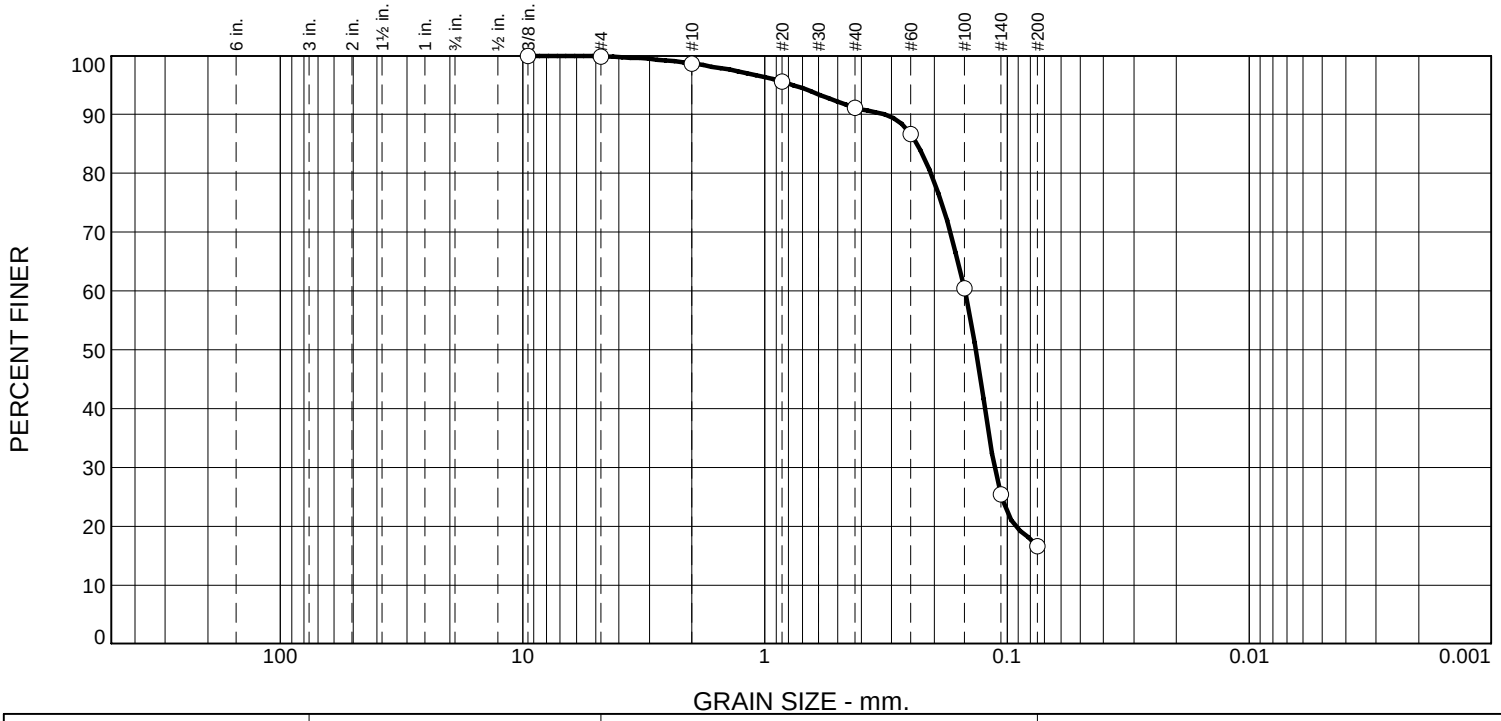
Source of Sample: PA23-1110S W-C
Sample Number: 9D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	1.2	7.6	74.5	16.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.9		
#10	98.7		
#20	95.6		
#40	91.1		
#60	86.7		
#100	60.5		
#140	25.4		
#200	16.6		

* (no specification provided)

Material Description

Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.3177 D_{85}= 0.2349

D_{60}= 0.1490 D_{50}= 0.1347

D_{30}= 0.1124 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 4/3/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/29/23

Date Received: 3/30/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA23-1110S W-C

Sample Number: 9 Comp

INSIGHT GROUP
A CHRISTOPHER COMPANY

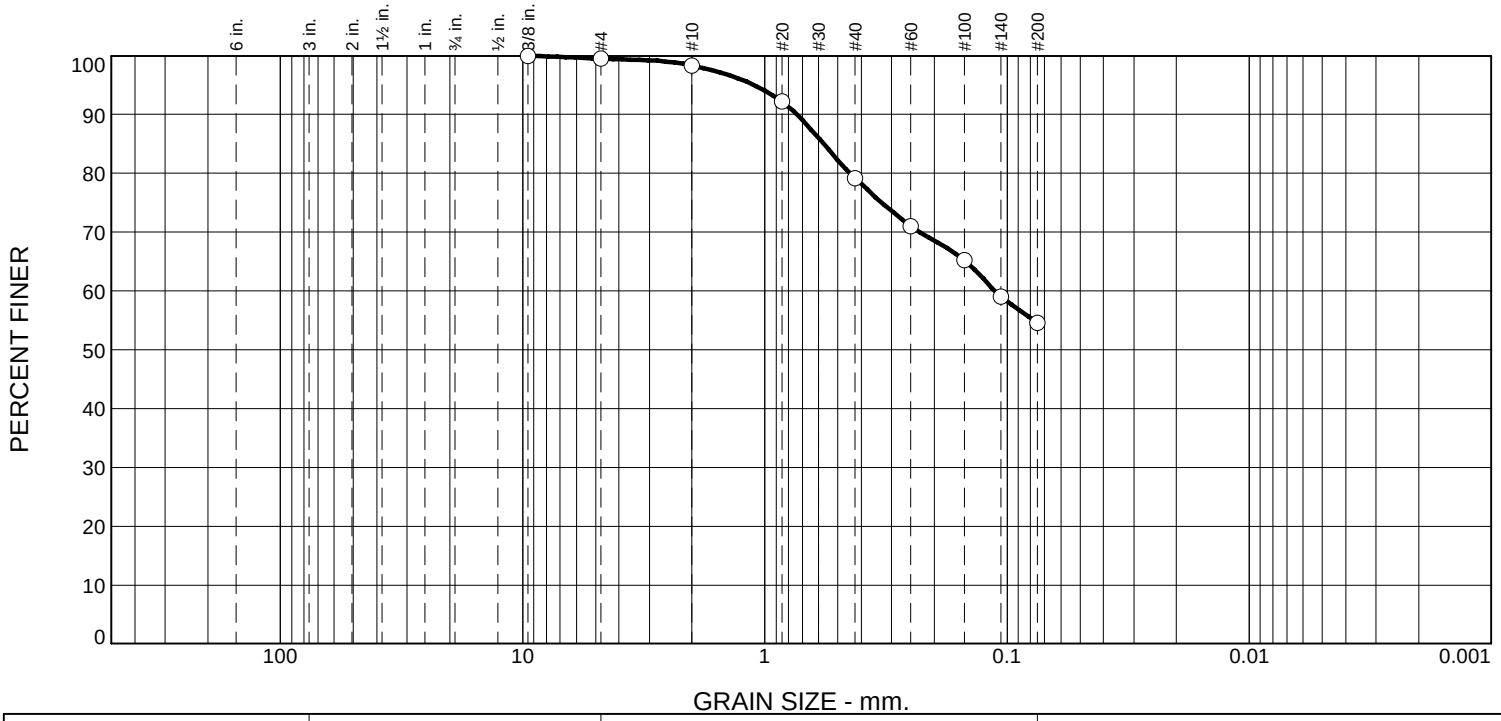
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	1.2	19.1	24.6	54.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.5		
#10	98.3		
#20	92.2		
#40	79.2		
#60	71.0		
#100	65.2		
#140	59.1		
#200	54.6		

* (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7375 D_{85}= 0.5715

D_{60}= 0.1122 D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/9/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23 526N W-C

Sample Number: 1A

INSIGHT GROUP
A CHRISTOPHER COMPANY

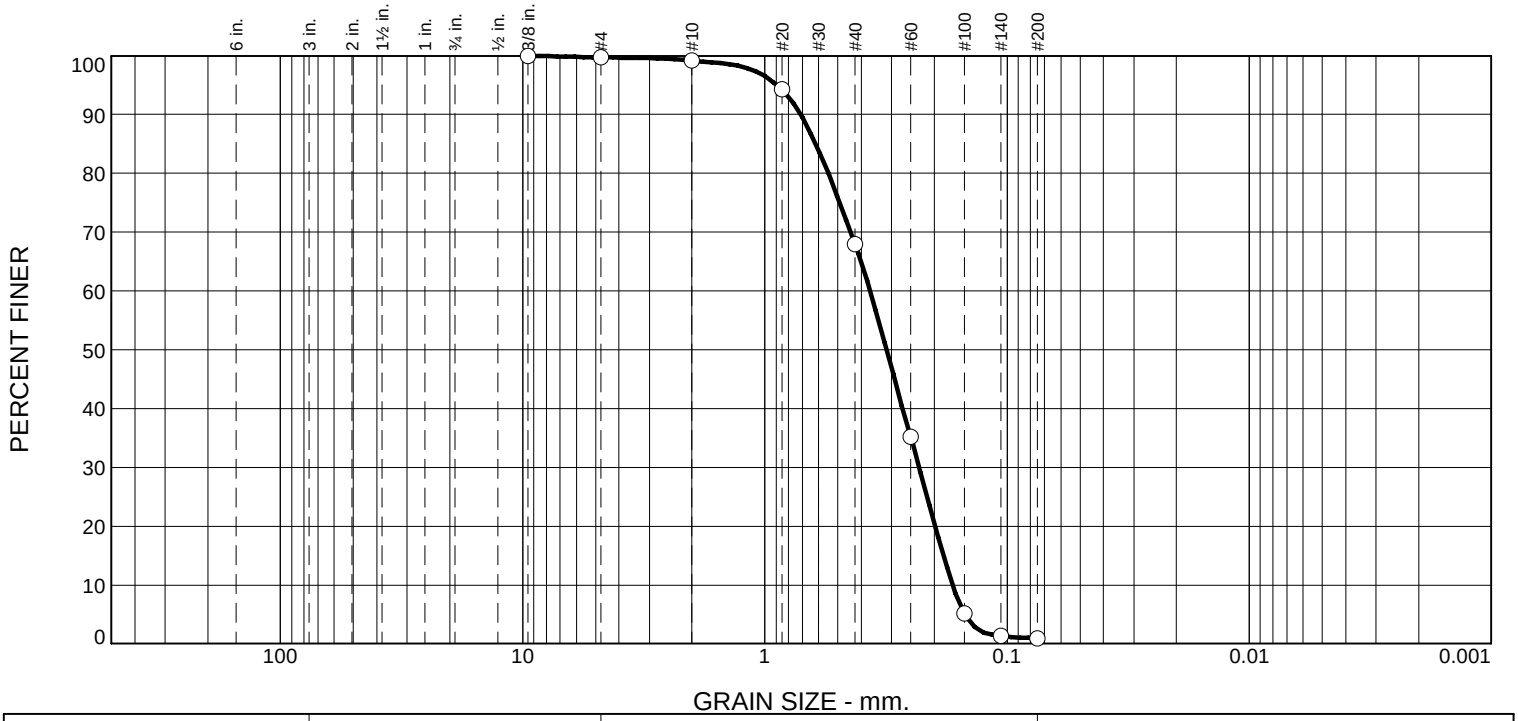
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.5	31.2	67.0	1.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.7		
#10	99.2		
#20	94.3		
#40	68.0		
#60	35.2		
#100	5.2		
#140	1.4		
#200	1.0		

· (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7116 D_{85}= 0.6167

D_{60}= 0.3681 D_{50}= 0.3146

D_{30}= 0.2302 D_{15}= 0.1834

D_{10}= 0.1680

C_u= 2.19 C_c= 0.86

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23 526N W-C

Sample Number: 1B

INSIGHT GROUP
A CHRISTOPHER COMPANY

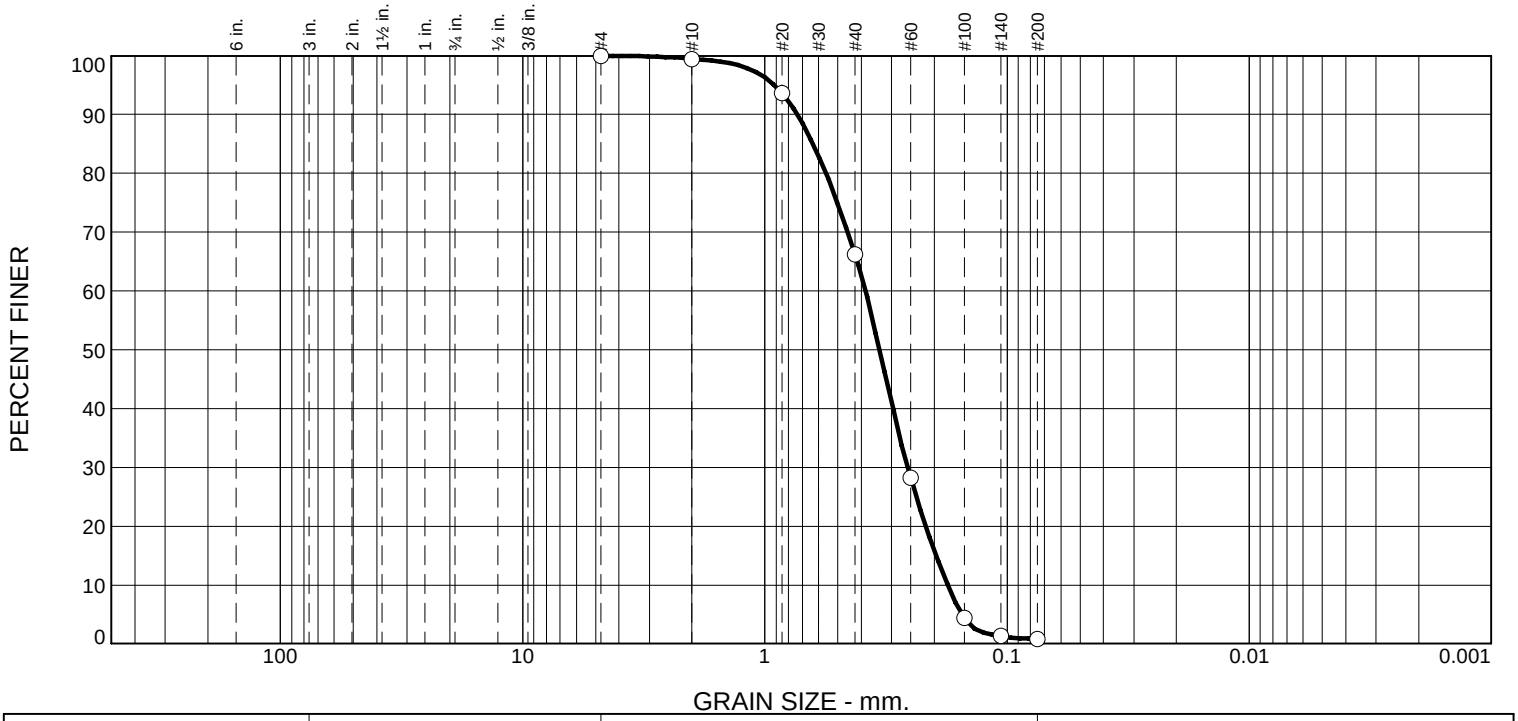
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	33.1	65.4	0.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.4		
#20	93.6		
#40	66.3		
#60	28.3		
#100	4.4		
#140	1.3		
#200	0.9		

* (no specification provided)

Material Description

Light Brown

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.7345 D_{85}= 0.6326

D_{60}= 0.3847 D_{50}= 0.3364

D_{30}= 0.2571 D_{15}= 0.1964

D_{10}= 0.1761

C_u= 2.18 C_c= 0.98

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23 526N W-C

Sample Number: 1C

INSIGHT GROUP
A CHRISTOPHER COMPANY

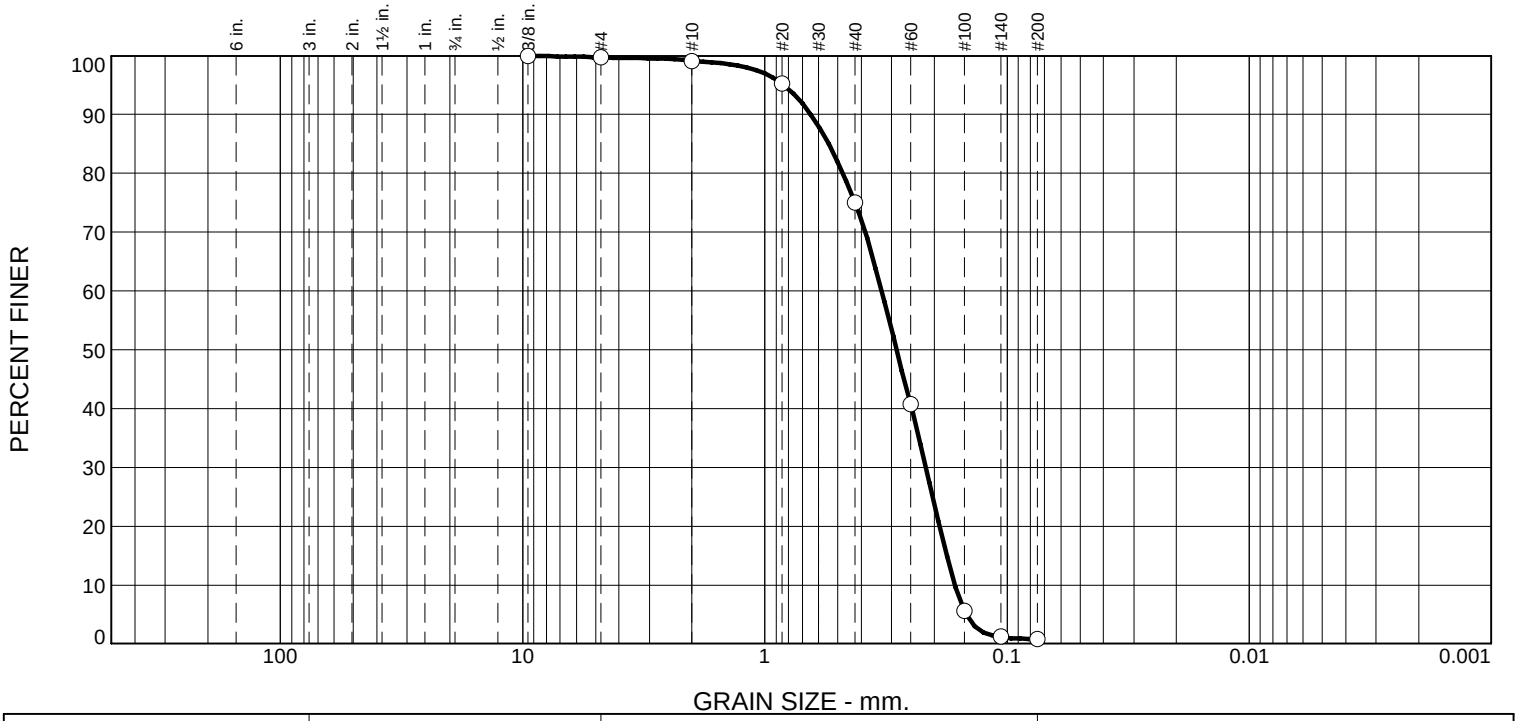
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.6	24.0	74.3	0.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.7		
#10	99.1		
#20	95.2		
#40	75.1		
#60	40.7		
#100	5.7		
#140	1.2		
#200	0.8		

· (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.6465 D_{85}= 0.5449

D_{60}= 0.3297 D_{50}= 0.2858

D_{30}= 0.2162 D_{15}= 0.1775

D_{10}= 0.1641

C_u= 2.01 C_c= 0.86

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23 526N W-C

Sample Number: 1D

INSIGHT GROUP
A CHRISTOPHER COMPANY

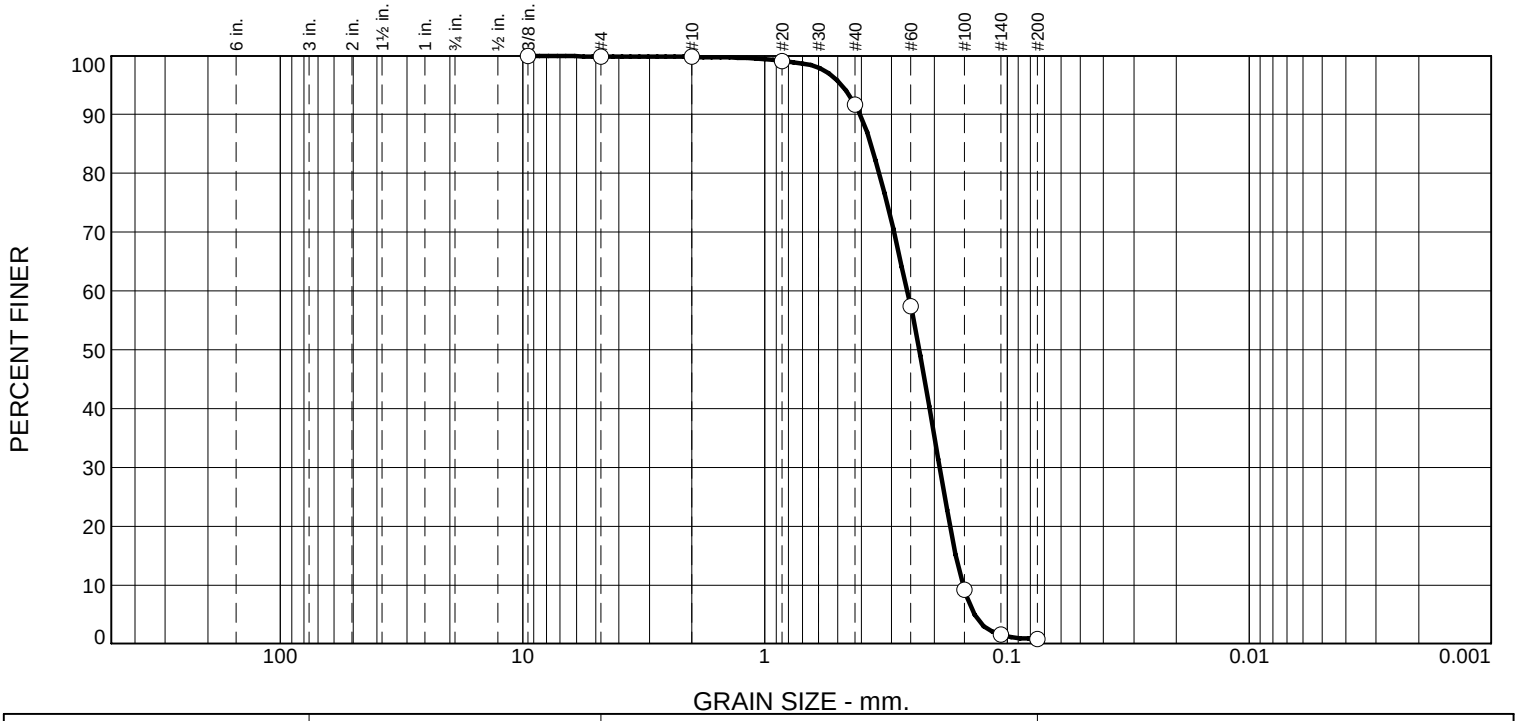
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	8.1	90.9	0.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.9		
#10	99.8		
#20	99.1		
#40	91.7		
#60	57.5		
#100	9.2		
#140	1.6		
#200	0.8		

· (no specification provided)

Material Description
Light Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4052 D_{85}= 0.3656
D_{60}= 0.2581 D_{50}= 0.2299
D_{30}= 0.1901 D_{15}= 0.1627
D_{10}= 0.1519
C_u= 1.70 C_c= 0.92

Sieve Test (ASTM D6913)
Test Date: 3/10/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)
SP

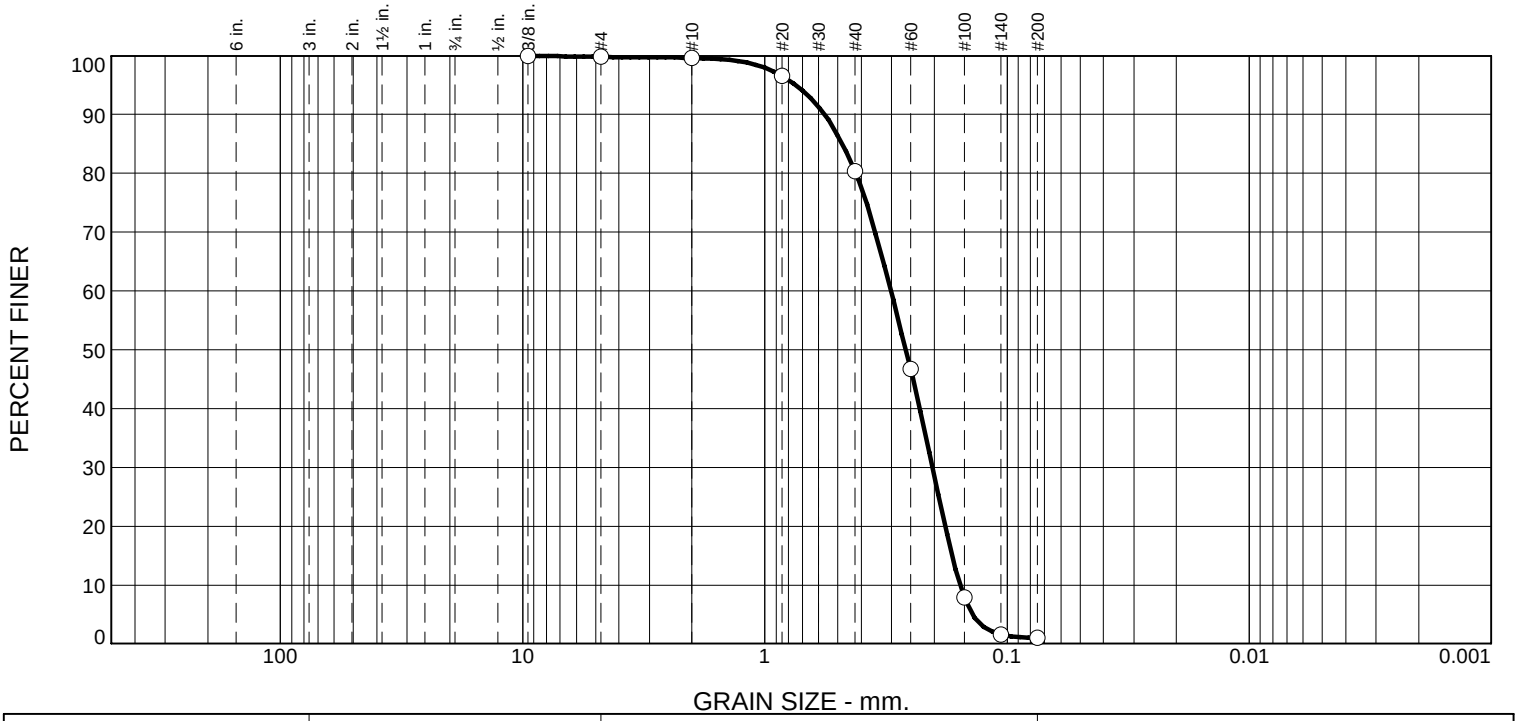
Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA-23 526N W-C
Sample Number: 1E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	19.2	79.4	1.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.8		
#10	99.6		
#20	96.5		
#40	80.4		
#60	46.7		
#100	7.9		
#140	1.6		
#200	1.0		

* (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.5673 D_{85}= 0.4782

D_{60}= 0.3017 D_{50}= 0.2620

D_{30}= 0.2033 D_{15}= 0.1688

D_{10}= 0.1561

C_u= 1.93 C_c= 0.88

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23 526N W-C

Sample Number: 1F

INSIGHT GROUP
A CHRISTOPHER COMPANY

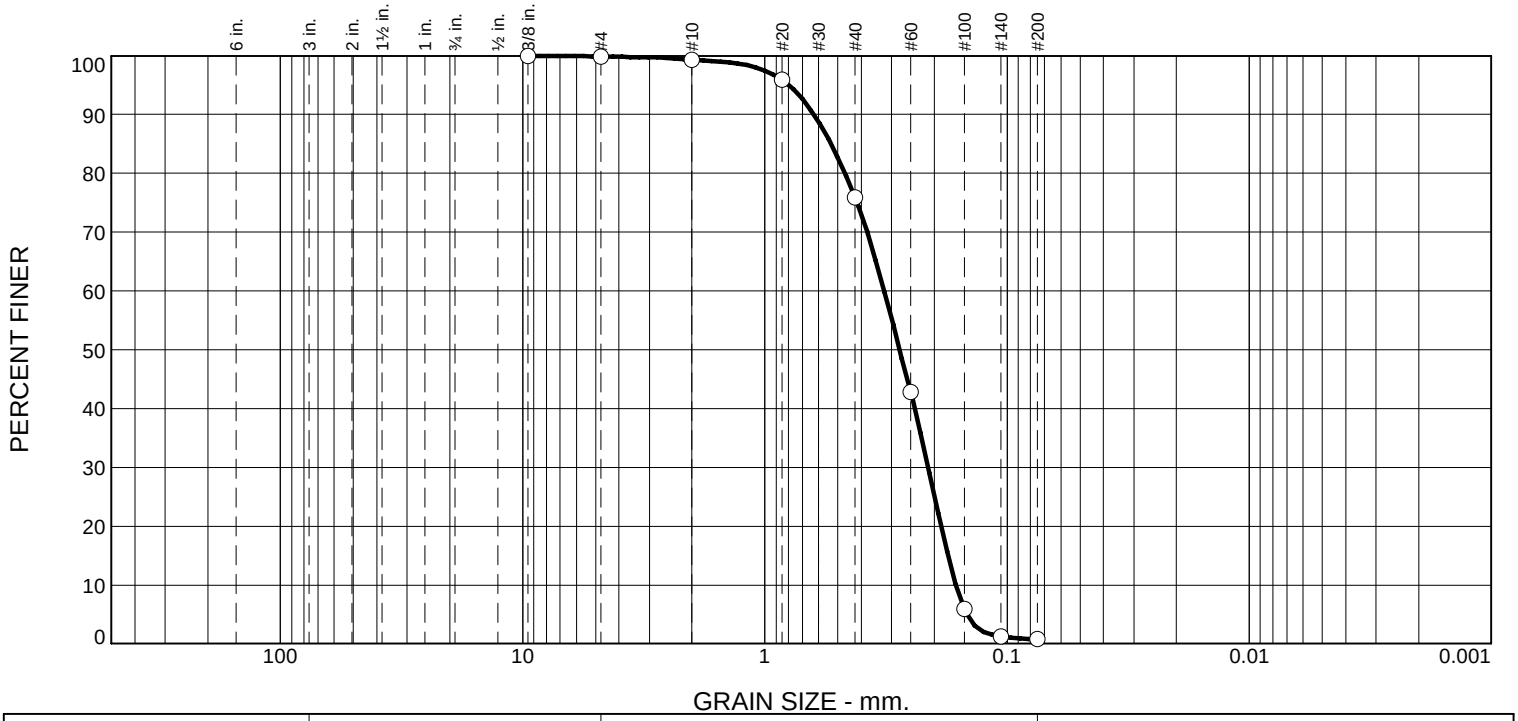
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.6	23.4	75.1	0.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.9		
#10	99.3		
#20	95.9		
#40	75.9		
#60	42.8		
#100	5.9		
#140	1.3		
#200	0.8		

* (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.6271 D_{85}= 0.5327

D_{60}= 0.3218 D_{50}= 0.2777

D_{30}= 0.2116 D_{15}= 0.1754

D_{10}= 0.1626

C_u= 1.98 C_c= 0.86

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23 526N W-C

Sample Number: Comp 1

INSIGHT GROUP
A CHRISTOPHER COMPANY

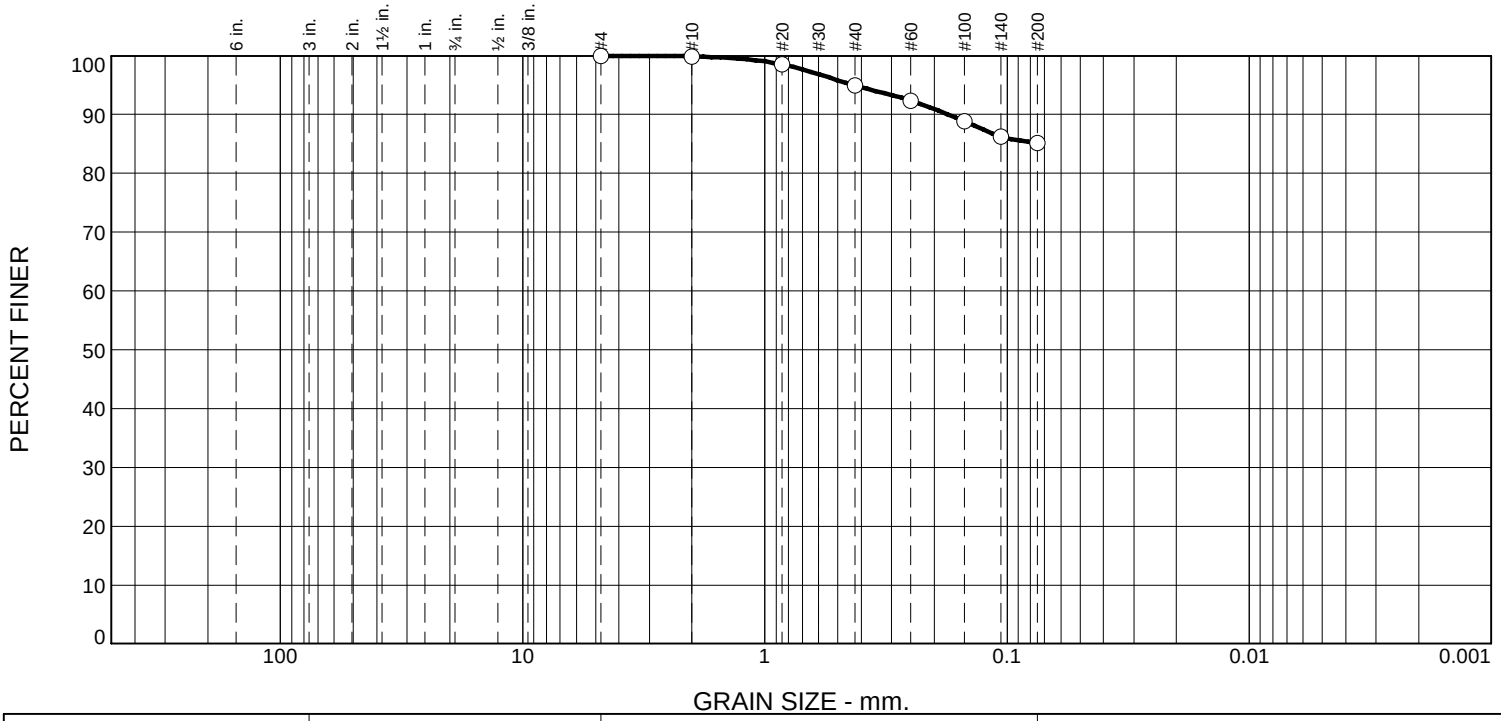
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	5.0	9.8	85.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	98.6		
#40	94.9		
#60	92.4		
#100	88.9		
#140	86.2		
#200	85.1		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1748 D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/10/23 Technician: B. Horn

Test Notes

Hydrometer Test
Test Date: _____ Technician: _____

Test Notes

USCS (ASTM D2487)

Source of Sample: PA-23-526N W-C
Sample Number: 10A

Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

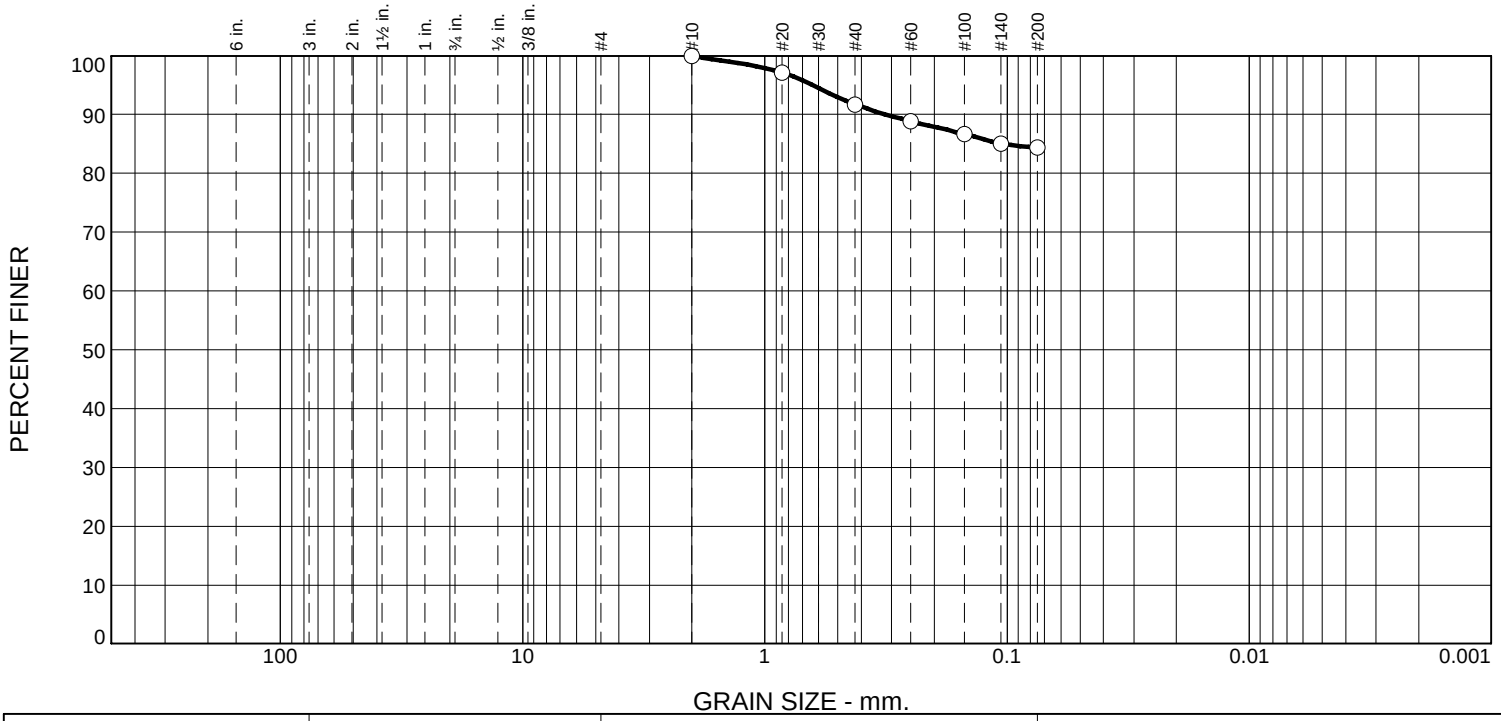
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.3	7.3	84.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.1		
#40	91.7		
#60	88.8		
#100	86.7		
#140	85.1		
#200	84.4		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.3155 D_{85}= 0.1036

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

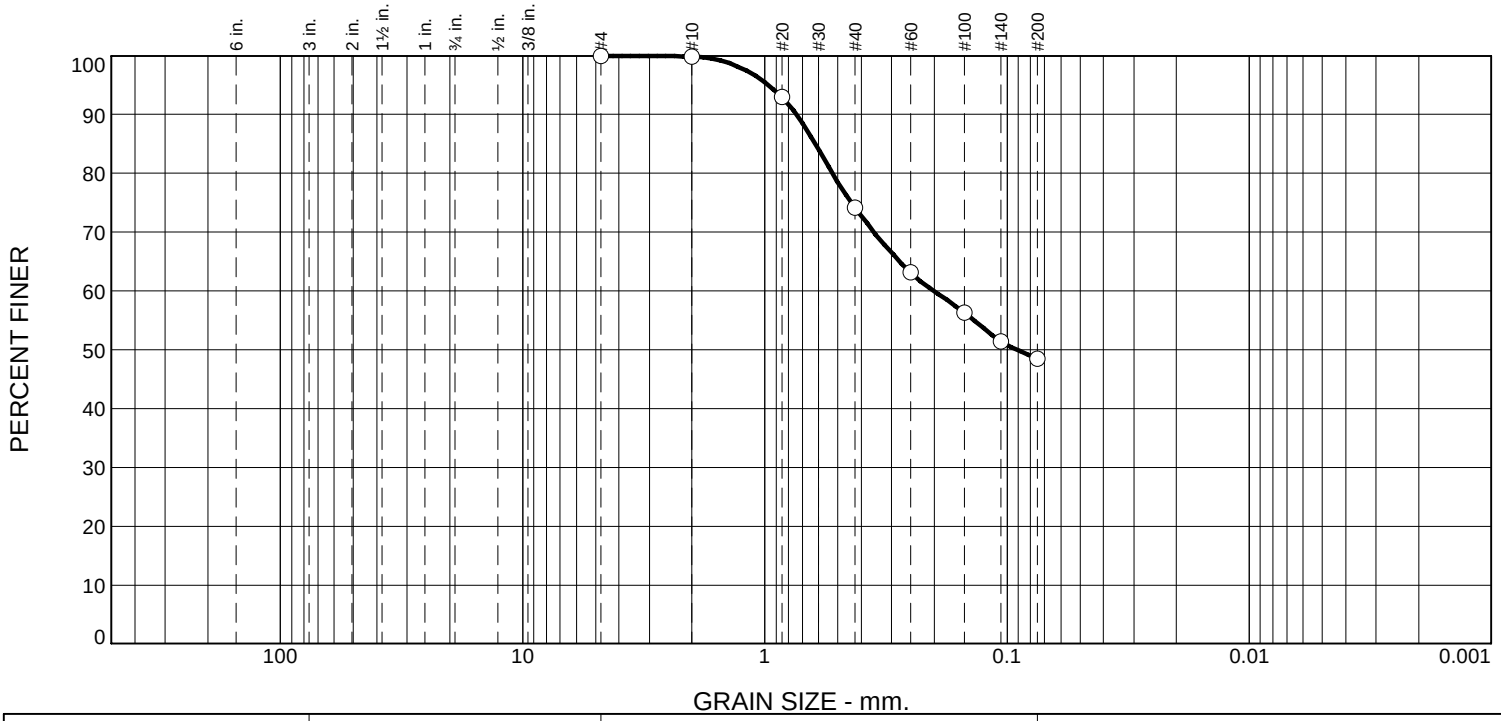
Source of Sample: PA-23-526N W-C
Sample Number: 10B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	25.7	25.8	48.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	92.9		
#40	74.2		
#60	63.1		
#100	56.4		
#140	51.4		
#200	48.4		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7413 D_{85}= 0.6194

D_{60}= 0.2010 D_{50}= 0.0913

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 10C

INSIGHT GROUP
A CHRISTOPHER COMPANY

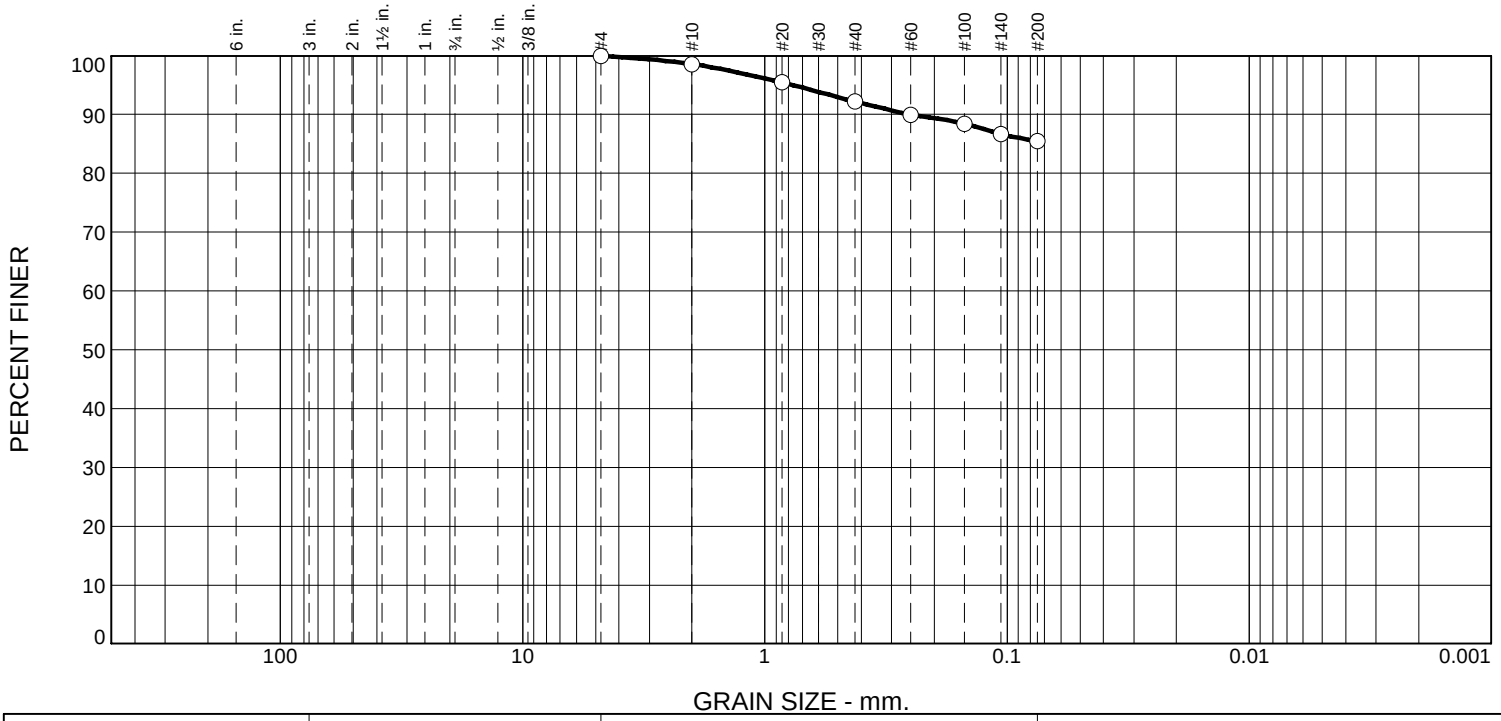
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.4	6.4	6.8	85.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	98.6		
#20	95.4		
#40	92.2		
#60	90.0		
#100	88.5		
#140	86.7		
#200	85.4		

· (no specification provided)

Material Description

Dark Grayish Brown with Red

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2507 D_{85}=

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C
Sample Number: 10D

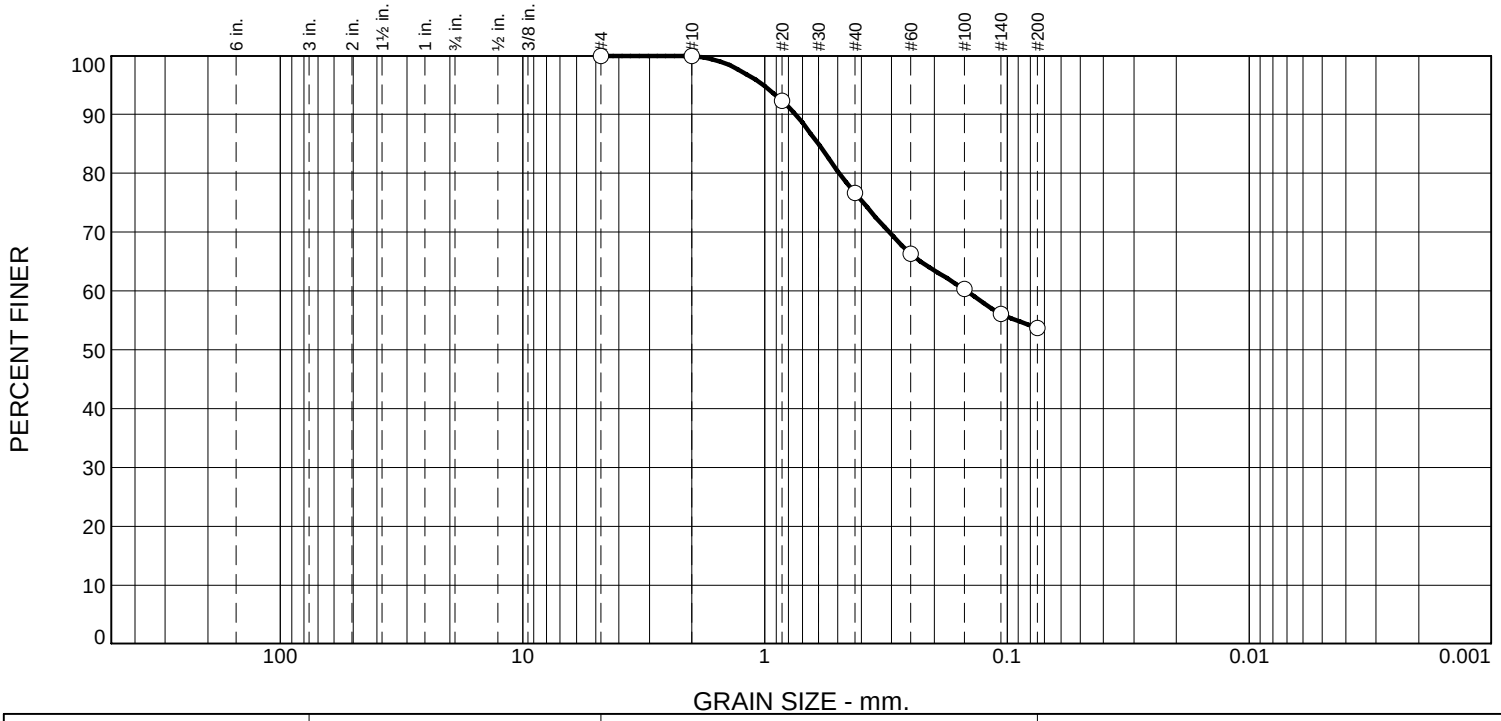
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	23.2	22.9	53.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	92.4		
#40	76.7		
#60	66.4		
#100	60.3		
#140	56.1		
#200	53.8		

· (no specification provided)

Material Description

Dark Grayish Brown with Red

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7461 D_{85}= 0.6011

D_{60}= 0.1463 D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C
Sample Number: Comp 10

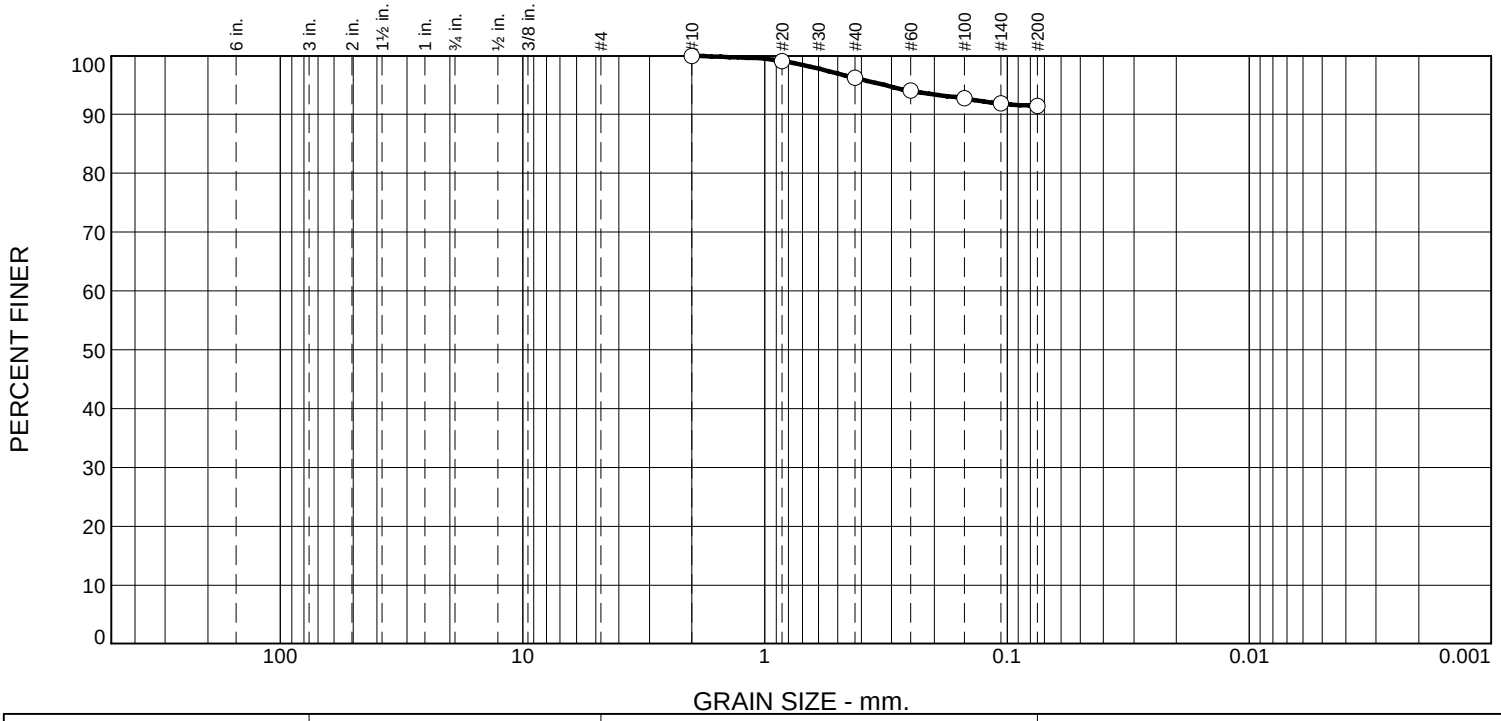
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.8	4.8	91.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.1		
#40	96.2		
#60	94.0		
#100	92.7		
#140	91.9		
#200	91.4		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/13/23 **Technician:** M. Moore
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

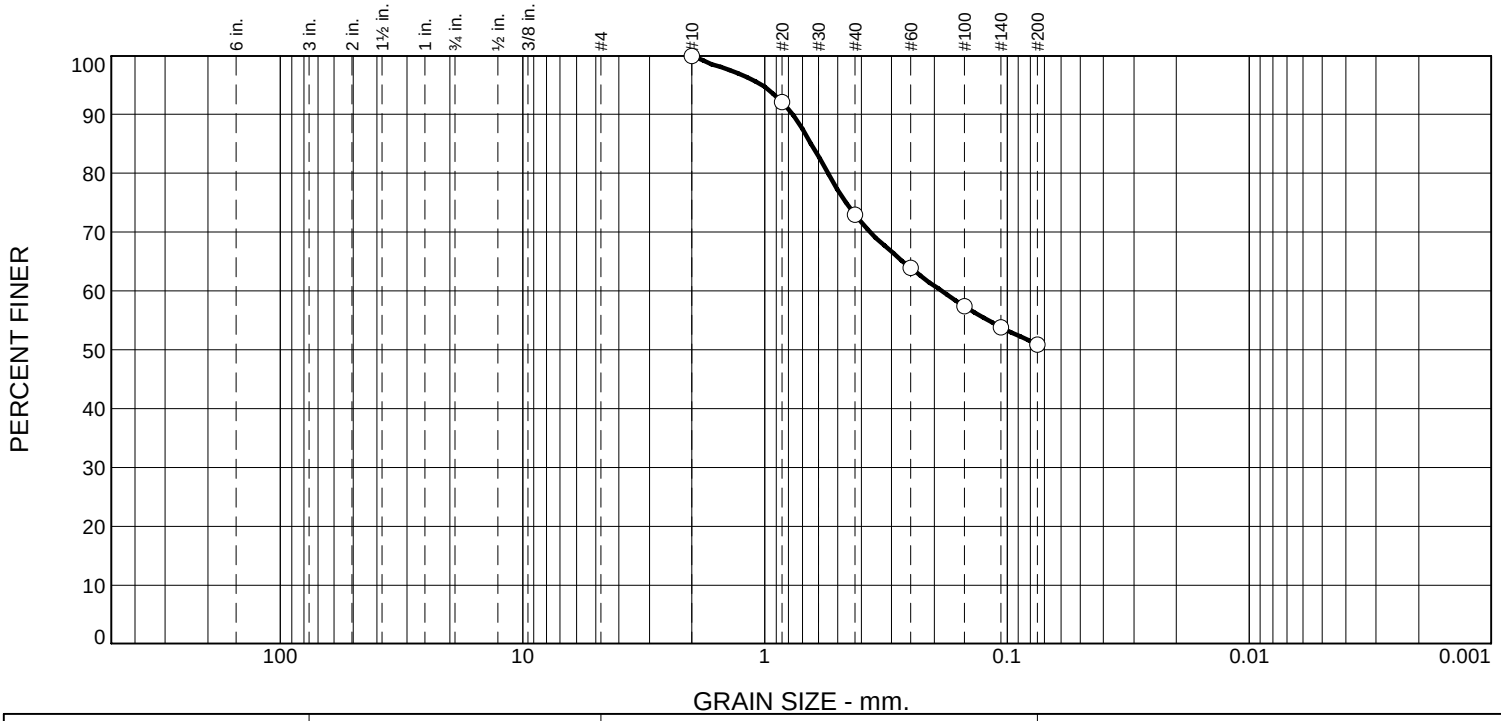
Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA-23-526N W-C
Sample Number: 11A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	27.1	22.0	50.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	92.2		
#40	72.9		
#60	63.9		
#100	57.4		
#140	53.8		
#200	50.9		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.7686 D_{85}= 0.6431
D_{60}= 0.1865 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

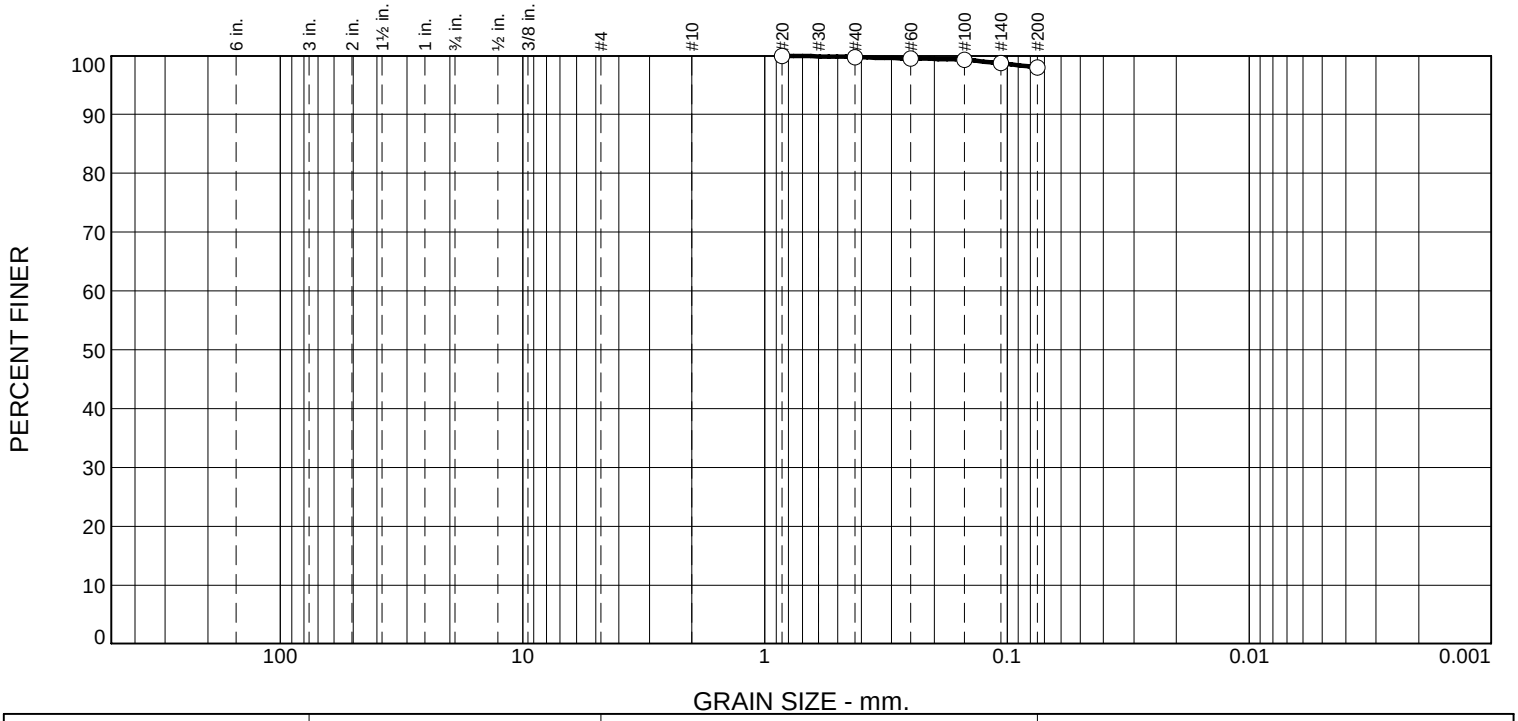
Source of Sample: PA-23-526N W-C
Sample Number: 11B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	1.8	98.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	99.5		
#100	99.3		
#140	98.7		
#200	98.0		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/13/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

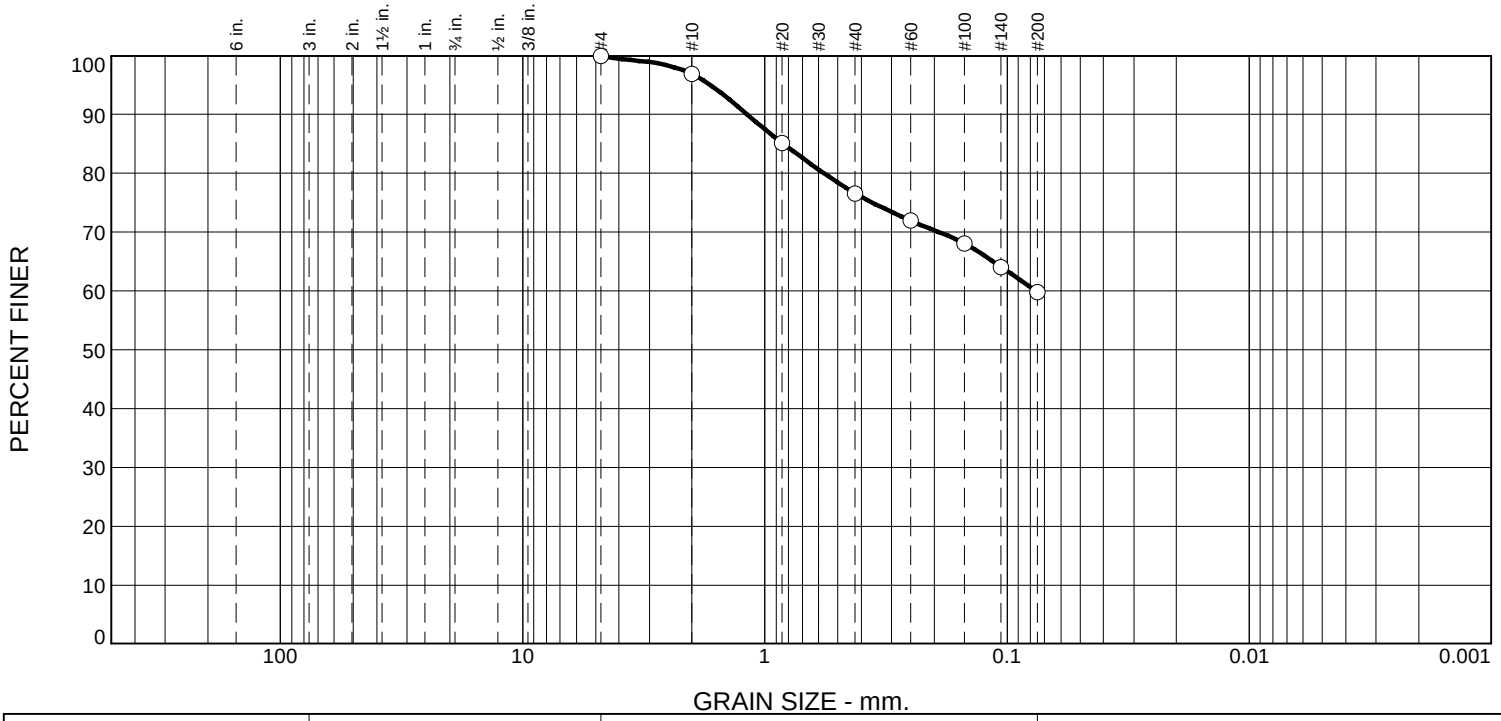
Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA-23-526N W-C
Sample Number: 11c

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	3.1	20.3	16.8	59.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	96.9		
#20	85.2		
#40	76.6		
#60	72.0		
#100	68.0		
#140	64.1		
#200	59.8		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.1827 D_{85}= 0.8388
D_{60}= 0.0762 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

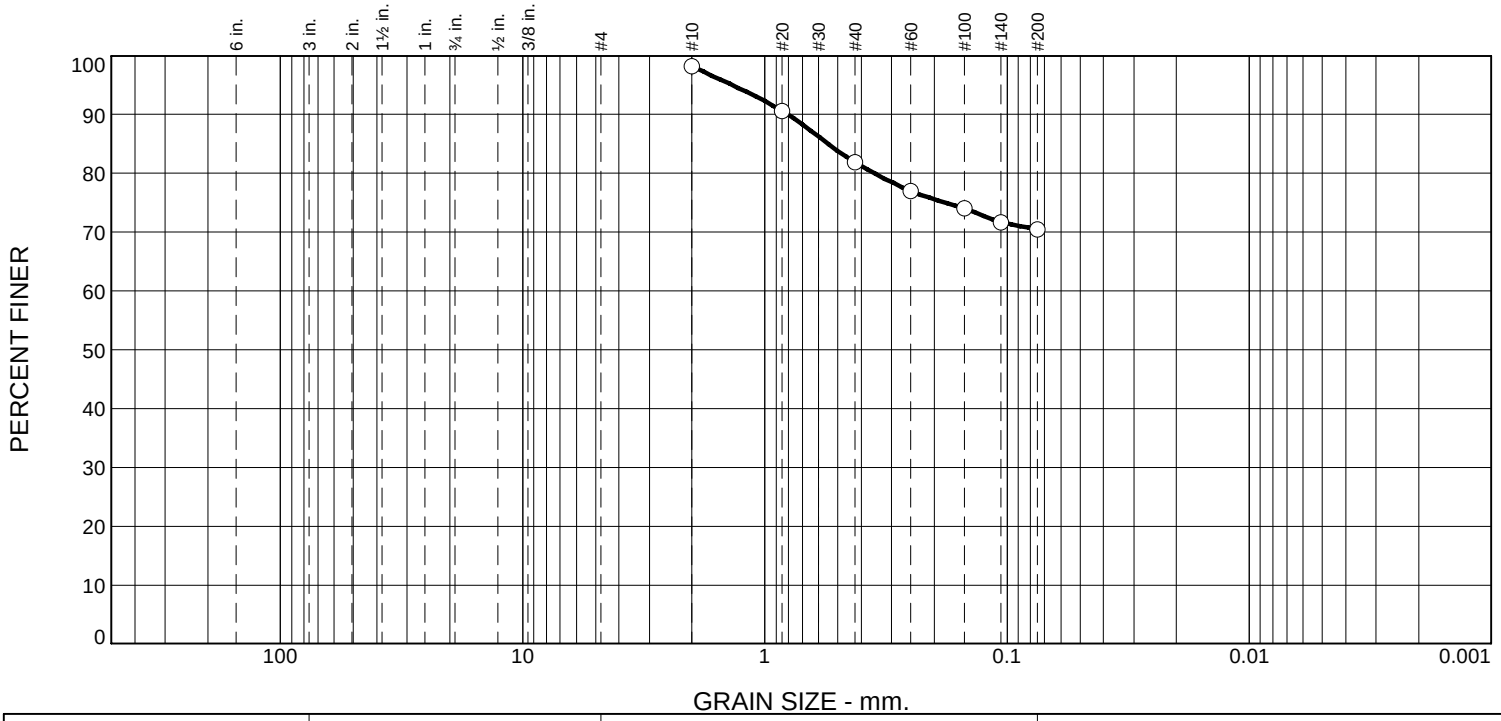
Source of Sample: PA-23-526N W-C
Sample Number: 11D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
				16.3	11.4	70.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	98.2		
#20	90.6		
#40	81.9		
#60	77.0		
#100	74.0		
#140	71.7		
#200	70.5		

* (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.8045 D_{85}= 0.5465
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/13/23 **Technician:** M. Moore
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)

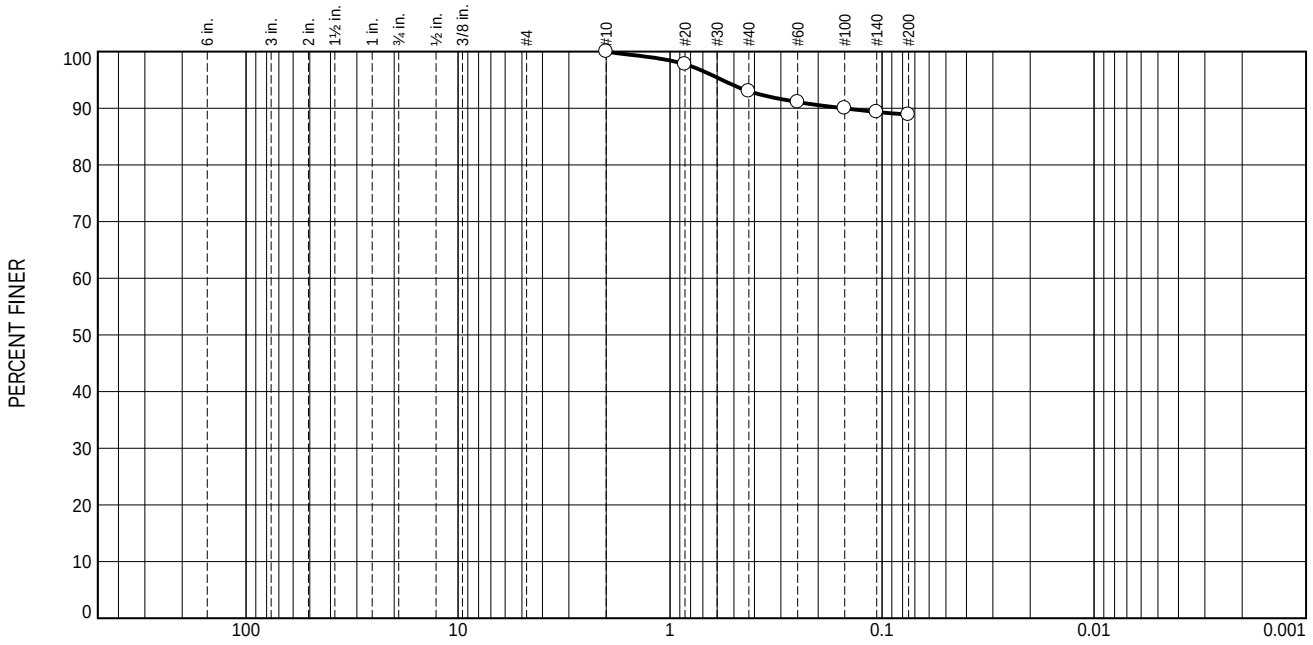
Date Sampled: 3/2/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA-23-526N W-C
Sample Number: Comp 11

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	7.0	4.1	88.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.8		
#40	93.0		
#60	91.1		
#100	90.0		
#140	89.3		
#200	88.9		

* (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 12A

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1512 D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

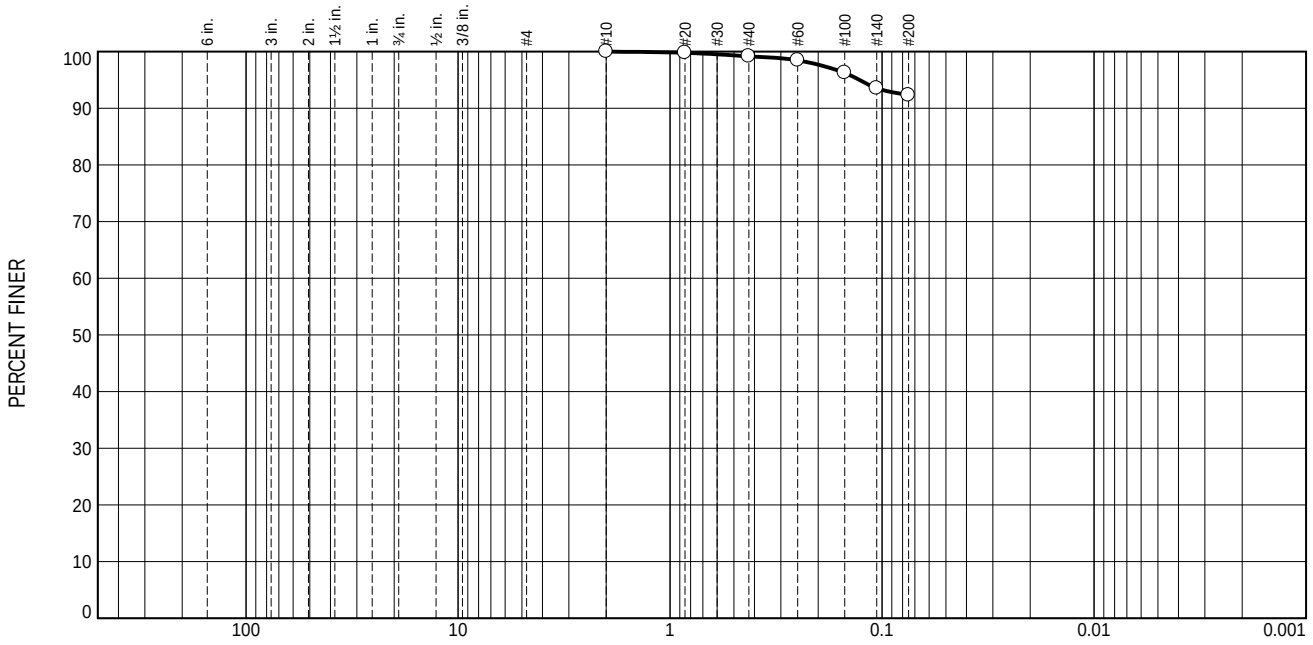
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	6.9	92.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.2		
#60	98.5		
#100	96.2		
#140	93.5		
#200	92.3		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 12B

Material Description
Dark Grayish Brown and Black

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

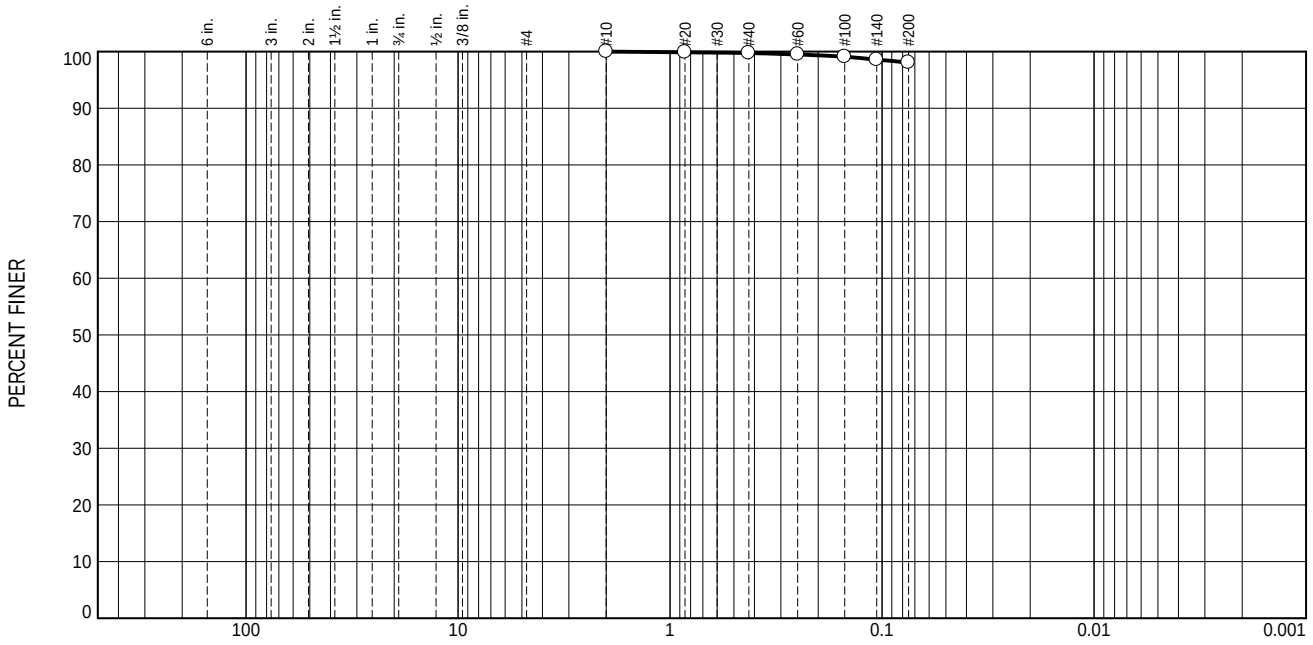
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	1.6	98.1	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.7		
#60	99.5		
#100	99.1		
#140	98.6		
#200	98.1		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 12C

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

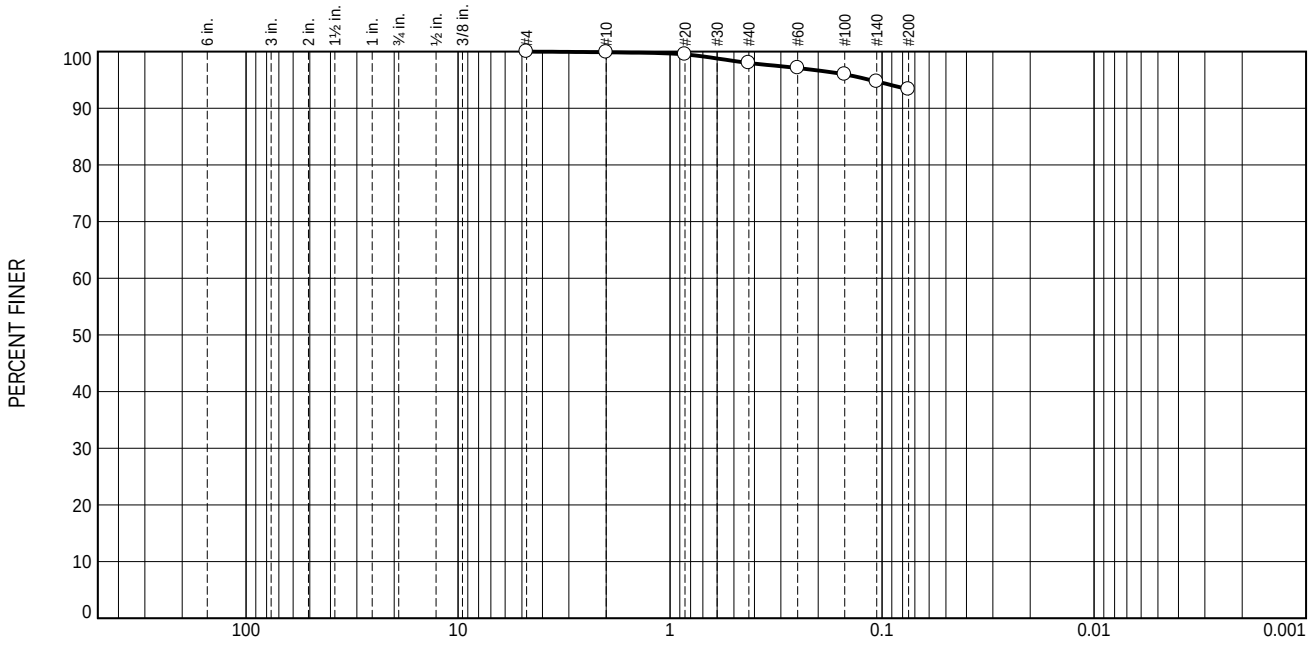
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.9	4.7	93.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.5		
#40	98.0		
#60	97.1		
#100	96.0		
#140	94.7		
#200	93.3		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 12D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

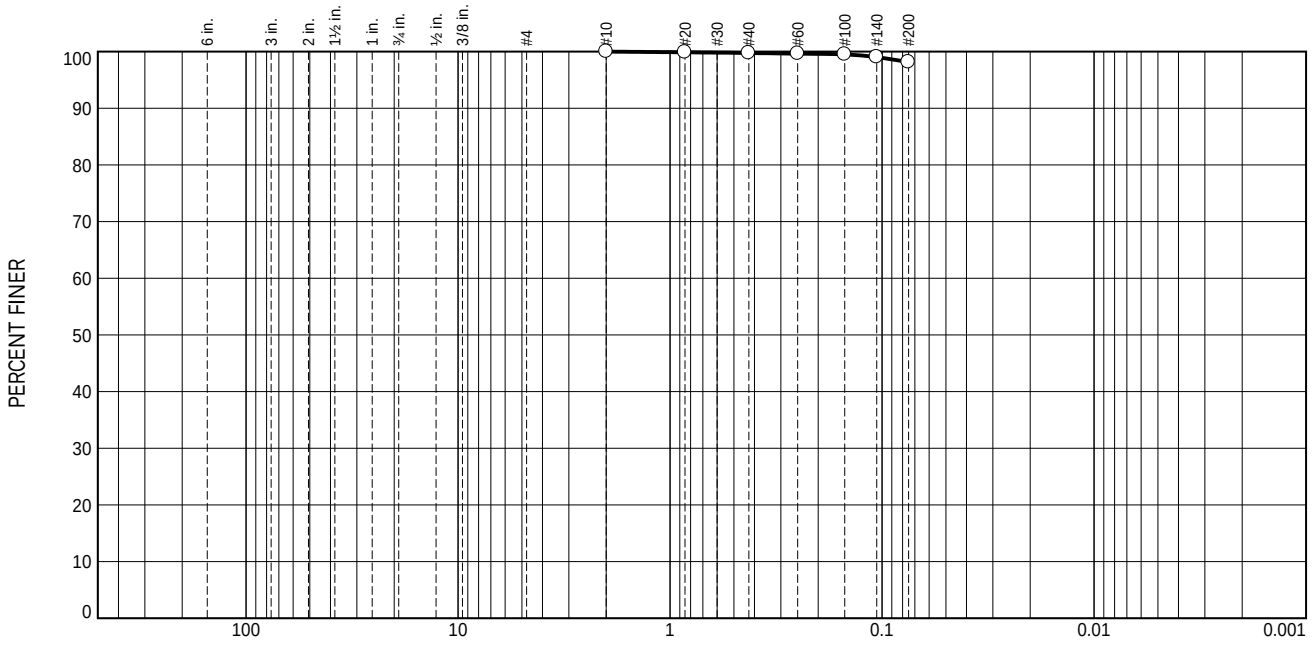
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	1.6	98.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.8		
#60	99.6		
#100	99.5		
#140	99.0		
#200	98.2		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 12 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

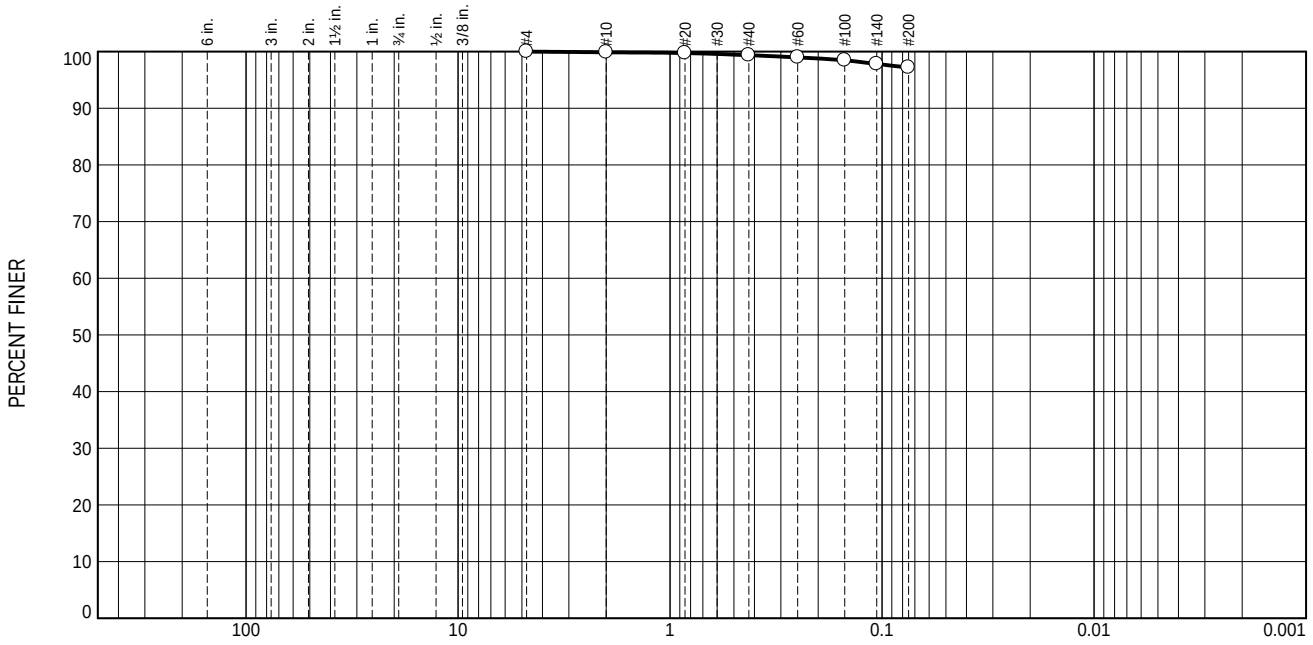
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 3/1/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.5	2.2	97.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.7		
#40	99.4		
#60	99.0		
#100	98.5		
#140	97.8		
#200	97.2		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 13A

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

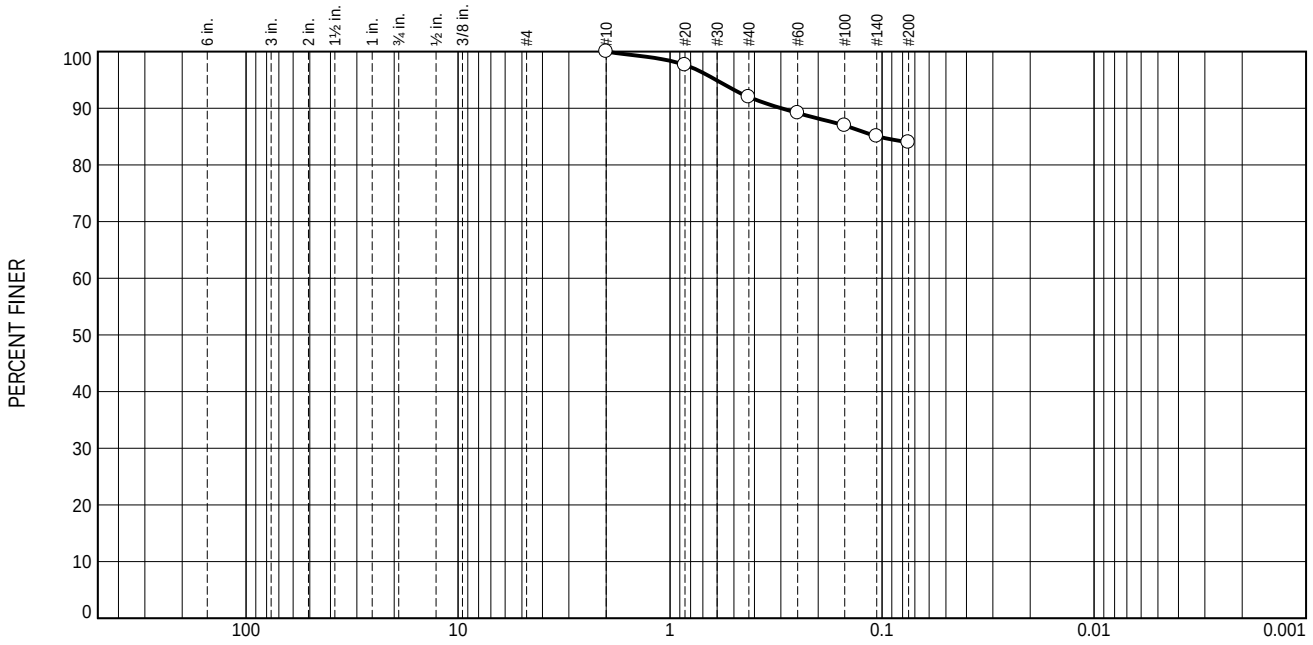
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.0	8.0	84.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.6		
#40	92.0		
#60	89.2		
#100	86.9		
#140	85.1		
#200	84.0		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 13B

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2985 D_{85}= 0.1044
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

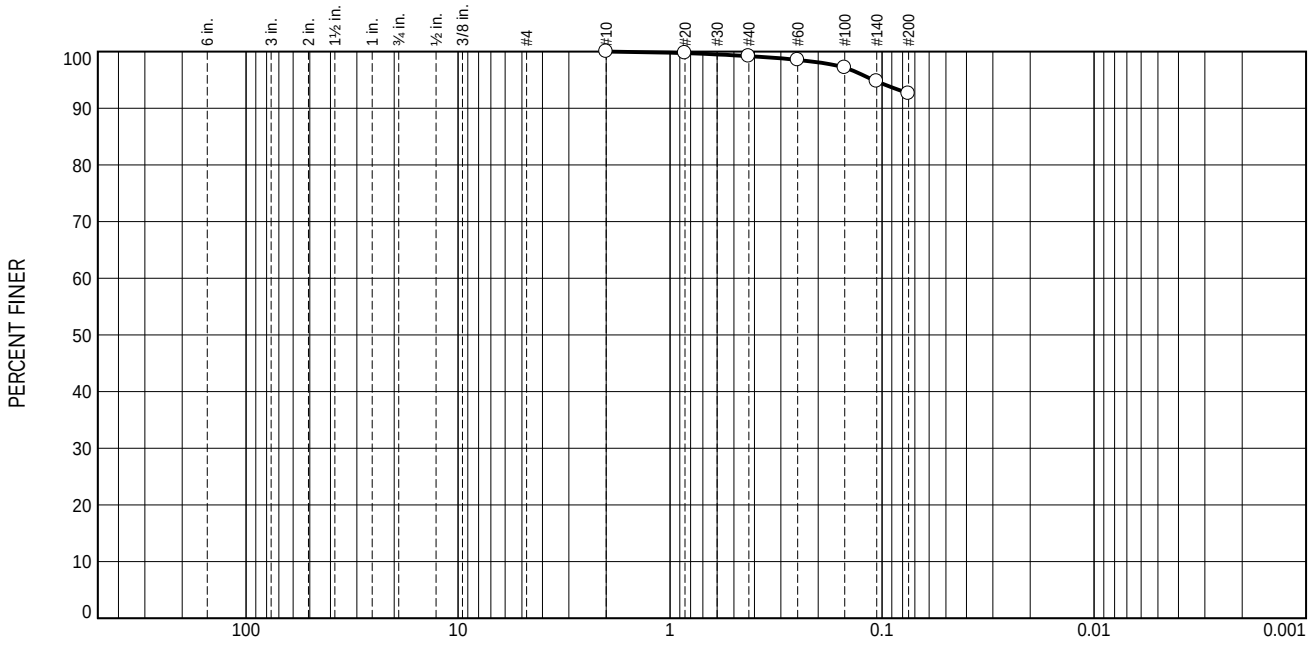
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	6.6	92.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	99.2		
#60	98.5		
#100	97.2		
#140	94.7		
#200	92.6		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 13C

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

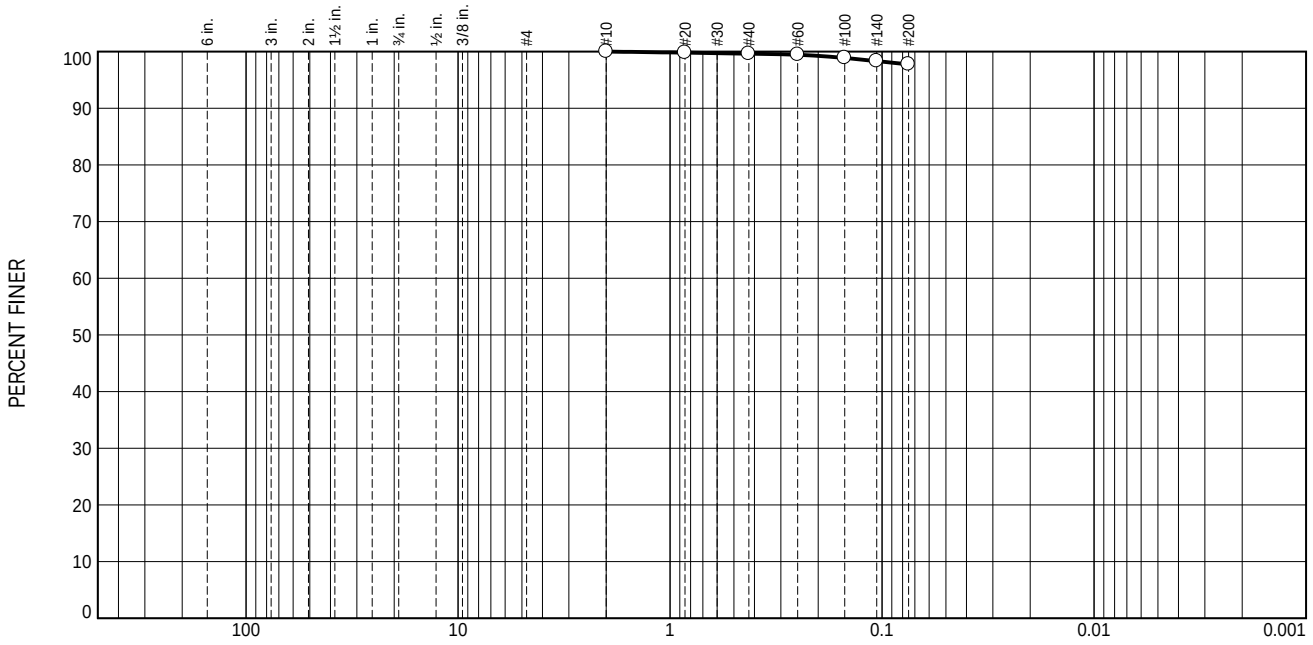
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	1.8	97.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.6		
#60	99.4		
#100	98.9		
#140	98.3		
#200	97.8		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 13D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

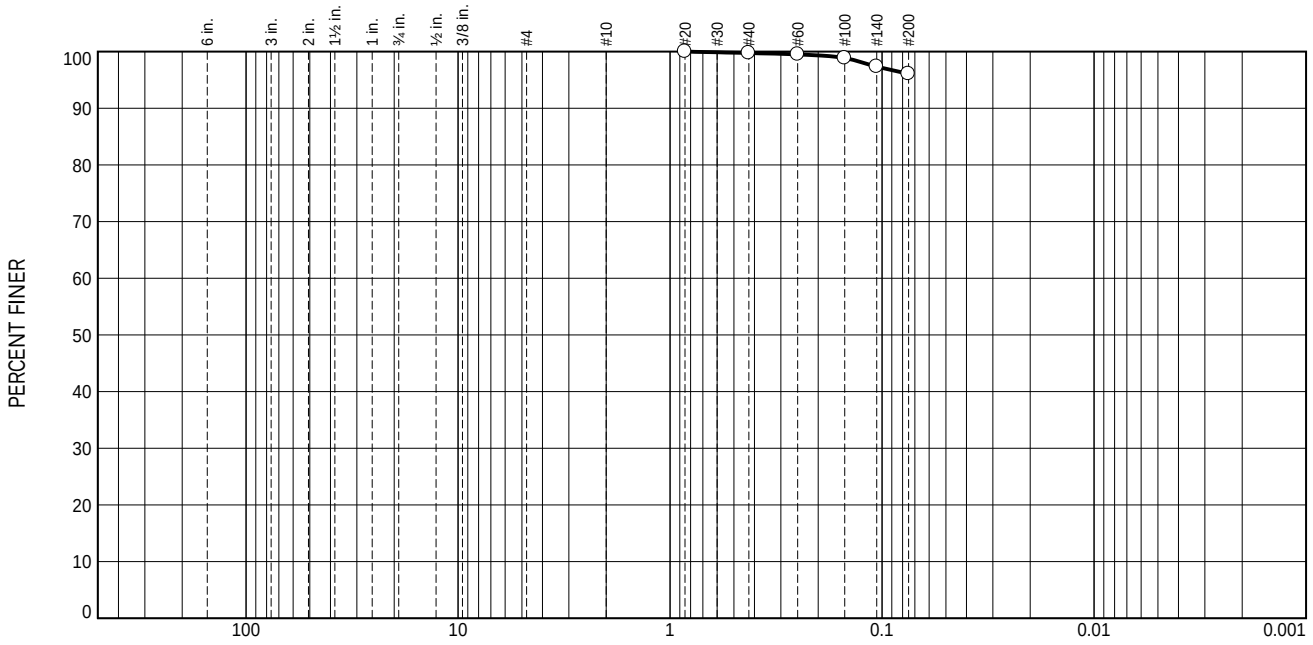
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	3.6	96.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.7		
#60	99.5		
#100	98.9		
#140	97.3		
#200	96.1		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 13E

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

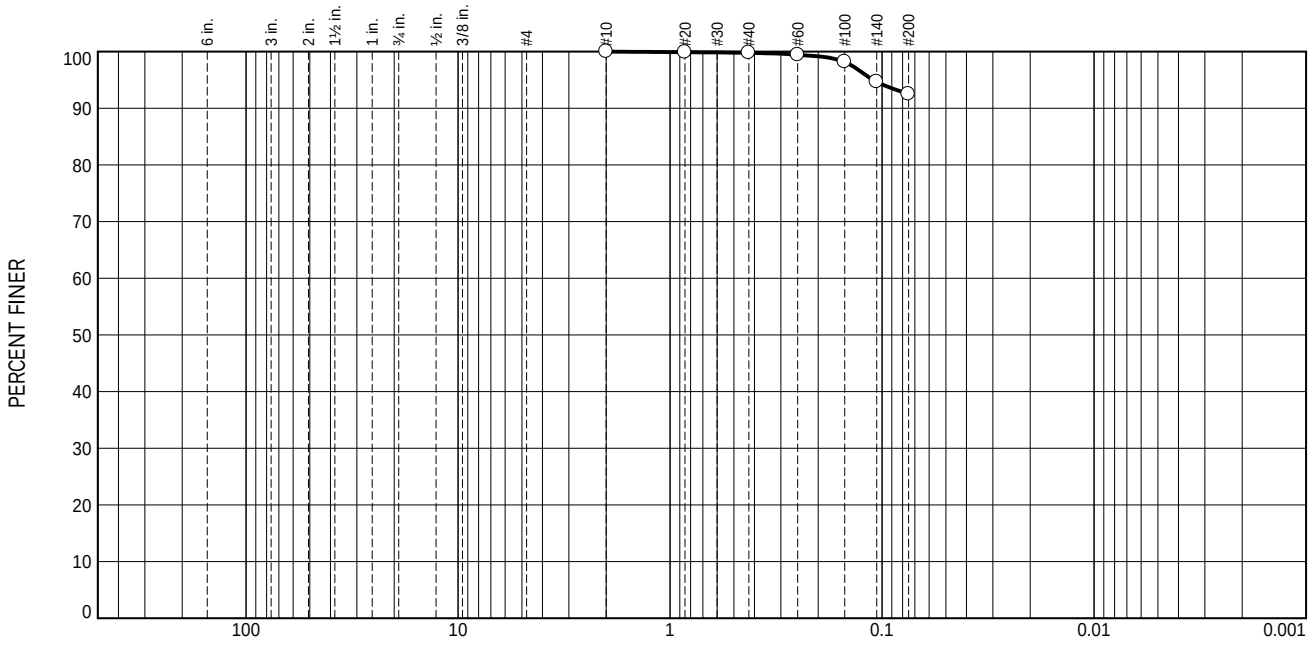
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	7.3	92.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.8		
#60	99.4		
#100	98.2		
#140	94.6		
#200	92.5		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 13F

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

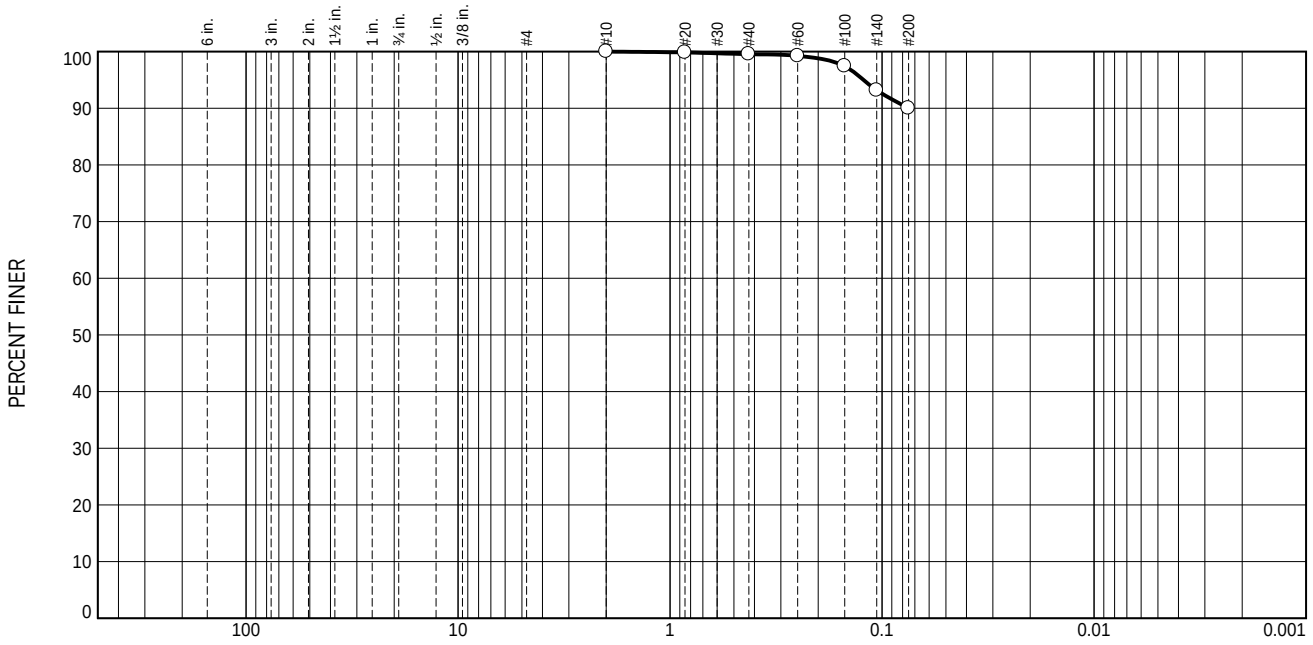
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	9.5	90.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.5		
#60	99.2		
#100	97.4		
#140	93.2		
#200	90.0		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 13 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.0751 D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

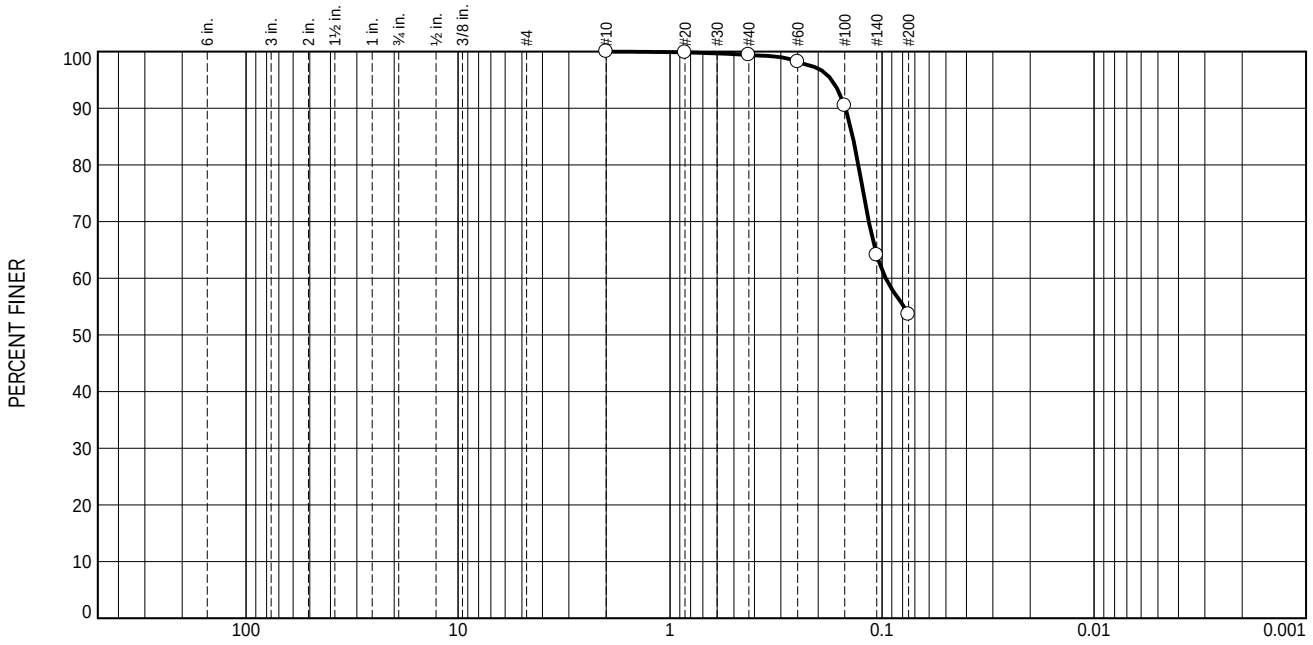
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	45.8	53.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.4		
#60	98.2		
#100	90.5		
#140	64.1		
#200	53.6		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 14A

Material Description
Brwon

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1486 D_{85}= 0.1375
D_{60}= 0.0962 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

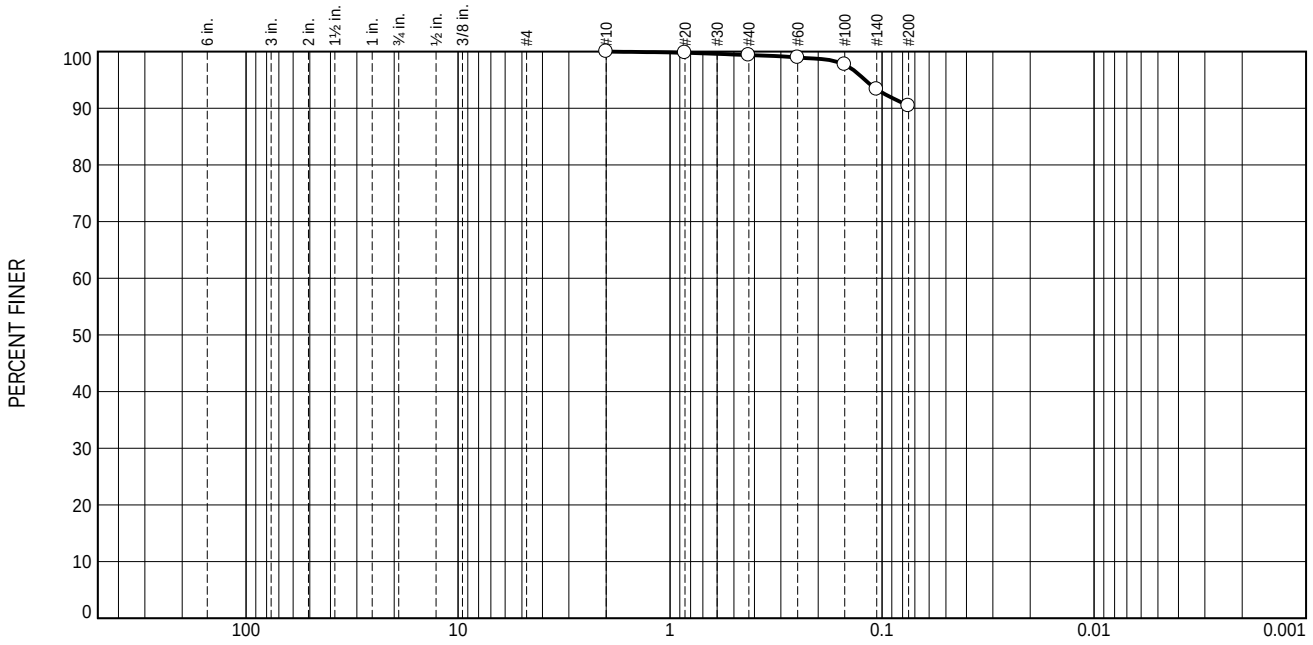
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	9.0	90.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.4		
#60	99.0		
#100	97.7		
#140	93.3		
#200	90.4		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 14B

Material Description
Dark Grayish Brown and Black

Sieve Test (ASTM D6913)

Test Date: 2/28/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

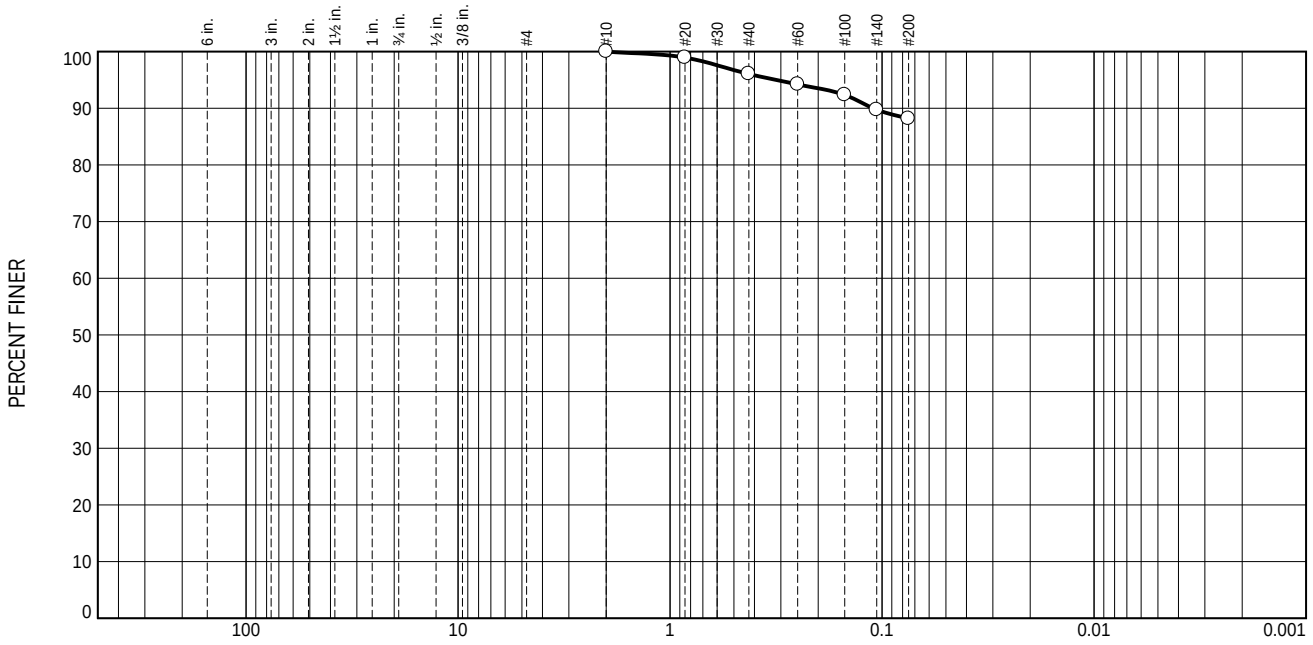
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.9	7.9	88.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.9		
#40	96.1		
#60	94.2		
#100	92.4		
#140	89.7		
#200	88.2		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 14C

Material Description
Dark Grayish Brown and Black

Sieve Test (ASTM D6913)

Test Date: 2/28/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1103 D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

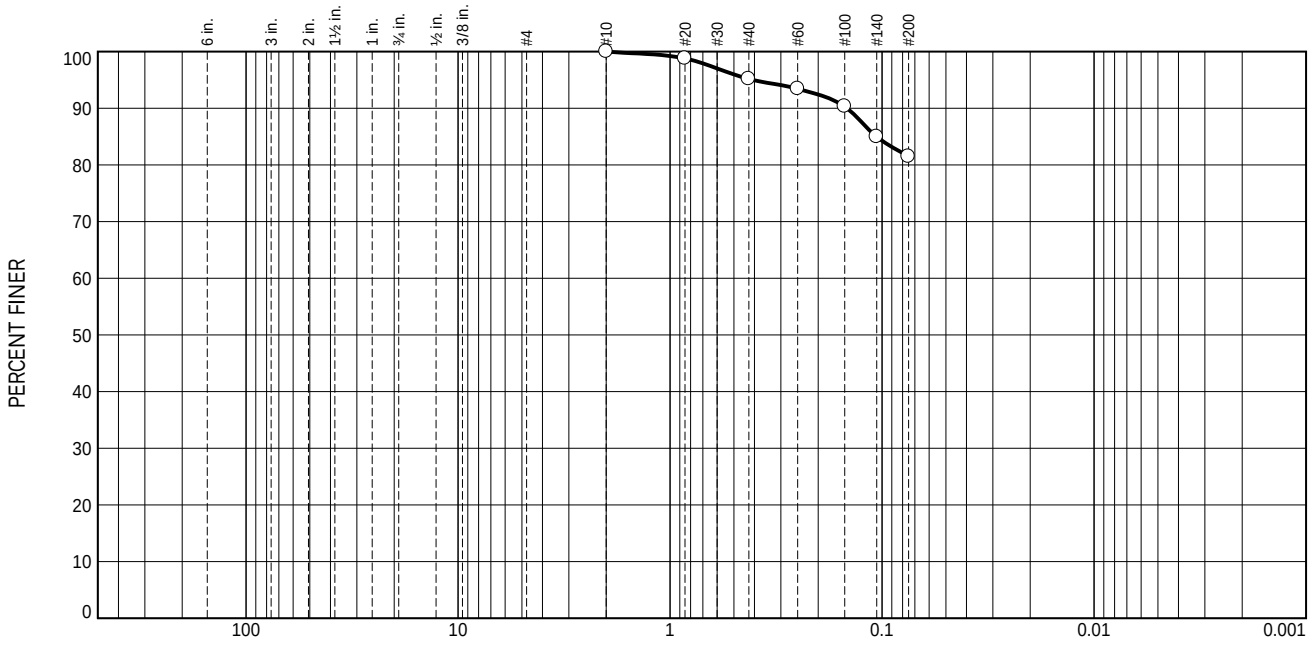
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.8	13.7	81.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.8		
#40	95.2		
#60	93.4		
#100	90.3		
#140	84.9		
#200	81.5		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 14D

Material Description
Dark Grayish Brown and Black

Sieve Test (ASTM D6913)

Test Date: 2/28/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1460 D_{85}= 0.1064
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

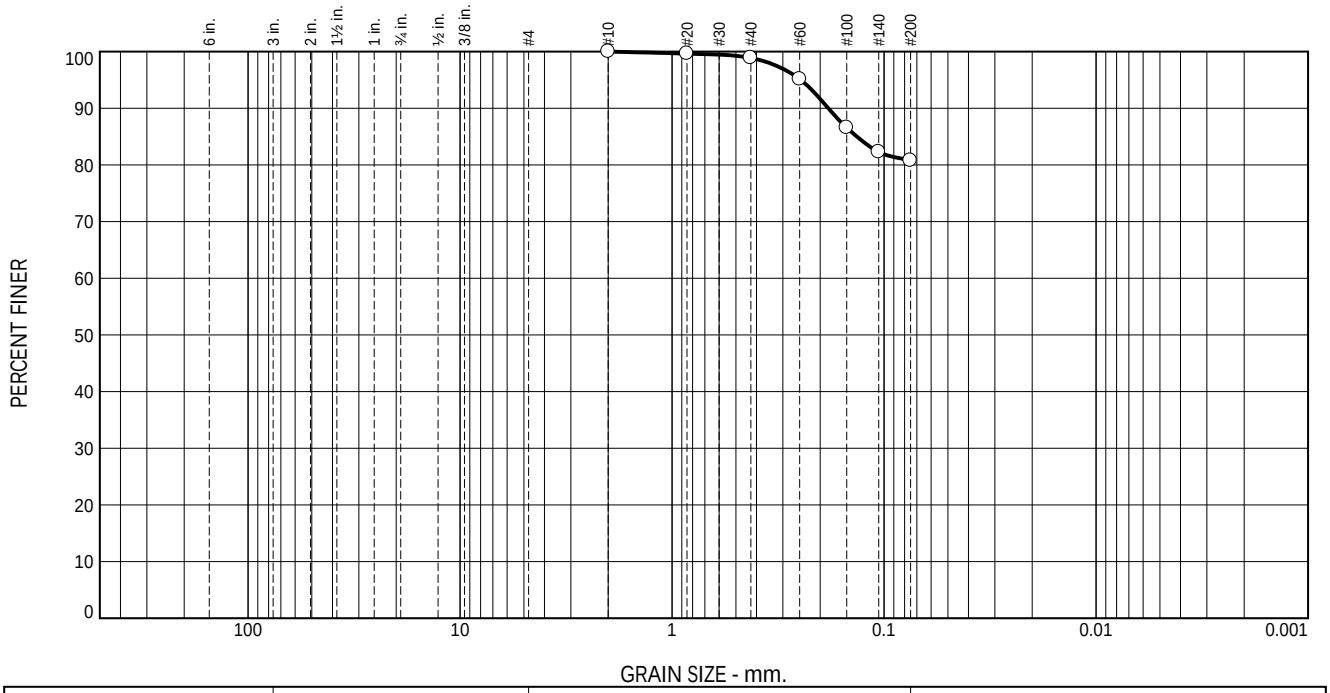
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.1	18.1	80.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.6		
#40	98.9		
#60	95.1		
#100	86.6		
#140	82.3		
#200	80.8		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 14E

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1833 D_{85}= 0.1344
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/28 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

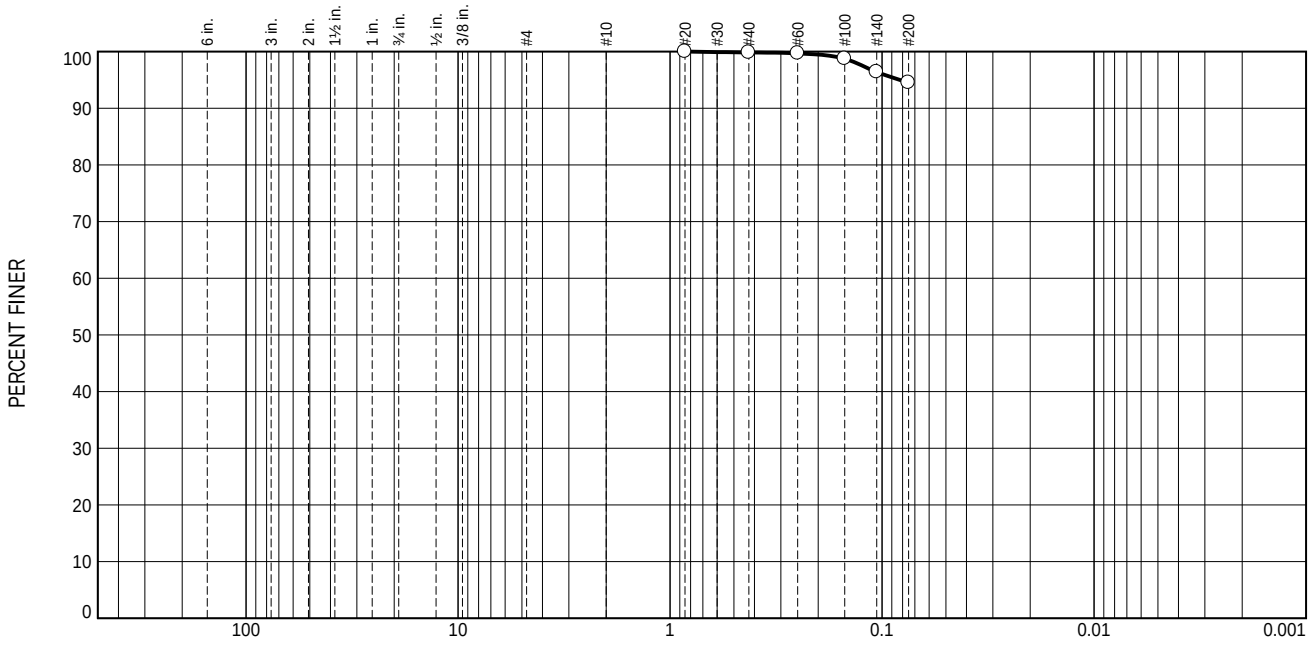
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	5.3	94.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	99.7		
#100	98.7		
#140	96.4		
#200	94.5		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 14F

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

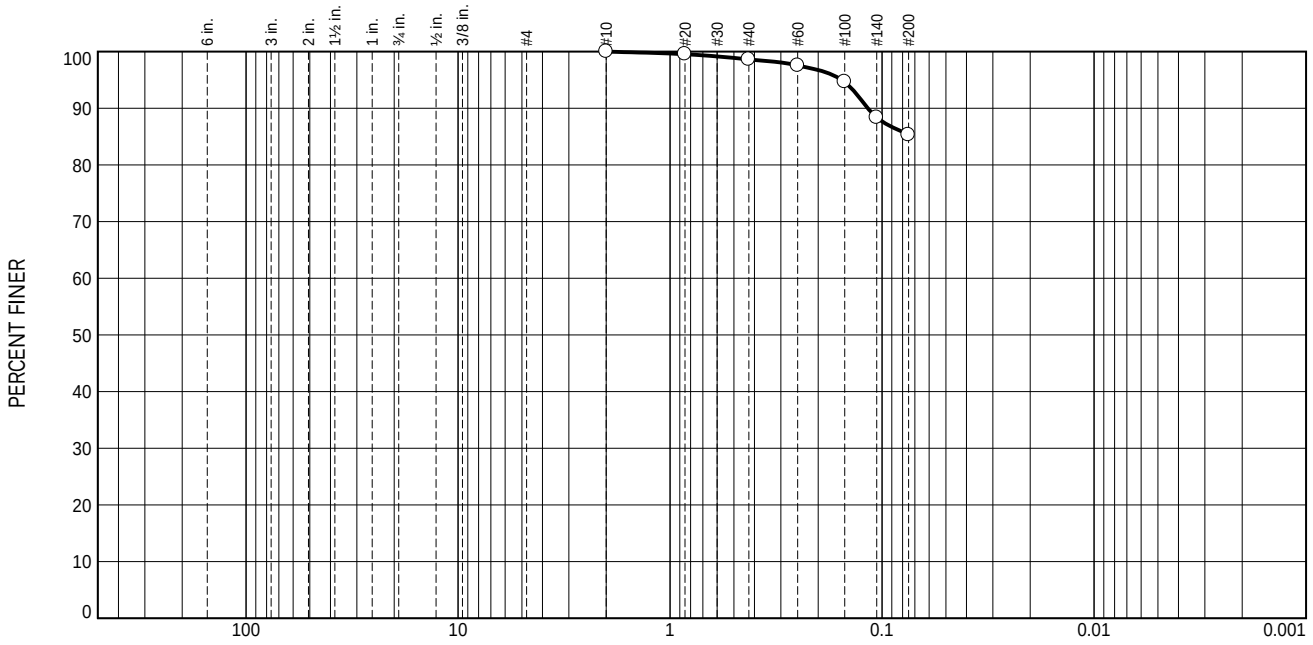
Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.4	13.3	85.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.5		
#40	98.6		
#60	97.5		
#100	94.6		
#140	88.4		
#200	85.3		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 14 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1168 D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

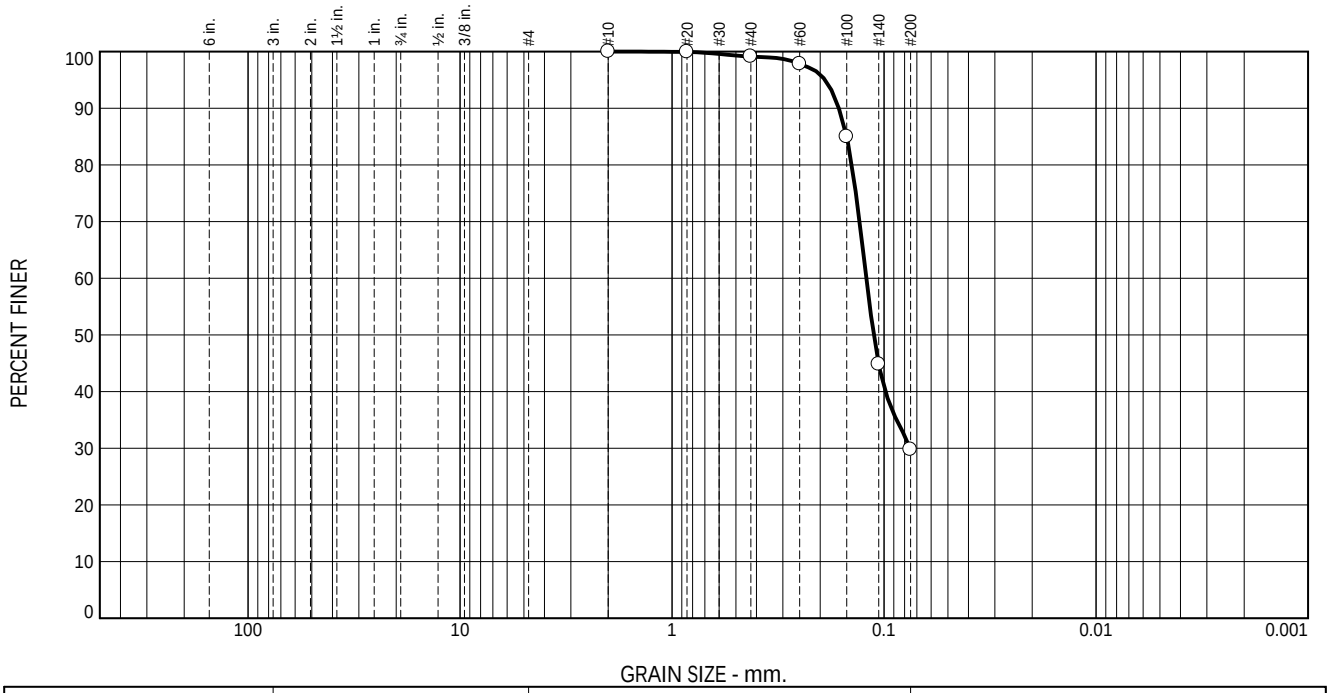
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	69.3	29.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.1		
#60	97.8		
#100	84.9		
#140	44.8		
#200	29.8		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 15A

Material Description
Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1634 D_{85}= 0.1501
D_{60}= 0.1213 D_{50}= 0.1119
D_{30}= 0.0754 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

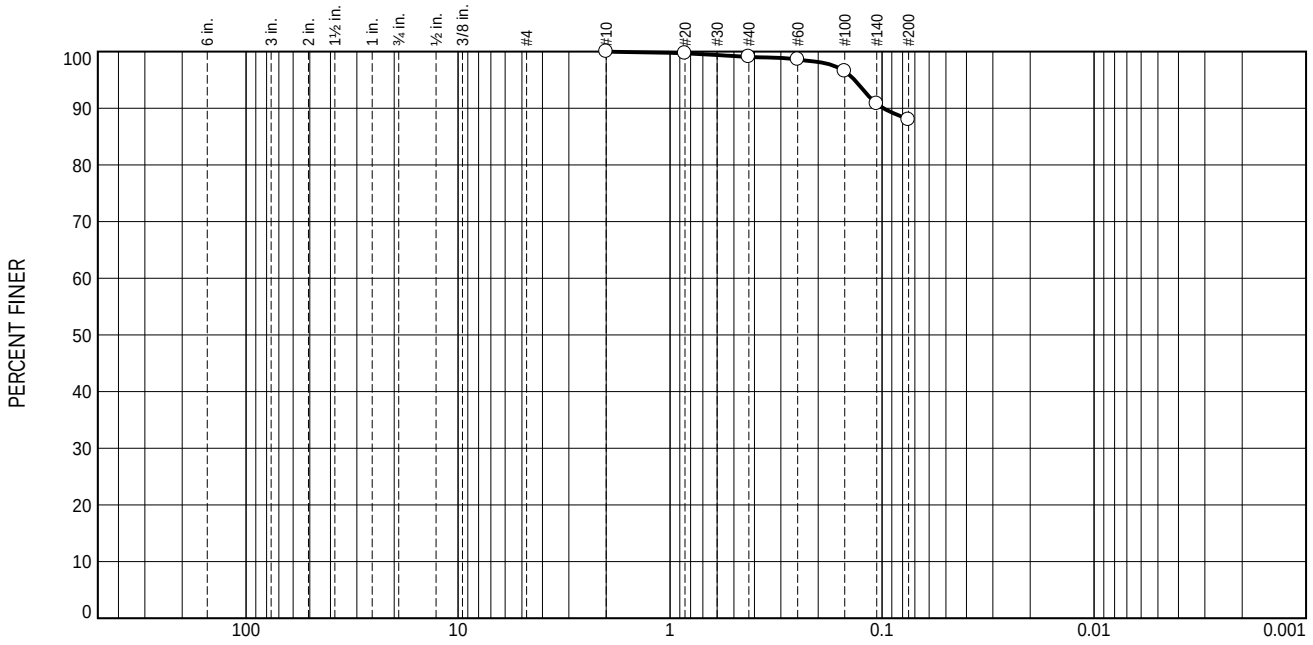
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	11.1	88.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	99.1		
#60	98.6		
#100	96.6		
#140	90.8		
#200	88.0		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 15B

Material Description
Dark Grayish Brown and Black

Sieve Test (ASTM D6913)

Test Date: 2/28/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.0986 D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

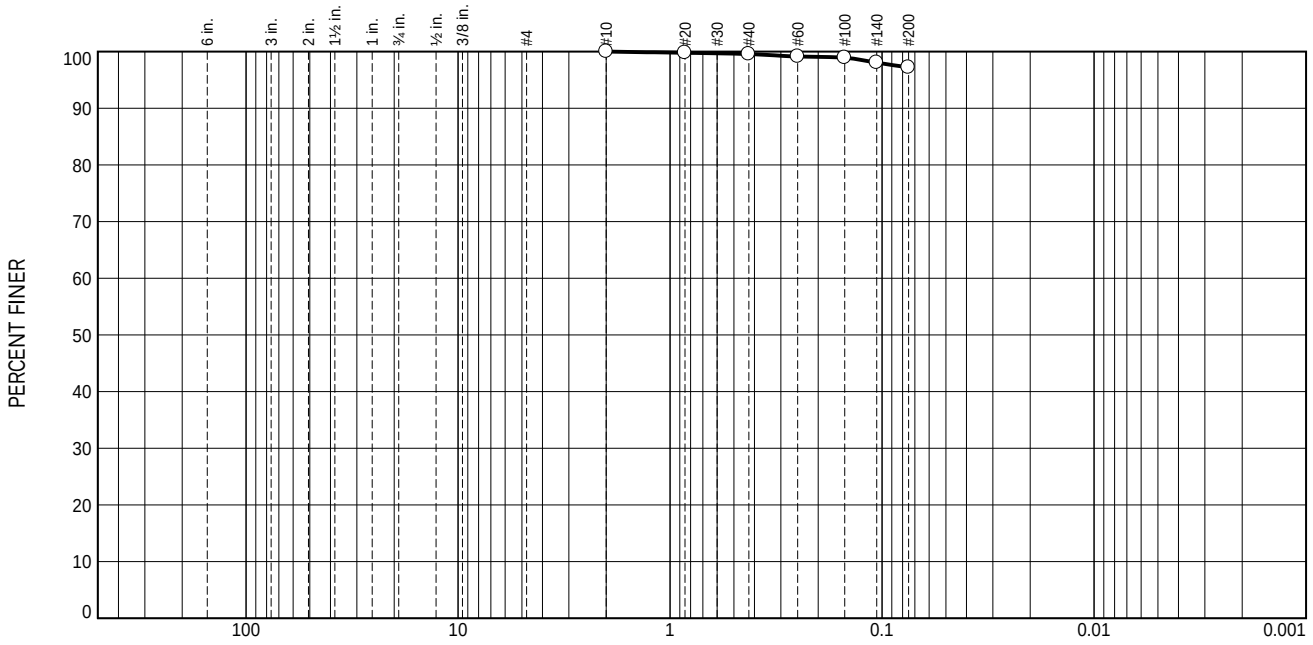
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	2.4	97.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.6		
#60	99.1		
#100	98.9		
#140	98.1		
#200	97.2		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 15C

Material Description
Dark Grayish Brown and Black

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

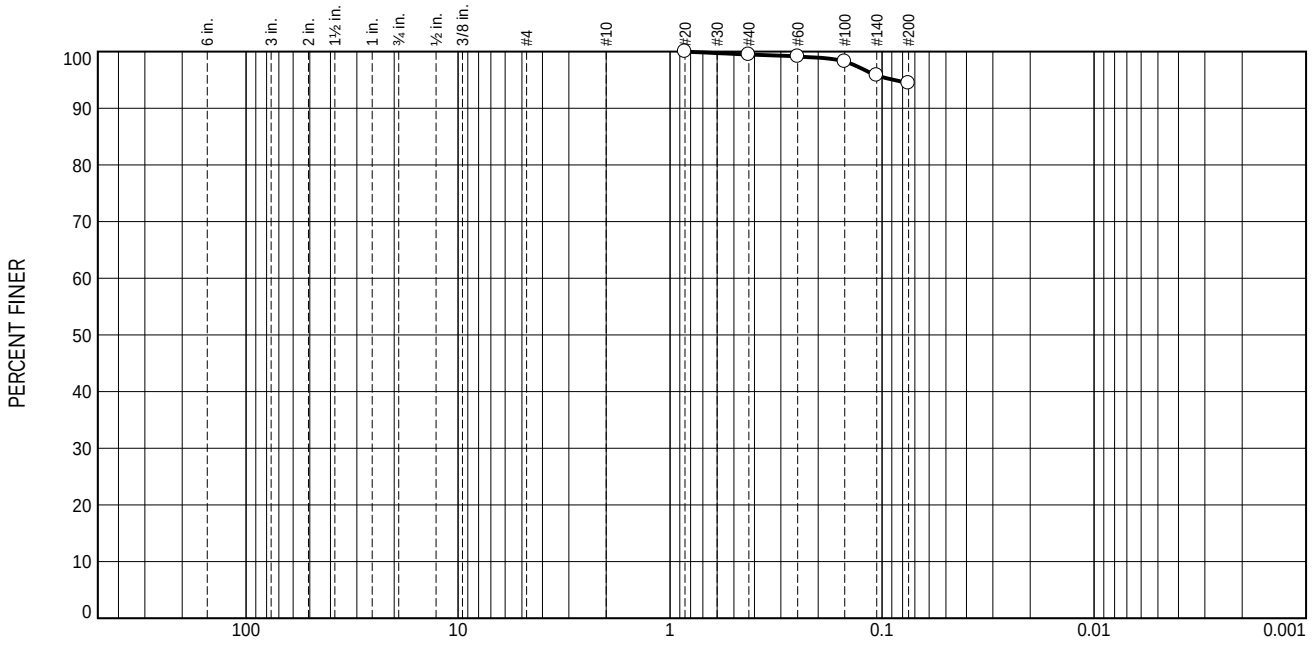
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	5.1	94.4	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.5		
#60	99.1		
#100	98.3		
#140	95.8		
#200	94.4		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 15D

Material Description
Dark Grayish Brown and Black

Sieve Test (ASTM D6913)

Test Date: 2/28/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

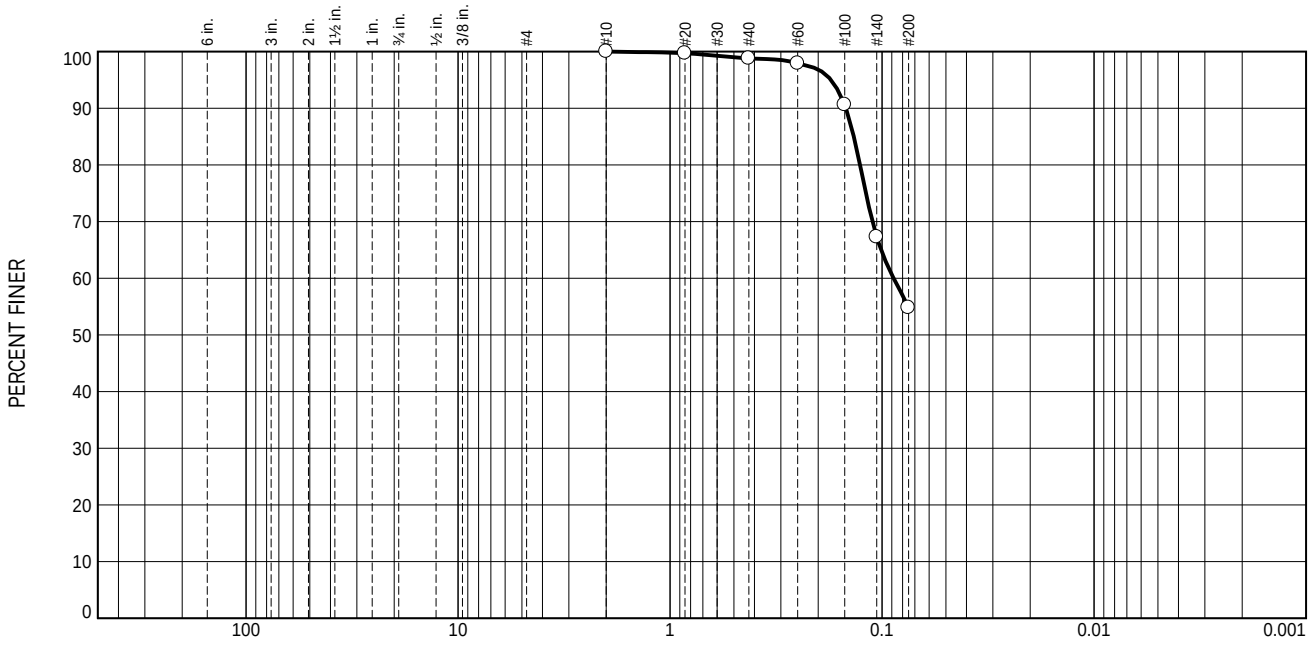
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.2	44.0	54.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	98.8		
#60	97.9		
#100	90.6		
#140	67.3		
#200	54.8		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 15 Comp

Material Description
Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1479 D_{85}= 0.1359
D_{60}= 0.0882 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

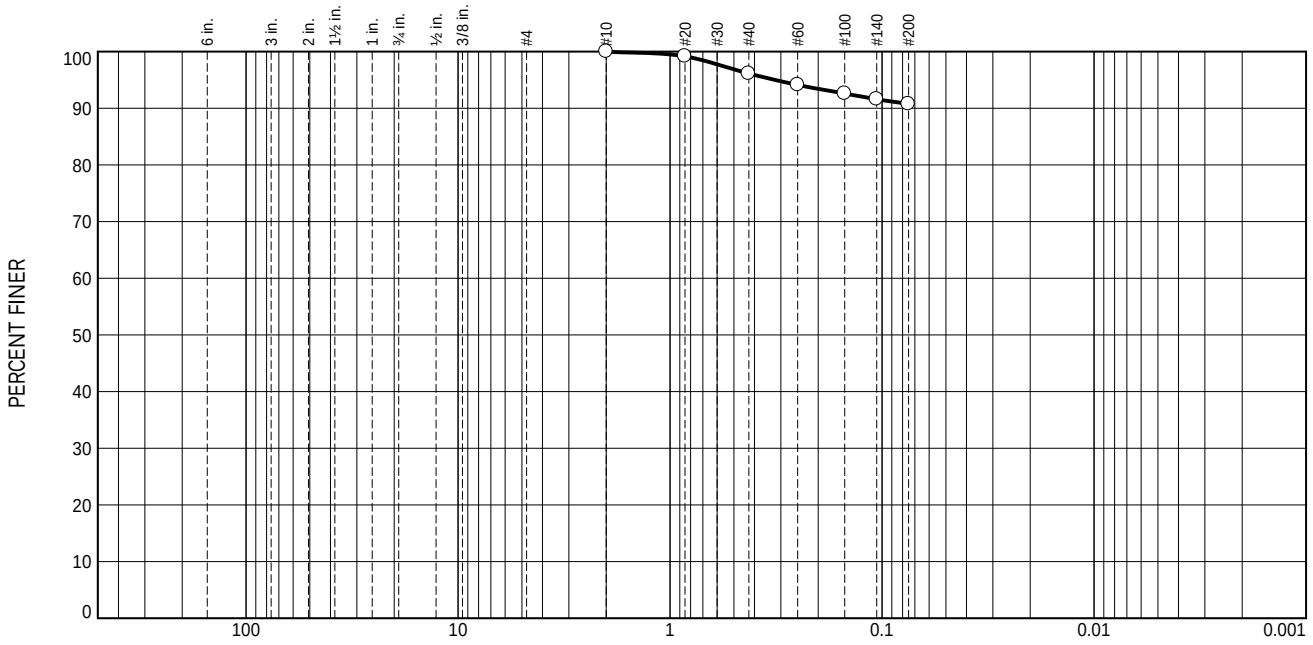
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.9	5.3	90.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.2		
#40	96.1		
#60	94.1		
#100	92.6		
#140	91.6		
#200	90.8		

* (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 16A

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

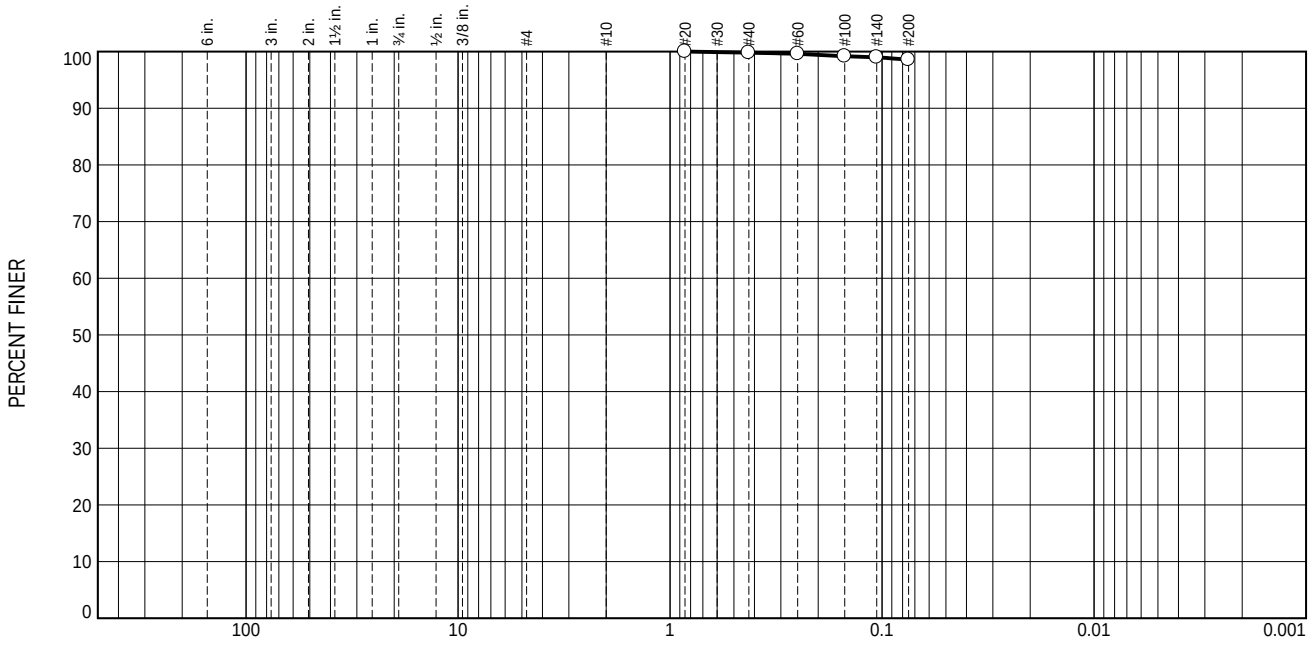
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	1.2	98.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	99.6		
#100	99.2		
#140	99.0		
#200	98.6		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 16B

Material Description
Dark Grayish Brown and Black

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

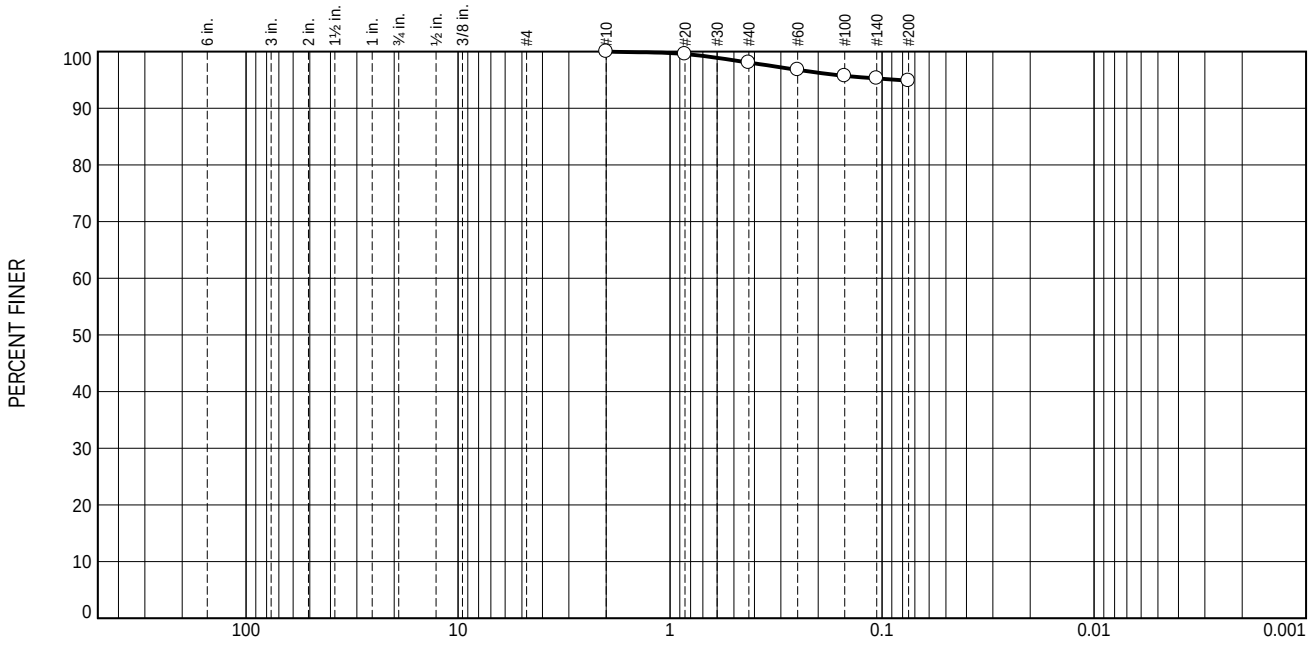
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.9	3.3	94.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.6		
#40	98.1		
#60	96.8		
#100	95.7		
#140	95.3		
#200	94.8		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 16C

Material Description
Dark Grayish Brown and Black

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

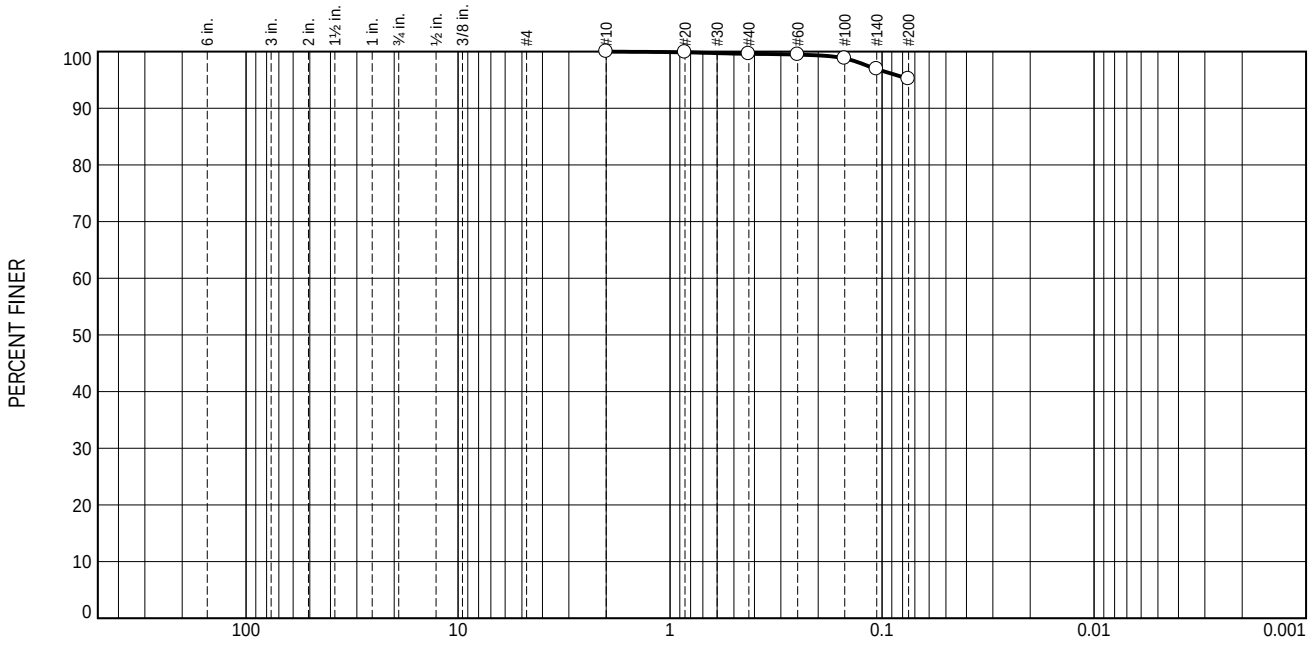
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	4.4	95.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.6		
#60	99.5		
#100	98.8		
#140	96.9		
#200	95.2		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 16D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

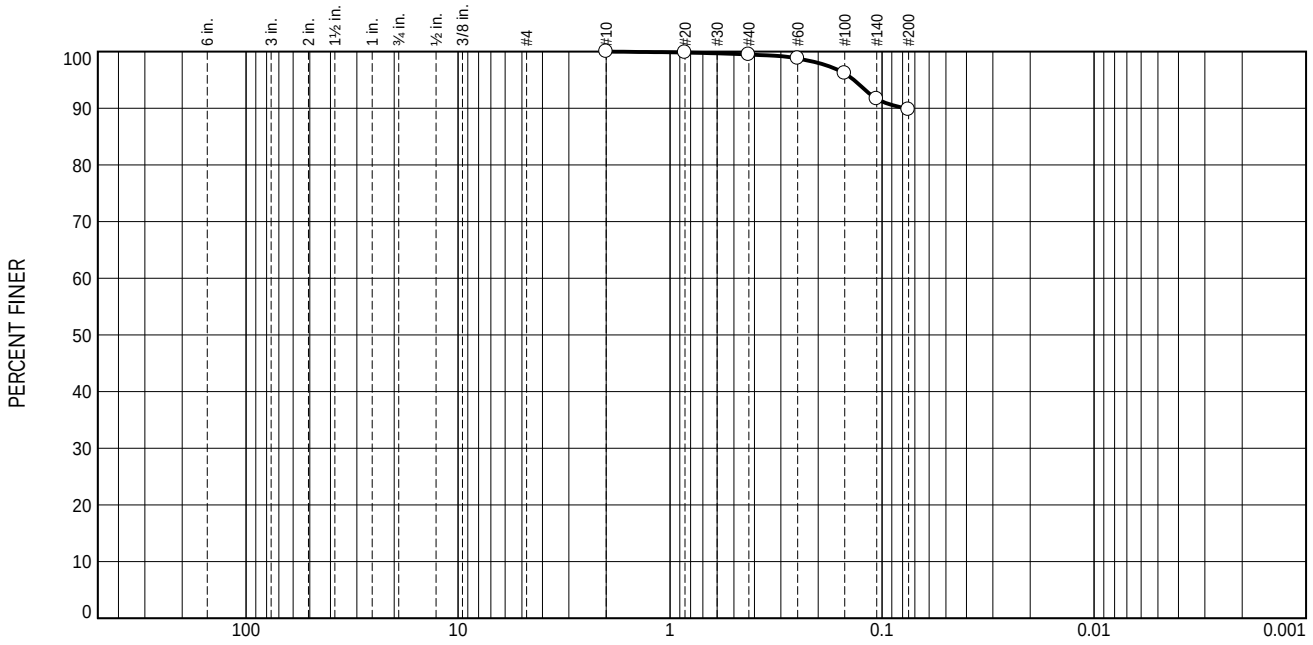
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	9.7	89.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.5		
#60	98.8		
#100	96.2		
#140	91.7		
#200	89.8		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 16 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.0787 D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

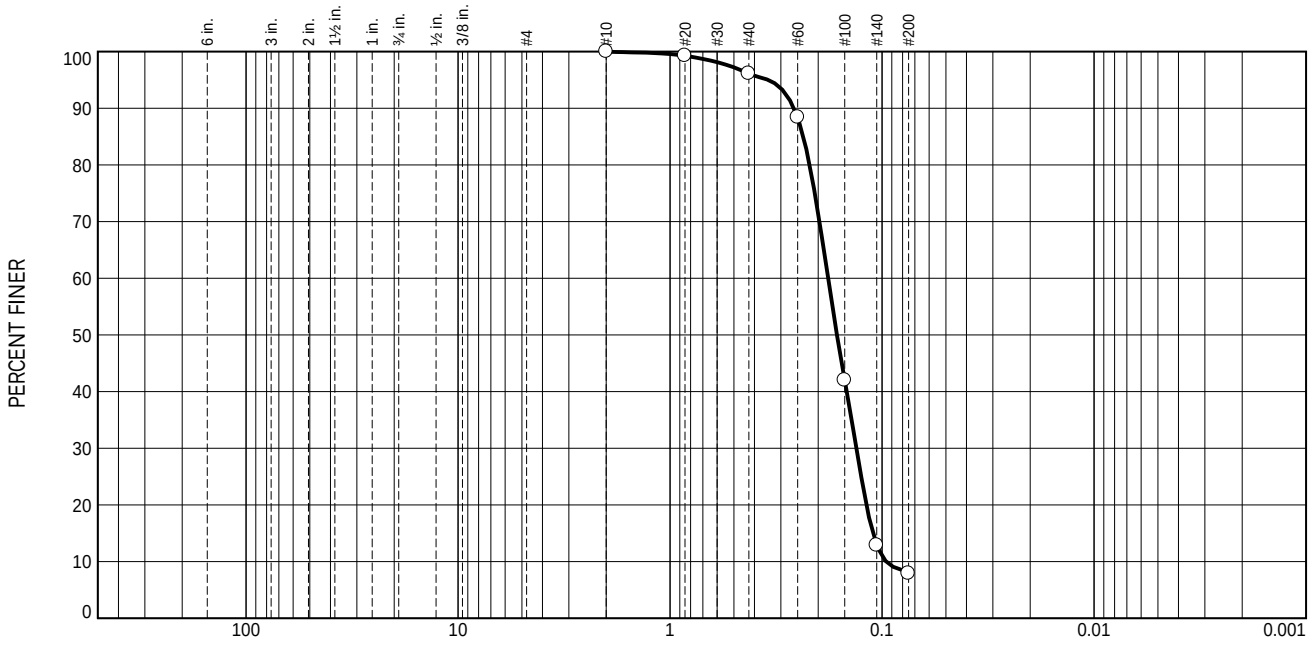
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.9	88.2	7.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.3		
#40	96.1		
#60	88.4		
#100	42.0		
#140	12.9		
#200	7.9		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 17A

Material Description
Light Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2605 D_{85}= 0.2349
D_{60}= 0.1795 D_{50}= 0.1632
D_{30}= 0.1322 D_{15}= 0.1105
D_{10}= 0.0958
C_u= 1.87 C_c= 1.02

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

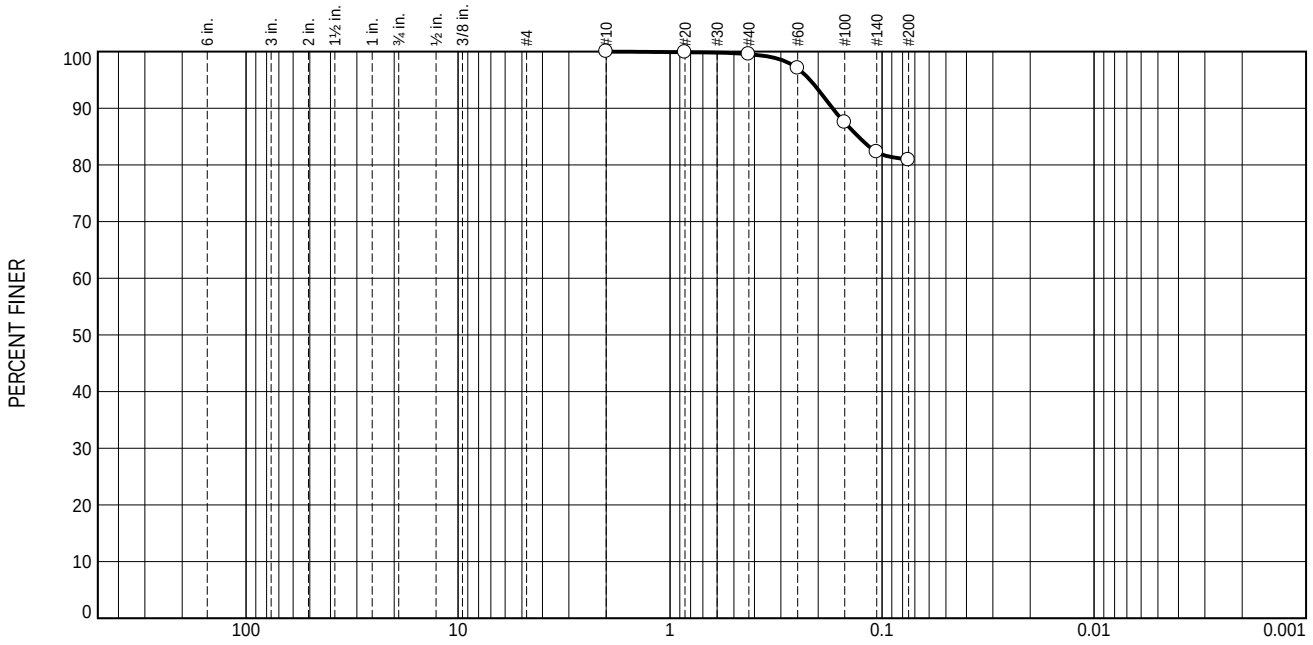
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	18.6	80.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.5		
#60	97.0		
#100	87.5		
#140	82.3		
#200	80.9		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 17B

Material Description
Dark Grayish Brown and Black

Sieve Test (ASTM D6913)

Test Date: 2/28/23 Technician: M Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1712 D_{85}= 0.1295
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

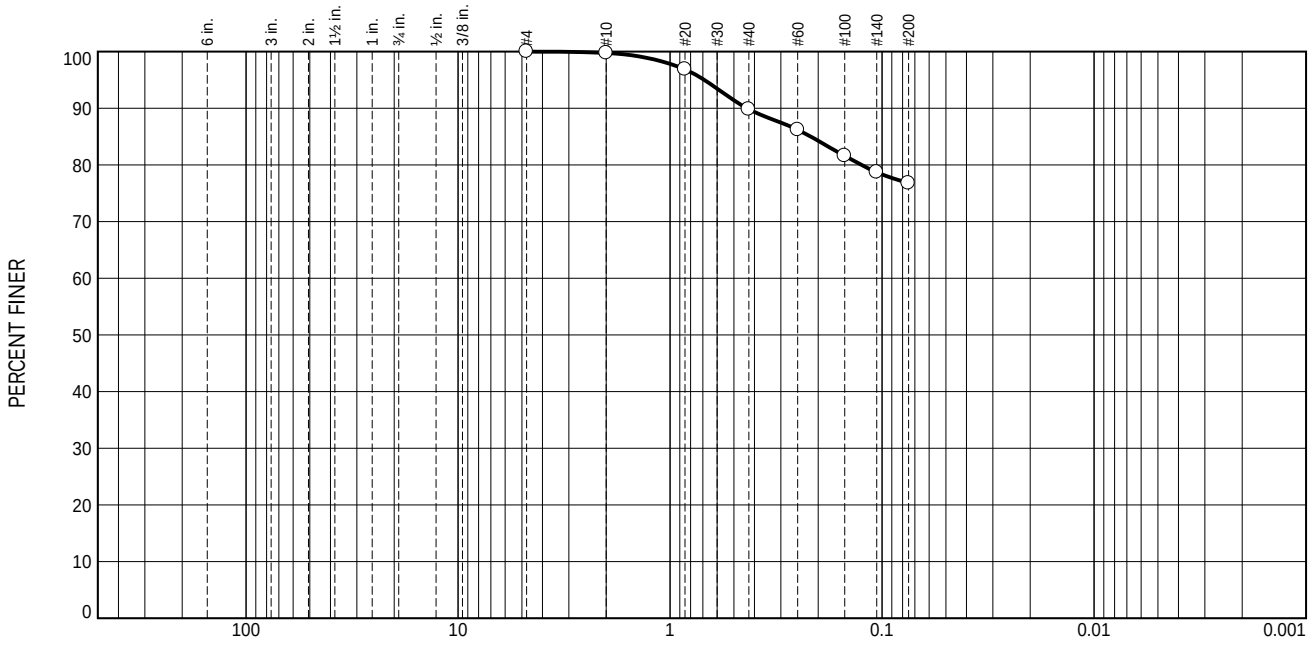
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	10.0	13.0	76.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	96.9		
#40	89.8		
#60	86.2		
#100	81.6		
#140	78.7		
#200	76.8		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 17C

Material Description
Dark Grayish Brown and Black

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4334 D_{85}= 0.2171
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

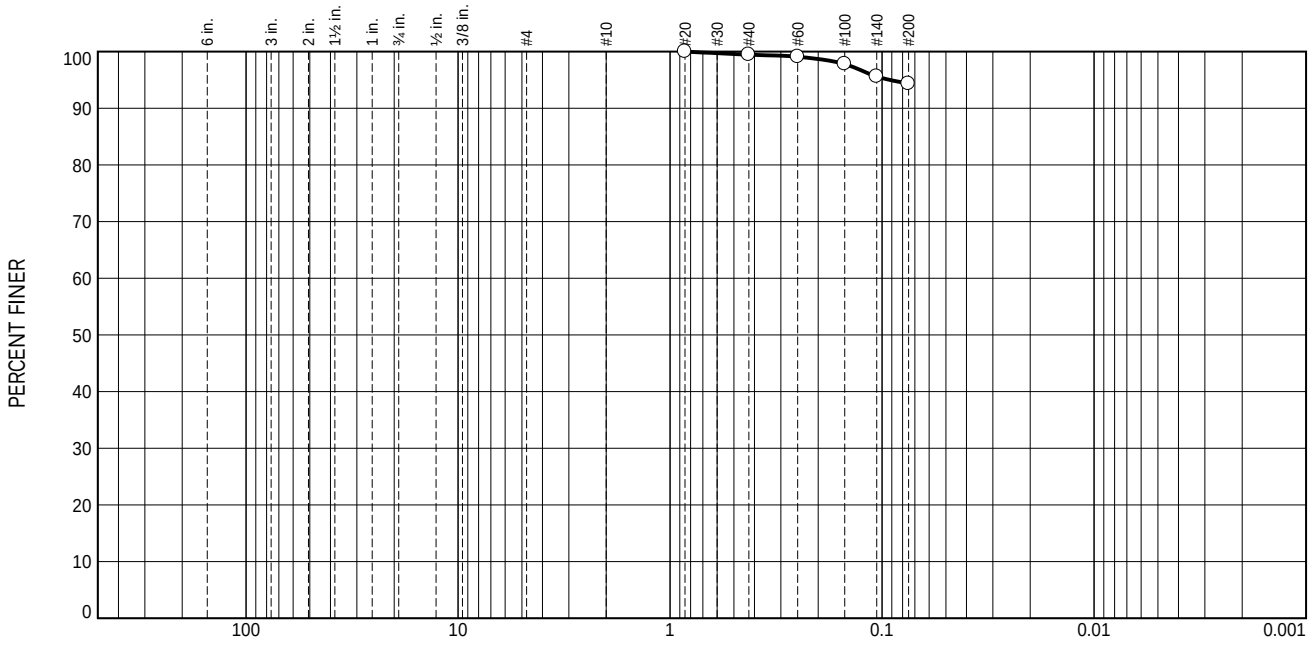
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	5.1	94.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.4		
#60	99.1		
#100	97.8		
#140	95.6		
#200	94.3		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 17D

Material Description
Dark Grayish Brown and Black

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

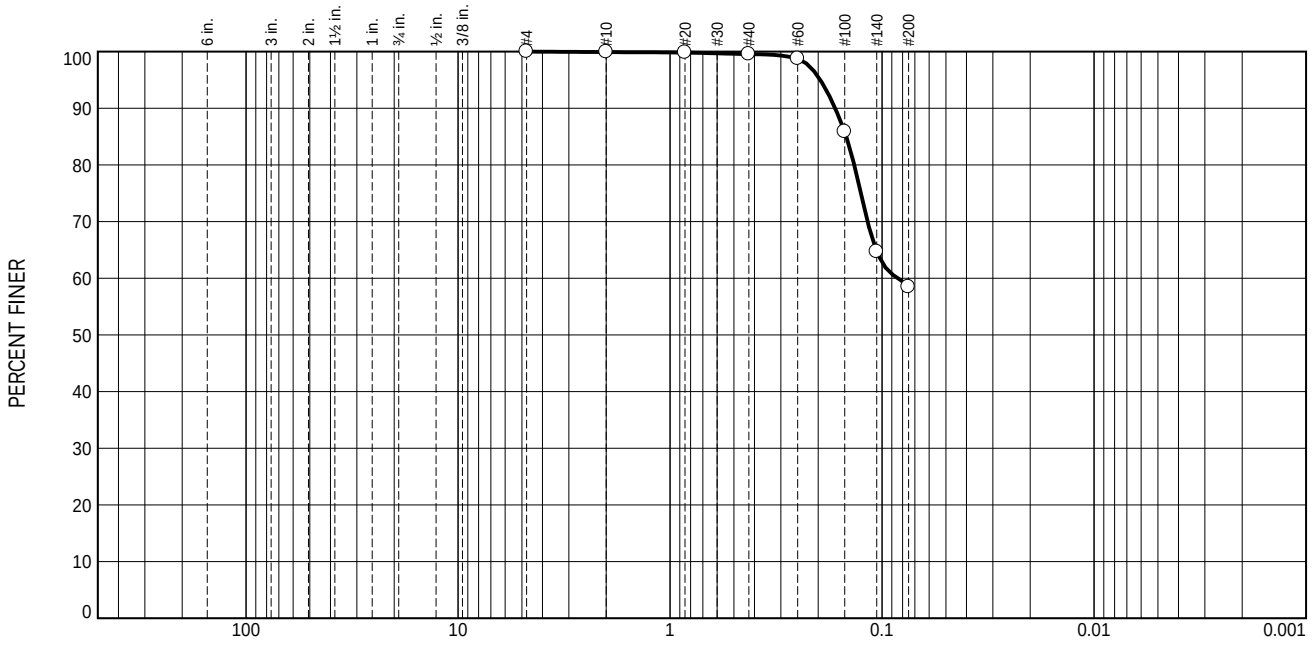
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.4	41.0	58.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.5		
#60	98.7		
#100	85.9		
#140	64.7		
#200	58.5		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 17E

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1664 D_{85}= 0.1472
D_{60}= 0.0842 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

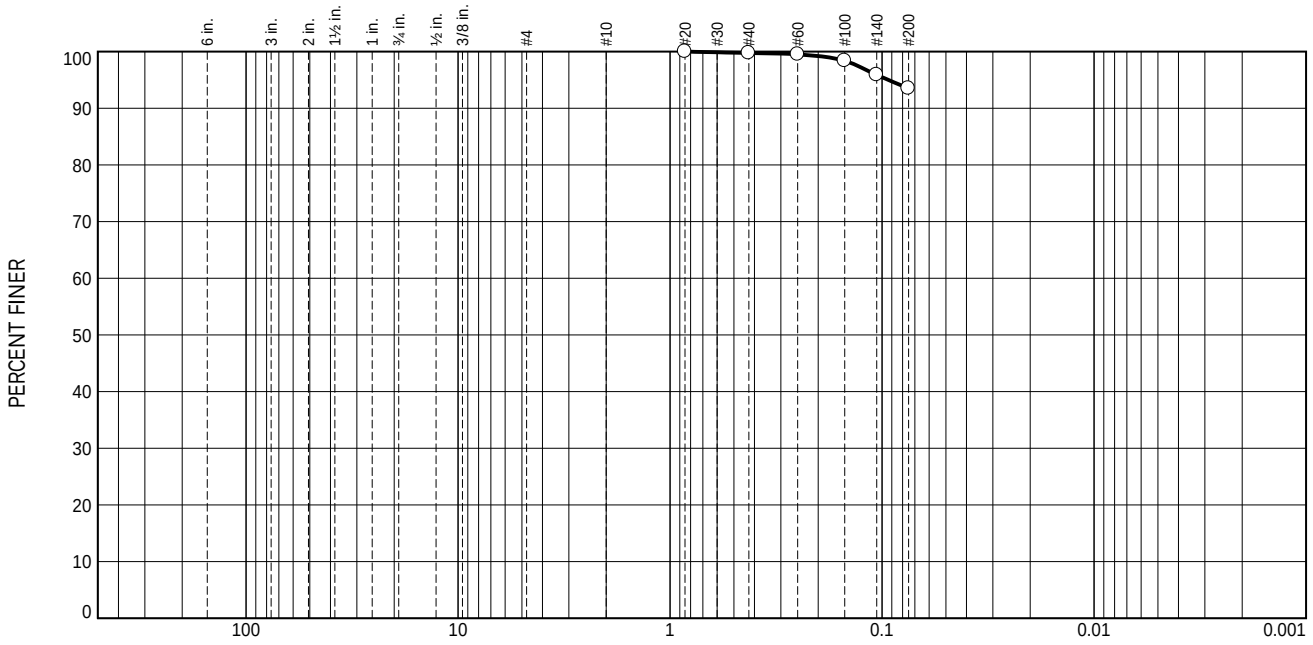
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	6.3	93.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.8		
#60	99.5		
#100	98.4		
#140	95.9		
#200	93.5		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 17F

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

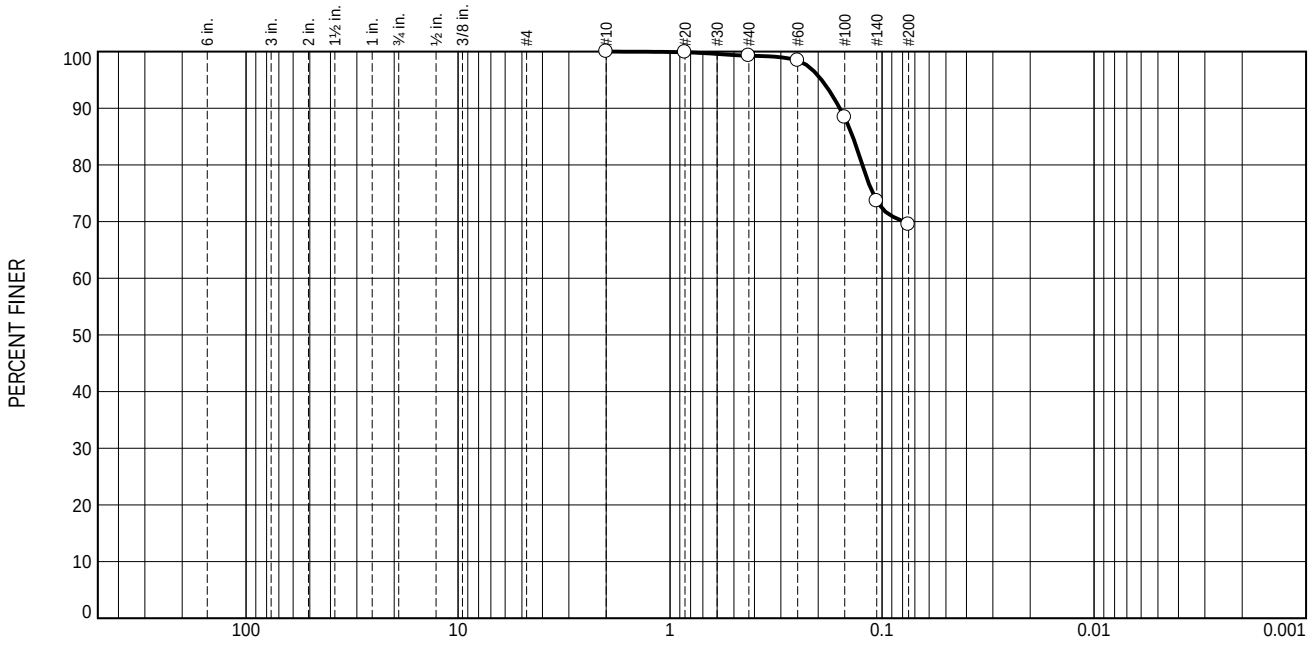
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	29.8	69.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.3		
#60	98.4		
#100	88.4		
#140	73.6		
#200	69.5		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 17 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1582 D_{85}= 0.1375
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/28 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

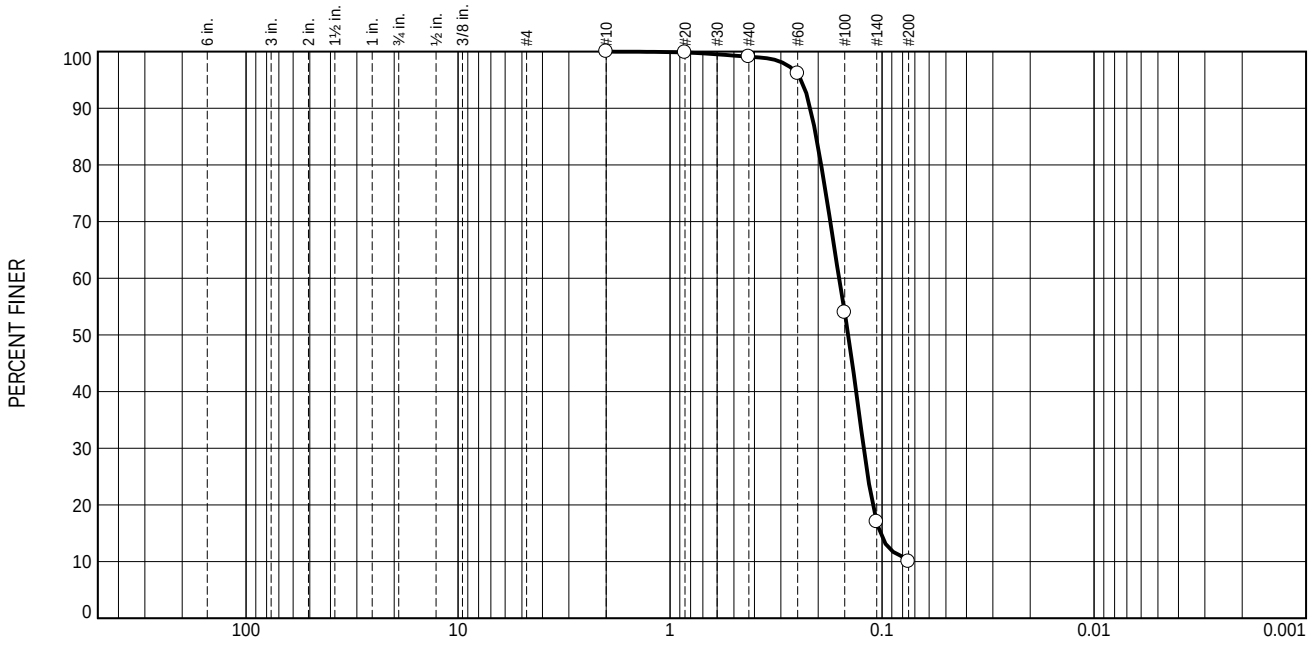
Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	89.1	10.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.1		
#60	96.1		
#100	53.9		
#140	17.0		
#200	10.0		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 18A

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2181 D_{85}= 0.2046
D_{60}= 0.1595 D_{50}= 0.1443
D_{30}= 0.1221 D_{15}= 0.1019
D_{10}= 0.0751
C_u= 2.12 C_c= 1.24

USCS (ASTM D2487)

Date Sampled: 2/25/27
Date Received: 2/27/27
Checked By: J. Hatch
Title: Sr Engineer

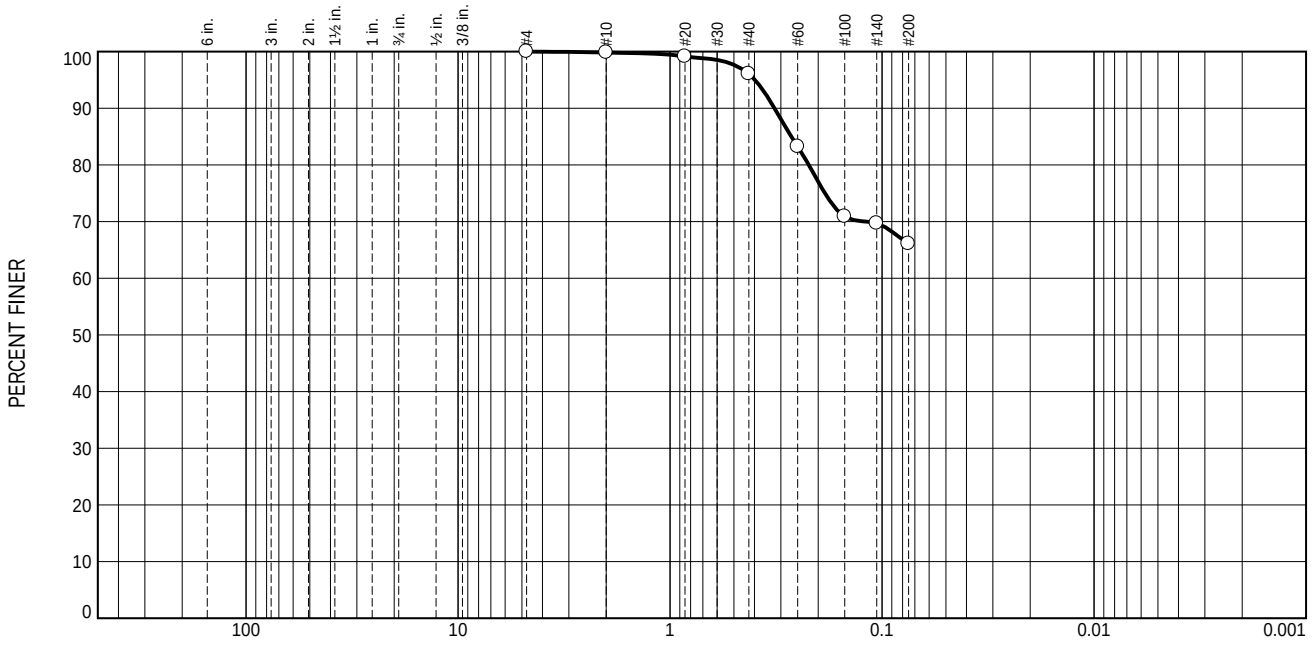
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	3.7	30.0	66.1	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.1		
#40	96.1		
#60	83.2		
#100	70.9		
#140	69.7		
#200	66.1		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 18B

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3215 D_{85}= 0.2681
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

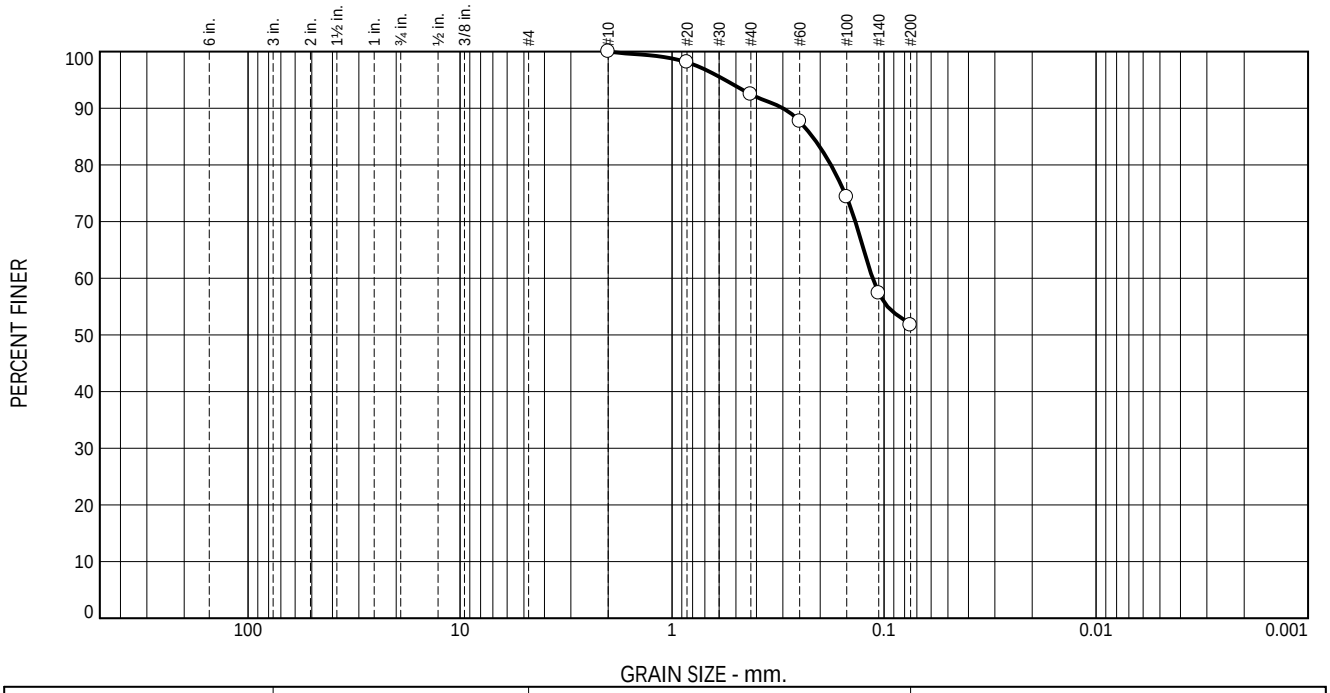
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	7.5	40.8	51.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.1		
#40	92.5		
#60	87.7		
#100	74.3		
#140	57.4		
#200	51.7		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 18C

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2997 D_{85}= 0.2178
D_{60}= 0.1132 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

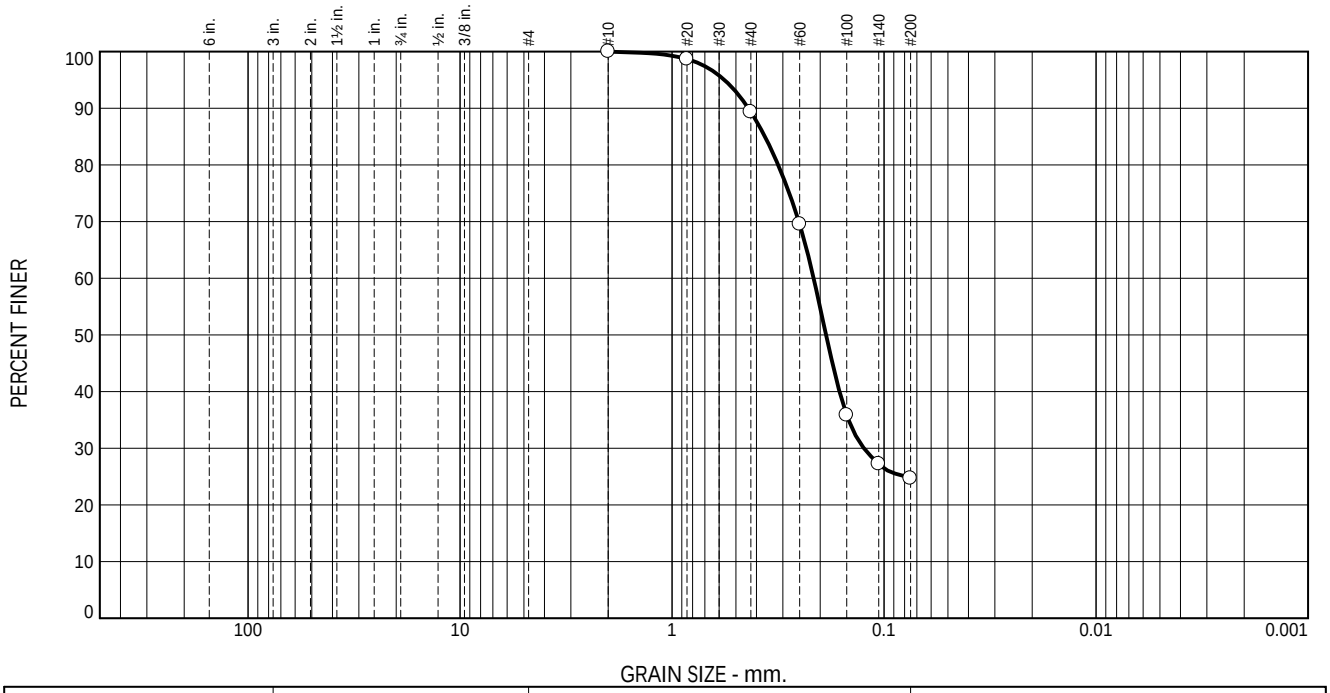
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	10.7	64.6	24.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.7		
#40	89.3		
#60	69.5		
#100	35.8		
#140	27.2		
#200	24.7		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 18D

Material Description
Light Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4364 D_{85}= 0.3646
D_{60}= 0.2149 D_{50}= 0.1878
D_{30}= 0.1246 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

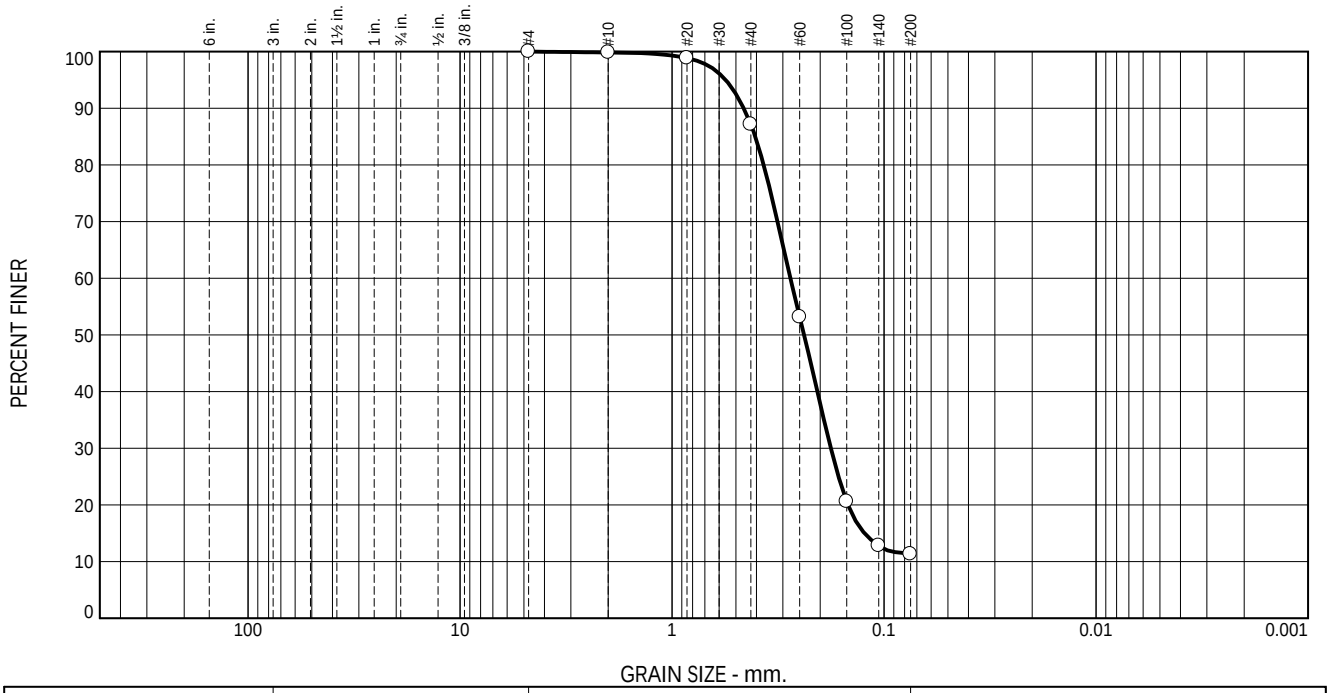
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	12.6	75.9	11.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	98.8		
#40	87.2		
#60	53.2		
#100	20.6		
#140	12.8		
#200	11.3		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 18E

Material Description
Light Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.4592 D_{85}= 0.4050
D_{60}= 0.2766 D_{50}= 0.2382
D_{30}= 0.1782 D_{15}= 0.1238
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

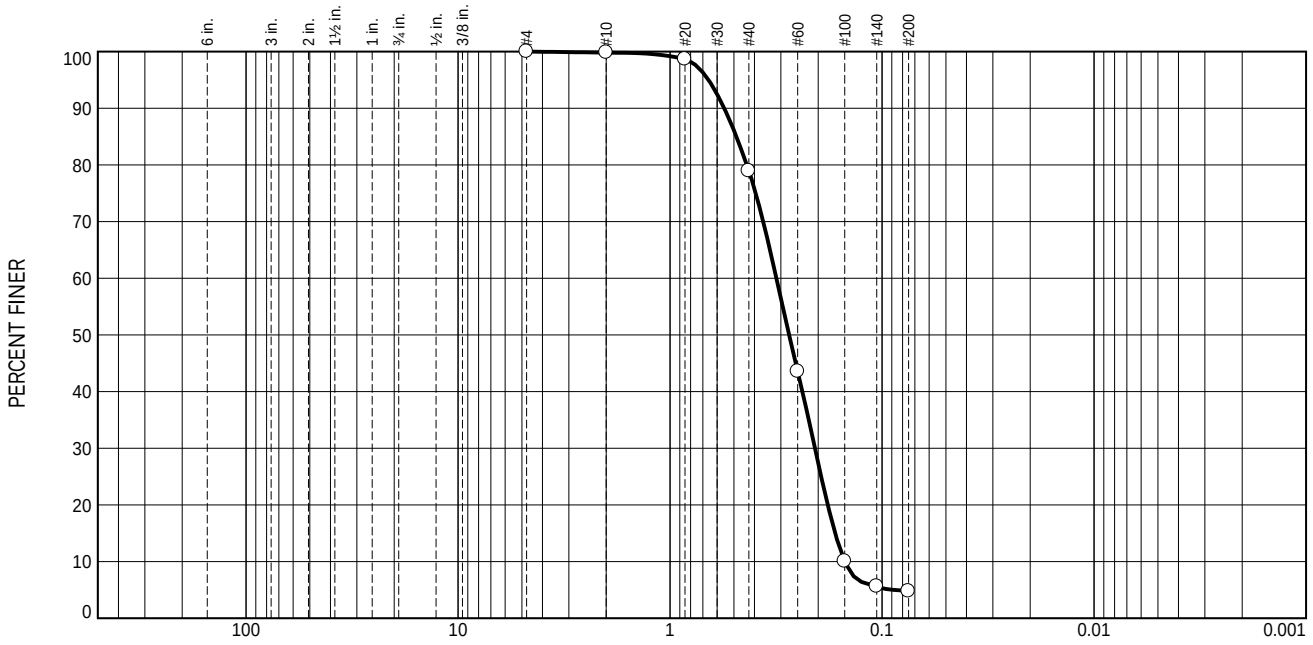
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	20.8	74.2	4.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	98.6		
#40	79.0		
#60	43.5		
#100	10.0		
#140	5.6		
#200	4.8		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 18F

Material Description
Light Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.5549 D_{85}= 0.4867
D_{60}= 0.3150 D_{50}= 0.2745
D_{30}= 0.2073 D_{15}= 0.1664
D_{10}= 0.1499
C_u= 2.10 C_c= 0.91

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

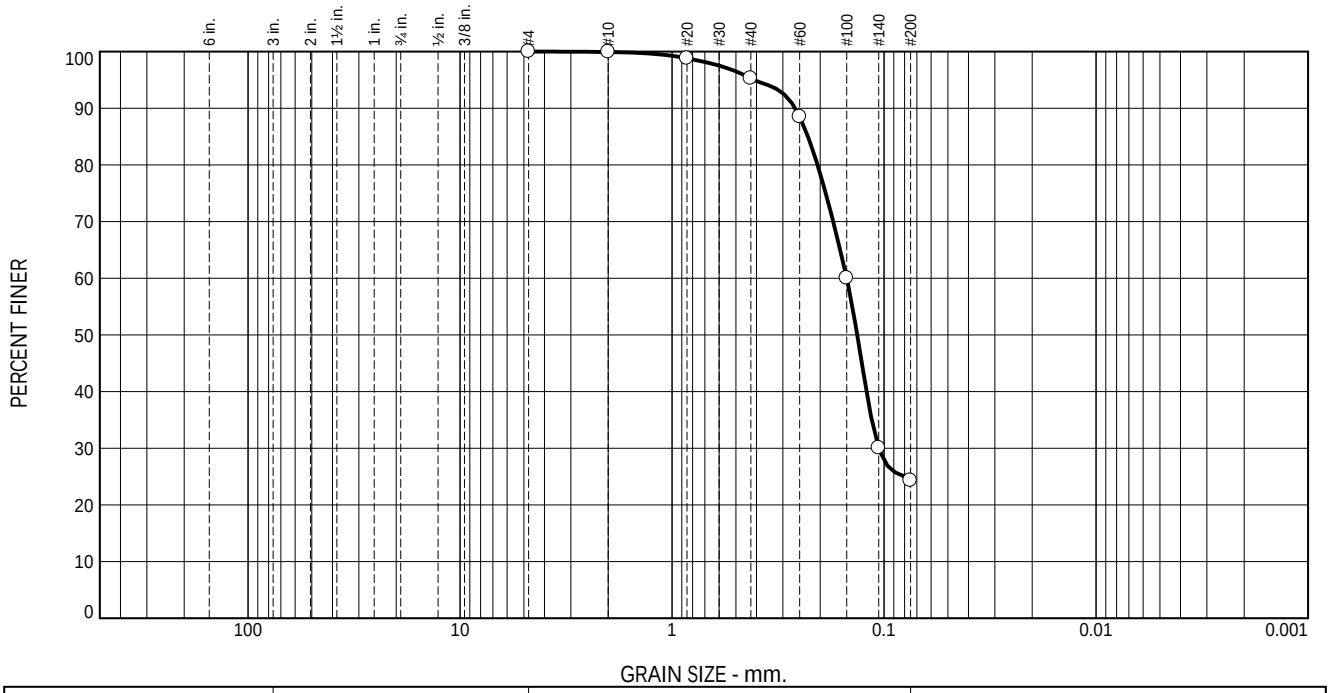
USCS (ASTM D2487)
SP

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	4.6	71.0	24.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	98.8		
#40	95.3		
#60	88.5		
#100	60.0		
#140	30.1		
#200	24.3		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 18 Comp

Material Description
Dark Brown

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2626 D_{85}= 0.2286
D_{60}= 0.1499 D_{50}= 0.1338
D_{30}= 0.1059 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

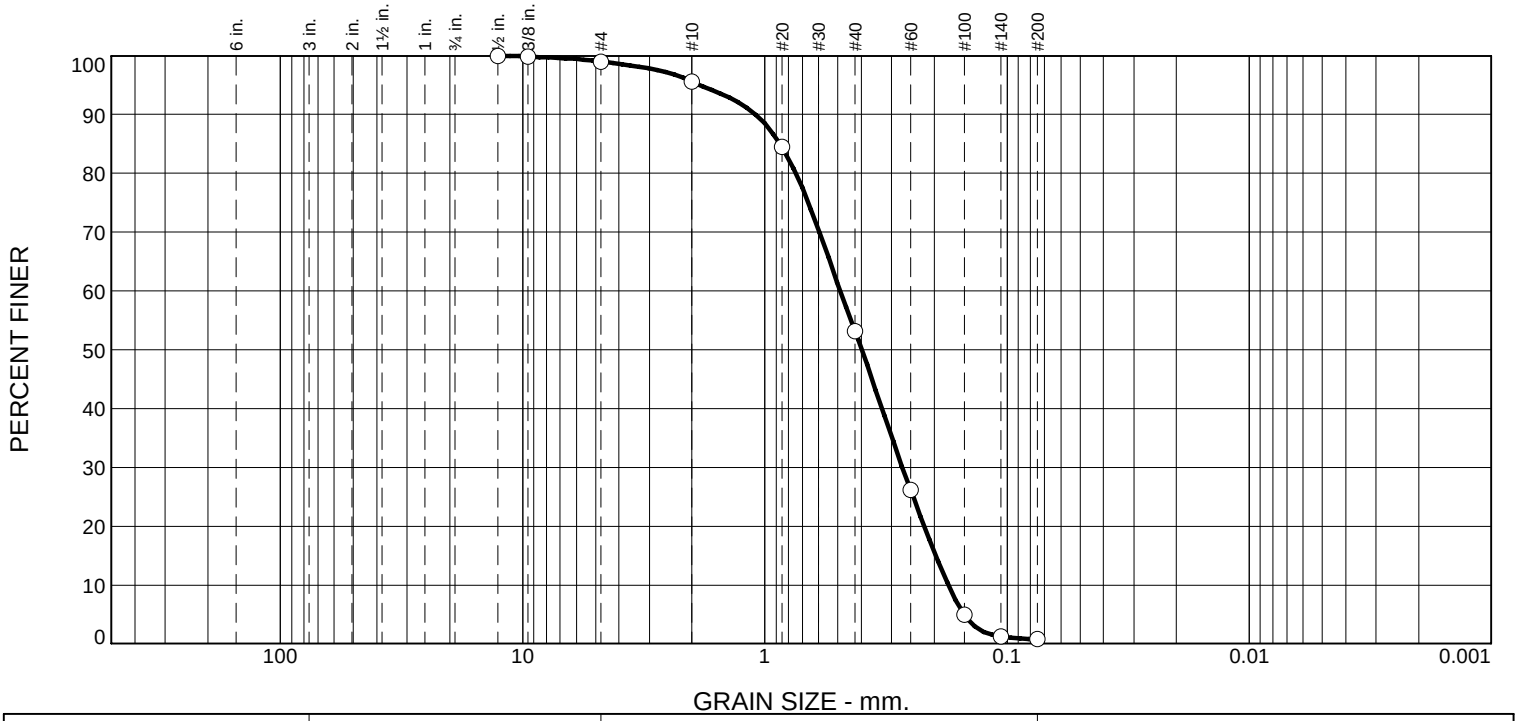
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	3.4	42.4	52.4	0.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	99.8		
#4	99.0		
#10	95.6		
#20	84.5		
#40	53.2		
#60	26.2		
#100	4.9		
#140	1.3		
#200	0.8		

· (no specification provided)

Material Description
Light Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.0946 D_{85}= 0.8662
D_{60}= 0.4877 D_{50}= 0.3984
D_{30}= 0.2708 D_{15}= 0.1969
D_{10}= 0.1750
C_u= 2.79 C_c= 0.86

Sieve Test (ASTM D6913)
Test Date: 3/10/23 **Technician:** B. Horn
Test Notes

Hydrometer Test
Test Date: _____ **Technician:** _____
Test Notes

USCS (ASTM D2487)
SP

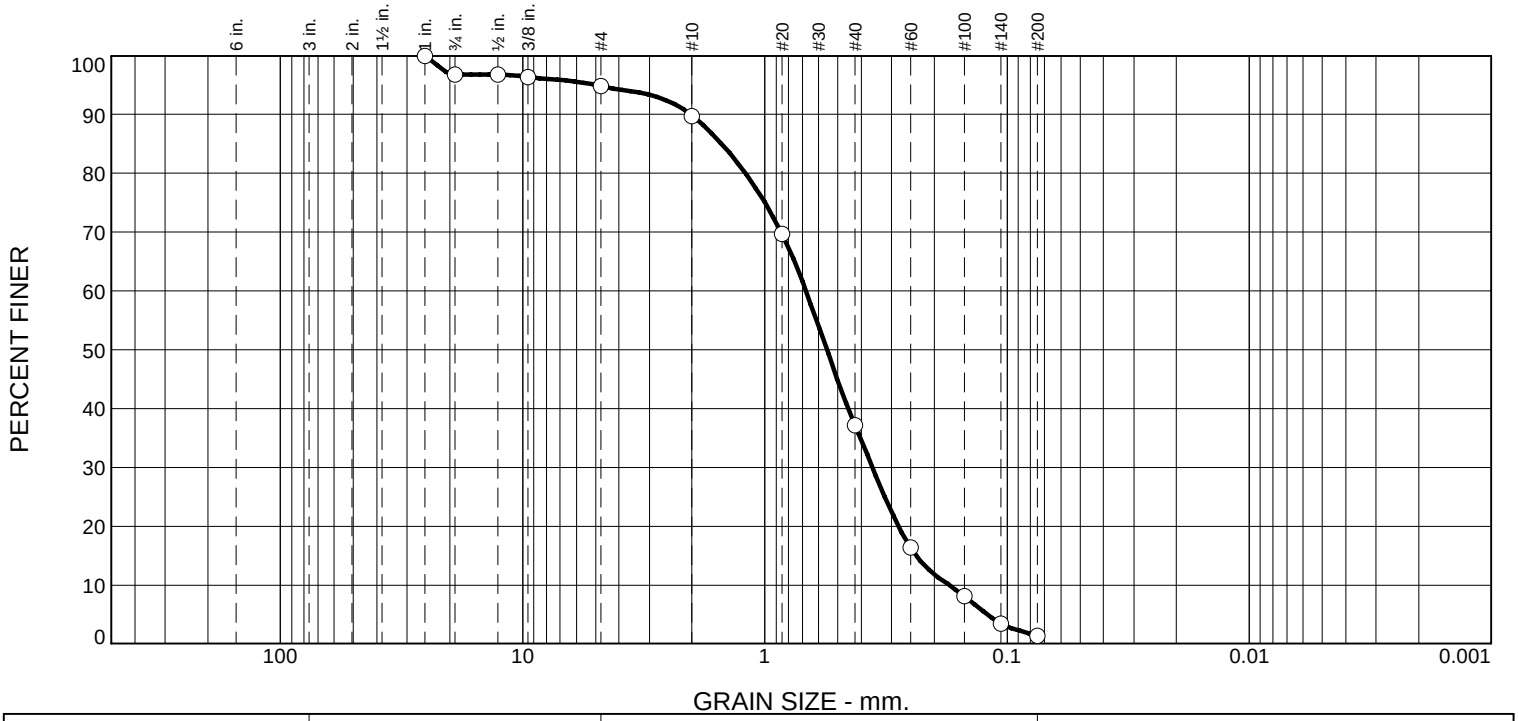
Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

Source of Sample: PA-23-526N W-C
Sample Number: 2A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.2	1.9	5.1	52.6	35.9	1.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
1"	100.0		
0.75"	96.8		
0.5"	96.8		
0.375"	96.4		
#4	94.9		
#10	89.8		
#20	69.7		
#40	37.2		
#60	16.3		
#100	8.1		
#140	3.5		
#200	1.3		

· (no specification provided)

Material Description

Light Brown

Sieve Test (ASTM D6913)

Test Date: 3/10/13 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 2.0312 D_{85}= 1.5087

D_{60}= 0.6766 D_{50}= 0.5543

D_{30}= 0.3602 D_{15}= 0.2373

D_{10}= 0.1739

C_u= 3.89 C_c= 1.10

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 2B

INSIGHT GROUP
A CHRISTOPHER COMPANY

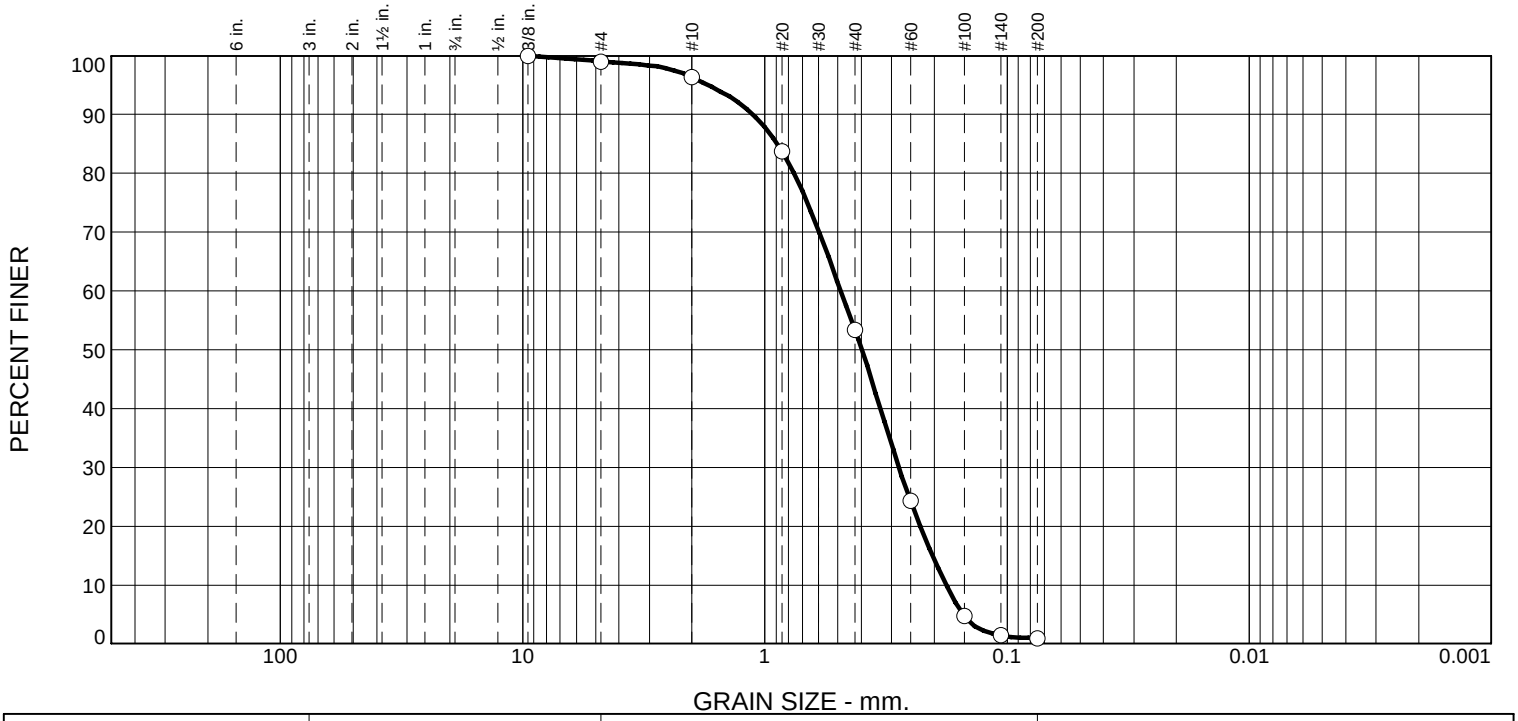
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	2.7	42.9	52.4	1.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.0		
#10	96.3		
#20	83.7		
#40	53.4		
#60	24.3		
#100	4.8		
#140	1.4		
#200	1.0		

* (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 1.1207 D_{85}= 0.8889

D_{60}= 0.4853 D_{50}= 0.3977

D_{30}= 0.2798 D_{15}= 0.2030

D_{10}= 0.1785

C_u= 2.72 C_c= 0.90

Sieve Test (ASTM D6913)

Test Date: 3/20/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 2C

INSIGHT GROUP
A CHRISTOPHER COMPANY

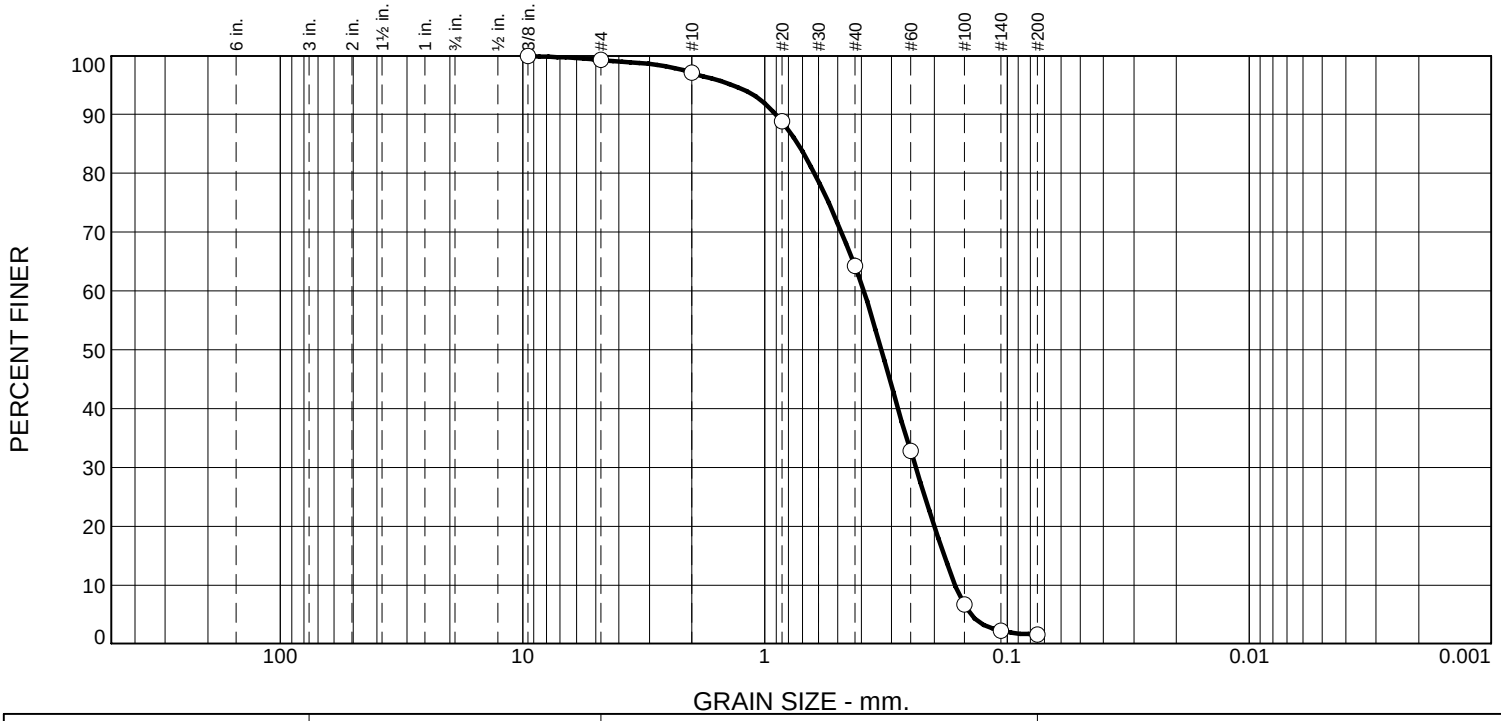
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	2.2	32.9	62.6	1.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.3		
#10	97.1		
#20	88.8		
#40	64.2		
#60	32.8		
#100	6.7		
#140	2.2		
#200	1.6		

* (no specification provided)

Material Description
Light Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.8983 D_{85}= 0.7316
D_{60}= 0.3912 D_{50}= 0.3308
D_{30}= 0.2376 D_{15}= 0.1821
D_{10}= 0.1639
C_u= 2.39 C_c= 0.88

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)
SP

Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

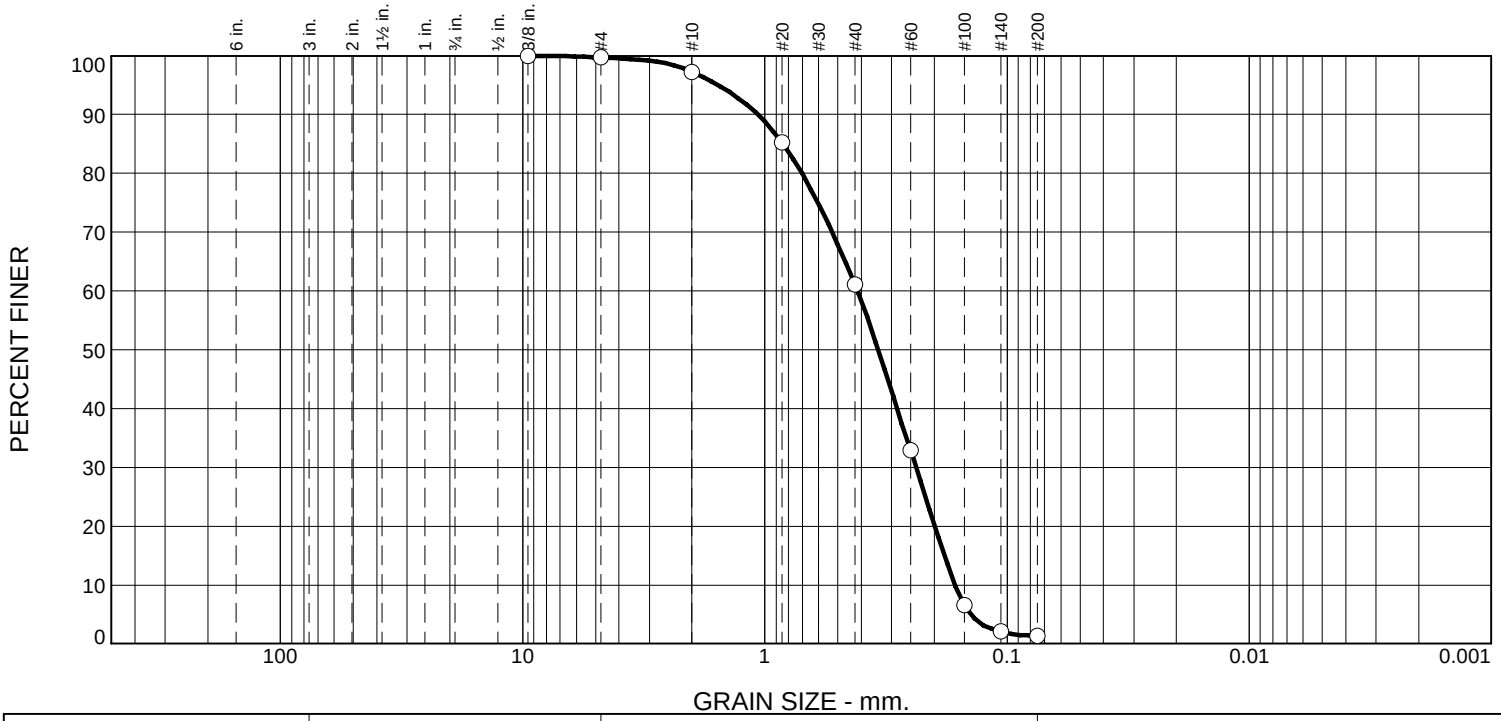
Source of Sample: PA-23-526N W-C
Sample Number: 2D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	2.4	36.2	59.8	1.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.7		
#10	97.3		
#20	85.2		
#40	61.1		
#60	32.9		
#100	6.6		
#140	2.1		
#200	1.3		

* (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 1.0707 D_{85}= 0.8426

D_{60}= 0.4150 D_{50}= 0.3408

D_{30}= 0.2369 D_{15}= 0.1817

D_{10}= 0.1639

C_u= 2.53 C_c= 0.82

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 2E

INSIGHT GROUP
A CHRISTOPHER COMPANY

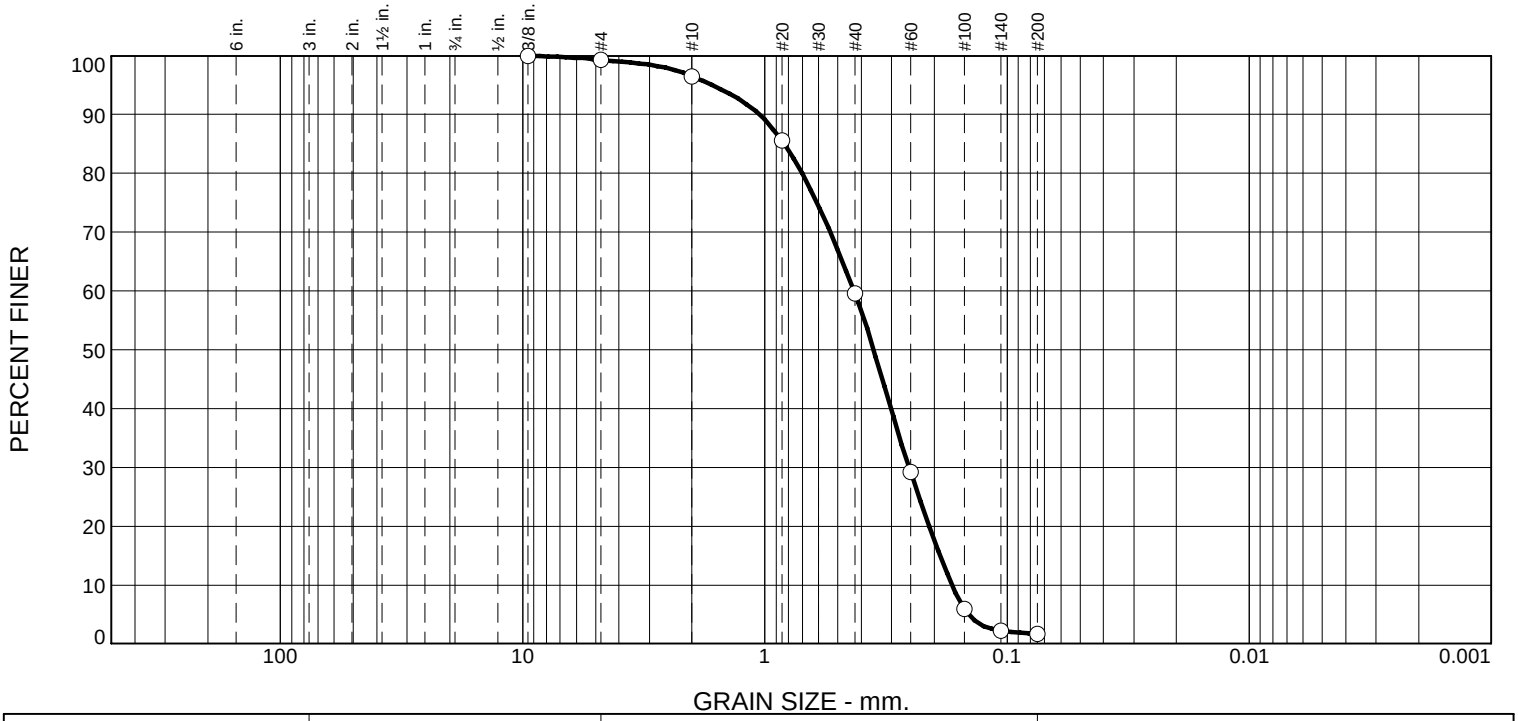
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	2.8	36.9	57.9	1.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.3		
#10	96.5		
#20	85.6		
#40	59.6		
#60	29.2		
#100	5.9		
#140	2.3		
#200	1.7		

· (no specification provided)

Material Description
Light Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.0550 D_{85}= 0.8317
D_{60}= 0.4289 D_{50}= 0.3561
D_{30}= 0.2537 D_{15}= 0.1893
D_{10}= 0.1689
C_u= 2.54 C_c= 0.89

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)
SP

Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

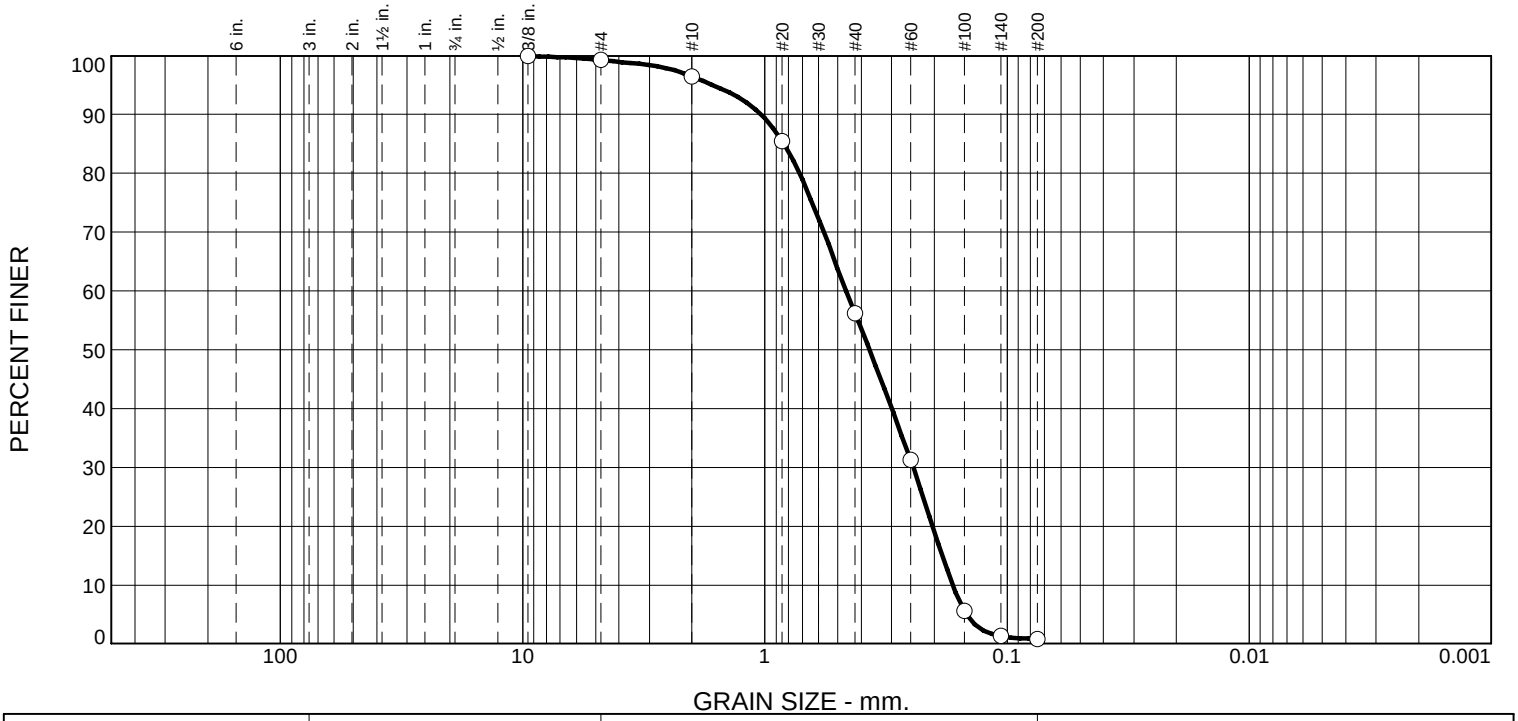
Source of Sample: PA-23-526N W-C
Sample Number: 2F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	2.8	40.2	55.5	0.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.3		
#10	96.5		
#20	85.5		
#40	56.3		
#60	31.3		
#100	5.6		
#140	1.3		
#200	0.8		

* (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 1.0396 D_{85}= 0.8345

D_{60}= 0.4614 D_{50}= 0.3703

D_{30}= 0.2435 D_{15}= 0.1855

D_{10}= 0.1679

C_u= 2.75 C_c= 0.77

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: Comp 2

INSIGHT GROUP
A CHRISTOPHER COMPANY

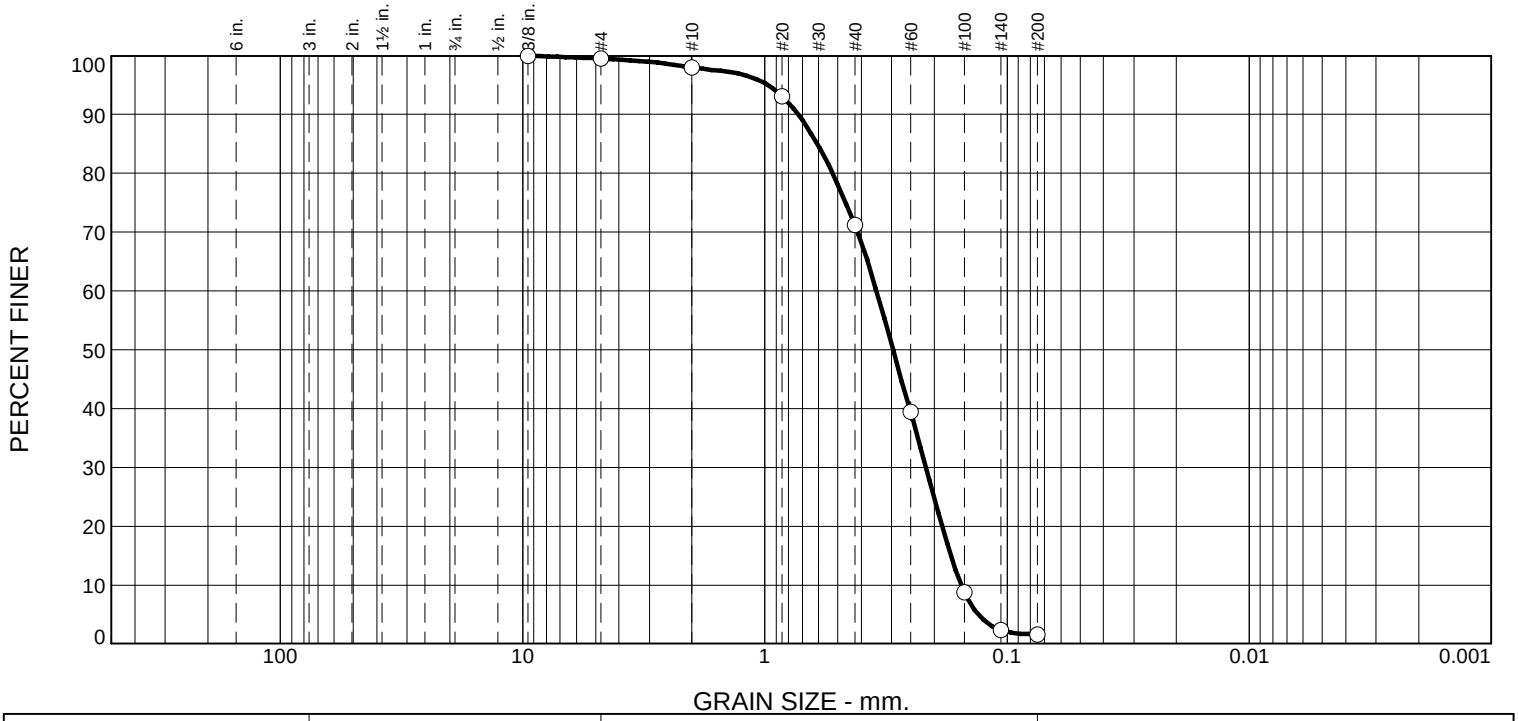
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	1.5	26.8	69.7	1.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.5		
#10	98.0		
#20	93.2		
#40	71.2		
#60	39.4		
#100	8.7		
#140	2.4		
#200	1.5		

· (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7274 D_{85}= 0.6071

D_{60}= 0.3462 D_{50}= 0.2957

D_{30}= 0.2159 D_{15}= 0.1707

D_{10}= 0.1547

C_u= 2.24 C_c= 0.87

Sieve Test (ASTM D6913)

Test Date: 3/20/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 3A

INSIGHT GROUP
A CHRISTOPHER COMPANY

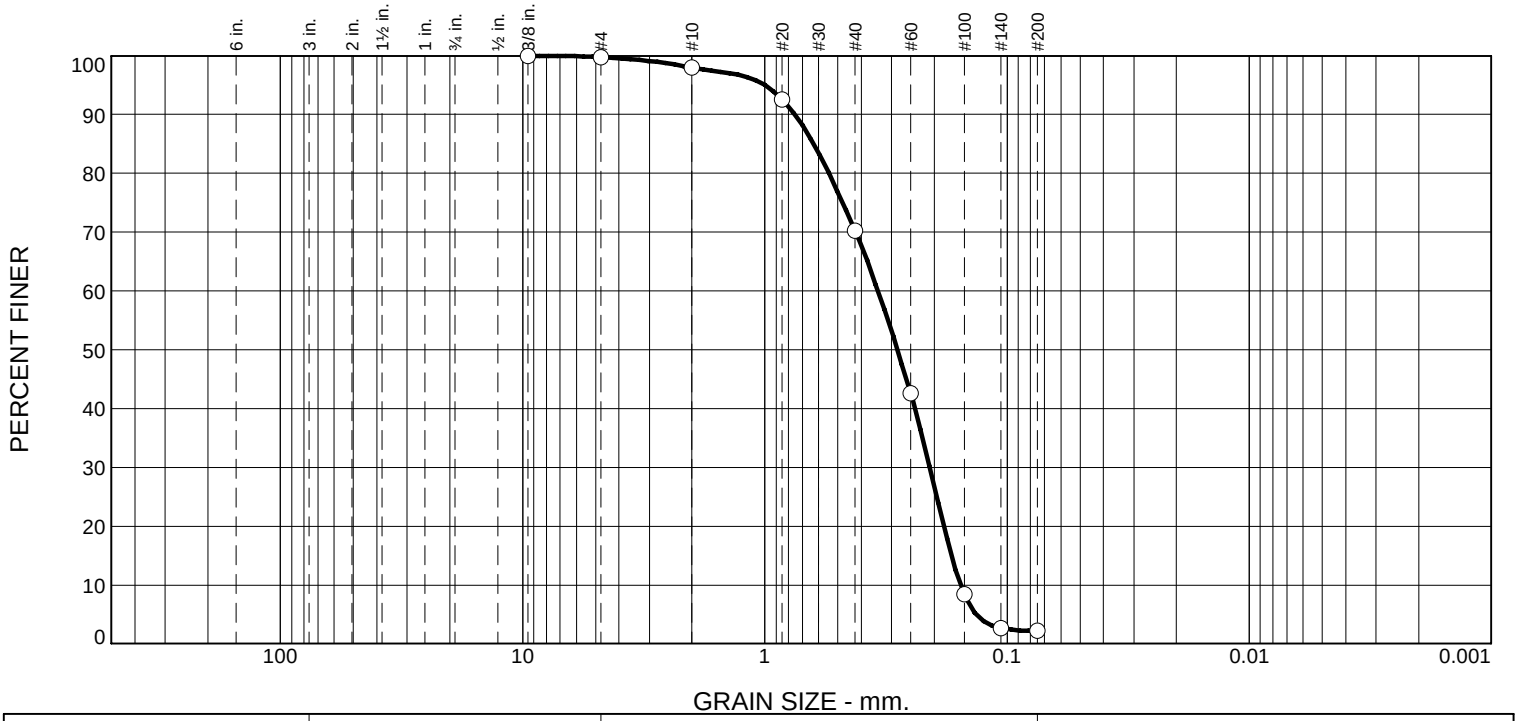
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	1.7	27.7	68.1	2.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.7		
#10	98.0		
#20	92.6		
#40	70.3		
#60	42.6		
#100	8.4		
#140	2.7		
#200	2.2		

* (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7522 D_{85}= 0.6292

D_{60}= 0.3412 D_{50}= 0.2837

D_{30}= 0.2086 D_{15}= 0.1696

D_{10}= 0.1554

C_u= 2.20 C_c= 0.82

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 3B

INSIGHT GROUP
A CHRISTOPHER COMPANY

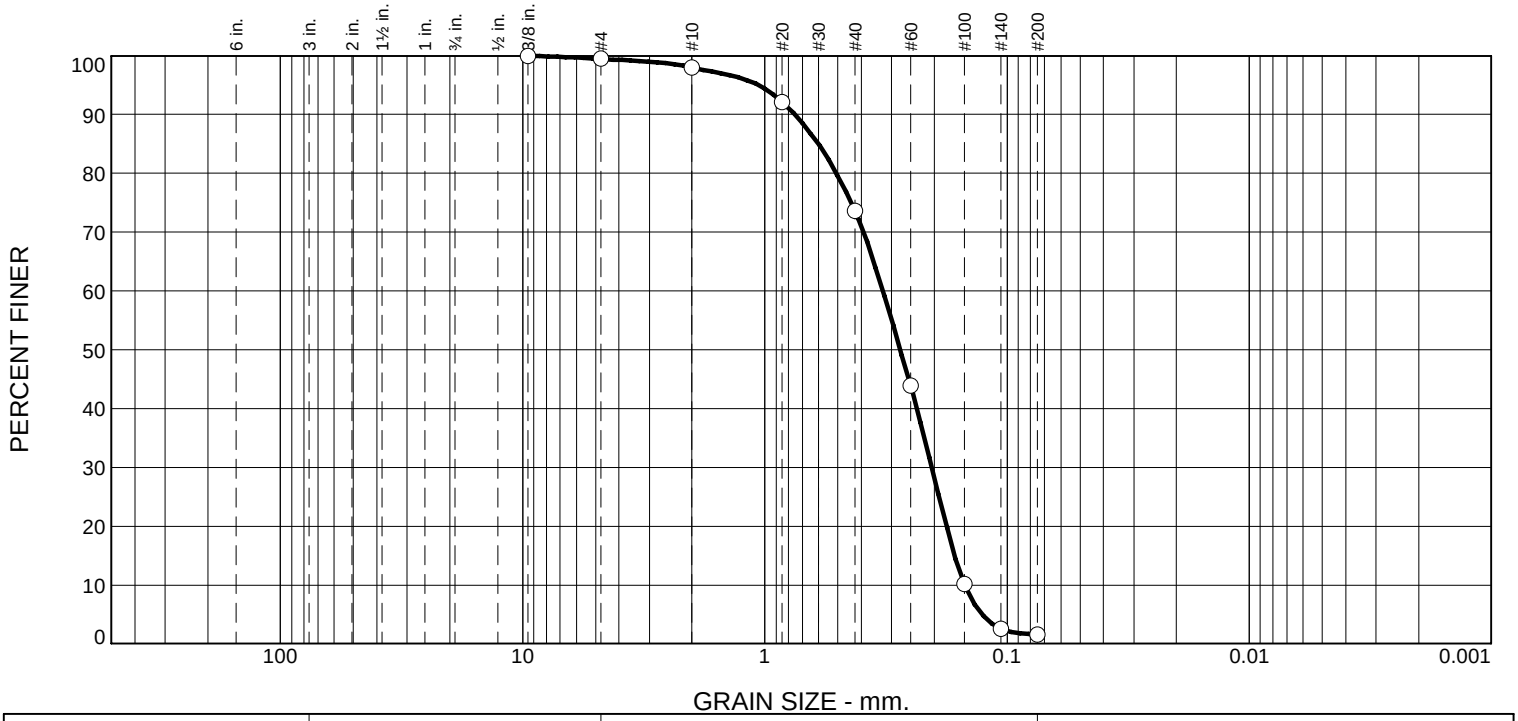
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	1.5	24.4	72.0	1.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.5		
#10	98.0		
#20	92.2		
#40	73.6		
#60	43.9		
#100	10.2		
#140	2.6		
#200	1.6		

* (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7530 D_{85}= 0.6009

D_{60}= 0.3257 D_{50}= 0.2761

D_{30}= 0.2047 D_{15}= 0.1646

D_{10}= 0.1494

C_u= 2.18 C_c= 0.86

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 3C

INSIGHT GROUP
A CHRISTOPHER COMPANY

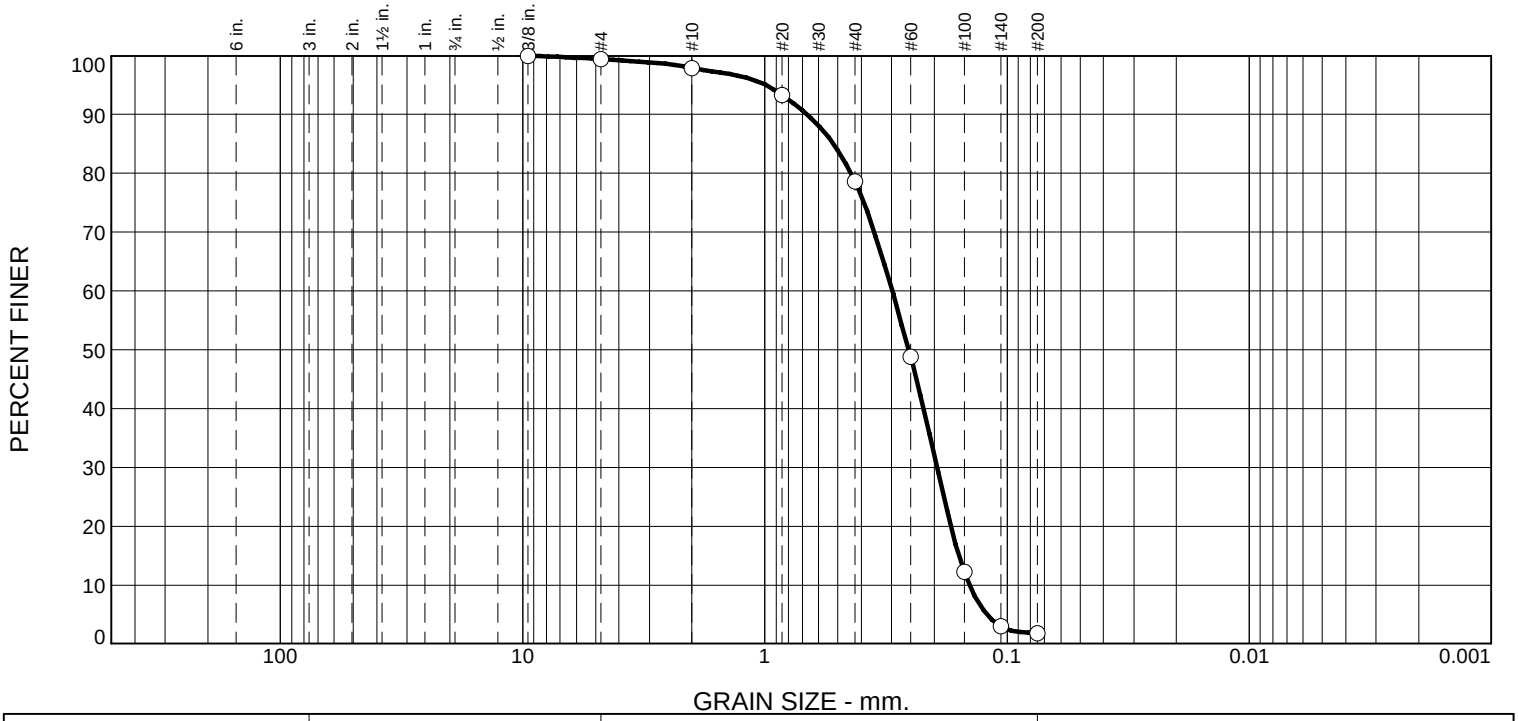
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	1.5	19.3	76.9	1.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.4		
#10	97.9		
#20	93.3		
#40	78.6		
#60	48.9		
#100	12.2		
#140	3.0		
#200	1.7		

* (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.6695 D_{85}= 0.5206

D_{60}= 0.2980 D_{50}= 0.2545

D_{30}= 0.1947 D_{15}= 0.1580

D_{10}= 0.1429

C_u= 2.09 C_c= 0.89

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 3D

INSIGHT GROUP
A CHRISTOPHER COMPANY

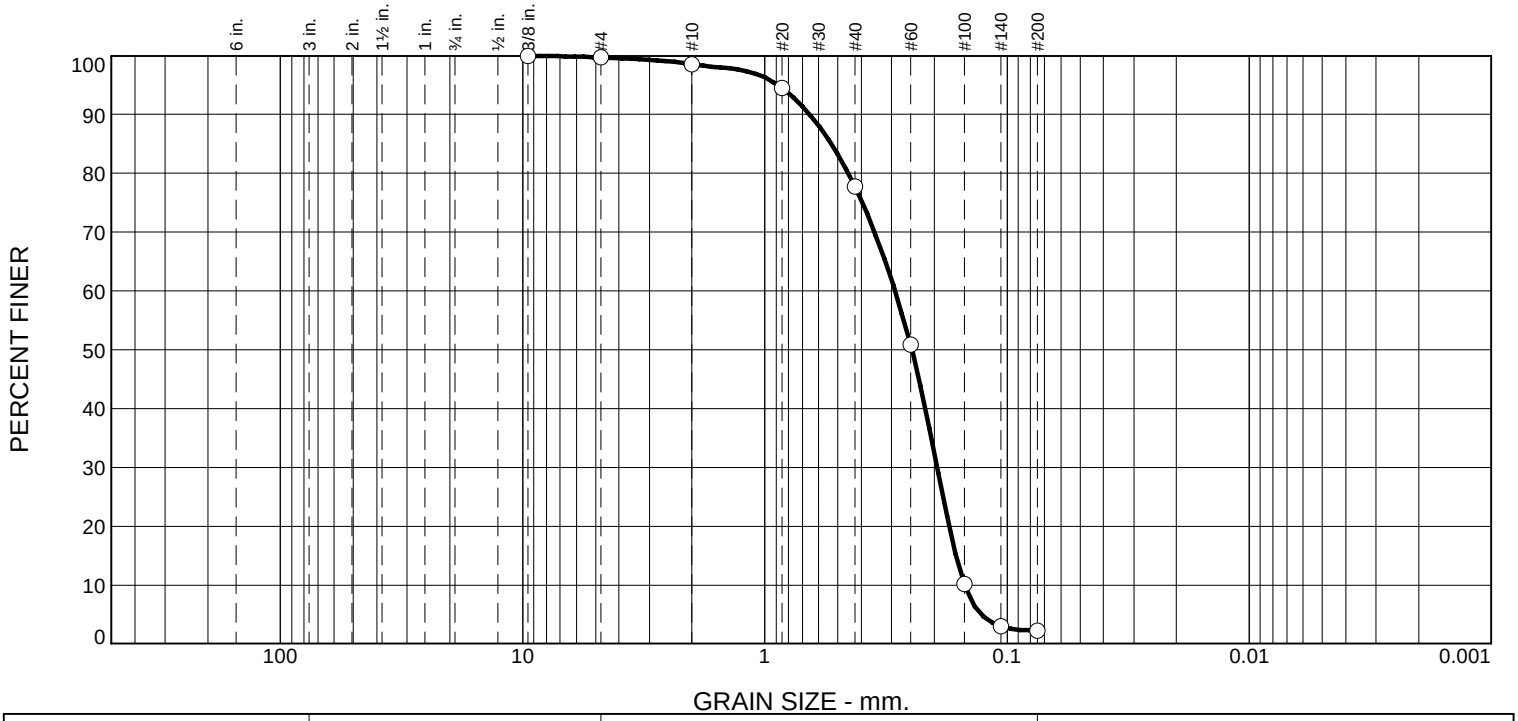
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	1.2	20.7	75.6	2.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.7		
#10	98.5		
#20	94.5		
#40	77.8		
#60	50.9		
#100	10.2		
#140	3.0		
#200	2.2		

· (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.6528 D_{85}= 0.5311

D_{60}= 0.2904 D_{50}= 0.2467

D_{30}= 0.1946 D_{15}= 0.1625

D_{10}= 0.1495

C_u= 1.94 C_c= 0.87

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 3E

INSIGHT GROUP
A CHRISTOPHER COMPANY

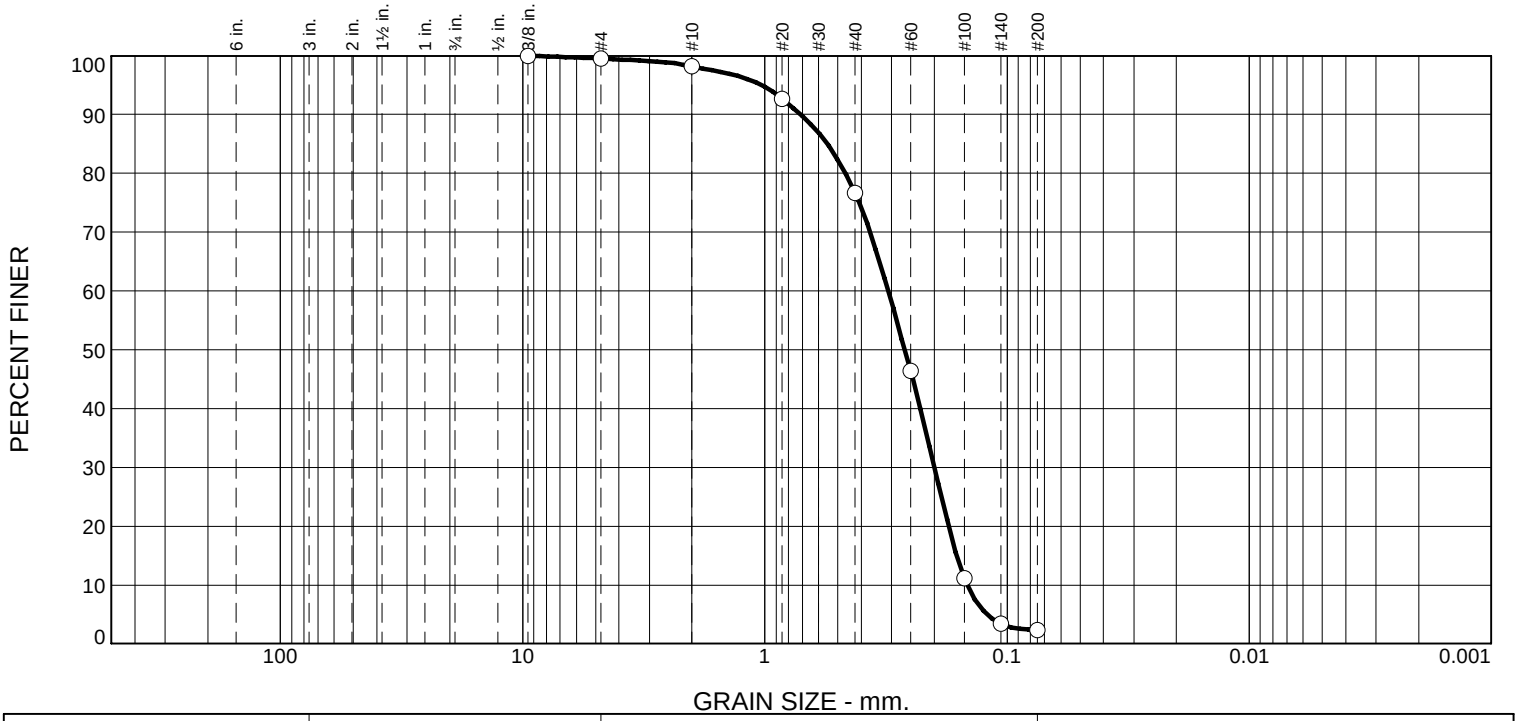
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	1.3	21.5	74.4	2.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.5		
#10	98.2		
#20	92.7		
#40	76.7		
#60	46.4		
#100	11.2		
#140	3.4		
#200	2.3		

* (no specification provided)

Material Description
Light Brown

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.7113 D_{85}= 0.5524
D_{60}= 0.3098 D_{50}= 0.2645
D_{30}= 0.1995 D_{15}= 0.1613
D_{10}= 0.1460
C_u= 2.12 C_c= 0.88

USCS (ASTM D2487)
SP

Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

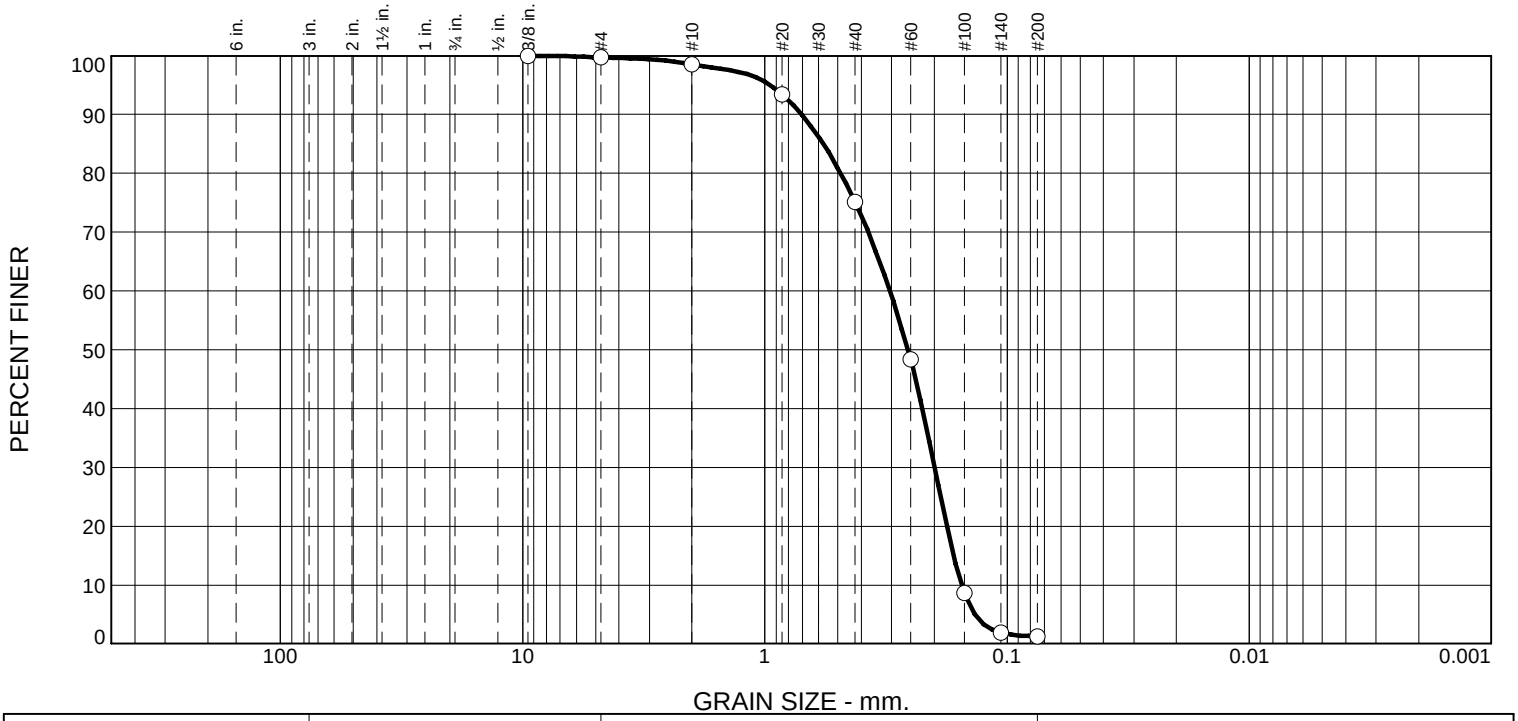
Source of Sample: PA-23-526N W-C
Sample Number: 3F

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	1.2	23.3	73.9	1.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.7		
#10	98.5		
#20	93.5		
#40	75.2		
#60	48.4		
#100	8.7		
#140	2.0		
#200	1.3		

* (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7052 D_{85}= 0.5735

D_{60}= 0.3048 D_{50}= 0.2565

D_{30}= 0.1991 D_{15}= 0.1663

D_{10}= 0.1538

C_u= 1.98 C_c= 0.85

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: Comp 3

INSIGHT GROUP
A CHRISTOPHER COMPANY

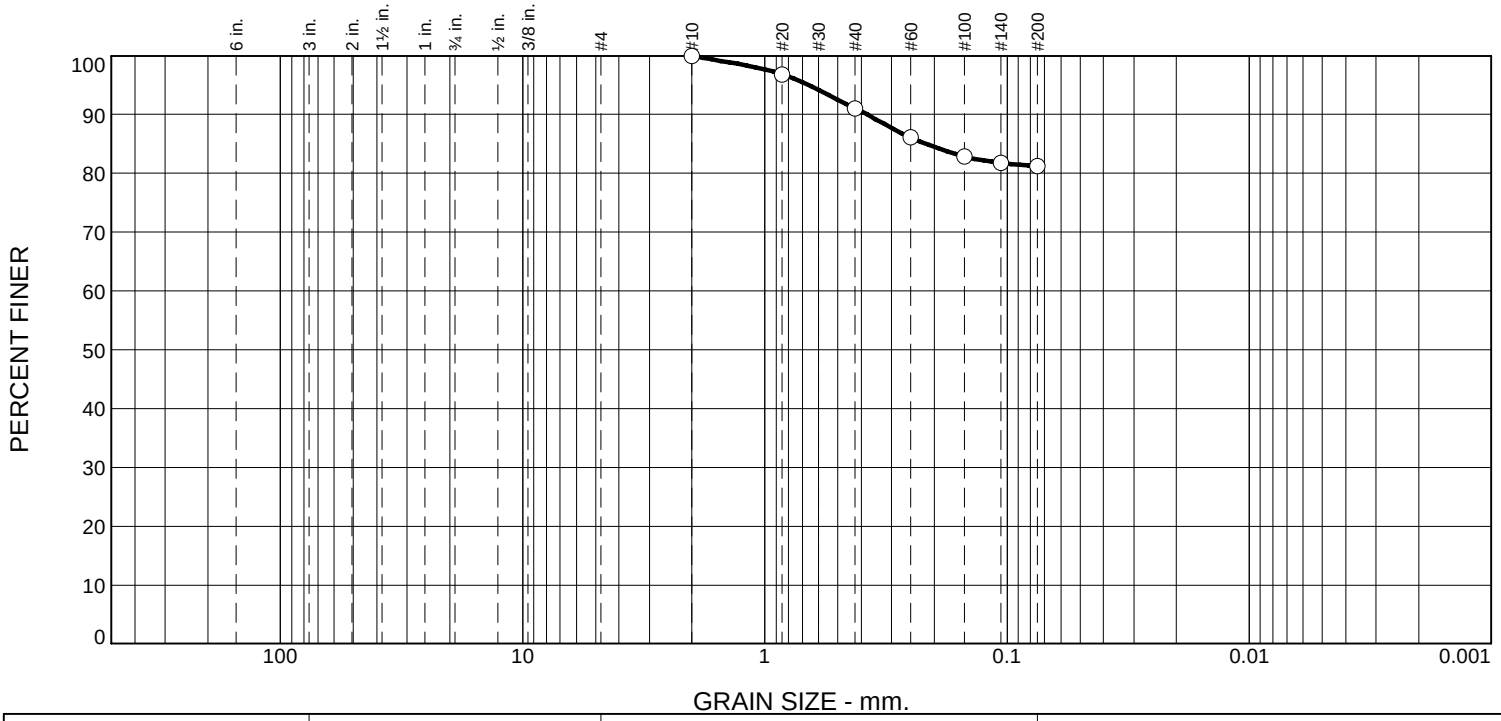
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.9	9.9	81.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	96.8		
#40	91.1		
#60	86.1		
#100	82.8		
#140	81.8		
#200	81.2		

· (no specification provided)

Material Description

Dark Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.3784 D_{85}= 0.2159

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

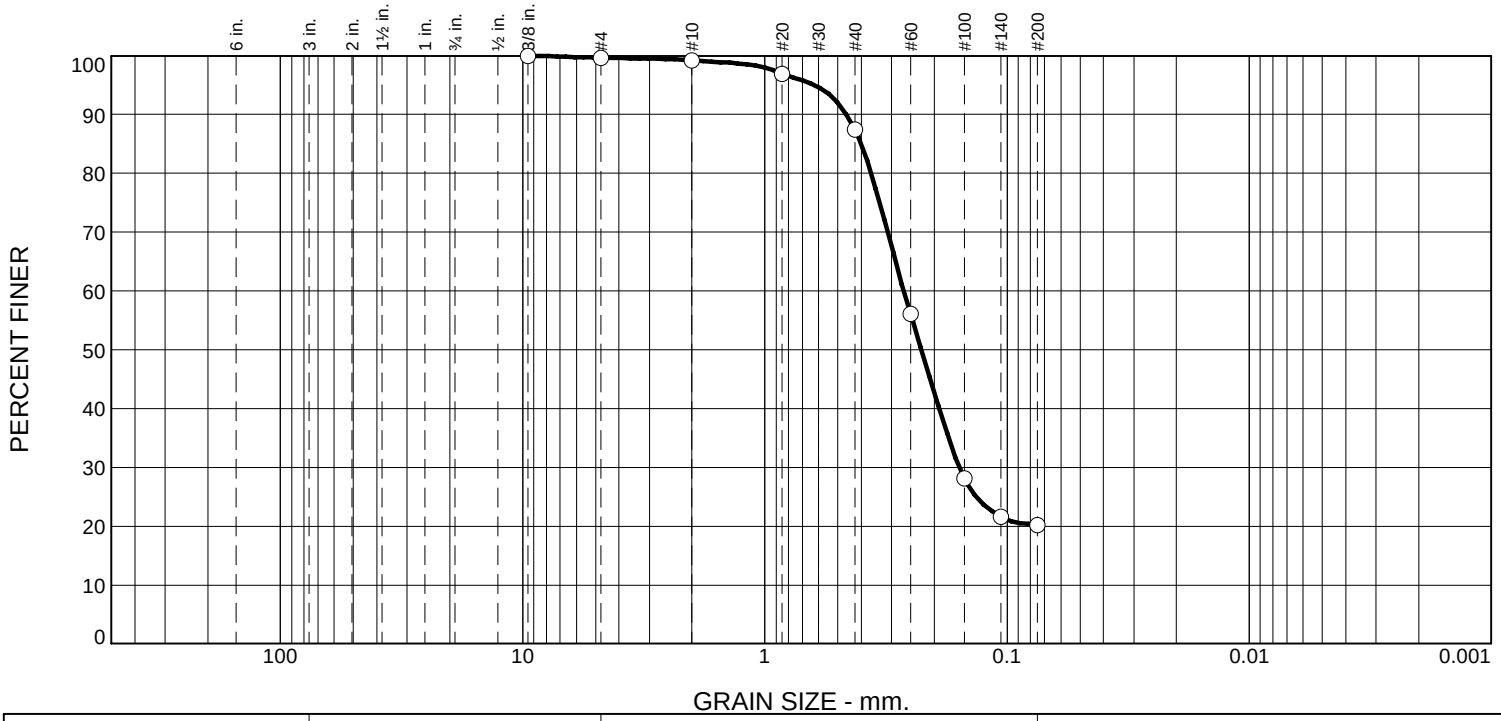
Source of Sample: PA-23-526N W-C
Sample Number: 4A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.5	11.8	67.2	20.2	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.7		
#10	99.2		
#20	96.9		
#40	87.4		
#60	56.1		
#100	28.1		
#140	21.6		
#200	20.2		

· (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.4605 D_{85}= 0.4008

D_{60}= 0.2669 D_{50}= 0.2255

D_{30}= 0.1573 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 4B

INSIGHT GROUP
A CHRISTOPHER COMPANY

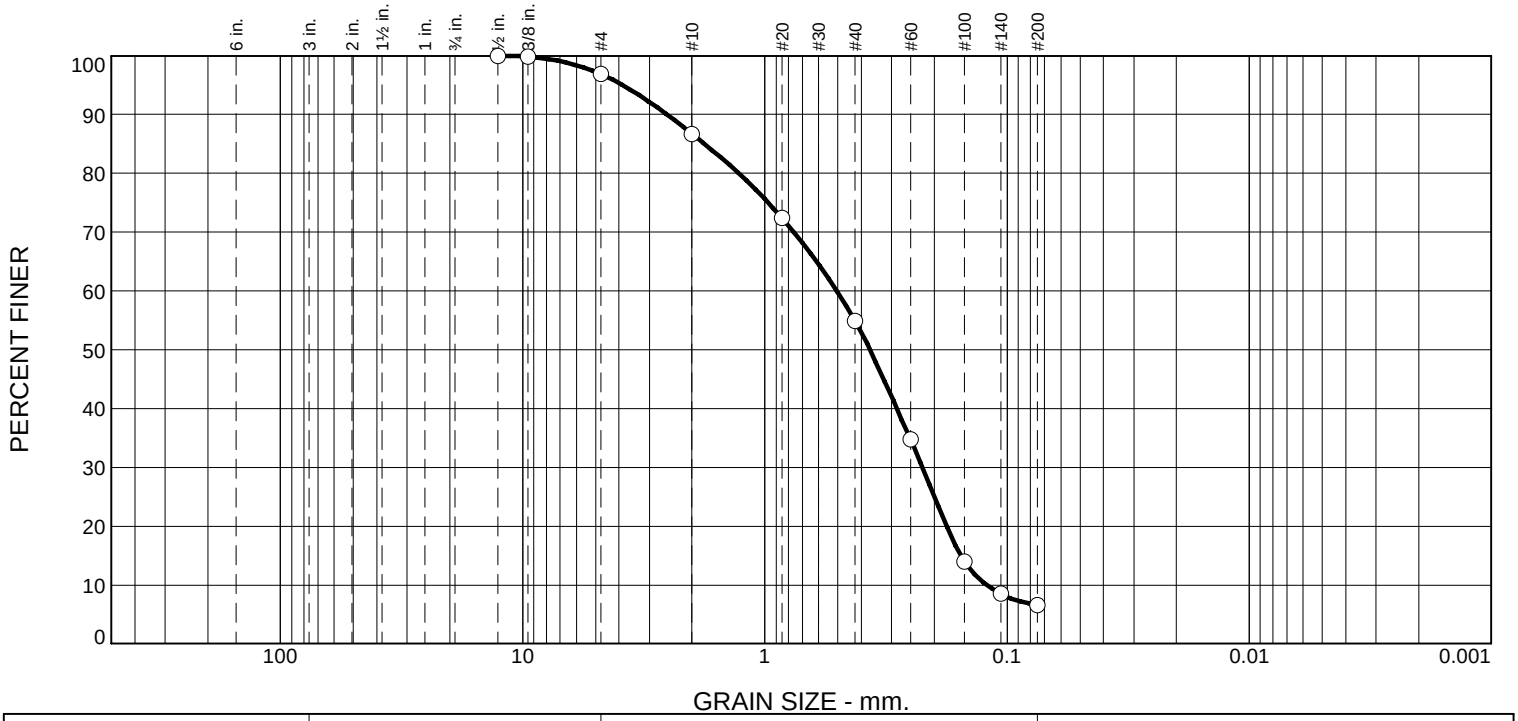
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.1	10.2	31.8	48.3	6.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	100.0		
0.375"	99.8		
#4	96.9		
#10	86.7		
#20	72.4		
#40	54.9		
#60	34.7		
#100	14.0		
#140	8.5		
#200	6.6		

* (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 2.5378 D_{85}= 1.7748

D_{60}= 0.5047 D_{50}= 0.3685

D_{30}= 0.2233 D_{15}= 0.1550

D_{10}= 0.1214

C_u= 4.16 C_c= 0.81

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 4C

INSIGHT GROUP
A CHRISTOPHER COMPANY

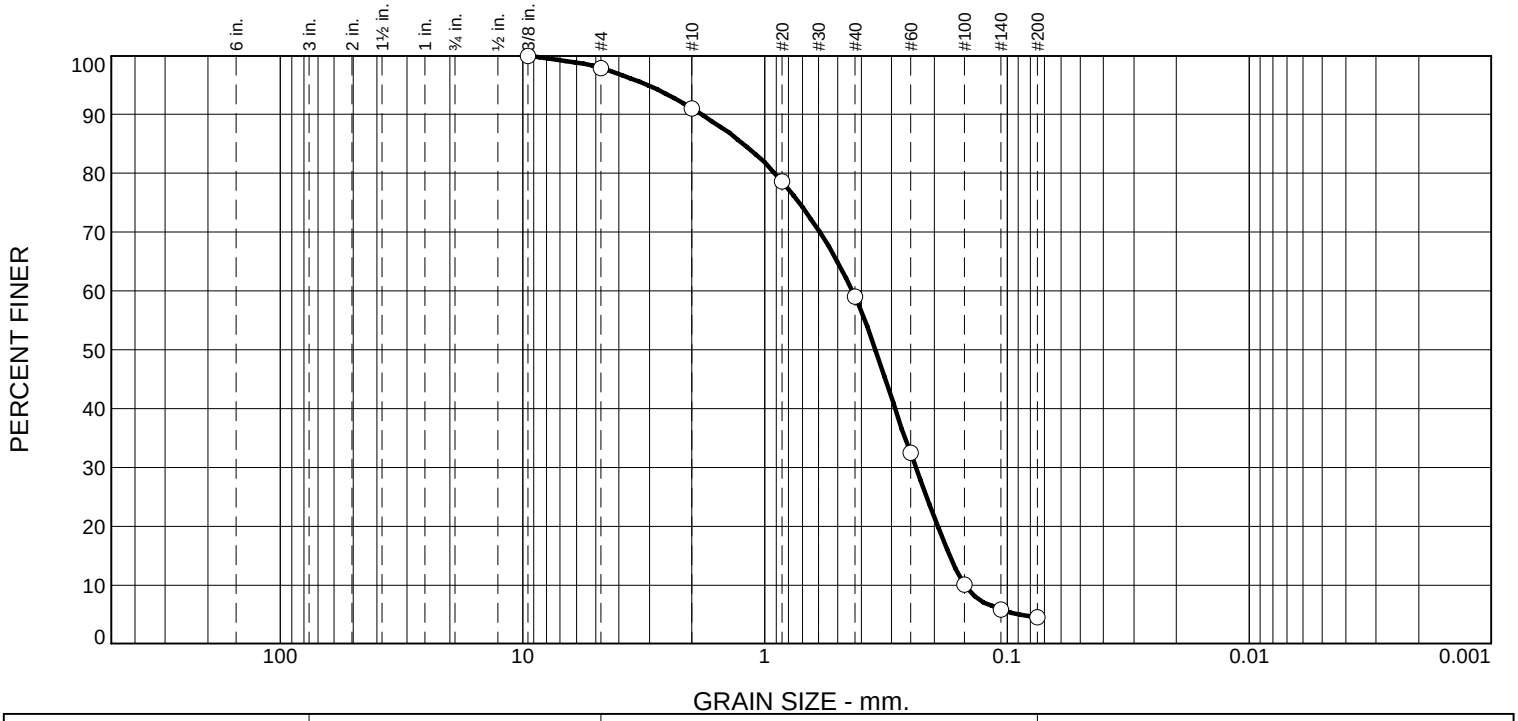
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.1	6.9	31.9	54.6	4.5	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	97.9		
#10	91.0		
#20	78.6		
#40	59.1		
#60	32.4		
#100	10.1		
#140	5.9		
#200	4.5		

* (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 1.8272 D_{85}= 1.2242

D_{60}= 0.4354 D_{50}= 0.3498

D_{30}= 0.2376 D_{15}= 0.1726

D_{10}= 0.1494

C_u= 2.91 C_c= 0.87

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

SP

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 4D

INSIGHT GROUP
A CHRISTOPHER COMPANY

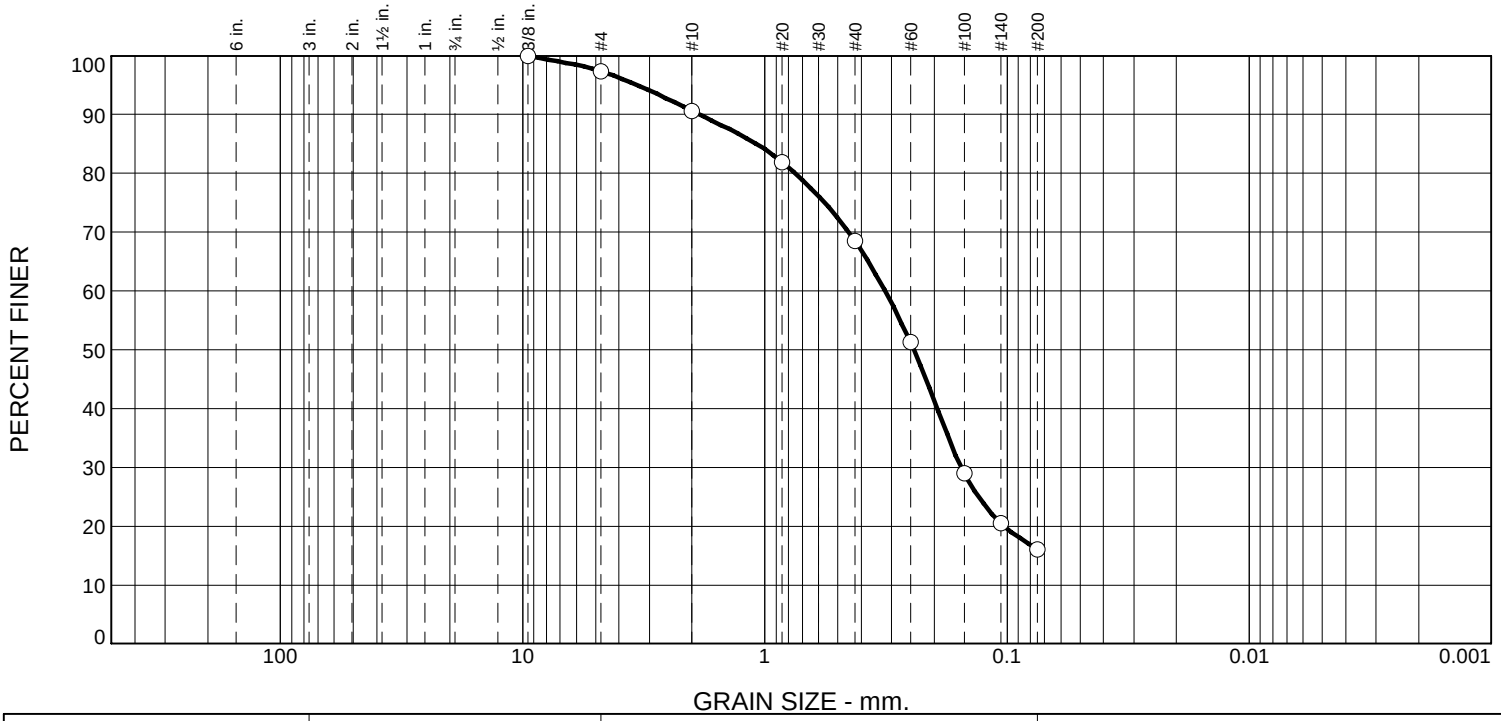
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.6	6.8	22.1	52.4	16.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	97.4		
#10	90.6		
#20	81.9		
#40	68.5		
#60	51.3		
#100	29.0		
#140	20.5		
#200	16.1		

· (no specification provided)

Material Description
Light Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.8687 D_{85}= 1.0837
D_{60}= 0.3192 D_{50}= 0.2421
D_{30}= 0.1545 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

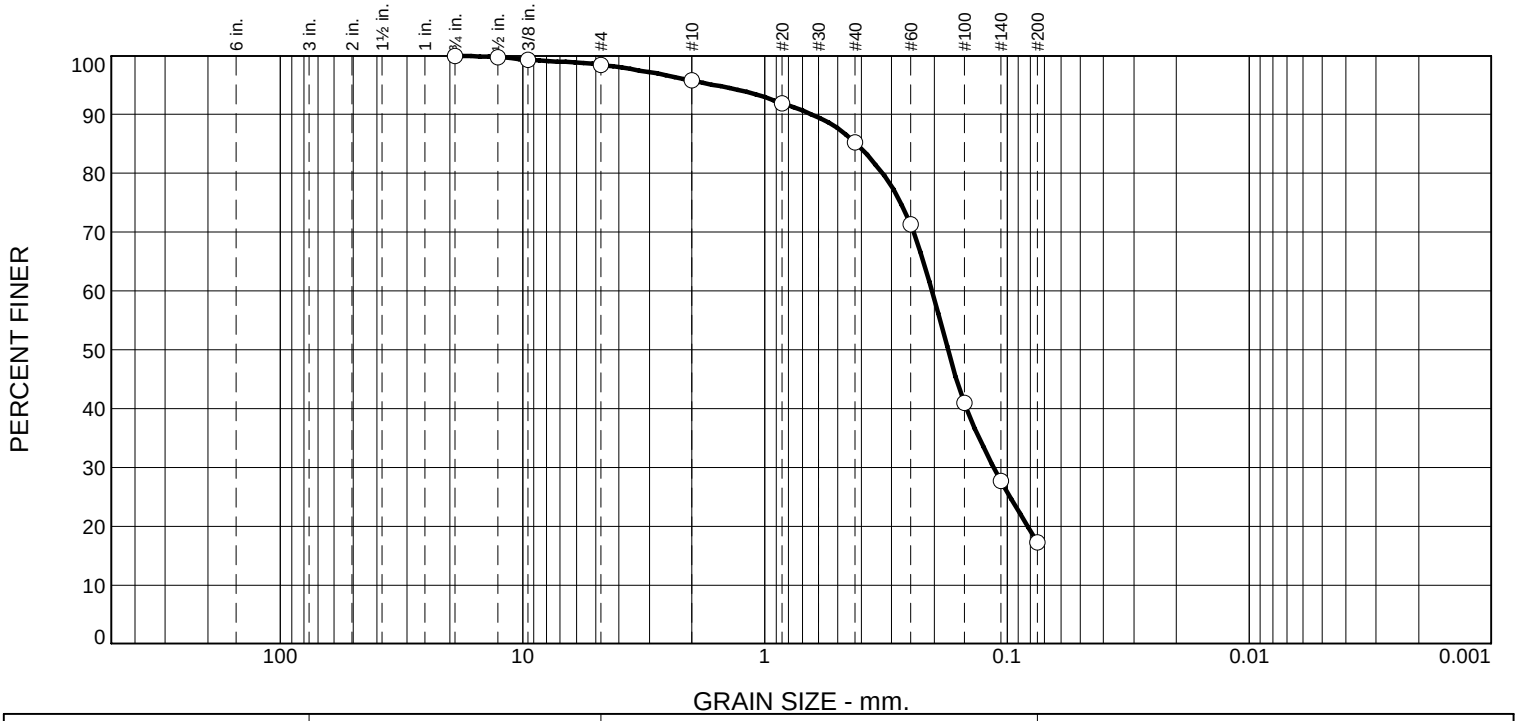
Source of Sample: PA-23-526N W-C
Sample Number: 4E

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.6	2.6	10.6	67.9	17.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.75"	100.0		
0.5"	99.7		
0.375"	99.3		
#4	98.4		
#10	95.8		
#20	91.9		
#40	85.2		
#60	71.4		
#100	40.9		
#140	27.7		
#200	17.3		

· (no specification provided)

Material Description

Light Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.6386 D_{85}= 0.4195

D_{60}= 0.2042 D_{50}= 0.1754

D_{30}= 0.1135 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 4F

INSIGHT GROUP
A CHRISTOPHER COMPANY

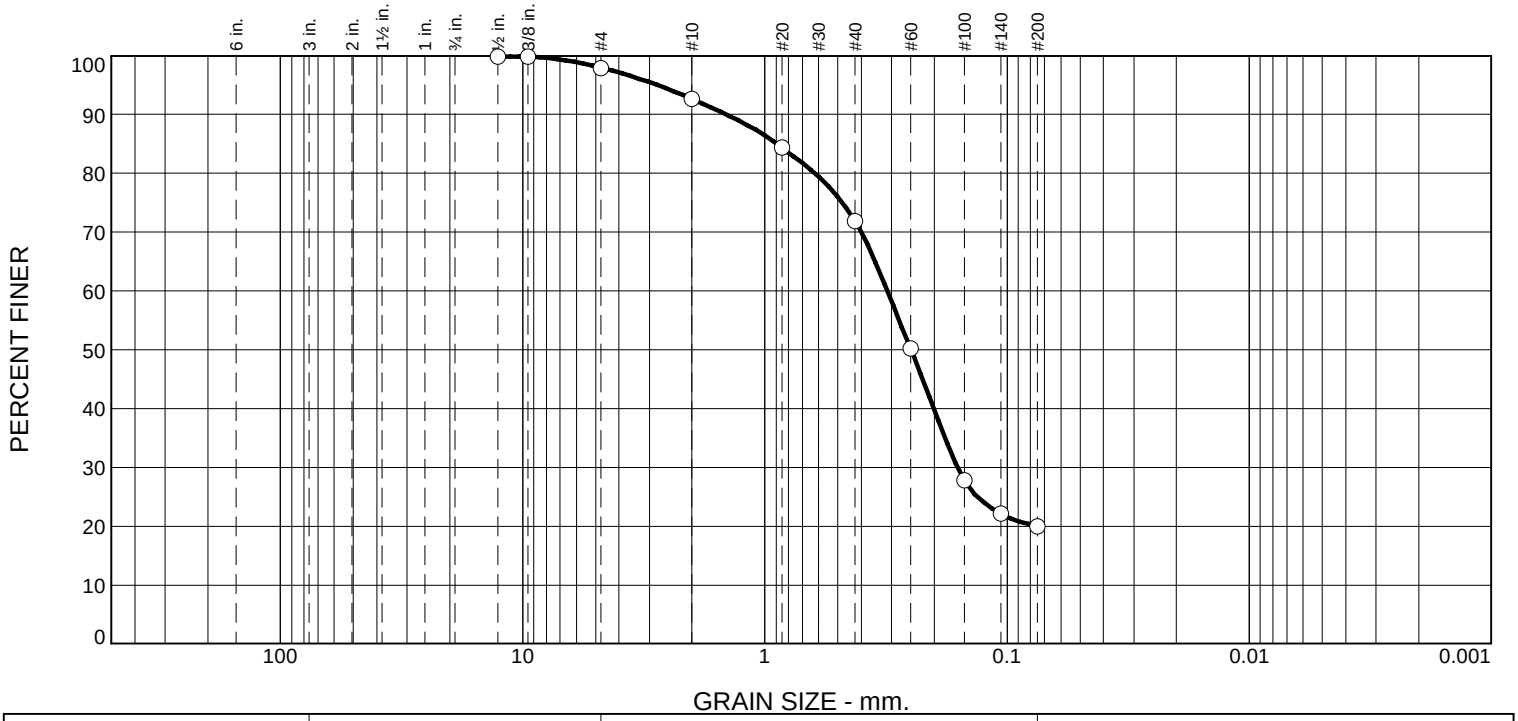
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
			5.3	20.7	51.9	20.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.5"	99.8		
0.375"	99.8		
#4	97.9		
#10	92.6		
#20	84.4		
#40	71.9		
#60	50.2		
#100	27.8		
#140	22.1		
#200	20.0		

· (no specification provided)

Material Description

Dark Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 1.4402 D_{85}= 0.8915

D_{60}= 0.3121 D_{50}= 0.2488

D_{30}= 0.1600 D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: Comp 4

INSIGHT GROUP
A CHRISTOPHER COMPANY

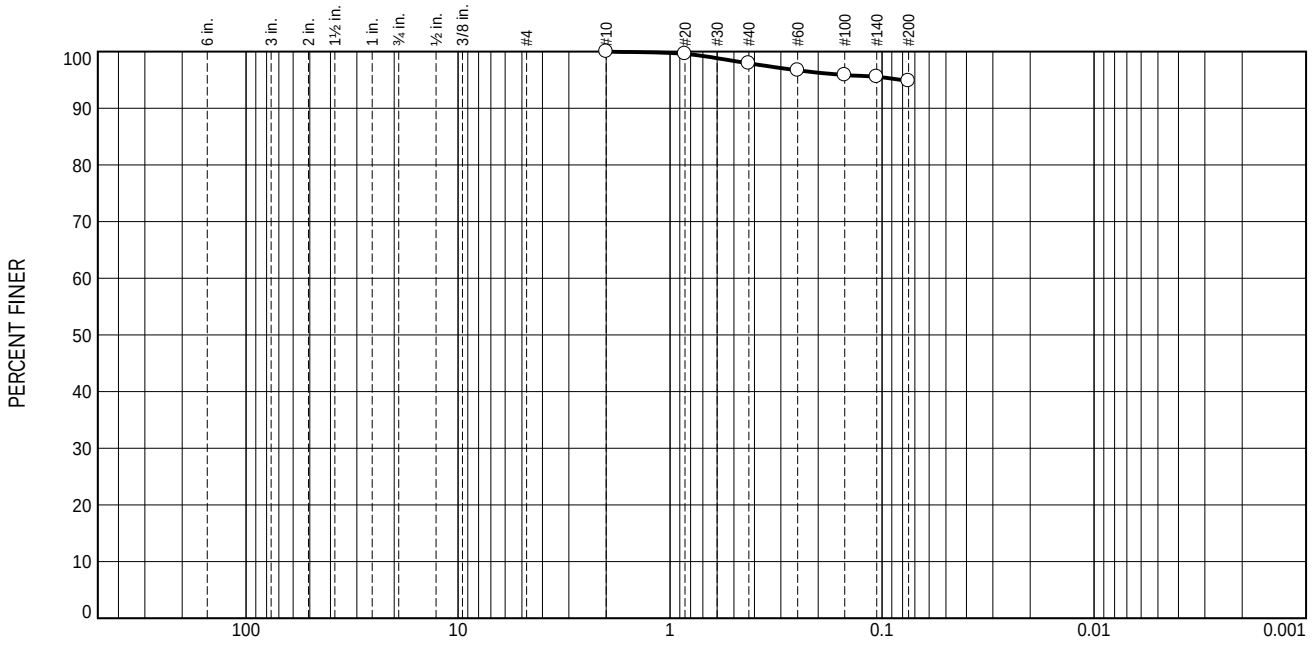
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.1	3.1	94.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.6		
#40	97.9		
#60	96.7		
#100	95.9		
#140	95.5		
#200	94.8		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 5A

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3.1.23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/25/28
Date Received: 2/27/28
Checked By: J. Hatch
Title: Sr Engineer

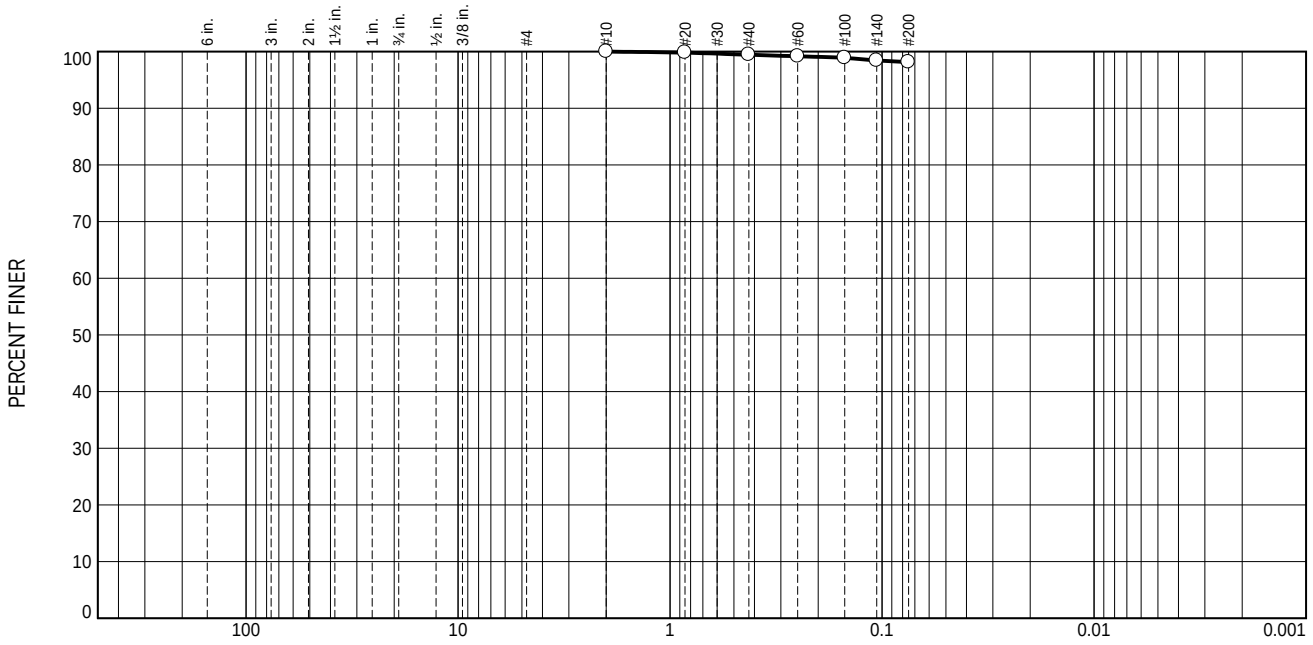
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	1.2	98.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.4		
#60	99.2		
#100	98.9		
#140	98.4		
#200	98.2		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 5B

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

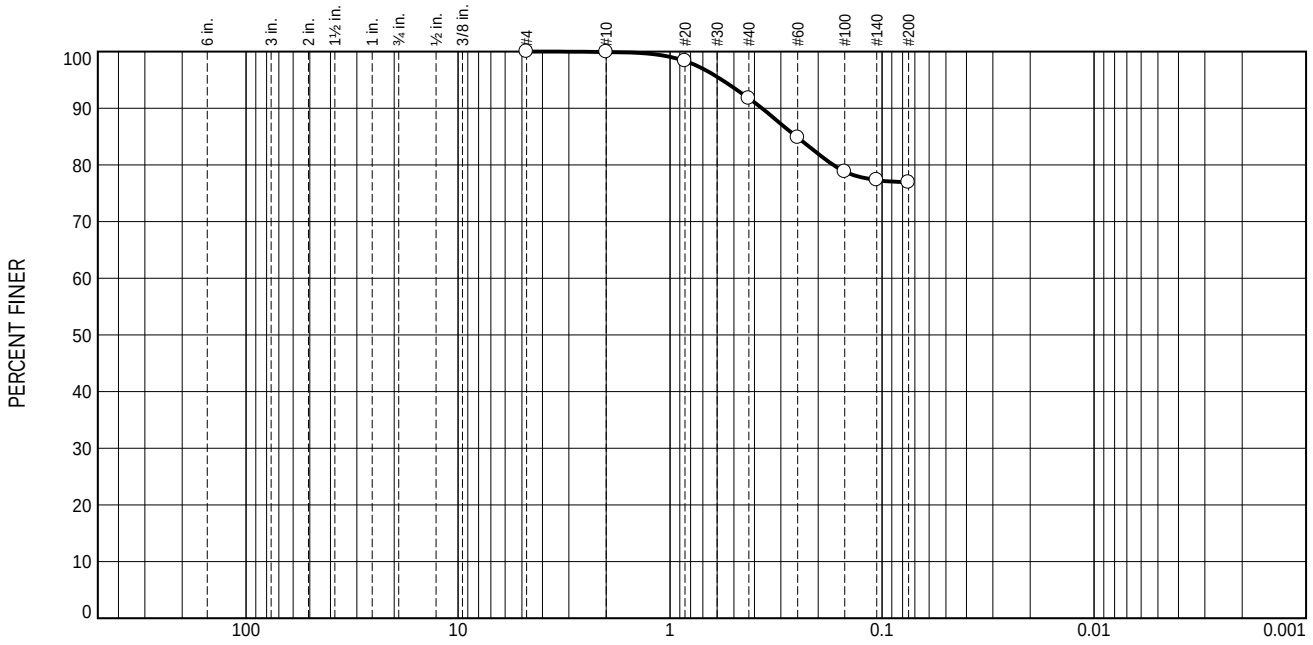
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	8.1	14.9	76.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	98.4		
#40	91.8		
#60	84.8		
#100	78.8		
#140	77.3		
#200	76.9		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 5C

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3682 D_{85}= 0.2534
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

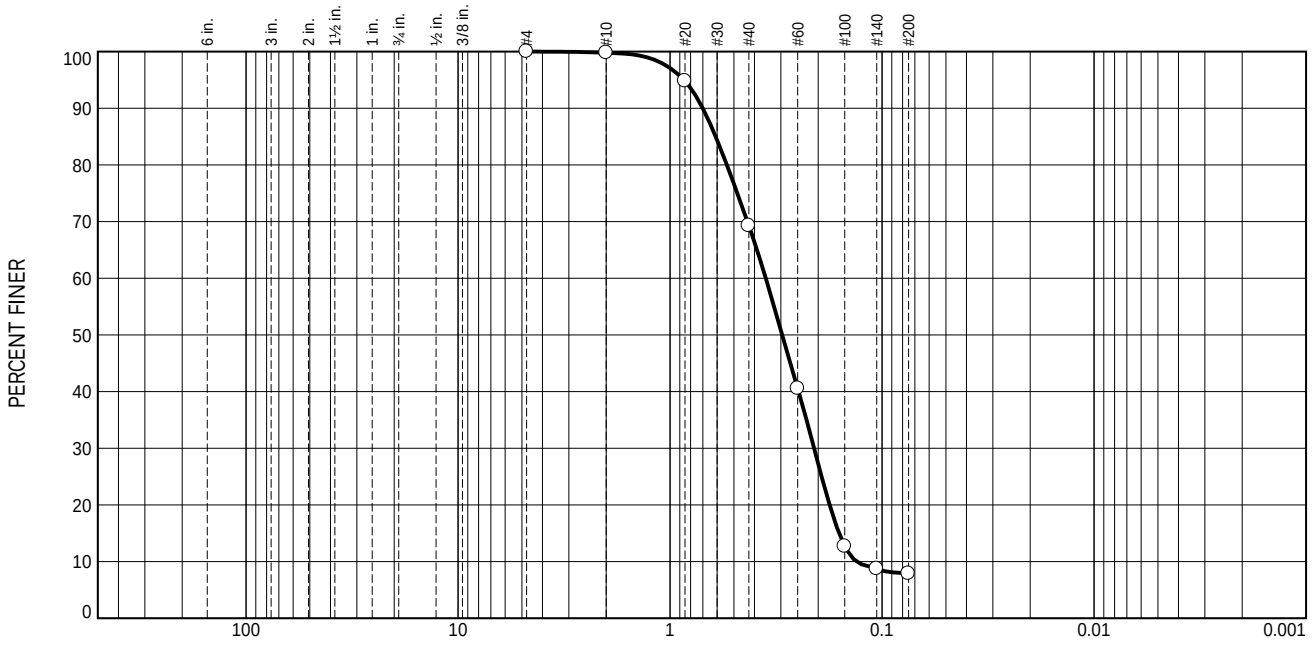
Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	30.5	61.4	7.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	94.8		
#40	69.3		
#60	40.5		
#100	12.7		
#140	8.7		
#200	7.9		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 5D

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 2/28/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7011 D_{85}= 0.6091
D_{60}= 0.3536 D_{50}= 0.2959
D_{30}= 0.2093 D_{15}= 0.1595
D_{10}= 0.1321
C_u= 2.68 C_c= 0.94

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

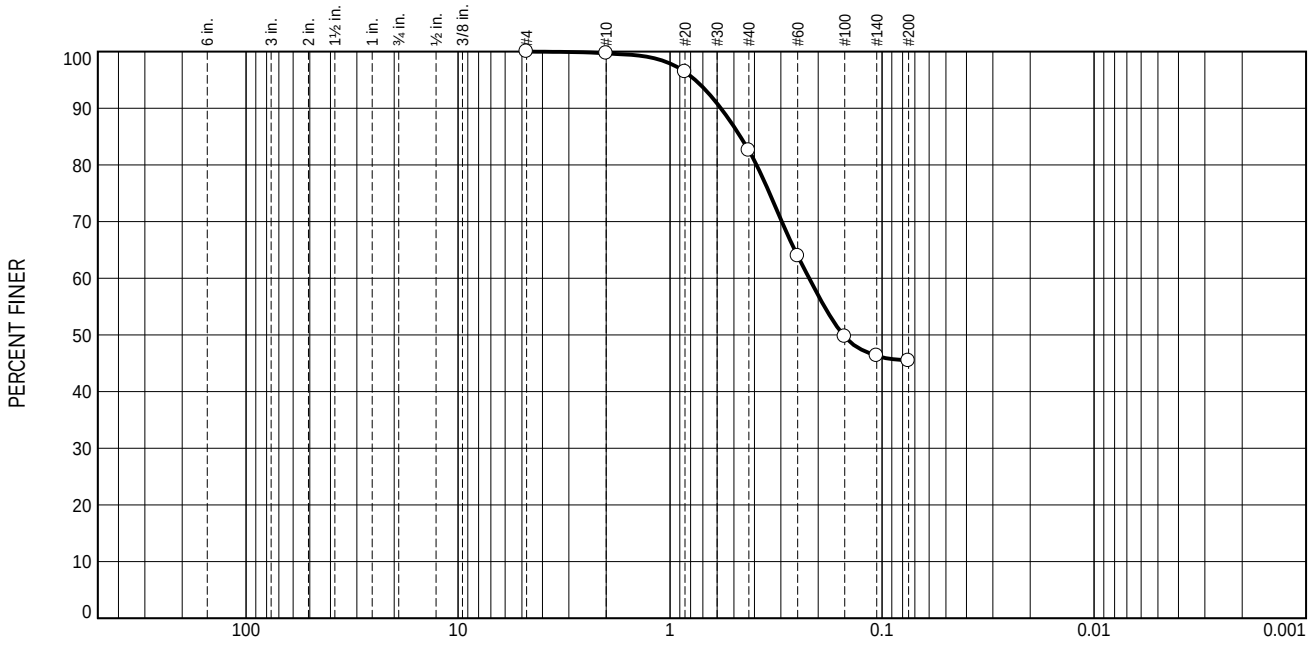
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	17.2	37.1	45.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	96.4		
#40	82.5		
#60	63.9		
#100	49.7		
#140	46.3		
#200	45.4		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 5 Comp

Material Description
Gray Brown and Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.5758 D_{85}= 0.4660
D_{60}= 0.2207 D_{50}= 0.1523
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

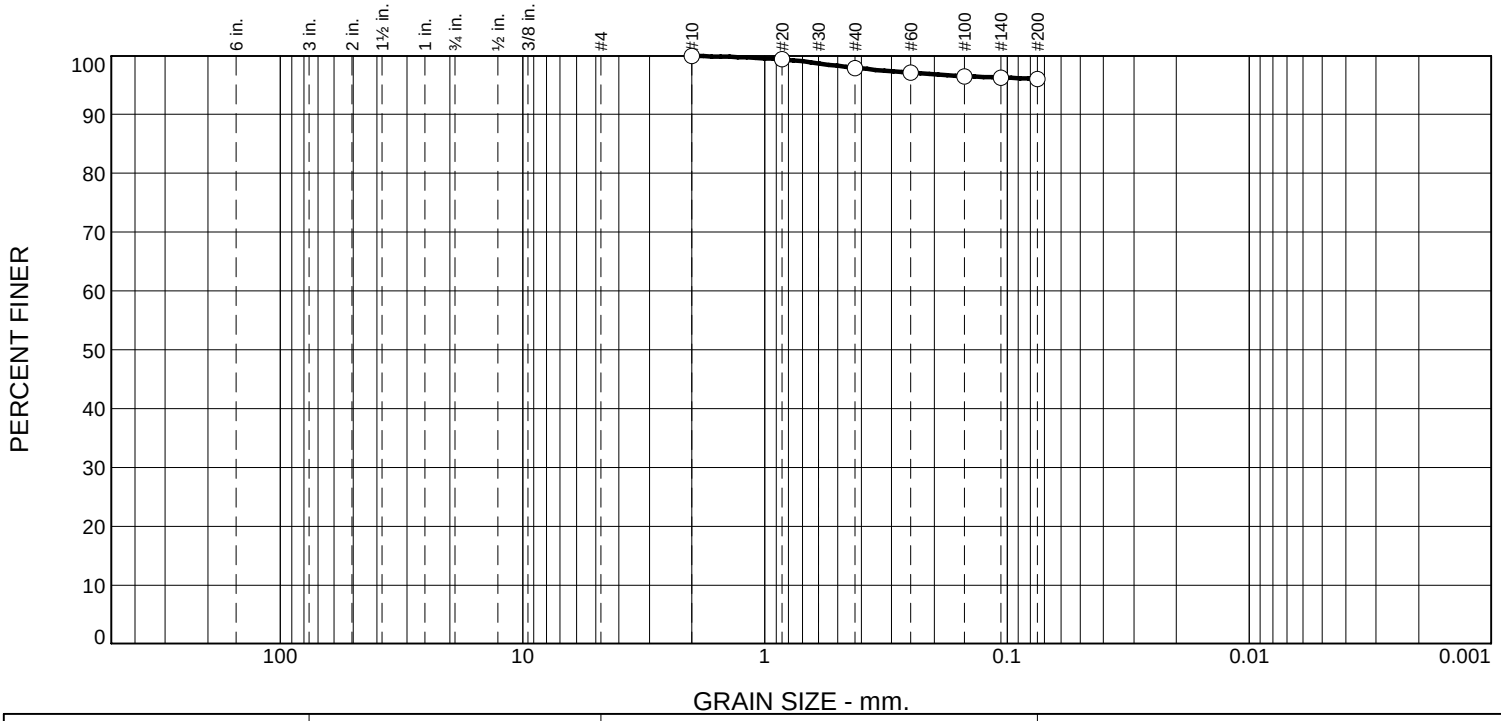
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.1	1.8	96.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.4		
#40	97.9		
#60	97.1		
#100	96.5		
#140	96.3		
#200	96.1		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

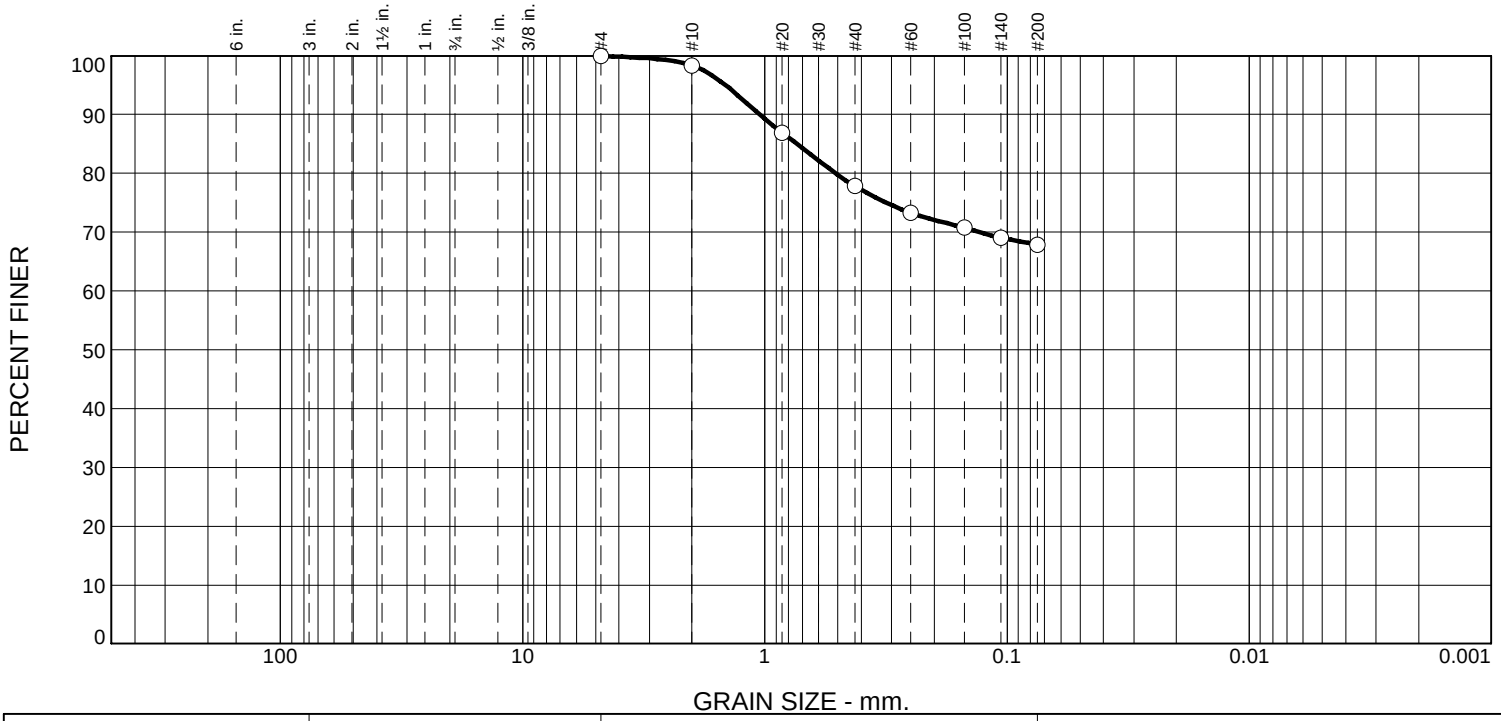
Source of Sample: PA-23-526N W-C
Sample Number: 6A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.7	20.5	9.9	67.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	98.3		
#20	86.9		
#40	77.8		
#60	73.3		
#100	70.7		
#140	69.0		
#200	67.9		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.0483 D_{85}= 0.7370
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

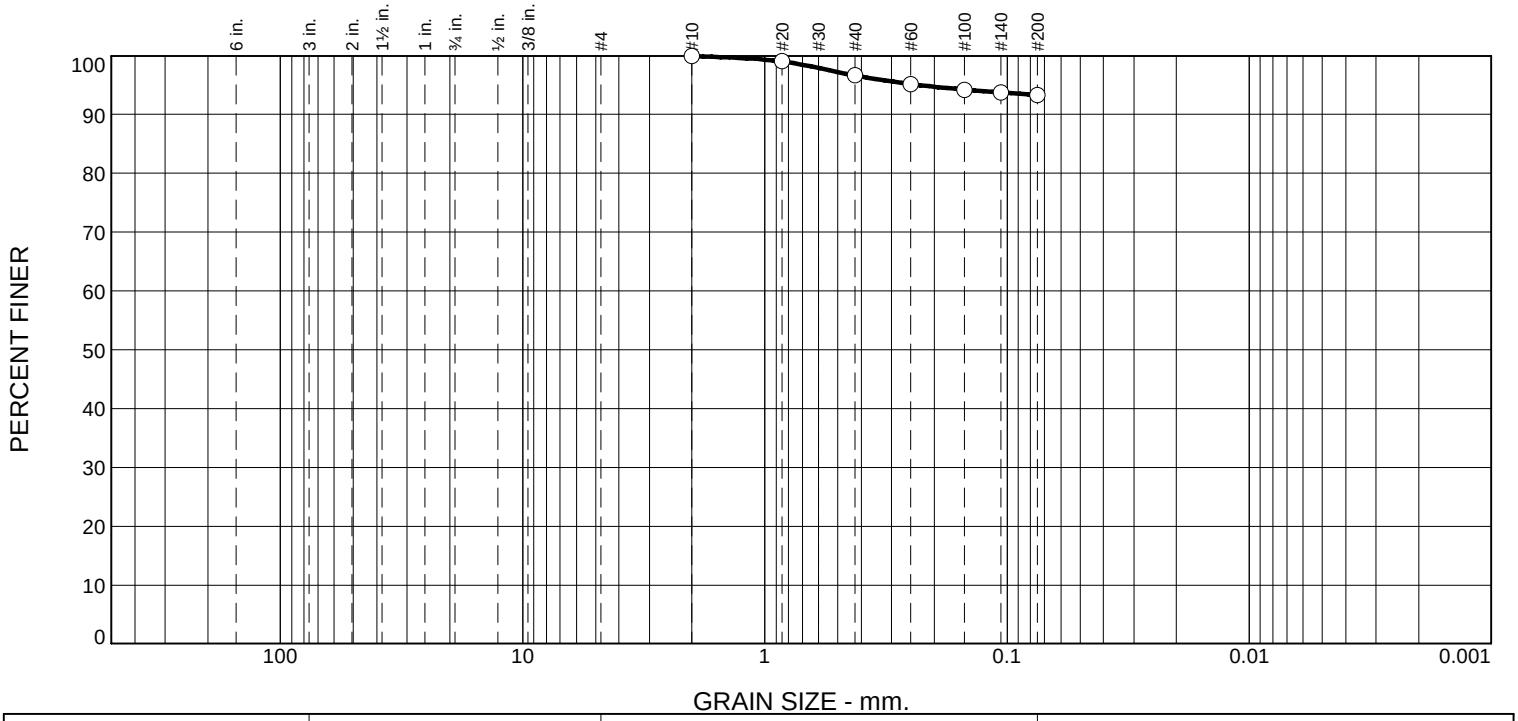
Source of Sample: PA-23-526N W-C
Sample Number: 6B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.4	3.3	93.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.0		
#40	96.6		
#60	95.2		
#100	94.2		
#140	93.8		
#200	93.3		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/13/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Source of Sample: PA-23-526N W-C
Sample Number: 6C

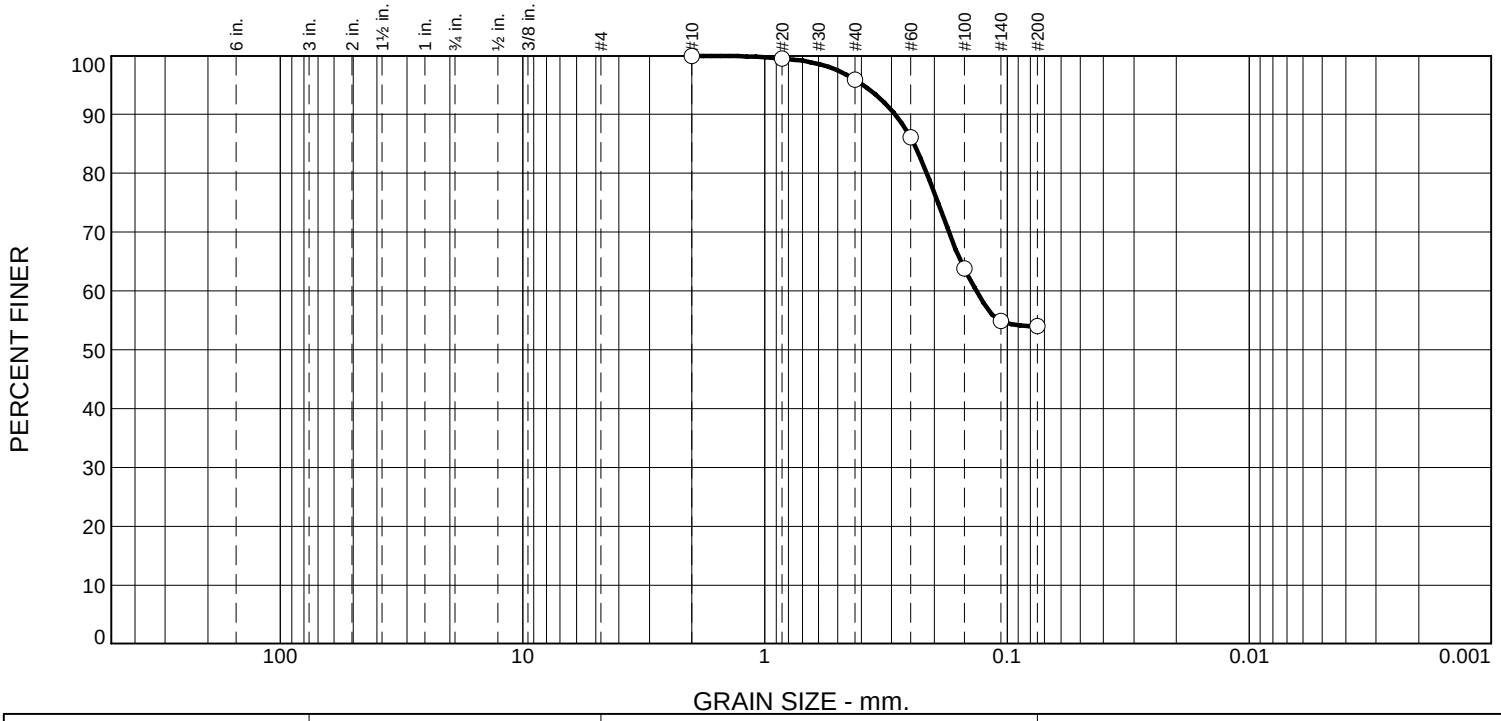
Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.1	41.9	54.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.5		
#40	95.9		
#60	86.1		
#100	63.8		
#140	54.9		
#200	54.0		

· (no specification provided)

Material Description

Dark Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2895 D_{85}= 0.2417

D_{60}= 0.1340 D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C

Sample Number: 6D

INSIGHT GROUP
A CHRISTOPHER COMPANY

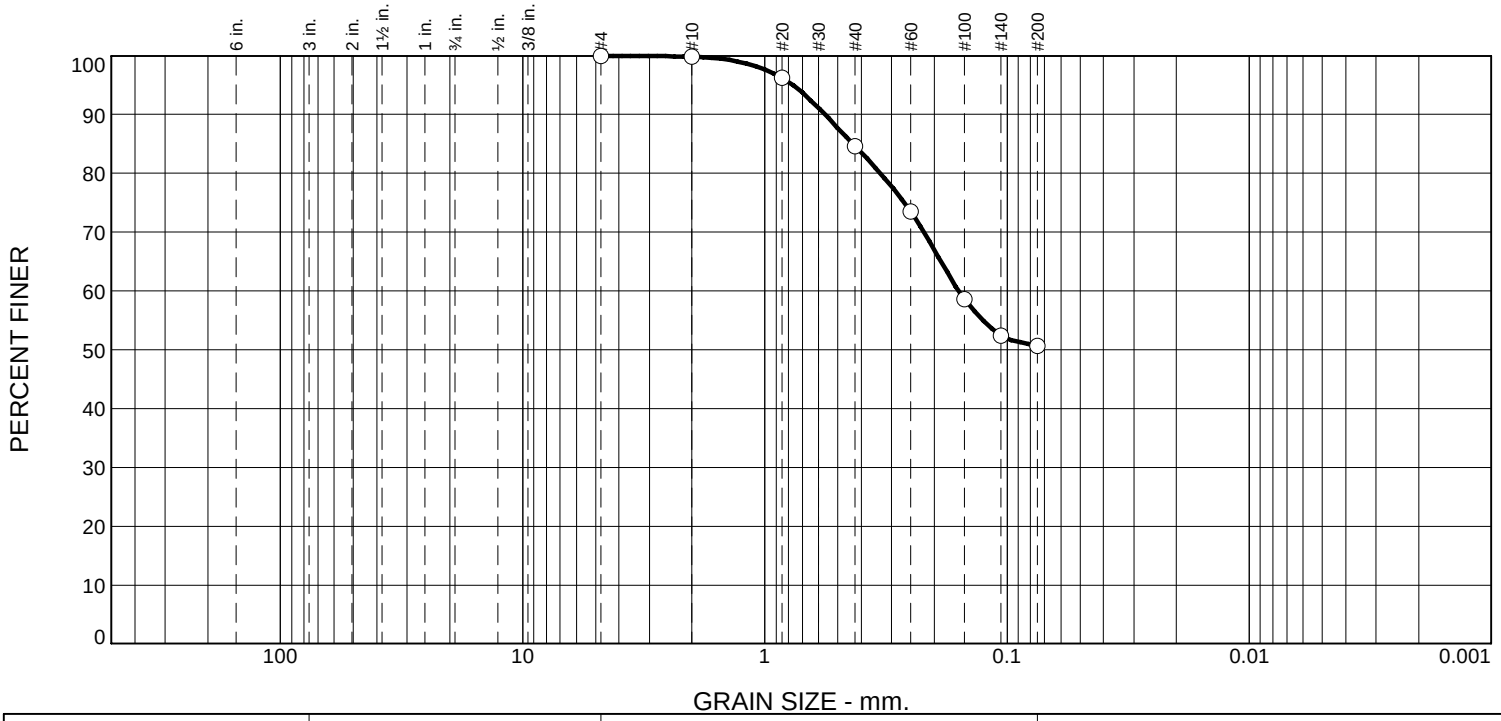
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	15.2	33.9	50.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	96.2		
#40	84.6		
#60	73.5		
#100	58.6		
#140	52.5		
#200	50.7		

· (no specification provided)

Material Description

Dark Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.5640 D_{85}= 0.4331

D_{60}= 0.1583 D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/13/23 **Technician:** M. Moore

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C
Sample Number: Comp 6

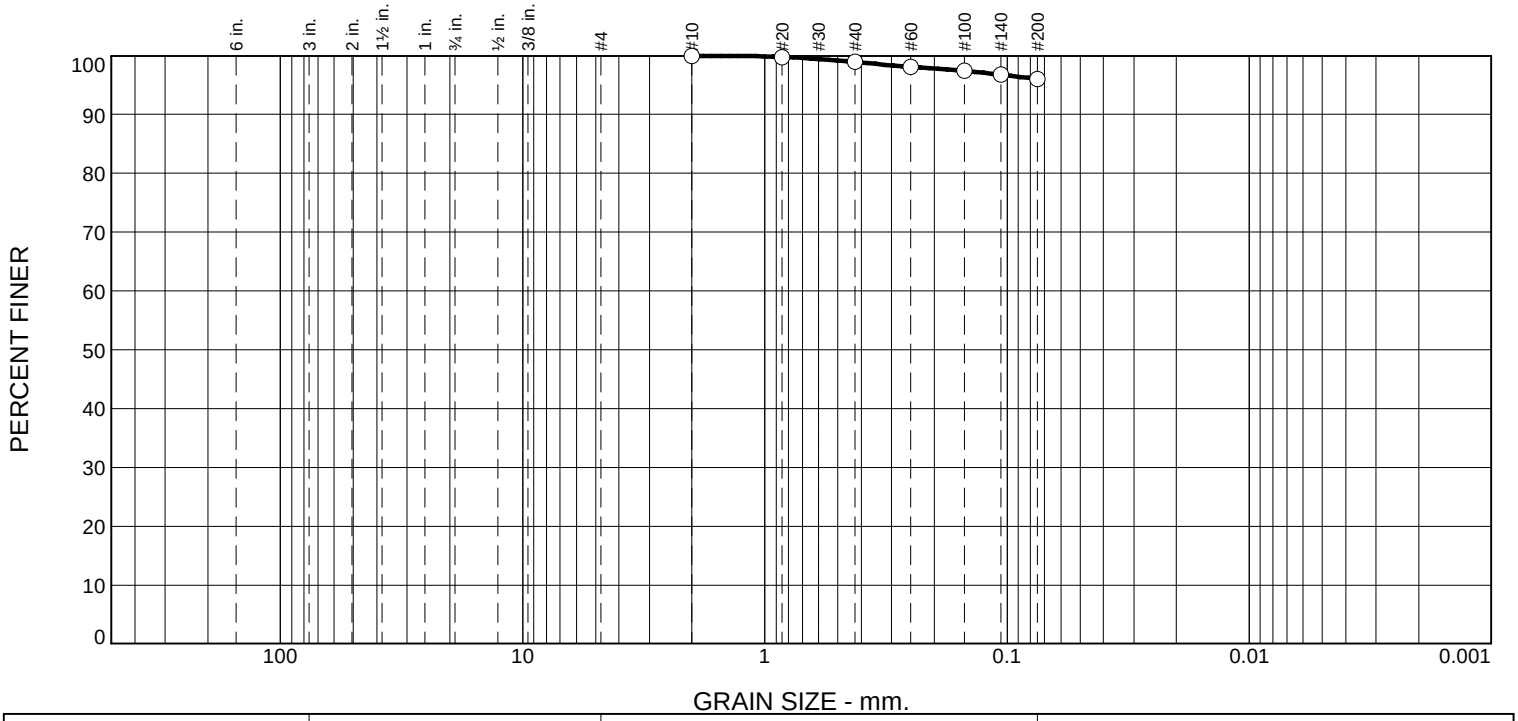
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.1	2.9	96.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	98.9		
#60	98.1		
#100	97.4		
#140	96.8		
#200	96.0		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/10/23 Technician: B. Horn

Test Notes

Hydrometer Test
Test Date: _____ Technician: _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

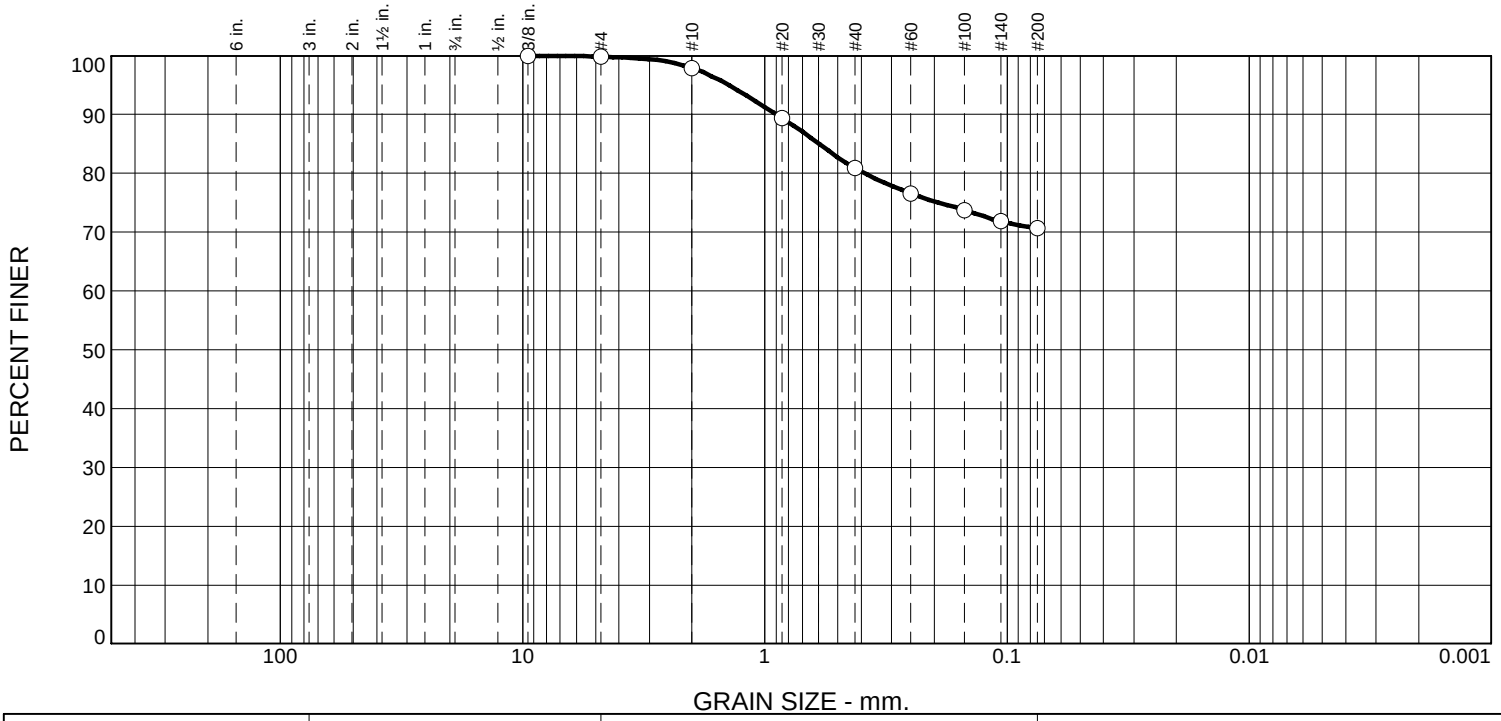
Source of Sample: PA-23-526N W-C
Sample Number: 7A

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	2.0	17.0	10.3	70.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
0.375"	100.0		
#4	99.9		
#10	97.9		
#20	89.4		
#40	80.9		
#60	76.6		
#100	73.8		
#140	71.8		
#200	70.6		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.8954 D_{85}= 0.5967
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

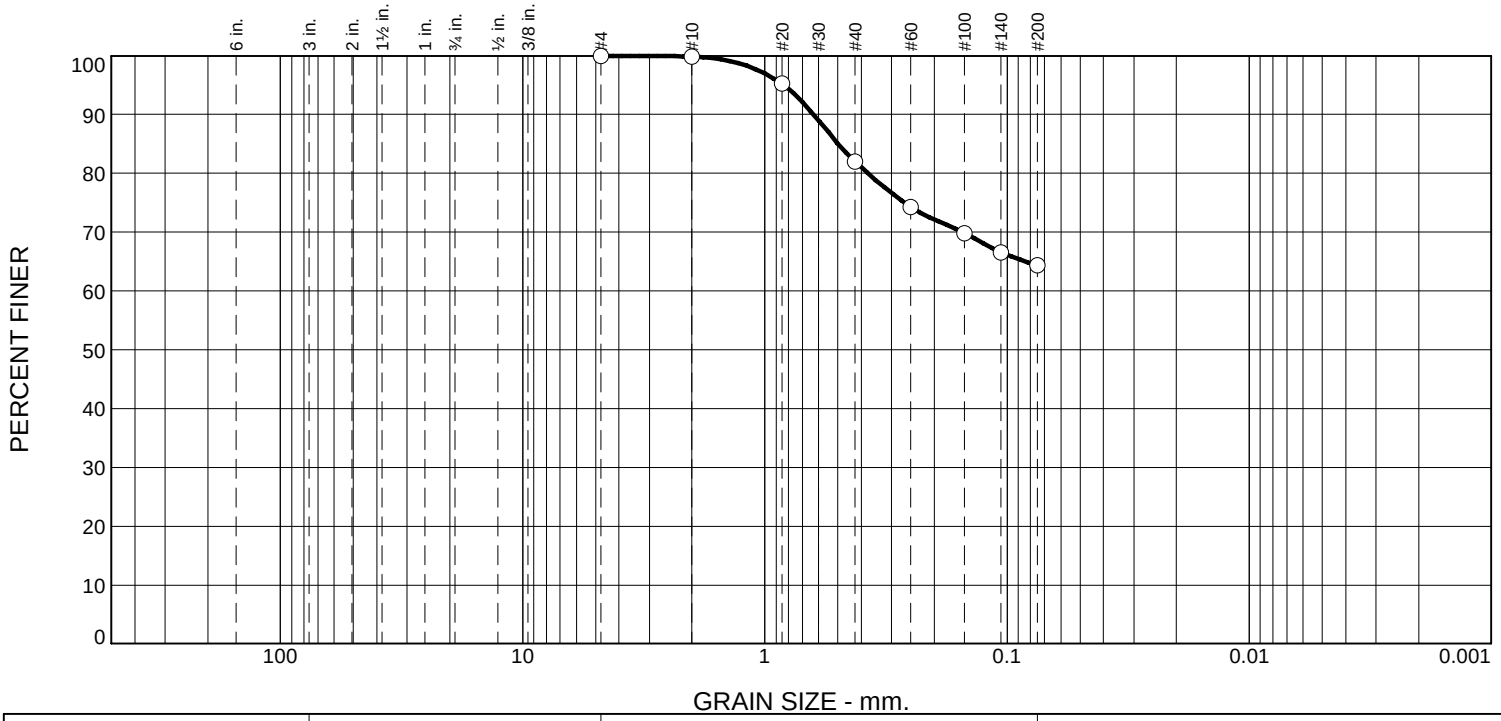
Source of Sample: PA-23-526N W-C
Sample Number: 7B

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	17.9	17.7	64.3	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	95.2		
#40	82.0		
#60	74.3		
#100	69.8		
#140	66.6		
#200	64.3		

· (no specification provided)

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.6292 D_{85}= 0.4974
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

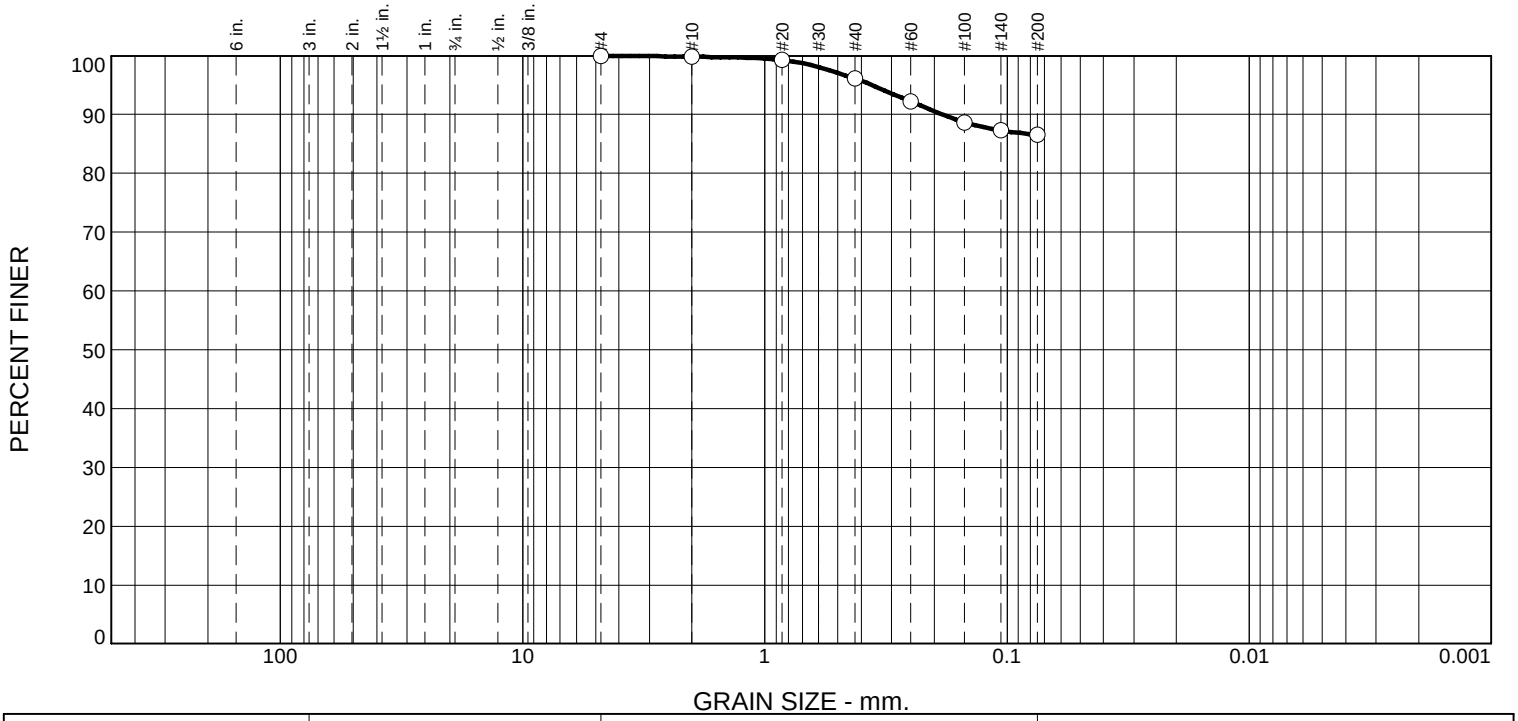
Source of Sample: PA-23-526N W-C
Sample Number: 7C

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	3.7	9.5	86.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.3		
#40	96.1		
#60	92.2		
#100	88.7		
#140	87.3		
#200	86.6		

· (no specification provided)

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1842 D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23
Date Received: 3/3/23
Checked By: J. Hatch
Title: Sr Engineer

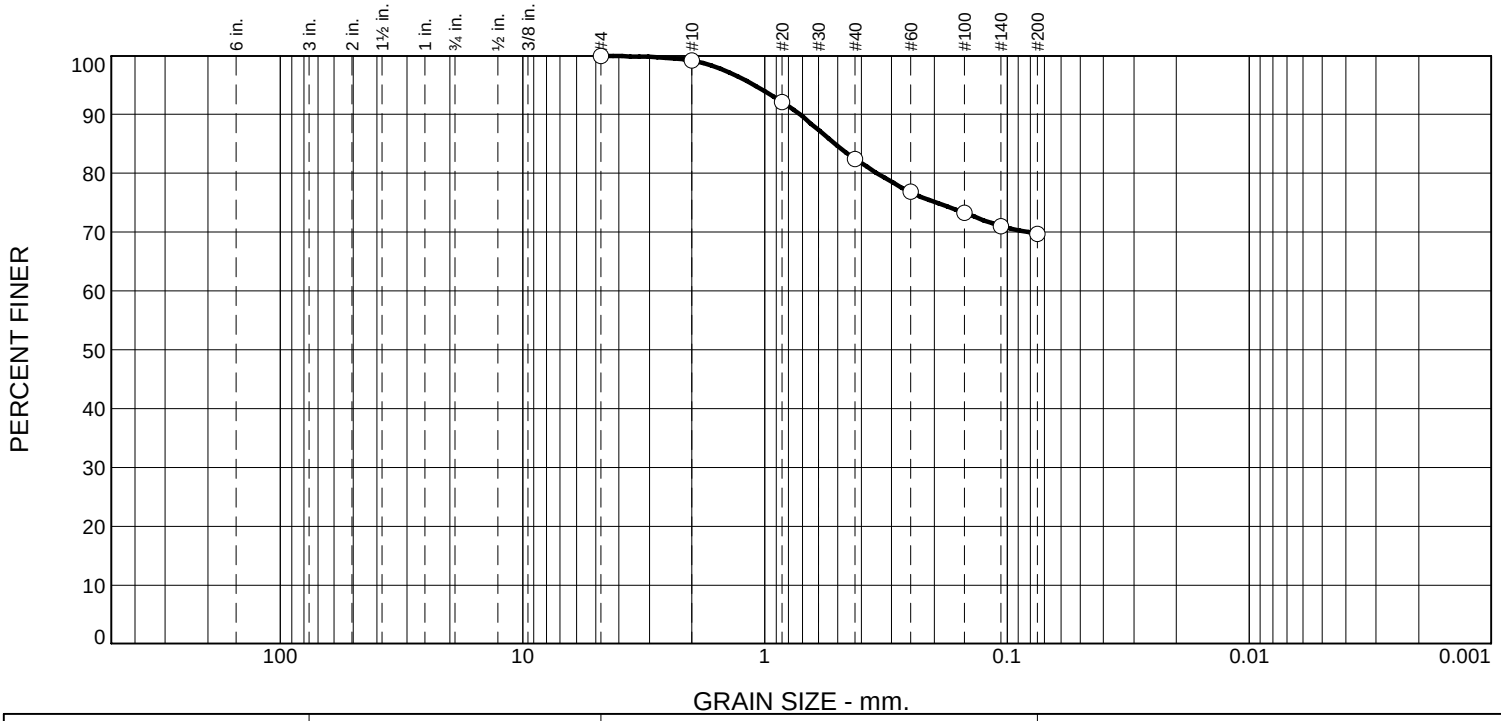
Source of Sample: PA-23-526N W-C
Sample Number: 7D

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.9	16.6	12.8	69.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.1		
#20	92.2		
#40	82.5		
#60	76.8		
#100	73.3		
#140	71.0		
#200	69.7		

· (no specification provided)

Material Description

Dark Grayish Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7165 D_{85}= 0.5120

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/10/23 **Technician:** B. Horn

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 3/3/23

Date Received: 3/3/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23-526N W-C
Sample Number: Comp 7

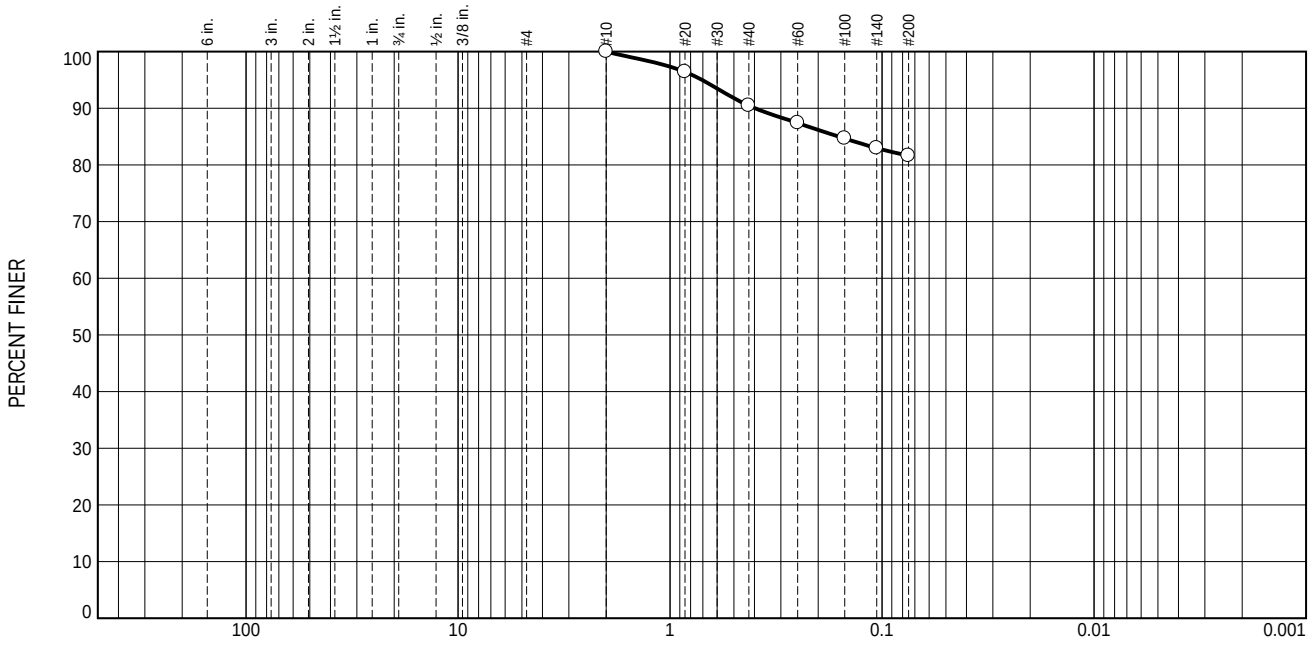
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	9.5	8.9	81.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	96.4		
#40	90.5		
#60	87.4		
#100	84.7		
#140	83.0		
#200	81.6		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 8A

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3975 D_{85}= 0.1600
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 2/28/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

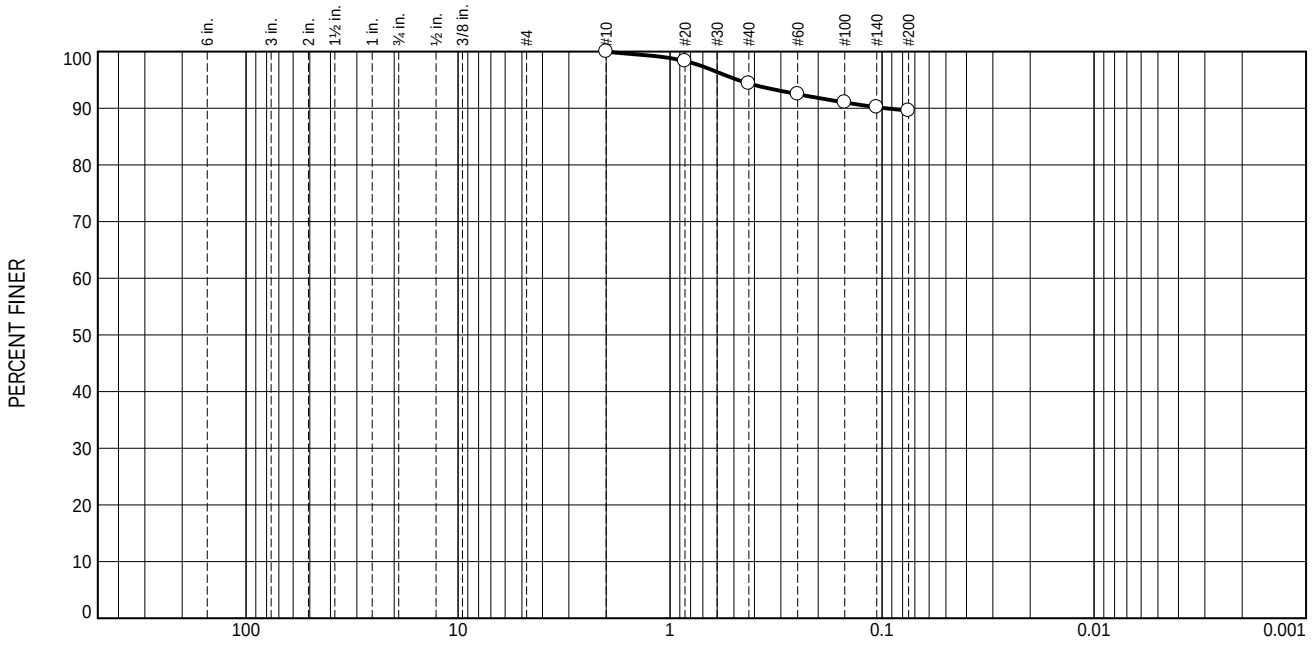
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.6	4.8	89.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.3		
#40	94.4		
#60	92.5		
#100	91.0		
#140	90.2		
#200	89.6		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 8B

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.0958 D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

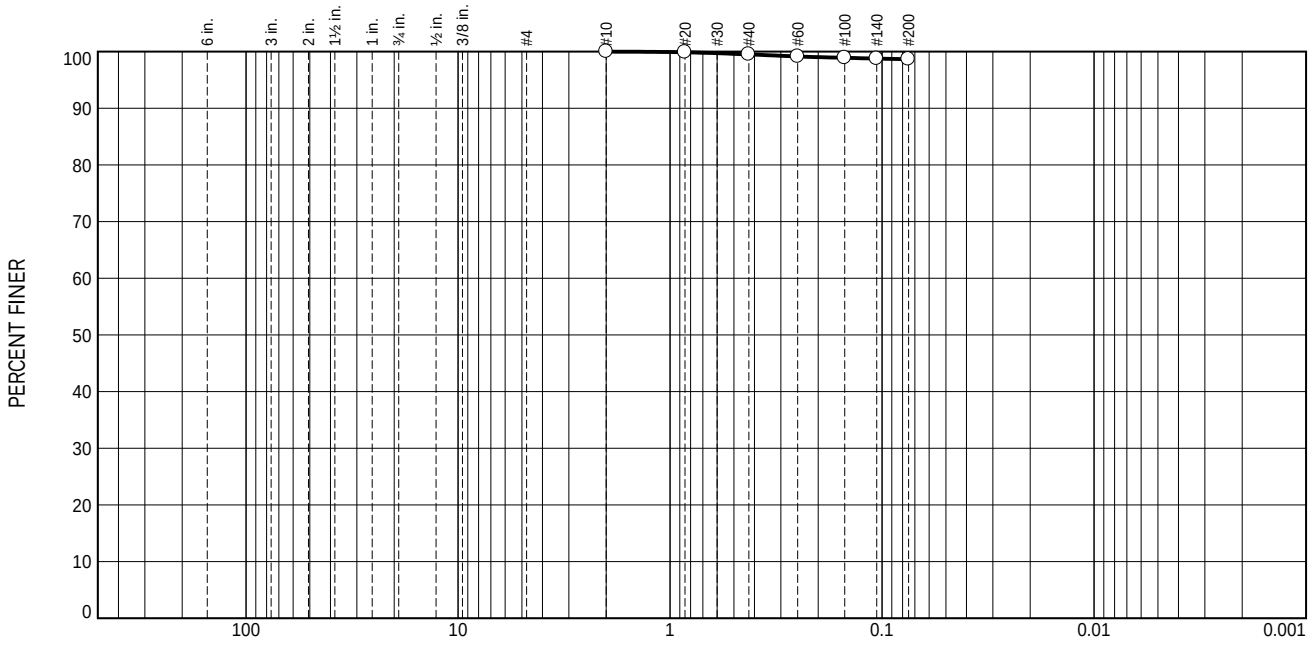
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	0.8	98.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.5		
#60	99.1		
#100	98.9		
#140	98.8		
#200	98.7		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 8C

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

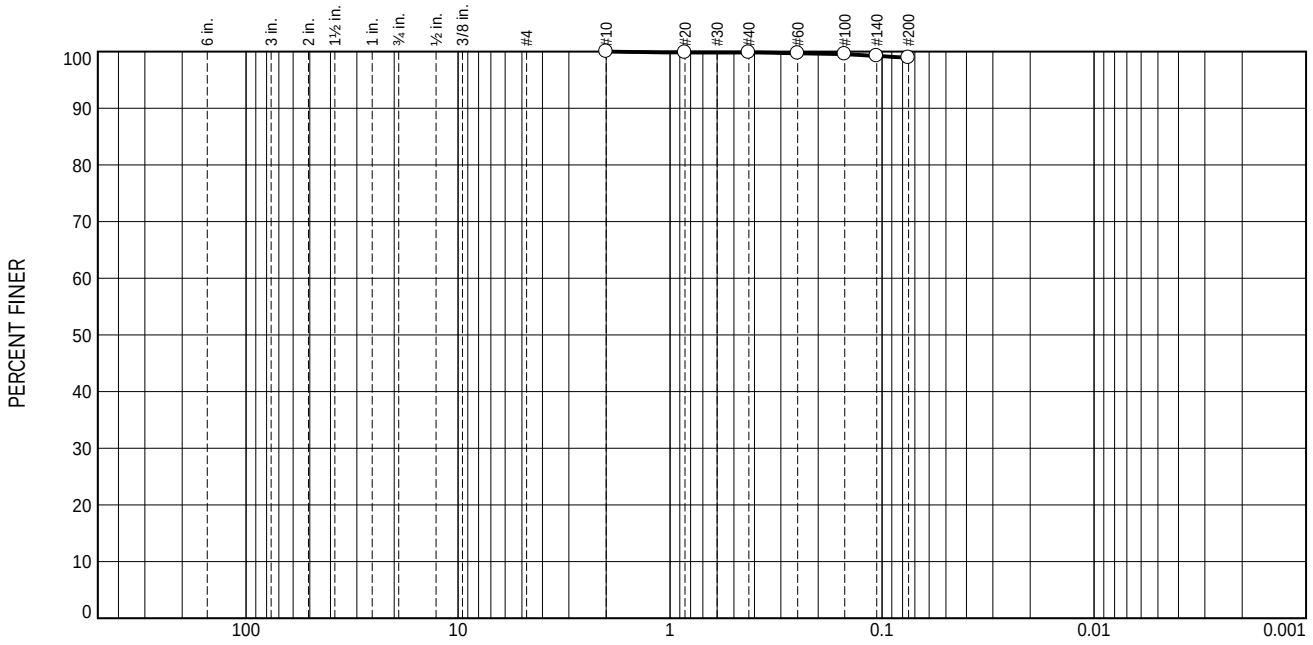
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	0.9	98.9	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.8		
#60	99.7		
#100	99.5		
#140	99.2		
#200	98.9		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 8D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

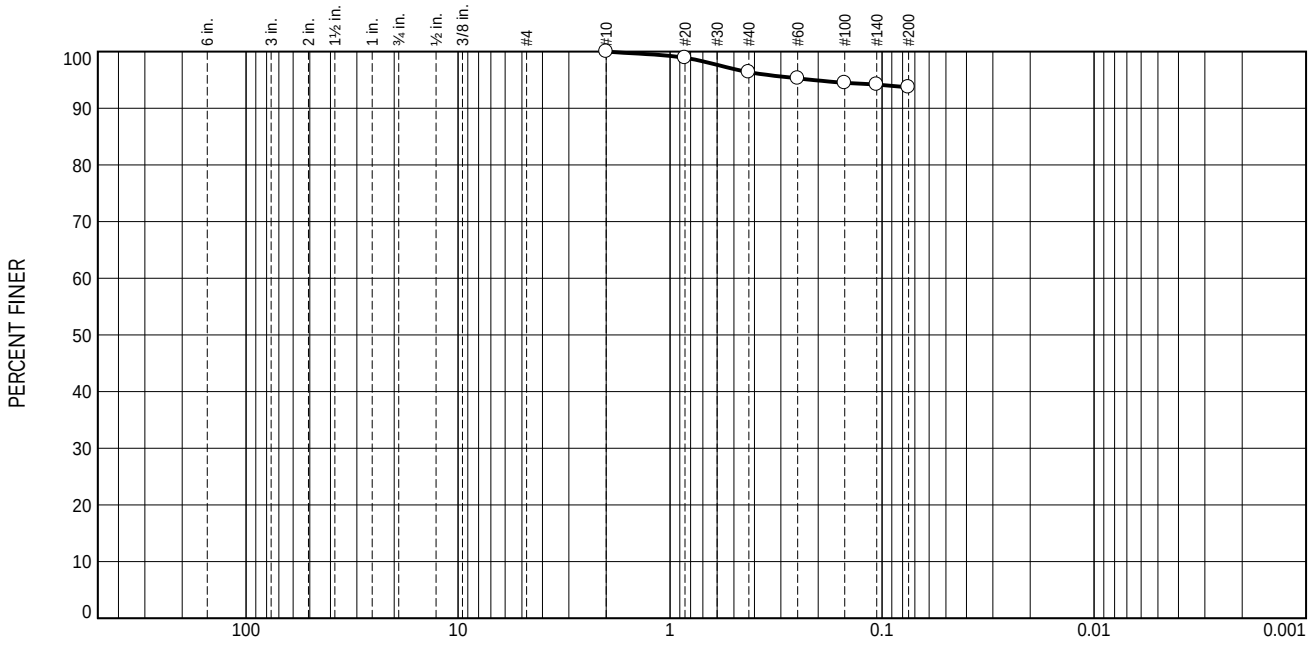
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.6	2.7	93.7	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.9		
#40	96.4		
#60	95.3		
#100	94.5		
#140	94.2		
#200	93.7		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 8 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

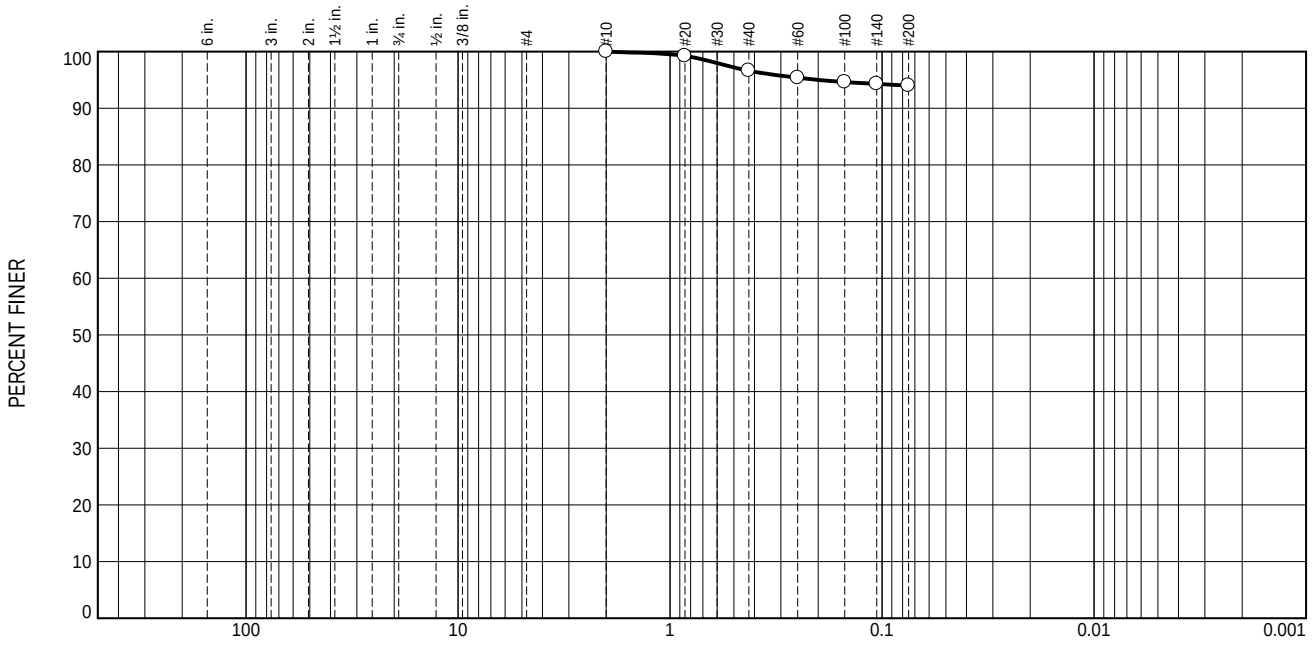
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.4	2.6	94.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.2		
#40	96.6		
#60	95.4		
#100	94.6		
#140	94.3		
#200	94.0		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 9A

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/28/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

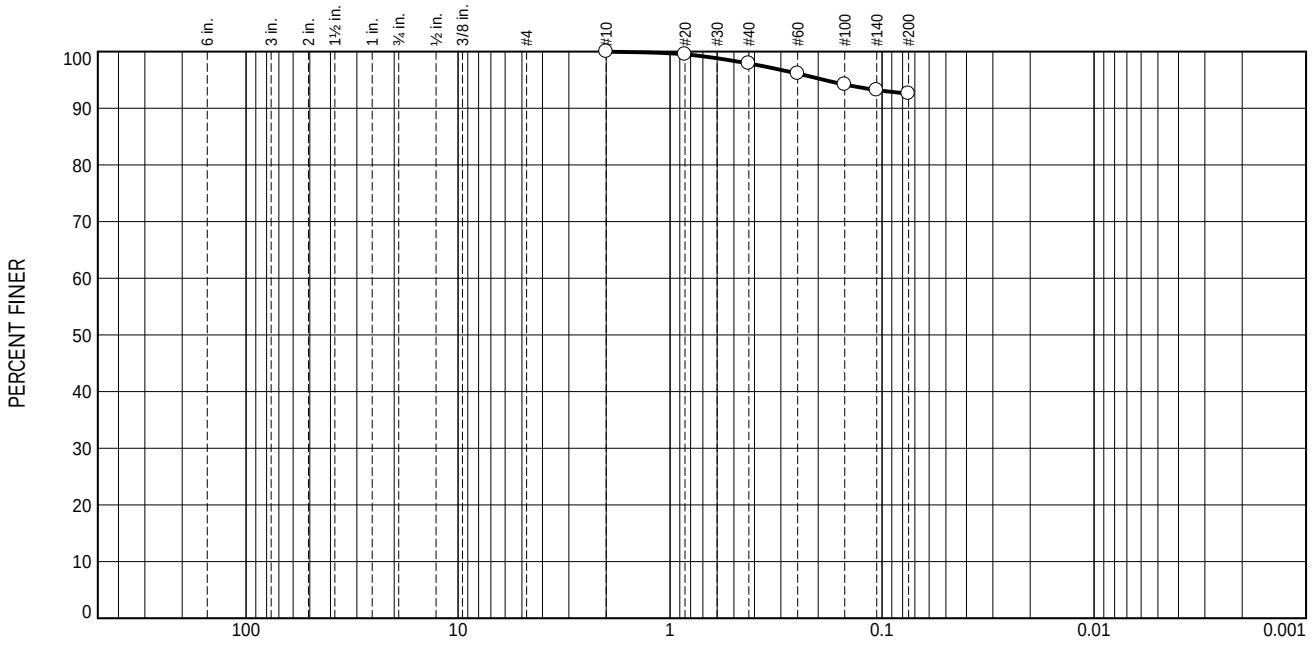
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.1	5.3	92.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.5		
#40	97.9		
#60	96.1		
#100	94.2		
#140	93.2		
#200	92.6		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 9B

Material Description
Dark Grayish Brown and Black

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

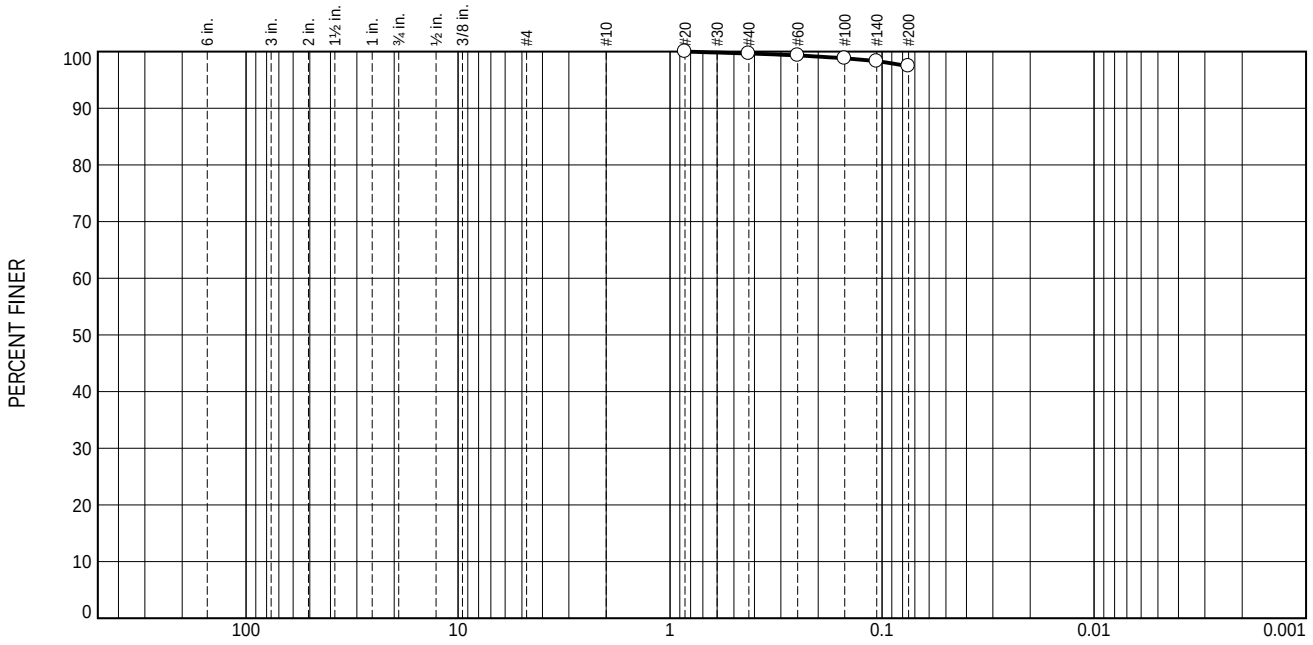
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	2.3	97.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.7		
#60	99.3		
#100	98.8		
#140	98.3		
#200	97.4		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 9C

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

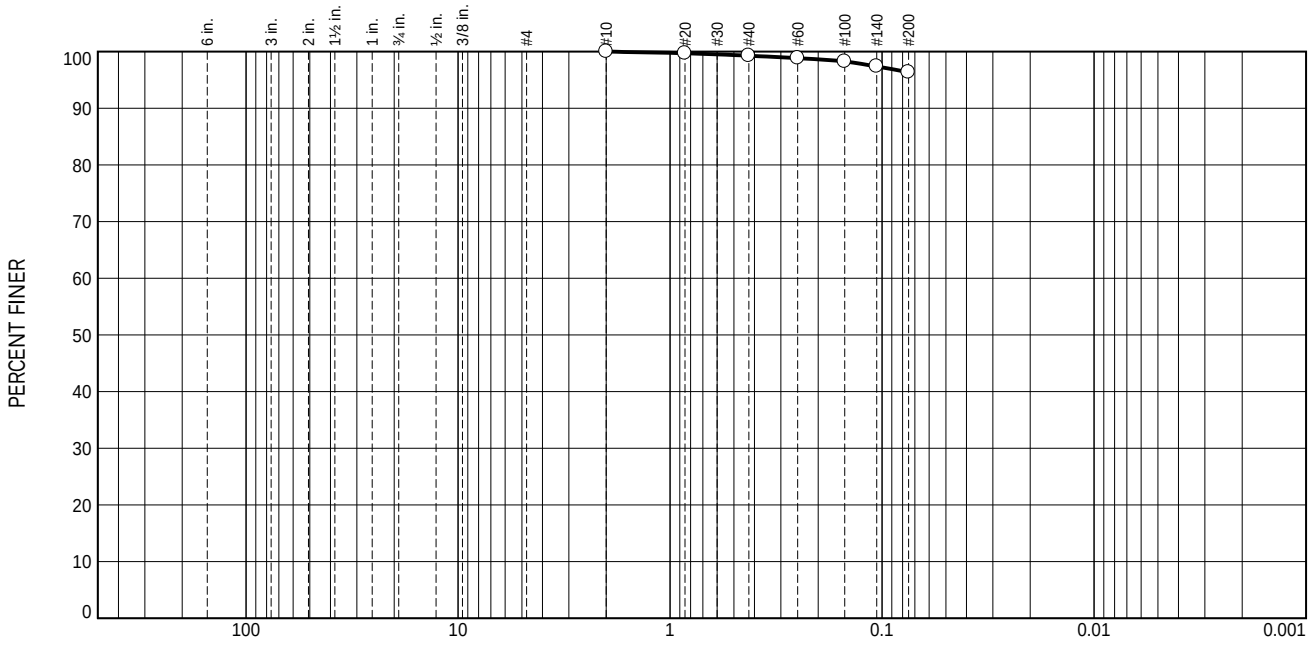
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	2.9	96.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	99.3		
#60	98.8		
#100	98.3		
#140	97.4		
#200	96.4		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 9D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

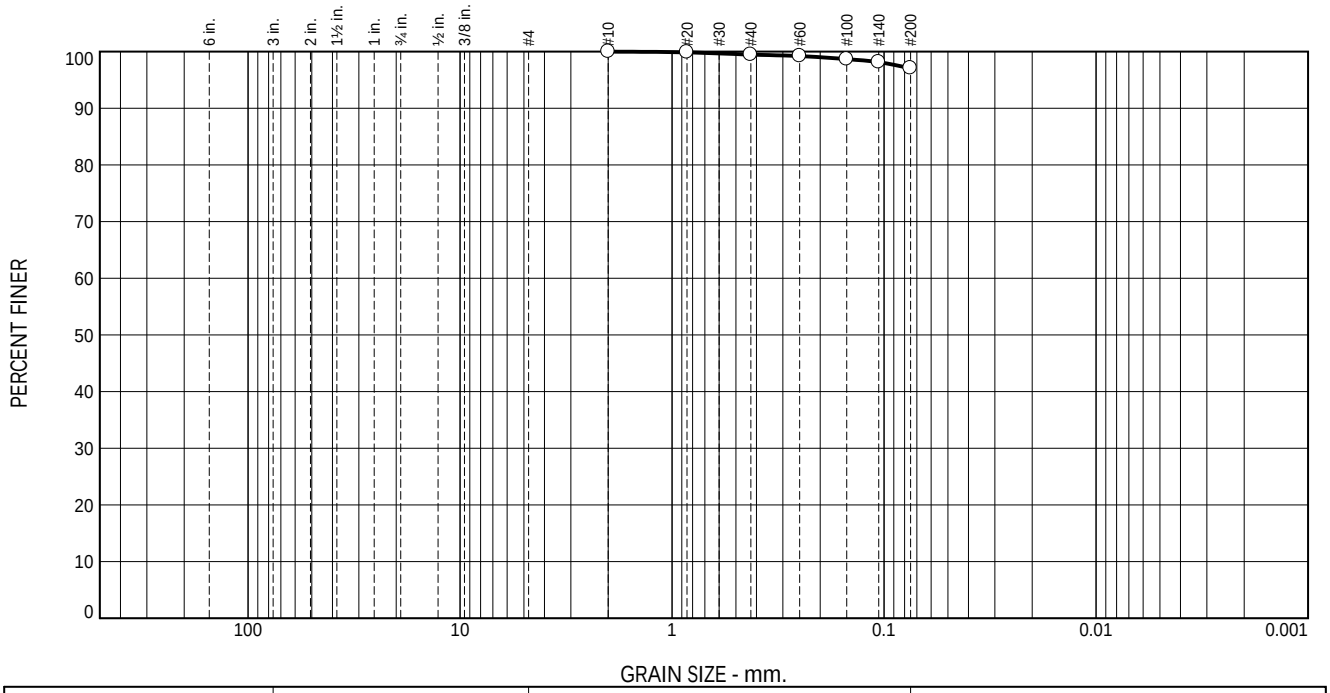
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	2.4	97.1	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.5		
#60	99.2		
#100	98.7		
#140	98.1		
#200	97.1		

· (no specification provided)

Source of Sample: PA23-562N W-C
Sample Number: 9 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

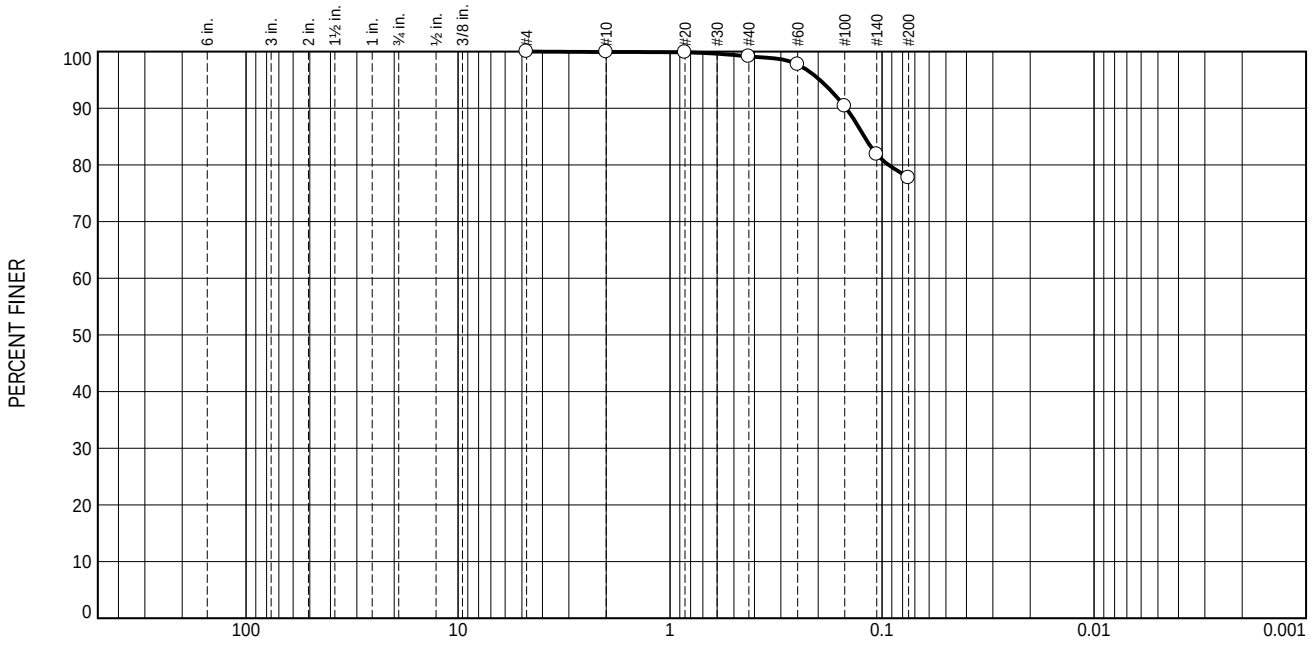
USCS (ASTM D2487)

Date Sampled: 2/25/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.8	21.4	77.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.9		
#40	99.1		
#60	97.7		
#100	90.4		
#140	81.9		
#200	77.7		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 1A

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1474 D_{85}= 0.1213
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/2023 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

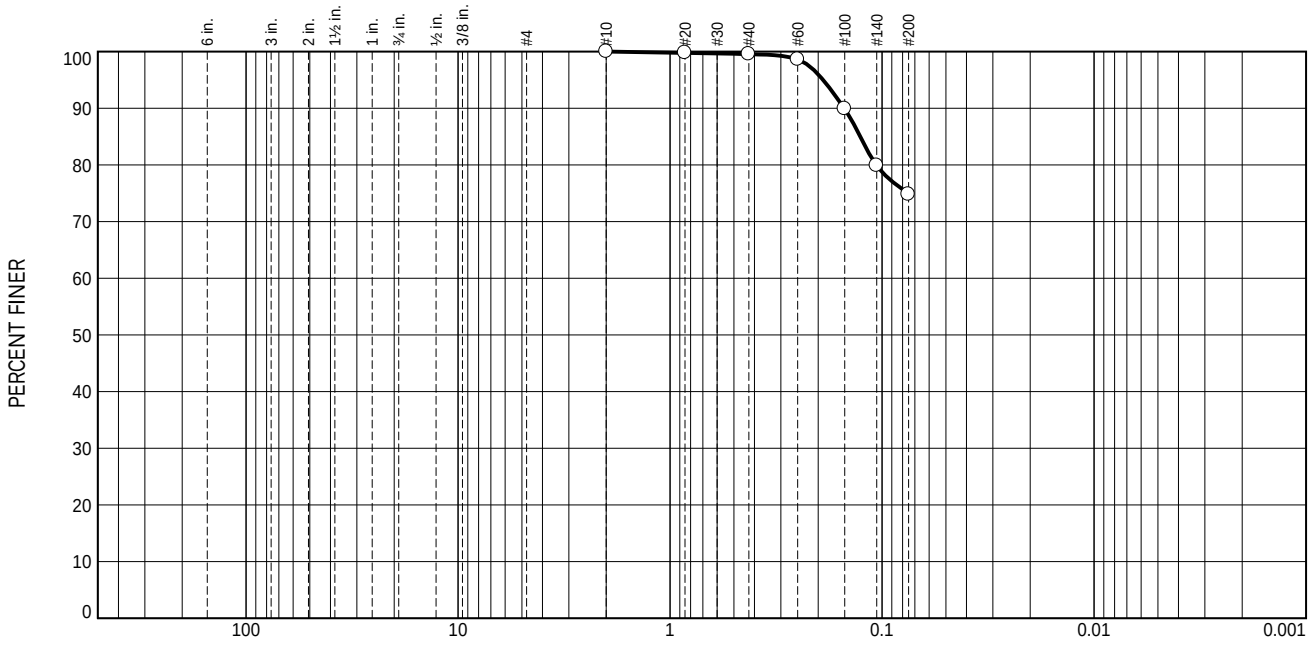
Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	24.7	74.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.5		
#60	98.6		
#100	89.9		
#140	79.9		
#200	74.8		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 1B

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1507 D_{85}= 0.1268
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

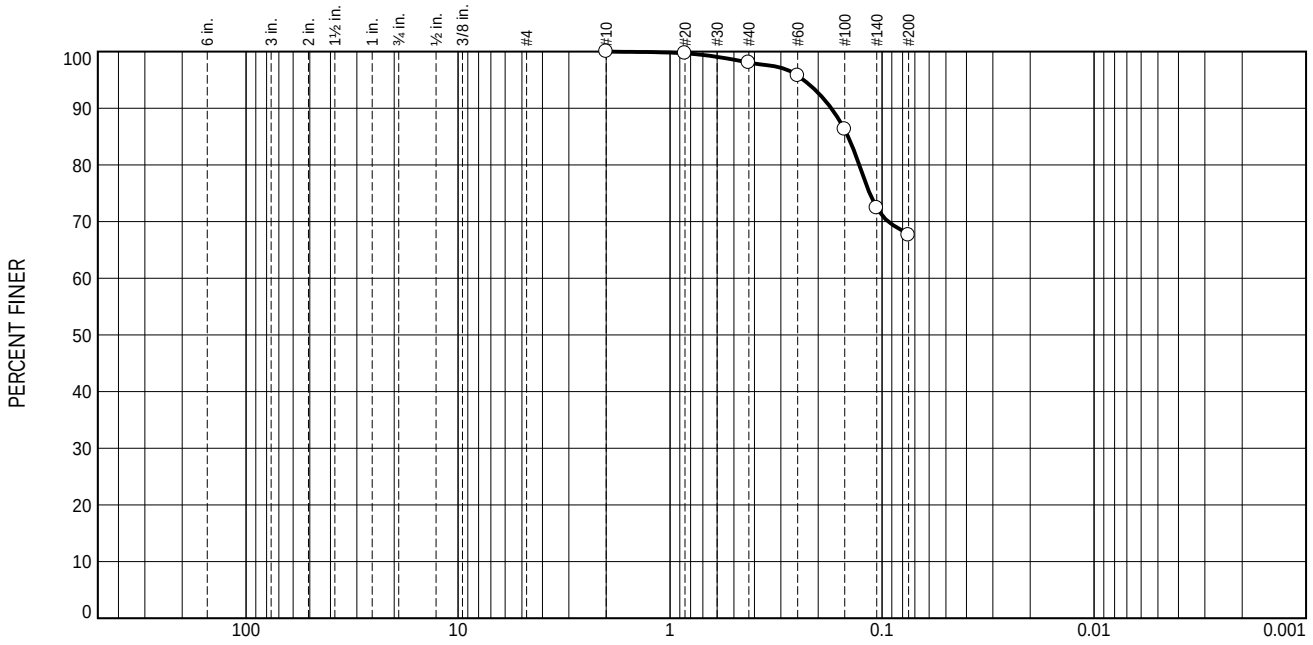
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.9	30.5	67.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	98.1		
#60	95.8		
#100	86.3		
#140	72.4		
#200	67.6		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 1C

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1736 D_{85}= 0.1443
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

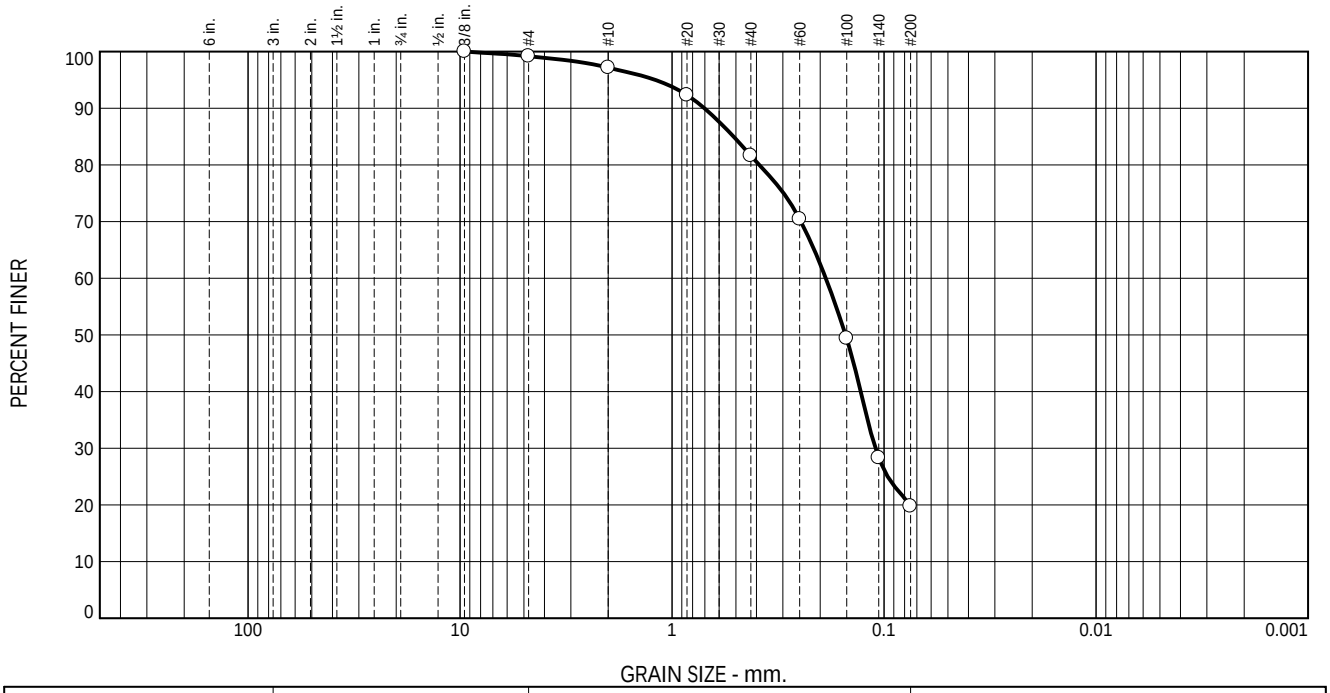
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	2.0	15.6	61.8	19.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.2		
#10	97.2		
#20	92.3		
#40	81.6		
#60	70.4		
#100	49.4		
#140	28.3		
#200	19.8		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 1D

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7038 D_{85}= 0.5131
D_{60}= 0.1883 D_{50}= 0.1518
D_{30}= 0.1099 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

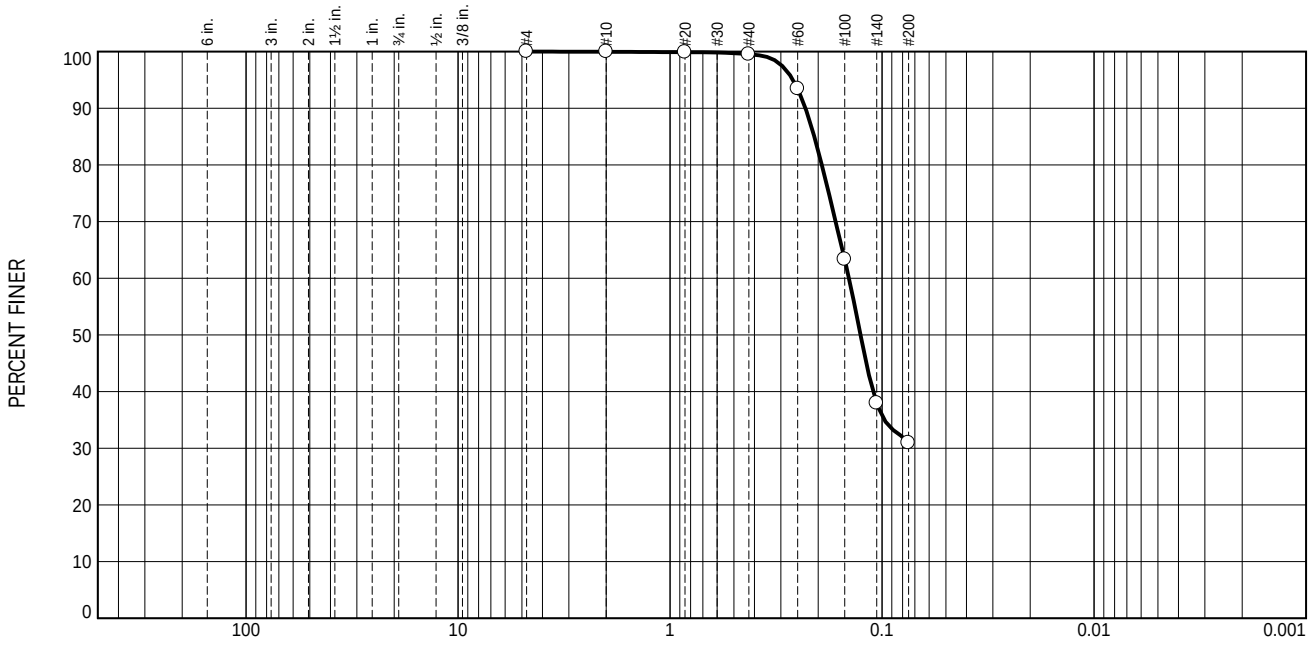
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	68.6	30.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.5		
#60	93.4		
#100	63.3		
#140	37.9		
#200	30.9		

* (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 1E

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2297 D_{85}= 0.2088
D_{60}= 0.1432 D_{50}= 0.1264
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

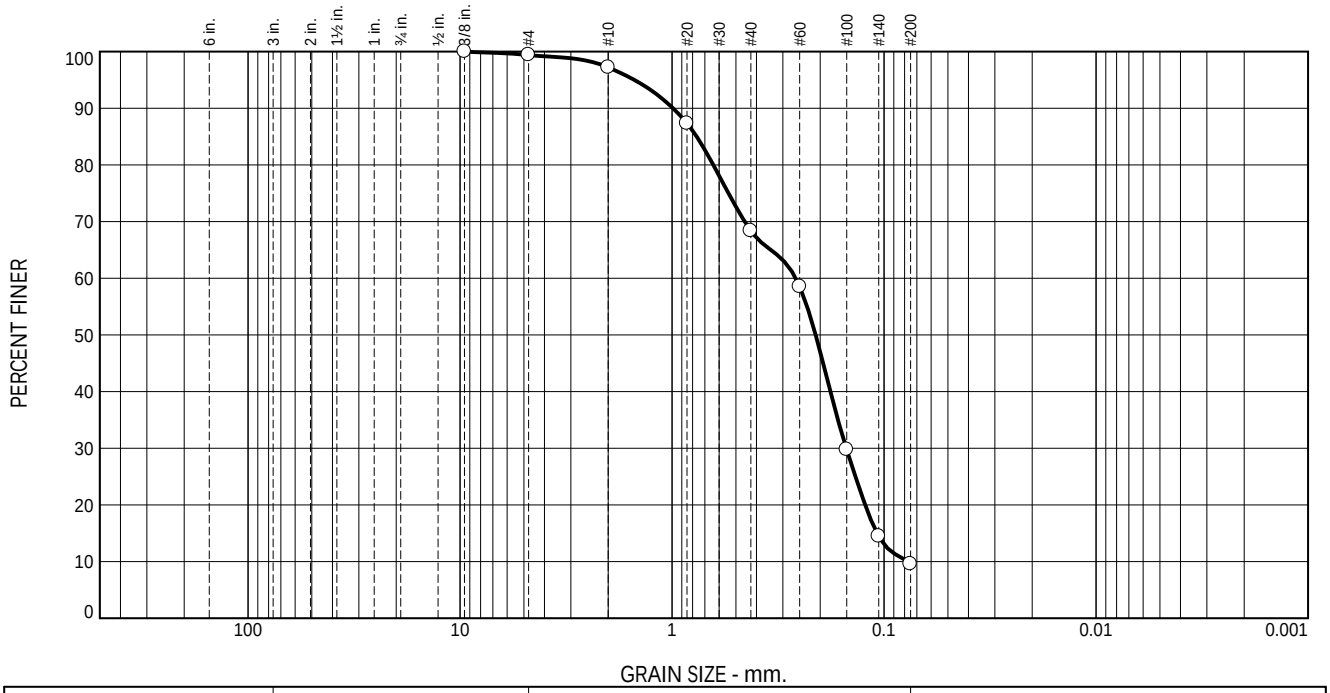
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	2.2	28.8	58.8	9.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.4		
#10	97.2		
#20	87.3		
#40	68.4		
#60	58.5		
#100	29.8		
#140	14.5		
#200	9.6		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 1F

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.9894 D_{85}= 0.7653
D_{60}= 0.2610 D_{50}= 0.2103
D_{30}= 0.1507 D_{15}= 0.1079
D_{10}= 0.0775
C_u= 3.37 C_c= 1.12

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

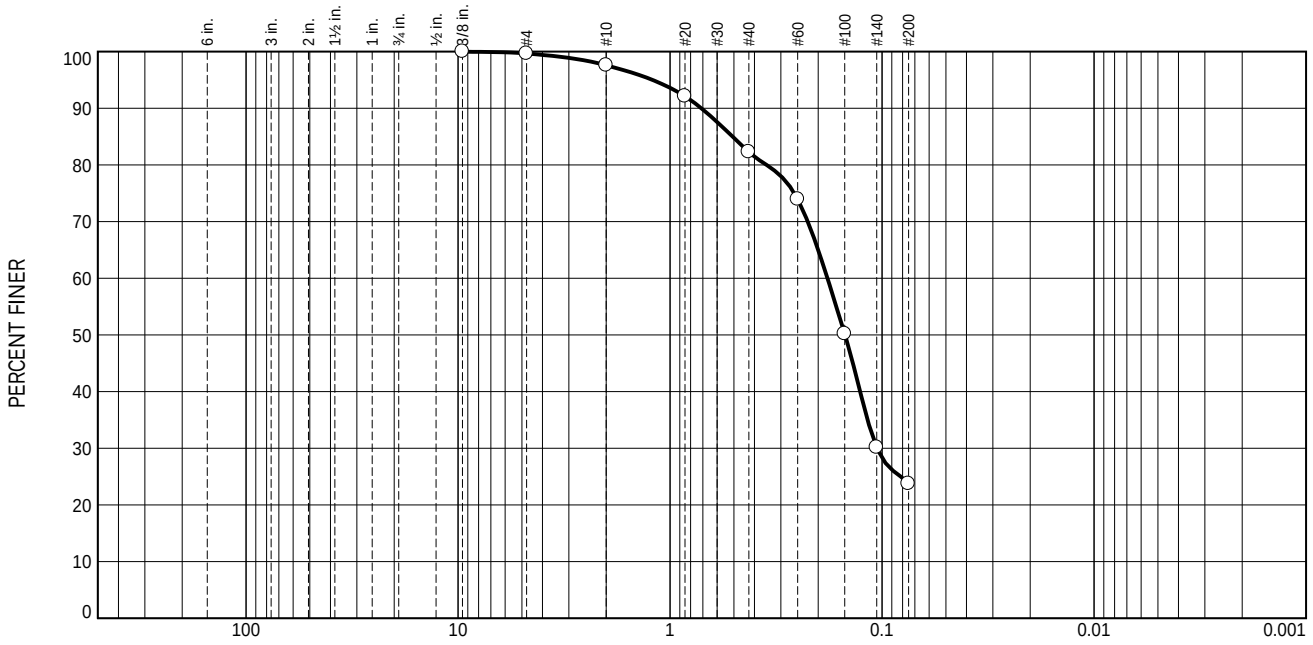
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	2.1	15.3	58.6	23.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.7		
#10	97.6		
#20	92.1		
#40	82.3		
#60	73.9		
#100	50.2		
#140	30.1		
#200	23.7		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 1 Comp

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7119 D_{85}= 0.5071
D_{60}= 0.1810 D_{50}= 0.1495
D_{30}= 0.1056 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

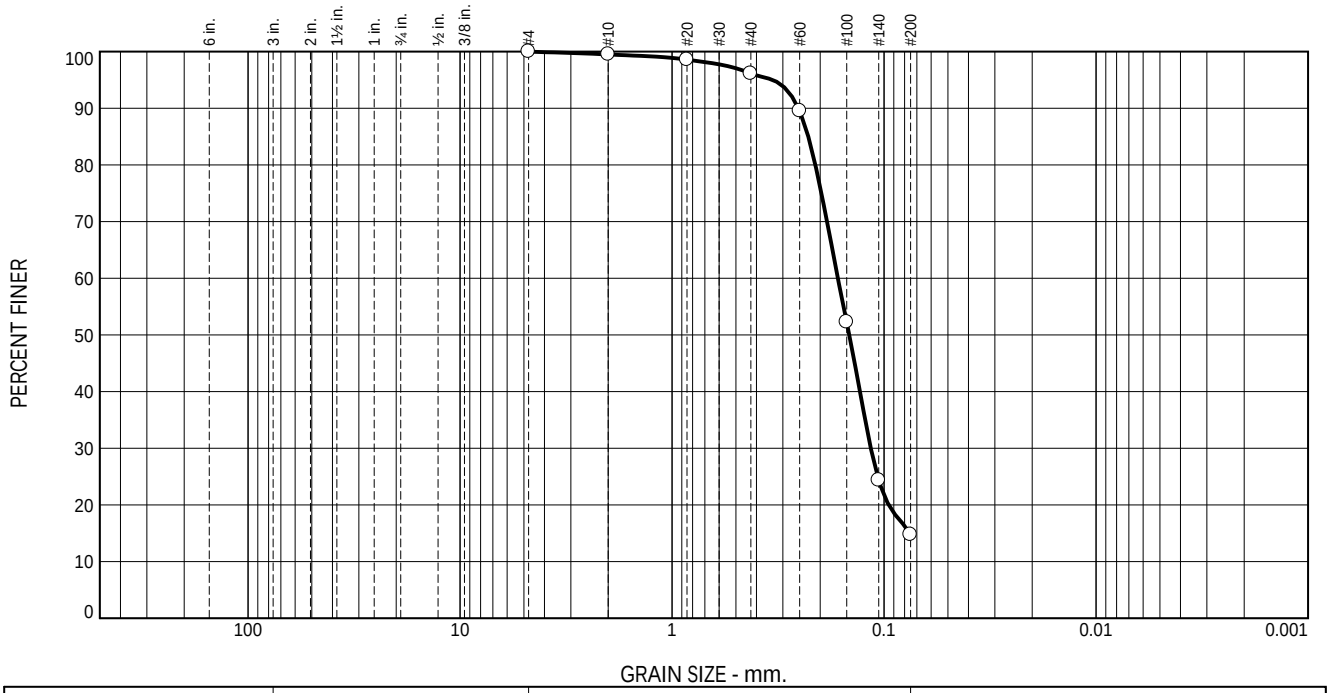
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	3.4	81.3	14.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.5		
#20	98.6		
#40	96.1		
#60	89.5		
#100	52.2		
#140	24.3		
#200	14.8		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 10A

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2534 D_{85}= 0.2277
D_{60}= 0.1651 D_{50}= 0.1458
D_{30}= 0.1155 D_{15}= 0.0757
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

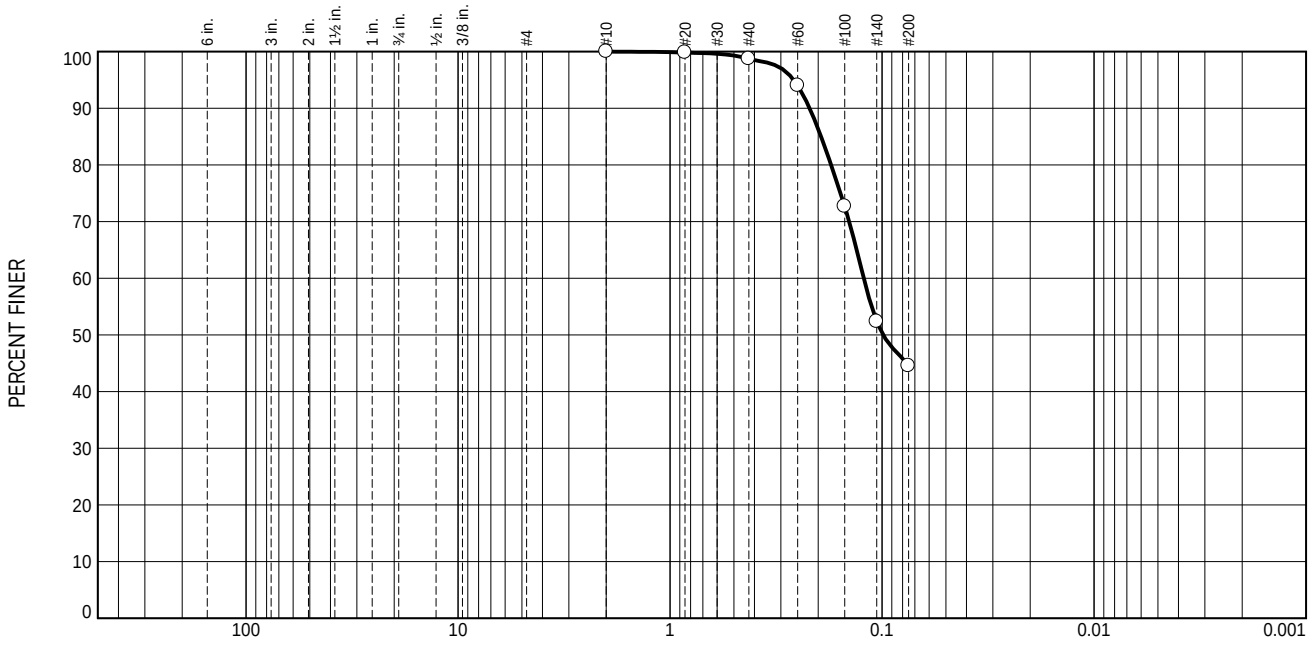
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.3	54.1	44.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	98.7		
#60	94.0		
#100	72.7		
#140	52.4		
#200	44.6		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 10B

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2197 D_{85}= 0.1939
D_{60}= 0.1220 D_{50}= 0.0989
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

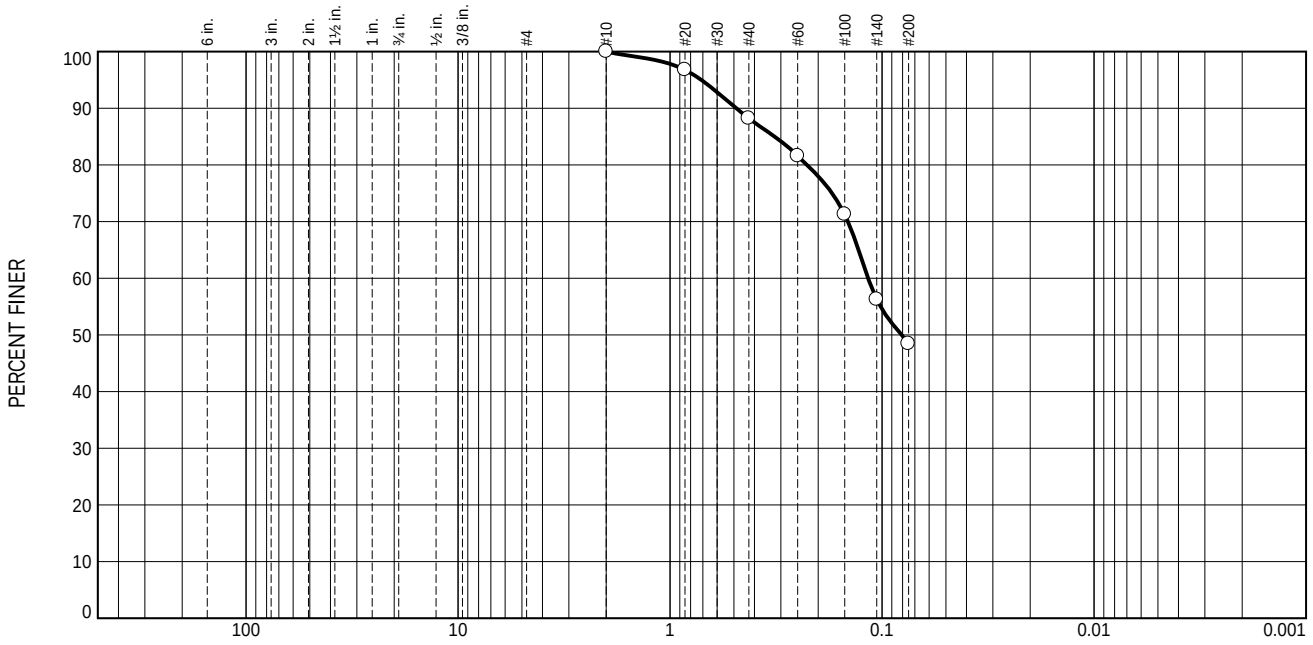
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	11.8	39.7	48.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	96.8		
#40	88.2		
#60	81.6		
#100	71.3		
#140	56.3		
#200	48.5		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 10C

Material Description
Dark Gray

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.4872 D_{85}= 0.3214
D_{60}= 0.1164 D_{50}= 0.0808
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

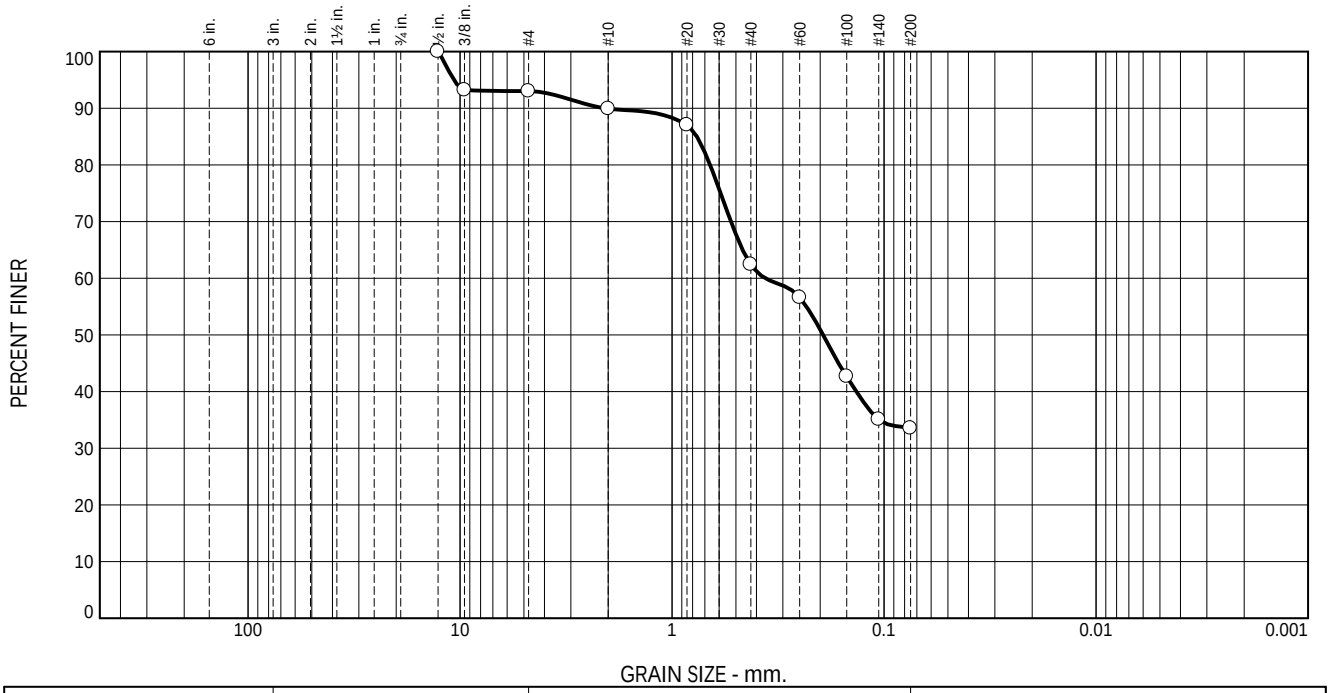
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	7.0	3.1	27.5	28.9	33.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
1/2	100.0		
3/8	93.2		
#4	93.0		
#10	89.9		
#20	87.0		
#40	62.4		
#60	56.6		
#100	42.6		
#140	35.1		
#200	33.5		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 10D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 2.0755 D_{85}= 0.7639
D_{60}= 0.3634 D_{50}= 0.1939
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/2/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

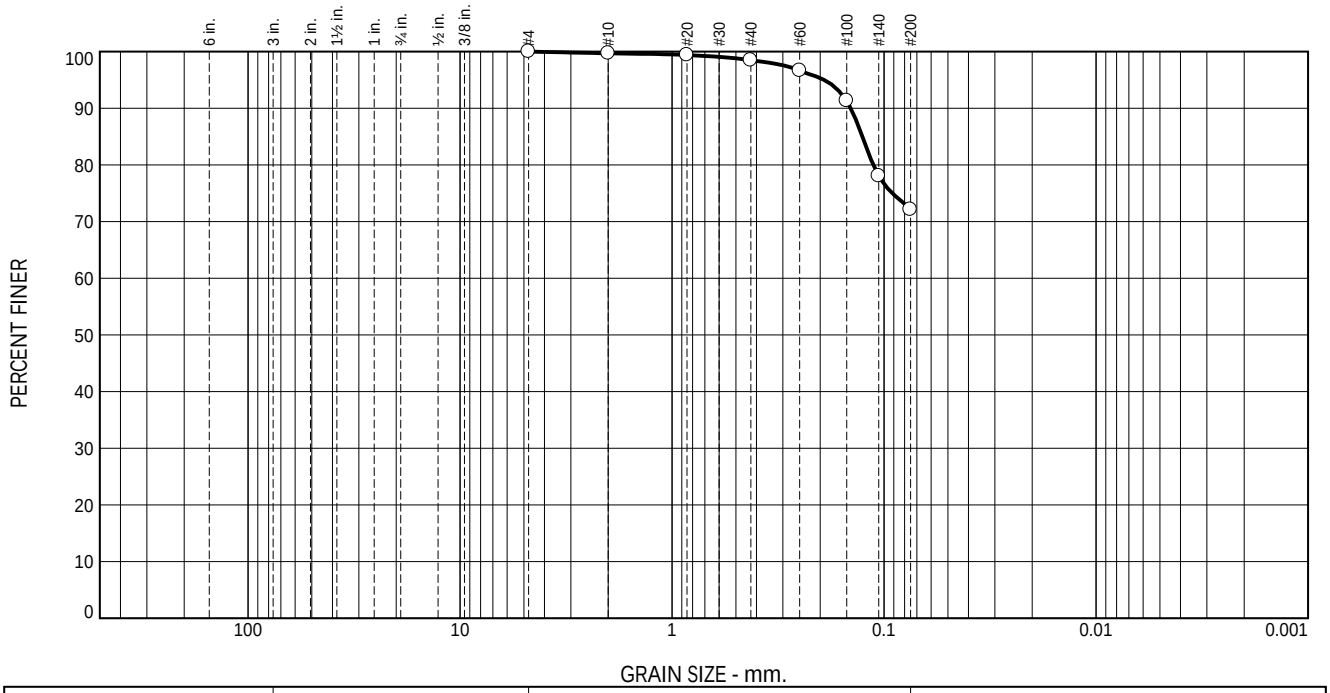
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.2	26.4	72.1	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	99.4		
#40	98.5		
#60	96.6		
#100	91.3		
#140	78.0		
#200	72.1		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 10E

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1433 D_{85}= 0.1266
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

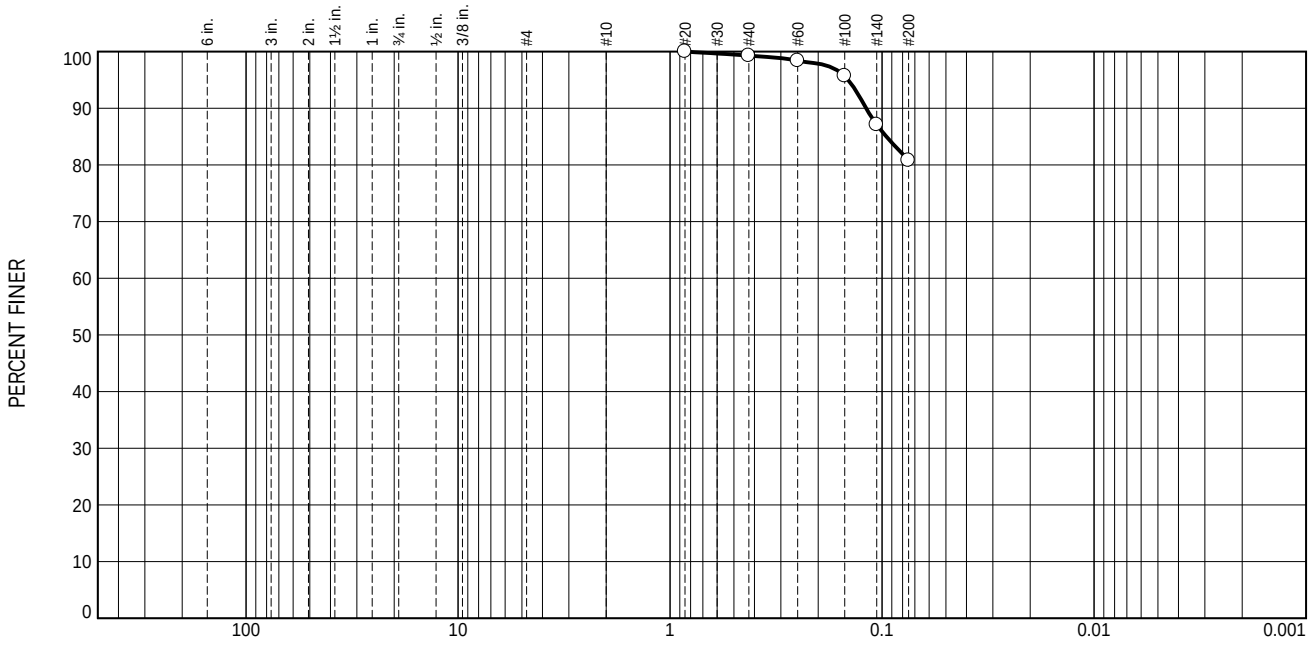
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	18.5	80.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.3		
#60	98.4		
#100	95.7		
#140	87.1		
#200	80.8		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 10F

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1189 D_{85}= 0.0955
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/2/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

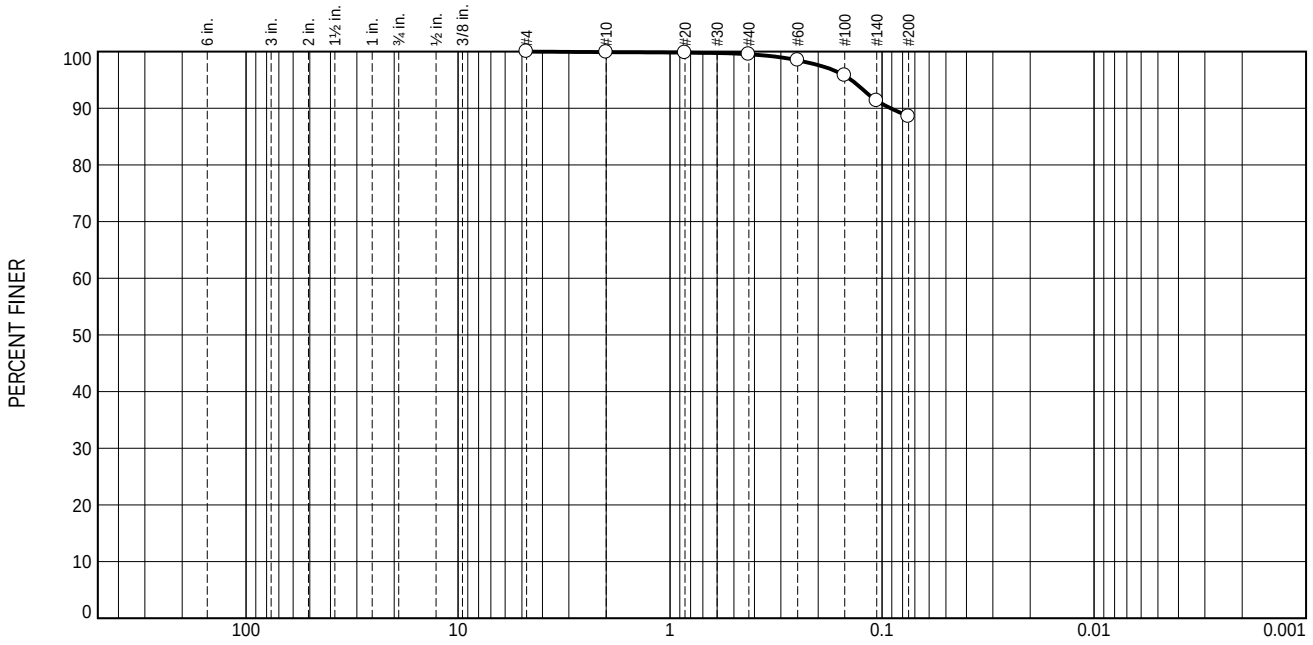
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.4	11.0	88.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.5		
#60	98.5		
#100	95.8		
#140	91.3		
#200	88.5		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 10 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.0912 D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/2/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

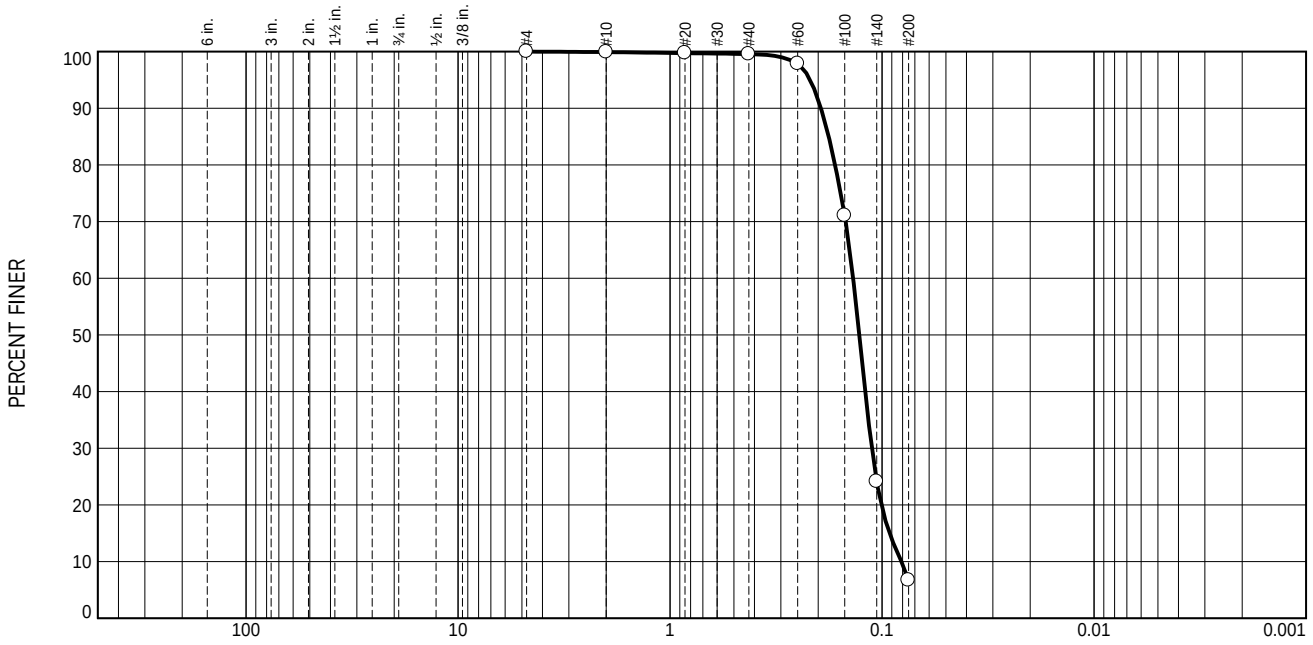
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.4	92.8	6.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.7		
#40	99.5		
#60	97.9		
#100	71.1		
#140	24.1		
#200	6.7		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 11A

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1942 D_{85}= 0.1785
D_{60}= 0.1369 D_{50}= 0.1281
D_{30}= 0.1118 D_{15}= 0.0922
D_{10}= 0.0810
C_u= 1.69 C_c= 1.13

USCS (ASTM D2487)

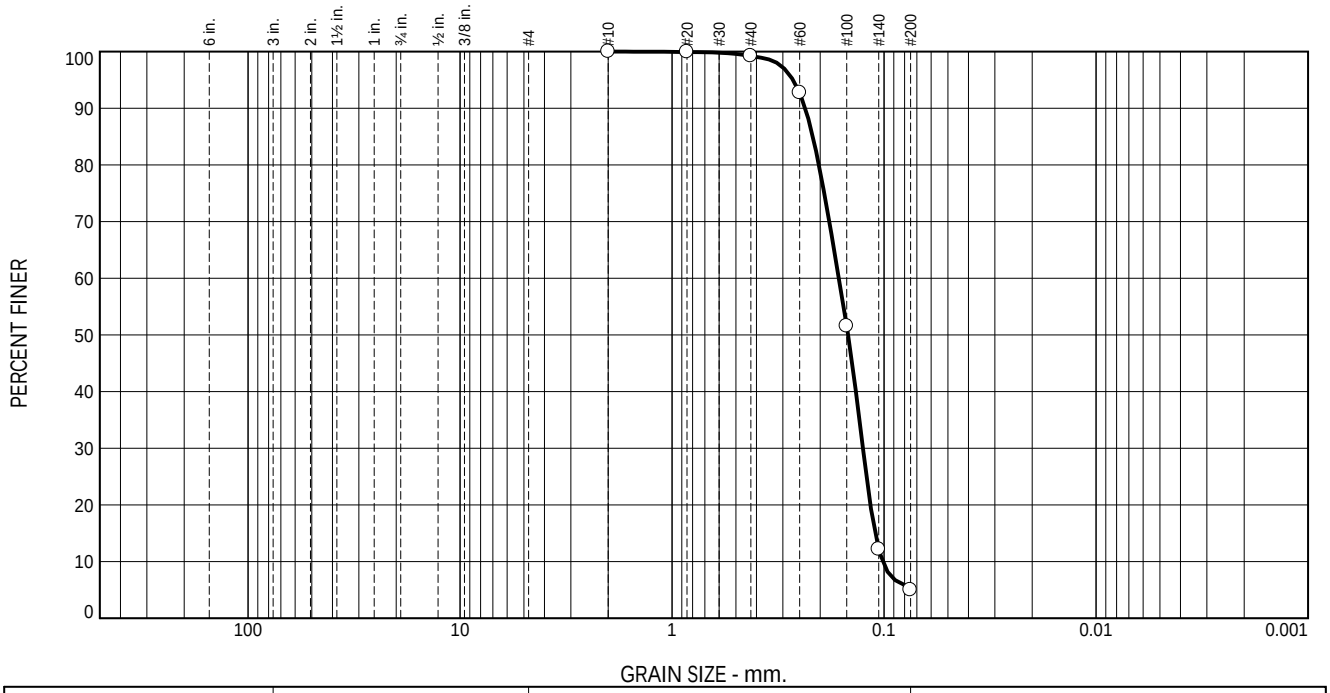
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	94.2	5.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.2		
#60	92.7		
#100	51.5		
#140	12.2		
#200	5.0		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 11B

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2352 D_{85}= 0.2168
D_{60}= 0.1635 D_{50}= 0.1477
D_{30}= 0.1259 D_{15}= 0.1102
D_{10}= 0.1016
C_u= 1.61 C_c= 0.95

USCS (ASTM D2487)

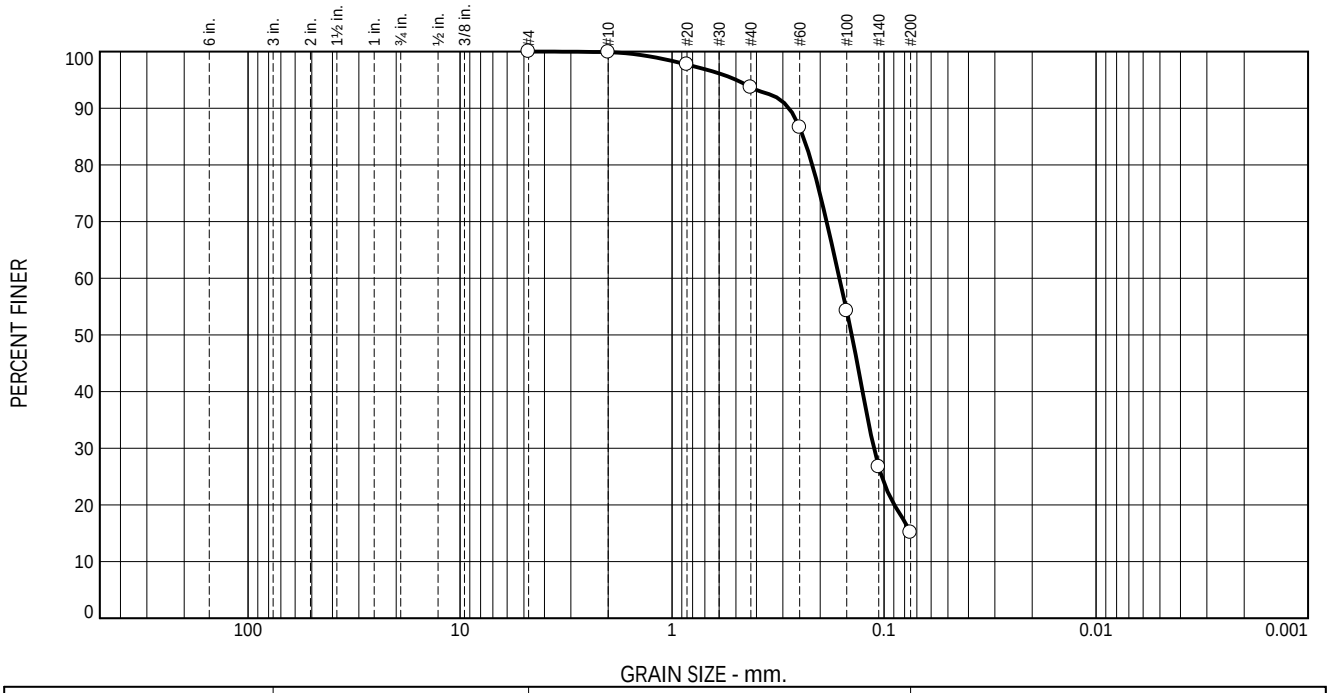
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	6.2	78.6	15.1	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	97.7		
#40	93.7		
#60	86.6		
#100	54.2		
#140	26.7		
#200	15.1		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 11C

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2808 D_{85}= 0.2405
D_{60}= 0.1624 D_{50}= 0.1419
D_{30}= 0.1117 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/2/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

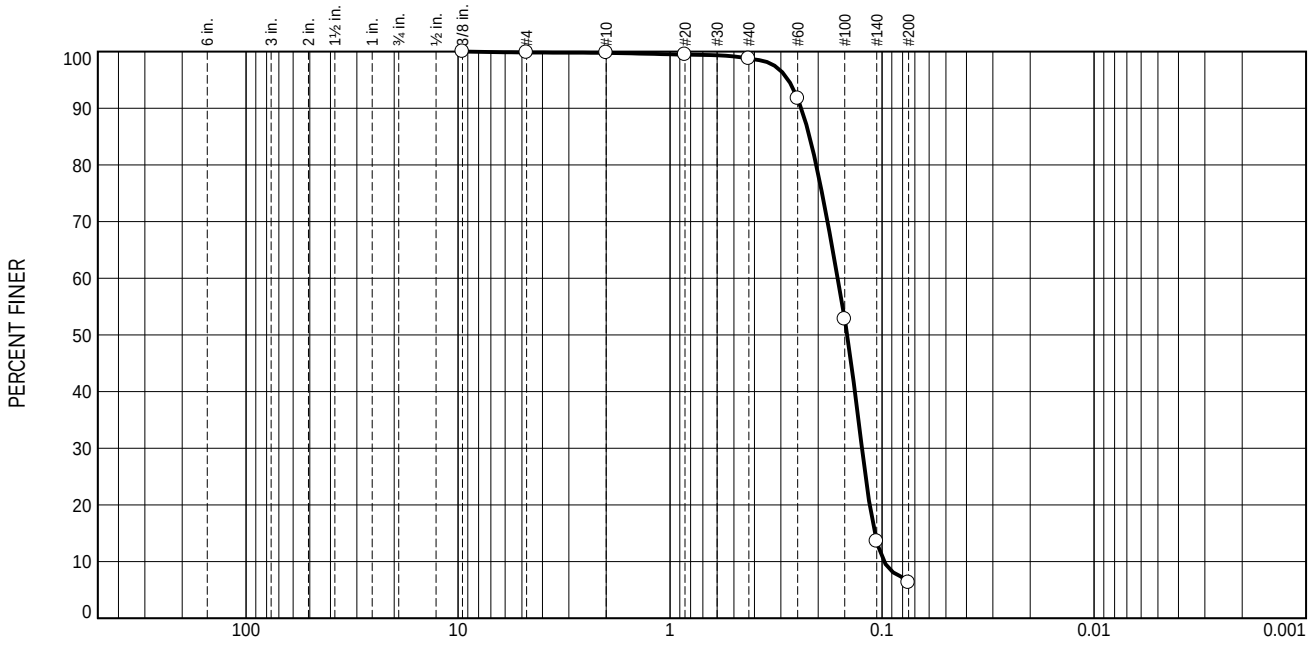
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.0	1.0	92.5	6.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.8		
#10	99.8		
#20	99.5		
#40	98.8		
#60	91.7		
#100	52.8		
#140	13.6		
#200	6.3		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 11D

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2403 D_{85}= 0.2198
D_{60}= 0.1620 D_{50}= 0.1460
D_{30}= 0.1245 D_{15}= 0.1083
D_{10}= 0.0978
C_u= 1.66 C_c= 0.98

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	2.3	83.6	13.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.6		
#20	98.9		
#40	97.3		
#60	92.2		
#100	60.7		
#140	22.8		
#200	13.7		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 11E

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2339 D_{85}= 0.2103
D_{60}= 0.1488 D_{50}= 0.1356
D_{30}= 0.1149 D_{15}= 0.0801
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/2/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

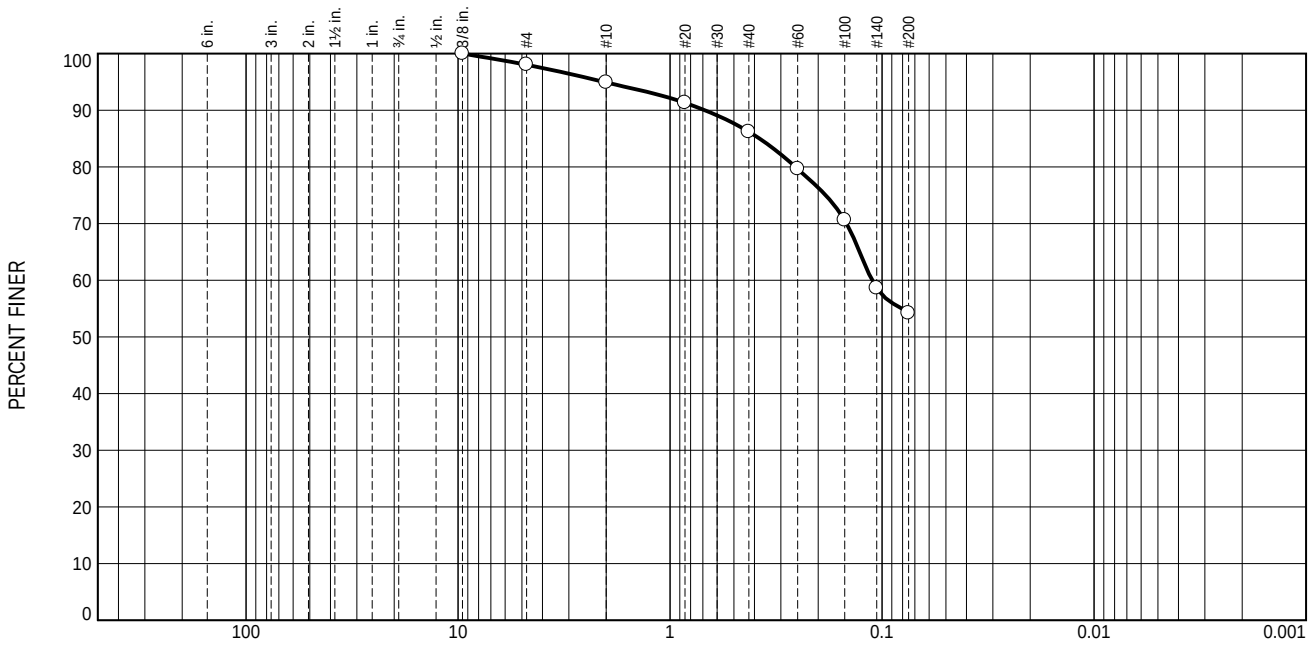
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.0	3.1	8.7	32.0	54.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	98.0		
#10	94.9		
#20	91.3		
#40	86.2		
#60	79.6		
#100	70.6		
#140	58.6		
#200	54.2		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 11F

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6862 D_{85}= 0.3784
D_{60}= 0.1114 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/2/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

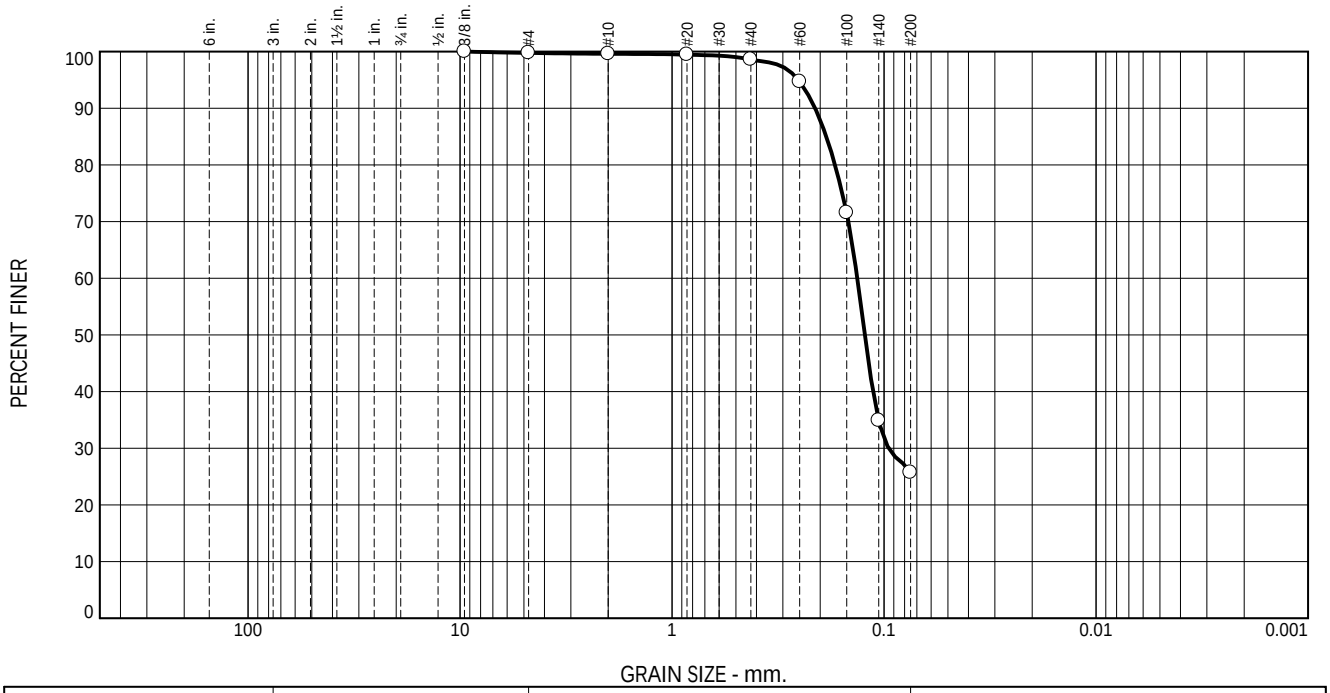
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	1.0	72.9	25.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.8		
#10	99.6		
#20	99.5		
#40	98.6		
#60	94.7		
#100	71.5		
#140	34.9		
#200	25.7		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 11 Comp

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2115 D_{85}= 0.1872
D_{60}= 0.1338 D_{50}= 0.1232
D_{30}= 0.0952 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

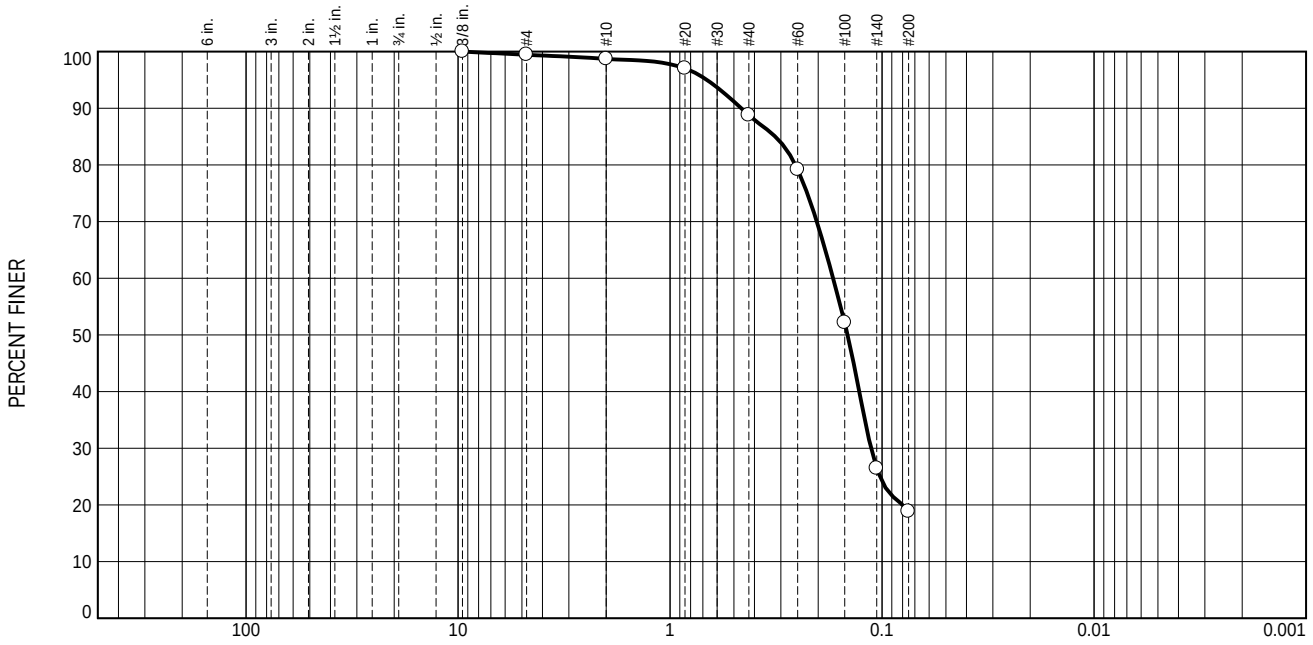
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.7	9.9	70.0	18.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.4		
#10	98.7		
#20	97.0		
#40	88.8		
#60	79.2		
#100	52.2		
#140	26.4		
#200	18.8		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 12A

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.4610 D_{85}= 0.3188
D_{60}= 0.1702 D_{50}= 0.1453
D_{30}= 0.1127 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

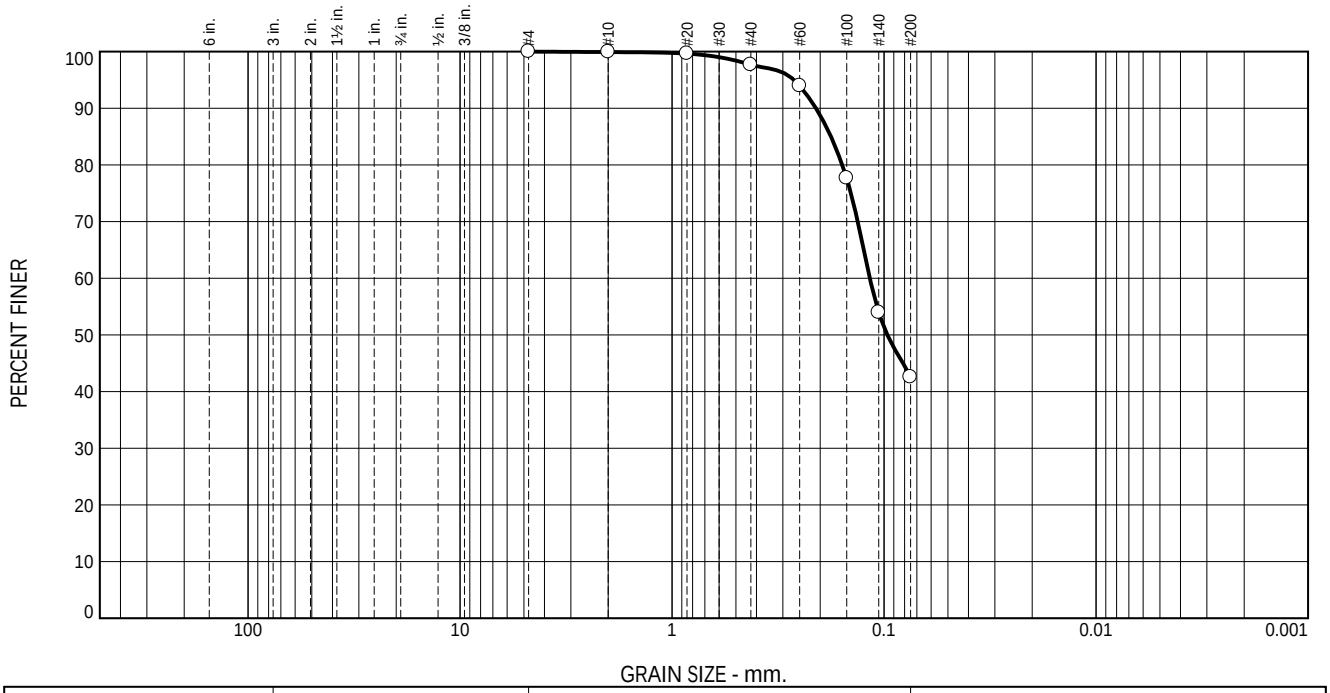
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.2	55.1	42.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	97.7		
#60	94.0		
#100	77.7		
#140	54.0		
#200	42.6		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 12B

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2095 D_{85}= 0.1780
D_{60}= 0.1167 D_{50}= 0.0965
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/2/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

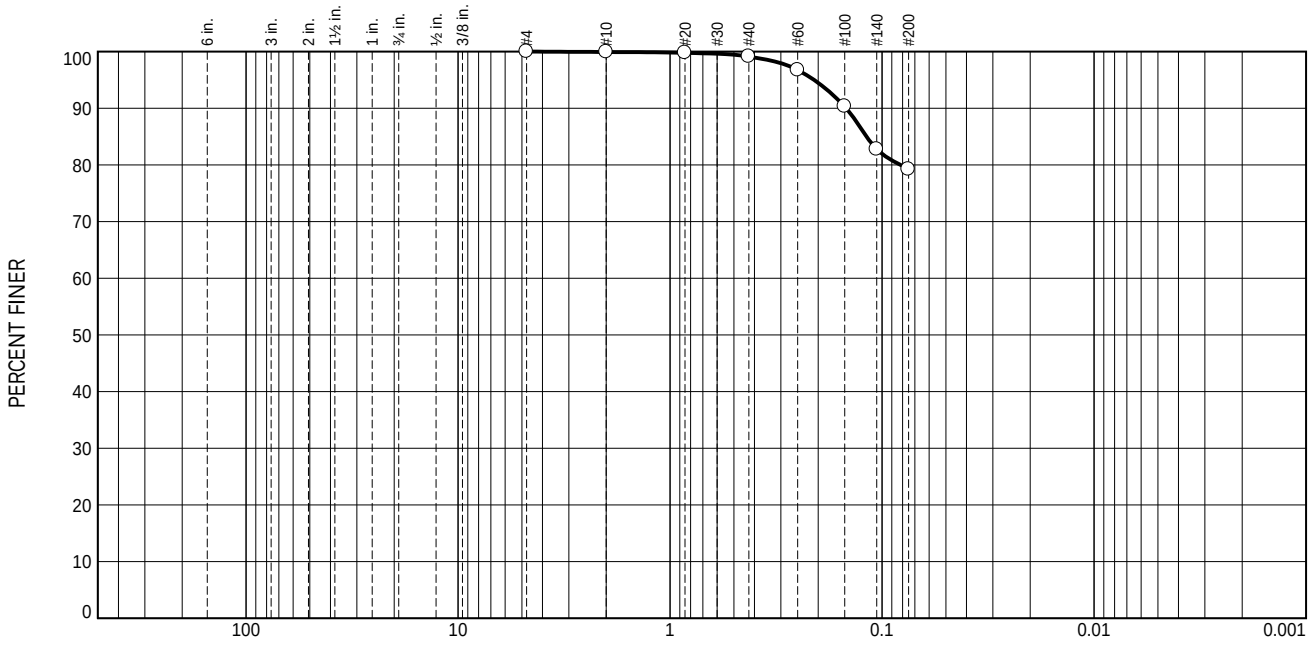
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.8	19.9	79.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.1		
#60	96.7		
#100	90.3		
#140	82.8		
#200	79.2		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 12C

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1474 D_{85}= 0.1185
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

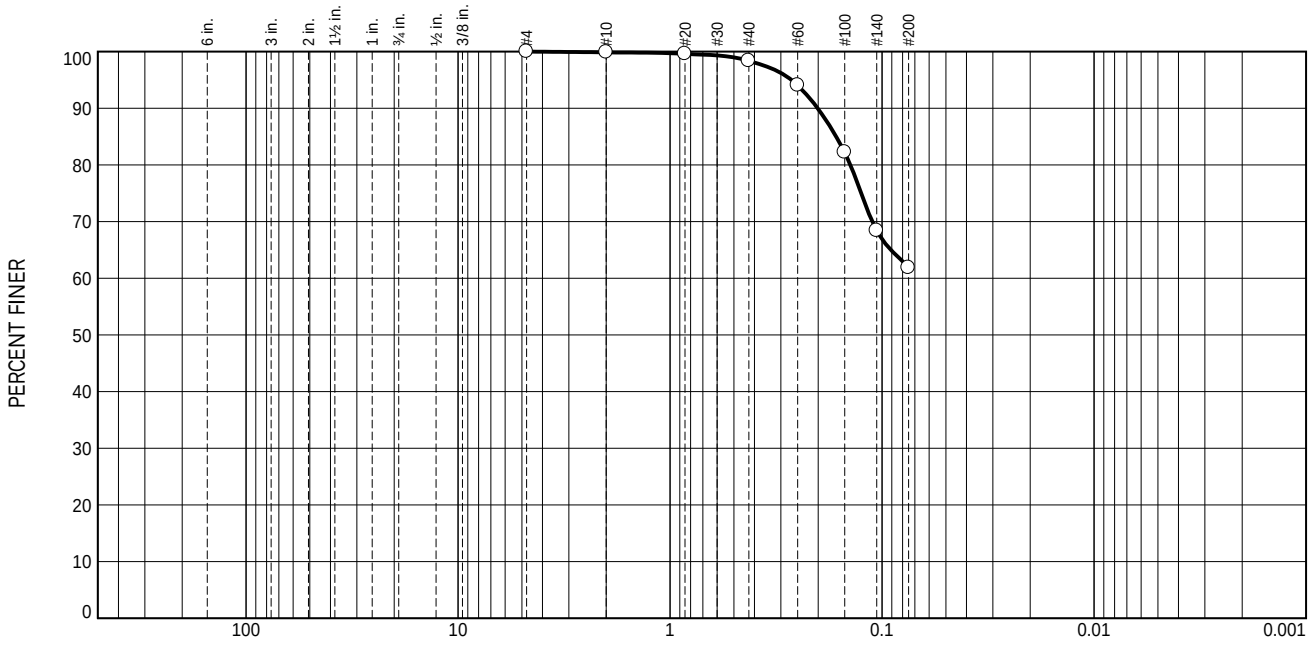
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.5	36.5	61.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.4		
#60	94.0		
#100	82.2		
#140	68.4		
#200	61.9		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 12D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2013 D_{85}= 0.1646
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/2/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

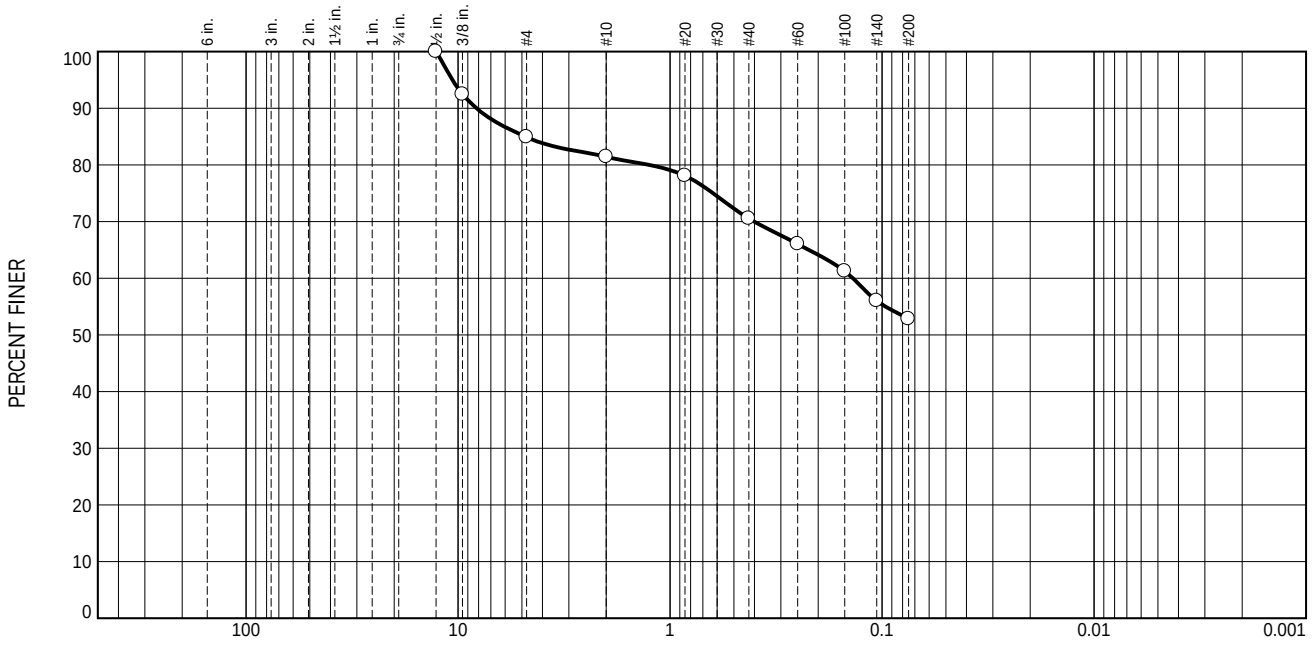
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	15.1	3.5	10.9	17.7	52.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
1/2	100.0		
3/8	92.5		
#4	84.9		
#10	81.4		
#20	78.1		
#40	70.5		
#60	66.0		
#100	61.2		
#140	56.0		
#200	52.8		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 12E

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 8.1811 D_{85}= 4.8108
D_{60}= 0.1372 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/2/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
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Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	17.0	30.5	52.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	96.1		
#40	83.0		
#60	73.2		
#100	65.6		
#140	56.6		
#200	52.5		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 12F

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.5966 D_{85}= 0.4707
D_{60}= 0.1218 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/2/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

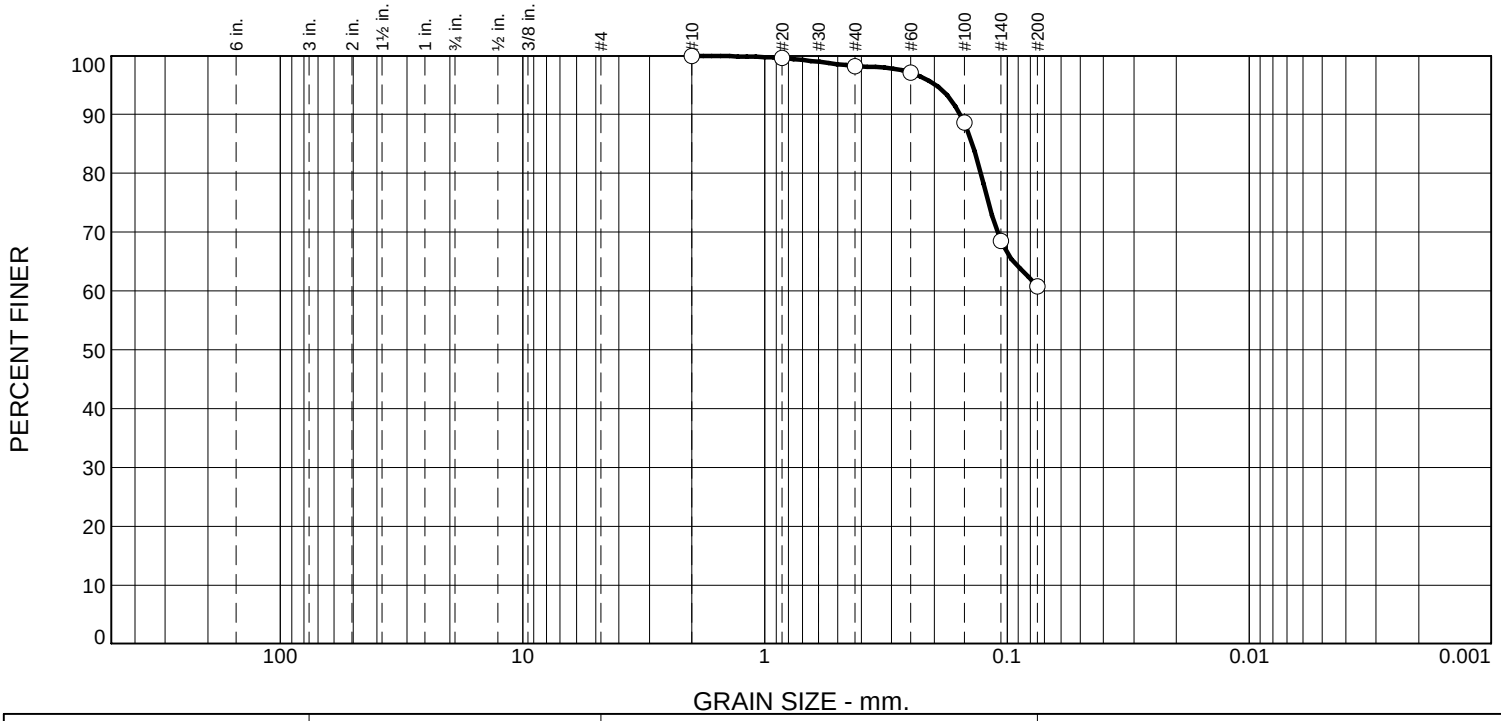
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.7	37.5	60.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.6		
#40	98.3		
#60	97.1		
#100	88.6		
#140	68.5		
#200	60.8		

· (no specification provided)

Material Description

Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 0.1561 D_{85}= 0.1392

D_{60}= D_{50}=

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23

Date Received: 2/27/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23 MIN
Sample Number: 12 Comp

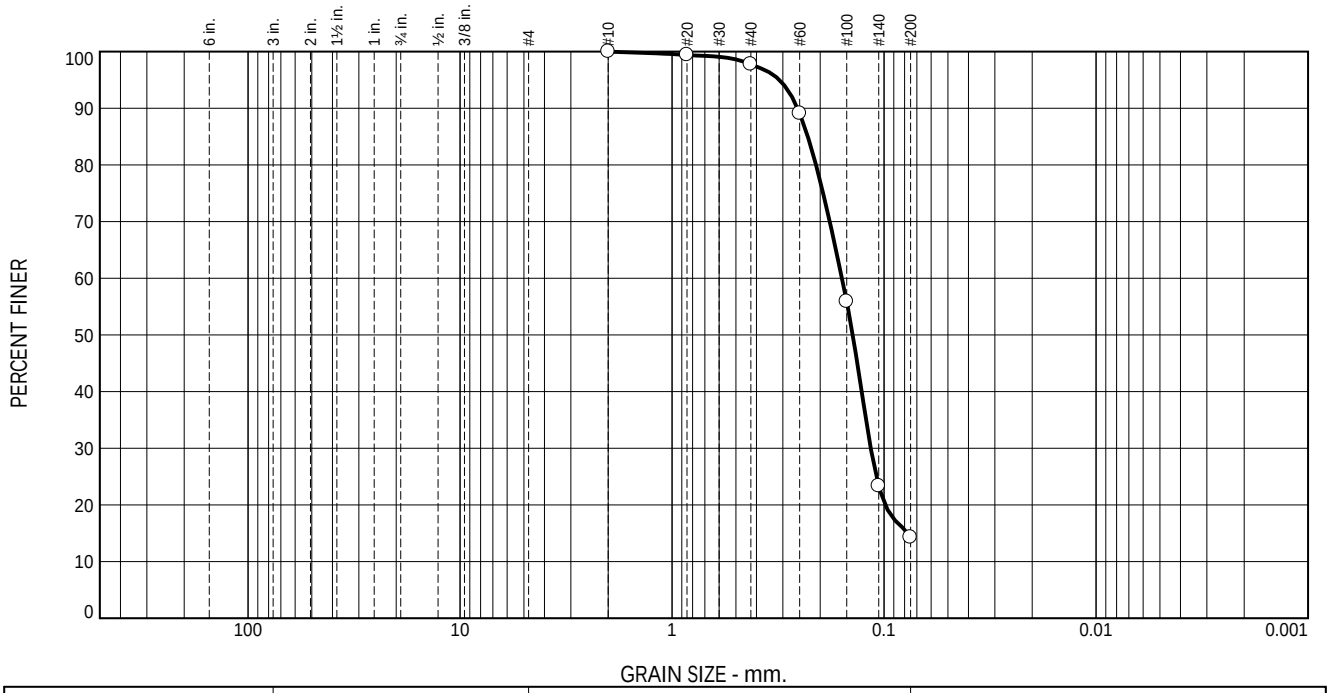
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.2	83.5	14.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.4		
#40	97.8		
#60	89.1		
#100	55.9		
#140	23.3		
#200	14.3		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 13A

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2560 D_{85}= 0.2289
D_{60}= 0.1581 D_{50}= 0.1405
D_{30}= 0.1155 D_{15}= 0.0773
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

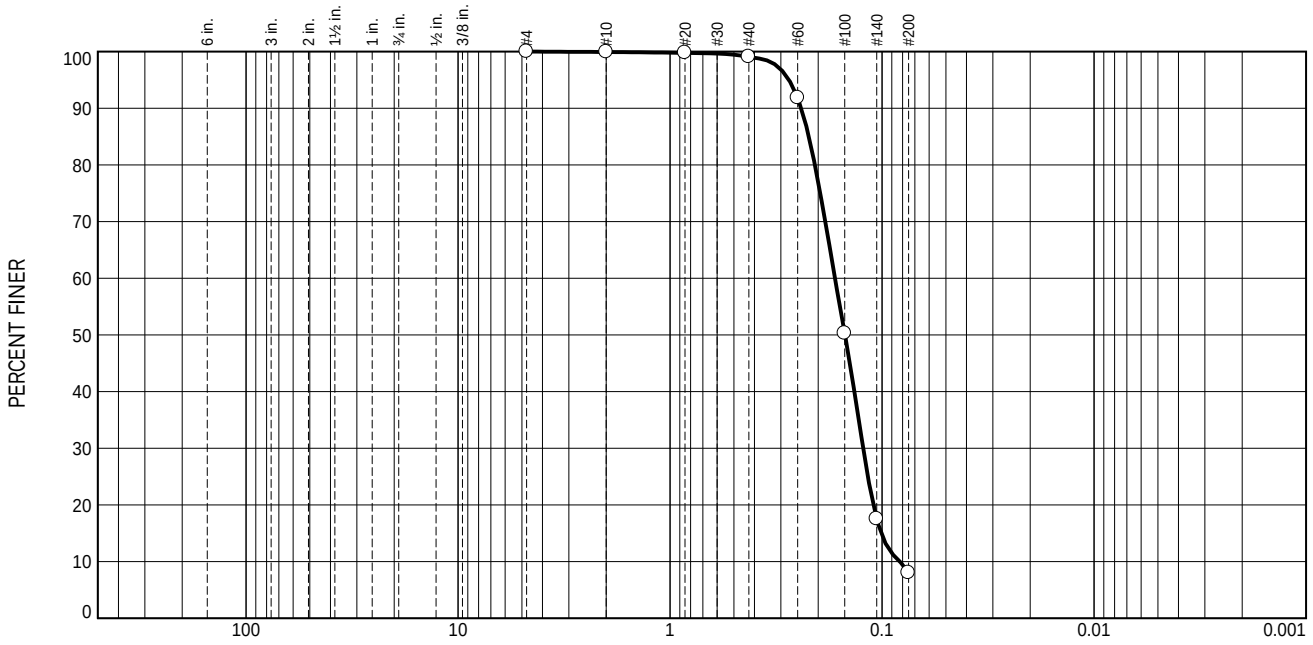
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.8	91.1	8.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.1		
#60	91.8		
#100	50.3		
#140	17.5		
#200	8.0		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 13B

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2403 D_{85}= 0.2215
D_{60}= 0.1667 D_{50}= 0.1495
D_{30}= 0.1228 D_{15}= 0.1010
D_{10}= 0.0825
C_u= 2.02 C_c= 1.10

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: j. hATCH
Title: Sr Engineer

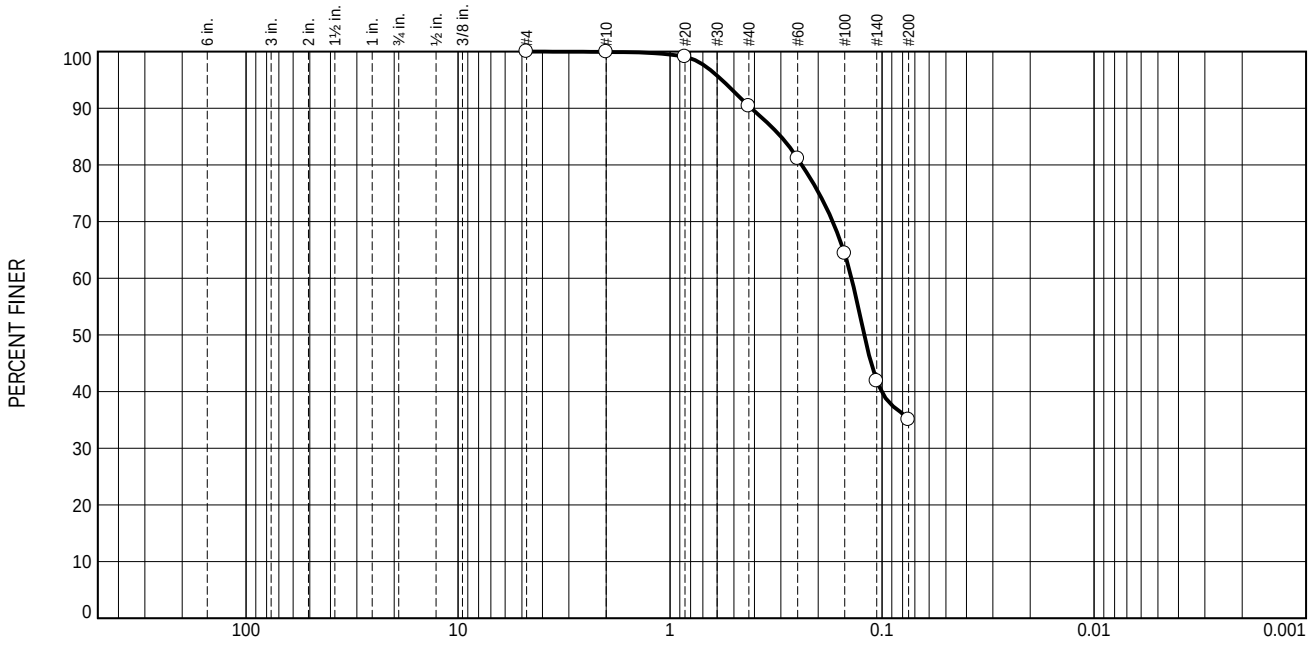
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	9.5	55.4	35.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.1		
#40	90.4		
#60	81.1		
#100	64.4		
#140	41.9		
#200	35.0		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 13C

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.4139 D_{85}= 0.2999
D_{60}= 0.1392 D_{50}= 0.1213
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

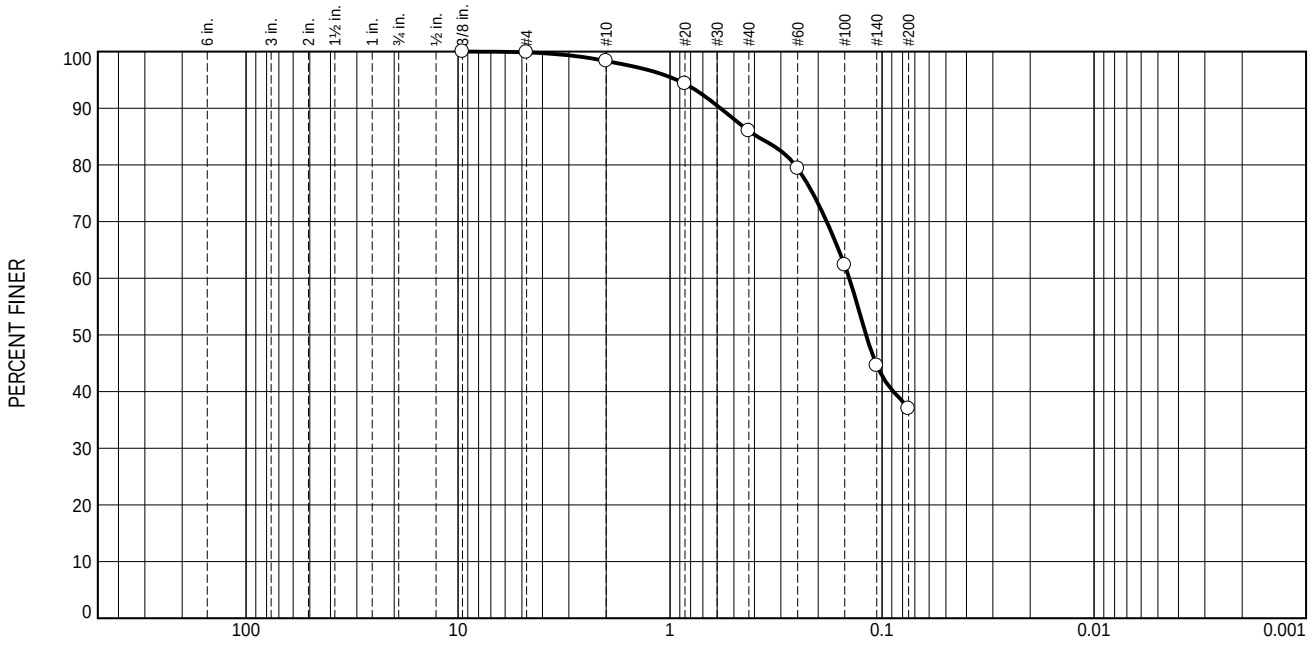
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: j. hATCH
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	1.6	12.3	49.0	37.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.9		
#10	98.3		
#20	94.3		
#40	86.0		
#60	79.4		
#100	62.3		
#140	44.6		
#200	37.0		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 13D

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.5780 D_{85}= 0.3871
D_{60}= 0.1427 D_{50}= 0.1190
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

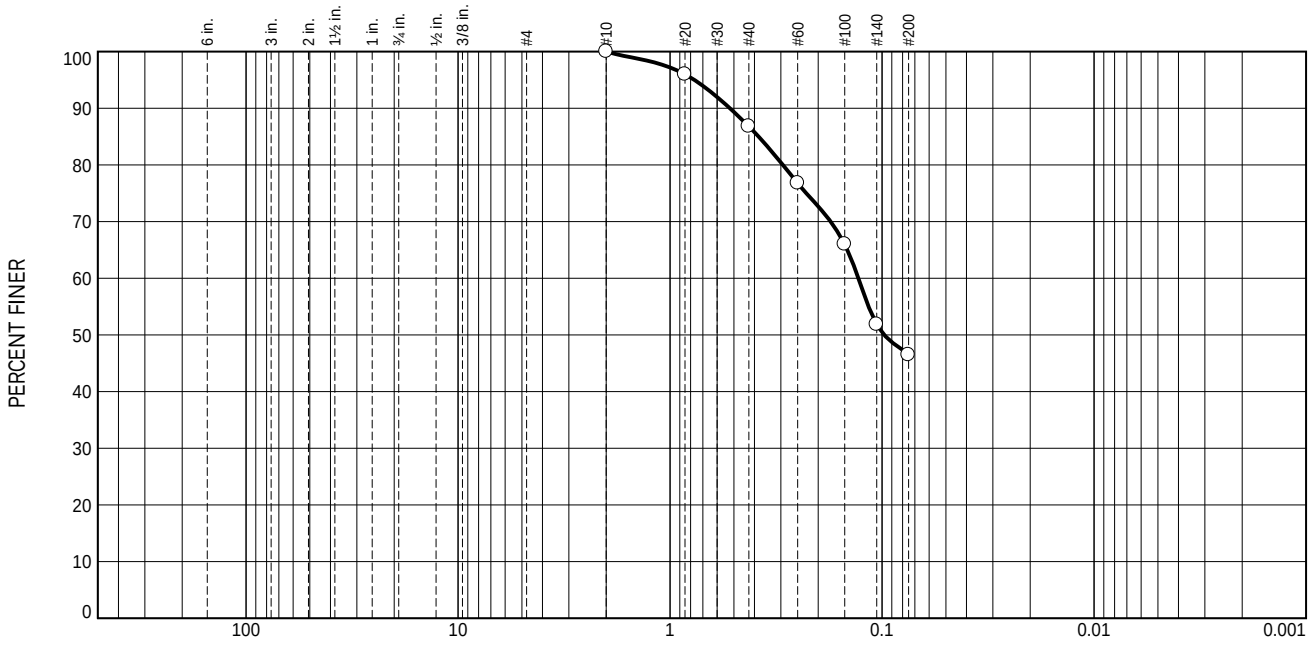
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	13.2	40.3	46.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	96.0		
#40	86.8		
#60	76.8		
#100	66.0		
#140	51.8		
#200	46.5		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 13E

Material Description
Dark Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.5221 D_{85}= 0.3821
D_{60}= 0.1294 D_{50}= 0.0978
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

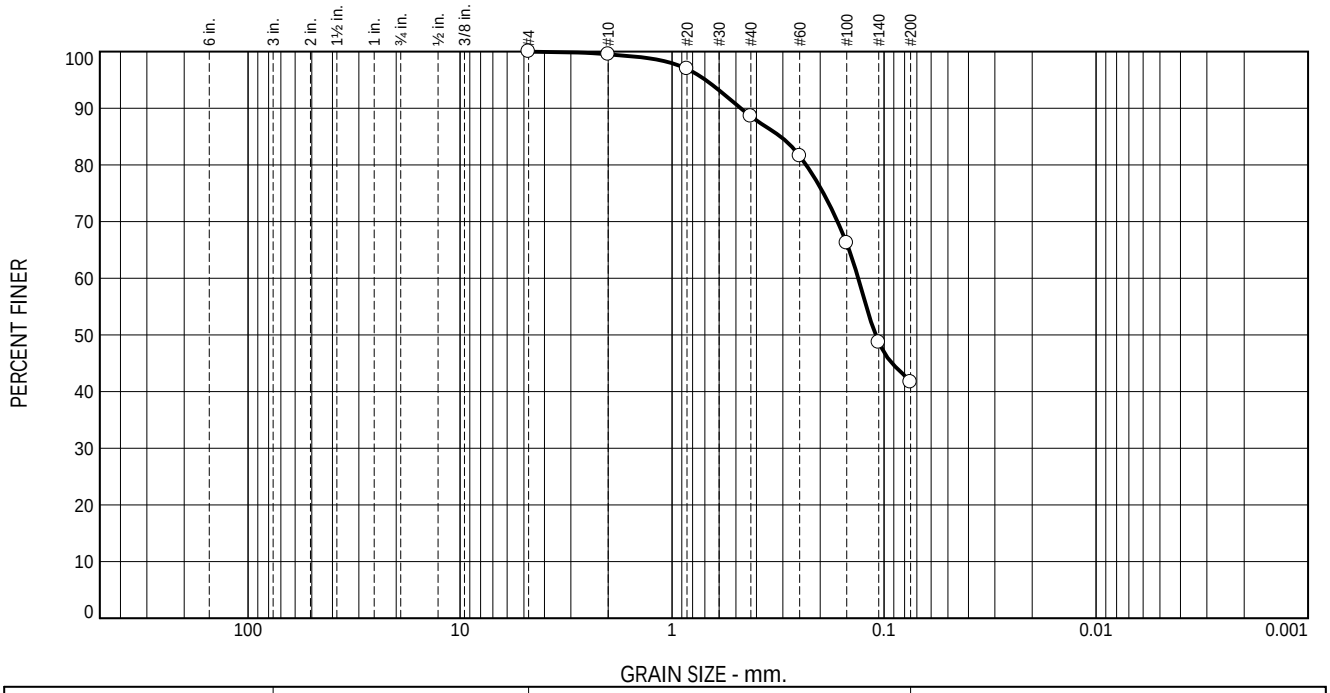
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	10.9	46.9	41.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.5		
#20	96.9		
#40	88.6		
#60	81.6		
#100	66.2		
#140	48.7		
#200	41.7		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 13F

Material Description
Dark Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.4741 D_{85}= 0.3079
D_{60}= 0.1324 D_{50}= 0.1097
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

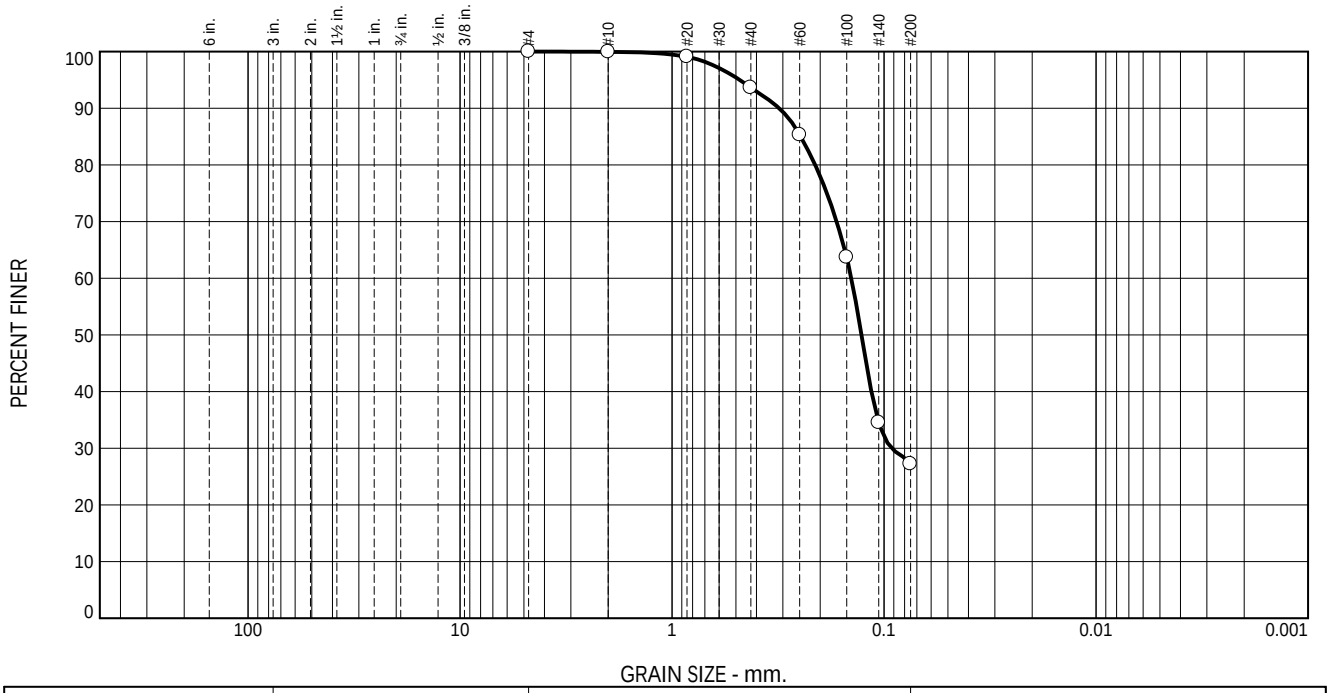
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	6.3	66.4	27.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.1		
#40	93.6		
#60	85.3		
#100	63.7		
#140	34.5		
#200	27.2		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 13 Comp

Material Description
Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3120 D_{85}= 0.2473
D_{60}= 0.1426 D_{50}= 0.1279
D_{30}= 0.0921 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: _____ Technician: _____
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/27/28
Date Received: 2/27/28
Checked By: J. Hatch
Title: Sr Engineer

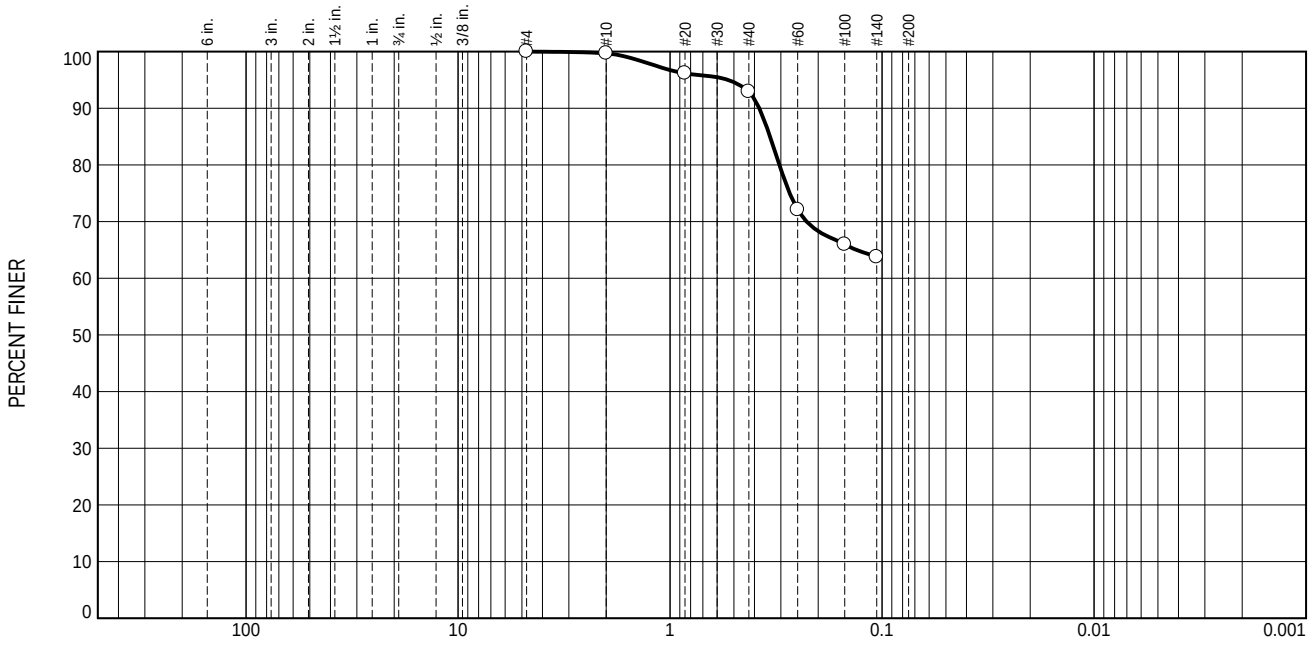
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	6.8	92.9		

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	96.1		
#40	92.9		
#60	72.1		
#100	66.0		
#140	63.7		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 14A

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3792 D_{85}= 0.3376
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

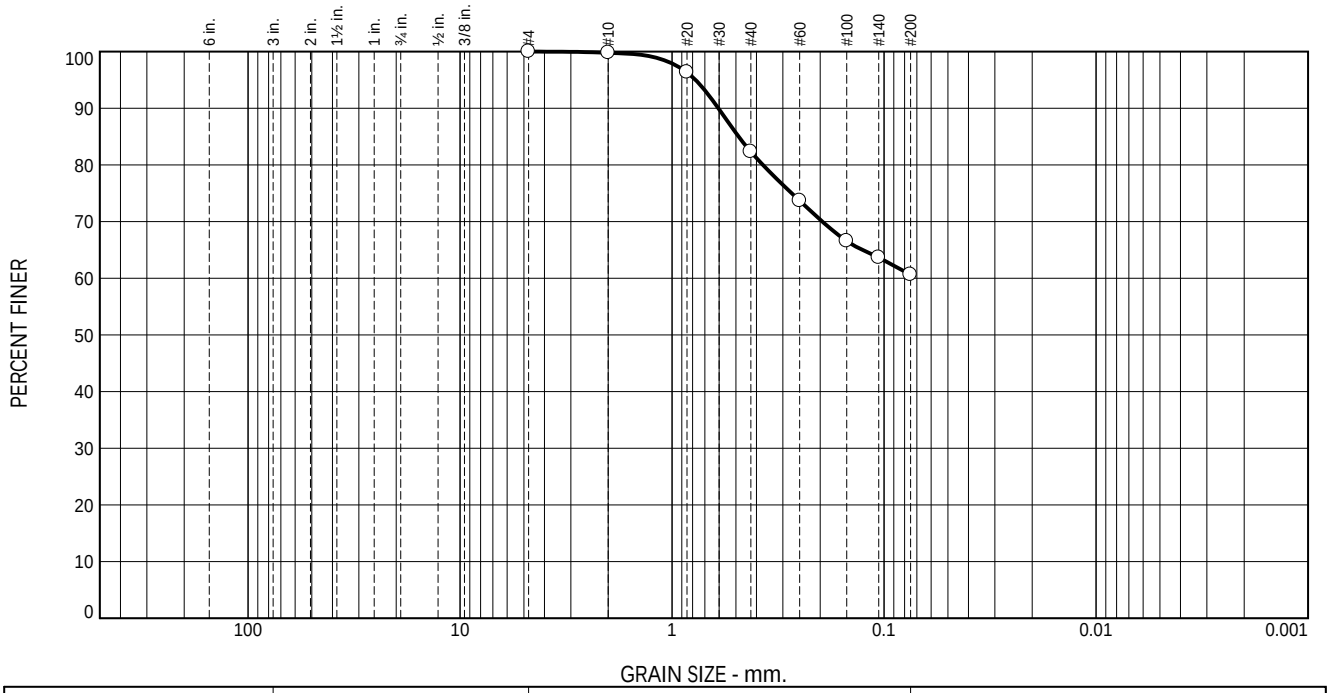
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	17.5	21.7	60.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	96.3		
#40	82.3		
#60	73.7		
#100	66.6		
#140	63.6		
#200	60.6		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 14B

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6045 D_{85}= 0.4855
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

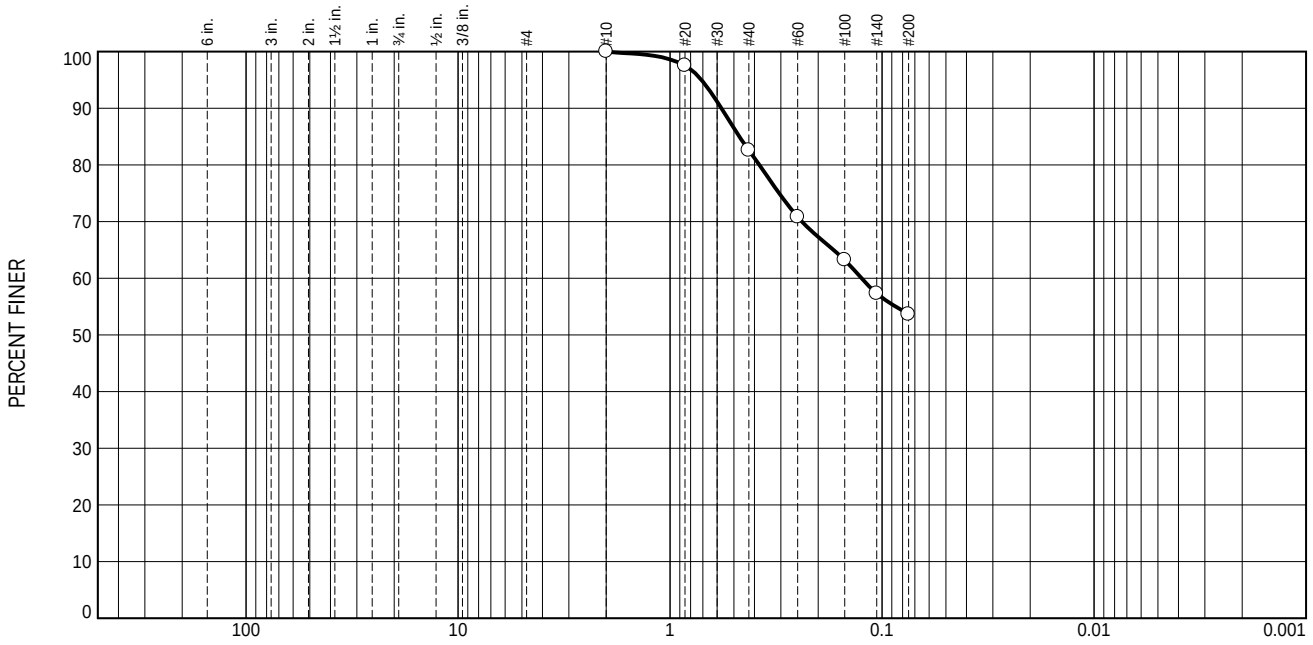
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	17.4	29.0	53.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	97.5		
#40	82.6		
#60	70.8		
#100	63.2		
#140	57.3		
#200	53.6		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 14C

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.5723 D_{85}= 0.4711
D_{60}= 0.1250 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

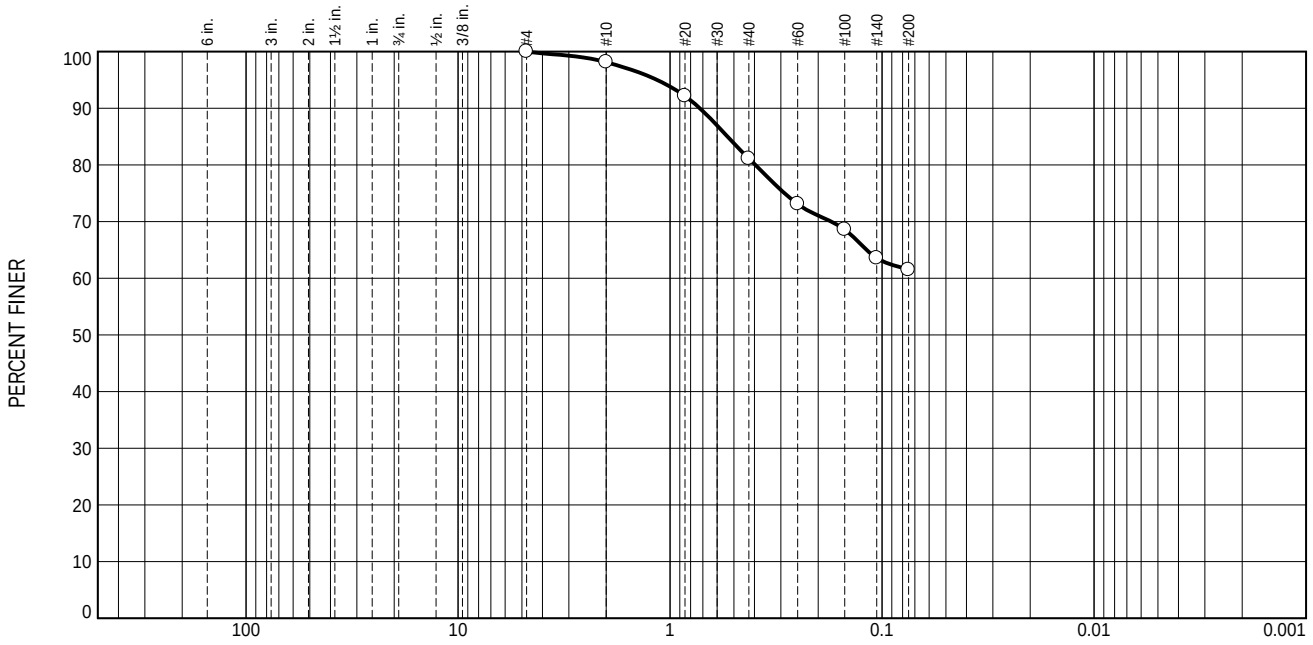
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.9	17.0	19.6	61.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	98.1		
#20	92.1		
#40	81.1		
#60	73.1		
#100	68.6		
#140	63.6		
#200	61.5		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 14D

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.7236 D_{85}= 0.5359
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

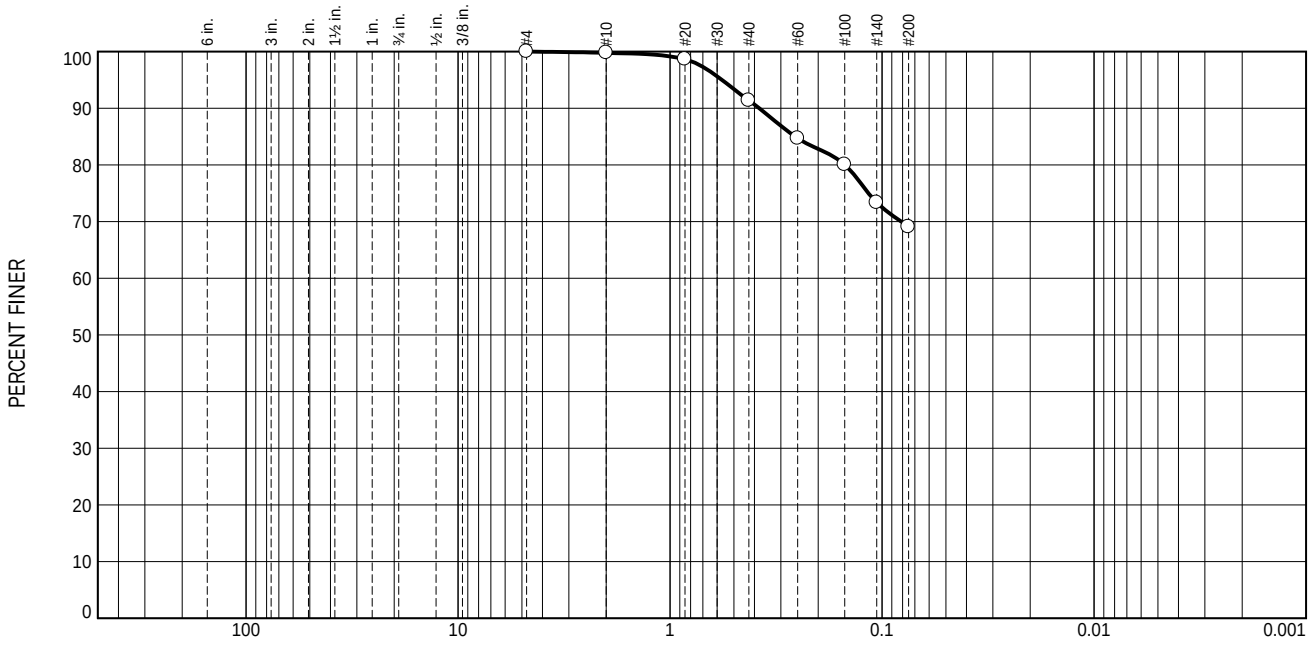
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	8.4	22.4	69.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	98.6		
#40	91.4		
#60	84.7		
#100	80.0		
#140	73.4		
#200	69.0		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 14 Comp

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3796 D_{85}= 0.2570
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

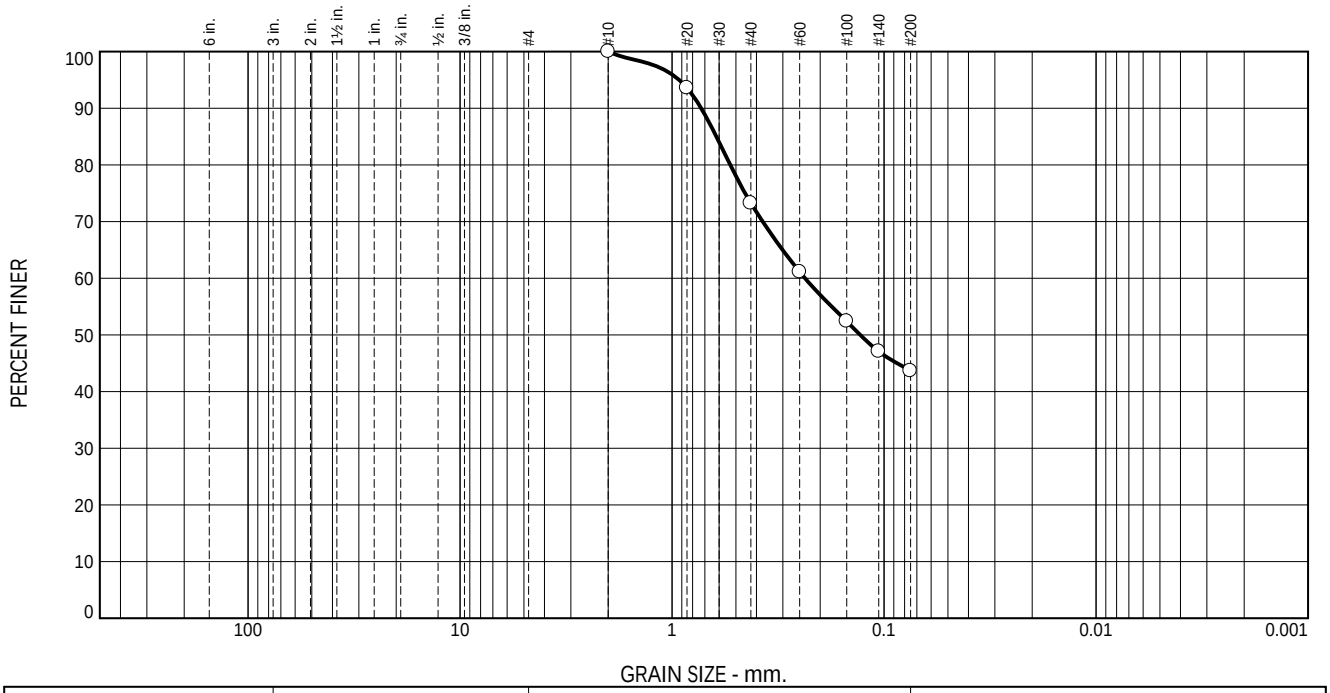
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	26.7	29.6	43.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	93.6		
#40	73.3		
#60	61.1		
#100	52.4		
#140	47.1		
#200	43.7		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 15A

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.7286 D_{85}= 0.6180
D_{60}= 0.2360 D_{50}= 0.1295
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

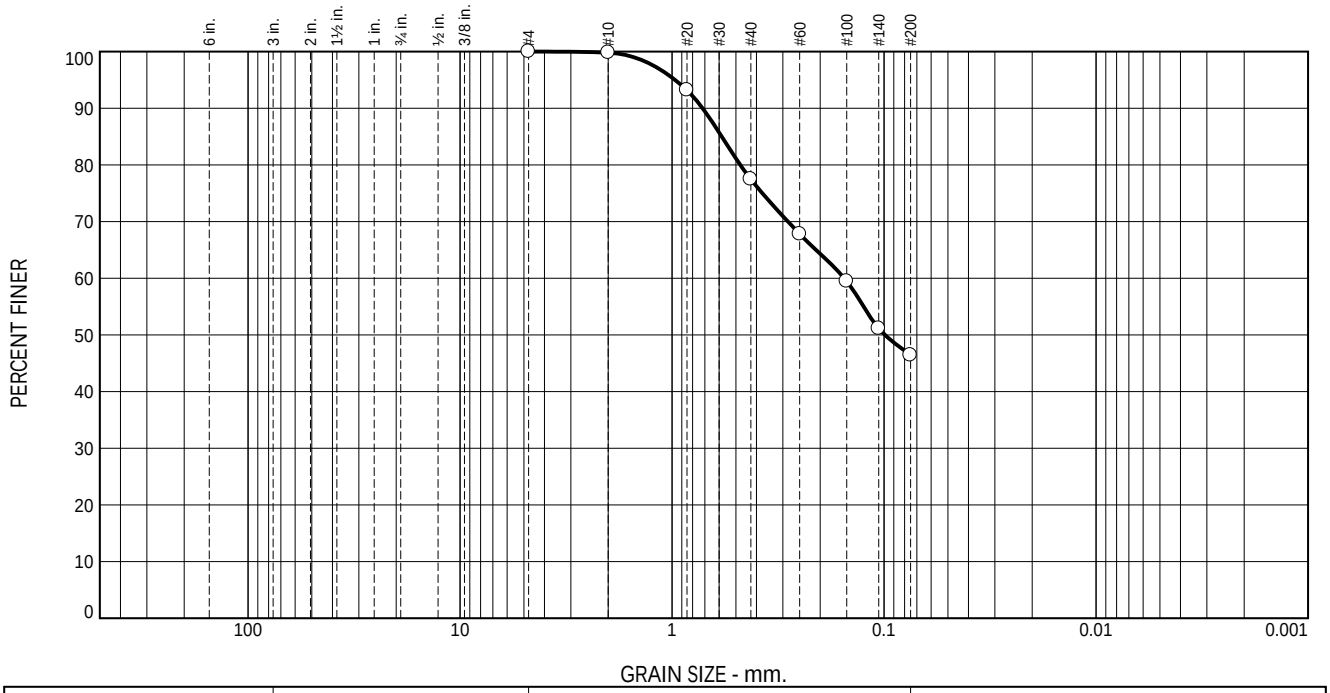
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	22.3	31.1	46.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	93.2		
#40	77.5		
#60	67.8		
#100	59.5		
#140	51.1		
#200	46.4		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 15B

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.7178 D_{85}= 0.5828
D_{60}= 0.1541 D_{50}= 0.0992
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

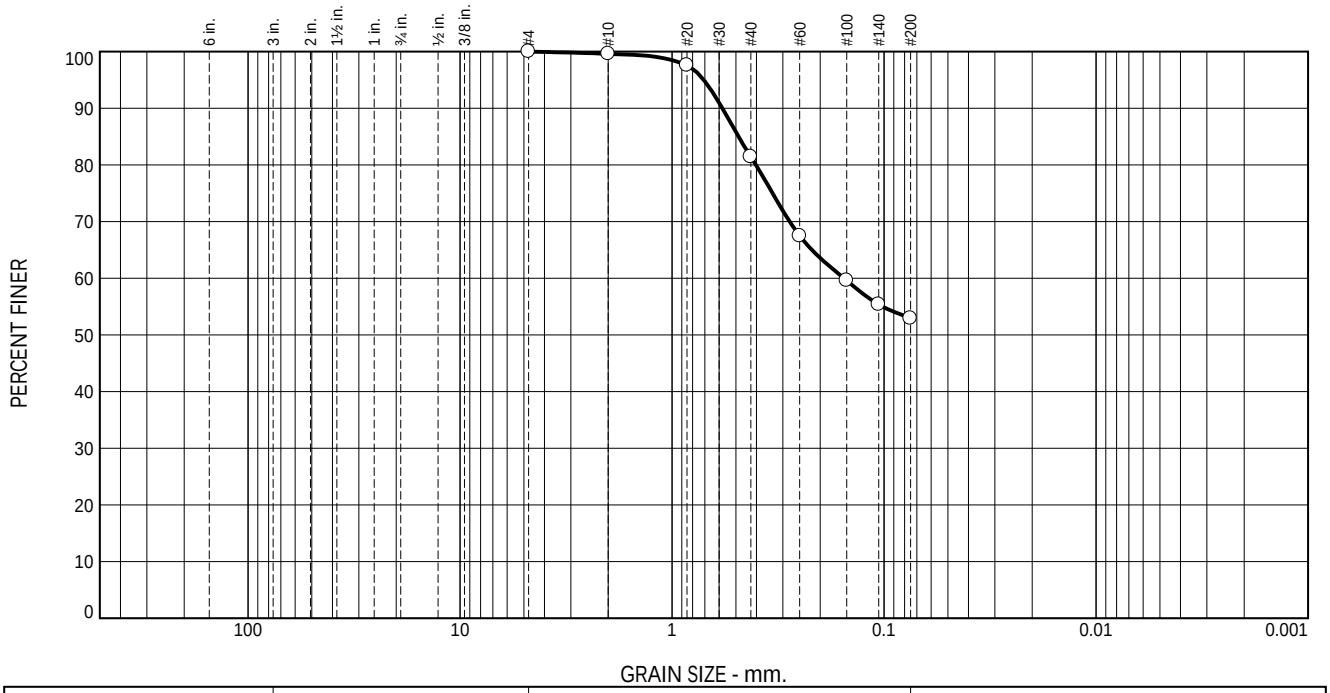
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	18.2	28.5	52.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.6		
#20	97.6		
#40	81.4		
#60	67.5		
#100	59.6		
#140	55.4		
#200	52.9		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 15C

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.5788 D_{85}= 0.4858
D_{60}= 0.1545 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

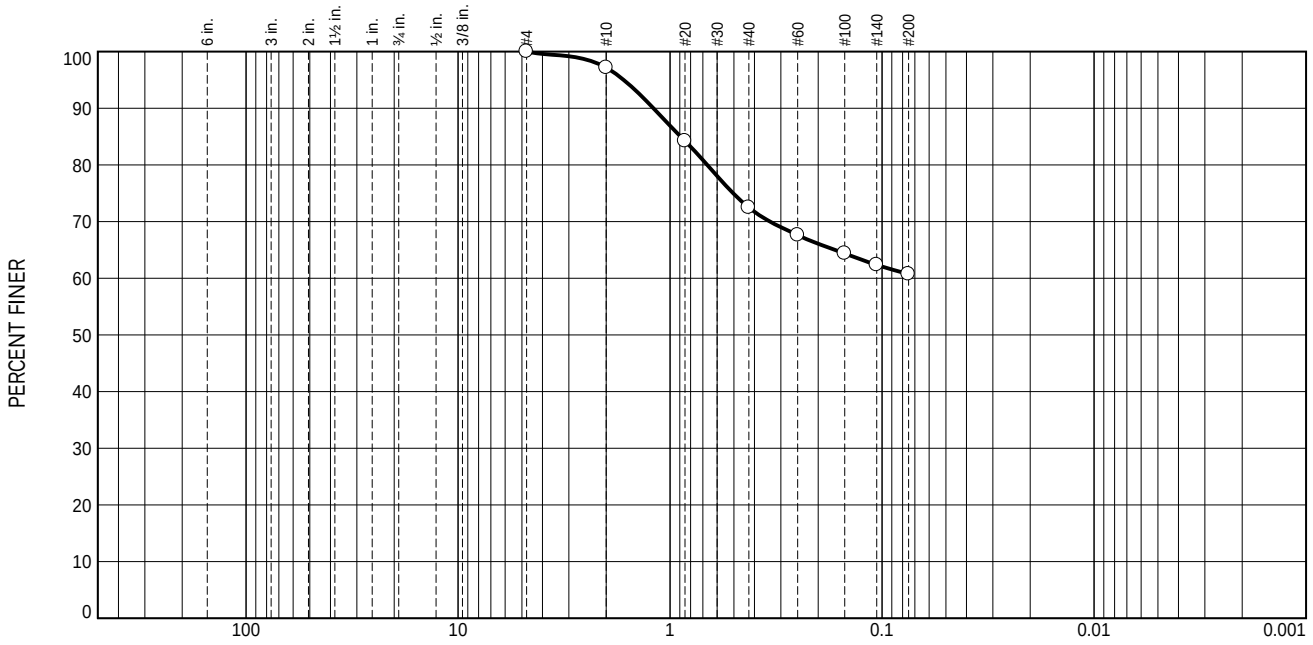
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	2.8	24.7	11.8	60.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	97.2		
#20	84.2		
#40	72.5		
#60	67.6		
#100	64.4		
#140	62.3		
#200	60.7		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 15D

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.1976 D_{85}= 0.8923
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

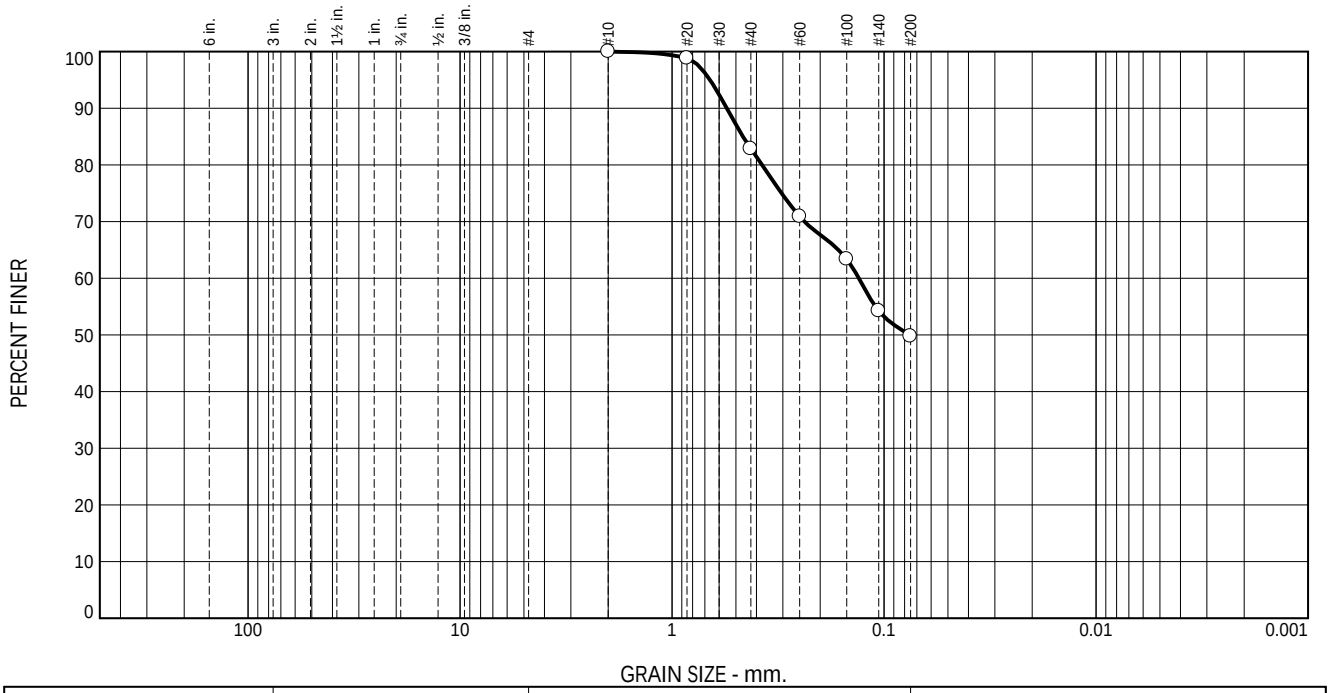
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	17.1	33.1	49.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.8		
#40	82.9		
#60	70.9		
#100	63.4		
#140	54.2		
#200	49.8		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 15 Comp

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.5515 D_{85}= 0.4631
D_{60}= 0.1315 D_{50}= 0.0764
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: _____ Technician: _____
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

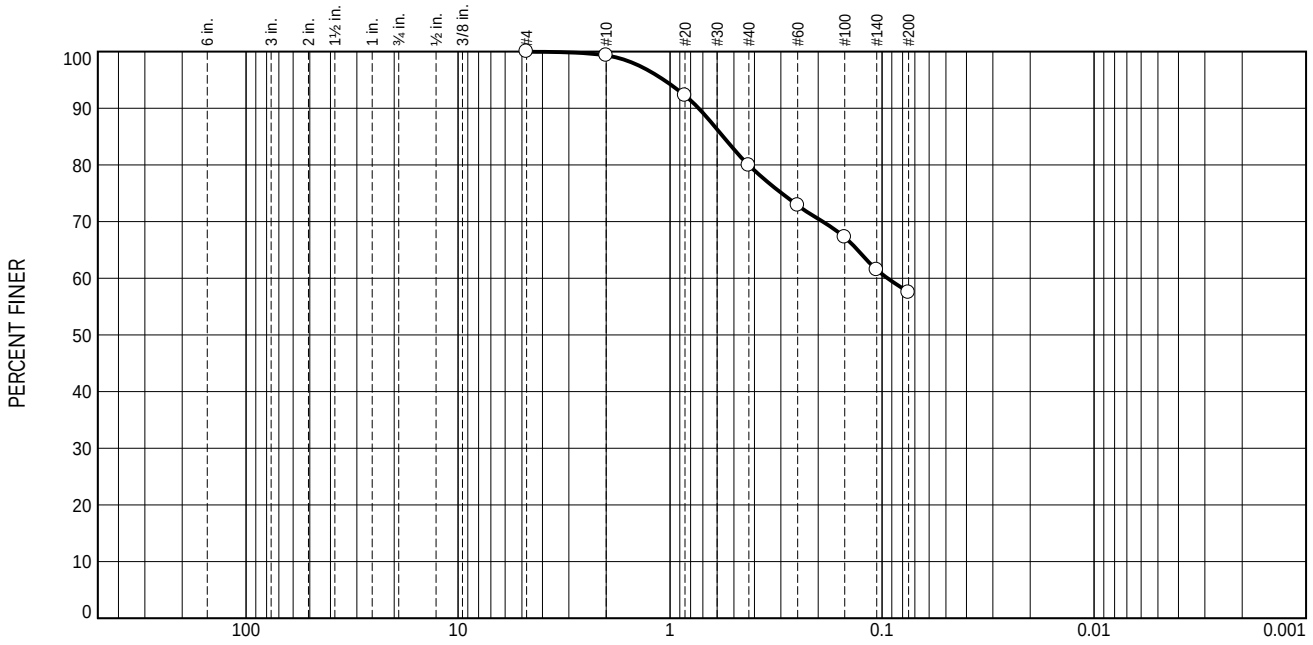
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	19.4	22.4	57.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.3		
#20	92.2		
#40	79.9		
#60	72.9		
#100	67.2		
#140	61.5		
#200	57.5		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 16A

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7331 D_{85}= 0.5619
D_{60}= 0.0942 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

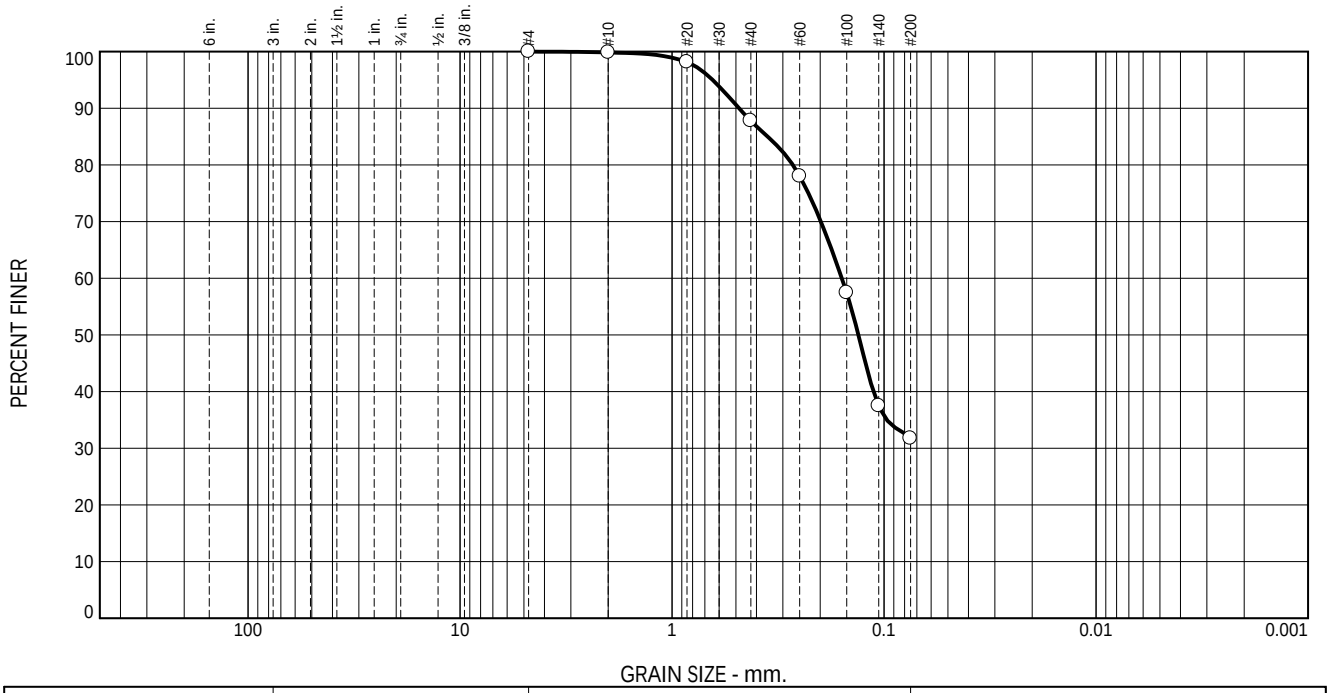
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	12.0	56.1	31.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	98.1		
#40	87.8		
#60	78.0		
#100	57.4		
#140	37.5		
#200	31.7		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 16B

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4829 D_{85}= 0.3540
D_{60}= 0.1582 D_{50}= 0.1322
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

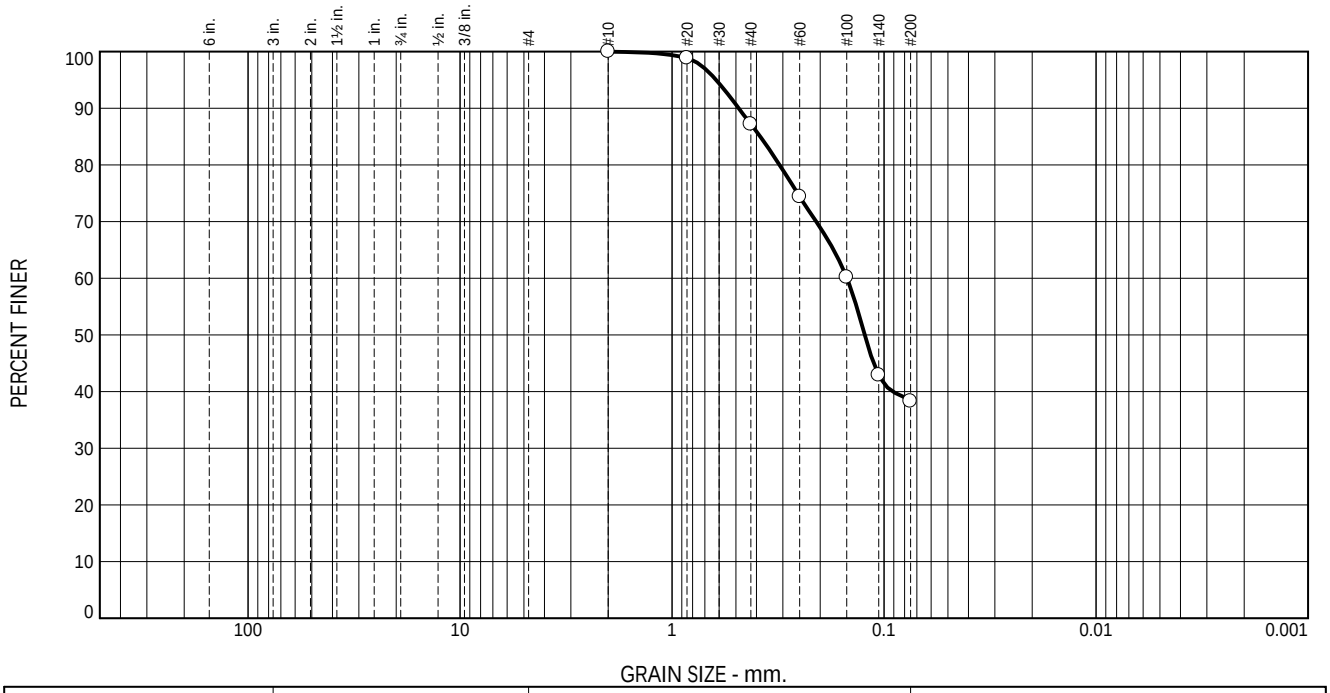
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	12.8	48.9	38.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	98.8		
#40	87.2		
#60	74.4		
#100	60.2		
#140	42.9		
#200	38.3		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 16C

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.4851 D_{85}= 0.3837
D_{60}= 0.1493 D_{50}= 0.1234
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

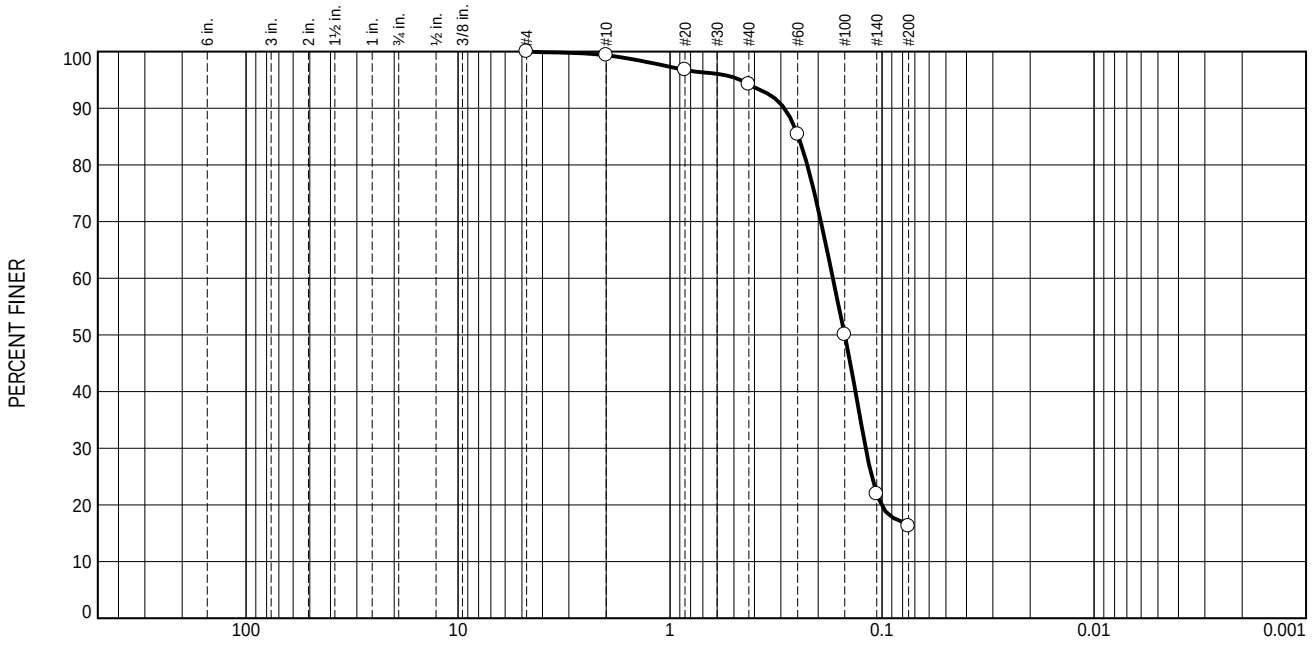
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	5.2	77.9	16.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.4		
#20	96.8		
#40	94.2		
#60	85.4		
#100	50.0		
#140	21.9		
#200	16.3		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 16D

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2890 D_{85}= 0.2478
D_{60}= 0.1706 D_{50}= 0.1499
D_{30}= 0.1195 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

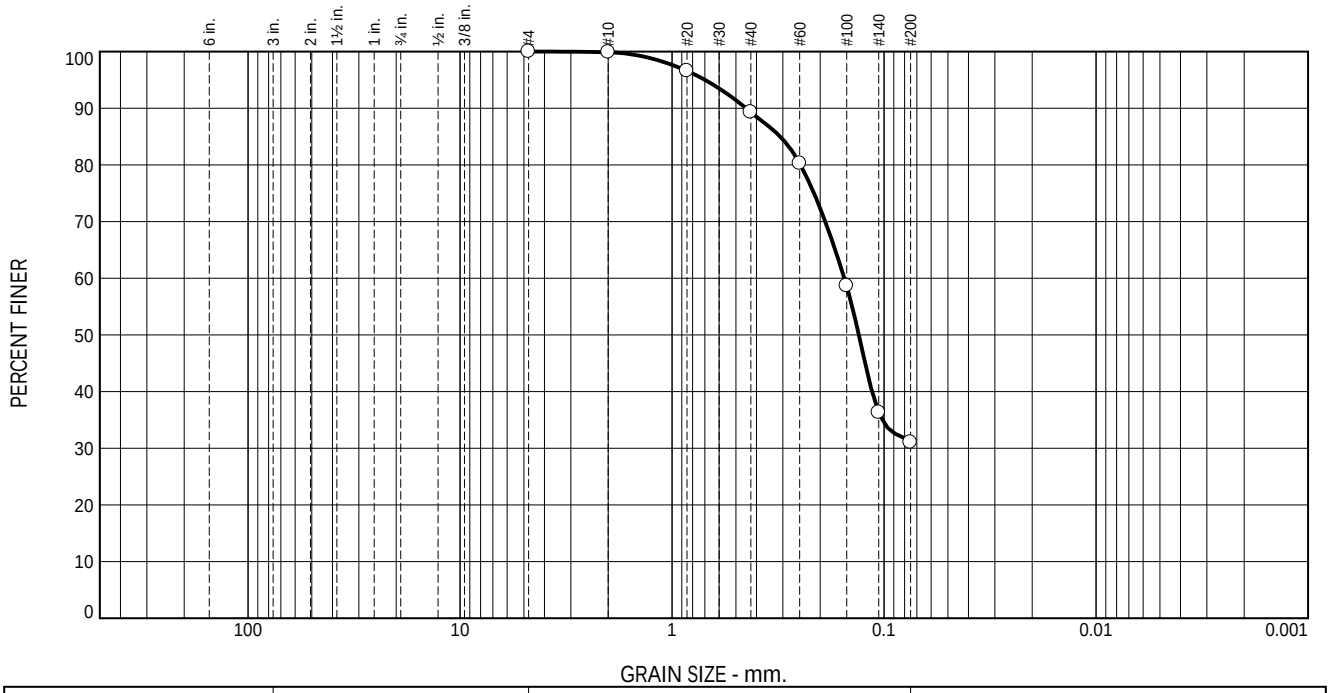
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	10.6	58.3	31.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	96.6		
#40	89.3		
#60	80.3		
#100	58.6		
#140	36.3		
#200	31.0		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 16 Comp

Material Description
Grayish Brown and Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.4473 D_{85}= 0.3089
D_{60}= 0.1539 D_{50}= 0.1316
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

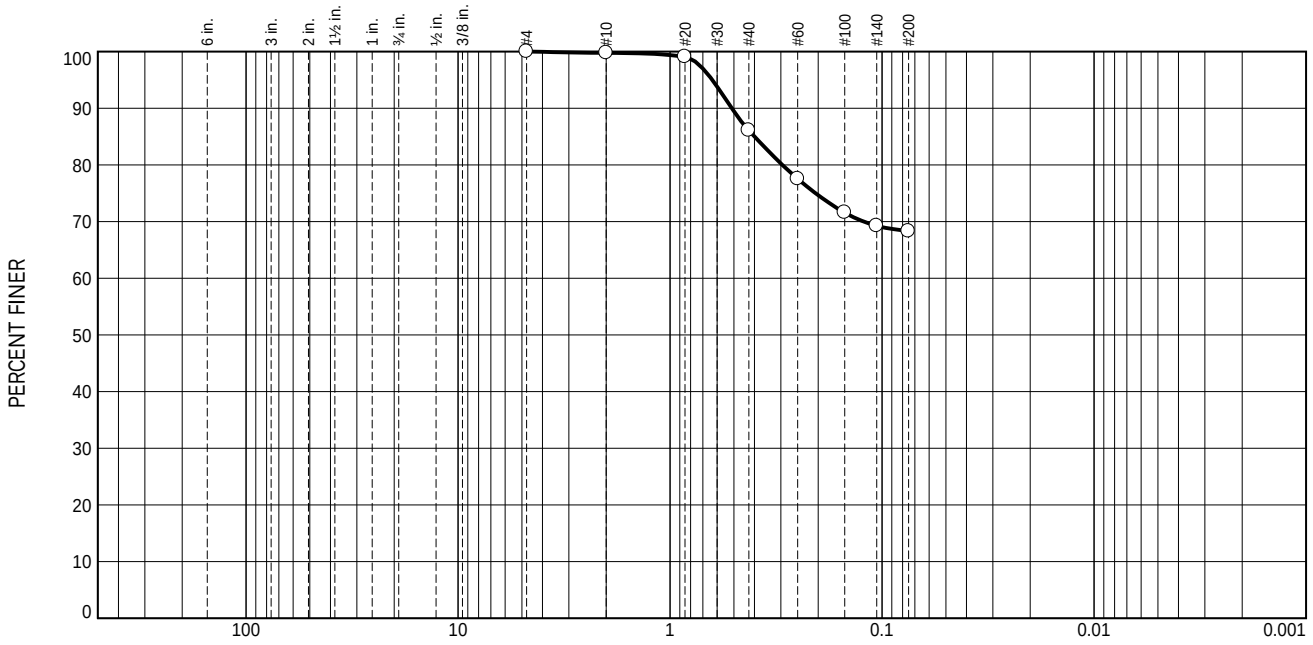
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	13.7	17.8	68.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.1		
#40	86.1		
#60	77.5		
#100	71.6		
#140	69.2		
#200	68.3		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 17A

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.5113 D_{85}= 0.3993
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

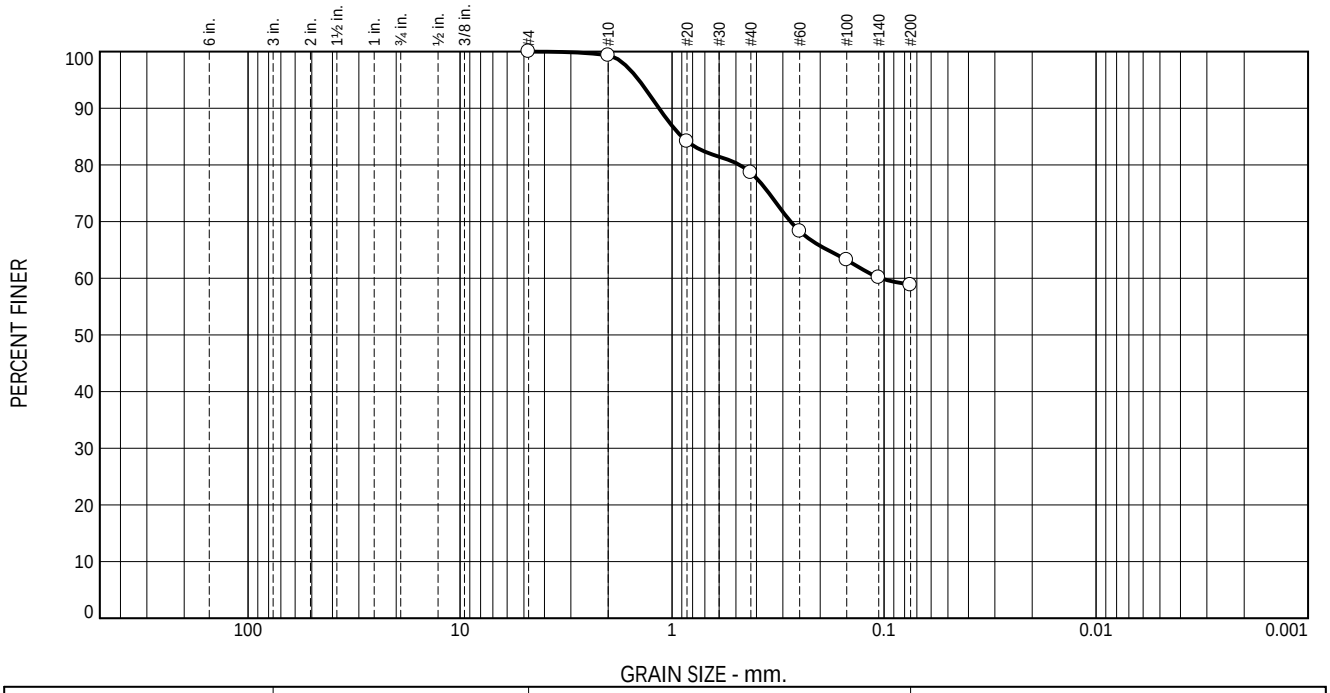
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	20.7	19.8	58.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.3		
#20	84.1		
#40	78.6		
#60	68.3		
#100	63.2		
#140	60.1		
#200	58.8		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 17B

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 1.1521 D_{85}= 0.9019
D_{60}= 0.1037 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

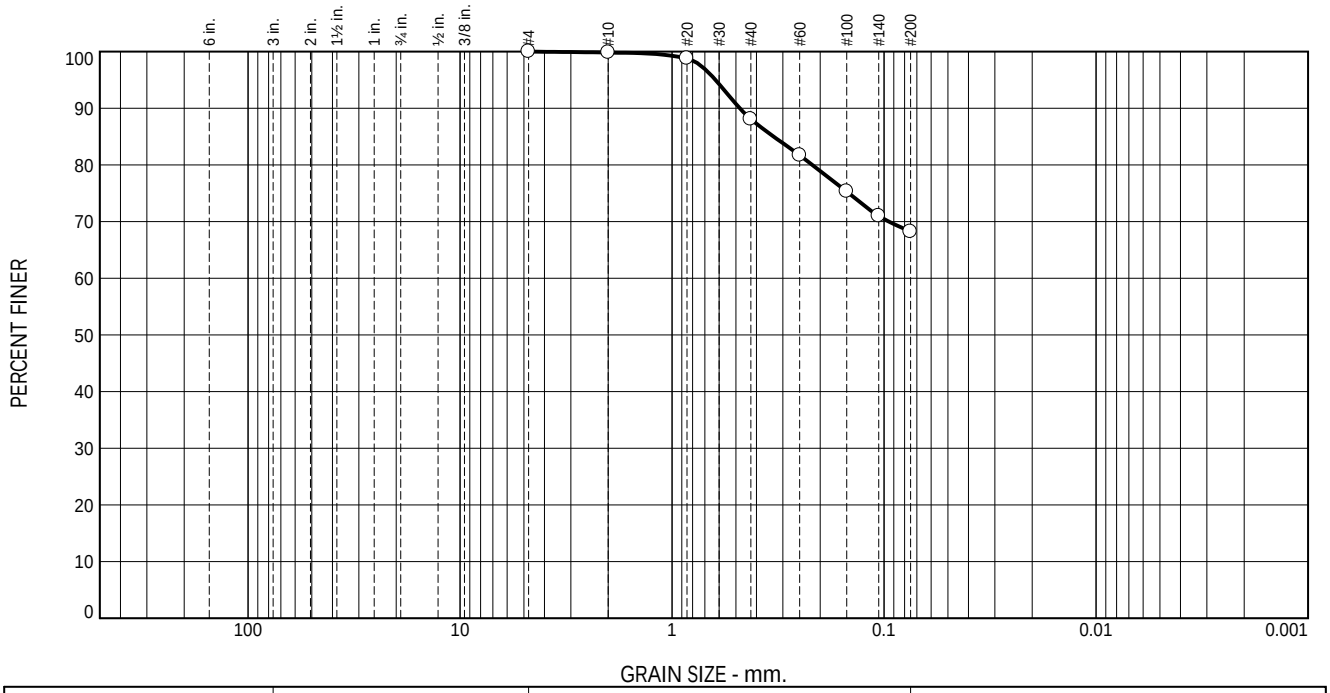
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	11.7	19.9	68.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	98.8		
#40	88.1		
#60	81.7		
#100	75.3		
#140	71.0		
#200	68.2		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 17C

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4792 D_{85}= 0.3319
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

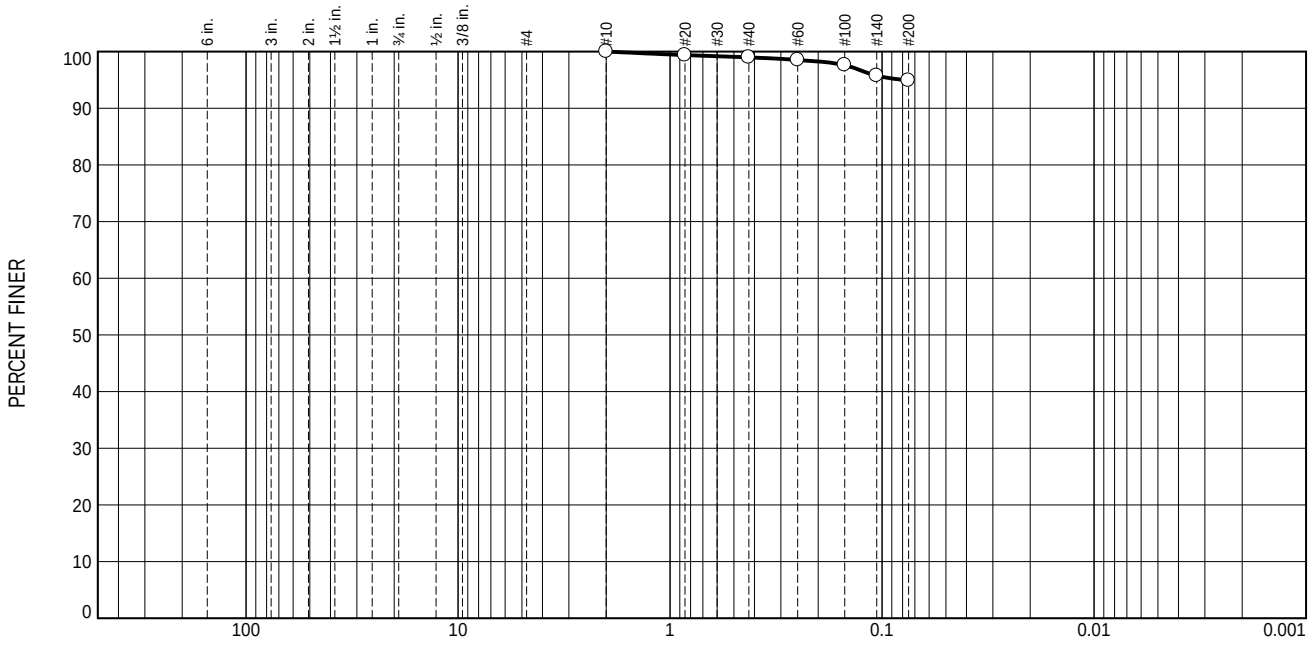
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.0	4.1	94.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.4		
#40	99.0		
#60	98.5		
#100	97.6		
#140	95.7		
#200	94.9		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 17D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

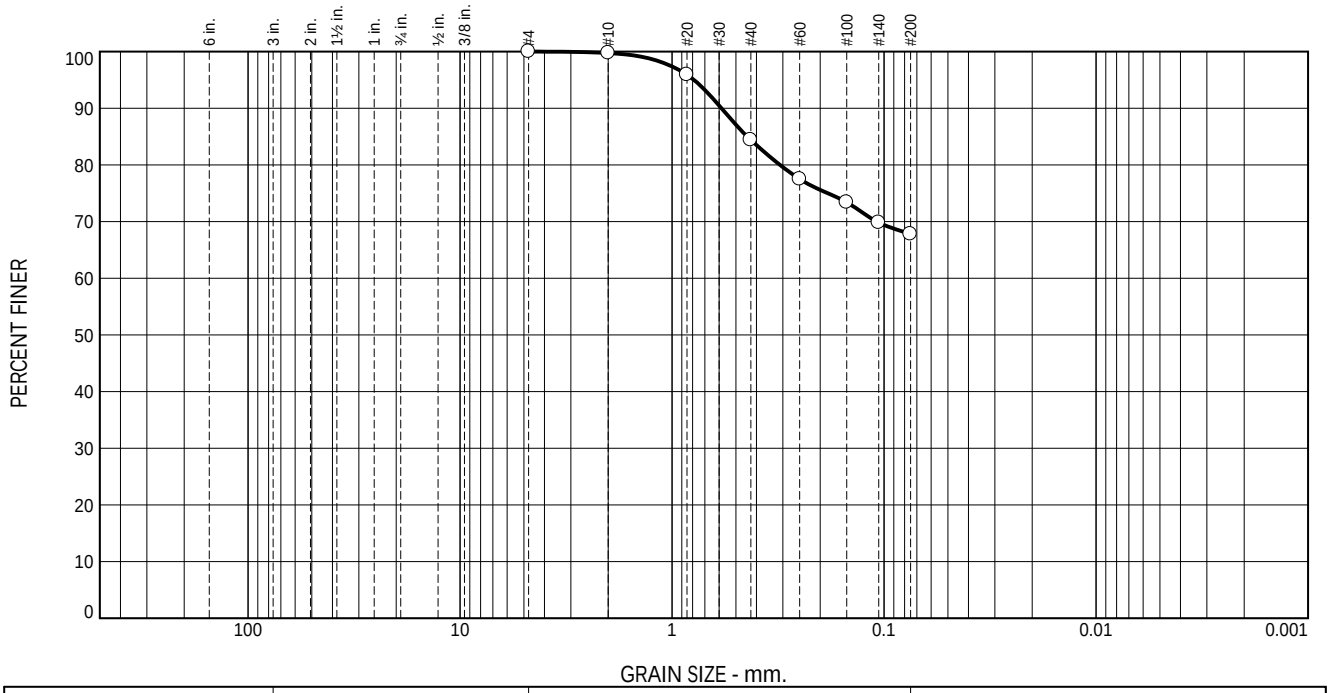
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	15.3	16.6	67.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	95.9		
#40	84.4		
#60	77.5		
#100	73.4		
#140	69.8		
#200	67.8		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 17 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.5844 D_{85}= 0.4420
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

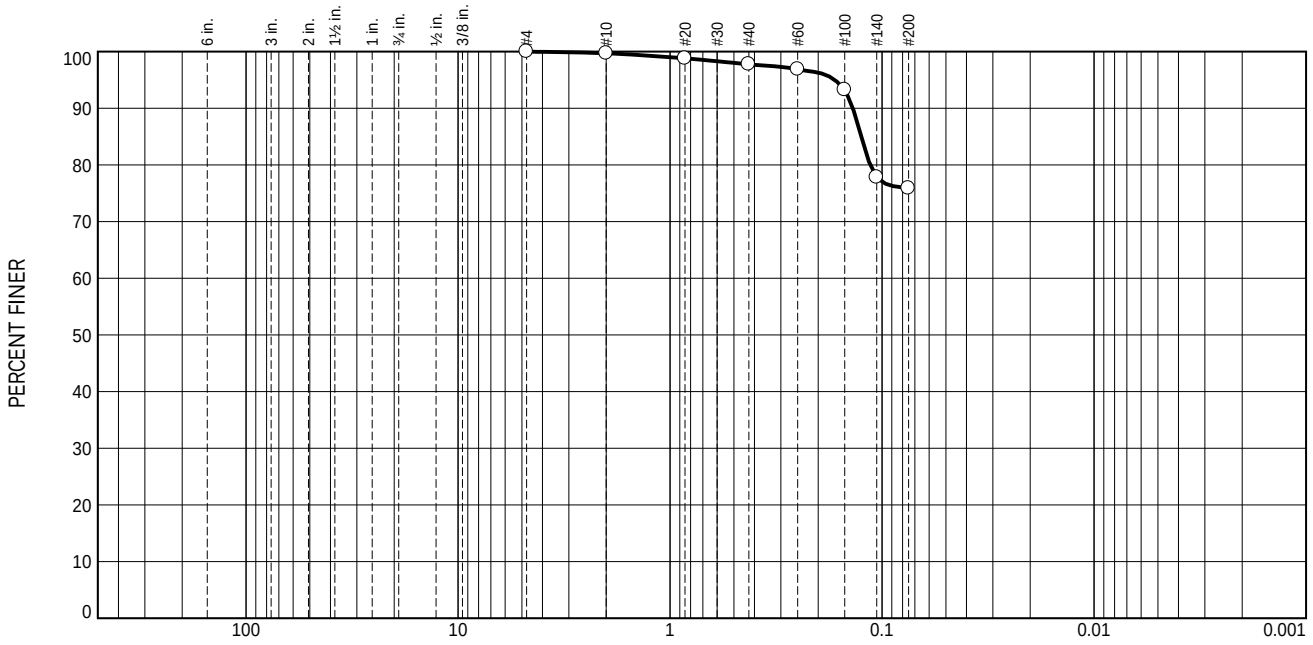
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.9	21.9	75.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	98.8		
#40	97.8		
#60	96.9		
#100	93.3		
#140	77.8		
#200	75.9		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 18A

Material Description
Grayish Brown with Red

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1373 D_{85}= 0.1253
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

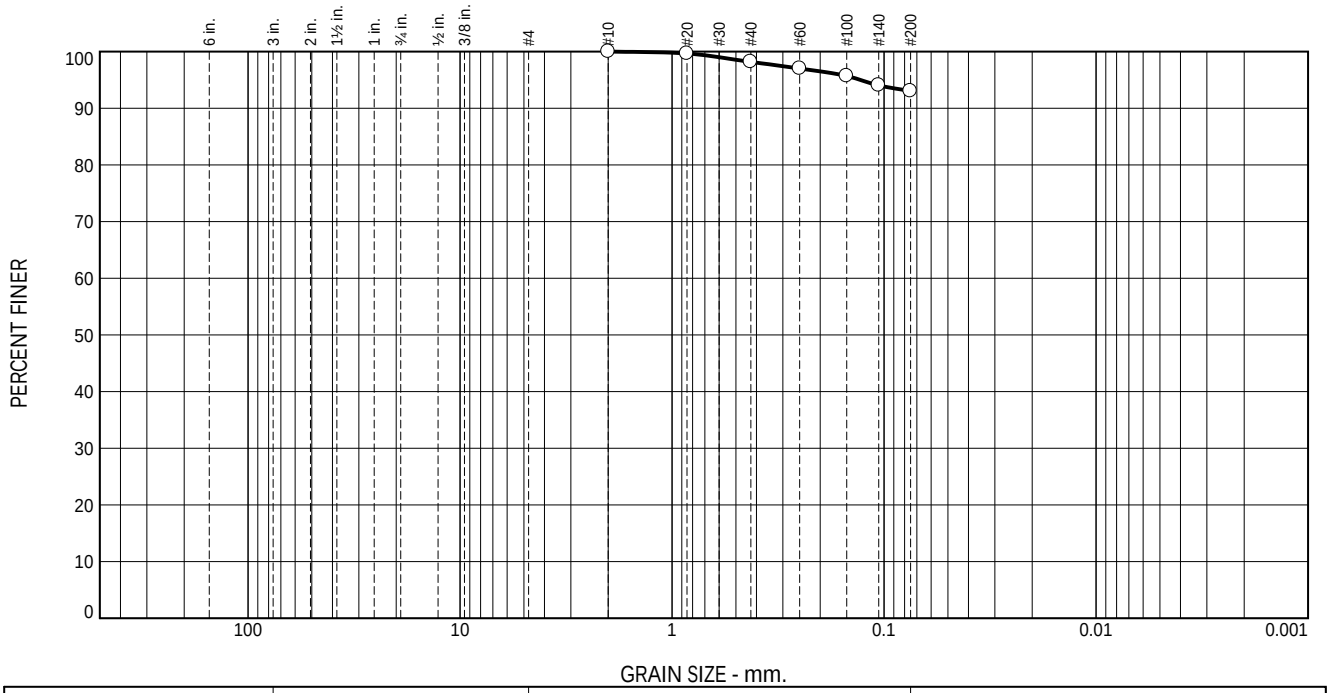
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.8	5.2	93.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	98.2		
#60	97.0		
#100	95.7		
#140	94.0		
#200	93.0		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 18B

Material Description
Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

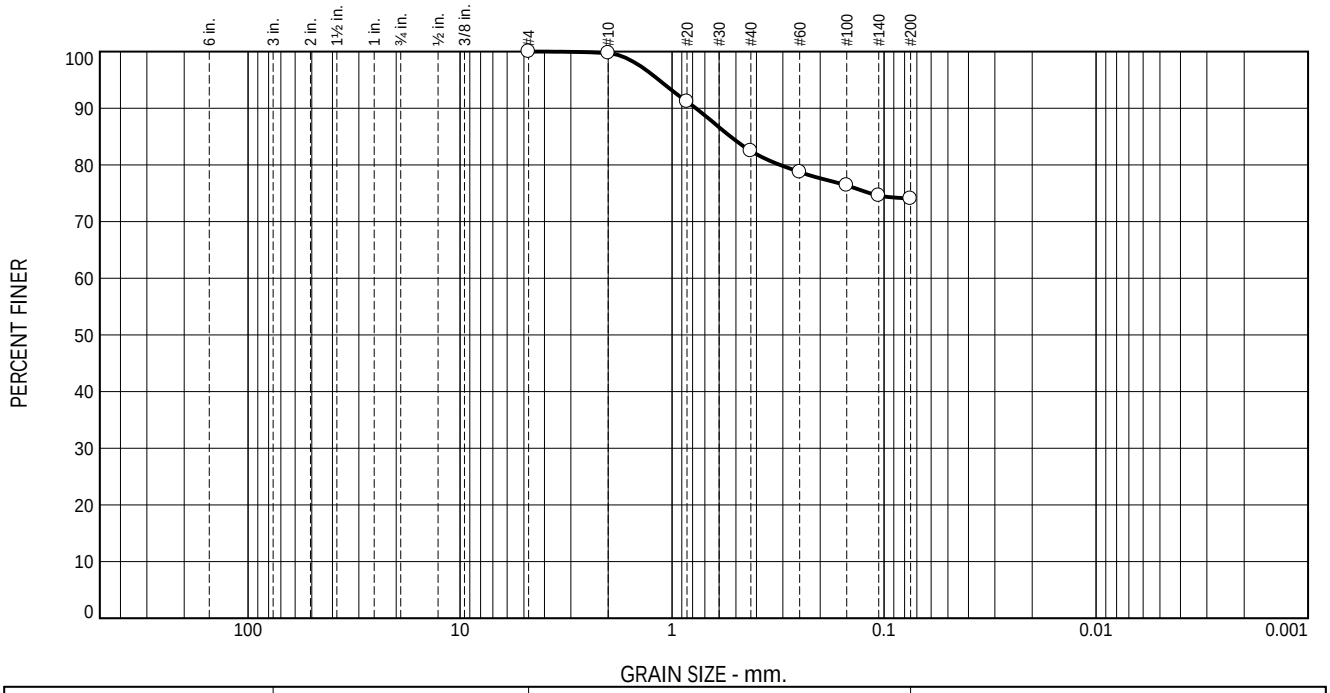
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	17.2	8.5	74.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	91.2		
#40	82.5		
#60	78.7		
#100	76.4		
#140	74.6		
#200	74.0		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 18C

Material Description
Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.7713 D_{85}= 0.5297
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

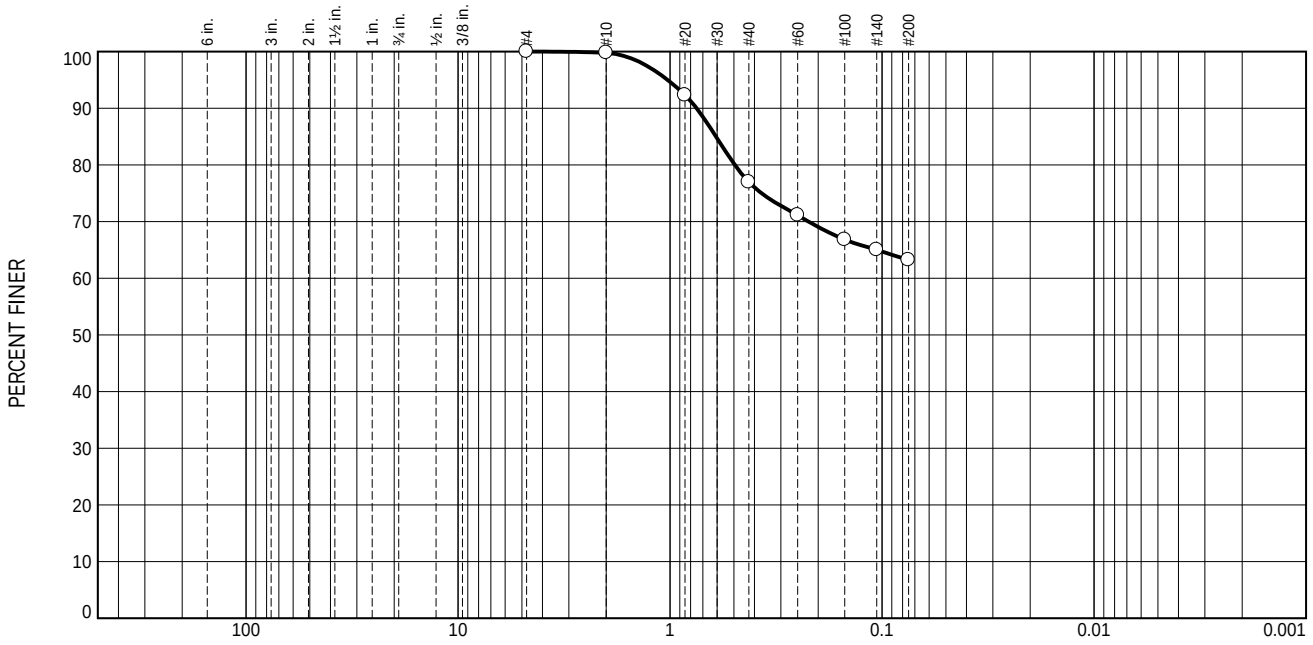
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	22.8	13.8	63.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	92.3		
#40	77.0		
#60	71.1		
#100	66.8		
#140	65.0		
#200	63.2		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 18D

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.7495 D_{85}= 0.6070
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

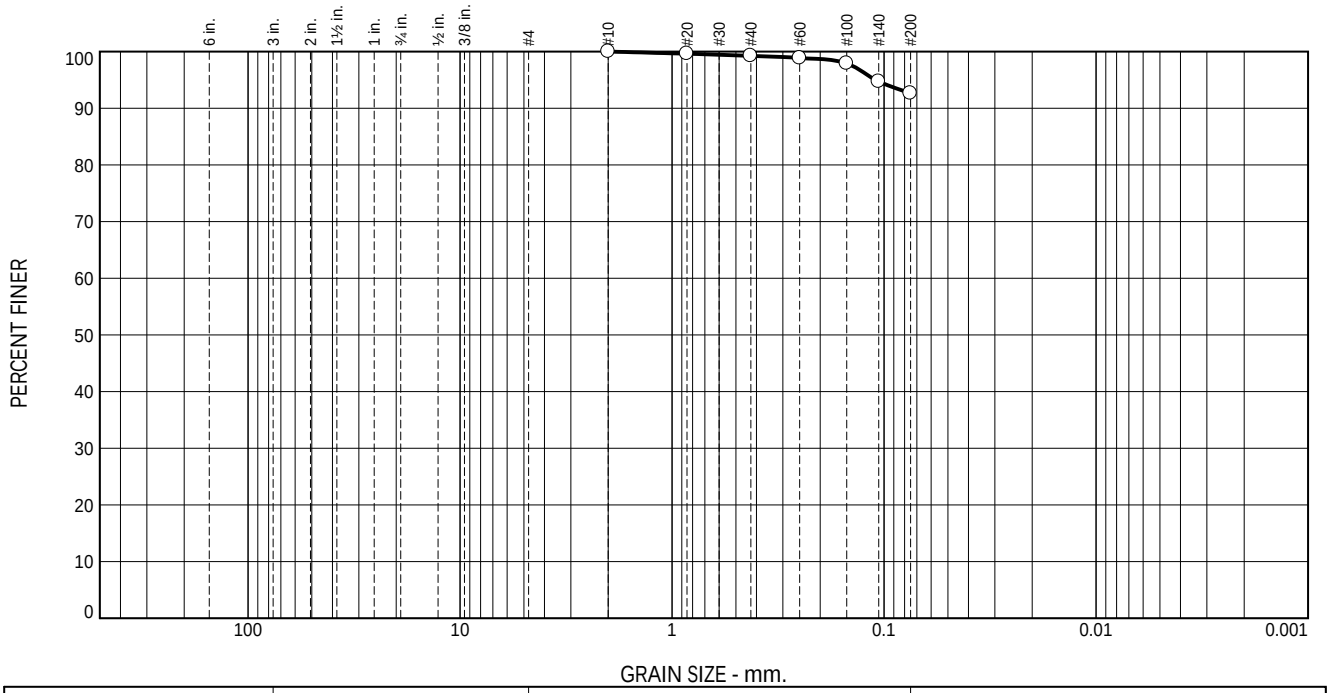
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	6.6	92.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.6		
#40	99.2		
#60	98.9		
#100	97.9		
#140	94.7		
#200	92.6		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 18 Comp

Material Description
Gray

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

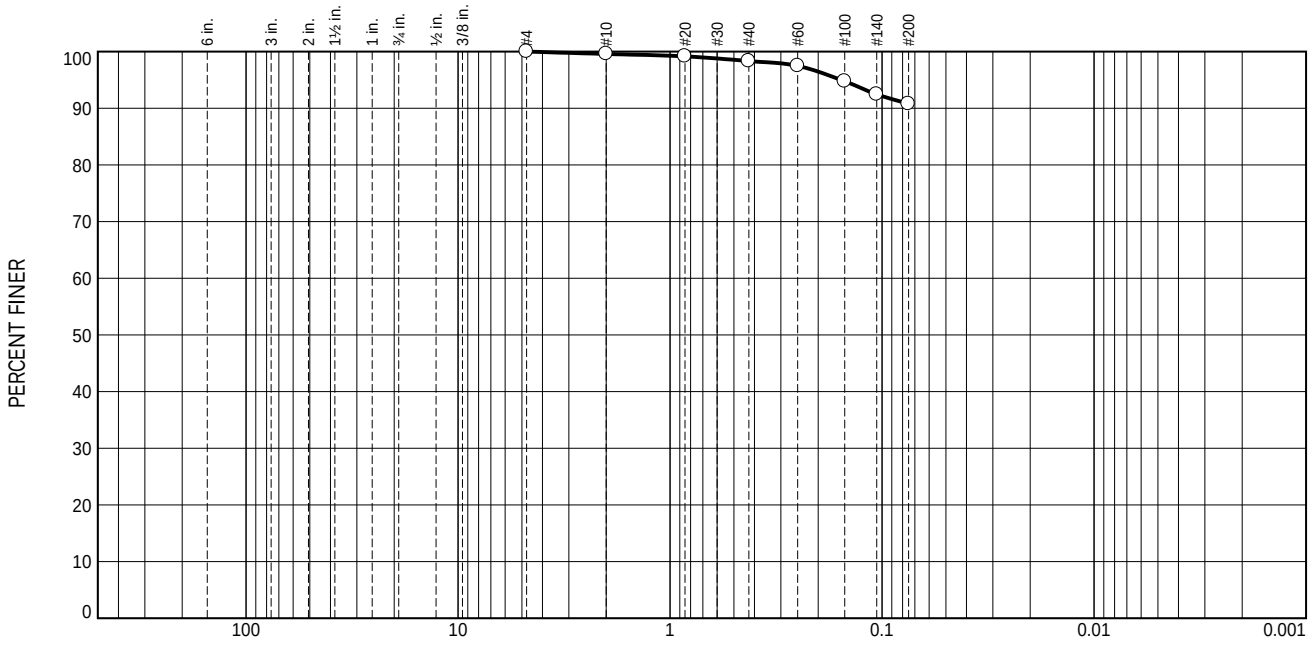
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	1.3	7.5	90.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.6		
#20	99.2		
#40	98.3		
#60	97.5		
#100	94.8		
#140	92.5		
#200	90.8		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 19A

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

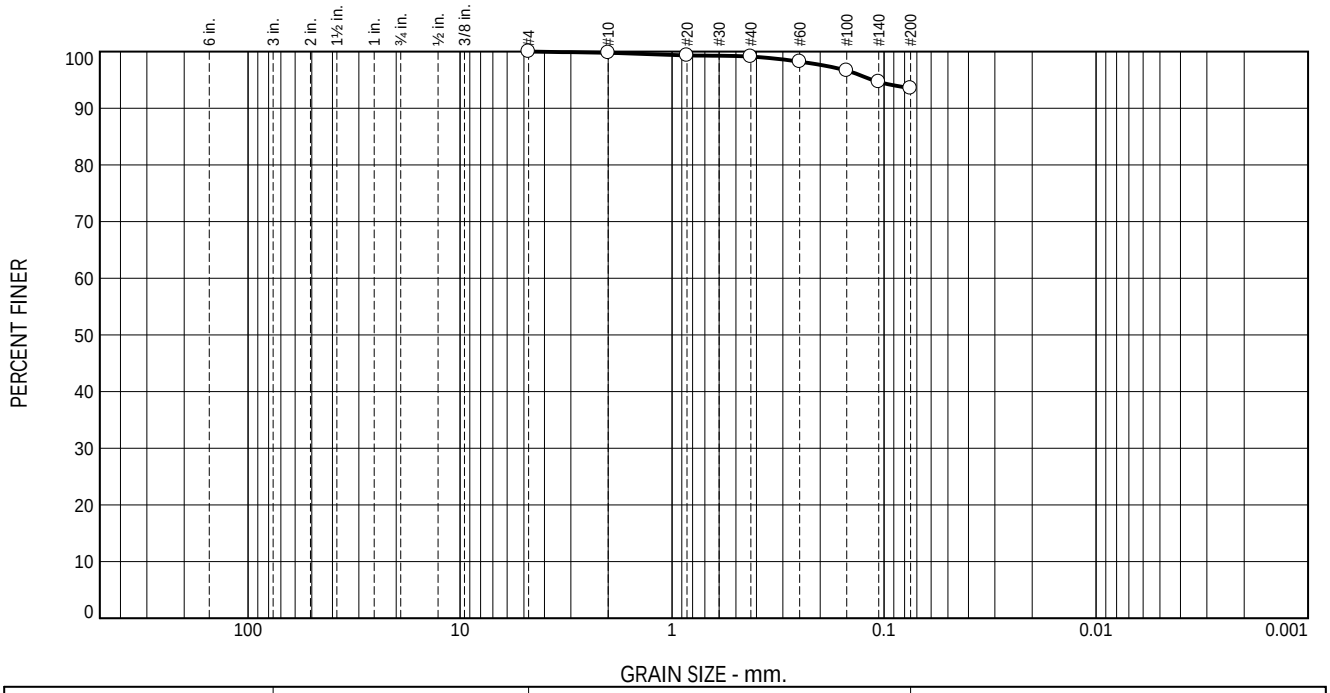
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.7	5.6	93.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.3		
#40	99.1		
#60	98.2		
#100	96.7		
#140	94.6		
#200	93.5		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 19B

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

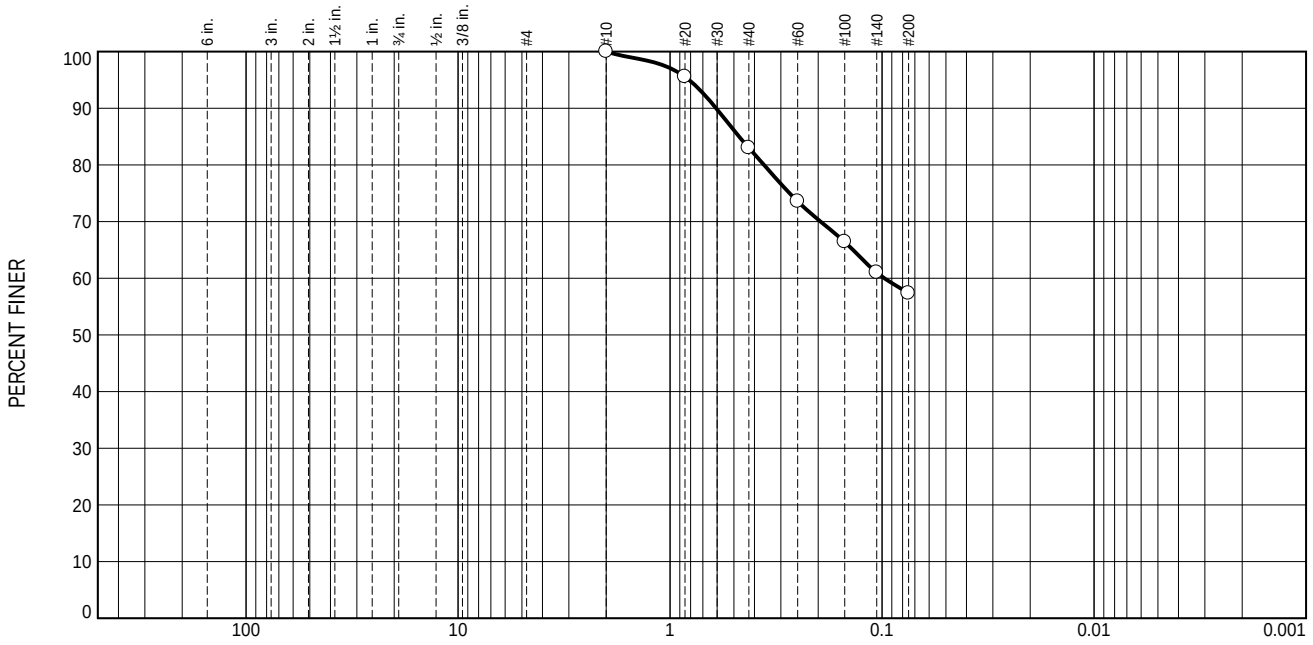
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	17.0	25.7	57.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	95.6		
#40	83.0		
#60	73.6		
#100	66.4		
#140	61.0		
#200	57.3		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 19C

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.6061 D_{85}= 0.4723
D_{60}= 0.0975 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

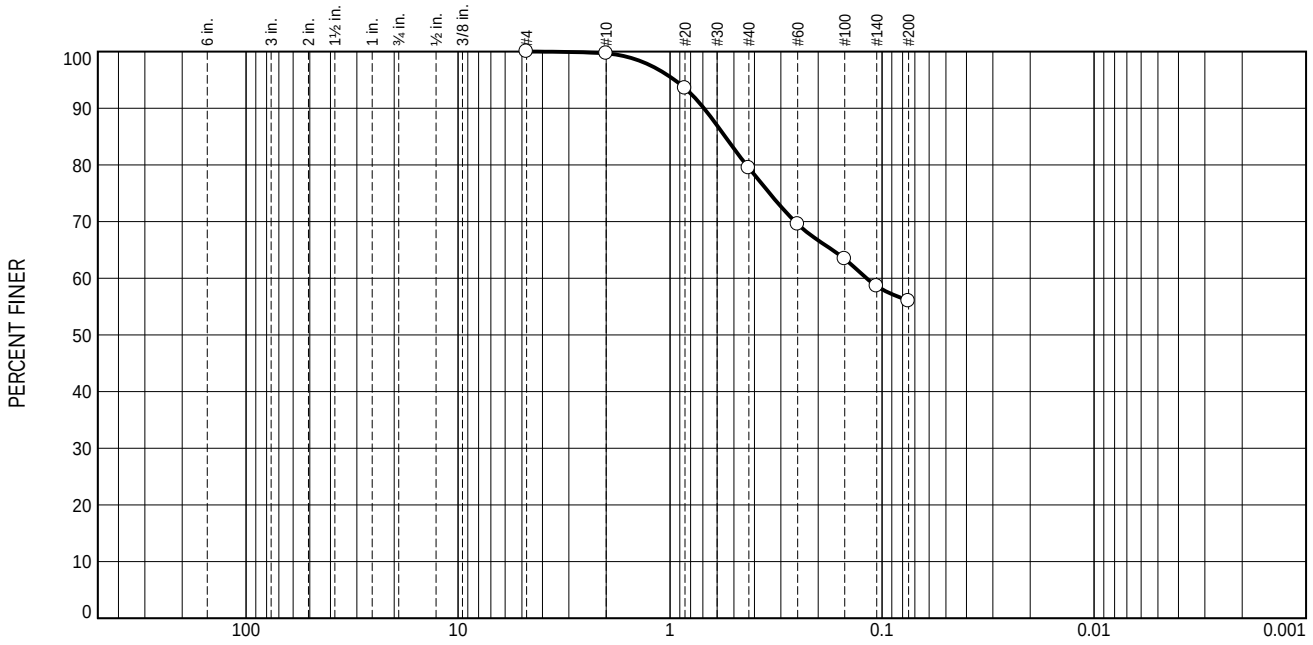
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	20.2	23.5	56.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	93.5		
#40	79.5		
#60	69.5		
#100	63.4		
#140	58.6		
#200	56.0		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 19D

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.6919 D_{85}= 0.5495
D_{60}= 0.1184 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

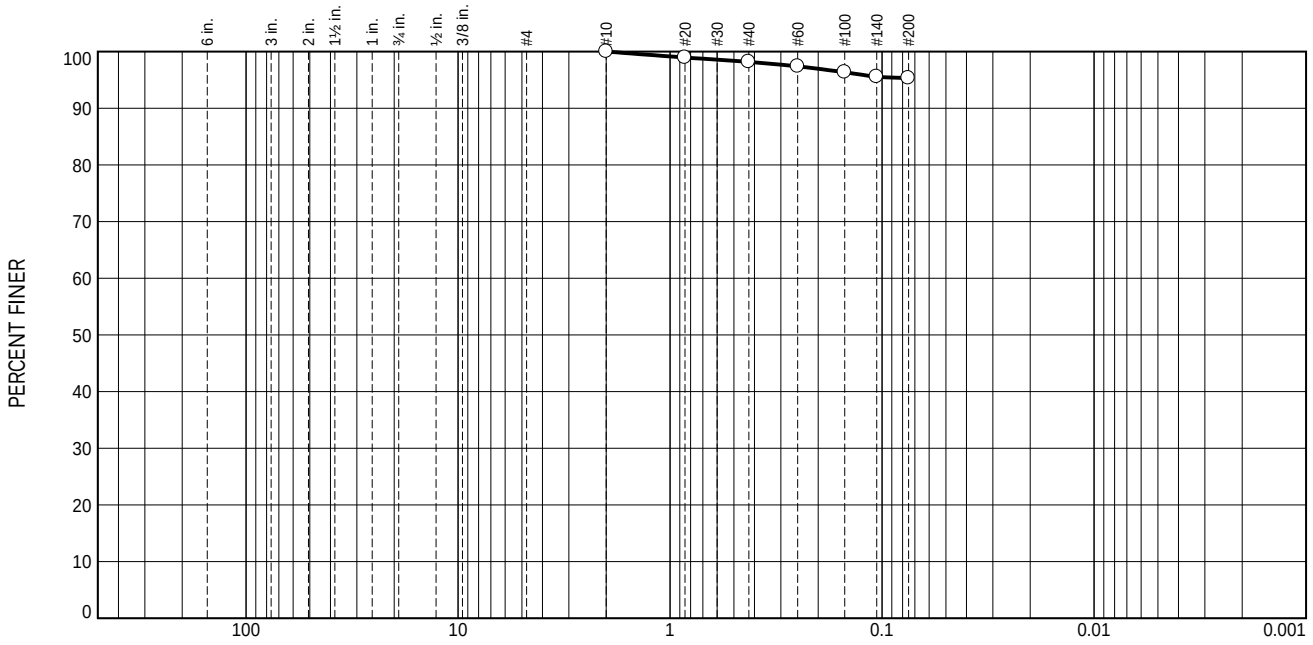
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.8	2.9	95.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.0		
#40	98.2		
#60	97.4		
#100	96.4		
#140	95.6		
#200	95.3		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 19 Comp

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= D_{85}=
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

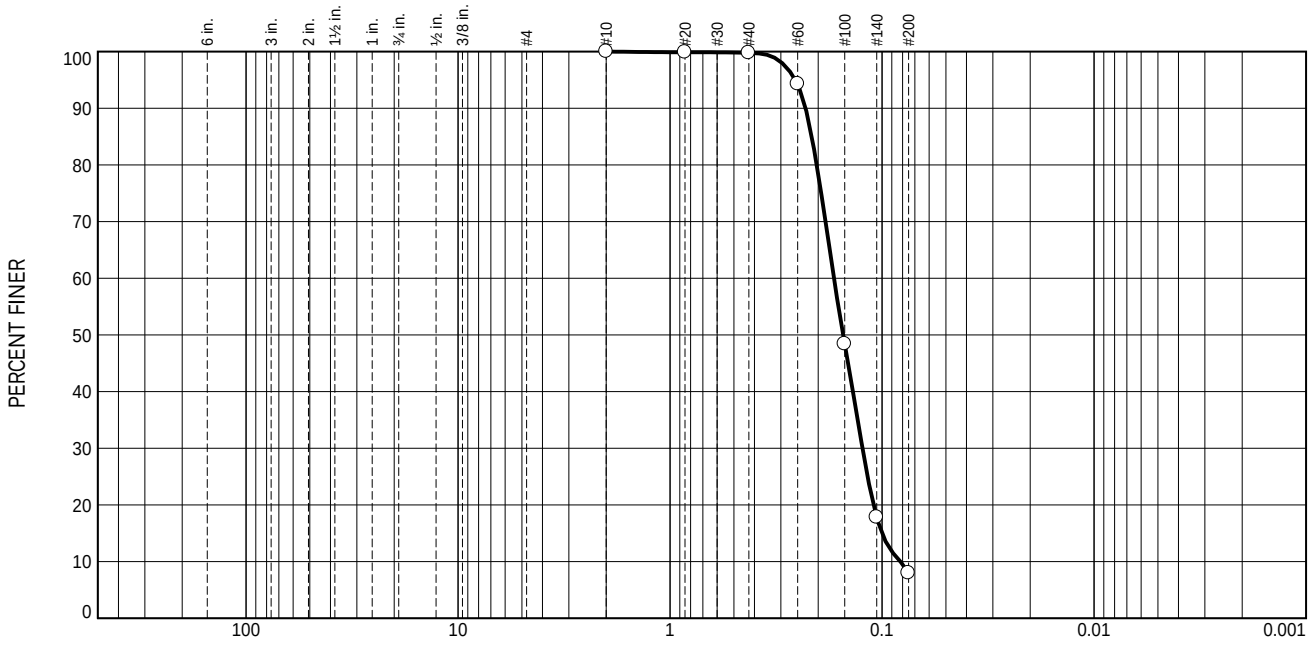
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	91.8	8.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.8		
#60	94.3		
#100	48.4		
#140	17.8		
#200	8.0		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 2A

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2293 D_{85}= 0.2147
D_{60}= 0.1685 D_{50}= 0.1527
D_{30}= 0.1238 D_{15}= 0.1002
D_{10}= 0.0820
C_u= 2.05 C_c= 1.11

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

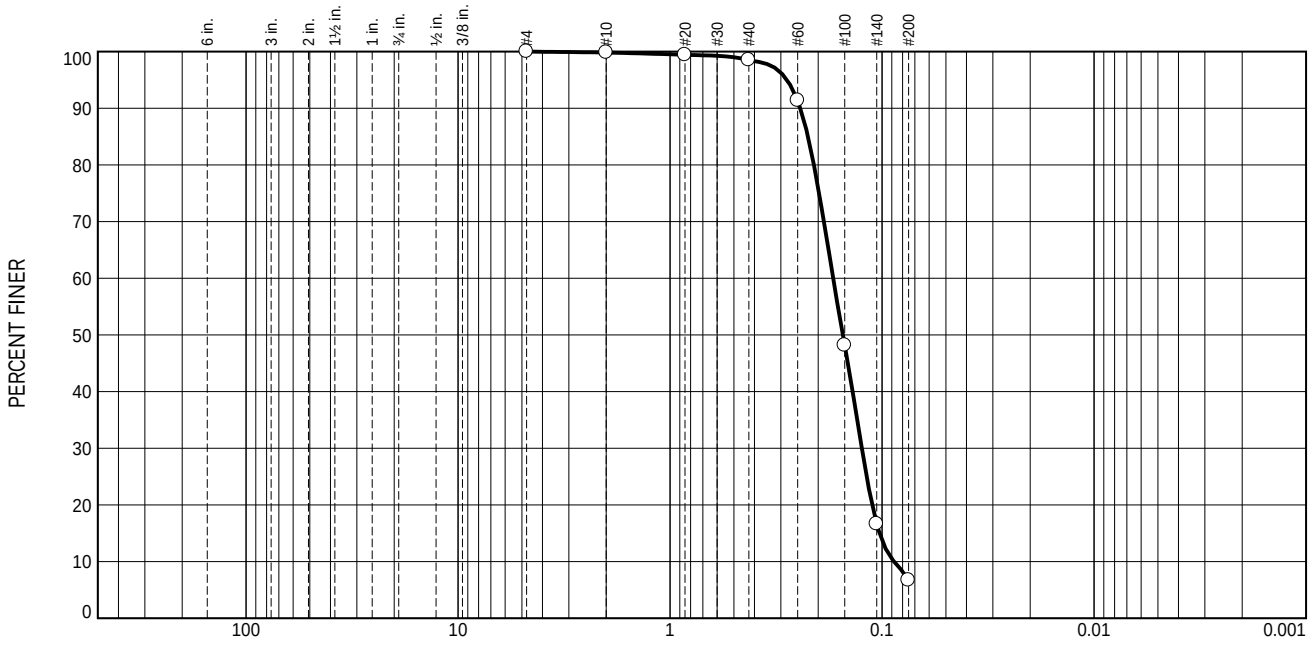
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.3	91.8	6.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.4		
#40	98.5		
#60	91.4		
#100	48.2		
#140	16.6		
#200	6.7		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 2B

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2425 D_{85}= 0.2235
D_{60}= 0.1700 D_{50}= 0.1531
D_{30}= 0.1246 D_{15}= 0.1029
D_{10}= 0.0878
C_u= 1.94 C_c= 1.04

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

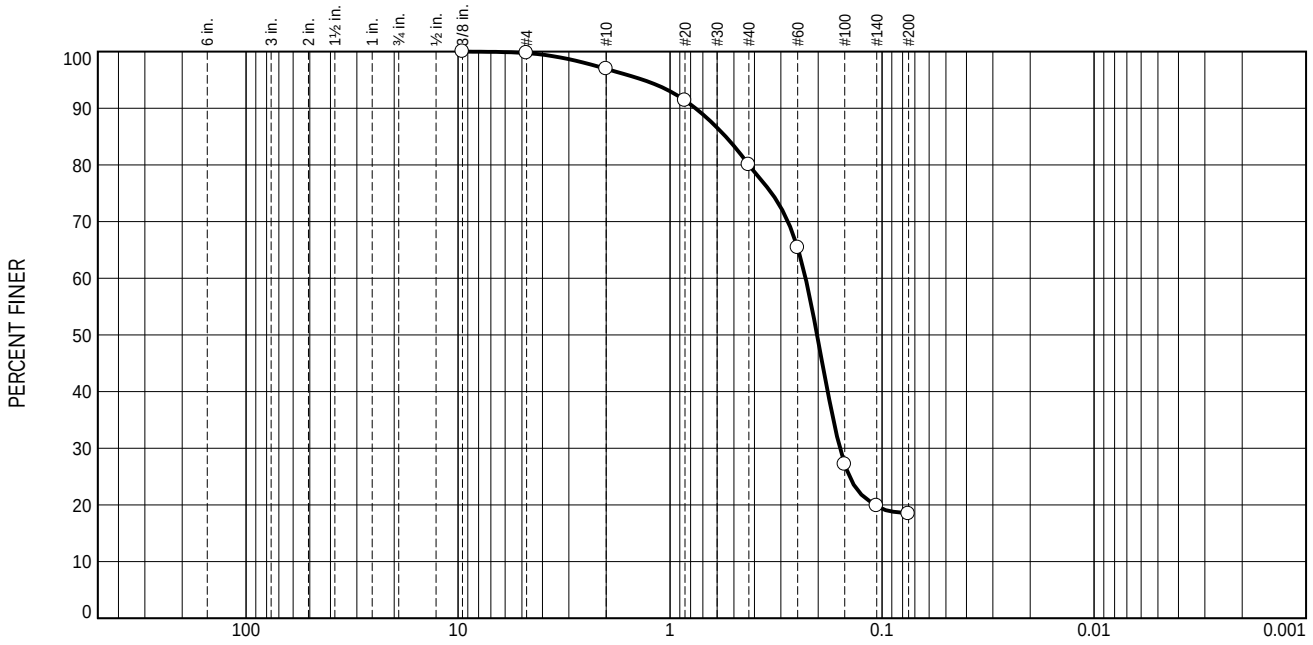
USCS (ASTM D2487)

Date Sampled: 2/26/26
Date Received: 2/24/26
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	2.8	16.9	61.6	18.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.7		
#10	96.9		
#20	91.4		
#40	80.0		
#60	65.4		
#100	27.1		
#140	19.8		
#200	18.4		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 2C

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.7590 D_{85}= 0.5465
D_{60}= 0.2293 D_{50}= 0.2026
D_{30}= 0.1580 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

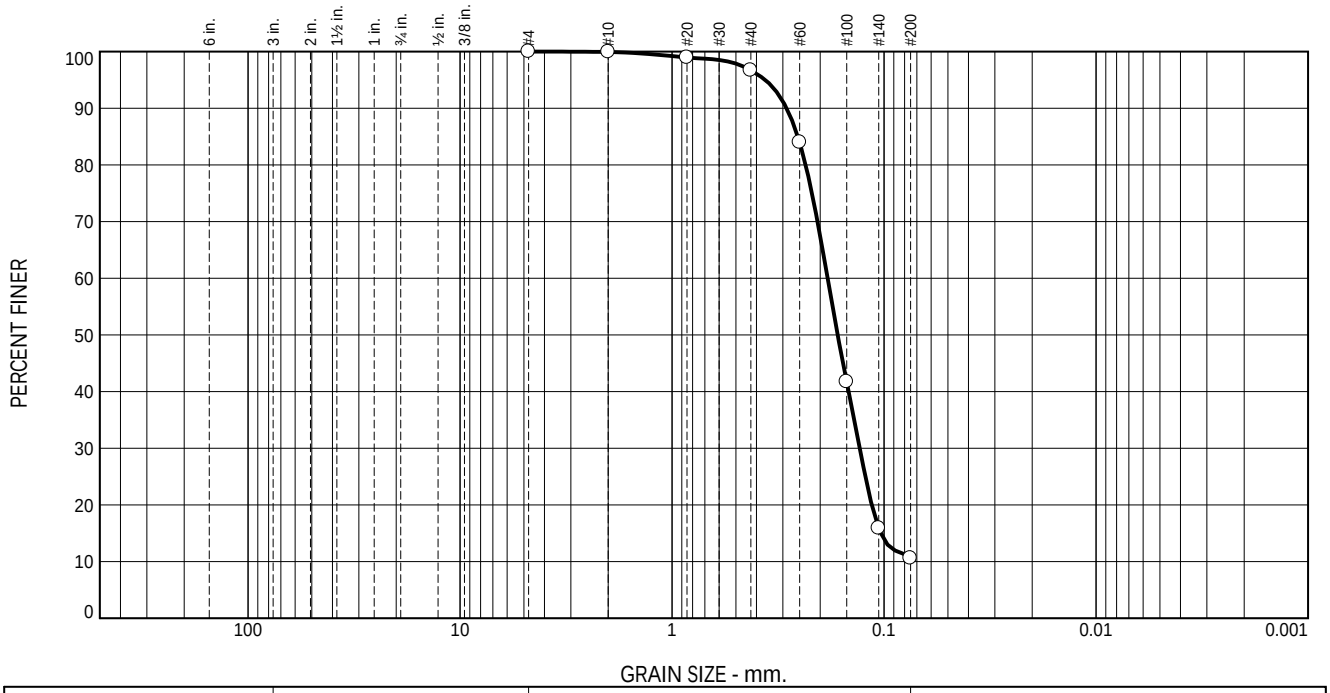
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	3.2	86.1	10.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.0		
#40	96.7		
#60	84.0		
#100	41.7		
#140	15.9		
#200	10.6		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 2D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2881 D_{85}= 0.2550
D_{60}= 0.1845 D_{50}= 0.1655
D_{30}= 0.1304 D_{15}= 0.1037
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

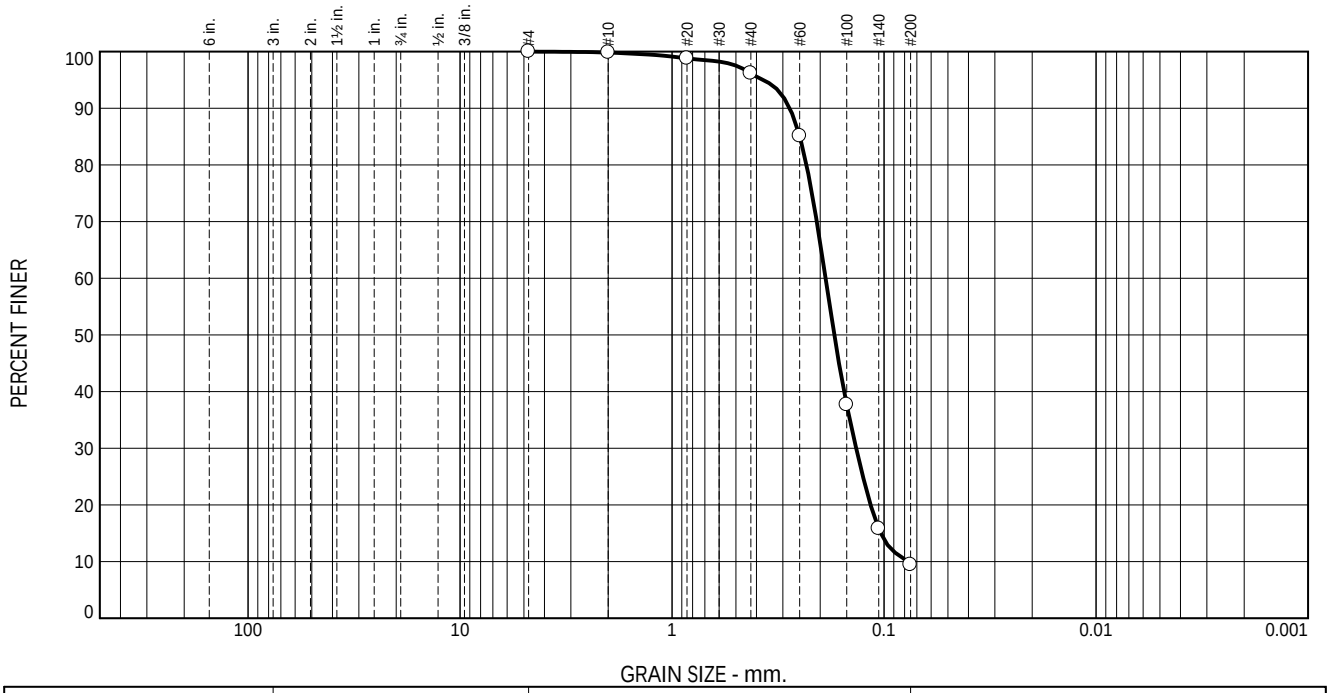
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	3.6	86.8	9.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	98.8		
#40	96.2		
#60	85.1		
#100	37.7		
#140	15.8		
#200	9.4		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 2E

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2787 D_{85}= 0.2496
D_{60}= 0.1887 D_{50}= 0.1716
D_{30}= 0.1354 D_{15}= 0.1038
D_{10}= 0.0776
C_u= 2.43 C_c= 1.25

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

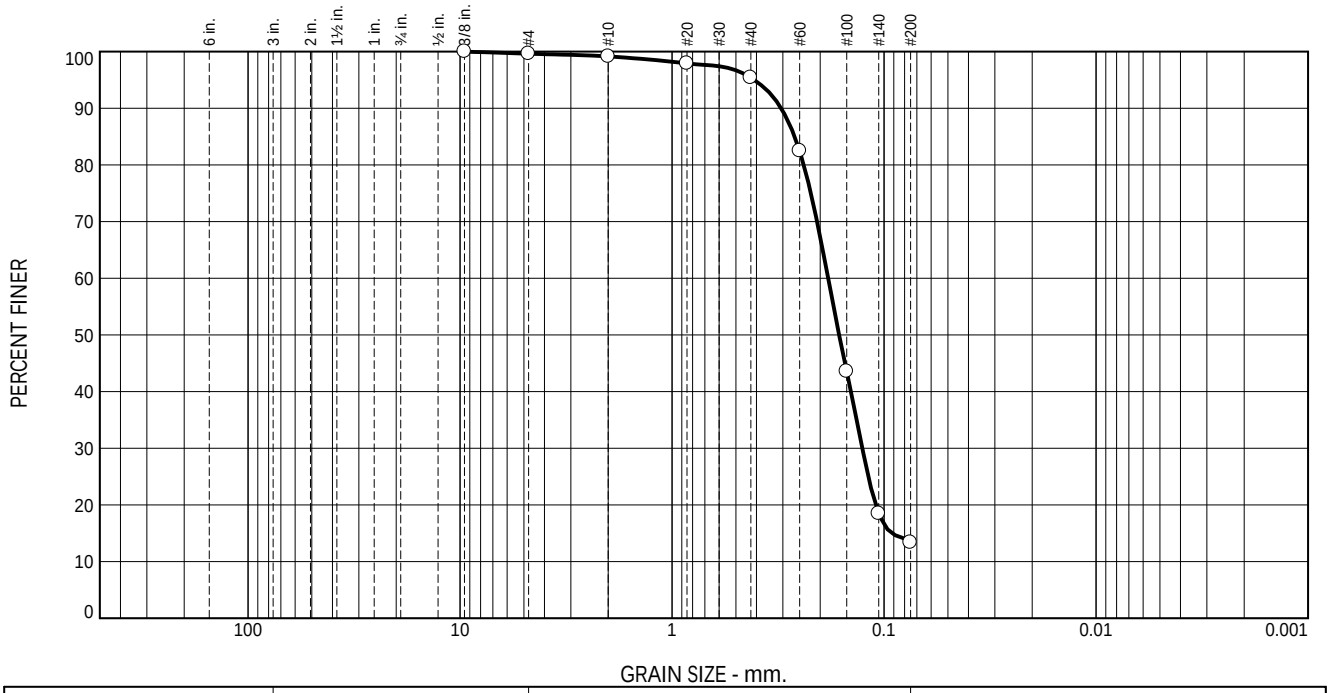
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.5	3.7	82.0	13.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.6		
#10	99.1		
#20	97.9		
#40	95.4		
#60	82.5		
#100	43.6		
#140	18.5		
#200	13.4		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 2F

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3056 D_{85}= 0.2641
D_{60}= 0.1835 D_{50}= 0.1629
D_{30}= 0.1267 D_{15}= 0.0919
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

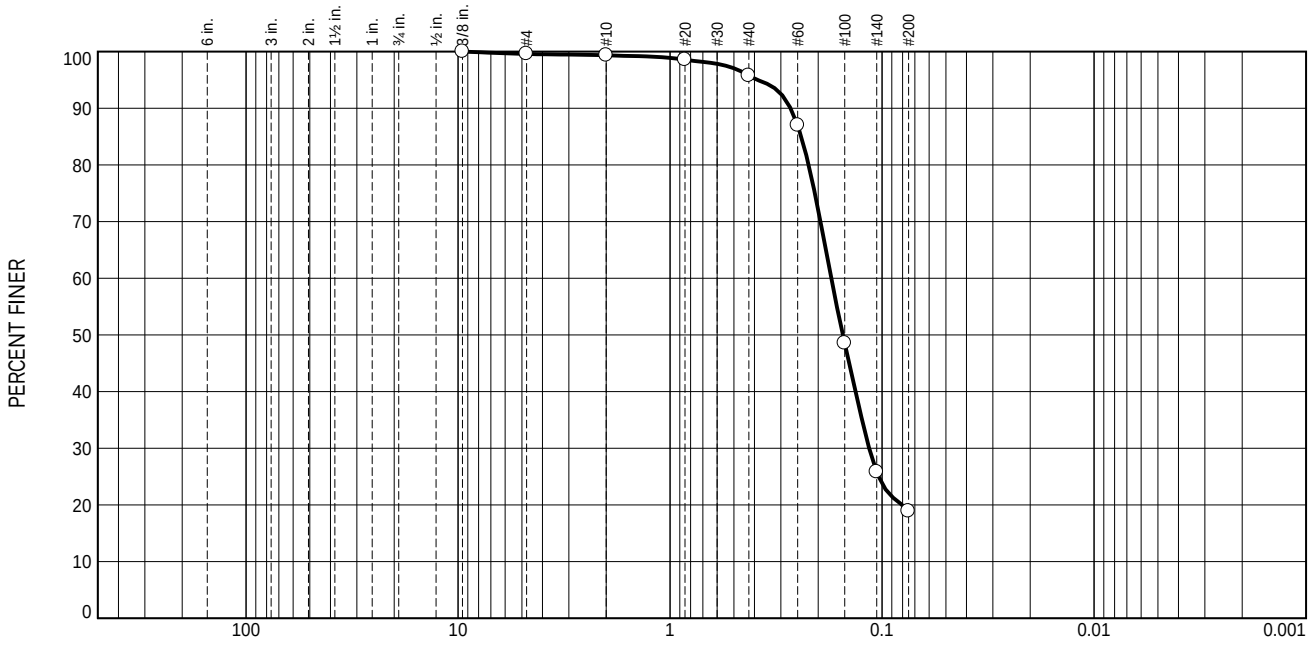
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.3	3.5	76.9	18.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.6		
#10	99.3		
#20	98.6		
#40	95.8		
#60	87.0		
#100	48.5		
#140	25.8		
#200	18.9		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 2 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2703 D_{85}= 0.2404
D_{60}= 0.1735 D_{50}= 0.1531
D_{30}= 0.1151 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

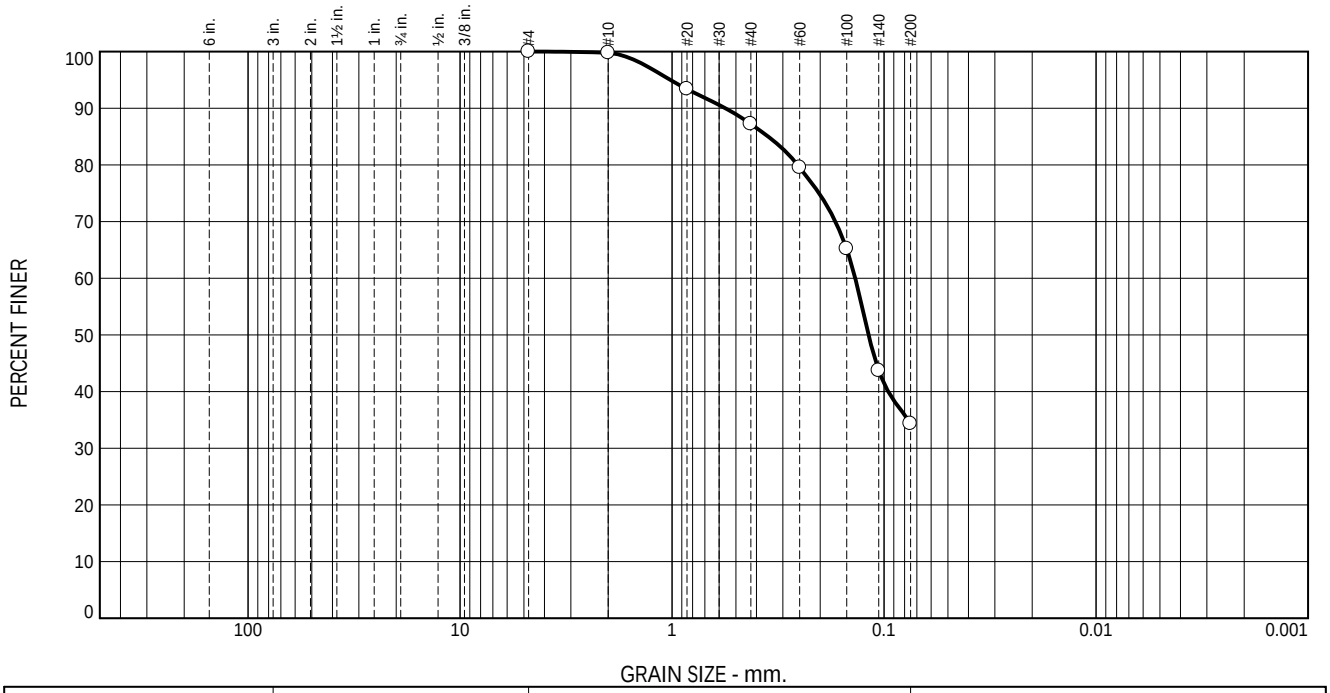
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	12.6	52.9	34.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	93.4		
#40	87.2		
#60	79.5		
#100	65.2		
#140	43.7		
#200	34.3		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 20A

Material Description
Olive Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.5603 D_{85}= 0.3520
D_{60}= 0.1368 D_{50}= 0.1183
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

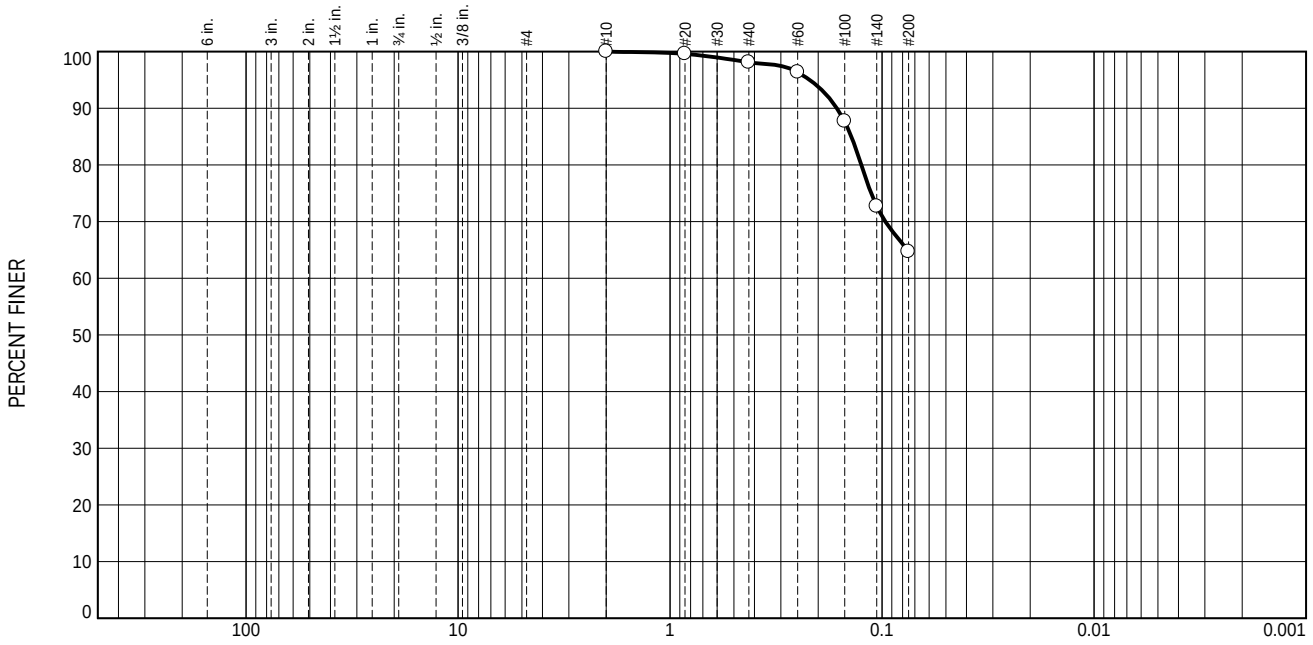
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.9	33.4	64.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.6		
#40	98.1		
#60	96.3		
#100	87.7		
#140	72.7		
#200	64.7		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 20B

Material Description
Olive Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1634 D_{85}= 0.1394
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

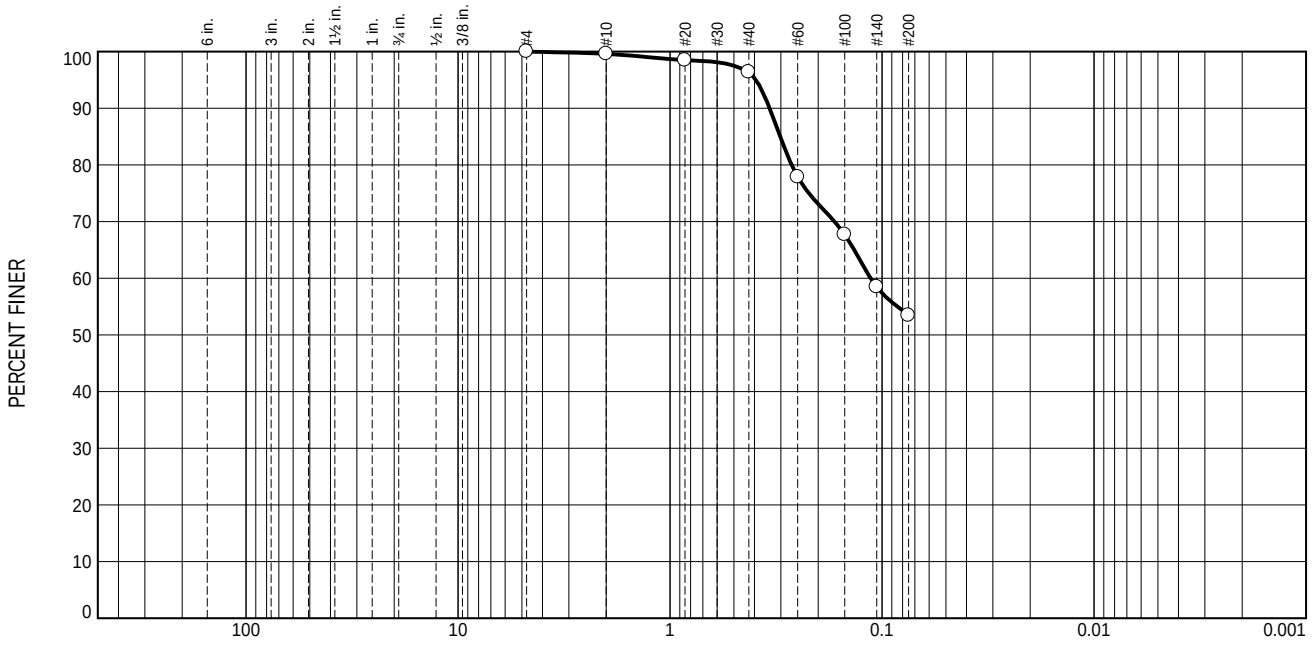
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	3.2	43.0	53.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.6		
#20	98.5		
#40	96.4		
#60	77.9		
#100	67.7		
#140	58.5		
#200	53.4		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 20C

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3390 D_{85}= 0.3021
D_{60}= 0.1133 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

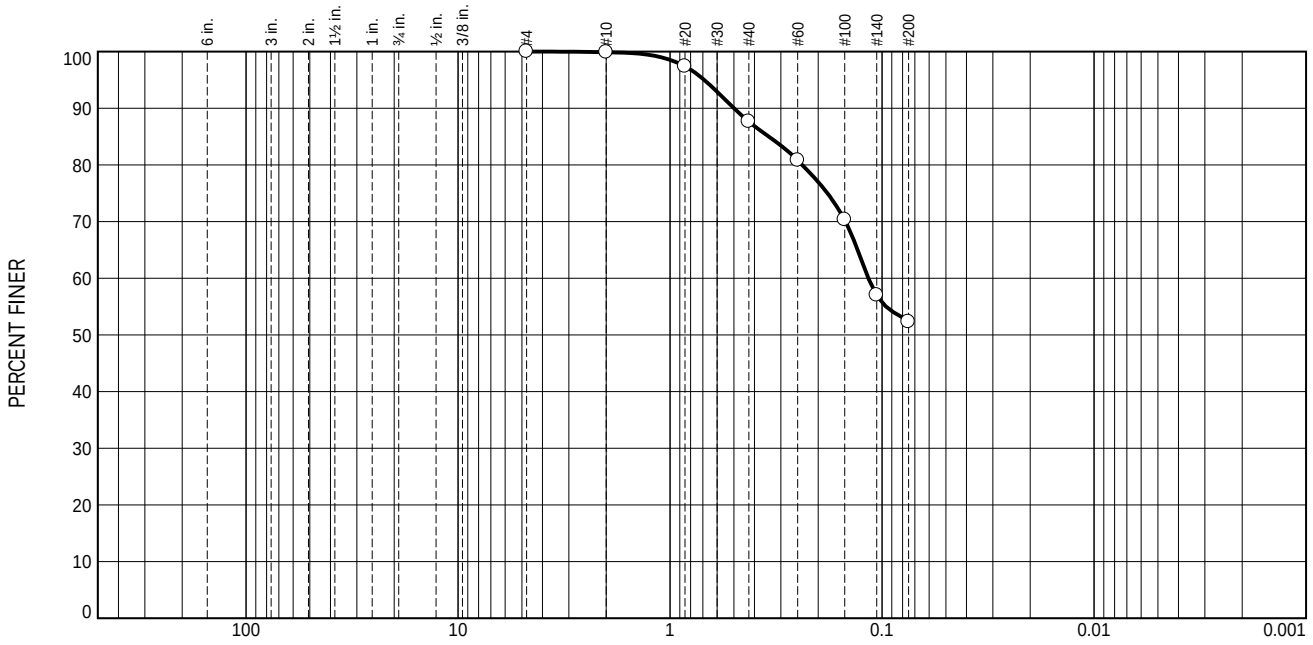
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	12.3	35.3	52.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	97.4		
#40	87.6		
#60	80.8		
#100	70.3		
#140	57.0		
#200	52.3		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 20D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4991 D_{85}= 0.3423
D_{60}= 0.1160 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

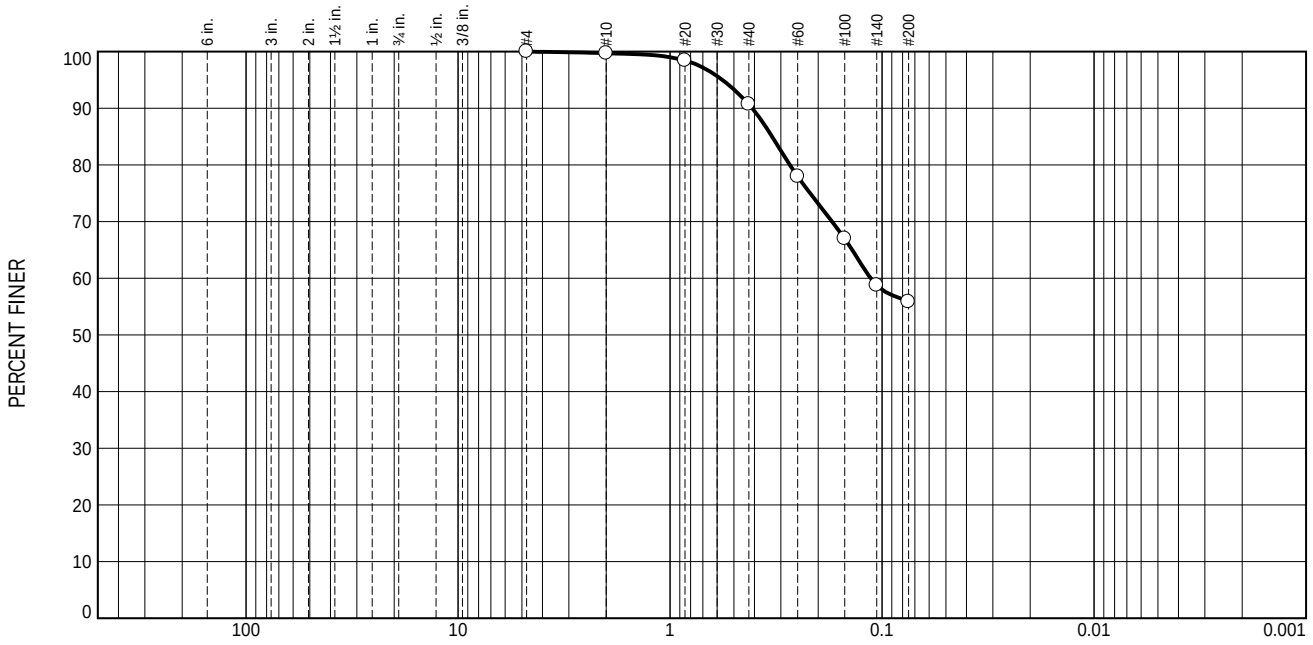
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	9.0	34.9	55.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	98.4		
#40	90.7		
#60	78.0		
#100	67.0		
#140	58.8		
#200	55.8		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 20 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.4094 D_{85}= 0.3301
D_{60}= 0.1132 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

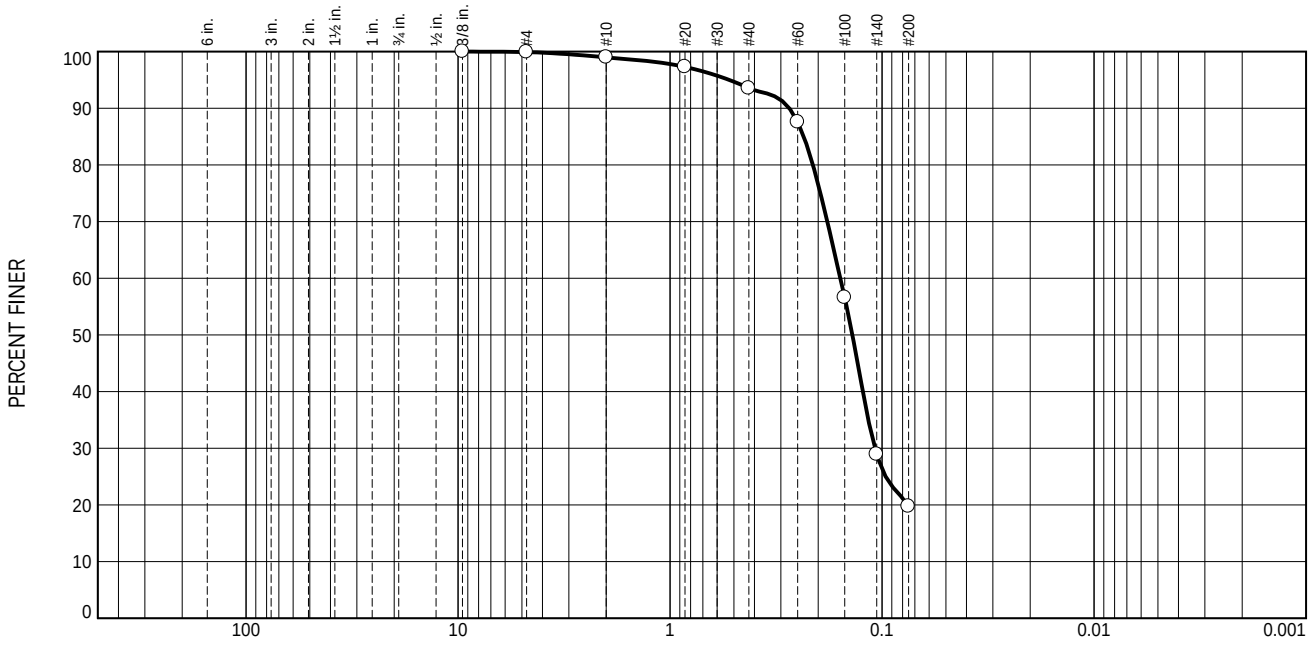
USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.9	5.5	73.8	19.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.9		
#10	99.0		
#20	97.3		
#40	93.5		
#60	87.6		
#100	56.6		
#140	28.9		
#200	19.7		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 21A

Material Description
Olive Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2740 D_{85}= 0.2340
D_{60}= 0.1574 D_{50}= 0.1380
D_{30}= 0.1081 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

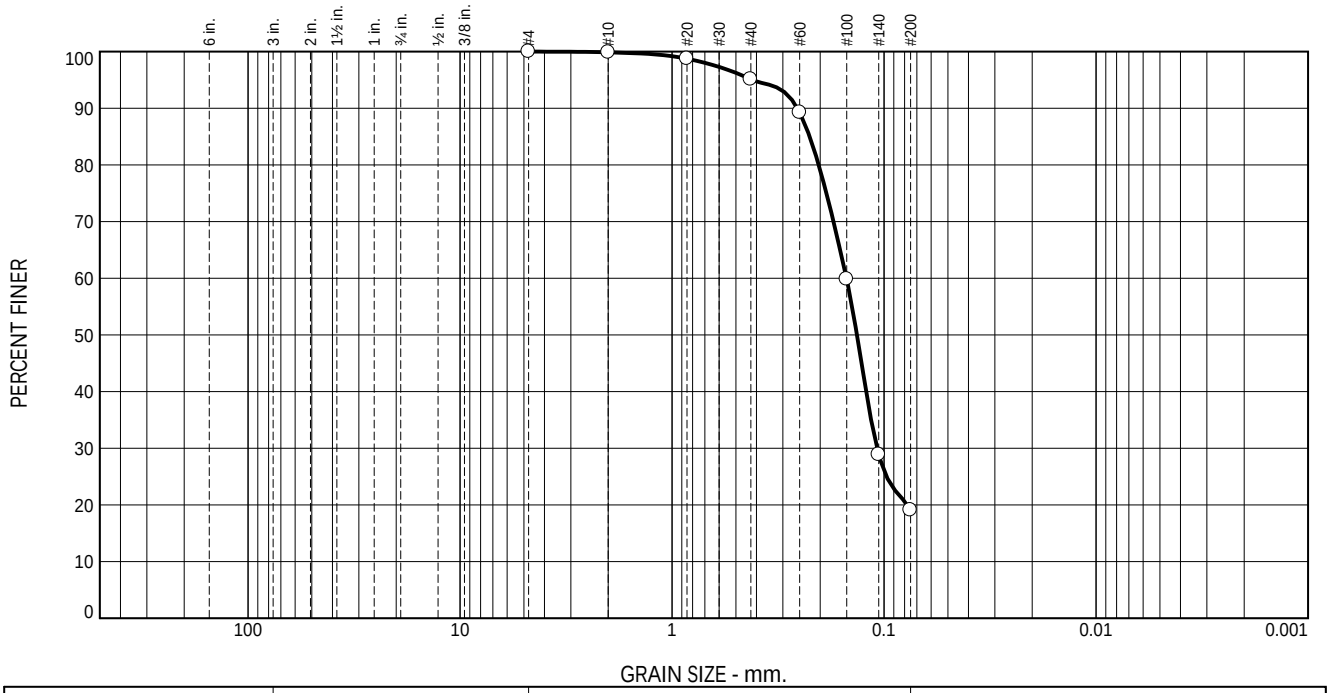
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	4.8	76.0	19.1	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	98.7		
#40	95.1		
#60	89.2		
#100	59.8		
#140	28.9		
#200	19.1		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 21B

Material Description
Olive Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2563 D_{85}= 0.2244
D_{60}= 0.1504 D_{50}= 0.1342
D_{30}= 0.1079 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

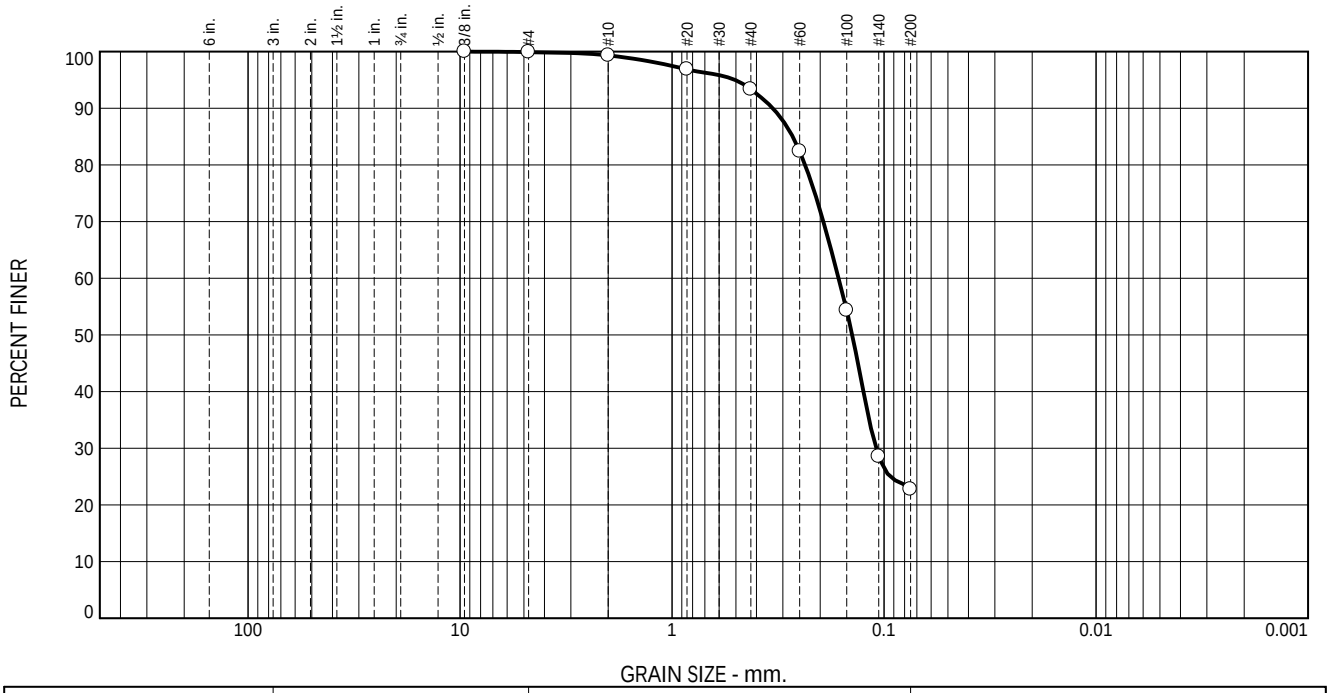
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.6	6.0	70.6	22.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.9		
#10	99.3		
#20	96.9		
#40	93.3		
#60	82.4		
#100	54.3		
#140	28.5		
#200	22.7		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 21C

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.3349 D_{85}= 0.2698
D_{60}= 0.1639 D_{50}= 0.1412
D_{30}= 0.1091 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

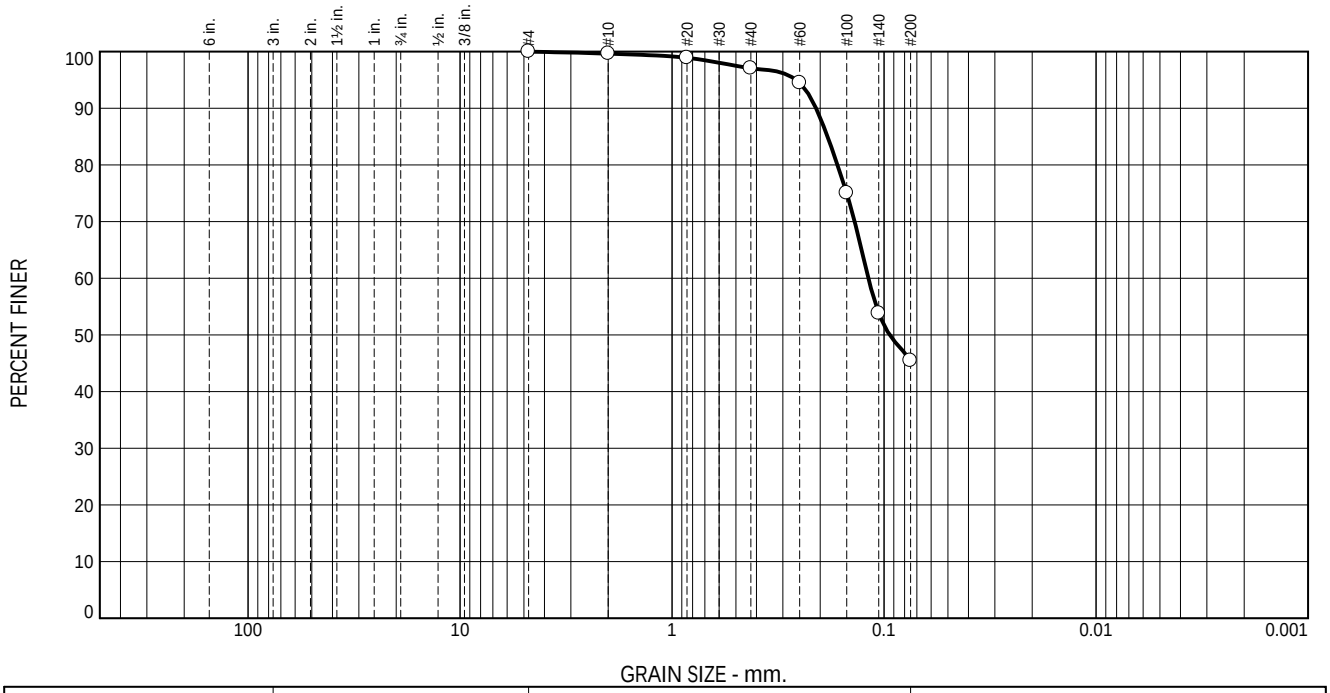
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	2.5	51.6	45.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.6		
#20	98.9		
#40	97.1		
#60	94.5		
#100	75.0		
#140	53.8		
#200	45.5		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 21D

Material Description
Gray

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2094 D_{85}= 0.1847
D_{60}= 0.1186 D_{50}= 0.0941
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

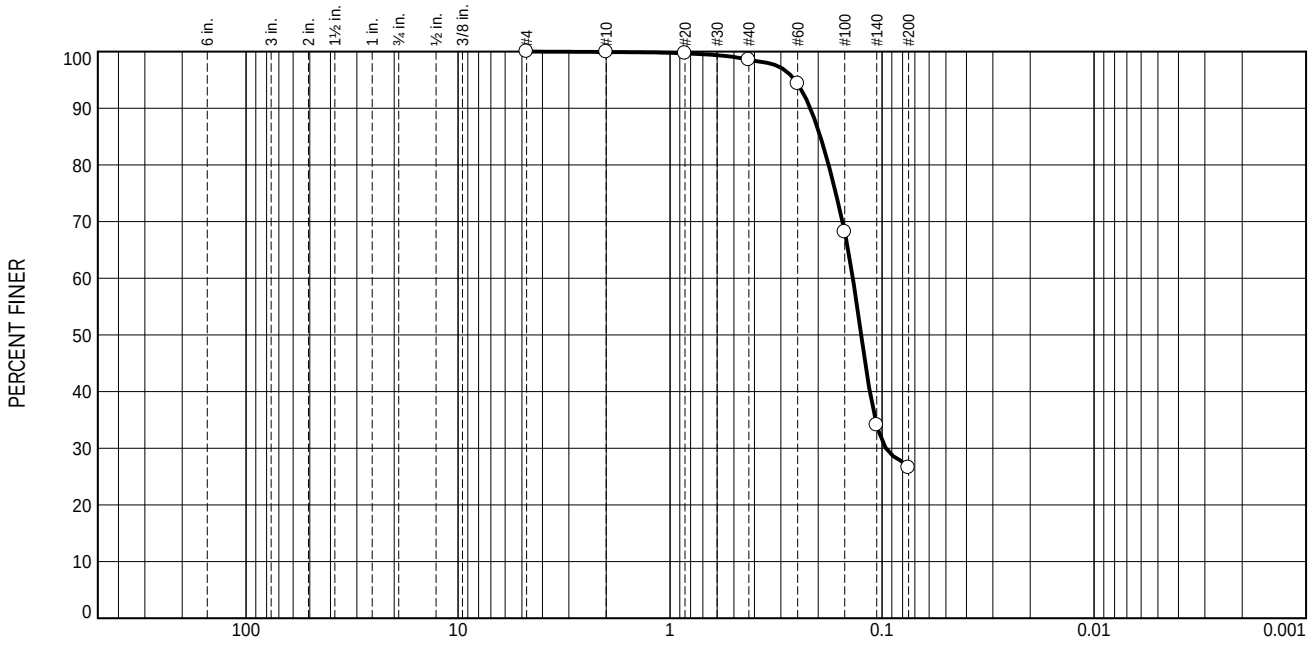
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.4	71.9	26.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.5		
#60	94.3		
#100	68.2		
#140	34.1		
#200	26.6		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 21 Comp

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2181 D_{85}= 0.1954
D_{60}= 0.1373 D_{50}= 0.1255
D_{30}= 0.0960 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/3/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

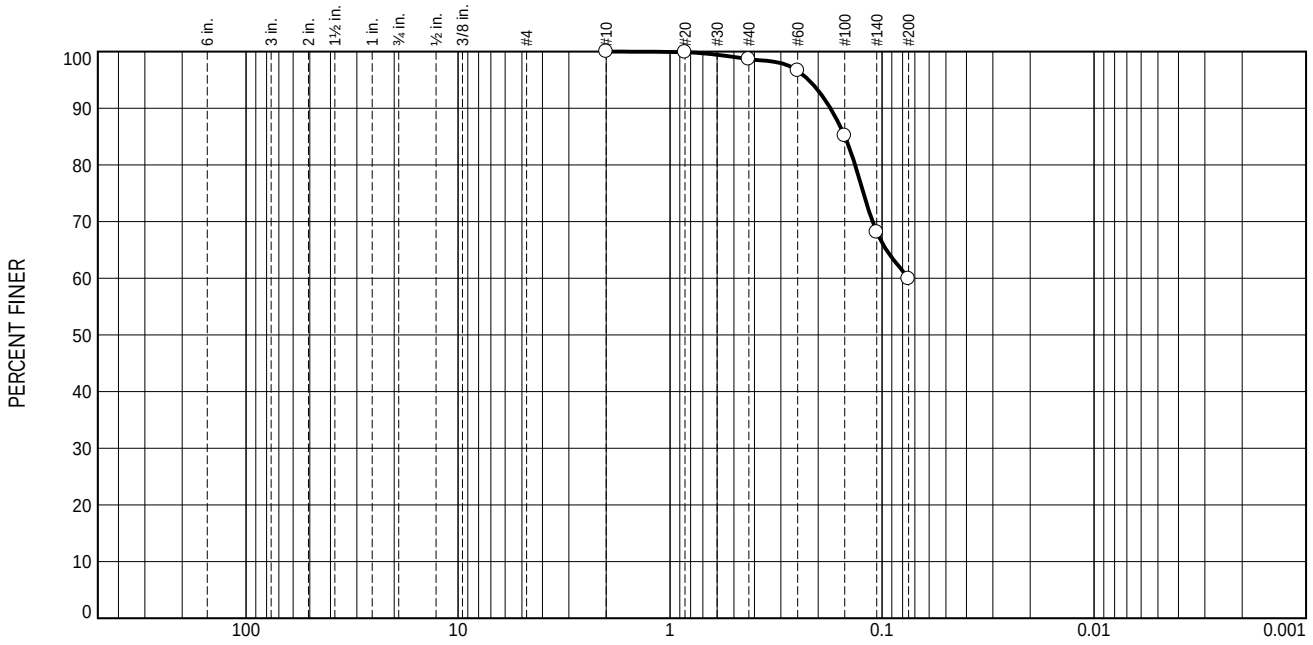
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.3	38.8	59.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	98.7		
#60	96.6		
#100	85.1		
#140	68.1		
#200	59.9		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 22A

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1752 D_{85}= 0.1494
D_{60}= 0.0753 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

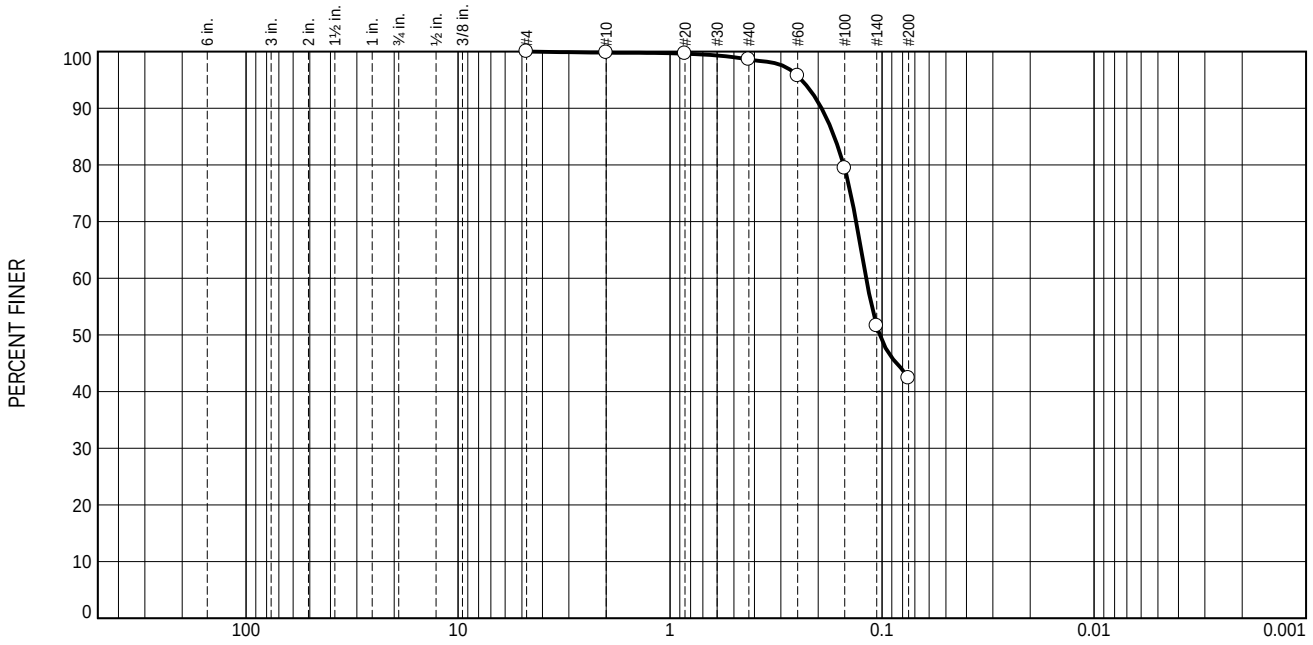
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.2	56.2	42.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.6		
#40	98.6		
#60	95.7		
#100	79.4		
#140	51.6		
#200	42.4		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 22B

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1929 D_{85}= 0.1680
D_{60}= 0.1189 D_{50}= 0.1026
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

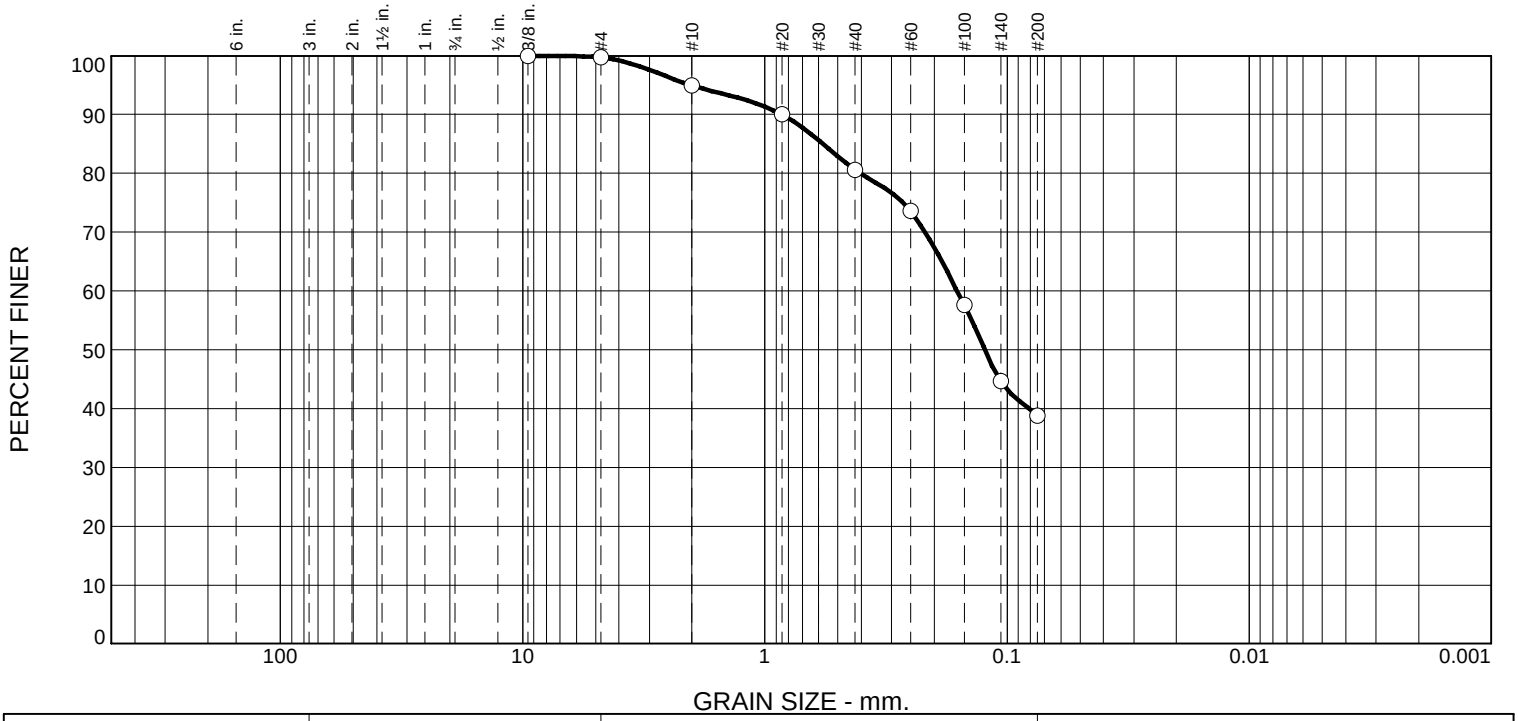
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	4.8	14.3	41.8	38.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.7		
#10	94.9		
#20	90.0		
#40	80.6		
#60	73.6		
#100	57.6		
#140	44.6		
#200	38.8		

* (no specification provided)

Material Description

Brown

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.8500 D_{85}= 0.5761

D_{60}= 0.1607 D_{50}= 0.1236

D_{30}= D_{15}=

D_{10}=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/3/23 **Technician:** D. Carter

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/27/23

Date Received: 2/28/23

Checked By: J. Hatch

Title: Sr Engineer

Source of Sample: PA-23 MIN

Sample Number: 22C

INSIGHT GROUP
A CHRISTOPHER COMPANY

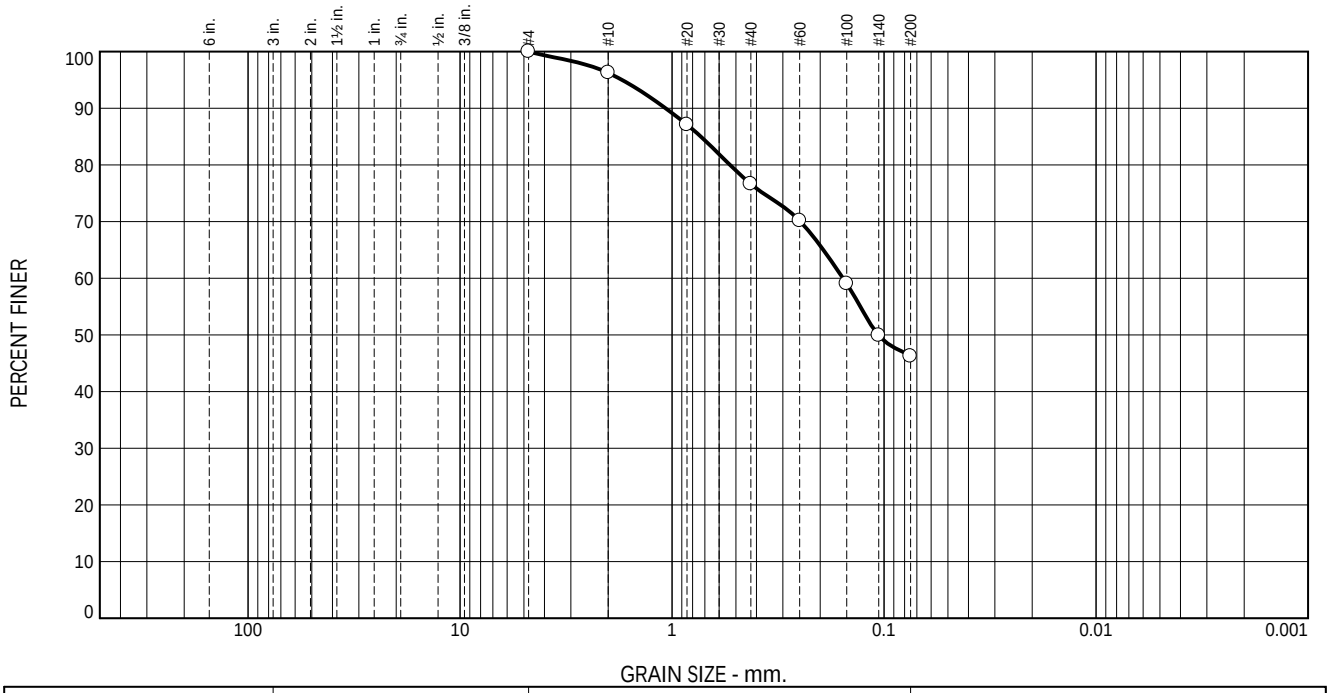
Client: AEM Group

Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	3.8	19.6	30.4	46.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	96.2		
#20	87.1		
#40	76.6		
#60	70.1		
#100	59.0		
#140	49.9		
#200	46.2		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 22D

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 1.0728 D_{85}= 0.7318
D_{60}= 0.1561 D_{50}= 0.1066
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

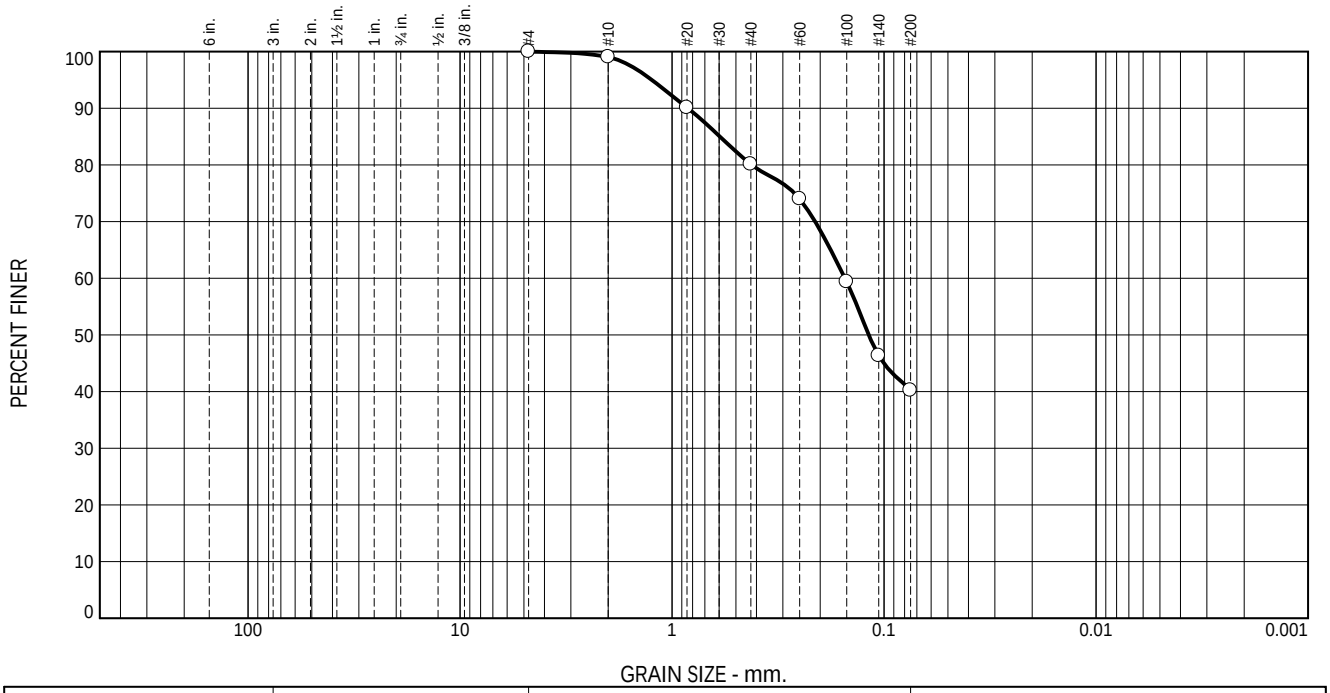
Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.0	18.9	39.9	40.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.0		
#20	90.1		
#40	80.1		
#60	74.0		
#100	59.4		
#140	46.3		
#200	40.2		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 22 Comp

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/3/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.8427 D_{85}= 0.5949
D_{60}= 0.1530 D_{50}= 0.1181
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/28/23
Checked By: J. Hatch
Title: Sr Engineer

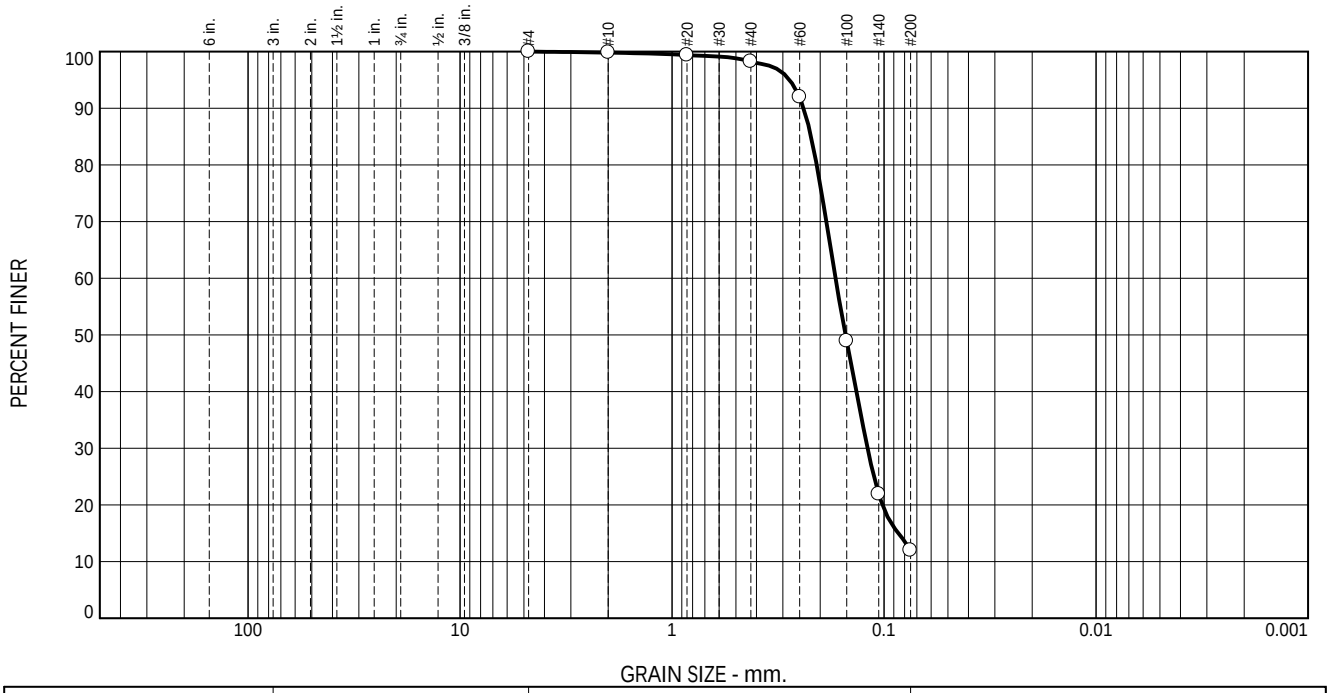
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.6	86.2	12.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.4		
#40	98.2		
#60	92.0		
#100	48.9		
#140	21.9		
#200	12.0		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 3A

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2390 D_{85}= 0.2210
D_{60}= 0.1694 D_{50}= 0.1520
D_{30}= 0.1197 D_{15}= 0.0856
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

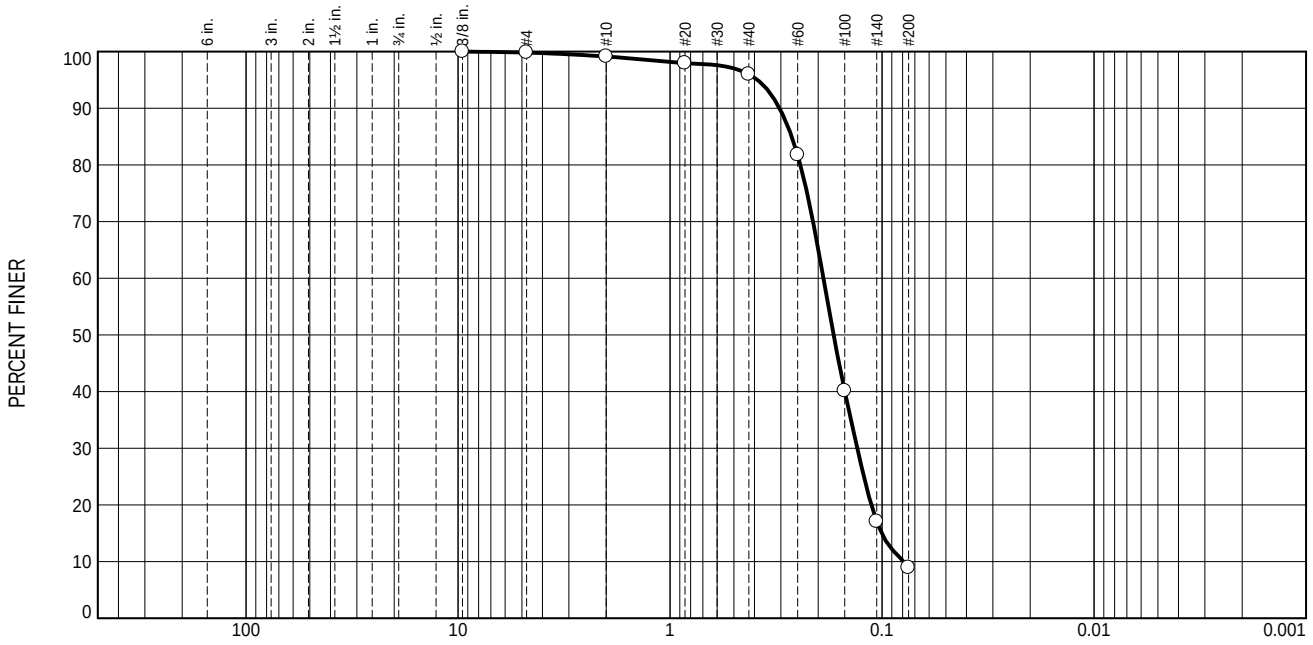
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.7	3.1	87.1	8.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.8		
#10	99.1		
#20	98.0		
#40	96.0		
#60	81.7		
#100	40.1		
#140	17.0		
#200	8.9		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 3B

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3044 D_{85}= 0.2669
D_{60}= 0.1890 D_{50}= 0.1692
D_{30}= 0.1309 D_{15}= 0.1006
D_{10}= 0.0791
C_u= 2.39 C_c= 1.15

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

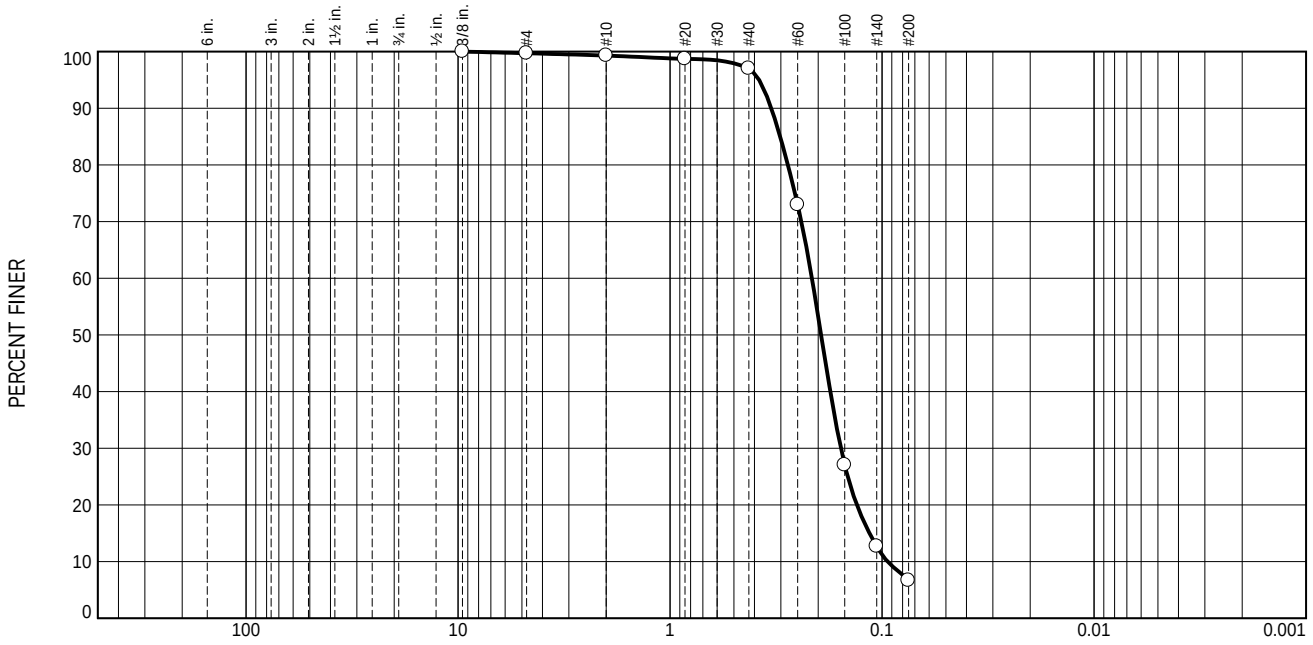
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.4	2.3	90.3	6.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.7		
#10	99.3		
#20	98.7		
#40	97.0		
#60	73.0		
#100	27.0		
#140	12.7		
#200	6.7		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 3C

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.3328 D_{85}= 0.3023
D_{60}= 0.2143 D_{50}= 0.1939
D_{30}= 0.1564 D_{15}= 0.1146
D_{10}= 0.0942
C_u= 2.27 C_c= 1.21

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

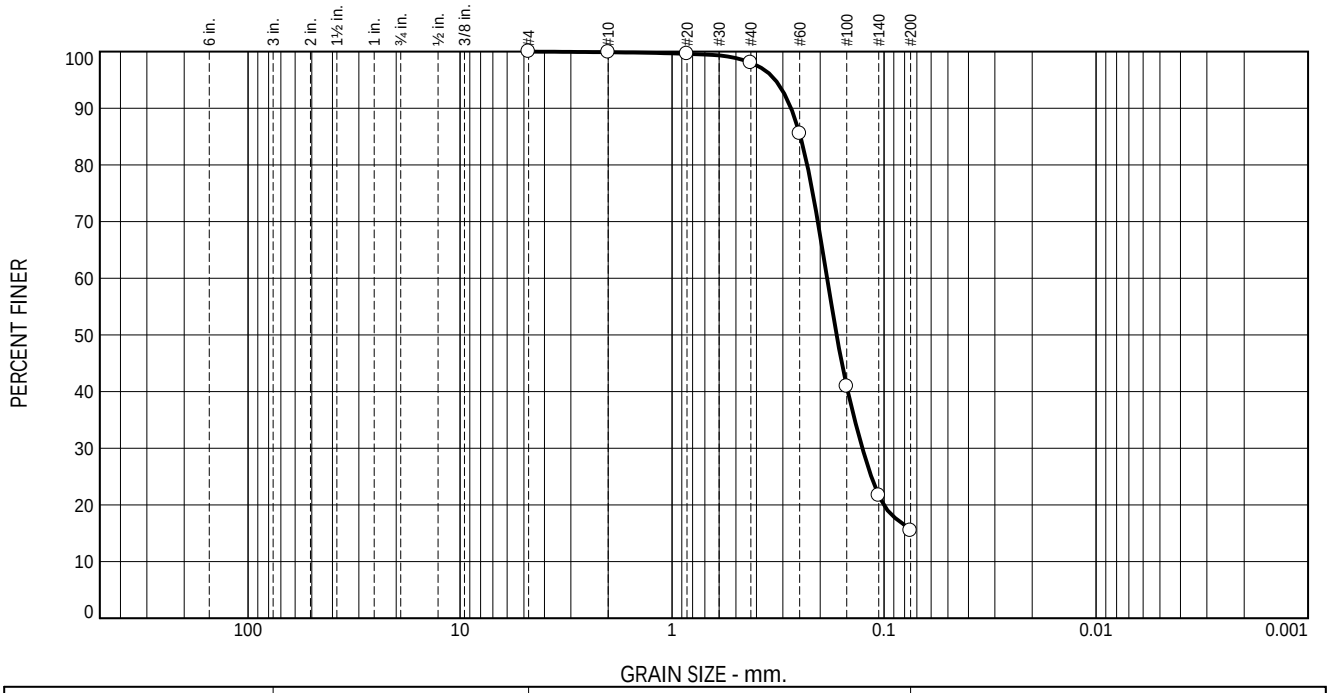
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.9	82.5	15.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.0		
#60	85.5		
#100	40.9		
#140	21.7		
#200	15.5		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 3D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2746 D_{85}= 0.2477
D_{60}= 0.1856 D_{50}= 0.1674
D_{30}= 0.1266 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

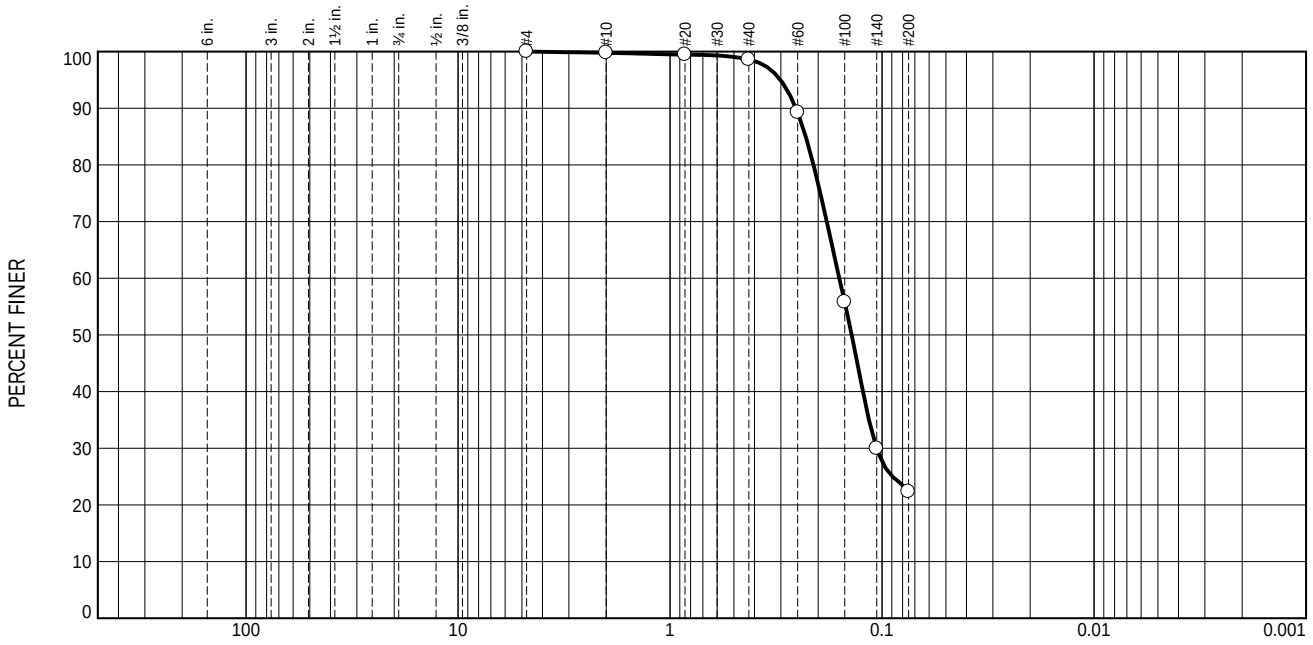
Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.2	76.3	22.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.5		
#40	98.6		
#60	89.2		
#100	55.8		
#140	29.9		
#200	22.3		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 3E

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2547 D_{85}= 0.2290
D_{60}= 0.1591 D_{50}= 0.1390
D_{30}= 0.1062 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

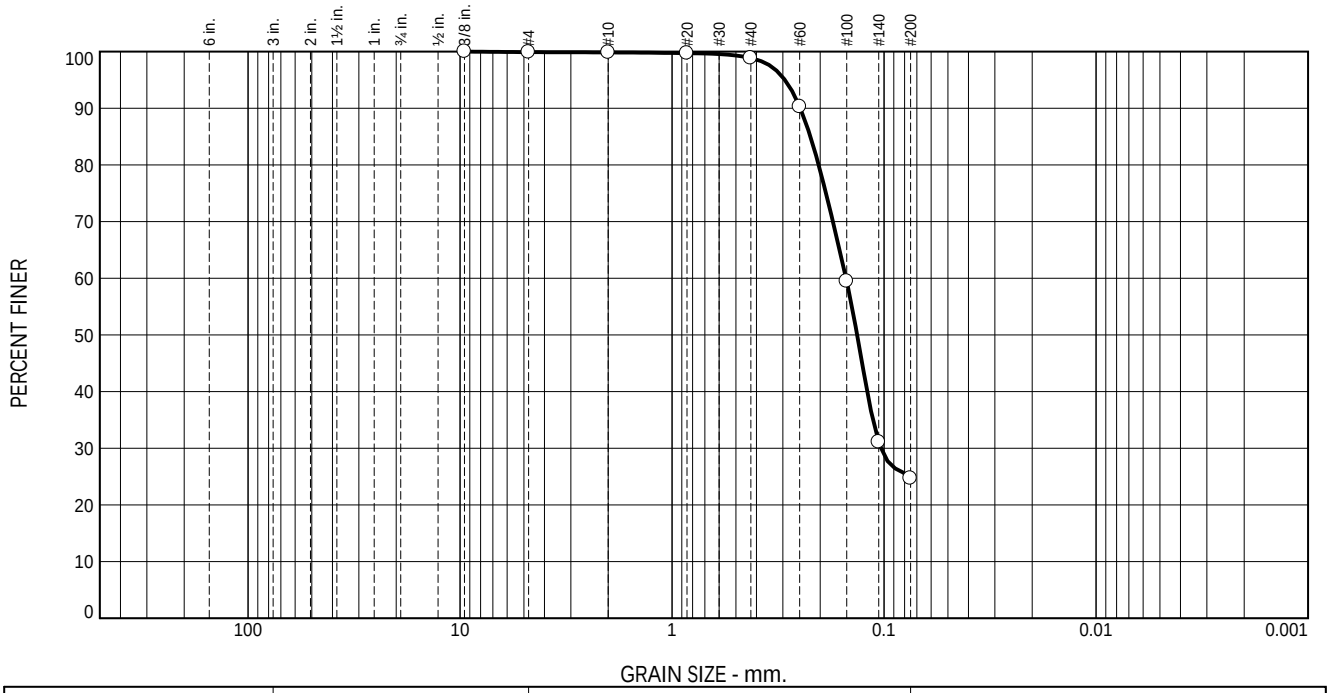
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.0	1.1	74.1	24.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.9		
#10	99.9		
#20	99.7		
#40	98.8		
#60	90.3		
#100	59.5		
#140	31.1		
#200	24.7		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 3F

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2483 D_{85}= 0.2226
D_{60}= 0.1512 D_{50}= 0.1340
D_{30}= 0.1035 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

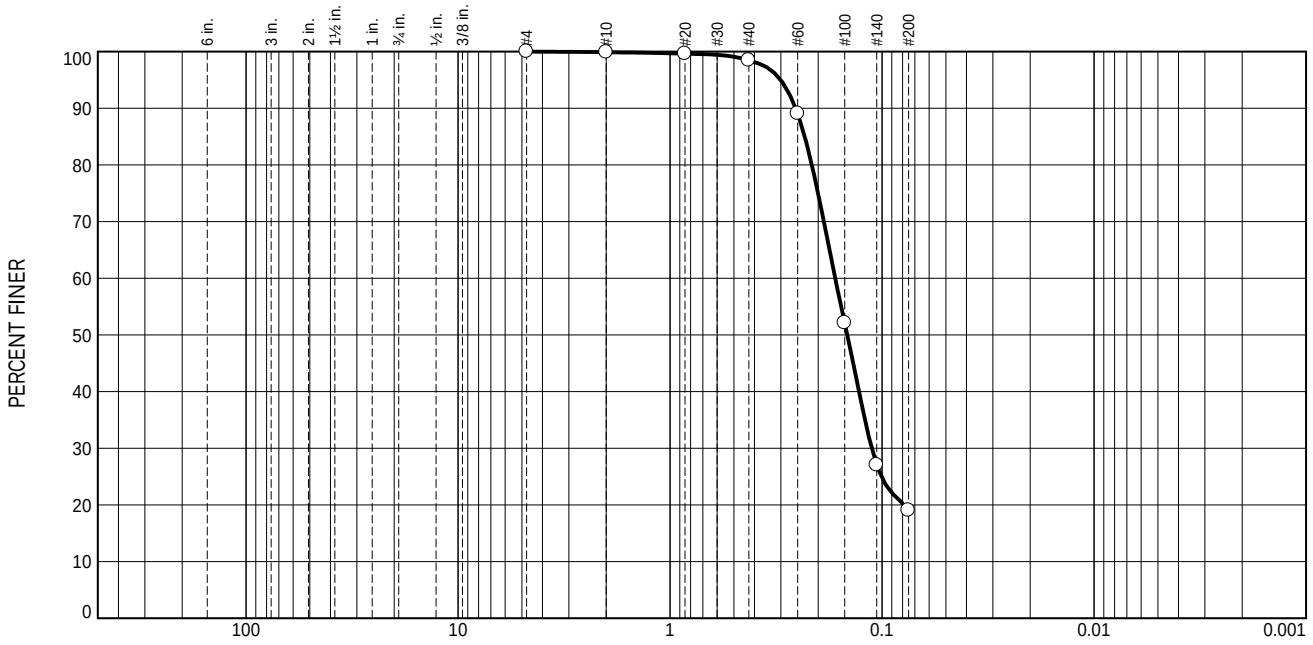
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.4	79.5	19.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.5		
#60	89.0		
#100	52.1		
#140	27.0		
#200	19.0		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 3 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2556 D_{85}= 0.2315
D_{60}= 0.1663 D_{50}= 0.1458
D_{30}= 0.1119 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

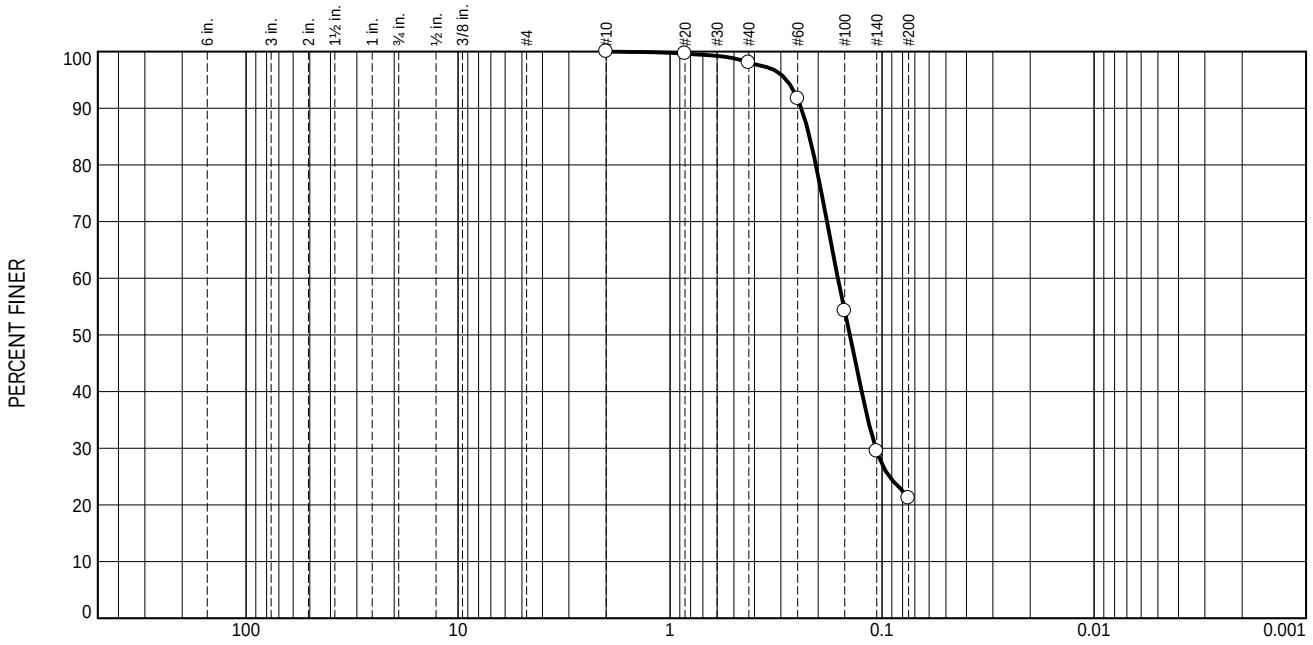
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.9	76.9	21.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.6		
#40	98.1		
#60	91.7		
#100	54.2		
#140	29.5		
#200	21.2		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 4A

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2399 D_{85}= 0.2199
D_{60}= 0.1616 D_{50}= 0.1418
D_{30}= 0.1072 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

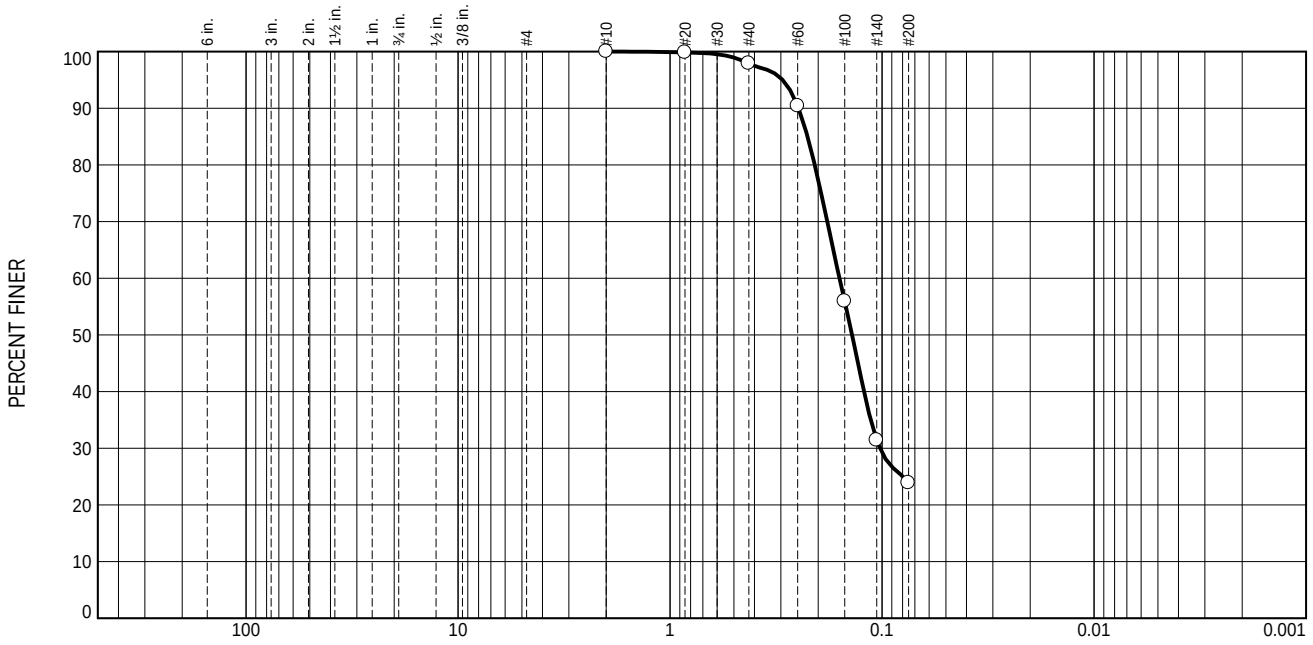
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.1	74.0	23.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	97.9		
#60	90.4		
#100	55.9		
#140	31.4		
#200	23.9		

* (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 4B

Material Description
Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2476 D_{85}= 0.2247
D_{60}= 0.1588 D_{50}= 0.1385
D_{30}= 0.1025 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

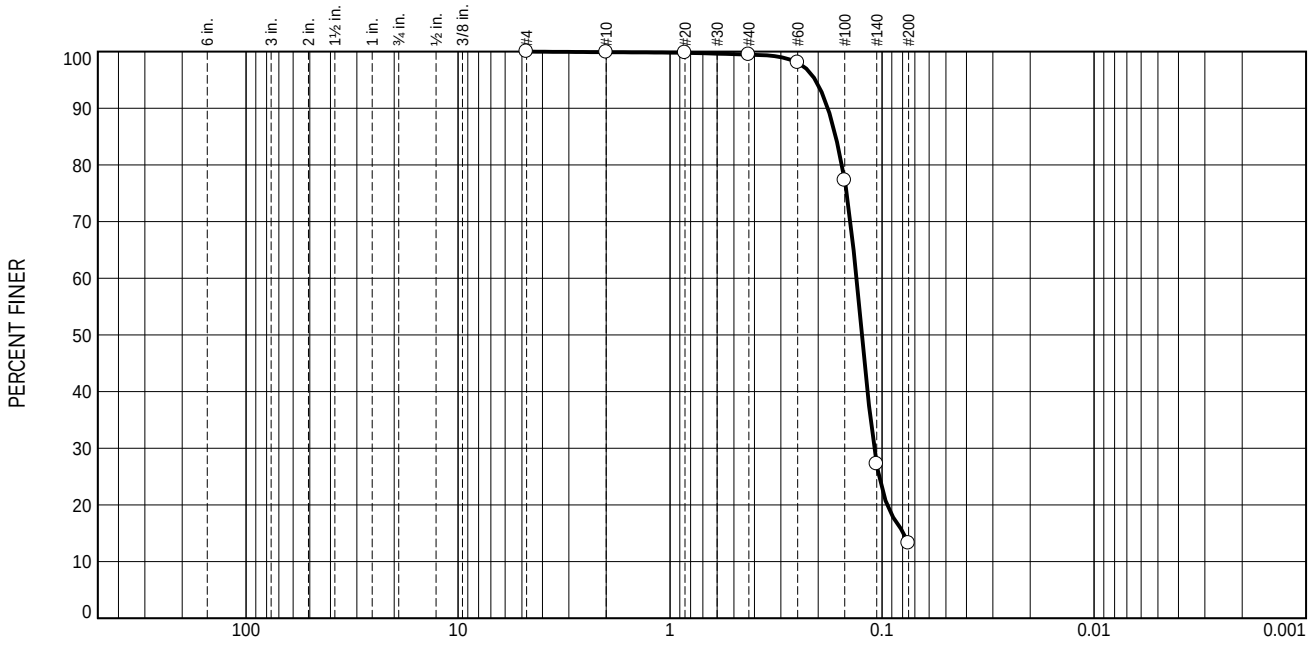
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.4	86.3	13.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.5		
#60	98.0		
#100	77.3		
#140	27.2		
#200	13.2		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 4C

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1802 D_{85}= 0.1653
D_{60}= 0.1321 D_{50}= 0.1244
D_{30}= 0.1089 D_{15}= 0.0791
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

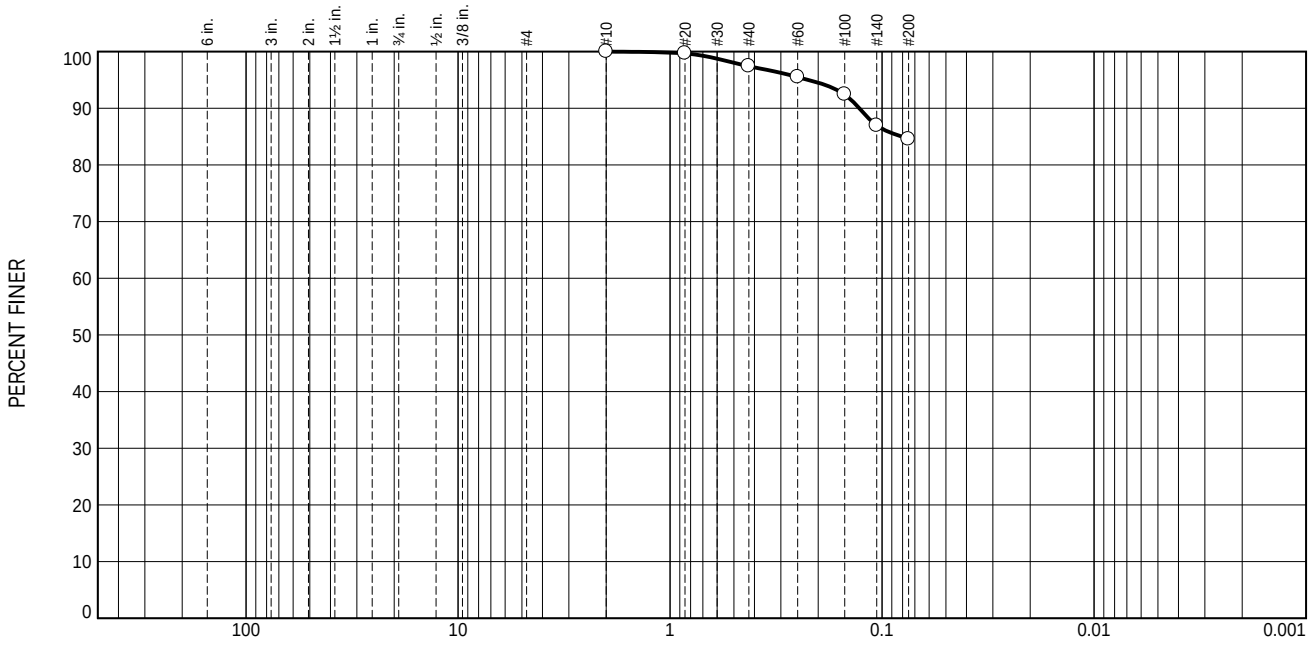
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.6	12.9	84.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	97.4		
#60	95.5		
#100	92.4		
#140	87.0		
#200	84.5		

* (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 4D

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1281 D_{85}= 0.0807
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

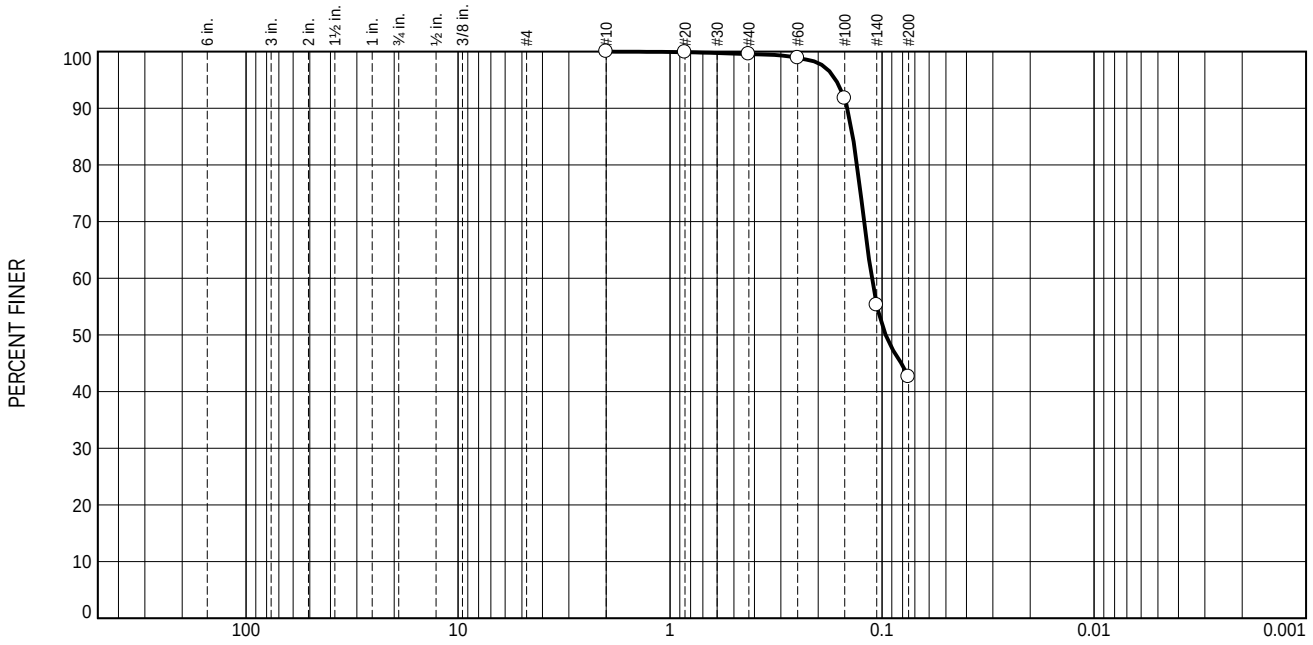
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	56.9	42.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.5		
#60	98.9		
#100	91.8		
#140	55.3		
#200	42.6		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 4E

Material Description
Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1453 D_{85}= 0.1373
D_{60}= 0.1118 D_{50}= 0.0962
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 3/1/23 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

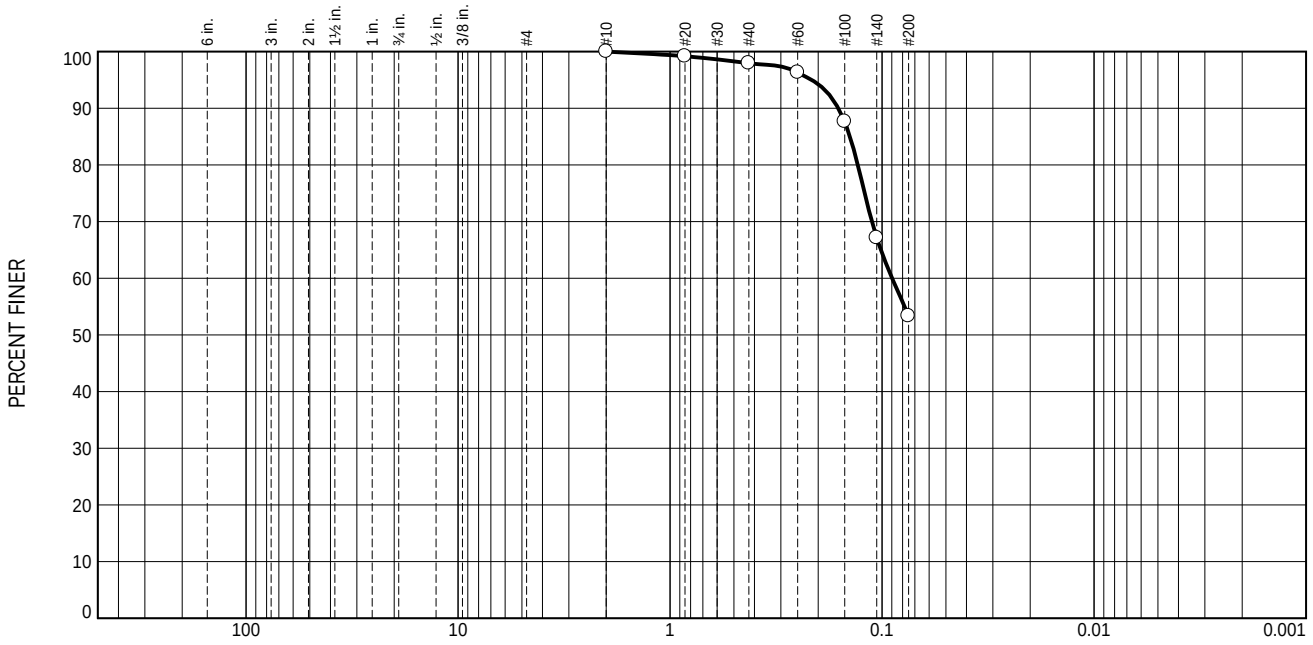
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.1	44.6	53.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.2		
#40	97.9		
#60	96.3		
#100	87.7		
#140	67.1		
#200	53.3		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 4F

Material Description
Dark Grayish Brown and Black

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1608 D_{85}= 0.1415
D_{60}= 0.0896 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J.Hatch
Title: Sr Engineer

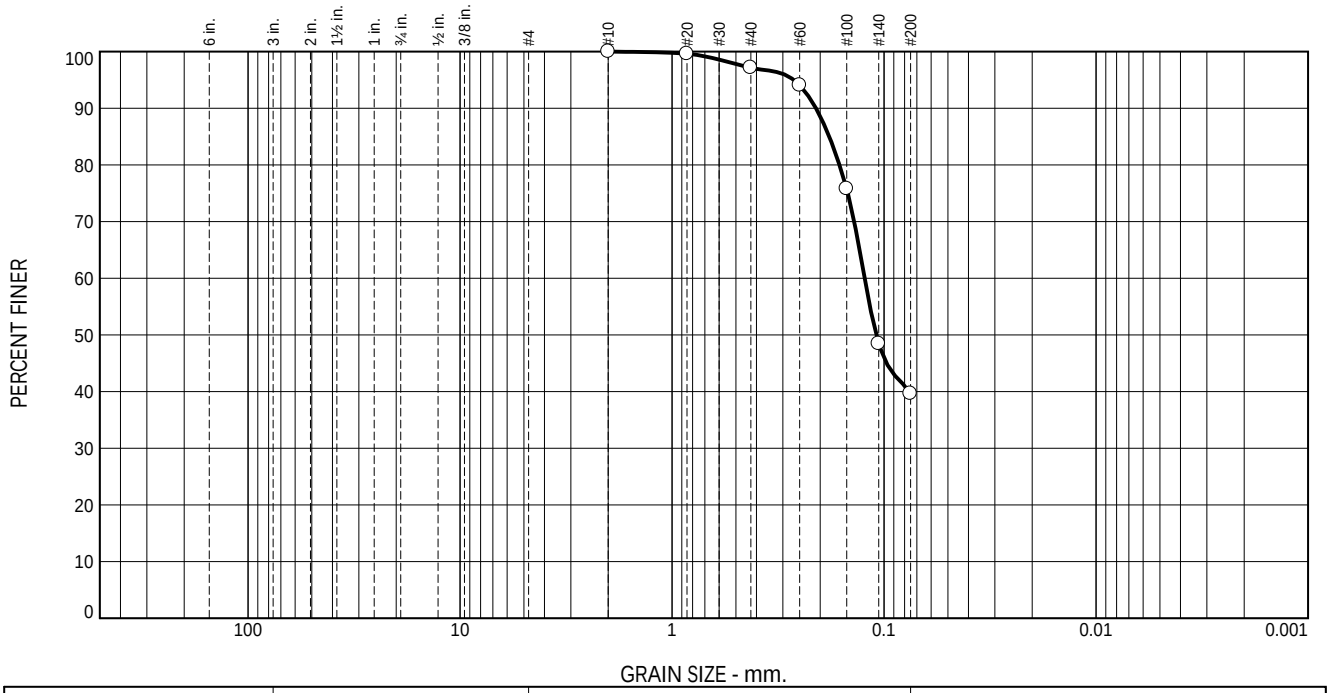
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.9	57.5	39.6	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.6		
#40	97.1		
#60	94.0		
#100	75.8		
#140	48.5		
#200	39.6		

* (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 4 Comp

Material Description
Dark Grayish Brown and Black

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2096 D_{85}= 0.1814
D_{60}= 0.1235 D_{50}= 0.1089
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

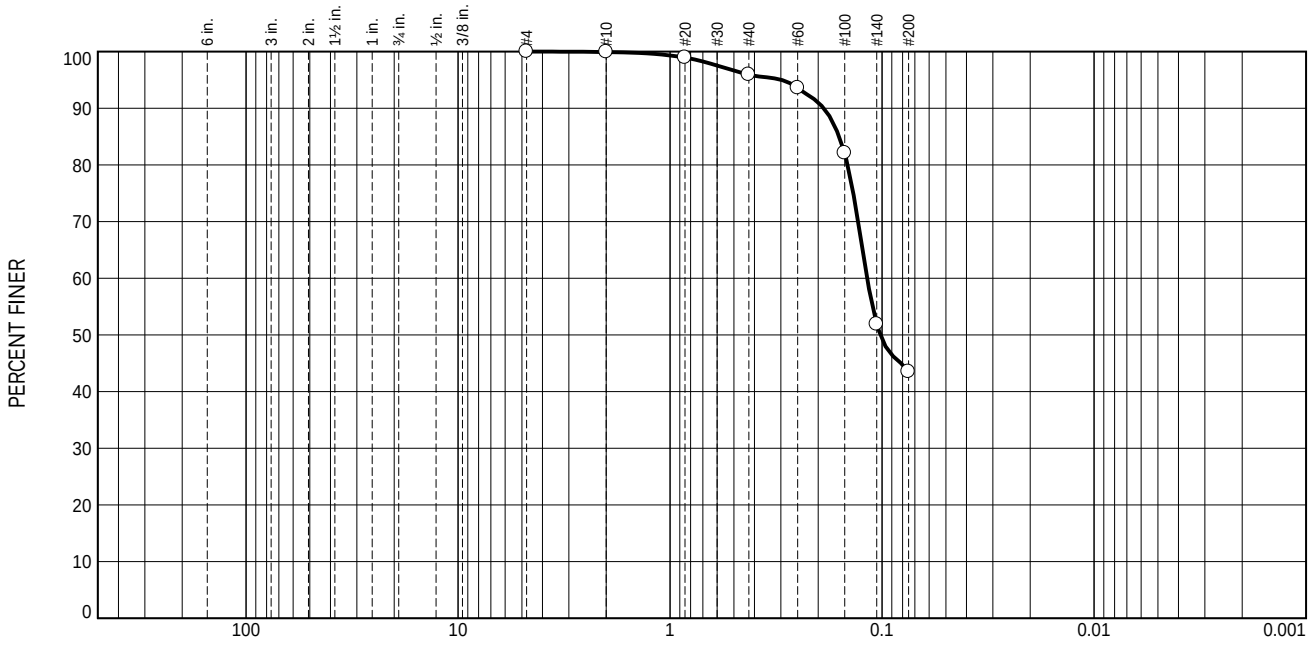
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	4.0	52.4	43.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	98.9		
#40	95.9		
#60	93.6		
#100	82.1		
#140	51.9		
#200	43.5		

* (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 5A

Material Description
Dark Grayish Brown and Black

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1883 D_{85}= 0.1593
D_{60}= 0.1176 D_{50}= 0.1020
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.8	49.6	43.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.3		
#40	93.2		
#60	89.5		
#100	76.4		
#140	52.5		
#200	43.6		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 5B

Material Description
Dark Grayish Brown and Black

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2579 D_{85}= 0.1944
D_{60}= 0.1191 D_{50}= 0.0995
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

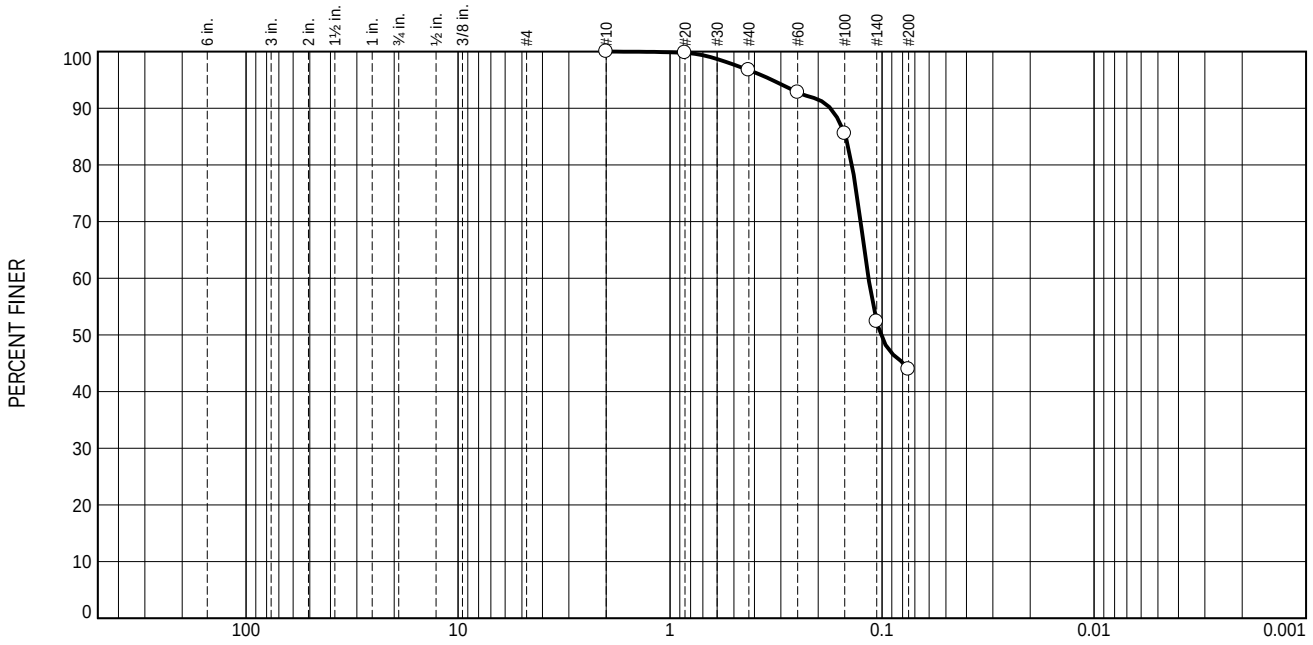
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.3	52.8	43.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	96.7		
#60	92.8		
#100	85.5		
#140	52.4		
#200	43.9		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 5C

Material Description
Dark Brown

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1752 D_{85}= 0.1483
D_{60}= 0.1158 D_{50}= 0.1012
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

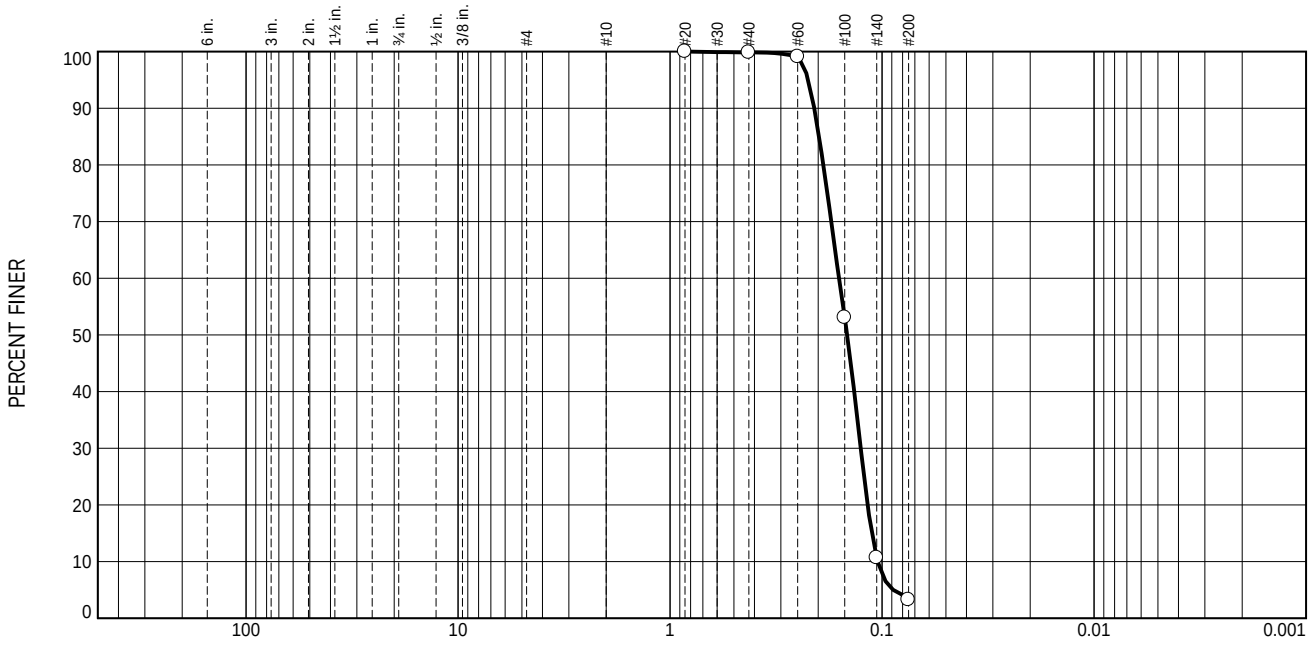
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: _____
Title: _____

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	96.7	3.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.1		
#100	53.1		
#140	10.7		
#200	3.2		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 5D

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2089 D_{85}= 0.1982
D_{60}= 0.1596 D_{50}= 0.1460
D_{30}= 0.1262 D_{15}= 0.1118
D_{10}= 0.1048
C_u= 1.52 C_c= 0.95

USCS (ASTM D2487)

SP

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

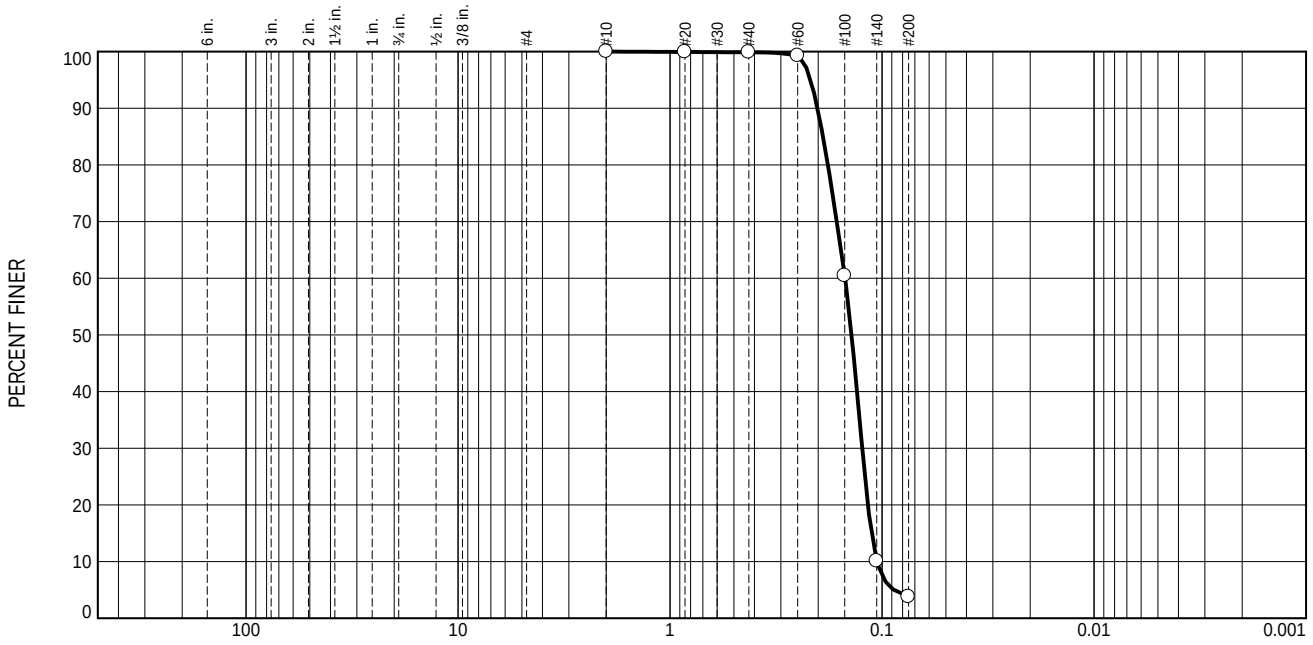
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	96.1	3.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.9		
#60	99.3		
#100	60.5		
#140	10.1		
#200	3.8		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 5E

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2017 D_{85}= 0.1899
D_{60}= 0.1494 D_{50}= 0.1392
D_{30}= 0.1241 D_{15}= 0.1123
D_{10}= 0.1059
C_u= 1.41 C_c= 0.97

USCS (ASTM D2487)

SP

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

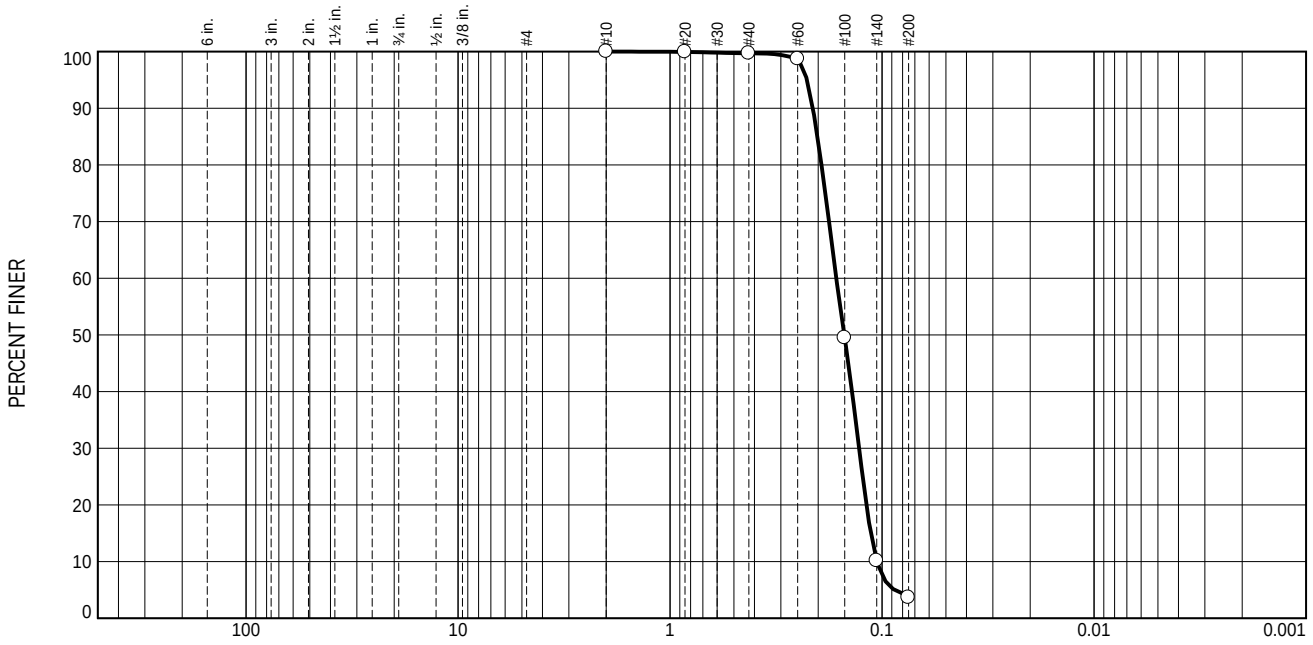
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	96.1	3.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.7		
#60	98.7		
#100	49.5		
#140	10.1		
#200	3.6		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 5F

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2121 D_{85}= 0.2017
D_{60}= 0.1643 D_{50}= 0.1508
D_{30}= 0.1284 D_{15}= 0.1131
D_{10}= 0.1057
C_u= 1.55 C_c= 0.95

USCS (ASTM D2487)

SP

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

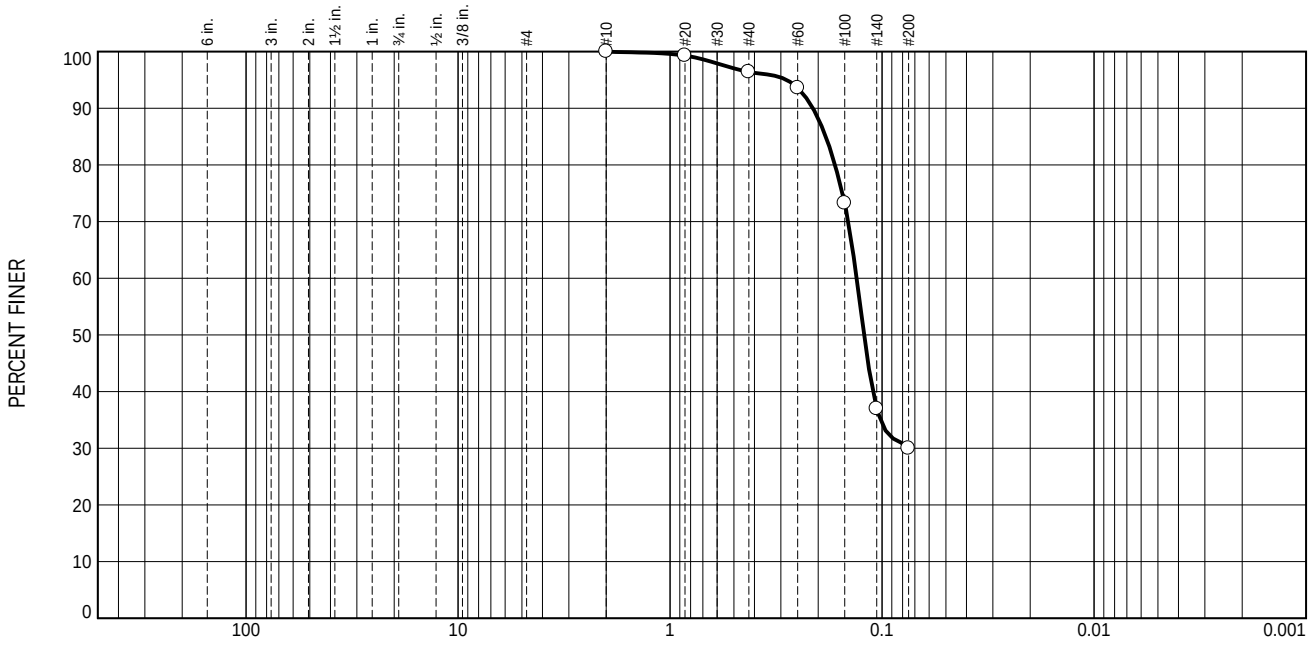
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.6	66.4	30.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.3		
#40	96.4		
#60	93.6		
#100	73.2		
#140	37.0		
#200	30.0		

* (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 5 Comp

Material Description
Dark Grayish Brown with Brown

Sieve Test (ASTM D6913)

Test Date: 3/1/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2120 D_{85}= 0.1843
D_{60}= 0.1318 D_{50}= 0.1216
D_{30}= 0.0751 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

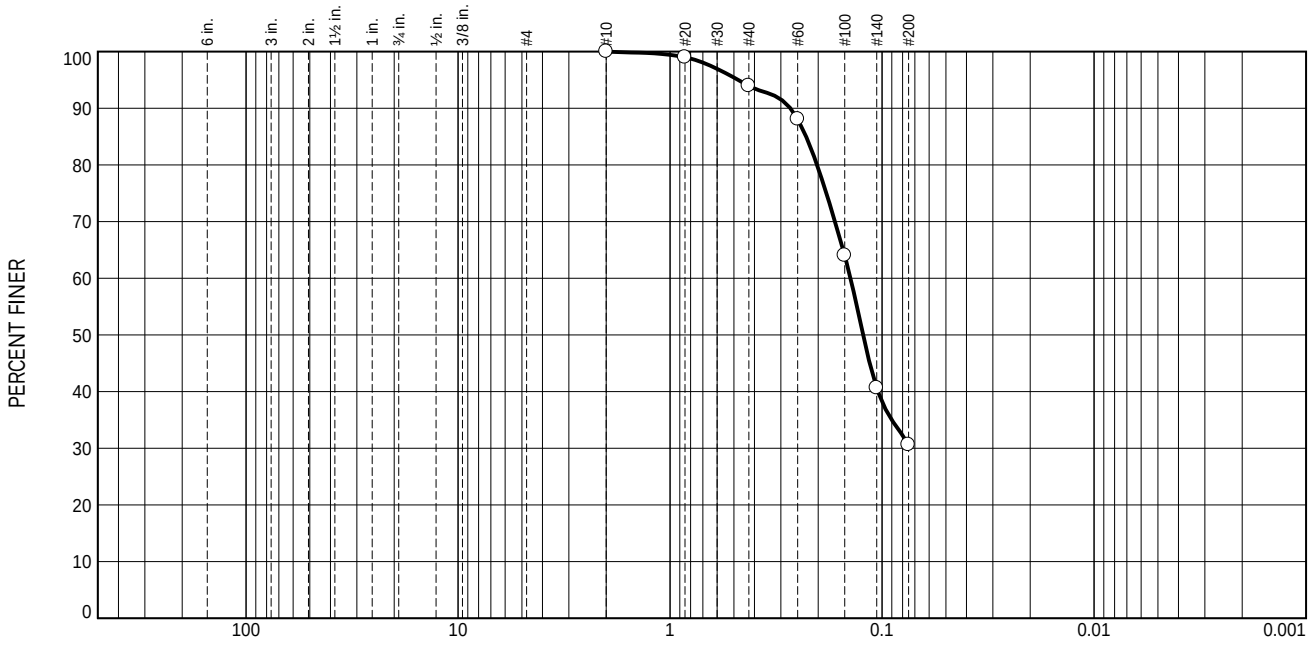
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.1	63.3	30.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.0		
#40	93.9		
#60	88.1		
#100	64.0		
#140	40.6		
#200	30.6		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 6A

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2708 D_{85}= 0.2282
D_{60}= 0.1408 D_{50}= 0.1229
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.6	7.8	50.9	40.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.9		
#10	99.3		
#20	96.3		
#40	91.5		
#60	83.4		
#100	69.0		
#140	47.7		
#200	40.6		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 6B

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.3740 D_{85}= 0.2706
D_{60}= 0.1294 D_{50}= 0.1112
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

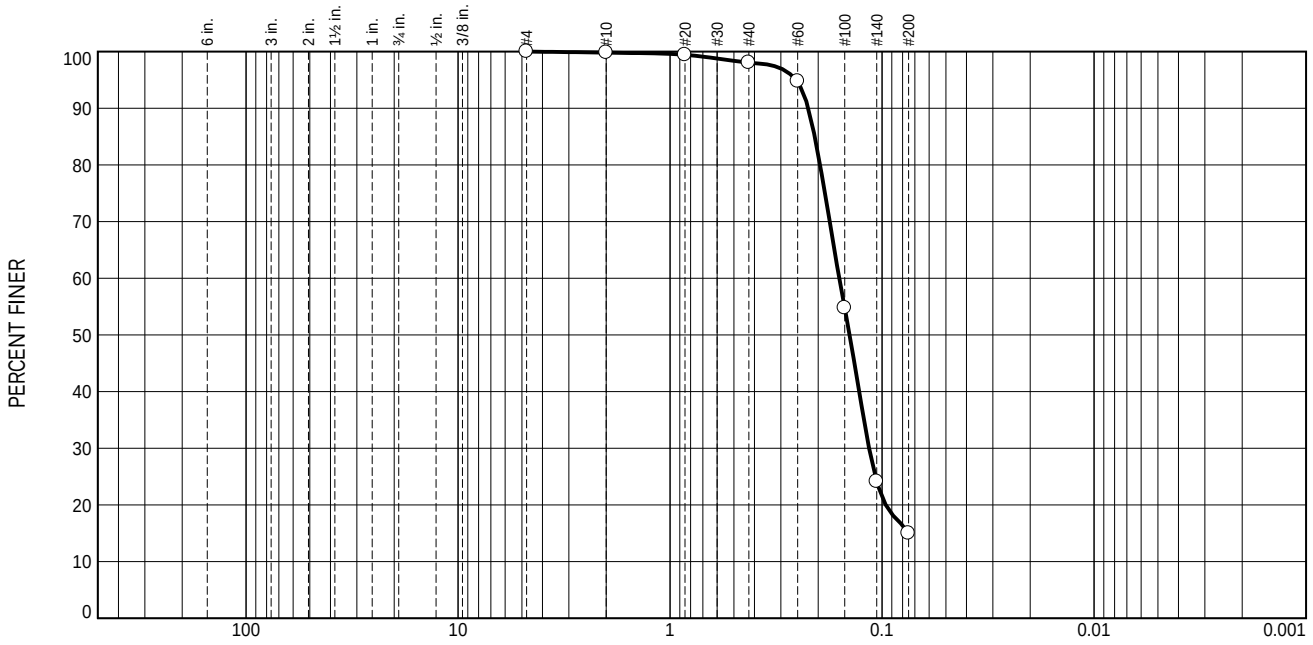
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.8	83.0	15.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.4		
#40	98.0		
#60	94.8		
#100	54.7		
#140	24.1		
#200	15.0		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 6C

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2229 D_{85}= 0.2078
D_{60}= 0.1592 D_{50}= 0.1422
D_{30}= 0.1151 D_{15}= 0.0751
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

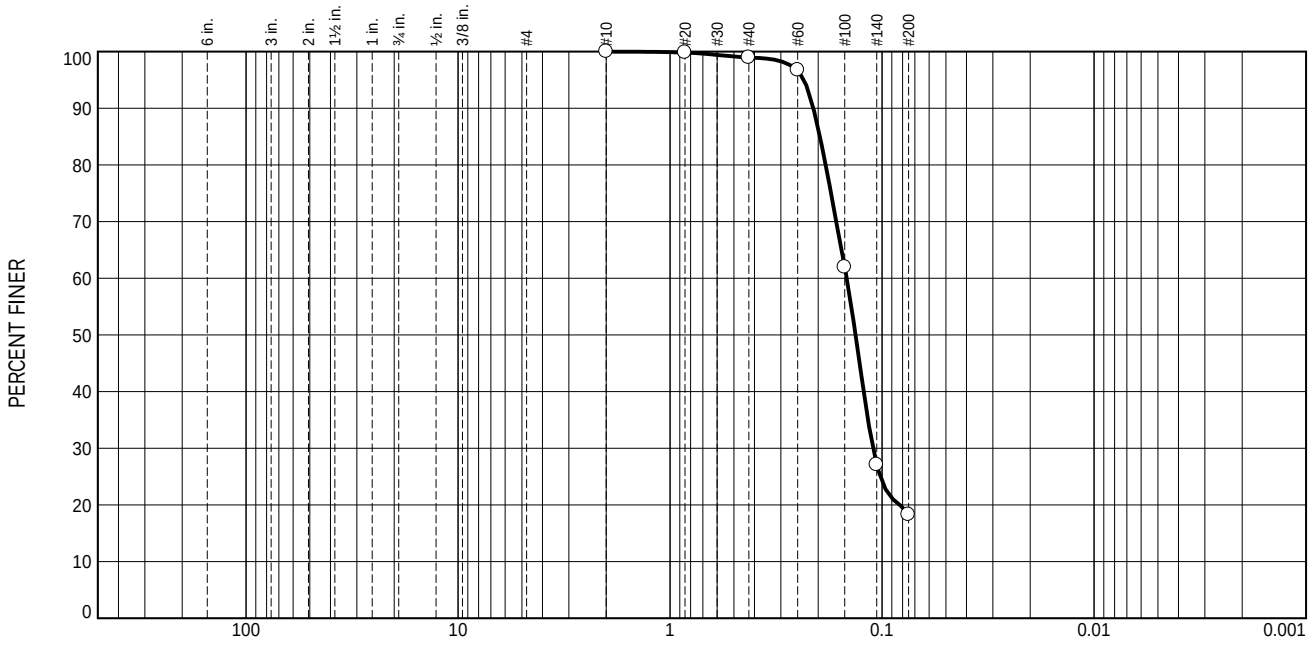
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.0	80.7	18.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	99.0		
#60	96.7		
#100	62.0		
#140	27.1		
#200	18.3		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 6D

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2110 D_{85}= 0.1963
D_{60}= 0.1467 D_{50}= 0.1334
D_{30}= 0.1103 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

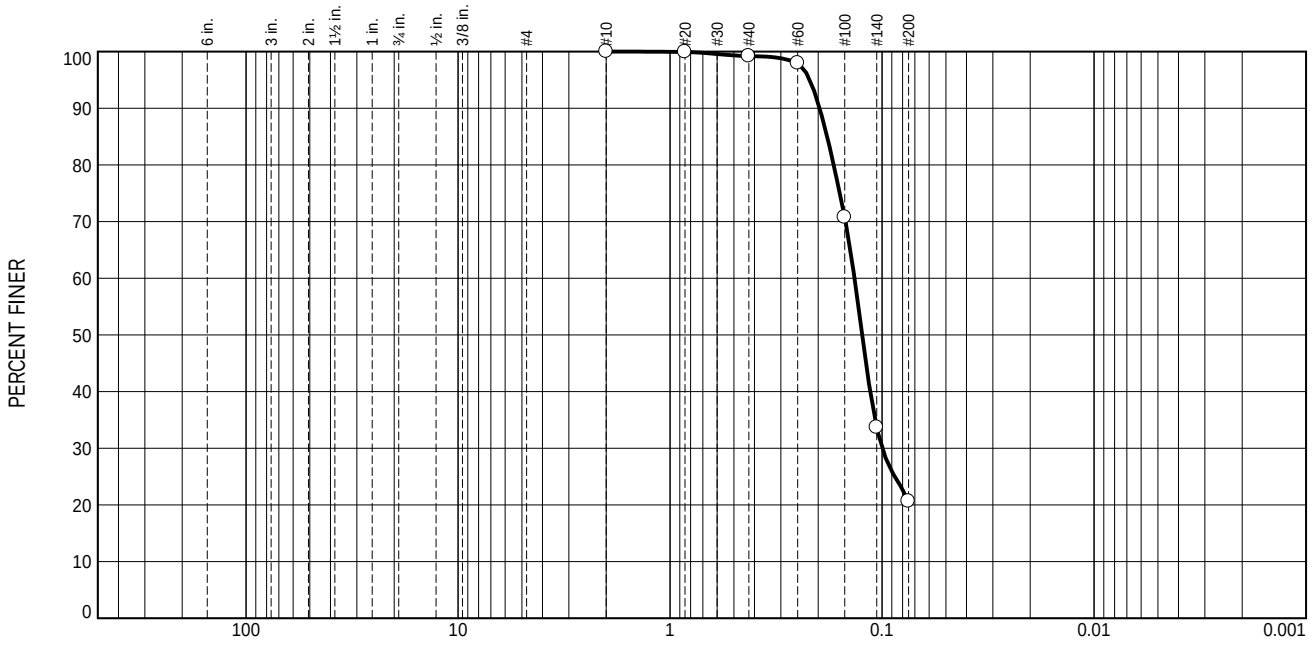
Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	78.6	20.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.2		
#60	98.0		
#100	70.8		
#140	33.7		
#200	20.6		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 6E

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.1970 D_{85}= 0.1816
D_{60}= 0.1349 D_{50}= 0.1242
D_{30}= 0.0998 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

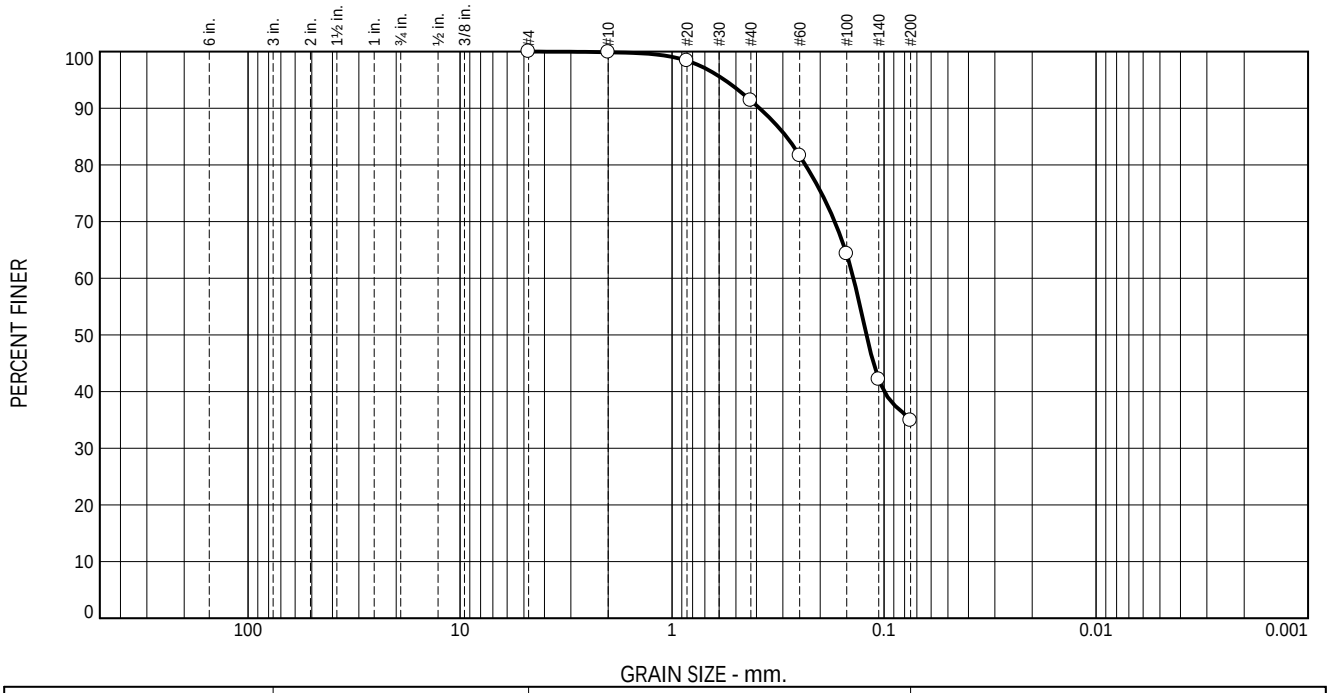
Date Sampled: 2/27/28
Date Received: 2/27/28
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	8.5	56.5	34.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	98.4		
#40	91.4		
#60	81.6		
#100	64.3		
#140	42.1		
#200	34.9		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 6F

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.3867 D_{85}= 0.2889
D_{60}= 0.1393 D_{50}= 0.1211
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	4.4	9.9	56.7	28.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.8		
#10	95.4		
#20	90.3		
#40	85.5		
#60	79.3		
#100	64.4		
#140	45.0		
#200	28.8		

· (no specification provided)

Source of Sample: PA-23 MIN
Sample Number: 6 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.8150 D_{85}= 0.4035
D_{60}= 0.1372 D_{50}= 0.1158
D_{30}= 0.0770 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/2/23 Technician: D. Carter

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/27/23
Date Received: 2/27/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Group Lab Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	1.6	13.3	83.7	0.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.4		
#10	97.8		
#20	94.4		
#40	84.5		
#60	47.3		
#100	5.9		
#140	1.6		
#200	0.8		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 7A

Material Description
Light Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.5099 D_{85}= 0.4305
D_{60}= 0.2937 D_{50}= 0.2589
D_{30}= 0.2060 D_{15}= 0.1745
D_{10}= 0.1627
C_u= 1.80 C_c= 0.89

USCS (ASTM D2487)

SP

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

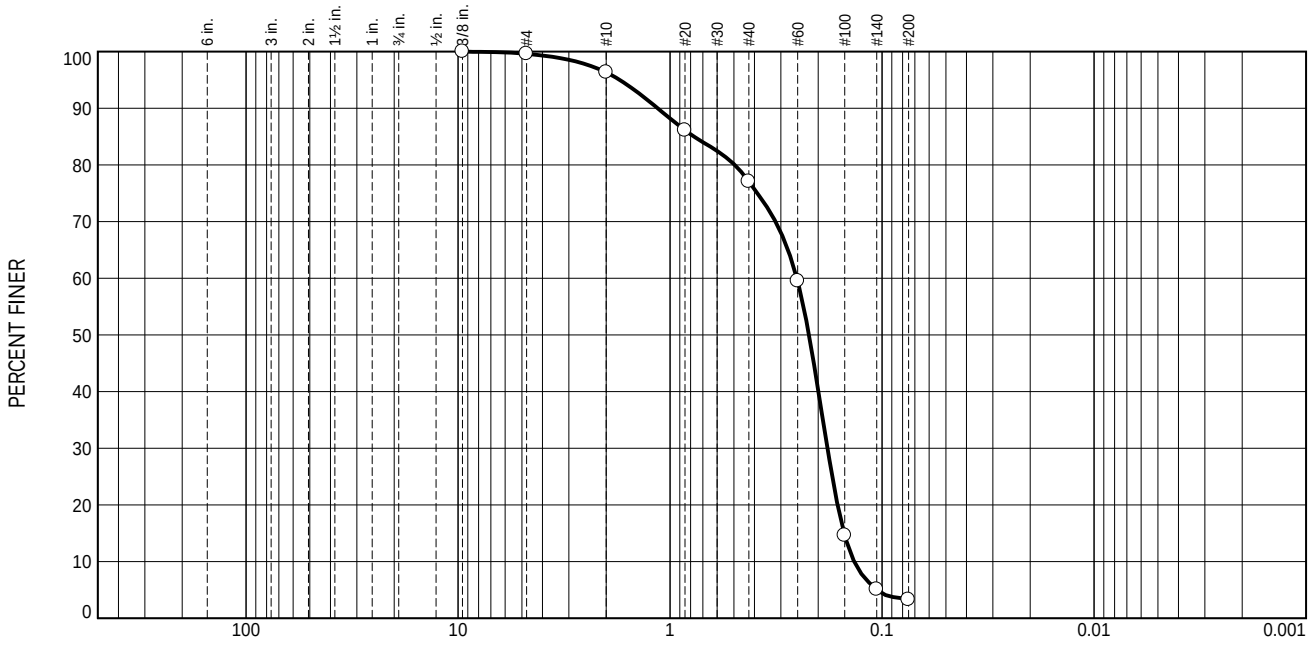
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	3.3	19.3	73.7	3.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.6		
#10	96.3		
#20	86.1		
#40	77.0		
#60	59.5		
#100	14.6		
#140	5.1		
#200	3.3		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 7B

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 1.1440 D_{85}= 0.7718
D_{60}= 0.2522 D_{50}= 0.2212
D_{30}= 0.1809 D_{15}= 0.1510
D_{10}= 0.1355
C_u= 1.86 C_c= 0.96

USCS (ASTM D2487)

SP

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	2.7	12.5	83.0	1.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.7		
#10	97.0		
#20	91.5		
#40	84.5		
#60	65.7		
#100	11.8		
#140	3.0		
#200	1.5		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 7C

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.6739 D_{85}= 0.4343
D_{60}= 0.2336 D_{50}= 0.2129
D_{30}= 0.1808 D_{15}= 0.1566
D_{10}= 0.1456
C_u= 1.60 C_c= 0.96

USCS (ASTM D2487)

SP

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

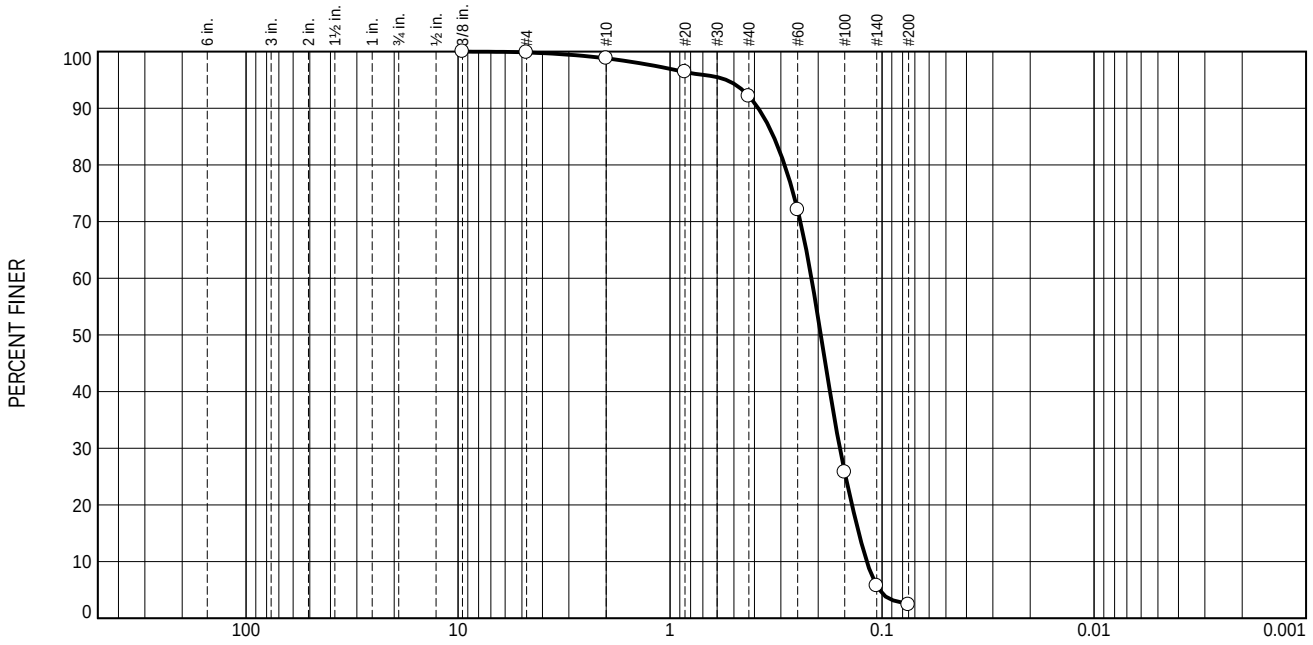
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	1.1	6.7	89.7	2.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.9		
#10	98.8		
#20	96.4		
#40	92.1		
#60	72.1		
#100	25.8		
#140	5.7		
#200	2.4		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 7D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3836 D_{85}= 0.3245
D_{60}= 0.2153 D_{50}= 0.1945
D_{30}= 0.1582 D_{15}= 0.1287
D_{10}= 0.1181
C_u= 1.82 C_c= 0.98

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)
SP

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.5	3.1	22.2	67.8	2.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	95.5		
#10	92.4		
#20	87.8		
#40	70.2		
#60	59.7		
#100	19.6		
#140	4.9		
#200	2.4		

* (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 7E

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 1.0321 D_{85}= 0.7380
D_{60}= 0.2515 D_{50}= 0.2163
D_{30}= 0.1724 D_{15}= 0.1384
D_{10}= 0.1246
C_u= 2.02 C_c= 0.95

USCS (ASTM D2487)

SP

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

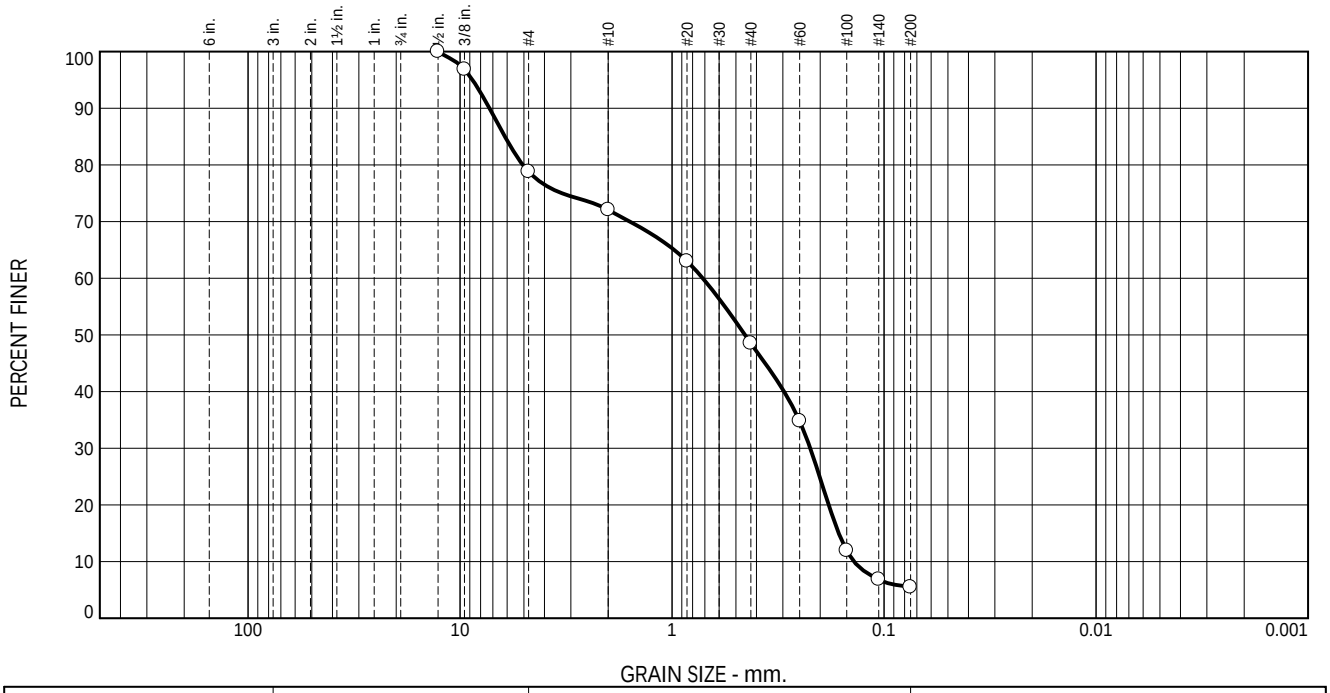
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	21.2	6.7	23.6	43.0	5.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
1/2	100.0		
3/8	96.8		
#4	78.8		
#10	72.1		
#20	63.0		
#40	48.5		
#60	34.8		
#100	11.9		
#140	6.8		
#200	5.5		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 7F

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 7.2658 D_{85}= 6.1433
D_{60}= 0.7164 D_{50}= 0.4529
D_{30}= 0.2229 D_{15}= 0.1636
D_{10}= 0.1388
C_u= 5.16 C_c= 0.50

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

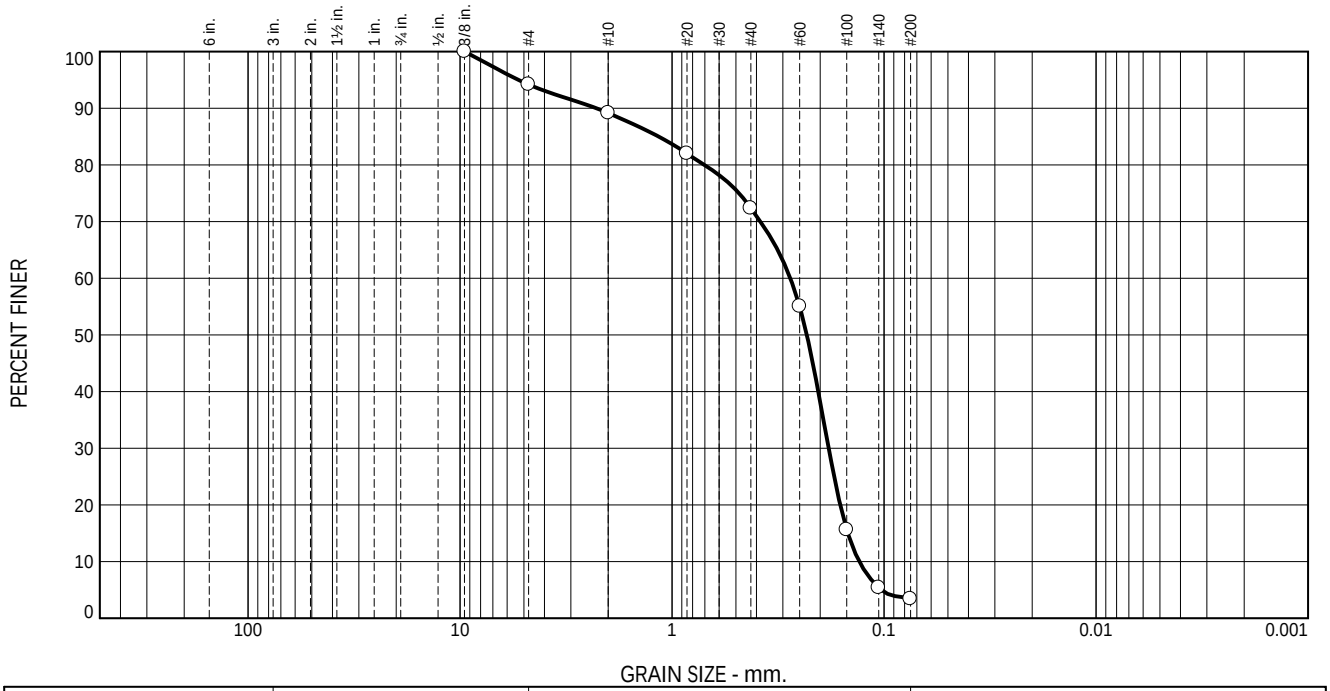
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	5.8	5.0	16.8	69.0	3.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	94.2		
#10	89.2		
#20	82.0		
#40	72.4		
#60	55.0		
#100	15.6		
#140	5.4		
#200	3.4		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 7 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 2.2732 D_{85}= 1.1559
D_{60}= 0.2769 D_{50}= 0.2312
D_{30}= 0.1825 D_{15}= 0.1483
D_{10}= 0.1310
C_u= 2.11 C_c= 0.92

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

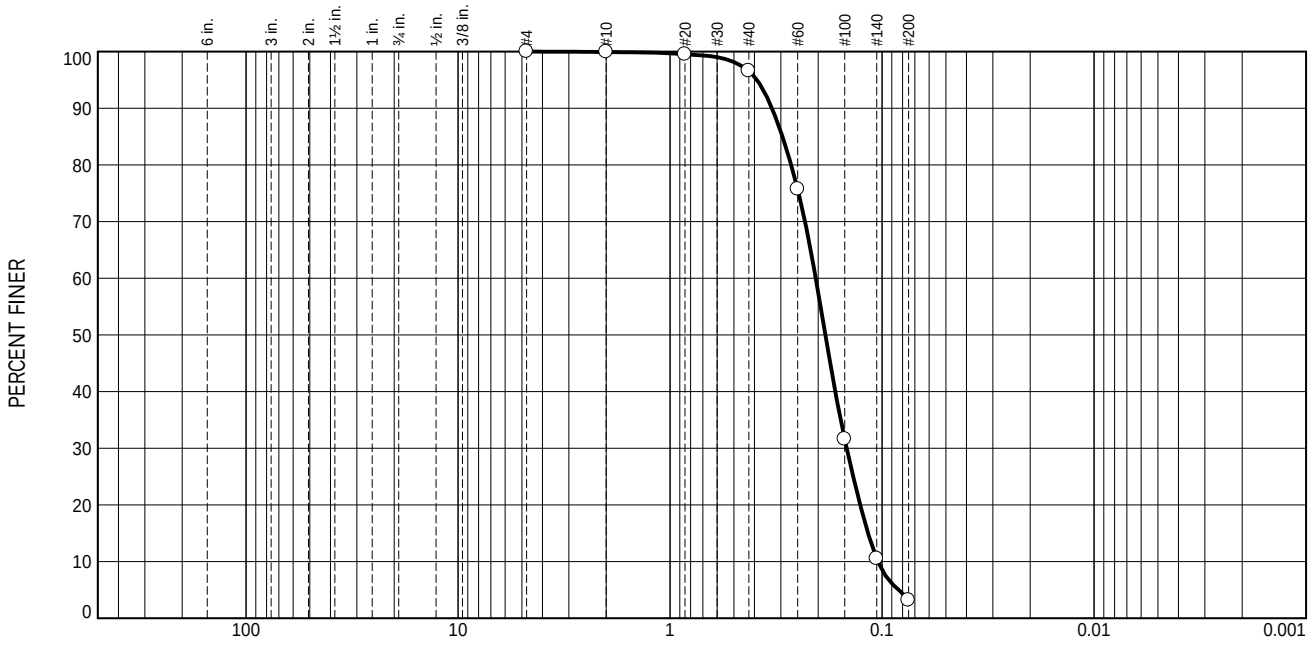
USCS (ASTM D2487)
SP

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	3.3	93.4	3.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.5		
#40	96.6		
#60	75.7		
#100	31.6		
#140	10.5		
#200	3.2		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 8A

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.3303 D_{85}= 0.2949
D_{60}= 0.2056 D_{50}= 0.1850
D_{30}= 0.1467 D_{15}= 0.1165
D_{10}= 0.1046
C_u= 1.96 C_c= 1.00

USCS (ASTM D2487)

SP

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

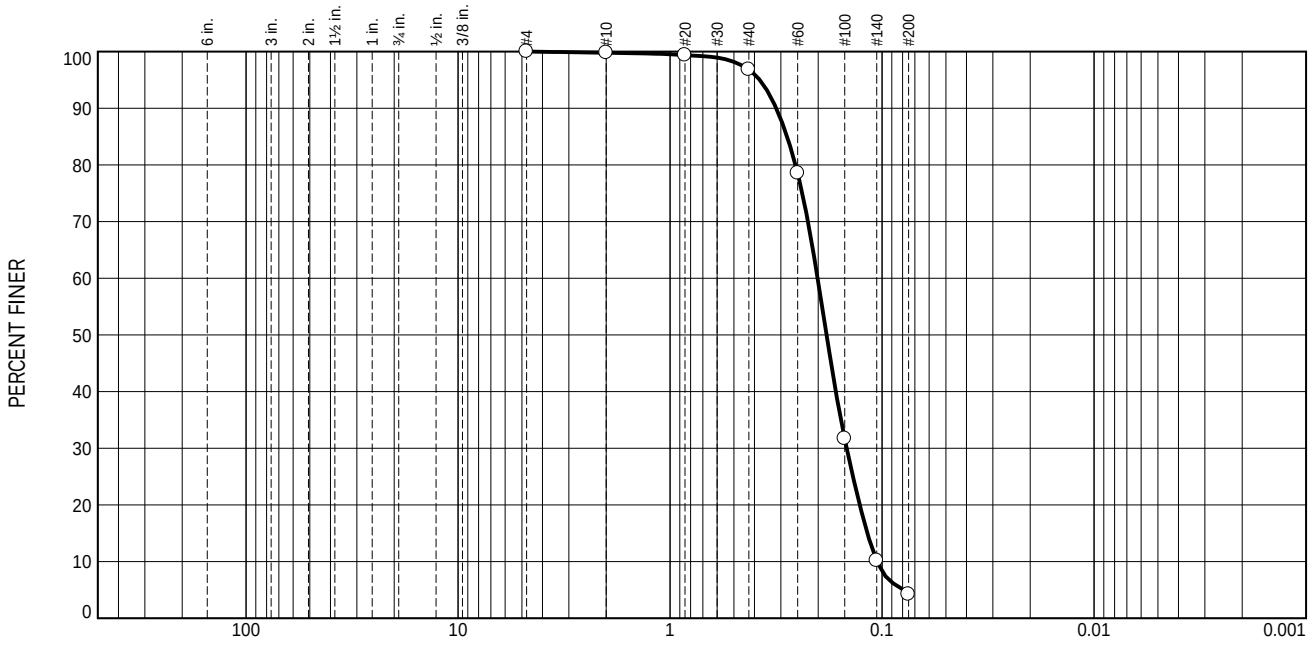
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	3.0	92.6	4.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.8		
#20	99.4		
#40	96.8		
#60	78.5		
#100	31.7		
#140	10.2		
#200	4.2		

* (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 8B

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.3155 D_{85}= 0.2806
D_{60}= 0.2014 D_{50}= 0.1827
D_{30}= 0.1468 D_{15}= 0.1173
D_{10}= 0.1056
C_u= 1.91 C_c= 1.01

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)
SP

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
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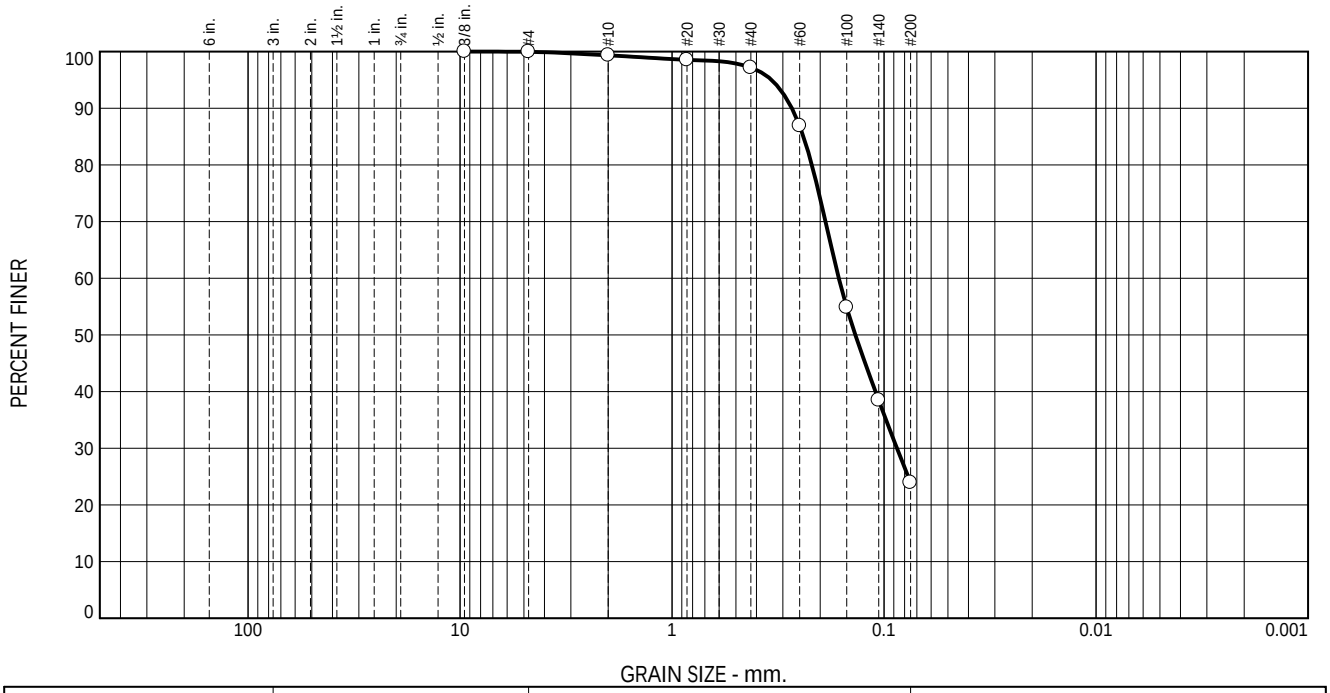
Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	2.1	73.3	23.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	100.0		
#10	99.3		
#20	98.5		
#40	97.2		
#60	86.9		
#100	54.8		
#140	38.5		
#200	23.9		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 8C

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2722 D_{85}= 0.2397
D_{60}= 0.1634 D_{50}= 0.1366
D_{30}= 0.0869 D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

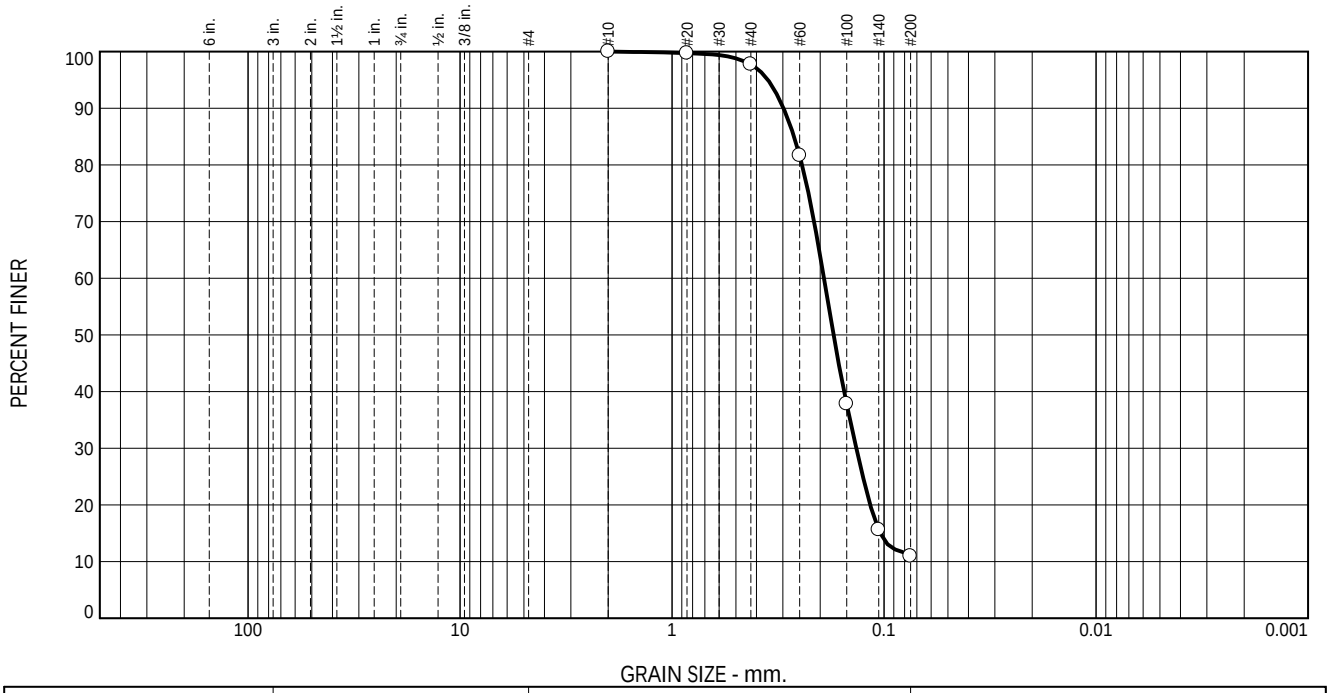
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.3	86.8	10.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.7		
#40	97.7		
#60	81.6		
#100	37.8		
#140	15.6		
#200	10.9		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 8D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2980 D_{85}= 0.2659
D_{60}= 0.1920 D_{50}= 0.1729
D_{30}= 0.1351 D_{15}= 0.1043
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

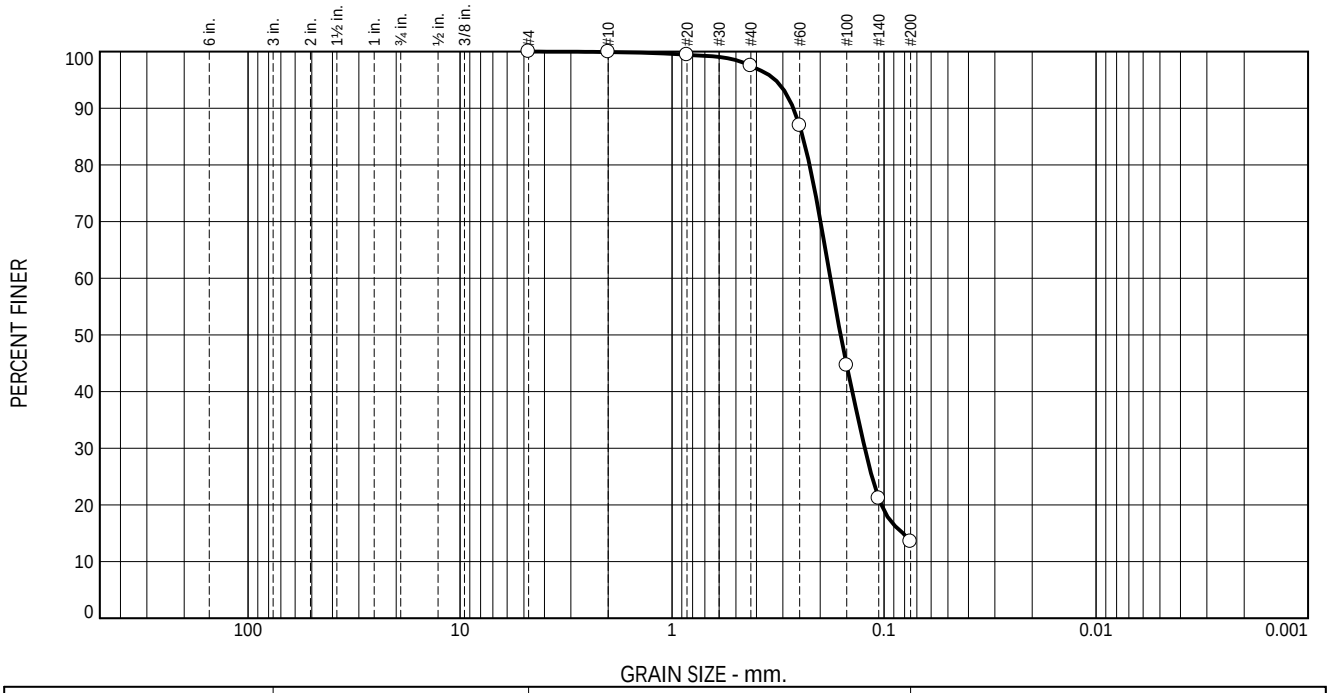
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.4	84.0	13.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.4		
#40	97.5		
#60	86.9		
#100	44.6		
#140	21.1		
#200	13.5		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 8E

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2677 D_{85}= 0.2415
D_{60}= 0.1791 D_{50}= 0.1603
D_{30}= 0.1233 D_{15}= 0.0814
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

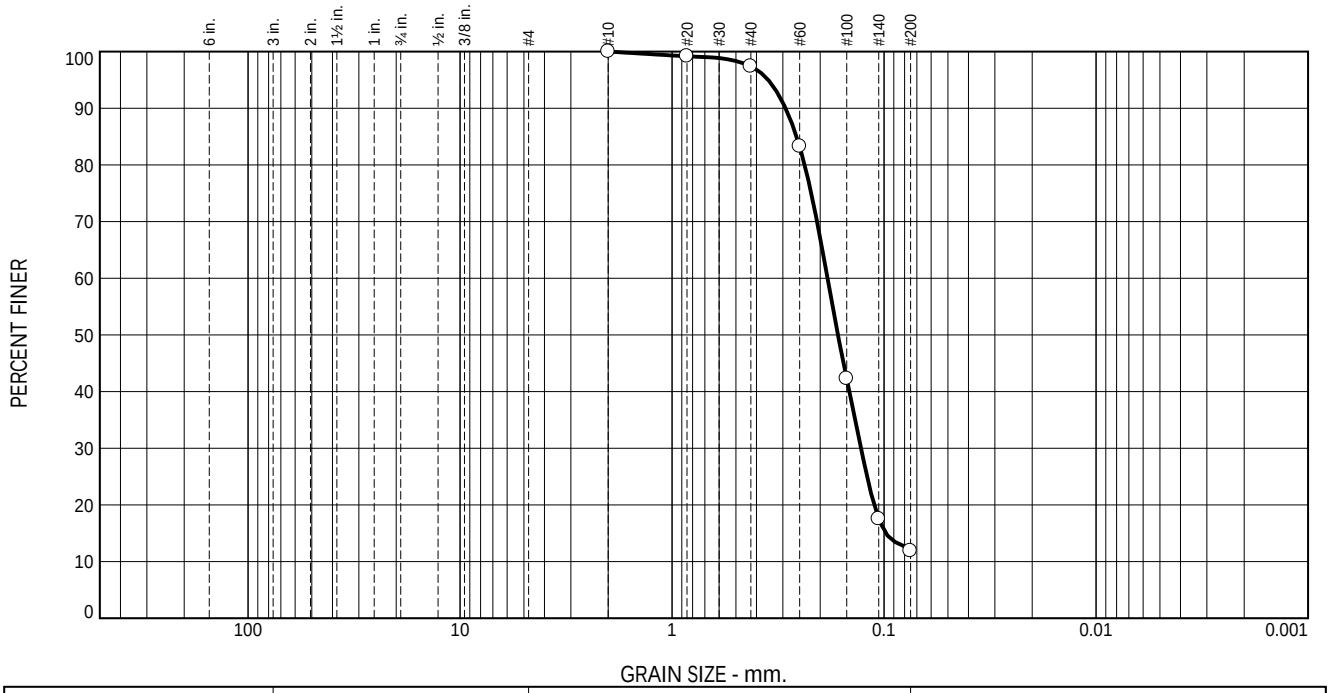
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.6	85.5	11.9	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.2		
#40	97.4		
#60	83.3		
#100	42.3		
#140	17.5		
#200	11.9		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 8F

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2913 D_{85}= 0.2587
D_{60}= 0.1847 D_{50}= 0.1649
D_{30}= 0.1285 D_{15}= 0.0982
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

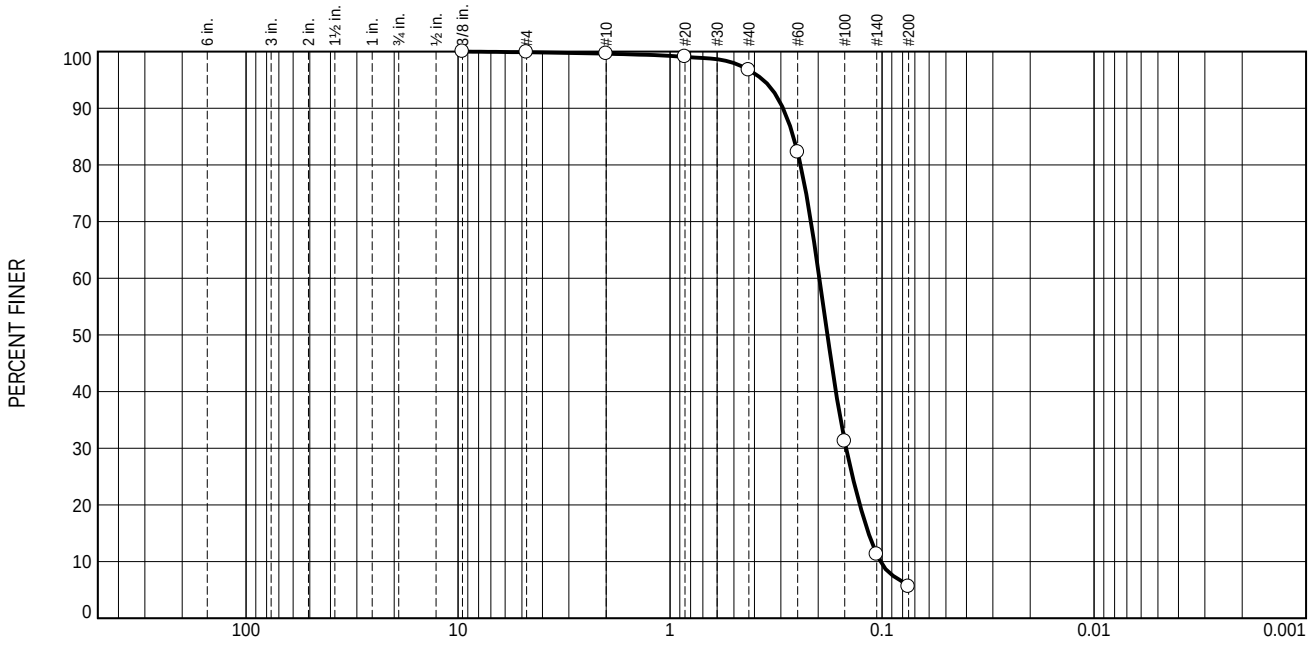
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	2.9	91.1	5.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
3/8	100.0		
#4	99.9		
#10	99.6		
#20	99.1		
#40	96.7		
#60	82.3		
#100	31.2		
#140	11.3		
#200	5.6		

* (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 8 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2930 D_{85}= 0.2619
D_{60}= 0.1976 D_{50}= 0.1810
D_{30}= 0.1477 D_{15}= 0.1158
D_{10}= 0.1020
C_u= 1.94 C_c= 1.08

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

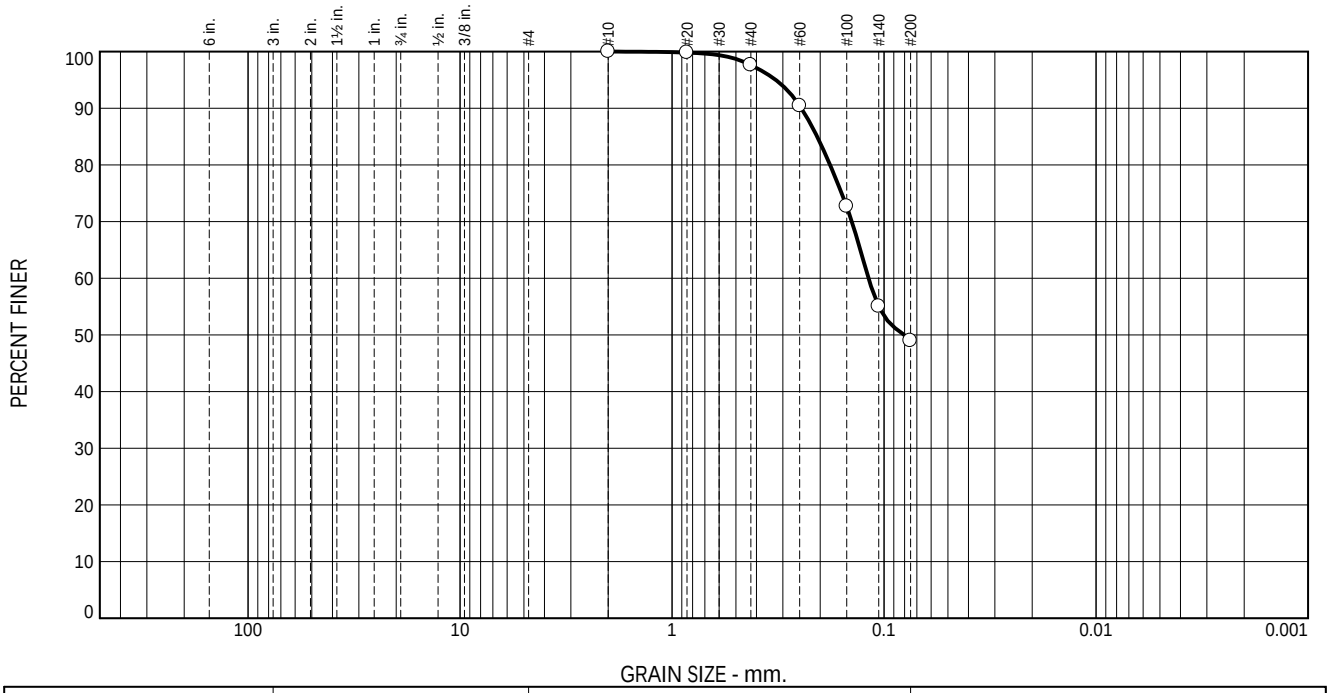
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.4	48.6	49.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	97.6		
#60	90.4		
#100	72.7		
#140	55.0		
#200	49.0		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 9A

Material Description
Dark Grayish Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2457 D_{85}= 0.2069
D_{60}= 0.1184 D_{50}= 0.0804
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

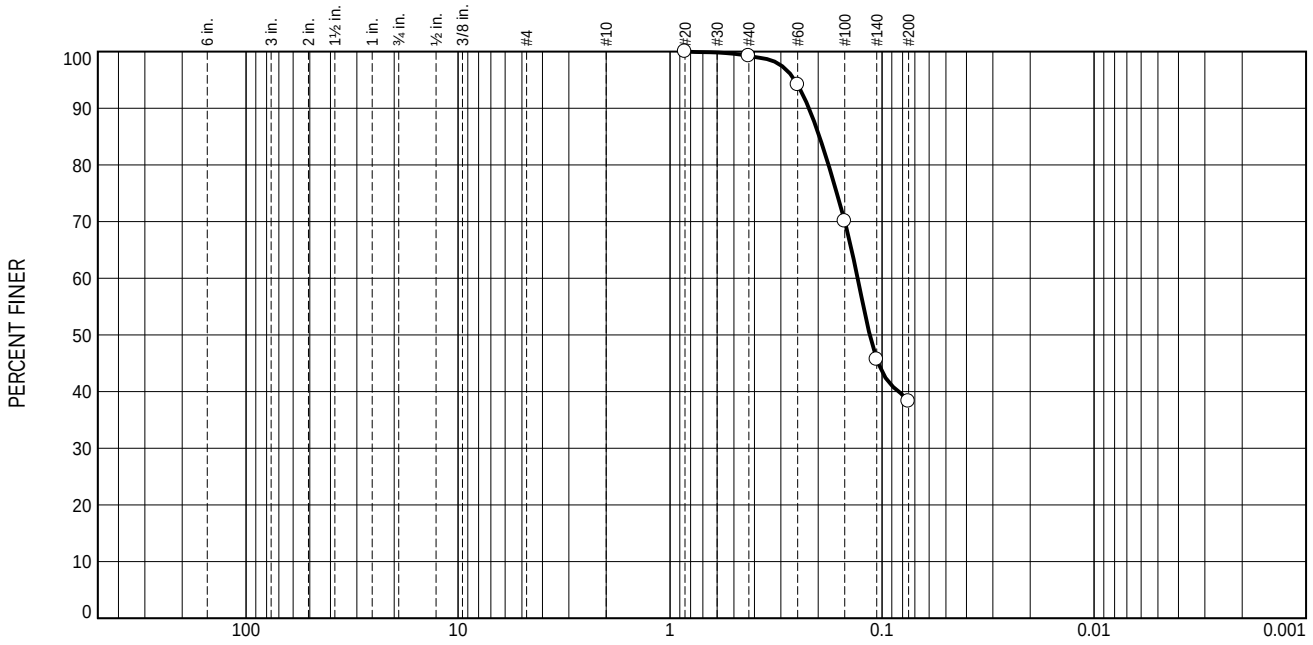
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	60.9	38.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.2		
#60	94.1		
#100	70.1		
#140	45.7		
#200	38.3		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 9B

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2213 D_{85}= 0.1975
D_{60}= 0.1304 D_{50}= 0.1143
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

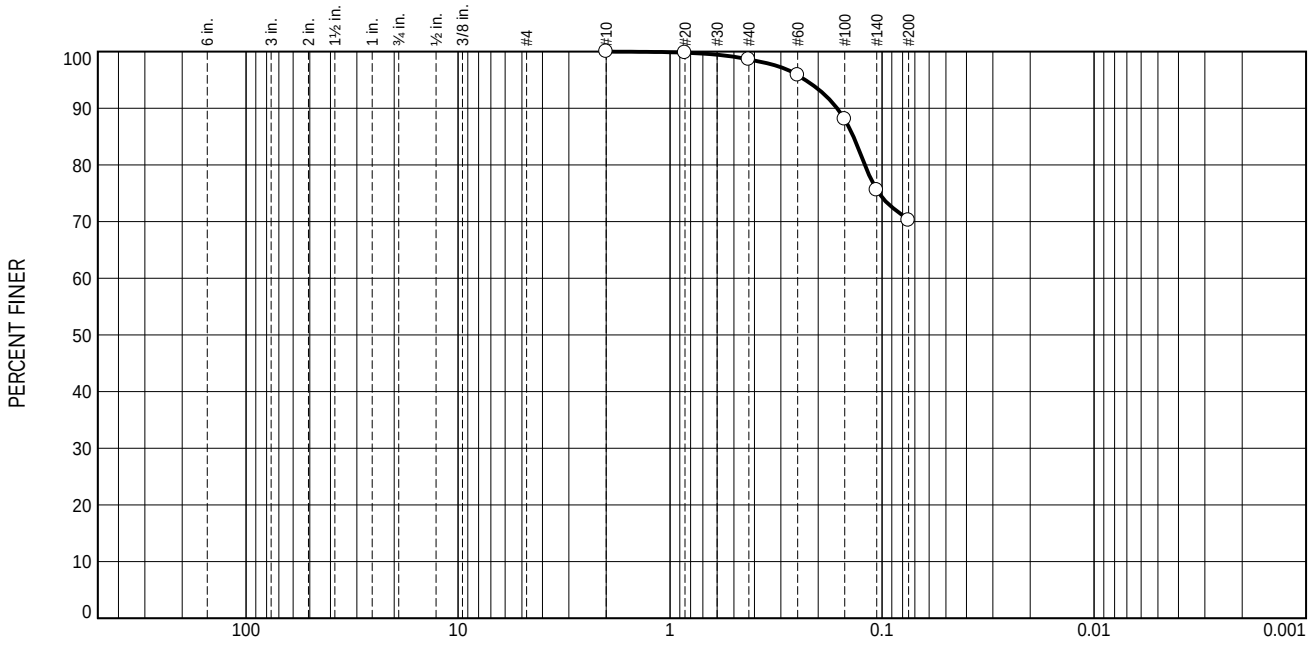
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.4	28.4	70.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.8		
#40	98.6		
#60	95.8		
#100	88.1		
#140	75.6		
#200	70.2		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 9C

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1629 D_{85}= 0.1364
D_{60}= D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

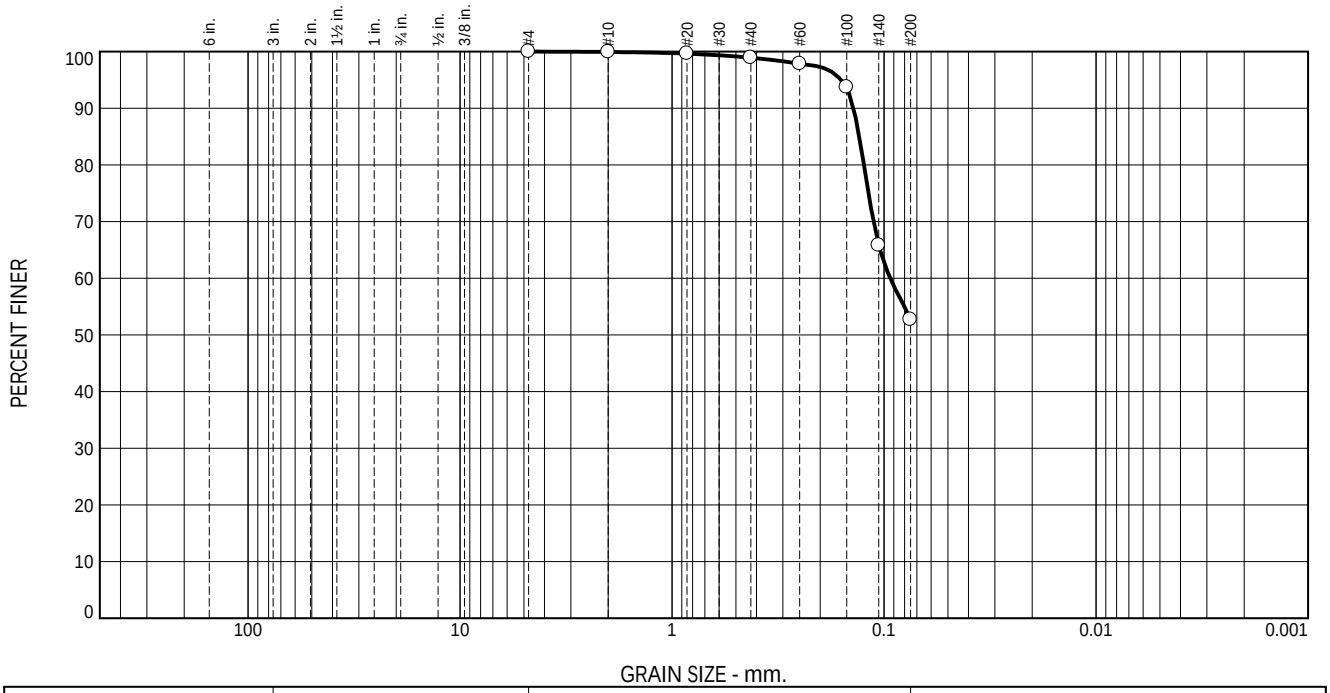
Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.0	46.2	52.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.9		
#60	97.8		
#100	93.7		
#140	65.8		
#200	52.7		

* (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 9D

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1391 D_{85}= 0.1310
D_{60}= 0.0935 D_{50}=
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

USCS (ASTM D2487)

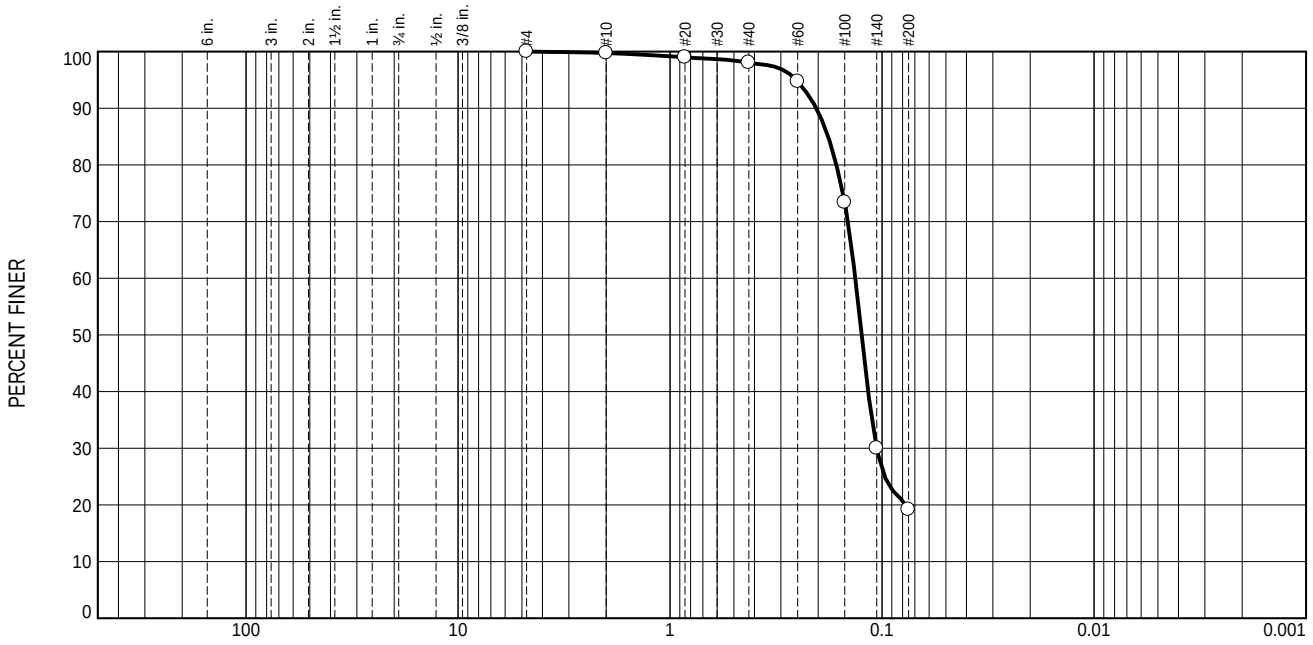
Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024 Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.7	78.8	19.2	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.7		
#20	99.0		
#40	98.0		
#60	94.7		
#100	73.4		
#140	30.0		
#200	19.2		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 9E

Material Description
Brown

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 0.2043 D_{85}= 0.1796
D_{60}= 0.1337 D_{50}= 0.1248
D_{30}= 0.1060 D_{15}=
D_{10}=
C_u= C_c=

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

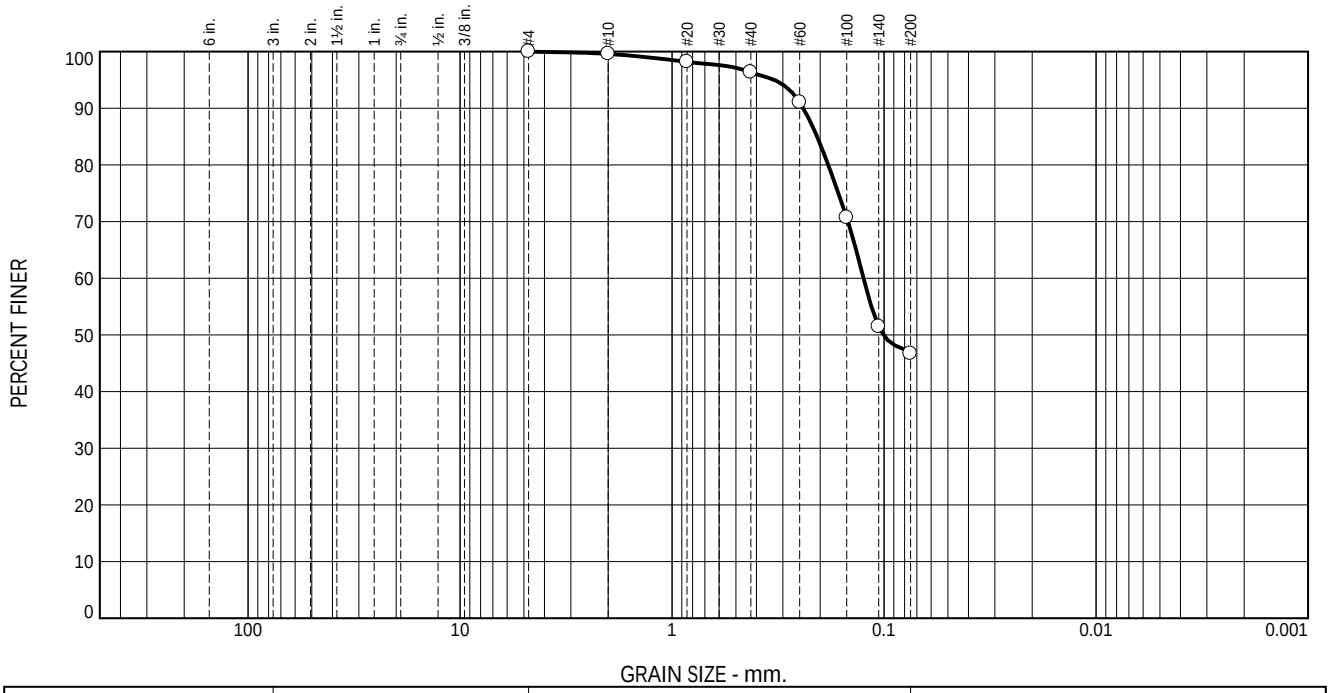
INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	3.3	49.6	46.7	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	99.6		
#20	98.2		
#40	96.3		
#60	91.0		
#100	70.7		
#140	51.5		
#200	46.7		

* (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 9F

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.2404 D_{85}= 0.2071
D_{60}= 0.1251 D_{50}= 0.1008
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)
Test Date: 2/27/23 Technician: M. Moore
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

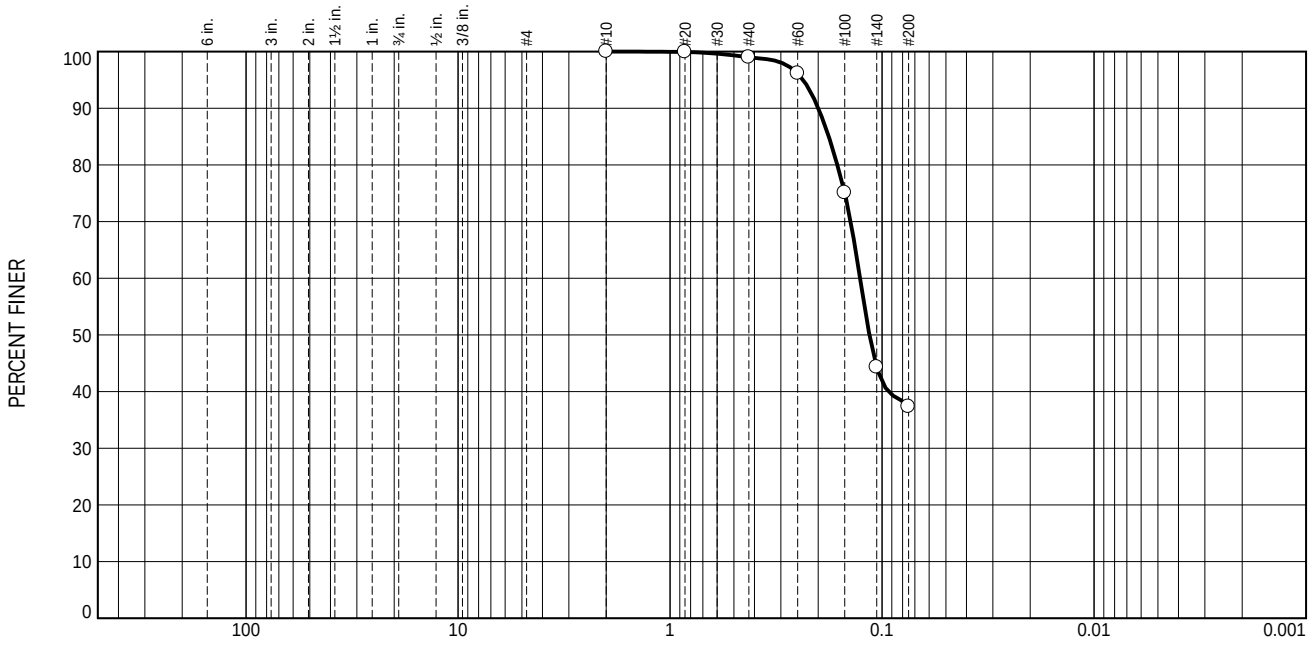
USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client: AEM Group
Project: AEM Lab Group Testing
Project No: 23-0024
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.0	61.7	37.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#10	100.0		
#20	99.9		
#40	99.0		
#60	96.1		
#100	75.1		
#140	44.3		
#200	37.3		

· (no specification provided)

Source of Sample: PA23-MIN
Sample Number: 9 Comp

Material Description
Dark Grayish Brown

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.1998 D_{85}= 0.1784
D_{60}= 0.1270 D_{50}= 0.1147
D_{30}= D_{15}=
D_{10}=
C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 2/27/23 Technician: M. Moore

Test Notes

Hydrometer Test

Test Date: _____ Technician: _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2/23/23
Date Received: 2/24/23
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

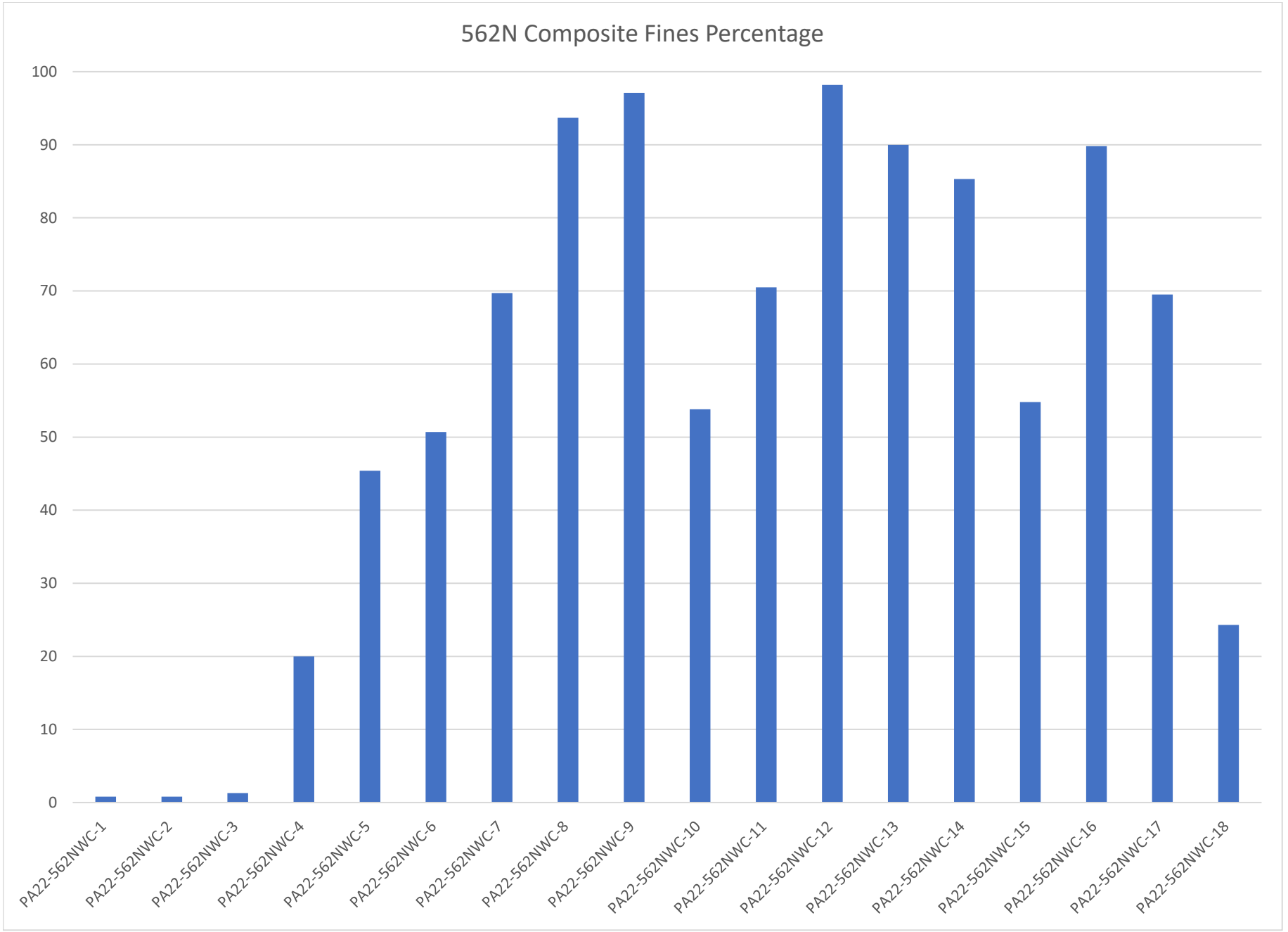
Client: AEM Group
Project: AEM Lab Group Testing

Project No: 23-0024

Figure

APPENDIX F

COMPOSITE FINES PERCENTAGE GRAPHS


562N Composite Fines Percentage
100
90
80
70
60
50
40
30
20
10
0
PA22-562NWC-1
PA22-562NWC-2
PA22-562NWC-3
PA22-562NWC-4
PA22-562NWC-5
PA22-562NWC-6
PA22-562NWC-7
PA22-562NWC-8
PA22-562NWC-9
PA22-562NWC-10
PA22-562NWC-11
PA22-562NWC-12
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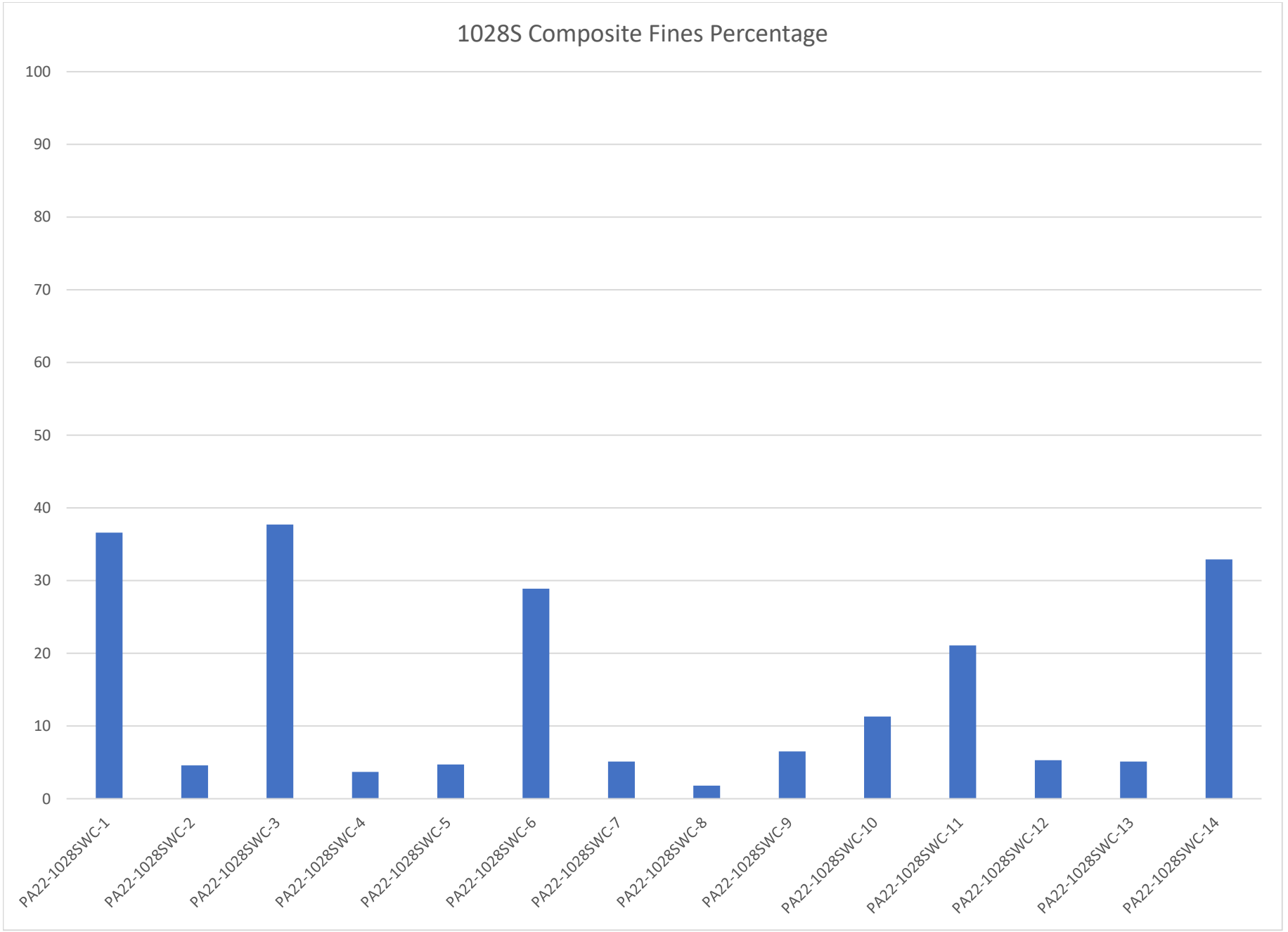
PA22-562NWC-18


1028S Composite Fines Percentage
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90
80
70
60
50
40
30
20
10
0
PA22-1028SWC-1
PA22-1028SWC-2
PA22-1028SWC-3
PA22-1028SWC-4
PA22-1028SWC-5
PA22-1028SWC-6
PA22-1028SWC-7
PA22-1028SWC-8
PA22-1028SWC-9
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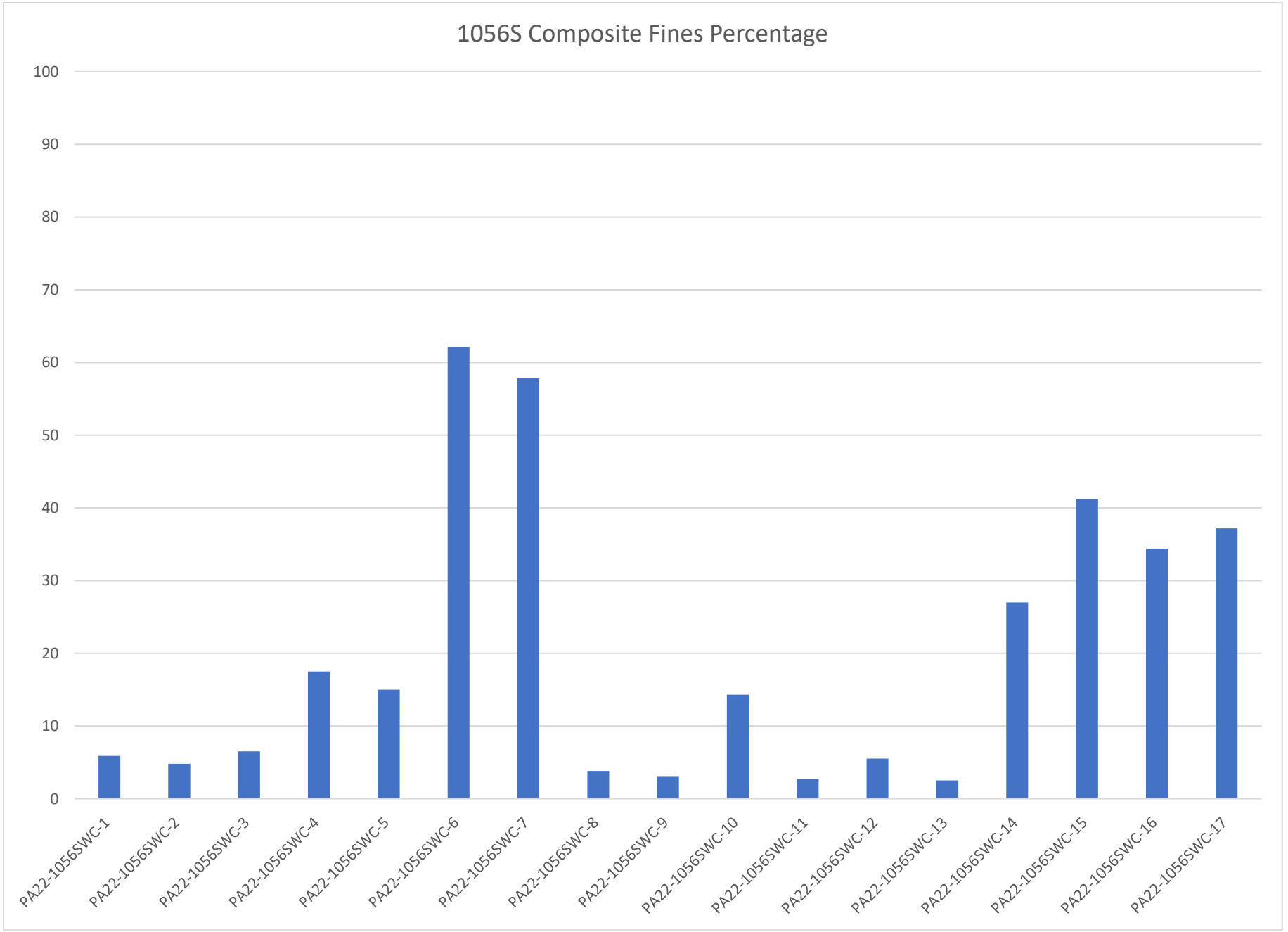
PA22-1028SWC-13
PA22-1028SWC-14


1056S Composite Fines Percentage
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90
80
70
60
50
40
30
20
10
0
PA22-1056SWC-1
PA22-1056SWC-2
PA22-1056SWC-3
PA22-1056SWC-4
PA22-1056SWC-5
PA22-1056SWC-6
PA22-1056SWC-7
PA22-1056SWC-8
PA22-1056SWC-9
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PA22-1056SWC-12
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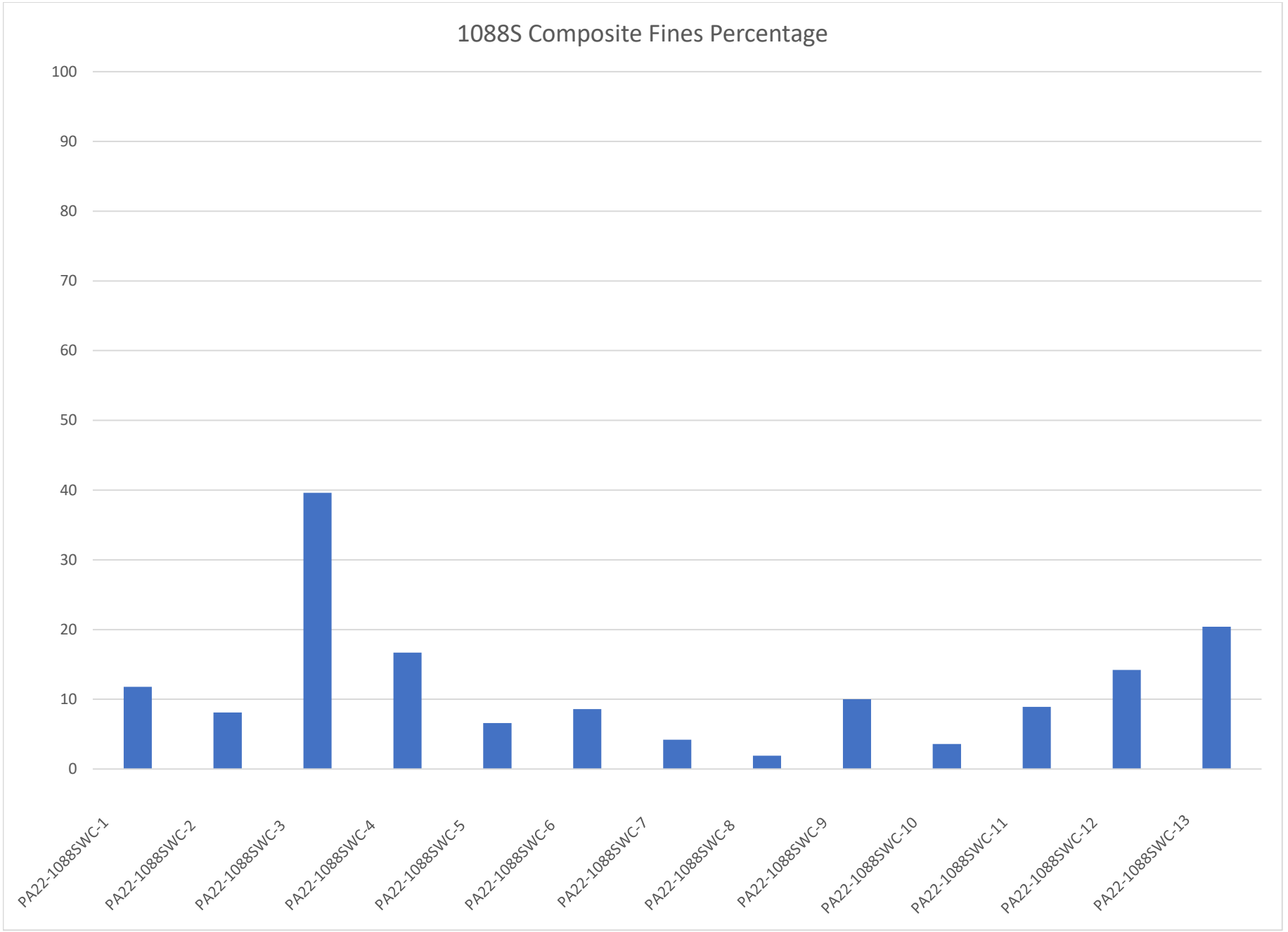
PA22-1056SWC-17


1088S Composite Fines Percentage
100
90
80
70
60
50
40
30
20
10
0
PA22-1088SWC-1
PA22-1088SWC-2
PA22-1088SWC-3
PA22-1088SWC-4
PA22-1088SWC-5
PA22-1088SWC-6
PA22-1088SWC-7
PA22-1088SWC-8
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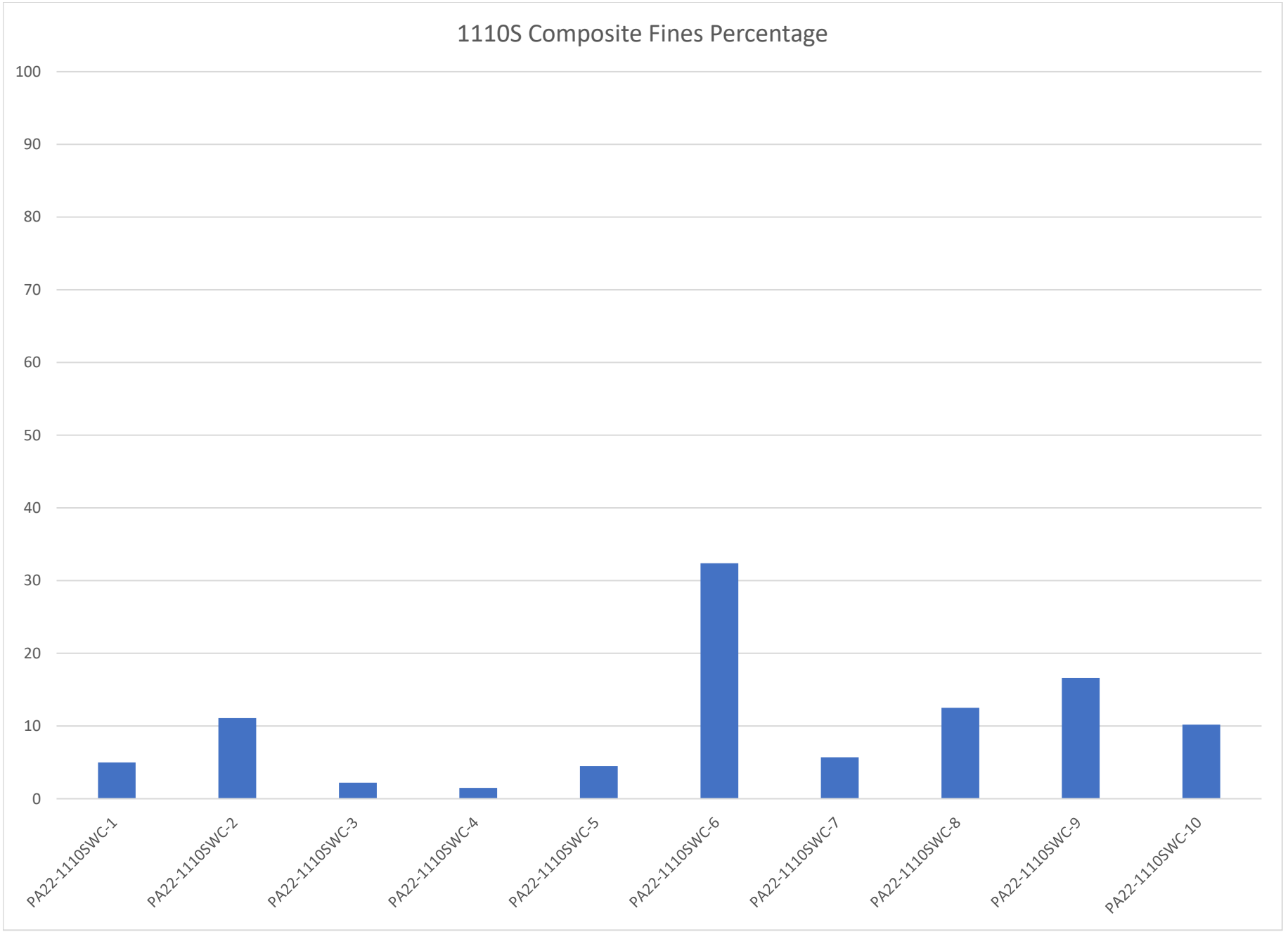
PA22-1088SWC-13


1110S Composite Fines Percentage
100
90
80
70
60
50
40
30
20
10
0
PA22-1110SWC-1
PA22-1110SWC-2
PA22-1110SWC-3
PA22-1110SWC-4
PA22-1110SWC-5
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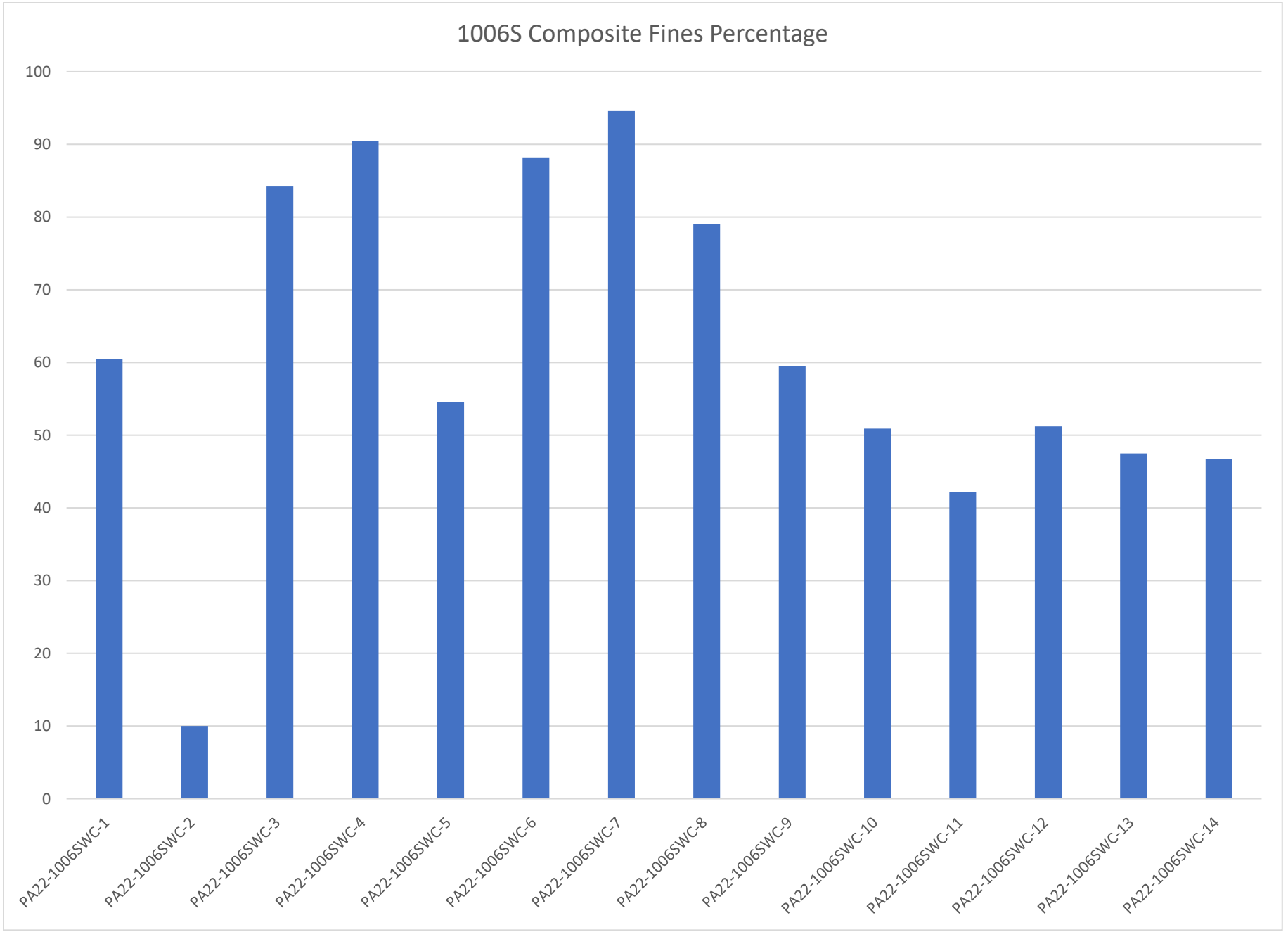
PA22-1110SWC-10


1006S Composite Fines Percentage
100
90
80
70
60
50
40
30
20
10
0
PA22-1006SWC-1
PA22-1006SWC-2
PA22-1006SWC-3
PA22-1006SWC-4
PA22-1006SWC-5
PA22-1006SWC-6
PA22-1006SWC-7
PA22-1006SWC-8
PA22-1006SWC-9
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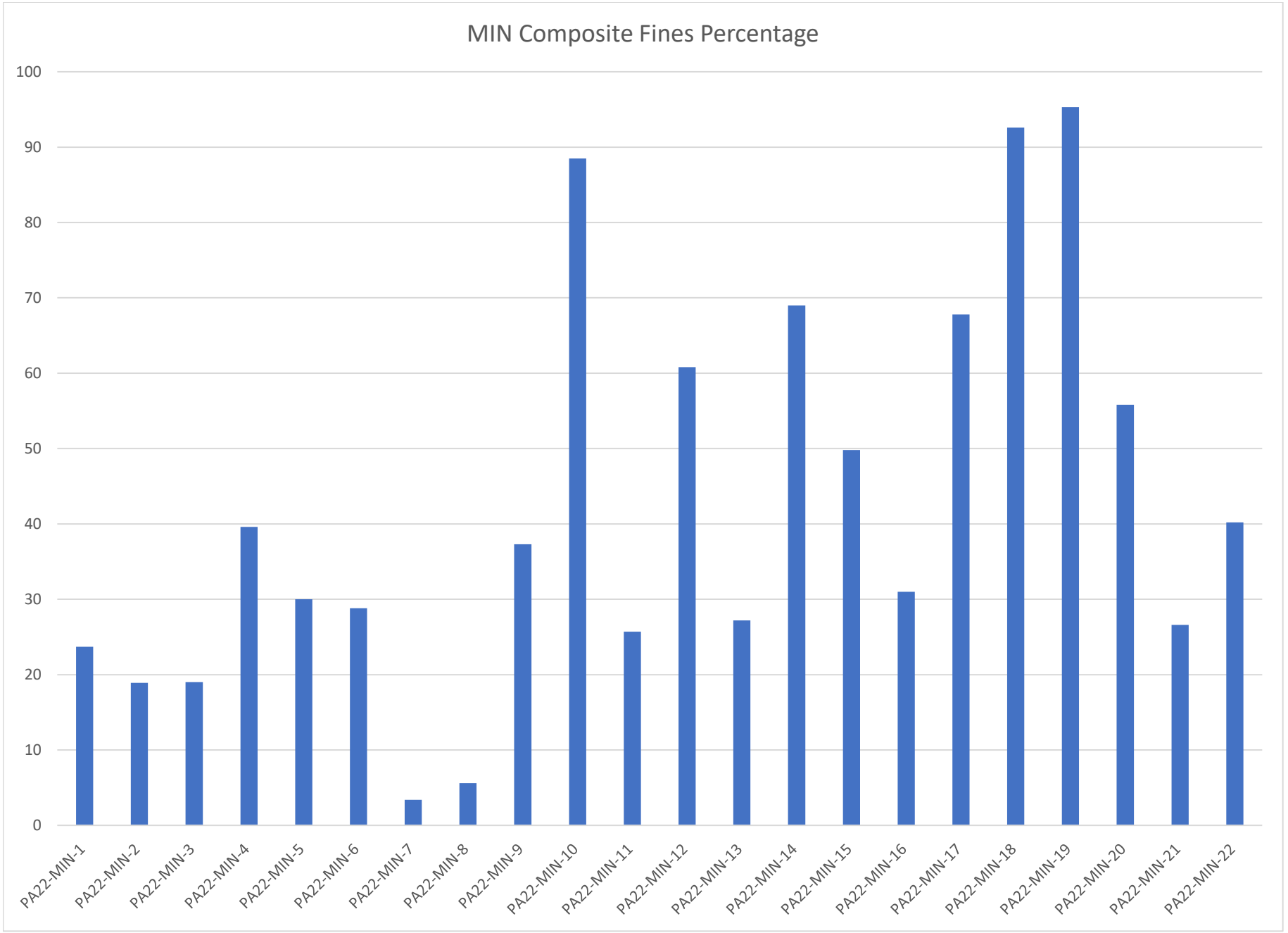
PA22-1006SWC-13
PA22-1006SWC-14


MIN Composite Fines Percentage
100
90
80
70
60
50
40
30
20
10
0
PA22-MIN-1
PA22-MIN-2
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PA22-MIN-4
PA22-MIN-5
PA22-MIN-6
PA22-MIN-7
PA22-MIN-8
PA22-MIN-9
PA22-MIN-10
PA22-MIN-11
PA22-MIN-12
PA22-MIN-13
PA22-MIN-14
PA22-MIN-15
PA22-MIN-16
PA22-MIN-17
PA22-MIN-18
PA22-MIN-19
PA22-MIN-20
PA22-MIN-21
PA22-MIN-22

APPENDIX G

QAPP

Quality Assurance Prevention Plan (QAPP)
for
FY23 Sediment Sampling and Analysis
Dredged Material Management Areas
Charleston County, South Carolina

GS-10F-0338X / W912HP23F0003

Preparedfor:

U.S. Army Engineer District, Charleston
69-A Hagood Avenue
Charleston, South Carolina 29403

Prepared by:

AEM Group
44339 Plymouth Oaks Blvd.
Plymouth, Michigan, 48170-2585
January 31, 2023
G23000

Voice: 734-354-9070 ◆ Fax: 734-354-9087 ◆ www.AEMGroup.biz

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Appendices

Appendix A: Field Sampling Plan

Appendix B: Sample Locations Maps

Appendix C: Sample Location Coordinates

Appendix D: Laboratory Standard Operating Procedures

Abbreviations

AAPP	Abbreviated Accident Prevention Plan
AEM GROUP	Advanced Environmental Management Group, LLC
AHA	activity hazard analysis
AIWW	Atlantic Intercoastal Waterway
ANSI	American National Standards Institute
CHMM	Certified Hazardous Materials Manager
COR	Contracting Officer Representative
DMMA	dredged material management area
DQO	data quality objectives
EPA	U.S. Environmental Protection Agency
FD	field duplicate
FNC	Federal Navigation Channel
GNSS	global navigation satellite system
GPS	global positioning system
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSM	Health and Safety Manager
LOD	limit of detection
MDL	method detection limit
MS	matrix spike
MSD	matrix spike duplicate
OSHA	Occupational Safety and Health Administration
PA	placement area
P.E.	Professional Engineer
PFD	personal floatation device
PgM	Program Manager
PM	Project Manager
PPE	personal protective equipment
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
QCM	Quality Control Manager
RL	reporting limit
RPD	relative percent difference
SAP	sampling and analysis plan
SCDHEC	South Carolina Department of Health and Environmental Control
SOH	safety and occupational health
SOP	standard operating procedures
SOW	scope of work
SSHO	Site Safety and Health Officer
USACE	United States Army Corps of Engineers

1.0 Section A – Project Management

1.1 A.1 Title of Plan and Approval

Advanced Environmental Management Group (AEM Group)

FY23 Sediment Sampling and Analysis
Dredged Material Management Areas
Charleston County, South Carolina

GS-10F-0338X / W912HP23F0003

Prepared by:
Mariah Hope P.E. CHMM
AEM Group, LLC
44339 Plymouth Oaks Blvd.
Plymouth, Michigan 48170

Signatures:

Ms. Mariah Hope, AEM Group, CQ Manager	Date
Mr. Jim Finetti, AEM Group, Program Manager	Date
Mr. Jason Hatch, Insight Group, Project Manager	Date
Mr. Brandon J. Kyzar, USACE Project Manager and COR	Date
Ms. Hanna Gervais , USACE	Date
Mr. Alan Shirey, USACE	Date

1.2 A.2 Introduction

The U.S. Environmental Protection Agency (EPA) requires that all environmental monitoring and measurement efforts mandated or supported by EPA participate in a centrally managed quality assurance (QA) and quality control (QC) program. Any party generating data under this program is responsible for implementing minimum procedures to confirm that the precision, accuracy, completeness, and representativeness of its data are known and documented. To be certain the responsibility is met uniformly, each party must prepare a written Quality Assurance Project Plan (QAPP) covering each project it is to perform. This QAPP has been prepared for the US Army Corps of Engineers – Charleston District (USACE) FY23 Sediment Sampling and Analysis of the Dredged Material Management Areas (DMMA) in Charleston County, South Carolina.

This QAPP has been prepared by Advanced Environmental Management Group, LLC (AEM Group) in accordance with EPA Guidance for Quality Assurance Project Plans (QA/G-5) (EPA 2002) and the EPA Requirements for Quality Assurance Project Plans (QA/R-5) (EPA 2001a). As detailed in the instructions, this QAPP is organized into four sections as described below:

SECTION A: The elements in this section cover aspects of project management, objectives, and history. This section identifies the roles and responsibilities of project personnel and defines the lines of communication. This section identifies the goals and technical approach to achieving the goals at the site.

SECTION B: The elements in this section describe the design and implementation of measurement systems that will be used during the field investigation at the site. This section describes sampling procedures, analytical methods, analytical procedures, and data handling and documentation procedures. These elements are described further in the Field Sampling Plan (FSP), Appendix A. Standard operating procedures (SOPs) for sampling and analytical procedures are referenced and included in Appendix B. QC procedures, frequency requirements, acceptance criteria, and corrective action procedures associated with all methods are also provided in this section.

SECTION C: The elements in this section describe the measures used to implement the QAPP and the procedures outlined in Section B.

SECTION D: The elements in this section describe the QA activities, including data validation and usability assessments, that are expected to occur after the data collection and assessment phase is completed for the project.

1.3 A.3 Distribution List

USACE

Brandon J. Kyzar – Project Manager / COR
U.S. Army Corps of Engineers
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U.S. Army Corps of Engineers

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Voice:
Cell:

Alan Shirey,
U.S. Army Corps of Engineers
1050 Remount Road, Bldg. 3555
North Charleston, South Carolina 29406
Voice:
Cell:

AEM GROUP
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Voice: 734-354-9070 x 106
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Leif Rodney, CHMM
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Plymouth, Michigan 48170-2585
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Cell: 313-434-7272

Ryan Perry,
Advanced Environmental Management Group
44339 Plymouth Oaks Boulevard
Plymouth, Michigan 48170-2585
Voice: 734-354-9070 x 105
Cell: 517-442-9177

Contracted Laboratory

Jason Hatch, P.E.
Insight Group
3359 Meeting Street, Suite 101
North Charleston, South Carolina 29405
Voice: 843-779-9824
Cell: 843-514-0019

1.4 A.4 Project/Task Organization

This section outlines the USACE, AEM Group and the sub-contracted laboratory personnel involved in the QA team organization. The management structure provides for direct and constant operational responsibility, clear lines of authority, and the integration of QA activities. QA functions are explained below. USACE is responsible for planning, conducting, and overseeing all work for this project. An

organizational chart for key project personnel is presented in Figure 1.

USACE Project Manager and COR

Brandon J. Kyzar

USACE QA Manager

USACE Principal Scientist, Data Manager, and Contract Officer

AEM Group Quality Control Manager (QCM)

The AEM Group's CQM is Mariah Hope. Ms. Hope's responsibilities include overall project management of the sampling and laboratory services provided under the sampling contract and to ensure proper sampling and laboratory procedures are utilized as specified in the QAPP.

AEM Group Project Manager (PM) and Field Lead

The AEM Project Manager is Leif Rodney. He will serve as the field activities coordinator and field lead for all of AEM Group's onsite activities and will be responsible for the daily direction of the team members regarding Technical Proposal-specific tasks and the requirements outlined in the QAPP.

AEM Group Site Safety and Health Officer (SSHO)

Ryan Perry is responsible for implementing the Abbreviated Accident Prevention Plan (AAPP) and will perform safety and health monitoring and support compliance with all safety and health requirements.

Insight Group

The Insight Group (Insight) representative is Jason Hatch. Mr. Hatch will oversee the analysis of samples and will serve as Insight's point-of-contact. Mr. Hatch will ensure samples are received by the laboratory. Mr. Hatch's responsibility will be to review and respond to any issues regarding analysis and data quality of laboratory data provided by Insight.

1.5 A.5 Problem Definition /Background

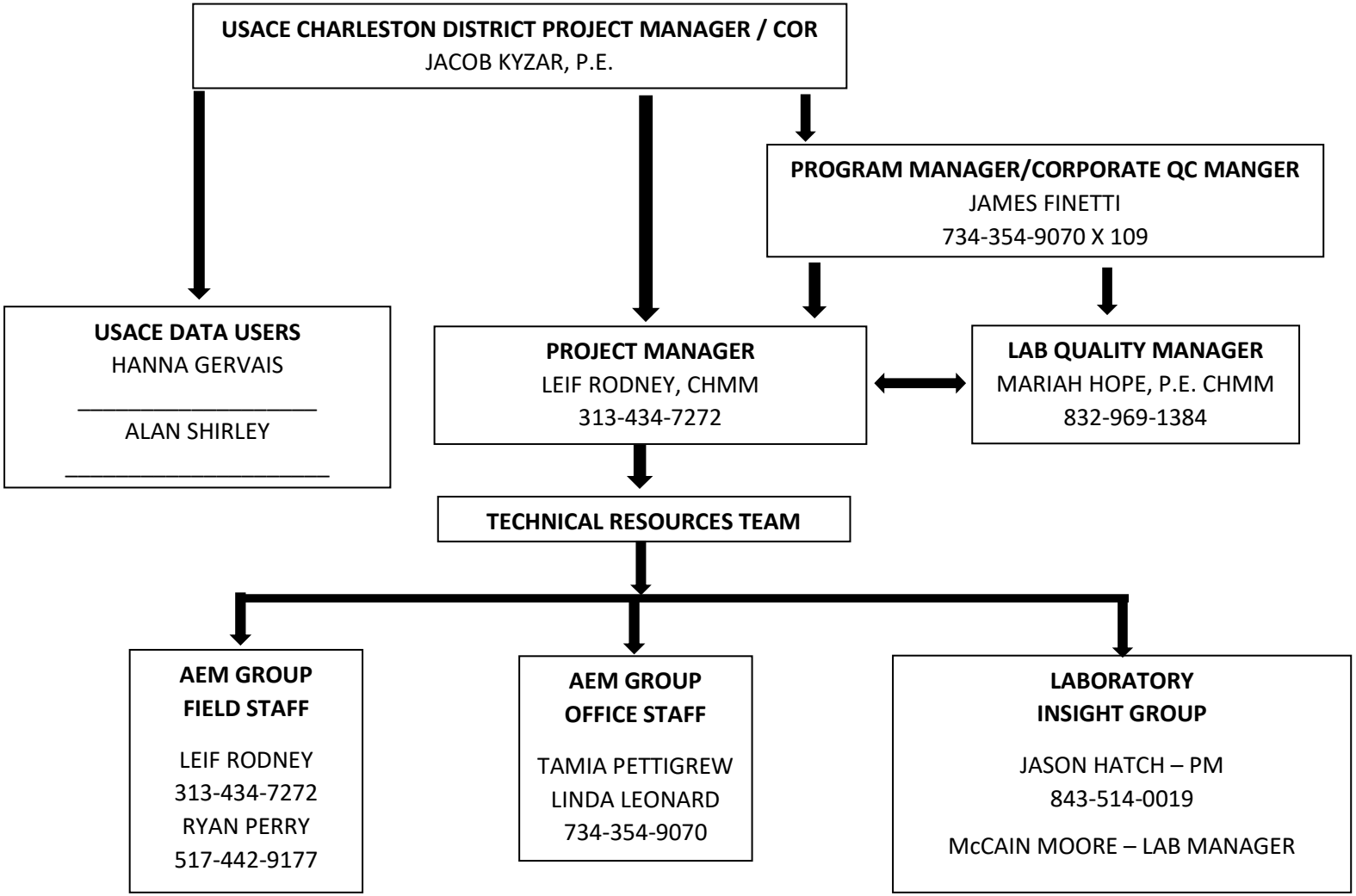
The U.S. Army Corps of Engineers, Charleston District (USACE) is responsible for performing maintenance dredging on the Atlantic Intracoastal Waterway (AIWW) and in the Charleston Harbor. As a result of this dredging, the USACE is also responsible for maintaining several Dredged Material Management Areas (DMMA) in Charleston County. In order to prolong the viability of these sites, the mining and beneficial use of sandy material contained within them has been proposed. By collecting sediment samples, the QAPP and Sampling and Analysis Plan (SAP) will provide vital information as to the quality, quantity, and location of that material.

1.6 A.6 Project / Task Description

The objective of this work is to obtain 648 sediment samples from 108 sample stations located at seven (7) upland DMMAs along the AIWW Federal Navigation Channel (FNC) and the Charleston Harbor FNC in Charleston County, South Carolina and perform laboratory testing on the samples for specified

QUALITY ASSURANCE PROJECT PLAN FY23 SEDIMENT SAMPLING AND ANALYSIS
DREDGED MATERIAL MANAGEMENT AREAS
CHARLESTON COUNTY, SOUTH CAROLINA

ORGANIZATIONAL CHART



parameters. The sediment samples are to be obtained as grab/auger samples.

Laboratory testing is to be accomplished in accordance with this Scope of Work and referenced standard ASTM D6913 Method A.

The work sites include 108 sediment sampling locations on seven DMMAs. Access to the DMMAs is via water only. Sample locations are tabulated in the attached SAP (see Appendix A) and shown in the attached figures (see Appendix B). All sampling locations are on land but may be susceptible to rain and lack of drainage. If proposed locations are under water at the time of sampling, alternate locations may be negotiated.

Active tasks for the project include the following:

- Project Planning and Support
- Field Investigation/Data Acquisition
- Sample Analysis
- Analytical Support and Data Validation
- Data Evaluation
- Reports
- Record Keeping Requirements

Sample Collection

To evaluate the current conditions of the dredged material sediments in the seven DMMAs, 648 samples will be collected from 108 pre-selected locations to pre-determined depths for grain size/sieve analysis using grab/auger samples. Samples will be collected in accordance with the USACE contract SOW. Sample information is included in Appendix C.

After submittal and approval of the AAPP and the SAP/QAPP, AEM Group will mobilize to Charleston, South Carolina to begin the field activities.

AEM Group currently plans on starting at Placement Area 562N W-C to collect 106 sediment samples from 18 locations. Eight locations will be hand augured to six feet; ten locations will be hand augured to four feet. Each location will have a complete length boring collected. This location may be accessible by road off State Road S-10-71 (Dupre Road in McClellanville). AEM Group will take some photographs of the site and the samples as requested in the project kick-off meeting.

AEM Group will then sample Morris Island's 22 sample locations for 136 samples for analysis. 13 locations will be hand augured to 6 feet, and nine locations will be hand augured to 4 feet. Each location will have a complete length boring collected. Morris Island can only be accessed by water.

The remaining placement areas are heavily vegetative and only accessible by boat. Sample locations may need to be moved due to vegetation roots. Placement Areas 1110S W-C and 1088S W-C two cells appear to be accessible by water and a dock located on Inlet Creek. Placement Area 1088S has 13 locations and 83 samples. Placement Area 1110S has 10 locations and 54 samples. Placement Area 1056S W-C has 17 locations and 97 samples. Placement Area 1006S has 14 locations and 84 samples. Placement Area 1028S W-C has 14 locations and 88 samples.

Each sample will be analyzed by the selected laboratory(s) for Grain Size only using ASTM D6913 Method A. The USACE stated that an USACE Materials Testing Center (MTC) Validated Laboratory is

acceptable for this analysis. AEM Group selected the Insight Group in North Charleston, South Carolina as the laboratory.

Quality Assurance/Quality Control Procedures

No field duplicate (FD) quality control (QC) samples will be collected for grain size analysis as agreed upon with the USACE. Grain size/sieve analysis samples using ASTM D6913 Method A do not require laboratory duplicate samples be run for laboratory QC procedures. The laboratory's QA/QC Manual does not require laboratory duplication of ASTM D6913.

AEM Group contacted the South Carolina Department of Health and Environmental Control (SCDHEC). Mr. Bennie Cockerel, program manager of the environmental lab certification. Mr. Cockerel stated that ASTM D6913 is not certified under the SCDHEC laboratory certification program, and SCDHEC does not have any QA/QC requirements for this test.

Global Positioning System Survey of Sampling Locations

A Global Positioning System (GPS)/Global Navigation Satellite System (GNSS) will be used to ensure sampling of the proposed sampling location, and a record will be taken of each sample location.

Horizontal control for the GPS/GNSS unit will be determined by establishing three benchmarks in accordance with procedures prescribed in the EPA Interim Guidance for Developing Global Positioning System Data Collection Standard Operating Procedures and Quality Assurance Project Plans (EPA 2008). These reference points will be located, referenced, and recorded on the GPS Daily Check sheet. These reference points will be clearly visible and stationary, and will facilitate verification of the locational data for any future activities at this site.

Deviations from the proposed sample location will require approval, be noted in the field logbook, and an explanation as to why the location deviation is necessary will be included.

Field Methods and Decontamination Procedures

Field methods for sample collection, handling, and documentation, as well as equipment decontamination procedures, are discussed in the SAP.

Analytical Procedures

Details regarding sample documentation and delivery to the analytical laboratory are included in the SAP. Laboratory analyses for the project will be performed by Insight which is certified by the USACE MTC program. Certification is included in Appendix D

1.7 A.7 Quality Objectives & Criteria

Data quality objectives (DQOs) are required for environmental data collection activities. DQOs are statements that define the objectives of the project; the type, quality, quantity, purpose, and use of data to be collected; and are an important planning tool used to help support data credibility. The DQO process allows the site assessment team to determine the level of data quality needed for specific data collection activities, and to estimate the costs associated with these activities. The DQO process consists of seven steps, which are used during the planning of the site assessment process to validate the field activities, data collection operations, and to demonstrate that resulting data meet the project objectives.

The objective of this project is summarized in the DQO below:

DQO 1: Determine the grain size through sieve analysis ASTM D6913 Method A.

108 sample locations were selected at the 7 DMMAs to determine if the dredged material stored in the DMMAs meet the requirements for beach nourishment and beneficial reuse that will allow for the removal of the material from the DMMA and lengthen the time the DMMA is available for dredged material storage.

Errors that may occur during this sampling event will be based solely upon:

- In-field sampling error
- Handling error, post-field and pre-laboratory
- Laboratory handling error
- Laboratory analysis error

A.7.1 Project Target Parameters and Intended Data Usages

The target parameter planned for this project is included in Table 1. The intended uses of data from this investigation are to define the nature and extent of gravel, sand, silt, and clay particles in the dredged materials and to identify any potential areas that may meet the requirements for beneficial reuse and beach nourishment. No field duplicate QC samples will be collected as part of this project.

The expected data users of the results of this project are the USACE.

Table 1: Dredged Material Management Areas Charleston County, South Carolina Analysis

DMMA	Sample Locations	Samples Analyzed	Analysis Method
1088S W-C	13	83	ASTM D6913 Method A
1110S W-C	10	54	
1056S W-C	17	97	
1006S W-C	14	84	
1028S W-C	14	88	
562N W-C	18	106	
Morris Island North	22	136	
Total	**108**	**648**	

A.7.2 Precision, Accuracy, and Method Reporting Limits

Internal quality control is an integral part of any laboratory procedural analysis. The Quality Assurance Program must establish technically sound methods for determining method validation, precision, accuracy, and sensibility of data reported by the analytical system. Routine studies used to measure quality control include:

- Duplicate analysis, Matrix Spike (MS) and Matrix Spike Duplicates (MSD)
- Field Duplicate (FD) analysis
- NIST Traceable Laboratory Control Standards comparisons
- Surrogate spike recovery analysis

- Internal Standard recovery comparisons
- Matrix spike recovery analysis
- Method Blank analysis and summaries
- Instrument Tune checks and summaries
- Initial Calibration Verification against second source standards summaries
- Continuing calibration verification summaries

Method Detection Limits (MDL's) are determined using the protocol established by Title 40, United States Code of Federal Regulations, Part 136, and can be found in individual analysis SOP's located in Appendix D. The Method Limit is established using the analytical protocols for the various classes of analytics under consideration. The Method Limit defines the lowest concentration allowed in the calibration of the equipment used to develop data on the samples. The Method Limit for ASTM D6913 is 0.1% or 0.1 % passing.

A.7.2.1 Precision

Precision describes the reproducibility of measurements of the same parameter for a sample under the same or similar conditions. Specifically, it is a quantitative measure of the degree of variability of a group of measurements compared to the average value. Precision is evaluated most directly by recording and comparing multiple measurements of the same parameter made on the same sample under similar conditions. Standard deviation, coefficient of variation, range, and relative range are terms often used to express precision.

Precision is determined in the laboratory by assessing the relative percent difference (RPD) for sample duplicate and MS/MSD pairs:

$$RPD = \frac{\text{Sample result} - \text{Duplicate result}}{(\text{Sample result} + \text{Duplicate result})/2} \times 100\%$$

Given uncertainties associated with field work and laboratory activity, a precision of ±50 percent RPD is the DQO to meet the project objectives. Laboratory method specific precision requirements also apply.

Field Precision

Field and laboratory precision are usually assessed through the collection and measurement of field duplicates and MS/MSD samples, respectively. Field duplicates are usually collected at a rate of 10 percent, and MS/MSDs are usually collected at a rate of 5 percent. Each duplicate sample are usually collected for the suite of analyses designated for the original sample.

No field duplicate QC samples are required for this project.

Laboratory Precision

The laboratory method ASTM D6913 does not require using laboratory duplicates. Precision will not be assessed using laboratory duplicates.

A.7.2.2 Accuracy

Accuracy is the comparison between experimental and known or calculated values, expressed as a percent recovery (%R), and measures the bias of a measurement system. This method has no way to measure

accuracy.

Sensitivity

Sensitivity is the ability of the method or instrument to detect the contaminant of concern or other required data at the level of interest. Sensitivity is not determined as part of this method.

Method Detection Limit

Also known as a detection limit: the minimum concentration of a substance (i.e., an analyte) that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. It is determined from analysis of a sample in a given matrix containing the analyte.

Reporting Limit

The reporting limit (RL) are the minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The RL or Limit of Detection (LOD) for analytes in this investigation are included in Section B.9, Table 5.

A.7.3 Representativeness, Comparability, and Completeness

Internal quality control is an integral part of any sampling and laboratory procedural analysis. The Quality Assurance Program must establish technically sound methods for determining Representativeness, Comparability, and Completeness reported by the analytical system.

A.7.3.1 Representativeness

Representativeness describes the degree to which sample data accurately and precisely represent a characteristic of the material being measured. Representativeness is a qualitative term that is evaluated to determine whether in situ and other field measurements are made and physical samples are collected in such a manner that the resulting data appropriately reflect the media and phenomenon measured or studied. Representativeness will be determined by the following procedures:

- Comparison of actual sampling procedures to those specified in the planning documents

A.7.3.2 Comparability

Comparability is a parameter used to express the confidence with which one set of data may be compared with another. To achieve comparability in data sets, it is important that standard techniques are used to collect and analyze representative samples and to report analytical results. The presence of the following items enhances the comparability of data sets:

- Two data sets should contain the same set of variables of interest
- Units in which these variables were measured should be convertible to a common metric
- Similar analytical and QA procedures should be used
- The measurements should be collected at a similar time
- Similar measuring devices should be used
- Any rules for excluding certain types of observations should be used for both samples

To verify that data derived from this field effort are comparable to each other and to other data produced using EPA methods or similar, all samples will be submitted for analysis by the same analytical method

(with like analytical parameters and similar detection/RLs); units of measure (e.g. microgram/liter, microgram/kilogram) will be the same for all reporting; and all samples will be handled and prepared in the same manner.

A.7.3.3 Completeness

Completeness is a measure of the relative number of analytical data points that meet all the acceptance criteria for accuracy, precision, and additional criteria required by the specific analytical methods used. The goal is that sufficient valid data will be generated to satisfy the project decision conditions. Completeness is expressed as a percentage, as follows:

$$\text{Percent Completeness} = (\text{Number of valid data}/\text{Expected number of data}) \times 100\%$$

Completeness will be routinely assessed using this equation. Where analysis is precluded or where DQOs are compromised, effects on the overall investigation will be considered. If data deficiencies fail to meet the completeness requirements, the need for re-sampling of the deficient data will be evaluated.

The sampling and analysis program for the Site is sufficiently broad in scope to prevent a single data point or parameter from sacrificing attainment of the site characterization study objectives. The completeness goal for the project is 90 percent.

A.7.4 Levels of Quality Control Effort

Field duplicates will not be collected and submitted to the analytical laboratory. QC samples will not be prepared and analyzed by the laboratory.

Field Quality Control

Field duplicates will not be collected as part of this project.

1.8 A.8 Special Personnel, Training Requirements/Certifications, and or Equipment

The purpose of this section is to describe any specialized training or certification requirements necessary to the project so that these requirements are known and that the procedures are described in sufficient detail so that specific training skills and certifications can be verified, documented, and updated as necessary. AEM Group and Insight, have trained their employees to perform the tasks necessary for this Project. Each company and organization have certificates for training on file at their office. This section summarizes training requirements.

Health and Safety Training

Onsite personnel will review and sign a AAPP prior to the start of work.

At least two people onsite will be trained and currently certified in first aid and adult cardiopulmonary resuscitation.

Logbook Training

AEM Group team members will be trained in the maintenance of field logbooks.

Sampling

AEM Group team members operating coring equipment will be trained in the operation of the equipment, including the various methods of collecting samples, and completing vertical measurements of water and depth of sediment.

GPS

AEM Group team members will be trained in the proper use and operations of the GPS unit used to survey horizontal locations of sediment sampling locations prior to the commencement of field work. This training will include basic functions and capabilities of the unit, and the methods required to record locations to the level of accuracy required to meet objectives of the project.

The field activities coordinator will be responsible for providing training to the field staff responsible for sample collection and sample management activities, and ensuring that the assigned field personnel are competent to properly conduct the sampling and document field activities in accordance with the QAPP. Cores will be logged by a qualified geologist, engineer, environmental scientist, or trained technician; someone who has experience logging sediment cores.

1.9 A.9 Documentation and Records

This section defines the records that are critical to the project, identifies information to be included in the reports, and describes the data reporting format and document control procedures to be used. Project information generated will be documented in a format that is usable by all project personnel. Specification of the proper reporting format, compatible with data validation, will facilitate clear and direct communication of the investigation. Project data and information will be tracked and managed from its inception to its final storage area. USACE retains final project documents in perpetuity, AEM Group and their subcontracted laboratories retain project documents for 5 years after completion of project.

A.9.1 Document Control

Document control is defined as the maintenance of investigation project files. Official and original documents relating to the investigation must be placed in the official project files. Evidentiary files [relevant hard and electronic copies (see A.9.2 for electronic record procedures) records, reports, correspondence, logs, field logbooks, photographs, subcontractor reports, data, etc.] will be maintained by the AEM Group Representative (and the USACE QA Manager, as applicable) in a secured, limited access area.

A.9.2 Field Documentation

The field operating records to be used in this investigation will document field procedures and any measurements performed during the sampling effort. The sampling team will maintain one bound field logbook to provide a daily record of significant events, observations, and measurements taken during the field investigation and will serve as a master site log of daily activities.

All entries into the field logbook will be made with indelible ink. The field logbooks are intended to provide sufficient data and observations to enable the field team to reconstruct events that occur during the project. The field boring logs will be collected electronically in the field.

The field logbooks will contain the following as a minimum:

- Name of the sample collector

- Date and military time of collection
- Weather conditions, including temperature
- Site number and name
- Location of sampling point
- Sample identification number
- Type of sample
- Calculations, results, and calibration data for field sampling, field analytical, and field physical measurement equipment
- Any field measurements taken
- Field observations, especially any notice of stained sediment, stressed or absent vegetation, and whether it is located in a drainage area
- References, such as maps or photographs of the sampling site
- Any procedural steps taken that deviate from those presented in this QAPP.

Documents, records, photographs, and information relating to field activities will be maintained in the project file via electronic files and/or hard copy. The field activities coordinator will review field documentation to verify the activities will meet the intent of the QAPP and SAP. Field logbooks, field sheets, and photographs will be scanned and stored electronically.

Other records of sample collection activities will include data collection sheets, chain-of-custody records, custody seals, sample tags, phone conversation records, airbills, and corrective action reports. Chain-of-custody records will be used to document the progression of field samples and QC samples and are discussed further in Section B.3.4. On a daily basis, field logs, sample management files (including copies of chains of custody), and other types of field documentation will be copied and/or otherwise digitally reproduced and stored on a secure server by the field activities coordinator.

A.9.3 Laboratory Documentation

The analytical laboratory will be responsible for maintaining analytical logbooks and laboratory data. Raw laboratory data files and electronic and hard copy data will be inventoried and maintained by the laboratory for the time period established by USACE and the laboratory.

Laboratory analytical data packages will contain the following information at a minimum: case narrative, completed chain-of-custody forms, calibration summary and raw data, mass spectrometer tuning data (as applicable), gas chromatogram (as applicable), QC summary forms and raw data, blank results, and method and instrument DLs. The laboratory will provide an electronic copy of the data. The analytical data packages and the EDDs provided by the laboratory will be provided in accordance with the reporting requirements.

A.9.4 Data Submittals

This deliverable will be submitted in both draft and final form describing the number, location, results, data analysis, and recommendation (if any) from this assessment. The report will also document sampling changes made in the field along with any issues, concerns, or problems encountered during data collection and analysis. The draft report will be provided to the USACE Project Manager electronically, at a minimum, and will be submitted 90 days after notice to proceed with the final document delivery within 125 days of Notice to Proceed and within 15 calendar days after receiving comments on the draft document.

Final reports will be submitted as electronic copies. Electronic copies will be provided in both original (native) formats as well as Adobe Acrobat format.

A.9.5 Project Data Assessment Records

Records of project assessments will be maintained including field technical systems audit checklists, field performance audit checklists, laboratory performance audit checklists, data validation reports, internal reviewer sign off, phone conversation records, and corrective action reports.

2.0 Section B – DATA GENERATION & AQCUISITION

2.1 B.1 Sampling Process Design

B.1.1 Sample Network by Task and Matrix

Soils are the matrices of concern for this investigation. Samples will be collected during February and/or March of 2023 for the samples within the designated area.

B.1.2 Site Map of Sampling Locations

The intended soil and sediment sampling locations are shown in Appendix B and in Appendix C.

B.1.3 Rationale of Selected Sampling Locations

Sampling boring locations were chosen by the USACE to identify areas that contain more than 50% sand to allow for the mining of the DMMAs for beach nourishment.

B.1.4 Laboratory Deliverable Time Schedule.

Table 2: Laboratory Deliverable Schedule

Submittal and/or Action Item	Action By	Cumulative Calendar Days After NTP (January 19, 2023)
Prepare Accident Prevention Plan and SAP/QAPP	AEM Group	20
Corps Review and Approve APP and SAP/QAPP	COE	30
Complete Field Work/Sampling	AEM Group	60
Submit Draft Report	AEM Group	90
Corps Review Draft Report	COE	110
Submit Final Report	AEM Group	125

2.2 B.2 Sampling Methods & Procedure

This section describes the field procedures for collecting soils to be used for the samples obtained in the USACE Charleston County DMMAs for grain size analysis.

Sample processing will be performed onsite at a temporary core processing area. Each sample location sediment sample will be:

- Placed into a container
- Homogenized for either in 1-foot interval or whole boring composite, unless otherwise instructed by the USACE
- Placed into the respective pre-labeled sample containers for discrete and composite samples.
- Delivered to the laboratory for analysis

The laboratory analysis of soils for the Charleston County DMMAs are included in Table 1 which include a total of 648 laboratory samples.

B.2.1 Mobilization

Following authorization to begin field work. At a minimum, the following tasks will be completed before the field investigation activities begin:

- Complete utility clearance through 360 Positive Response (South Carolina 811) for the area around Highway 517 between the mainland and Isle of Palms Beach.

- Mobilize personnel and equipment, to _____

- Establish a temporary core processing area where sampling equipment (including safety and health equipment, such as personal protective equipment [PPE], and decontamination equipment) and sample containers will be delivered and stored.

- Hold a team kick-off meeting at the staging area as the final phase of mobilization. The team kickoff meeting will focus on project safety and health requirements, site access requirements, security provisions for equipment and field data, field sampling procedures, sample processing, documentation, decontamination, and waste handling.

B.2.2 Field Measurements

Sampling points will be located using a differentially corrected GPS, and the exact GPS location will be recorded at each sampling point. The length of core to be composited will be determined by subtracting the depths of required samples outlined above from the surface and converted into tenth of feet.

B.2.3 Documentation and Records

Will be adhered to as described in section A.9.

B.2.4 Decontamination Procedures

B.2.4.1 Personnel and Equipment

All field sampling personnel will be required to wear closed-toed shoes, and gloves. Equipment (e.g., mixing containers, spatulas, spoons) will be rinsed with water.

B.2.4.2 Sampling Bottles/ Sediment Preservation / Analytical Hold Times

Sample containers will be provided by AEM Group.

Table 3 contains a listing of the number and types of required containers for transport of the samples from the field to analytical laboratory storage for each identified sample. Hold Time protocol is given in Table 3 below.

Table 3: Sample Preservation, Sample Container and Hold Time Protocol

Analysis	Container	Preservation	Holding Time
Grain Size without hydrometer	Ziplock bags	None	1-year

B.2.4.3 Sampling Devices

AEM Group will use a hand auger or similar equipment to collect samples.

B.2.5 Field Health and Safety

Field sampling operations will be conducted under a modified Level D safety program. This will include the following PPE:

- closed toed shoes
- nitrile inner gloves
- leather work gloves
- safety glasses
- safety vest
- personal floatation device

The exclusion zone will include the area near drilling equipment along with the core processing area. No food or drink will be permitted in this area during sampling. All personnel performing sampling activities will be required to use the PPE described above.

2.3 B.3 Sampling Handling & Custody

The primary objective of sample handling and custody procedures is to create an accurate written record that can be used to trace the possession and handling of samples from the moment of their collection, through analysis, until their final disposition. Procedures for sample labeling, handling, and reporting of environmental samples will comply with EPA-approved labeling and chain-of-custody methods. The following sections discuss custody procedures and provide detailed descriptions of each form. Specific protocols for sample designation are presented in SAP (Appendix A). Specific protocols for sample handling and custody are presented in SAP (Appendix A).

B.3.1 Sample Tracking Procedure

Sample tracking will be used to ensure that samples are not misplaced or lost during field collection and transport to the analytical laboratories. Chain-of-custody procedures will be followed as prescribed in the EPA document Methods Manual for Bottom Sediment Sample Collection dated May 1985.

B.3.2 Sample Identification System

All samples will be assigned a unique alphanumeric identifying code according to the following method.

Samples will be labeled PA23-DMMA-xxy (with xx identifying the sample location and y identifying the depth.)

The DMMAs are 1088SWC, 1110SWC, 1056SWC, 1006SWC, 1028SWC, 562NWC, and MIN (Morris Island North).

B.3.3 Initiation of Field Tracking Procedure

Field tracking procedures will begin as soon as samples are collected.

B.3.4 Field Activity Documentation/Logbook

A field notebook will be assigned and will be used to record detailed notes on the field investigation. General information recorded in the notebook will include date, time, weather, names of all sampling team members present, and names of visitors. Information specific to each sample which will be recorded electronically and will include location, soil surface elevation, depth of penetration, core length, core section length, and physical description of the sediment. The sample packaging and shipment procedures summarized below will ensure that the samples will arrive at the laboratory intact.

- The Field Team Leader is responsible for the care and custody of the samples until they are delivered to the laboratory.

- All sample containers will be identified by labels which contain the following information: sample identification number, sampling location, date/time of collection, sampler initials, and type of analysis.

- Samples will be packaged within sealed plastic bags and shipped dry. The COC for the packaged samples will be sealed within a plastic bag as protection from damage and placed within the transport container.

- Field personnel will verify COC information included within the sample delivery package against the field notebook and labels attached to the sample containers before shipment to the laboratory.

Samples will be transported to the laboratory by contractor or courier.

B.3.5 Sample Custody – Overview

To maintain and document sample custody, chain-of-custody procedures will be strictly followed. A sample is considered to be under custody if it exhibits one of the following characteristics:

- It is in actual possession of the responsible person
- It is in view, following physical possession
- It is in possession of a responsible person and is locked or sealed to prevent tampering
- It is in a secure area.

By this definition, the field crew collecting the samples is responsible for care and custody of the sample until it is transferred to the shipping company or the laboratory.

B.3.6 Chain-of-Custody Record

Chain-of-custody records will be used to track all samples from the time of sampling to the arrival of

samples at the laboratory. Every sample container being shipped or picked up by the laboratory will contain a chain-of-custody record. Field personnel will retain a signed and dated hardcopy and scanned electronic copy of the chain-of-custody while the original chain-of-custody and other copies (if necessary) are enclosed in a waterproof enclosure within each shipping container. The laboratory, upon receiving the samples, will sign the original chain-of-custody and retain it in the project file.

When transferring the possession of samples, the individuals relinquishing and receiving will sign, date, and note the time on the record. This record documents the transfer of samples from the custody of the sampler to that of another person, or the laboratory. Packaged samples will be accompanied by the chain-of-custody record, which identifies the contents. The sampler will retain a copy for the project file. The airbill number will be written on the chain-of-custody record retained by the field personnel. The Project Manager is responsible for consistency of records and inclusion in the permanent project file.

B.3.7 Sampling and Packaging Procedures

Samples shipped to the laboratories will be packaged in compliance with current U.S. Department of Transportation regulations to avoid breakage or contamination.

B.3.8 Laboratory Chain-of-Custody Procedures

The laboratory custody procedures and document control will be carried out according to the laboratory procedures detailed SOPs (Appendix D). The laboratory representative who accepts the incoming sample shipment signs and dates the chain- of-custody record to acknowledge receipt of the samples. In addition, the receiving laboratory will document the condition of the sample shipment. Once the sample transfer process is complete, the laboratory is responsible for maintaining internal logbooks and records that provide a custody record throughout sample preparation and analysis.

If more than one laboratory handles the samples, custody of the samples is maintained between laboratory sample management personnel. Within each laboratory, the analysts will maintain custody of the sample while the analysis is being performed. USACE samples are stored and preserved in a secure refrigerated (except for particle size) area for at least six months. No sample disposal occurs until the USACE reports that the final Quality Assurance Deliverable has undergone complete review and is judged as complete.

2.4 B.4 Analytical Methods

B.4.1 Laboratory Analysis

Table 4 identifies analytical methods to be followed for any laboratory analysis. Any deviation from analytical methods should be notified and approved by the QA Manager and a reference to the method should be included in the final report. Individual analysis specifics including method descriptions, performance criteria, etc. can be located within individual laboratory SOP's.

Table 4: Insight Laboratory Analyses and Methods

Analysis	Analysis Method	Laboratory SOP
Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis	ASTM Method D6913/D6913M − 17	

B.4.2 Laboratory Turnaround Time Requirements

The standard laboratory turnaround time requirements for the reports on analyses are five weeks for each day's submittal for the particle size (Gradation) properties.

2.5 B.5 Quality Control

The laboratories which will be performing analyses as a part of this project have a QC program they use to ensure the reliability and validity of the analyses performed at the laboratory. All analytical procedures are documented in writing as SOPs, and each SOP includes QC information which addresses the minimum QC requirements for the procedure. The internal quality control checks might differ slightly for each individual procedure, but in general, the QC requirements include the following:

- Method blanks
- Reagent/preparation blanks
- Instrument blanks
- Matrix spikes/matrix spike duplicates
- Surrogate spikes
- Analytical spikes
- Laboratory duplicates
- Laboratory control standards
- Internal standard areas for GC/MS analysis

ASTM method D6913 does not require any QC requirements listed above.

2.6 B.6 Instrument/Equipment Testing, Inspection, and Maintenance

B.6.1 Field Equipment Preventative Maintenance

The field equipment for this project includes the GPS unit, ocean capable vessel (boat) and motor, and Sampling/Drilling equipment. Any spare parts needed for breakdown or maintenance are the responsibility of AEM Group and/or their subcontracted entities to obtain or store.

B.6.2 Laboratory Preventative Maintenance

Equipment maintenance records will be kept on file for all analytical equipment used for the laboratory chemical analysis. The maintenance procedures for all equipment used during the course of the project will be conducted as recommended in the operations manuals for the equipment following the guidance given in each method SOP (Appendix D).

2.7 B.7 Instrument/Equipment Calibration and Frequency

This section describes the calibration procedures and the frequency at which these procedures will be performed for both field and laboratory instruments.

B.7.1 Field Instrument Calibration

GPS accuracy will be measured by utilizing control or reference points, at a known location at the beginning and end of each day that samples are collected. The observed and known coordinates can then be used to determine accuracy.

B.7.2 Laboratory Instrument Calibration

Instrument calibration procedures serve as a quality control check of the instrument and its bias during an analytical procedure. This method does not require any calibration procedures.

2.8 B.8 Inspection/Acceptance of Supplies & Consumables

Supplies and consumables that may directly or indirectly affect the quality of the project must be clearly identified and documented by field personnel. Typical examples of supplies and consumables include sample bottles, sample cores, core processing equipment, and materials for decontamination activities.

AEM Group will be using quart-sized ziplock bags for the storage of samples for analysis.

Laboratory custody procedures for sample receiving and log-in, sample storage and numbering, tracking during sample preparation and analysis, and storage of data will be per the analytical laboratories' internal procedures.

2.9 B.9 Data Acquisition Requirements for Non-Direct Measurements

The parameters for ASTM method D6913 are listed in Table 5.

Table 5: Laboratory MDL's and RL's (LOD)

Method No	CAS	Analyte	PQL	LOD	MDL	Units
ASTM D6913		Clay	0.1	0.1	0.1	%
		Coarse Gravel	0.1	0.1	0.1	%
		Coarse Sand	0.1	0.1	0.1	%
		Fine Gravel	0.1	0.1	0.1	%
		Fine Sand	0.1	0.1	0.1	%
		Medium sand	0.1	0.1	0.1	%
		Non retained material	0.1	0.1	0.1	%
		Silt	0.1	0.1	0.1	%
ASTM D6913		#4	0.1	0.1	0.1	% Finer
		#10	0.1	0.1	0.1	% Finer
		#20	0.1	0.1	0.1	% Finer
		#40	0.1	0.1	0.1	% Finer
		#60	0.1	0.1	0.1	% Finer
		#100	0.1	0.1	0.1	% Finer
		#140	0.1	0.1	0.1	% Finer
		#200	0.1	0.1	0.1	% Finer

2.10 B.10 Data Management

B.10.1 Laboratory Reports

All laboratory data and records will be included in the final analytical report submitted to the USACE in both pdf and Microsoft Excel format. A complete copy of the QAPP will be provided to the labs. AEM

Group will be responsible for maintaining the reports in the permanent project file. The following laboratory-specific records will be compiled by the appropriate laboratory and included in the final analytical report submitted to the USACE.

- cover letter
- case narrative
- list of sample numbers and run chronology
- copies of all raw data, clearly labeled
- QC data (none for this project)
- chain-of-custody
- lab flags and flag definitions
- sample specific DLs and RLs
- batch information linking samples to QC samples

B.10.2 Laboratory Management Records

The laboratory sample management records will document sample receipt, handling and storage, and scheduling of analyses. The records will verify that sampling tracking and proper preservation procedures were maintained. They will reflect any anomalies in the samples, (damaged containers), note the log-in of samples into the laboratory, and the procedures used to ensure that holding time requirements were met.

AEM Group will deliver all sample containers to the geotechnical laboratory Insight Group at 3359 Meeting Street, Suite 101, North Charleston, South Carolina, a USACE Materials Testing Center (MTC) geotechnical laboratory.

3.0 Section C – Assessment and Oversight

This section details the procedures used for implementation of the QAPP. This group of QAPP elements addresses the activities for assessing the effectiveness of the implementation of the project and the associated QA/QC activities. This element should identify any deviations from the QAPP and describe the process by which the need for corrective action is documented, reported, and implemented, and effectiveness assessed.

3.1 C.1 Assessment and Response Actions

Assessments and oversights of both field and laboratory activities will be performed during the site activities to evaluate the effectiveness of the QAPP. Any problems discovered during an assessment of field activities or laboratory activities will require corrective action so that the problems are resolved. QA system audits may be conducted by the USACE Project Manager and/or Project QA Manager during activities that may affect the integrity of the sampling program. The audits are unannounced and are not predetermined. The objectives of the system audits are to:

- Verify that a system of QC measures, procedures, reviews, and approvals is established for all activities that generate and process environmentally-related data

- Verify that a system for project documentation (e.g., records, chain-of-custody records, analytical tags, logbooks, worksheets, etc.) is established

- Verify documentation of the required QC reviews, approvals, and activity record

- Identify non-conformances with the established system of QC measures, procedures, reviews,

approvals, and documentation

- Recommend corrective actions for identified nonconformance
- Verify implementation of corrective action
- Provide written reports of audits for the project file.

C.1.1 Surveillance

Surveillance is the continual or frequent monitoring of the status of the project and the analysis of records to confirm that specified project requirements are fulfilled. Surveillance of site activities will be performed by USACE. USACE field personnel will monitor field activities (including all subcontractor activities and sampling efforts) by continuous presence and periodic site inspections.

C.1.2 Laboratory Performance Audits

A laboratory system audit is a review of laboratory operations. It is conducted to verify that the laboratory has the necessary facilities, equipment, staff, and procedures in place to generate acceptable data. Laboratory audit procedures are detailed in the laboratory QA Manual.

C.1.3 Corrective Action

Surveillance and field investigation audits may reveal practices or procedures that do not conform to the QAPP, and that require corrective measures be implemented in a timely manner. Field corrective action procedures will depend on the type and severity of the finding.

Assessment findings are classified as either deficiencies or observations. Deficiencies are findings that may have a significant impact on data quality and require corrective action. Observations are findings that do not directly affect data quality but are suggestions for consideration and review.

The initial responsibility for monitoring QC activities and responding to deficiencies identified in the field during field assessment is that of the Field Lead. The Field Lead is responsible for verifying that all QC procedures are followed. This requires that the Field Lead assess the correctness of the field methods, determine the ability to meet QA/QC objectives, and evaluate the impact a procedure has upon field objectives and the resulting data quality. In the event that a problem arises concerning QA/QC during field activities, the Field Lead will contact the USACE QA Manager of the situation.

Corrective action measures, if necessary, will be determined and implemented with the approval of the USACE Project Manager, and documented in the monthly Progress Report. In responding to assessment findings, USACE will describe each deficiency, the proposed corrective action, the individual responsible for implementing the corrective action, and the completion dates for each corrective action. The deficiency, corrective action taken, and the results of that action will be recorded in the field logbook by the Field Lead.

Internal laboratory procedures for corrective action and descriptions of out-of-control situations that require corrective action are contained in laboratory QA plans.

In the event that the laboratory is unable to meet QA/QC objectives, appropriate corrective action measures will be initiated by the laboratory QA Officer and/or Project Manager informing the USACE QA Manager. The USACE Project Manager and the project team will maintain daily contact with the

laboratory. In the event of laboratory problems requiring additional field work (e.g., resampling) or field problems requiring laboratory action (e.g., mislabeling), the AEM Group project team will propose the appropriate corrective action and inform the USACE Project Manager.

3.2 C.2 Reports to Management

Applicable QA activities will be recorded in the monthly status reports, which will be distributed to the USACE Project Manager. Minimum requirements for information to be included in the monthly status report are as follows:

- Status and coverage of various lab and field QA project activities
- Data QA reviews of precision, accuracy, and completeness
- Any significant field observations noted in field logbooks
- Any revisions or planned revisions to the QAPP (NOTE: substantive revisions require the review and approval of USACE prior to implementation)
- Summary of results of performance and system audits.
- A single report will be submitted to USACE and will include the following items:
    - Any sampling changes made in the field along with any issues, concerns, or problems encountered during data collection and analysis
    - Data summary, including: preliminary figures, tables, charts, and graphs with appropriate sample identification/station location numbers; preliminary (not validated) analytical results, and data qualifiers
    - Reconciliation of project data with project quality objectives
    - Note: The report will not include data interpretation.

The AEM Group Project Manager will be responsible for preparation of all reports. Management may also be informed of QA problems by immediate verbal notification.

4.0 Section D – Data Validation and Usability

4.1 D.1 Data Review, Validation, and Reporting

Data generated in field and laboratory activities will be reduced, reviewed, and validated prior to reporting. No data will be disseminated by the laboratory until they have been subjected to the reduction and review procedures summarized below.

D.1.1 Data Reduction and Review

Raw data from any field measurements and sample collection activities will be appropriately recorded in the field logbook. If the data are to be used in the project reports, they will be reduced and summarized, and the method of reduction will be documented in the report.

Laboratory data reduction procedures will be in accordance with SOPs (Appendix D). For each of the methods, the Laboratory Project Manager will complete a thorough inspection of all reports prior to release of the data. Following review and approval of the preliminary report by the Laboratory Project Manager, final reports will be generated and signed by the Laboratory Project Manager. The Laboratory review processes are documented in the QA Manual and laboratory SOPs (Appendix D).

D.1.2 Data Validation

The performance of all field activities, calibration checks on all field instruments at the beginning and end of each day of use, manual checks of field calculations, checking for transcription errors, and review of field logbooks are the responsibility of the Field Lead or USACE Project Manager. USACE will track and document delivery of the analytical data packages and EDDs from Insight through AEM Group.

A completeness review will also be completed in regards to Field and Geotechnical data.

Completeness will be evaluated by auditing the data package for the following:

- Chain-of-custody records
- Technical holding times
- Required analytical methods
- Reporting limits
- Reporting format
- Laboratory and field QC reporting forms (none required for this project)
- Appropriate supporting data
- Case narrative
- Completeness of results
- Data usability (compliance with project DQOs).

4.2 D.2 Validation and Verification Methods

No third-party data validation will be performed on this project.

USACE will review pertinent sampling and laboratory documentation to determine to what degree each data item has met its quality specifications as presented in this QAPP.

Data verification by the USACE Data Manager will include the following:

- Sampling Design— each sample shall be checked for conformity to the specifications, including type and location.

- Sample Collection Procedures— verify that sample collection procedures were performed in accordance with procedures presented in this QAPP. If it is determined that a deviation occurred in the collection procedure, the procedure shall, at a minimum, conform to the Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (EPA 2001b); this deviation shall also be documented in the field logbook.

- Sample Handling—verify that the sample was labeled, documented, and shipped properly in accordance with procedures presented in this QAPP.

- Analytical Procedures—verify that each sample was analyzed by the methods specified in this QAPP.

- Quality Control—verify that QC was performed during sample collection, handling, and analysis.
- Calibration—verify that the calibration of field instruments was performed in accordance with the manufacturer specifications for the equipment.

In the event that a dispute arises during the data review, verification, or validation processes, the EA QA Manager will work with the EPA Project Manager and subcontracted laboratories to achieve an agreeable resolution.

Findings or QC concerns will be included in the data narrative prepared by USACE. The USACE Project Manager, after consultation with the USACE Data Manager and/or QA Manager, will be responsible for any corrective action identified during the data validation process.

Any laboratory corrective action will be the responsibility of the USACE Project Manager, QA Manager, and/or Data Manager.

4.3 D.3 Usability/Reconciliation with Data Quality Objectives

Laboratory results will be assessed for compliance with required precision, accuracy, completeness, and sensitivity requirements as described in Section A.7 of this QAPP. Data that does not meet the requirements specified in Section A.7 and the QA requirements in the analytical methods will be discussed in the data validation summaries and incorporated into the summary report for this project.

Any sources of sampling or analytical error will be identified as early as possible during the sample collection activities so that corrective action can quickly be implemented. Data that are not deemed usable to support or address the project decision-making process will be identified and the potential need for additional sampling will be discussed with the USACE Project Manager. If it is determined that the use of data obtained from any sampling event should be limited because of validation or other issues, a disclaimer will be included on each page of any table generated from the data and included in a report.

Appendix A

Sampling and Analysis Plan

Appendix B

Location of Charleston Harbor DMMA Project Areas



0 0.125 0.25 0.5 Miles

Legend

- Table 1. Sample Locations at 1088S W-C
- Table 2. Sample Locations at 1110S W-C
- Table 3. Sample Locations at 1056S W-C
- Table 4. Sample Locations at 1006S W-C
- Table 5. Sample Locations at 1028S W-C
- Table 6. Sample Locations at 562N W-C
- Table 7. Sample Locations at Morris Island North

N

Figure 1
Morris Island

Client	Date	Drawn by
USACE Charleston	1-31-2023	RP

Location	Project no.
Charleston Harbor, South Carloina	G23000

AEM GROUP
ENVIRONMENTAL SERVICES
voice: 1-734-354-9070
fax: 1-734-354-9087
www.aemgroup.biz

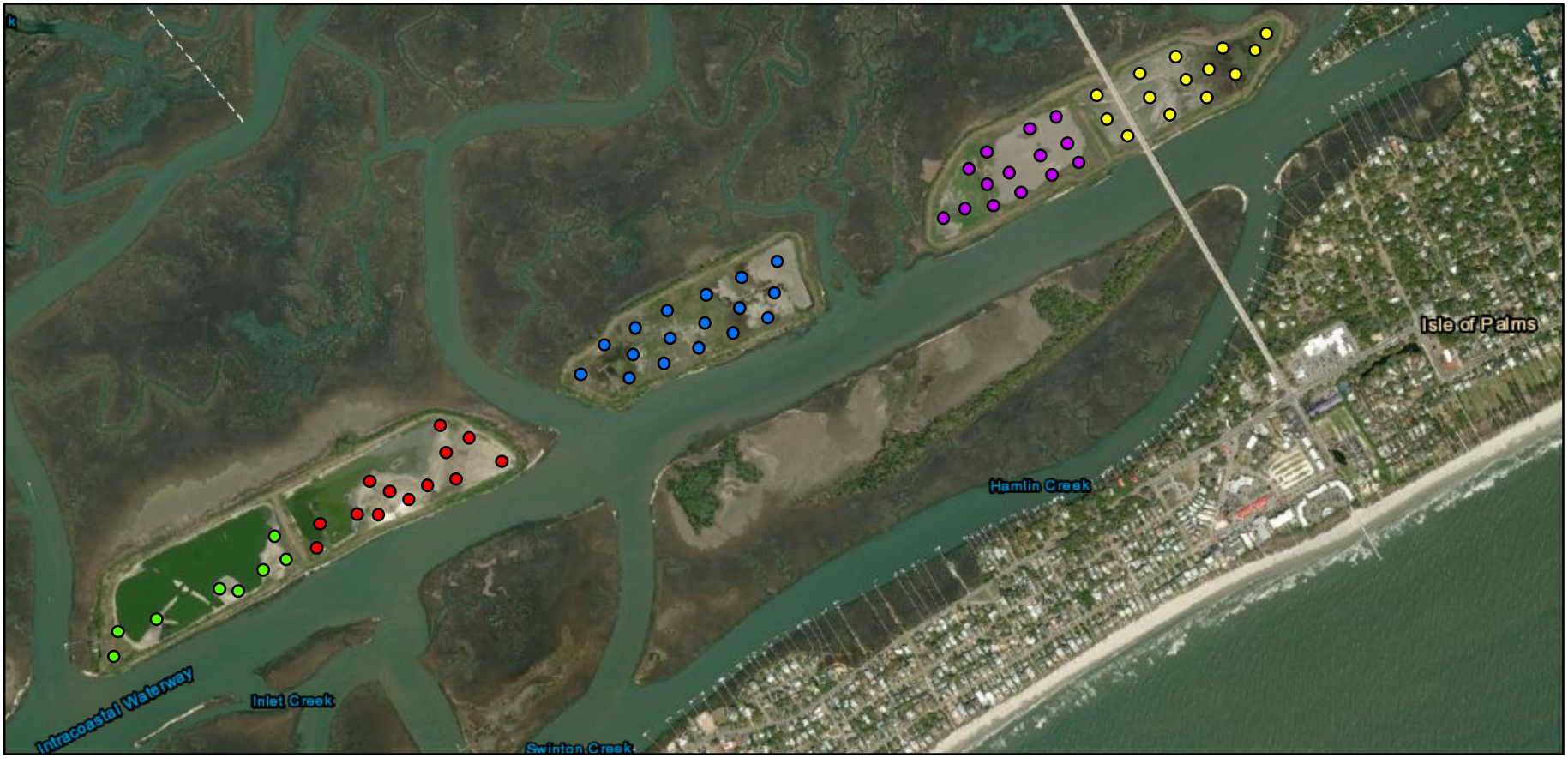
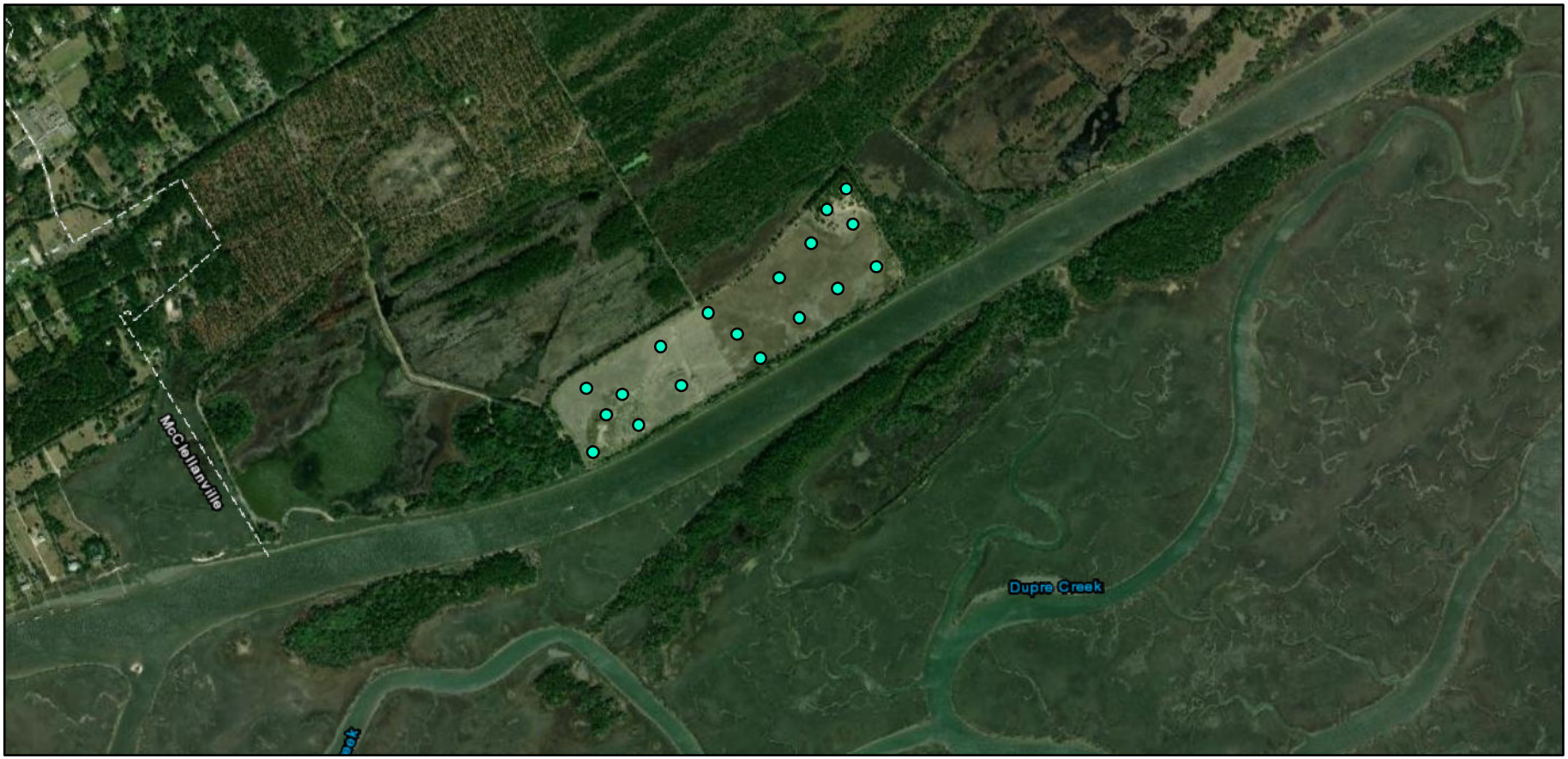


Figure 2
Isle of Palms

Client USACE Charleston	**Date** 1-31-2023	**Drawn by** RP
Location Charleston Harbor, South Carloina		**Project no.** G23000

AEM GROUP
ENVIRONMENTAL SERVICES
voice: 1-734-354-9070
fax: 1-734-354-9087
www.aemgroup.biz



0 0.125 0.25 0.5 Miles

Legend

- Table 1. Sample Locations at 1088S W-C
- Table 2. Sample Locations at 1110S W-C
- Table 3. Sample Locations at 1056S W-C
- Table 4. Sample Locations at 1006S W-C
- Table 5. Sample Locations at 1028S W-C
- Table 6. Sample Locations at 562N W-C
- Table 7. Sample Locations at Morris Island North

N

Figure 3
McClellanville

Client	Date	Drawn by
USACE Charleston	1-31-2023	RP

Location	Project no.
Charleston Harbor, South Carloina	G23000

AEM GROUP
ENVIRONMENTAL SERVICES
voice: 1-734-354-9070
fax: 1-734-354-9087
www.aemgroup.biz

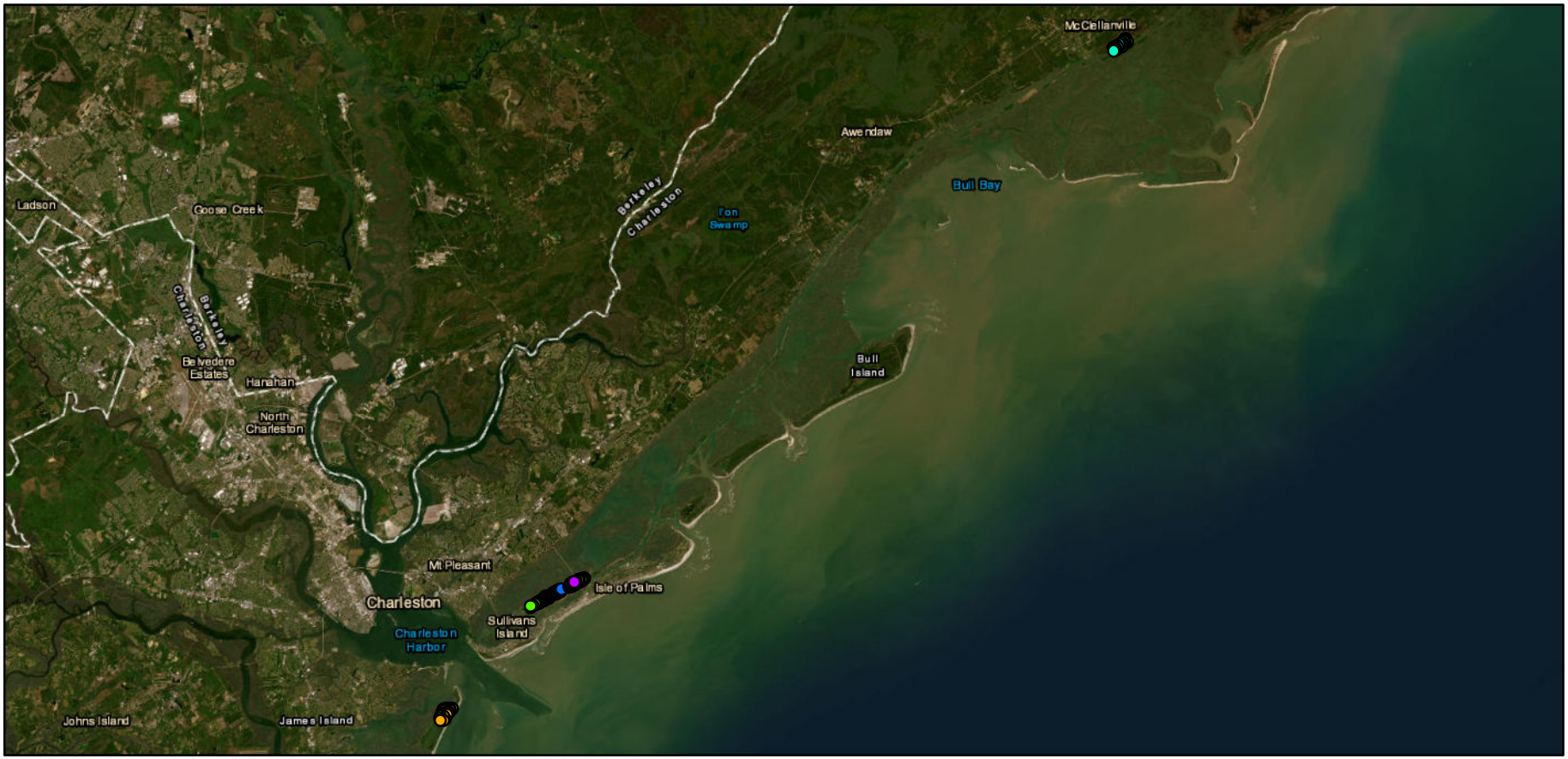


Figure 4
Overall Project Sample Locations

Client	Date	Drawn by
USACE Charleston	1-31-2023	RP

Location	Project no.
Charleston Harbor, South Carloina	G23000

AEM GROUP
ENVIRONMENTAL SERVICES
voice: 1-734-354-9070
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Appendix C

Sample Locations Coordinates

Table 1. Sample Locations at 1088S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID		Sample Depth (ft)	Sample Number
PA23-1088SWC-1	XY=2365225.09,349106.96	PA23-1088SWC-1A	0-1	0-1	1
		PA23-1088SWC-1B	1-2	1-2	2
		PA23-1088SWC-1C	2-3	2-3	3
		PA23-1088SWC-1D	3-4	3-4	4
		PA23-1088SWC-1E	4-5	4-5	5
		PA23-1088SWC-1F	5-6	5-6	6
		Composite		0-6	7
PA23-1088SWC-2	XY=2364923.77,349329.23	PA23-1088SWC-2A	0-1	0-1	8
		PA23-1088SWC-2B	1-2	1-2	9
		PA23-1088SWC-2C	2-3	2-3	10
		PA23-1088SWC-2D	3-4	3-4	11
		PA23-1088SWC-2E	4-5	4-5	12
		PA23-1088SWC-2F	5-6	5-6	13
		Composite		0-6	14
PA23-1088SWC-3	XY=2364659.09,349440.66	PA23-1088SWC-3A	0-1	0-1	15
		PA23-1088SWC-3B	1-2	1-2	16
		PA23-1088SWC-3C	2-3	2-3	17
		PA23-1088SWC-3D	3-4	3-4	18
		Composite		0-4	19
PA23-1088SWC-4	XY=2364711.70,349192.00	PA23-1088SWC-4A	0-1	0-1	20
		PA23-1088SWC-4B	1-2	1-2	21
		PA23-1088SWC-4C	2-3	2-3	22
		PA23-1088SWC-4D	3-4	3-4	23
		PA23-1088SWC-4E	4-5	4-5	24
		PA23-1088SWC-4F	5-6	5-6	25
		Composite		0-6	26
PA23-1088SWC-5	XY=2364805.53,348944.26	PA23-1088SWC-5A	0-1	0-1	27
		PA23-1088SWC-5B	1-2	1-2	28
		PA23-1088SWC-5C	2-3	2-3	29
		PA23-1088SWC-5D	3-4	3-4	30
		PA23-1088SWC-5E	4-5	4-5	31
		PA23-1088SWC-5F	5-6	5-6	32
		Composite		0-6	33

Table 1. Sample Locations at 1088S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID		Sample Depth (ft)	Sample Number
PA23-1088SWC-6	XY=2364544.20,348886.21	PA23-1088SWC-6A	0-1	0-1	34
		PA23-1088SWC-6B	1-2	1-2	35
		PA23-1088SWC-6C	2-3	2-3	36
		PA23-1088SWC-6D	3-4	3-4	37
		Composite		0-4	38
PA23-1088SWC-7	XY=2364368.95,348757.38	PA23-1088SWC-7A	0-1	0-1	39
		PA23-1088SWC-7B	1-2	1-2	40
		PA23-1088SWC-7C	2-3	2-3	41
		PA23-1088SWC-7D	3-4	3-4	42
		PA23-1088SWC-7E	4-5	4-5	43
		PA23-1088SWC-7F	5-6	5-6	44
		Composite		0-6	45
PA23-1088SWC-8	XY=2364191.29,348831.07	PA23-1088SWC-8A	0-1	0-1	46
		PA23-1088SWC-8B	1-2	1-2	47
		PA23-1088SWC-8C	2-3	2-3	48
		PA23-1088SWC-8D	3-4	3-4	49
		PA23-1088SWC-8E	4-5	4-5	50
		PA23-1088SWC-8F	5-6	5-6	51
		Composite		0-6	52
PA23-1088SWC-9	XY=2364089.11,348617.63	PA23-1088SWC-9A	0-1	0-1	53
		PA23-1088SWC-9B	1-2	1-2	54
		PA23-1088SWC-9C	2-3	2-3	55
		PA23-1088SWC-9D	3-4	3-4	56
		PA23-1088SWC-9E	4-5	4-5	57
		PA23-1088SWC-9F	5-6	5-6	58
		Composite		0-6	59
PA23-1088SWC-10	XY=2364010.17,348925.31	PA23-1088SWC-10A	0-1	0-1	60
		PA23-1088SWC-10B	1-2	1-2	61
		PA23-1088SWC-10C	2-3	2-3	62
		PA23-1088SWC-10D	3-4	3-4	63
		Composite		0-4	64

Table 1. Sample Locations at 1088S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID		Sample Depth (ft)	Sample Number
PA23-1088SWC-11	XY=2363888.80,348623.09	PA23-1088SWC-11A	0-1	0-1	65
		PA23-1088SWC-11B	1-2	1-2	66
		PA23-1088SWC-11C	2-3	2-3	67
		PA23-1088SWC-11D	3-4	3-4	68
		Composite		0-4	69
PA23-1088SWC-12	XY=2363548.50,348533.15	PA23-1088SWC-12A	0-1	0-1	70
		PA23-1088SWC-12B	1-2	1-2	71
		PA23-1088SWC-12C	2-3	2-3	72
		PA23-1088SWC-12D	3-4	3-4	73
		PA23-1088SWC-12E	4-5	4-5	74
		PA23-1088SWC-12F	5-6	5-6	75
		Composite		0-6	76
PA23-1088SWC-13	XY=2363517.89,348310.58	PA23-1088SWC-13A	0-1	0-1	77
		PA23-1088SWC-13B	1-2	1-2	78
		PA23-1088SWC-13C	2-3	2-3	79
		PA23-1088SWC-13D	3-4	3-4	80
		PA23-1088SWC-13E	4-5	4-5	81
		PA23-1088SWC-13F	5-6	5-6	82
		Composite		0-6	83

Table 2. Sample Locations at 1110S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-1110SWC-1	XY=2363235.25,348207.07	PA23-1110SWC-1A	0-1	1
		PA23-1110SWC-1B	1-2	2
		PA23-1110SWC-1C	2-3	3
		PA23-1110SWC-1D	3-4	4
		PA23-1110SWC-1E	4-5	5
		PA23-1110SWC-1F	5-6	6
		Composite	0-6	7
PA23-1110SWC-2	XY=2363131.19,348419.81	PA23-1110SWC-2A	0-1	8
		PA23-1110SWC-2B	1-2	9
		PA23-1110SWC-2C	2-3	10
		PA23-1110SWC-2D	3-4	11
		Composite	0-4	12
PA23-1110SWC-3	XY=2363023.12,348107.68	PA23-1110SWC-3A	0-1	13
		PA23-1110SWC-3B	1-2	14
		PA23-1110SWC-3C	2-3	15
		PA23-1110SWC-3D	3-4	16
		Composite	0-4	17
PA23-1110SWC-4	XY=2362793.03,347913.11	PA23-1110SWC-4A	0-1	18
		PA23-1110SWC-4B	1-2	19
		PA23-1110SWC-4C	2-3	20
		PA23-1110SWC-4D	3-4	21
		Composite	0-4	22
PA23-1110SWC-5	XY=2362618.7,347932.13	PA23-1110SWC-5A	0-1	23
		PA23-1110SWC-5B	1-2	24
		PA23-1110SWC-5C	2-3	25
		PA23-1110SWC-5D	3-4	26
		Composite	0-4	27
PA23-1110SWC-6	XY=2362036.9,347651.99	PA23-1110SWC-6A	0-1	28
		PA23-1110SWC-6B	1-2	29
		PA23-1110SWC-6C	2-3	30
		PA23-1110SWC-6D	3-4	31
		Composite	0-4	32

Table 2. Sample Locations at 1110S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-1110SWC-7	XY=2361645.81,347305.03	PA23-1110SWC-7A	0-1	33
		PA23-1110SWC-7B	1-2	34
		PA23-1110SWC-7C	2-3	35
		PA23-1110SWC-7D	3-4	36
		PA23-1110SWC-7E	4-5	37
		PA23-1110SWC-7F	5-6	38
		Composite	0-6	39
PA23-1110SWC-8	XY=2361683.38,347534.27	PA23-1110SWC-8A	0-1	40
		PA23-1110SWC-8B	1-2	41
		PA23-1110SWC-8C	2-3	42
		PA23-1110SWC-8D	3-4	43
		Composite	0-4	44
PA23-1110SWC-9	XY=2361626.71,347756.85	PA23-1110SWC-9A	0-1	45
		PA23-1110SWC-9B	1-2	46
		PA23-1110SWC-9C	2-3	47
		PA23-1110SWC-9D	3-4	48
		Composite	0-4	49
PA23-1110SWC-10	XY=2361659.43,347990.34	PA23-1110SWC-10A	0-1	50
		PA23-1110SWC-10B	1-2	51
		PA23-1110SWC-10C	2-3	52
		PA23-1110SWC-10D	3-4	53
		Composite	0-4	54

Table 3. Sample Locations at 1056S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-1056SWC-1	XY=2366404.51,349878.25	PA23-1056SWC-1A	0-1	1
		PA23-1056SWC-1B	1-2	2
		PA23-1056SWC-1C	2-3	3
		PA23-1056SWC-1D	3-4	4
		Composite	0-4	5
PA23-1056SWC-2	XY=2366725.47,350017.83	PA23-1056SWC-2A	0-1	6
		PA23-1056SWC-2B	1-2	7
		PA23-1056SWC-2C	2-3	8
		PA23-1056SWC-2D	3-4	9
		PA23-1056SWC-2E	4-5	10
		PA23-1056SWC-2F	5-6	11
		Composite	0-6	12
PA23-1056SWC-3	XY=2367046.43,350157.42	PA23-1056SWC-3A	0-1	13
		PA23-1056SWC-3B	1-2	14
		PA23-1056SWC-3C	2-3	15
		PA23-1056SWC-3D	3-4	16
		PA23-1056SWC-3E	4-5	17
		PA23-1056SWC-3F	5-6	18
		Composite	0-6	19
PA23-1056SWC-4	XY=2367367.39,350297.00	PA23-1056SWC-4A	0-1	20
		PA23-1056SWC-4B	1-2	21
		PA23-1056SWC-4C	2-3	22
		PA23-1056SWC-4D	3-4	23
		Composite	0-4	24
PA23-1056SWC-5	XY=2367688.36,350436.58	PA23-1056SWC-5A	0-1	25
		PA23-1056SWC-5B	1-2	26
		PA23-1056SWC-5C	2-3	27
		PA23-1056SWC-5D	3-4	28
		PA23-1056SWC-5E	4-5	29
		PA23-1056SWC-5F	5-6	30
		Composite	0-6	31

Table 3. Sample Locations at 1056S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-1056SWC-6	XY=2367745.41,350665.65	PA23-1056SWC-6A	0-1	32
		PA23-1056SWC-6B	1-2	33
		PA23-1056SWC-6C	2-3	34
		PA23-1056SWC-6D	3-4	35
		Composite	0-4	36
PA23-1056SWC-7	XY=2367424.44,350526.06	PA23-1056SWC-7A	0-1	37
		PA23-1056SWC-7B	1-2	38
		PA23-1056SWC-7C	2-3	39
		PA23-1056SWC-7D	3-4	40
		Composite	0-4	41
PA23-1056SWC-8	XY=2367103.48,350386.48	PA23-1056SWC-8A	0-1	42
		PA23-1056SWC-8B	1-2	43
		PA23-1056SWC-8C	2-3	44
		PA23-1056SWC-8D	3-4	45
		Composite	0-4	46
PA23-1056SWC-9	XY=2366782.52,350246.89	PA23-1056SWC-9A	0-1	47
		PA23-1056SWC-9B	1-2	48
		PA23-1056SWC-9C	2-3	49
		PA23-1056SWC-9D	3-4	50
		PA23-1056SWC-9E	4-5	51
		PA23-1056SWC-9F	5-6	52
		Composite	0-6	53
PA23-1056SWC-10	XY=2366440.62,350099.26	PA23-1056SWC-10A	0-1	54
		PA23-1056SWC-10B	1-2	55
		PA23-1056SWC-10C	2-3	56
		PA23-1056SWC-10D	3-4	57
		Composite	0-4	58
PA23-1056SWC-11	XY=2365958.41,349912.22	PA23-1056SWC-11A	0-1	59
		PA23-1056SWC-11B	1-2	60
		PA23-1056SWC-11C	2-3	61
		PA23-1056SWC-11D	3-4	62
		PA23-1056SWC-11E	4-5	63
		PA23-1056SWC-11F	5-6	64
		Composite	0-6	65

Table 3. Sample Locations at 1056S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-1056SWC-12	XY=2366176.17,350186.29	PA23-1056SWC-12A	0-1	66
		PA23-1056SWC-12B	1-2	67
		PA23-1056SWC-12C	2-3	68
		PA23-1056SWC-12D	3-4	69
		PA23-1056SWC-12E	4-5	70
		PA23-1056SWC-12F	5-6	71
		Composite	0-6	72
PA23-1056SWC-13	XY=2366462.58,350341.52	PA23-1056SWC-13A	0-1	73
		PA23-1056SWC-13B	1-2	74
		PA23-1056SWC-13C	2-3	75
		PA23-1056SWC-13D	3-4	76
		Composite	0-4	77
PA23-1056SWC-14		PA23-1056SWC-14A	0-1	78
XY=2366759.80,350503.08		PA23-1056SWC-14B	1-2	79
		PA23-1056SWC-14C	2-3	80
		PA23-1056SWC-14D	3-4	81
		Composite	0-4	82
PA23-1056SWC-15	XY=2367114.30,350649.02	PA23-1056SWC-15A	0-1	83
		PA23-1056SWC-15B	1-2	84
		PA23-1056SWC-15C	2-3	85
		PA23-1056SWC-15D	3-4	86
		Composite	0-4	87
PA23-1056SWC-16	XY=2367443.15,350806.87	PA23-1056SWC-16A	0-1	88
		PA23-1056SWC-16B	1-2	89
		PA23-1056SWC-16C	2-3	90
		PA23-1056SWC-16D	3-4	91
		Composite	0-4	92
PA23-1056SWC-17	XY=2367771.49,350955.91	PA23-1056SWC-17A	0-1	93
		PA23-1056SWC-17B	1-2	94
		PA23-1056SWC-17C	2-3	95
		PA23-1056SWC-17D	3-4	96
		Composite	0-4	97

Table 4. Sample Locations at 1006S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-1006SWC-1	XY=2372288.74,353060.14	PA23-1006SWC-1A	0-1	1
		PA23-1006SWC-1B	1-2	2
		PA23-1006SWC-1C	2-3	3
		PA23-1006SWC-1D	3-4	4
		PA23-1006SWC-1E	4-5	5
		PA23-1006SWC-1F	5-6	6
		Composite	0-6	7
PA23-1006SWC-2	XY=2372187.65,352905.16	PA23-1006SWC-2A	0-1	8
		PA23-1006SWC-2B	1-2	9
		PA23-1006SWC-2C	2-3	10
		PA23-1006SWC-2D	3-4	11
		PA23-1006SWC-2E	4-5	12
		PA23-1006SWC-2F	5-6	13
		Composite	0-6	14
PA23-1006SWC-3	XY=2372001.01,352683.60	PA23-1006SWC-3A	0-1	15
		PA23-1006SWC-3B	1-2	16
		PA23-1006SWC-3C	2-3	17
		PA23-1006SWC-3D	3-4	18
		PA23-1006SWC-3E	4-5	19
		PA23-1006SWC-3F	5-6	20
		Composite	0-6	21
PA23-1006SWC-4	XY=2371738.06,352471.67	PA23-1006SWC-4A	0-1	22
		PA23-1006SWC-4B	1-2	23
		PA23-1006SWC-4C	2-3	24
		PA23-1006SWC-4D	3-4	25
		Composite	0-4	26
PA23-1006SWC-5	XY=2371403.10,352312.53	PA23-1006SWC-5A	0-1	27
		PA23-1006SWC-5B	1-2	28
		PA23-1006SWC-5C	2-3	29
		PA23-1006SWC-5D	3-4	30
		Composite	0-4	31

Table 4. Sample Locations at 1006S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-1006SWC-6	XY=2371007.25,352112.34	PA23-1006SWC-6A	0-1	32
		PA23-1006SWC-6B	1-2	33
		PA23-1006SWC-6C	2-3	34
		PA23-1006SWC-6D	3-4	35
		PA23-1006SWC-6E	4-5	36
		PA23-1006SWC-6F	5-6	37
		Composite	0-6	38
PA23-1006SWC-7	XY=2370817.26,352272.34	PA23-1006SWC-7A	0-1	39
		PA23-1006SWC-7B	1-2	40
		PA23-1006SWC-7C	2-3	41
		PA23-1006SWC-7D	3-4	42
		PA23-1006SWC-7E	4-5	43
		PA23-1006SWC-7F	5-6	44
		Composite	0-6	45
PA23-1006SWC-8	XY=2371212.98,352472.52	PA23-1006SWC-8A	0-1	46
		PA23-1006SWC-8B	1-2	47
		PA23-1006SWC-8C	2-3	48
		PA23-1006SWC-8D	3-4	49
		Composite	0-4	50
PA23-1006SWC-9	XY=2371547.94,352631.67	PA23-1006SWC-9A	0-1	51
		PA23-1006SWC-9B	1-2	52
		PA23-1006SWC-9C	2-3	53
		PA23-1006SWC-9D	3-4	54
		Composite	0-4	55
PA23-1006SWC-10	XY=2371757.81,352731.77	PA23-1006SWC-10A	0-1	56
		PA23-1006SWC-10B	1-2	57
		PA23-1006SWC-10C	2-3	58
		PA23-1006SWC-10D	3-4	59
		Composite	0-4	60

Table 4. Sample Locations at 1006S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-1006SWC-11	XY=2371882.90,352922.55	PA23-1006SWC-11A	0-1	61
		PA23-1006SWC-11B	1-2	62
		PA23-1006SWC-11C	2-3	63
		PA23-1006SWC-11D	3-4	64
		PA23-1006SWC-11E	4-5	65
		PA23-1006SWC-11F	5-6	66
		Composite	0-6	67
PA23-1006SWC-12	XY=2371453.13,352847.39	PA23-1006SWC-12A	0-1	68
		PA23-1006SWC-12B	1-2	69
		PA23-1006SWC-12C	2-3	70
		PA23-1006SWC-12D	3-4	71
		Composite	0-4	72
PA23-1006SWC-13	XY=2371118.18,352688.25	PA23-1006SWC-13A	0-1	73
		PA23-1006SWC-13B	1-2	74
		PA23-1006SWC-13C	2-3	75
		PA23-1006SWC-13D	3-4	76
		Composite	0-4	77
PA23-1006SWC-14	XY=2370722.45,352488.07	PA23-1006SWC-14A	0-1	78
		PA23-1006SWC-14B	1-2	79
		PA23-1006SWC-14C	2-3	80
		PA23-1006SWC-14D	3-4	81
		PA23-1006SWC-14E	4-5	82
		PA23-1006SWC-14F	5-6	83
		Composite	0-6	84

Table 5. Sample Locations at 1028S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-1028SWC-1	XY=2369308.64,351355.36	PA23-1028SWC-1A	0-1	1
		PA23-1028SWC-1B	1-2	2
		PA23-1028SWC-1C	2-3	3
		PA23-1028SWC-1D	3-4	4
		PA23-1028SWC-1E	4-5	5
		PA23-1028SWC-1F	5-6	6
		Composite	0-6	7
PA23-1028SWC-2	XY=2369510.35,351445.38	PA23-1028SWC-2A	0-1	8
		PA23-1028SWC-2B	1-2	9
		PA23-1028SWC-2C	2-3	10
		PA23-1028SWC-2D	3-4	11
		PA23-1028SWC-2E	4-5	12
		PA23-1028SWC-2F	5-6	13
		Composite	0-6	14
PA23-1028SWC-3	XY=2369768.20,351470.43	PA23-1028SWC-3A	0-1	15
		PA23-1028SWC-3B	1-2	16
		PA23-1028SWC-3C	2-3	17
		PA23-1028SWC-3D	3-4	18
		PA23-1028SWC-3E	4-5	19
		PA23-1028SWC-3F	5-6	20
		Composite	0-6	21
PA23-1028SWC-4	XY=2370023.60,351594.79	PA23-1028SWC-4A	0-1	22
		PA23-1028SWC-4B	1-2	23
		PA23-1028SWC-4C	2-3	24
		PA23-1028SWC-4D	3-4	25
		PA23-1028SWC-4E	4-5	26
		PA23-1028SWC-4F	5-6	27
		Composite	0-6	28

Table 5. Sample Locations at 1028S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-1028SWC-5	XY=2370309.35,351755.00	PA23-1028SWC-5A	0-1	29
		PA23-1028SWC-5B	1-2	30
		PA23-1028SWC-5C	2-3	31
		PA23-1028SWC-5D	3-4	32
		PA23-1028SWC-5E	4-5	33
		PA23-1028SWC-5F	5-6	34
		Composite	0-6	35
PA23-1028SWC-6	XY=2370556.54,351867.94	PA23-1028SWC-6A	0-1	36
		PA23-1028SWC-6B	1-2	37
		PA23-1028SWC-6C	2-3	38
		PA23-1028SWC-6D	3-4	39
		PA23-1028SWC-6E	4-5	40
		PA23-1028SWC-6F	5-6	41
		Composite	0-6	42
PA23-1028SWC-7	XY=2370451.45,352048.92	PA23-1028SWC-7A	0-1	43
		PA23-1028SWC-7B	1-2	44
		PA23-1028SWC-7C	2-3	45
		PA23-1028SWC-7D	3-4	46
		Composite	0-4	47
PA23-1028SWC-8	XY=2370204.26,351935.97	PA23-1028SWC-8A	0-1	48
		PA23-1028SWC-8B	1-2	49
		PA23-1028SWC-8C	2-3	50
		PA23-1028SWC-8D	3-4	51
		Composite	0-4	52
PA23-1028SWC-9	XY=2369918.49,351775.76	PA23-1028SWC-9A	0-1	53
		PA23-1028SWC-9B	1-2	54
		PA23-1028SWC-9C	2-3	55
		PA23-1028SWC-9D	3-4	56
		Composite	0-4	57

Table 5. Sample Locations at 1028S W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-1028SWC-10	XY=2369713.59,351667.13	PA23-1028SWC-10A	0-1	58
		PA23-1028SWC-10B	1-2	59
		PA23-1028SWC-10C	2-3	60
		PA23-1028SWC-10D	3-4	61
		PA23-1028SWC-10E	4-5	62
		PA23-1028SWC-10F	5-6	63
		Composite	0-6	64
PA23-1028SWC-11	XY=2369544.93,351810.63	PA23-1028SWC-11A	0-1	65
		PA23-1028SWC-11B	1-2	66
		PA23-1028SWC-11C	2-3	67
		PA23-1028SWC-11D	3-4	68
		PA23-1028SWC-11E	4-5	69
		PA23-1028SWC-11F	5-6	70
		Composite	0-6	71
PA23-1028SWC-12	XY=2369708.47,351962.68	PA23-1028SWC-12A	0-1	72
		PA23-1028SWC-12B	1-2	73
		PA23-1028SWC-12C	2-3	74
		PA23-1028SWC-12D	3-4	75
		PA23-1028SWC-12E	4-5	76
		PA23-1028SWC-12F	5-6	77
		Composite	0-6	78
PA23-1028SWC-13	XY=2370104.87,352177.71	PA23-1028SWC-13A	0-1	79
		PA23-1028SWC-13B	1-2	80
		PA23-1028SWC-13C	2-3	81
		PA23-1028SWC-13D	3-4	82
		Composite	0-4	83
PA23-1028SWC-14	XY=2370352.06,352290.65	PA23-1028SWC-14A	0-1	84
		PA23-1028SWC-14B	1-2	85
		PA23-1028SWC-14C	2-3	86
		PA23-1028SWC-14D	3-4	87
		Composite	0-4	88

Table 6. Sample Locations at 562N W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-562NWC-1	XY=2480231.42,460585.87	PA23-562NWC-1A	0-1	1
		PA23-562NWC-1B	1-2	2
		PA23-562NWC-1C	2-3	3
		PA23-562NWC-1D	3-4	4
		PA23-562NWC-1E	4-5	5
		PA23-562NWC-1F	5-6	6
		Composite	0-6	7
PA23-562NWC-2	XY=2480056.06,460392.76	PA23-562NWC-2A	0-1	8
		PA23-562NWC-2B	1-2	9
		PA23-562NWC-2C	2-3	10
		PA23-562NWC-2D	3-4	11
		PA23-562NWC-2E	4-5	12
		PA23-562NWC-2F	5-6	13
		Composite	0-6	14
PA23-562NWC-3	XY=2480294.70,460258.37	PA23-562NWC-3A	0-1	15
		PA23-562NWC-3B	1-2	16
		PA23-562NWC-3C	2-3	17
		PA23-562NWC-3D	3-4	18
		PA23-562NWC-3E	4-5	19
		PA23-562NWC-3F	5-6	20
		Composite	0-6	21
PA23-562NWC-4	XY=2480510.92,459863.61	PA23-562NWC-4A	0-1	22
		PA23-562NWC-4B	1-2	23
		PA23-562NWC-4C	2-3	24
		PA23-562NWC-4D	3-4	25
		PA23-562NWC-4E	4-5	26
		PA23-562NWC-4F	5-6	27
		Composite	0-6	28
PA23-562NWC-5	XY=2480150.70,459664.94	PA23-562NWC-5A	0-1	29
		PA23-562NWC-5B	1-2	30
		PA23-562NWC-5C	2-3	31
		PA23-562NWC-5D	3-4	32
		Composite	0-4	33

Table 6. Sample Locations at 562N W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-562NWC-6	XY=2479909.28,460081.91	PA23-562NWC-6A	0-1	34
		PA23-562NWC-6B	1-2	35
		PA23-562NWC-6C	2-3	36
		PA23-562NWC-6D	3-4	37
		Composite	0-4	38
PA23-562NWC-7	XY=2479610.14,459759.82	PA23-562NWC-7A	0-1	39
		PA23-562NWC-7B	1-2	40
		PA23-562NWC-7C	2-3	41
		PA23-562NWC-7D	3-4	42
		Composite	0-4	43
PA23-562NWC-8	XY=2479801.36,459395.09	PA23-562NWC-8A	0-1	44
		PA23-562NWC-8B	1-2	45
		PA23-562NWC-8C	2-3	46
		PA23-562NWC-8D	3-4	47
		Composite	0-4	48
PA23-562NWC-9	XY=2479438.71,459021.44	PA23-562NWC-9A	0-1	49
		PA23-562NWC-9B	1-2	50
		PA23-562NWC-9C	2-3	51
		PA23-562NWC-9D	3-4	52
		Composite	0-4	53
PA23-562NWC-10	XY=2479223.62,459241.63	PA23-562NWC-10A	0-1	54
		PA23-562NWC-10B	1-2	55
		PA23-562NWC-10C	2-3	56
		PA23-562NWC-10D	3-4	57
		Composite	0-4	58
PA23-562NWC-11	XY=2478957.24,459440.29	PA23-562NWC-11A	0-1	59
		PA23-562NWC-11B	1-2	60
		PA23-562NWC-11C	2-3	61
		PA23-562NWC-11D	3-4	62
		Composite	0-4	63
PA23-562NWC-12	XY=2478517.64,459130.17	PA23-562NWC-12A	0-1	64
		PA23-562NWC-12B	1-2	65
		PA23-562NWC-12C	2-3	66
		PA23-562NWC-12D	3-4	67
		Composite	0-4	68

Table 6. Sample Locations at 562N W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-562NWC-13	XY=2478708.86,458765.44	PA23-562NWC-13A	0-1	69
		PA23-562NWC-13B	1-2	70
		PA23-562NWC-13C	2-3	71
		PA23-562NWC-13D	3-4	72
		PA23-562NWC-13E	4-5	73
		PA23-562NWC-13F	5-6	74
		Composite	0-6	75
PA23-562NWC-14	XY=2478315.94,458406.00	PA23-562NWC-14A	0-1	76
		PA23-562NWC-14B	1-2	77
		PA23-562NWC-14C	2-3	78
		PA23-562NWC-14D	3-4	79
		PA23-562NWC-14E	4-5	80
		PA23-562NWC-14F	5-6	81
		Composite	0-6	82
PA23-562NWC-15	XY=2478163.21,458685.40	PA23-562NWC-15A	0-1	83
		PA23-562NWC-15B	1-2	84
		PA23-562NWC-15C	2-3	85
		PA23-562NWC-15D	3-4	86
		Composite	0-4	87
PA23-562NWC-16	XY=2477828.40,458743.52	PA23-562NWC-16A	0-1	88
		PA23-562NWC-16B	1-2	89
		PA23-562NWC-16C	2-3	90
		PA23-562NWC-16D	3-4	91
		Composite	0-4	92
PA23-562NWC-17	XY=2478014.33,458498.56	PA23-562NWC-17A	0-1	93
		PA23-562NWC-17B	1-2	94
		PA23-562NWC-17C	2-3	95
		PA23-562NWC-17D	3-4	96
		PA23-562NWC-17E	4-5	97
		PA23-562NWC-17F	5-6	98
		Composite	0-6	99

Table 6. Sample Locations at 562N W-C

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-562NWC-18	XY=2477893.87,458156.17	PA23-562NWC-18A	0-1	100
		PA23-562NWC-18B	1-2	101
		PA23-562NWC-18C	2-3	102
		PA23-562NWC-18D	3-4	103
		PA23-562NWC-18E	4-5	104
		PA23-562NWC-18F	5-6	105
		Composite	0-6	106

Table 7. Sample Locations at Morris Island North

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-MIN-1	XY=2345955.19,327117.03	PA23-MIN-1A	0-1	1
		PA23-MIN-1B	1-2	2
		PA23-MIN-1C	2-3	3
		PA23-MIN-1D	3-4	4
		PA23-MIN-1E	4-5	5
		PA23-MIN-1F	5-6	6
		Composite	0-6	7
PA23-MIN-2	XY=2345491.74,327117.03	PA23-MIN-2A	0-1	8
		PA23-MIN-2B	1-2	9
		PA23-MIN-2C	2-3	10
		PA23-MIN-2D	3-4	11
		PA23-MIN-2E	4-5	12
		PA23-MIN-2F	5-6	13
		Composite	0-6	14
PA23-MIN-3	XY=2345077.91,327117.03	PA23-MIN-3A	0-1	15
		PA23-MIN-3B	1-2	16
		PA23-MIN-3C	2-3	17
		PA23-MIN-3D	3-4	18
		PA23-MIN-3E	4-5	19
		PA23-MIN-3F	5-6	20
		Composite	0-6	21
PA23-MIN-4	XY=2344747.71,327081.03	PA23-MIN-4A	0-1	22
		PA23-MIN-4B	1-2	23
		PA23-MIN-4C	2-3	24
		PA23-MIN-4D	3-4	25
		PA23-MIN-4E	4-5	26
		PA23-MIN-4F	5-6	27
		Composite	0-6	28
PA23-MIN-5	XY=2344343.98,326995.90	PA23-MIN-5A	0-1	29
		PA23-MIN-5B	1-2	30
		PA23-MIN-5C	2-3	31
		PA23-MIN-5D	3-4	32
		PA23-MIN-5E	4-5	33
		PA23-MIN-5F	5-6	34
		Composite	0-6	35

Table 7. Sample Locations at Morris Island North

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-MIN-6	XY=2344566.92,326829.24	PA23-MIN-6A	0-1	36
		PA23-MIN-6B	1-2	37
		PA23-MIN-6C	2-3	38
		PA23-MIN-6D	3-4	39
		PA23-MIN-6E	4-5	40
		PA23-MIN-6F	5-6	41
		Composite	0-6	42
PA23-MIN-7	XY=2345166.65,326885.89	PA23-MIN-7A	0-1	43
		PA23-MIN-7B	1-2	44
		PA23-MIN-7C	2-3	45
		PA23-MIN-7D	3-4	46
		PA23-MIN-7E	4-5	47
		PA23-MIN-7F	5-6	48
		Composite	0-6	49
PA23-MIN-8	XY=2345486.43,326889.56	PA23-MIN-8A	0-1	50
		PA23-MIN-8B	1-2	51
		PA23-MIN-8C	2-3	52
		PA23-MIN-8D	3-4	53
		PA23-MIN-8E	4-5	54
		PA23-MIN-8F	5-6	55
		Composite	0-6	56
PA23-MIN-9	XY=2345660.47,326749.03	PA23-MIN-9A	0-1	57
		PA23-MIN-9B	1-2	58
		PA23-MIN-9C	2-3	59
		PA23-MIN-9D	3-4	60
		PA23-MIN-9E	4-5	61
		PA23-MIN-9F	5-6	62
		Composite	0-6	63
PA23-MIN-10	XY=2345356.79,326388.15	PA23-MIN-10A	0-1	64
		PA23-MIN-10B	1-2	65
		PA23-MIN-10C	2-3	66
		PA23-MIN-10D	3-4	67
		PA23-MIN-10E	4-5	68
		PA23-MIN-10F	5-6	69
		Composite	0-6	70

Table 7. Sample Locations at Morris Island North

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-MIN-11	XY=2345099.55,326578.94	PA23-MIN-11A	0-1	71
		PA23-MIN-11B	1-2	72
		PA23-MIN-11C	2-3	73
		PA23-MIN-11D	3-4	74
		PA23-MIN-11E	4-5	75
		PA23-MIN-11F	5-6	76
		Composite	0-6	77
PA23-MIN-12	XY=2344639.57,326509.69	PA23-MIN-12A	0-1	78
		PA23-MIN-12B	1-2	79
		PA23-MIN-12C	2-3	80
		PA23-MIN-12D	3-4	81
		PA23-MIN-12E	4-5	82
		PA23-MIN-12F	5-6	83
		Composite	0-6	84
PA23-MIN-13	XY=2344101.39,326657.63	PA23-MIN-13A	0-1	85
		PA23-MIN-13B	1-2	86
		PA23-MIN-13C	2-3	87
		PA23-MIN-13D	3-4	88
		PA23-MIN-13E	4-5	89
		PA23-MIN-13F	5-6	90
		Composite	0-6	91
PA23-MIN-14	XY=2343988.55,326215.72	PA23-MIN-14A	0-1	92
		PA23-MIN-14B	1-2	93
		PA23-MIN-14C	2-3	94
		PA23-MIN-14D	3-4	95
		Composite	0-4	96
PA23-MIN-15	XY=2344448.52,325996.78	PA23-MIN-15A	0-1	97
		PA23-MIN-15B	1-2	98
		PA23-MIN-15C	2-3	99
		PA23-MIN-15D	3-4	100
		Composite	0-4	101
PA23-MIN-16	XY=2345068.54,325920.32	PA23-MIN-16A	0-1	102
		PA23-MIN-16B	1-2	103
		PA23-MIN-16C	2-3	104
		PA23-MIN-16D	3-4	105
		Composite	0-4	106

Table 8. Sample Locations Summary

SAMPLE Location	# of Sample Locations	0-4 ft Sample Locations	0-6 ft Samples Locations	Total # of Samples
PA23-1088SWC-	13	4	9	83
PA23-1110SWC-	10	8	2	54
PA23-1056SWC-	17	11	6	97
PA23-1006SWC-	14	7	7	84
PA23-1028SWC-	14	5	9	88
PA23-562NWC-	18	10	8	106
PA23-MIN-	22	9	13	136
Total	108	54	54	648

Table 7. Sample Locations at Morris Island North

SAMPLE Location	Sample Coordinates (SC State Plane NAD83)	Sub-Sample ID	Sample Depth (ft)	Sample Number
PA23-MIN-17	XY=2344579.01,325041.67	PA23-MIN-17A	0-1	107
		PA23-MIN-17B	1-2	108
		PA23-MIN-17C	2-3	109
		PA23-MIN-17D	3-4	110
		Composite	0-4	111
PA23-MIN-18	XY=2344336.77,325574.41	PA23-MIN-18A	0-1	112
		PA23-MIN-18B	1-2	113
		PA23-MIN-18C	2-3	114
		PA23-MIN-18D	3-4	115
		Composite	0-4	116
PA23-MIN-19	XY=2343670.60,325536.54	PA23-MIN-19A	0-1	117
		PA23-MIN-19B	1-2	118
		PA23-MIN-19C	2-3	119
		PA23-MIN-19D	3-4	120
		Composite	0-4	121
PA23-MIN-20	XY=2343610.04,325102.26	PA23-MIN-20A	0-1	122
		PA23-MIN-20B	1-2	123
		PA23-MIN-20C	2-3	124
		PA23-MIN-20D	3-4	125
		Composite	0-4	126
PA23-MIN-21	XY=2344261.07,324673.04	PA23-MIN-21A	0-1	127
		PA23-MIN-21B	1-2	128
		PA23-MIN-21C	2-3	129
		PA23-MIN-21D	3-4	130
		Composite	0-4	131
PA23-MIN-22	XY=2343747.30,324691.76	PA23-MIN-22A	0-1	132
		PA23-MIN-22B	1-2	133
		PA23-MIN-22C	2-3	134
		PA23-MIN-22D	3-4	135
		Composite	0-4	136

Appendix D

Laboratory Data

13.2 Test Procedures

Test procedures shall include or reference the test configuration and test objectives. Test procedures shall also include provisions for assuring that prerequisites and suitable environmental conditions are met, adequate instrumentation is available and used, and necessary monitoring is performed. Prerequisites shall include the following, as applicable:

- calibrated instrumentation
- appropriate equipment
- trained personnel
- condition of test equipment and item to be tested
- suitable environmental conditions
- provisions for data acquisition

As an alternative to this section, appropriate sections of related documents, such as the current version of ASTM methods, supplier manuals, equipment maintenance instructions, or approved drawings with acceptance criteria, can be used.

Departures from documented policies, procedures, or standards may be permitted at the written request of the client or specifying agency provided the safety and health of persons performing the testing or inspection are not compromised. Any such departure shall be noted on any test or inspection reports.

LABORATORY TEST ASSIGNMENT

INSIGHT GROUP

Project Name: _____ Date Assigned: _____

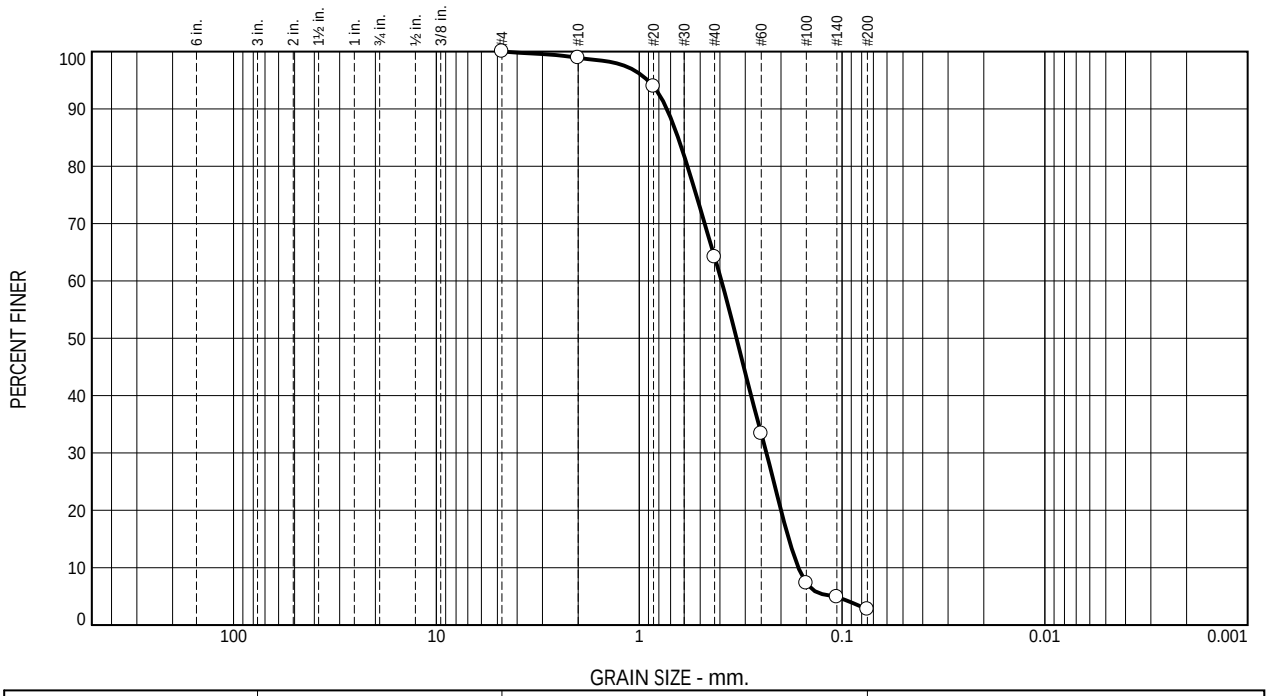
Client Project No.: _____ Need By Date: _____

Client: _____ Report to: _____

Sample ID				Index Testing				Grain Size		Triaxial		CBR								
Test No.	Depth (ft)		Sample No.	Moisture	Atterburg Limits 1 pt.	Atterburg Limits 3 pt.	%200 Wash	Full Grain Size D6913	Full Grain Size D6913 w/ hydro.	UU	CU	CBR Soaked	CBR Unsoaked	Consolidation	Std. Proctor	Mod. Proctor	pH	Resistivity	Organic Content	Notes
	Start	End																		

LAB USE Relenquished By: _____ Received By: _____ Drop off date: _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.1	34.7	61.4	2.8	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#4	100.0		
#10	98.9		
#20	93.9		
#40	64.2		
#60	33.4		
#100	7.3		
#140	4.9		
#200	2.8		

· (no specification provided)

Source of Sample: B40 Sand
Sample Number: 9.24.20 - 1

Material Description
Red poorly graded Sand

Sieve Test (ASTM D6913)
Test Date: 9.25.20 Technician: D. Carter
Test Notes

Hydrometer Test
Test Date: _____ Technician: _____
Test Notes

Atterberg (ASTM D4318)
PL= LL= PI=

Coefficients
D_{90}= 0.7307 D_{85}= 0.6429
D_{60}= 0.3929 D_{50}= 0.3312
D_{30}= 0.2356 D_{15}= 0.1829
D_{10}= 0.1642
C_u= 2.39 C_c= 0.86

USCS (ASTM D2487)
SP

Date Sampled: 9.24.20
Date Received: 9.24.20
Checked By: J. Hatch
Title: Sr Engineer

INSIGHT GROUP
A CHRISTOPHER COMPANY

Client:
Project:
Project No: Figure

3359 Meeting Street, North Charleston, SC 29405. Page 1 of 1.
The results contained in this report relate only to the items tested. This report shall not be reproduced, except in full, without prior written approval.

MTC
MATERIALS TESTING CENTER

USACE CERTIFICATE OF LABORATORY VALIDATION

ERDC
ENGINEER RESEARCH & DEVELOPMENT CENTER

Insight Group, LLC

3359 Meeting Street, Ste 101
North Charleston, SC,
Jason Hatch
(843) 514-0019

has demonstrated, by abbreviated audit of its AASHTO accreditation, or by inspection of required records, equipment, procedures, facilities, and/or final reports, its proficiency to perform testing of construction materials, as established by the quality standards of AASHTO R 18 guidance and the requirements of the applicable ASTM standards.

THIS USACE CERTIFICATE OF LABORATORY VALIDATION IS ACCURATE AS OF ITS DATE AND TIME OF GENERATION:

20 JAN 2023 AT 14:14 HOURS

ALL METHODS LISTED ON THIS CERTIFICATE OF VALIDATION WILL EXPIRE ON 10/21/2024

PLEASE CONFIRM THE CURRENT VALIDATION STATUS OF THIS LABORATORY USING THE SEARCH FEATURE ON OUR PUBLIC WEBSITE: https://mtc.erdc.dren.mil

Chad A. Gartrell, PE, Director
USACE Materials Testing Center
Vicksburg, Mississippi, USA

AGGREGATE

Aggregate - C 29 - Unit Weight and Voids in Aggregate
Aggregate - C 40 - Organic Impurities
Aggregate - D 75 - Sampling
Aggregate - C 88 - Sulfate Soundness
Aggregate - C 117 - Material Finer than 75 µm (No. 200) Sieve
Aggregate - C 123 - Lightweight Particles
Aggregate - C 127 - Specific Gravity & Absorption in Coarse Aggregate
Aggregate - C 128 - Specific Gravity & Absorption in Fine Aggregate
Aggregate - C 131 - Los Angeles Abrasion Resistance on Small-Size Coarse Aggregate
Aggregate - C 136 - Sieve Analysis of Aggregates
Aggregate - C 142 - Clay Lumps
Aggregate - E 329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
Aggregate - C 535 - Los Angeles Abrasion Resistance on Large Size Coarse Aggregate
Aggregate - C 566 - Total Moisture Content
Aggregate - C 702 - Reducing Samples to Testing Size
Aggregate - C 1077 - Concrete and Concrete Aggregate Testing Standards (Quality Standards)
Aggregate - C 1252 - Uncompacted Void Content of Fine Aggregate (as influenced by particle shape, surface texture, and grading)
Aggregate - C 1260 - Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
Aggregate - D 2419 - Sand Equivalent Value
Aggregate - D 4791 - Flat and Elongated Particles in Course Aggregate
Aggregate - D 5821 - Percentage of Fractured Particles in Coarse Aggregate

BITUMINOUS

Bituminous - D 2950 - Density of Bituminous Concrete in Place by Nuclear Methods

CONCRETE

Concrete - C 31 - Making and Curing Test Specimens in the Field
Concrete - C 39 - Compressive Strength of Cylindrical Specimens
Concrete - C 42 - Drilled Cores and Sawed Beams
Concrete - C 78 - Flexural Strength by Third Point Loading
Concrete - C 138 - Unit Weight and Air Content by Gravimetric
Concrete - C 143 - Slump
Concrete - C 157 - Length Change of Concrete and Mortars
Concrete - C 172 - Sampling
Concrete - C 173 - Air Content by Volumetric ***required if C231 not performed***
Concrete - C 174 - Concrete Thickness by Drilled Cores

Concrete - C 192 - Making and Curing Test Specimens in Laboratory
Concrete - C 231 - Air Content by Pressure ***required if C173 not performed***
Concrete - E 329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
Concrete - C 403 - Time of Setting by Penetration Resistance
Concrete - C 496 - Splitting Tensile Strength
Concrete - C 511 - Moist Cabinets, Moist Rooms, Water Storage Tanks
Concrete - C 617 - Capping Cylindrical Specimens
Concrete - C 642 - Density, Absorption, and Voids
Concrete - C 803 - Penetration Resistance of Hardened Concrete
Concrete - C 805 - Rebound Number of Hardened Concrete
Concrete - C 1064 - Temperature of Concrete
Concrete - C 1077 - Concrete and Concrete Aggregate Testing Standards (Quality Standards)
Concrete - C 1140 - Preparing and Testing Specimens from Shotcrete Test Panels
Concrete - C 1202 - Electrical Indication of Concrete to Resist Chloride Ion
Concrete - C 1231 - Unbonded Caps
Concrete - C 1542 - Measuring Length of Concrete Cores
Concrete - C 1567 - Potential Alkali Silica Reactivity Cementitious Materials and Aggregate Accelerated Mortar Bar Method

MASONRY

Masonry - C 67 - Sampling and Testing Brick and Structural Clay Tile
Masonry - C 140 - Sampling and Testing Concrete Masonry and Related Units
Masonry - E 329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
Masonry - C 511 - Mixing Rooms, Moist Cabinets, Cure Tanks
Masonry - C 1019 - Sampling and Testing Grout
Masonry - C 1093 - Masonry Testing Standard (Quality Standards)

SOILS

Soils - E 329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
Soils - D 421 - Dry Preparation for Particle Size Distribution & Soil Constants
Soils - D 422 - Particle Size Analysis (Sieve and Hydrometer)
Soils - D 558 - Moisture-Density of Soil-Cement
Soils - D 559 - Wetting & Drying Soil-Cement
Soils - D 560 - Freezing & Thawing Soil-Cement
Soils - D 698 - Compaction Characteristics by Standard Effort
Soils - D 854 - Specific Gravity of Soils
Soils - D 1140 - Material Finer than 75 m (No. 200) Sieve
Soils - D 1556 - Density & Unit Weight by Sand Cone
Soils - D 1557 - Compaction Characteristics by Modified Effort
Soils - D 1633 - Compressive Strength of Molded Soil-Cement Cylinders

Soils - D 1883 - CA Bearing Ratio (CBR)
Soils - D 2166 - Unconfined Compressive Strength
Soils - D 2216 - Water Content
Soils - D 2434 - Permeability of Granular Soils (Constant Head Method) (Withdrawn 2015)
Soils - D 2435 - One-Dimensional Consolidation Properties
Soils - D 2487 - Classification of Soils
Soils - D 2488 - Description & Identification of Soils (Visual-Manual Procedure)
Soils - D 2850 - Unconsolidated, Undrained Strength in Triaxial Compression
Soils - D 2937 - Density by Drive Cylinder Method
Soils - D 2974 - Moisture, Ash, & Organic Matter of Peat & Other Organic Soils
Soils - D 3080 - Direct Shear Test in Consolidated Drained Conditions
Soils - D 3740 - Soil and Rock Testing Standards (Quality Standard)
Soils - D 4318 - Liquid & Plastic Limits & Plasticity Index
Soils - D 4546 - One-Dimensional Swell or Settlement Potential
Soils - D 4643 - Determination of Water Content of Soil by Microwave Oven
Soils - D 4718 - Correction of Unit Weight and Water Content for Soils Containing Oversize Particles
Soils - D 4767 - Consolidated-Undrained Triaxial Compression
Soils - D 4944 - Field Moisture Content of Soil by Calcium Carbide Gas Pressure Tester
Soils - D 5084 - Hydraulic Conductivity using a Flexible Wall Permeameter
Soils - D 6913 - Particle-Size Distribution of Soils Using Sieve Analysis
Soils - D 6938 - Density and Water Content by Shallow Depth Nuclear Method
Soils - D 6951 - Dynamic Cone Penetrometer in Shallow Pavement Applications
Soils - D 7928 - Fine Grain Distribution with Hydrometer