



October 22, 2024

Jennifer Bistyga
Senior Project Manager
Cummins Cederberg, Inc.
888 S. Andrews Avenue, Suite 206
Ft. Lauderdale, FL 33316

RE: *Field Investigation Report*
Phillippi Creek Maintenance Dredging Feasibility Study Project
West Coast Inland Navigation District
Sarasota County, Florida

Dear Ms. Bistyga,

Athena Technologies, Inc., is pleased to submit this Field Investigation Report for the abovementioned project. Should you have any questions or concerns regarding the attached report, please do not hesitate to contact me via the information below.

Respectfully,

A handwritten signature in black ink, appearing to read "J. Adam Freeze", is written over a light gray circular background.

J. Adam Freeze
Vice President / Geologist



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FIELD INVESTIGATION REPORT

PHILLIPPI CREEK MAINTENANCE DREDGING FEASIBILITY PROJECT WEST FLORIDA INLAND NAVIGATION DISTRICT SARASOTA COUNTY, FLORIDA

October 2024

Prepared for:

Cummins Cederberg, Inc.
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Ft. Lauderdale, FL 33316

Prepared by:

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Section 1: Introduction

In March 2024, Athena Technologies, Inc. (Athena) was contracted by Cummins Cederberg, Inc. to conduct environmental and geotechnical vibracore sampling and prepare a corresponding report in support of the following project: *Phillippi Creek Maintenance Dredging Feasibility Study Project, Sarasota County, Florida*. The scope of work included the collection of vibracore samples from 8 locations within Phillippi Creek in Sarasota, Florida (**Figure 1**). The cores were required to facilitate proposed dredging activities in Phillippi Creek. Two vibracores were collected from each sample location. The first vibracore was collected to a depth of -4 feet relative to Mean Low Water (MLW) and sediment from the core was submitted to Advanced Environmental Laboratories, Inc. (AEL) for chemical analyses. The second vibracore was collected to a depth of -5 feet MLW and was retained by Athena to allow for geological logging, core photography, and geotechnical analysis. The vibracores were collected in May 2024, and a summary of the vibracore collection methodology and findings of the field investigation are presented below.

Section 2: Methodology

Athena utilized the 24-foot research vessel, *Good Vibrations*, as the sampling platform for this project. *Good Vibrations* was equipped with all required United States Coast Guard (USCG) safety gear and was operated by a USCG-certified 100 Ton Master Captain. A Trimble Differential Global Positioning System (capable of sub-meter accuracy) interfaced with HYPACK was utilized for primary navigation. Horizontal coordinates were recorded in North American Datum of 1983, State Plane Coordinate System, Florida West (Zone 0902), U.S. Survey Feet. Real-time tide elevation data were obtained using a Trimble R12i Global Navigation Satellite System receiver interfaced with the Trimble RTX Network, which served as the base station.

During field operations, *Good Vibration* was immobilized over the desired sample locations using spuds. Once on station, the coordinates at the vessel location were compared with the coordinates for the desired sample location to ensure accurate vessel positioning. Upon satisfactory positioning, a water depth was collected via lead line or fathometer and final horizontal coordinates were recorded at each station. Tide elevation data were also recorded in the field and were referenced to North American Vertical Datum of 1988 (NAVD 88). The tide elevation was then converted to MLW in the field using the National Oceanic and Atmospheric Administration's (NOAA) VDatum software (version 4.6.1), to determine the sediment surface elevation at each sample location.

FIGURE 1: Study Area Location Map
Phillippi Creek Maintenance Dredging Feasibility Study Project
Sarasota County, Florida



May 2024

0 1 2 3
miles



IMAGE SOURCE:
Sentinel 2
ESA
December 2023

Athena Technologies, Inc.
PO Box 68
McClellanville, SC 29458
843-887-3800

Environmental Vibracore Collection and Sample Analysis

Once the vessel was immobilized over the sample location, Athena's custom-designed and specially fabricated vibracore system was deployed. The vibracore system consists of a generator with a mechanical vibrator attached via cable to a 3-inch diameter, decontaminated, stainless-steel sample barrel with a cellulose acetate butyrate (CAB) liner insert. The sample barrel was lowered to the sediment surface through a moon pool in the deck of the vessel by attaching lengths of drill stem. The vibracore machine was then turned on and the sample barrel was allowed to penetrate until it reached the project depth of -4 feet MLW, or until refusal was encountered. The sample barrel was then retrieved using an electric winch. Once the sample barrel was on deck, the CAB liner was removed from the stainless-steel sample barrel, capped on both ends and labeled. A summary table containing final vibracore location coordinates, elevation data, and penetration and recovery data has been included as **Table 1**. A vibracore location map has been included as **Figure 2**.

Athena's scientist subsequently opened the core on the deck of *Good Vibrations* and collected 1 composite sample from each core. The sediment from the core was homogenized and placed in containers supplied by AEL, and a chain of custody was maintained for each sample. The analytical samples were delivered by Athena's scientist to AEL's laboratory in Jacksonville, Florida, and were analyzed for the following: metals (Al, As, Ba Cd, Cr, Cu, Pb, Ni, Se, Ag, Zn) (EPA 6010), mercury (EPA 7471A), pesticides (EPA 8081), polyaromatic hydrocarbons (PAHs) (EPA 8270C), polychlorinated biphenyls (PCBs) (EPA 8082A), and total petroleum hydrocarbons (TPH) (FL-PRO). A copy of the AEL analytical report and summary tables for the environmental samples has been included as **Appendix A**.

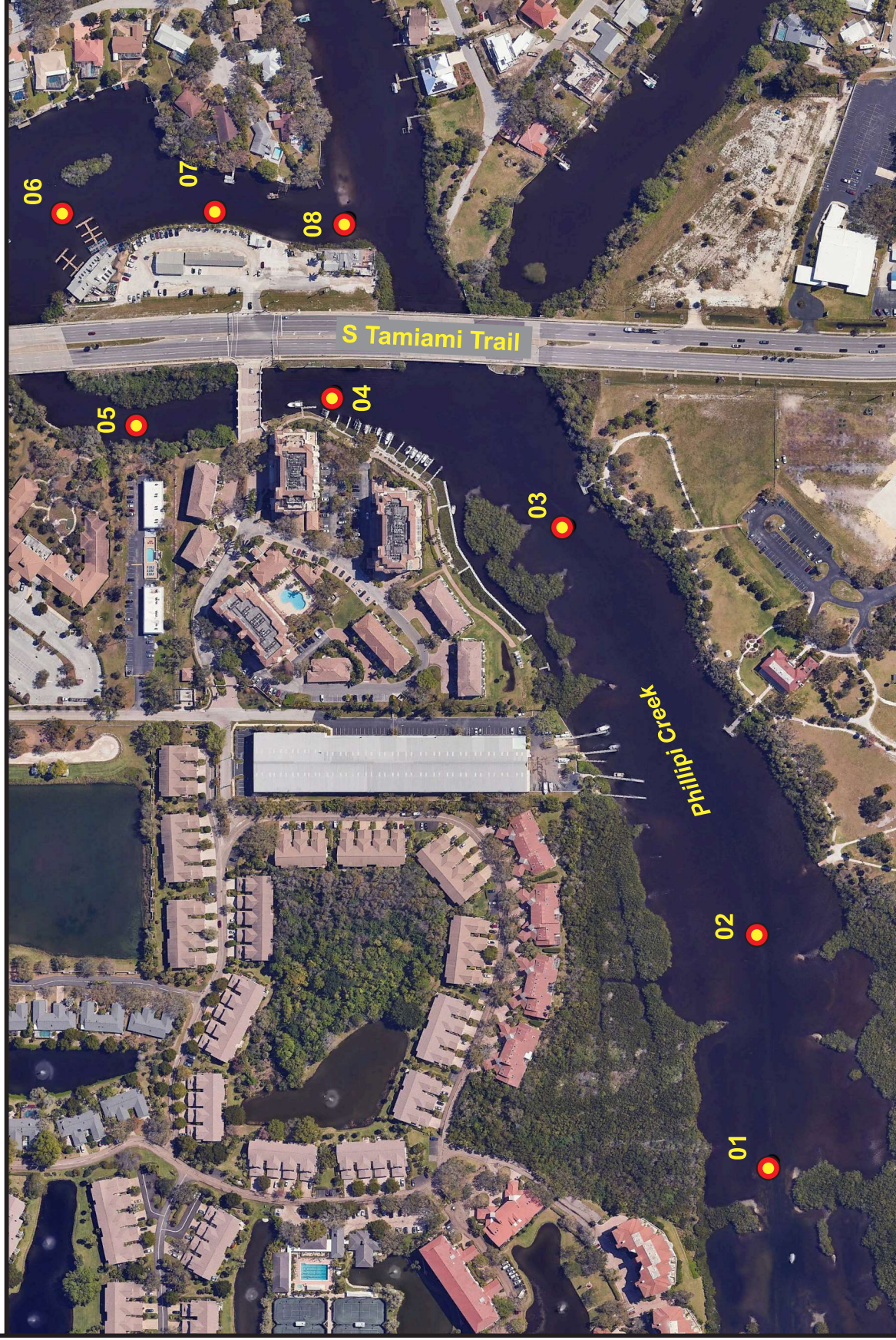
Geotechnical Vibracore Collection and Sample Analysis

Geotechnical vibracores were collected using the same vibracore system discussed above. The vibracore machine was turned on and the sample barrel was allowed to penetrate until the bottom of the sample barrel reached a project depth of -5 feet relative to MLW, or refusal. Once the sample barrel reached project depth or refusal, the machine was turned off and the sample barrel was retrieved using an electric winch. The cores were then measured, capped and labeled. The completed geotechnical vibracores were opened longitudinally at Athena's core processing facility in McClellanville, South Carolina. The cores were photographed after opening and were logged by Athena's geologist in accordance with protocol outlined in ASTM D 2488. Lithologic intervals in each core were also assigned a Unified Soil Classification System (USCS) designation, in accordance with protocol outlined in ASTM D 2487. Draft core logs and photo-mosaic images of the cores were provided to Cummins Cederberg, Inc. to allow for selection of sediment sub-sample intervals.

Geotechnical Analysis

Upon receipt of sub-sample intervals from Cummins Cederberg, Inc., Athena extracted and shipped the sub-samples to Terracon Consultants, Inc. (Terracon) in Jacksonville, Florida. Terracon is a USACE-certified geotechnical laboratory. Sub-sample intervals were determined based on lithologic breaks within each core and were collected at a frequency of 1 to 3 composite sub-samples per core. The laboratory described the sub-samples in accordance with ASTM D 2487 and each sub-sample was analyzed for grain size distribution in accordance with ASTM D 6913 using the following sieve sizes: 3/4-inch, 5/8-inch, No. 3.5, No. 4, No. 5, No 7, No. 10, No.14, No. 18, No. 25, No. 35, No. 45, No. 60, No. 80, No. 120, No. 170, No. 200, and No. 230. Munsell color designations (wet and dry) were also assigned for each sub-sample. A laboratory grain size data summary has been included as **Table 2**. Core photographs and logs have been included as **Appendix B**, and grain size distribution curves and granulometric reports have been included as **Appendix C**.

FIGURE 2: Vibracore Location Map
Phillippi Creek Maintenance Dredging Feasibility Study Project
Sarasota County, Florida



- Vibracores collected in May 2024

- Sample prefix PC-24- removed to improve figure clarity

0 200 400 feet

Vibracore Location



IMAGE SOURCE:
 Google Earth 2023

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Section 3: Discussion

The study area lies within a tidal channel situated to the east of Siesta Key and the Gulf Intracoastal Waterway (GIWW) in Sarasota, Florida. The general area along this portion of the Florida coastline experiences a mean tidal range of approximately 1 to 2 feet (NOAA). Sediment surface elevations at the sample locations ranged from -1.7 feet to -4.6 feet MLW. Additional discussion regarding vibracore characteristics and site conditions is presented below.

- Refusal was encountered at locations PC-24-05, PC-24-06, and PC-24-07. In each case, refusal was comprised of limestone or gravel-sized limestone fragments. The geotechnical vibracore at location PC-24-03 reached the proposed project depth of -5 feet MLW; however, refusal was encountered almost immediately below that elevation and was observed to be comprised of gravel-sized shells.
- Vibracores PC-24-01 through PC-24-03 were positioned in the entrance channel to Phillippi Creek and were the closest locations to the GIWW. As a result, the locations likely experienced the highest current velocities in the study area. Gravel-sized oyster shells dominated the surficial lithology in vibracores PC-24-01 and PC-24-03, and those surficial units were underlain by a bioturbated, poorly graded fine-grained quartz sand (USCS = SP). Although the shell component was missing from vibracore PC-24-02, the same bioturbated, poorly graded fine-grained quartz sand (USCS = SP) interval was observed in that core. Vibracores PC-24-01 and PC-24-02 terminated in a bioturbated, silty sand (USCS = SM) interval.
- Vibracores PC-24-04 through PC-24-08 were positioned within an abandoned oxbow located north of Phillippi Creek and running under the South Tamiami Trail bridge. Since the cores were located outside of the active currents in the main channel, most of the cores were comprised entirely of a fat organic silt (USCS = OH) with medium plasticity. Multiple peat intervals were observed in vibracore PC-24-08 and the core was also dominated by fine-grained organic silt; however, fine quartz sand was observed in the matrix and bedding within the core, most likely due to the fact that the core was located closer to the main Phillippi Creek channel.
- The fine-grained fraction in each of the cores was primarily comprised of organic silt/clay. Roots and organic fibers were routinely observed, and a strong organic odor was commonly documented, in the fine-grained intervals while logging the cores. The strong organic odor was most notable in the surficial intervals at PC-24-01 and PC-24-03, and in vibracores PC-24-04 through PC-24-07.

- A total of 15 sub-samples were analyzed from the vibracores. The average percentage of fine-grained constituents for all sub-samples was approximately 32.6%, while the average gravel-sized component (which was primarily comprised of shells) was 7.6%. The average mean grain size for all sub-samples was 0.48 millimeters (mm); however, the average mean grain size for sub-samples reporting less than 15% gravel was 0.17mm.

Note Regarding Penetration and Recovery

It should be noted that it is common for sediment within a core to compact while the vibracore machine is operating. The degree of compaction depends on sediment characteristics and can vary significantly. For example, a poorly graded, fine-grained quartz sand may have a compaction ratio of 10-20%, while a well graded, fine to coarse-grained quartz/shell sand may have a compaction ratio of greater than 30%. Additionally, if denser sediments overly softer sediments, the sediments at depth do not have enough density to “push” the denser material up the sample barrel as the barrel advances. In this scenario, the sample barrel typically rods or bypasses the softer material at depth. As a result, it is common to have a discrepancy between the penetration depths and recovery lengths for vibracores. The cores collected from Phillippi Creek averaged approximately 85% recovery, which, based on our experience, is common for the types of sediments observed in the geotechnical vibracores from the study area.

Note Regarding Laboratory Analyses and USCS Designations

It should be noted that hydrometer analysis was not conducted on the fine-grained fraction of the sub-samples and, as a result, the relative percentages of silt- and clay-sized particles in each sub-sample was not established. In response, the laboratory assigned a default designation of “silt” and a liquid limit of greater than 50% to all material passing the No. 230 sieve. Additionally, organic content analysis was not conducted on the sub-samples. As a result, the laboratory assigned a default designation of “inorganic” to the fine-grained fraction. Lacking sufficient laboratory data to differentiate between silt- and clay-sized particles, or organic and inorganic content, the USCS classification assigned by Athena’s geologist took precedence on the core logs, when a discrepancy was noted between the laboratory USCS designation and the USCS designation in the associated core log.

Section 4: References

ASTM D 2487-11, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System), ASTM International, West Conshohocken, PA. 2011.

ASTM D 2488-00, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), ASTM International, West Conshohocken, PA. 2000.

ASTM D 6913-04, Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis, ASTM International, West Conshohocken, PA. 2004.

Environmental Protection Agency (EPA), Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA publication SW-846, Third Edition, Final Updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), and V (2015).

National Oceanic and Atmospheric Administration, National Ocean Service, Center for Operational Oceanographic Products and Services, Tides & Currents, Station ID: 8726083 (Sarasota, FL); accessed August 6, 2024.
<https://tidesandcurrents.noaa.gov/stationhome.html?id=8726083>

TABLES

TABLE 1 - Vibracore Summary Table
Phillippi Creek Maintenance Dredging Feasibility Study Project
Sarasota County, Florida
May 2024

Boring ID	Collection Date	Time	East ^[1] (x)	North ^[1] (y)	Water Depth (ft)	Tide Elevation (ft MLW)	Sediment Surface Elevation (ft MLW)	Bottom of Boring Elevation (ft MLW)	Sample Type	Penetration (ft)	Recovery (ft)	Notes
PC-24-01	5/21/2024	11:24	481921.54	1068192.29	5.3	1.5	-3.8	-5.8	Environmental	2.0	1.0	
								-7.8	Geotechnical	4.0	3.3	
PC-24-02	5/21/2024	11:01	482448.00	1068220.16	5.3	1.7	-3.6	-5.1	Environmental	1.5	1.0	
								-7.1	Geotechnical	3.5	2.9	
PC-24-03	5/21/2024	10:33	483375.05	1068648.19	4.5	1.3	-3.2	-4.2	Environmental	1.0	0.7	
								-5.2	Geotechnical	2.0	1.5	Encountered refusal in gravel-sized shells with clay.
PC-24-04	5/21/2024	10:19	483681.49	1069176.66	5.9	1.4	-4.6	-5.1	Environmental	0.5	0.5	
								-6.6	Geotechnical	2.0	1.8	
PC-24-05	5/21/2024	9:40	483608.03	1069619.28	5.3	2.1	-3.2	-3.9	Environmental	0.7	0.7	
								-4.2	Geotechnical	1.0	0.8	Made 2 attempts. Encountered refusal on rock fragments/limestone.
PC-24-06	5/21/2024	9:28	484103.35	1069790.65	3.2	0.9	-2.3	-3.3	Environmental	1.0	1.0	
								-4.7	Geotechnical	2.4	2.4	Made 2 attempts. Encountered refusal on rock fragments/limestone.
PC-24-07	5/21/2024	8:35	484103.23	1069440.13	2.7	1.0	-1.7	-2.9	Environmental	1.2	1.0	
								-4.2	Geotechnical	2.5	2.3	Made 2 attempts. Encountered refusal on rock fragments/limestone.
PC-24-08	5/21/2024	8:57	484078.06	1069144.13	2.8	0.8	-2.0	-4.5	Environmental	2.5	2.0	Sampled core from 0-1 foot below sediment surface.
								-5.0	Geotechnical	3.0	2.2	
Notes	ft = feet											
	MLW = Mean Low Water											
	[1] = State Plane Coordinates, Florida West, Zone 0902, U.S. Survey Feet											
	Elevation data obtained using a Trimble R12i Global Navigation Satellite System receiver interfaced with the Trimble RTX network.											

TABLE 2 - Grain Size Data Summary
Phillippi Creek Maintenance Dredging Feasibility Study Project
Sarasota County, Florida
May 2024

Boring ID	Sample ID	Sample Interval (ft BSS)	Sample Interval (ft MLW)	Laboratory USCS Classification	Total Percent Gravel-Sized Fraction ^[1]	Percent Sand-Sized Fraction ^[2]	Percent Fine-Grained Fraction ^[3]	Mean Grain Size ^[6] (mm)	Sorting ^[6] (phi)	D10 Grain Size (mm)	D30 Grain Size (mm)	D50 Grain Size (mm)	D60 Grain Size (mm)
PC-24-01	S-1	0 - 0.9	-3.8 to -4.7	GP-GM	50.72	40.73	8.55	2.91	2.45	0.10	0.33	5.25	9.10
	S-2	0.9 - 1.2	-4.7 to -5	SP	16.30	82.50	1.21	0.58	1.90	0.18	0.24	0.31	0.35
PC-24-02	S-1	0 - 0.6	-3.6 to -4.2	SP	0.69	95.57	3.74	0.27	0.90	0.12	0.20	0.26	0.29
	S-2	0.6 - 1.4	-4.2 to -5	SP	0.01	95.63	4.36	0.24	0.74	0.11	0.18	0.23	0.26
PC-24-03	S-1	0 - 1	-3.2 to -4.2	SP-SM	30.55	60.44	9.01	1.13	2.38	0.09	0.18	0.35	1.28
	S-2	1 - 1.5	-4.2 to -4.7	SP	14.57	83.33	2.11	0.75	1.68	0.17	0.30	0.46	0.64
PC-24-04	S-1	0 - 0.4	-4.6 to -5	MH	0.00	27.43	72.57	0.16	0.91	N/A	N/A	N/A	N/A
PC-24-05	S-1	0 - 0.8	-3.2 to -4	MH	0.00	25.52	74.48	0.15	0.85	N/A	N/A	N/A	N/A
PC-24-06	S-1	0 - 1.2	-2.3 to -3.5	MH	0.00	23.25	76.75	0.14	0.61	N/A	N/A	N/A	N/A
	S-2	1.2 - 2.4	-3.5 to -4.7	MH	0.00	47.61	52.39	0.16	0.61	N/A	N/A	N/A	0.11
PC-24-07	S-1	0 - 1.2	-1.7 to -2.9	MH	0.00	39.01	60.99	0.12	0.63	N/A	N/A	N/A	0.06
	S-2	1.2 - 2.3	-2.9 to -4	SM	0.38	56.42	43.21	0.16	0.85	N/A	N/A	0.09	0.12
PC-24-08	S-1	0 - 0.6	-2 to -2.6	SP-SM	0.00	89.19	10.81	0.16	0.54	N/A	0.12	0.15	0.16
	S-2	0.6 - 1.6	-2.6 to -3.6	MH	0.07	48.51	51.42	0.15	0.64	N/A	N/A	N/A	0.10
	S-3	1.6 - 2	-3.6 to -4	SM	0.00	83.07	16.93	0.16	0.45	N/A	0.13	0.15	0.16
ft BSS = feet below sediment surface													
ft MLW = feet relative to Mean Low Water													
USCS = Unified Soil Classification System													
mm = millimeters													
N/A = Value not available because sample volume at the specified diameter could not be determined using the chosen sieve set.													
Notes	[1] = Defined as the sample fraction which is greater than or equal to 4.76 millimeters (i.e., retained on sieve sizes greater than or equal to the Number 4 sieve).												
	[2] = Defined as the sample fraction which is greater than or equal to 0.076 millimeters and less than 4.75 millimeters (i.e., retained on sieve sizes between the Number 4 and Number 200 sieves).												
	[3] = Defined as the sample fraction which is less than 0.075 millimeters (i.e., passes the Number 200 sieve).												
	[4] = The laboratory conducted carbonate content analysis using the acid digestion methodology developed by Twenhöfel and Tyler (1941).												
	[5] = The laboratory conducted visual estimation of shell using methodology developed by Terry and Chilingar (1955).												
	[6] = Value was calculated in gINT using the Moment Method (Folk, 1974) and applies to the portion of sample which did not pass the #230 sieve.												

APPENDIX A

AEL Laboratory Report and Data Summary Tables



Advanced Environmental Laboratories, Inc
6681 Southpoint Pkwy Jacksonville, FL 32216
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (904) 363-9350
Fax: (904) 363-9354

FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

June 05, 2024

Neil Wicker
Athena Technologies, Inc.
3700 Rosewood Drive
Columbia, SC 29205

RE: Workorder: J2407489 Phillippi Creek Dredging Study

Dear Neil Wicker:

Enclosed are the analytical results for sample(s) received by the laboratory on Wednesday May 22, 2024. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. The analytical results for the samples contained in this report were submitted for analysis as outlined by the Chain of Custody and results pertain only to these samples.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jerry Allen, Client Services Manager
JAllen@aellab.com

Certificate of Analysis

This report shall not be reproduced, except in full,
without the written consent of Advanced Environmental Laboratories, Inc.



NELAP Accredited E82574



FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received	Analytes Reported	Basis
J2407489001	PC-24-7	SO	EPA 8081	05/21/2024 08:44	05/22/2024 10:21	19	Dry
J2407489001	PC-24-7	SO	FL-PRO	05/21/2024 08:44	05/22/2024 10:21	1	Dry
J2407489001	PC-24-7	SO	SM 2540G	05/21/2024 08:44	05/22/2024 10:21	1	Dry
J2407489001	PC-24-7	SO	SW-846 6010	05/21/2024 08:44	05/22/2024 10:21	11	Dry
J2407489001	PC-24-7	SO	SW-846 7471A	05/21/2024 08:44	05/22/2024 10:21	1	Dry
J2407489001	PC-24-7	SO	SW-846 8082A	05/21/2024 08:44	05/22/2024 10:21	7	Dry
J2407489001	PC-24-7	SO	SW-846 8270C (SIM)	05/21/2024 08:44	05/22/2024 10:21	18	Dry
J2407489002	PC-24-8	SO	EPA 8081	05/21/2024 09:17	05/22/2024 10:21	19	Dry
J2407489002	PC-24-8	SO	FL-PRO	05/21/2024 09:17	05/22/2024 10:21	1	Dry
J2407489002	PC-24-8	SO	SM 2540G	05/21/2024 09:17	05/22/2024 10:21	1	Dry
J2407489002	PC-24-8	SO	SW-846 6010	05/21/2024 09:17	05/22/2024 10:21	11	Dry
J2407489002	PC-24-8	SO	SW-846 7471A	05/21/2024 09:17	05/22/2024 10:21	1	Dry
J2407489002	PC-24-8	SO	SW-846 8082A	05/21/2024 09:17	05/22/2024 10:21	7	Dry
J2407489002	PC-24-8	SO	SW-846 8270C (SIM)	05/21/2024 09:17	05/22/2024 10:21	18	Dry
J2407489003	PC-24-6	SO	EPA 8081	05/21/2024 09:34	05/22/2024 10:21	19	Dry
J2407489003	PC-24-6	SO	FL-PRO	05/21/2024 09:34	05/22/2024 10:21	1	Dry
J2407489003	PC-24-6	SO	SM 2540G	05/21/2024 09:34	05/22/2024 10:21	1	Dry
J2407489003	PC-24-6	SO	SW-846 6010	05/21/2024 09:34	05/22/2024 10:21	11	Dry
J2407489003	PC-24-6	SO	SW-846 7471A	05/21/2024 09:34	05/22/2024 10:21	1	Dry
J2407489003	PC-24-6	SO	SW-846 8082A	05/21/2024 09:34	05/22/2024 10:21	7	Dry
J2407489003	PC-24-6	SO	SW-846 8270C (SIM)	05/21/2024 09:34	05/22/2024 10:21	18	Dry
J2407489004	PC-24-5	SO	EPA 8081	05/21/2024 09:55	05/22/2024 10:21	19	Dry
J2407489004	PC-24-5	SO	FL-PRO	05/21/2024 09:55	05/22/2024 10:21	1	Dry
J2407489004	PC-24-5	SO	SM 2540G	05/21/2024 09:55	05/22/2024 10:21	1	Dry
J2407489004	PC-24-5	SO	SW-846 6010	05/21/2024 09:55	05/22/2024 10:21	11	Dry
J2407489004	PC-24-5	SO	SW-846 7471A	05/21/2024 09:55	05/22/2024 10:21	1	Dry
J2407489004	PC-24-5	SO	SW-846 8082A	05/21/2024 09:55	05/22/2024 10:21	7	Dry
J2407489004	PC-24-5	SO	SW-846 8270C (SIM)	05/21/2024 09:55	05/22/2024 10:21	18	Dry
J2407489005	PC-24-4	SO	EPA 8081	05/21/2024 10:29	05/22/2024 10:21	19	Dry
J2407489005	PC-24-4	SO	FL-PRO	05/21/2024 10:29	05/22/2024 10:21	1	Dry
J2407489005	PC-24-4	SO	SM 2540G	05/21/2024 10:29	05/22/2024 10:21	1	Dry
J2407489005	PC-24-4	SO	SW-846 6010	05/21/2024 10:29	05/22/2024 10:21	11	Dry
J2407489005	PC-24-4	SO	SW-846 7471A	05/21/2024 10:29	05/22/2024 10:21	1	Dry
J2407489005	PC-24-4	SO	SW-846 8082A	05/21/2024 10:29	05/22/2024 10:21	7	Dry
J2407489005	PC-24-4	SO	SW-846 8270C (SIM)	05/21/2024 10:29	05/22/2024 10:21	18	Dry

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Workorder: Phillippi Creek Dredging Study (J2407489)

Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received	Analytes Reported	Basis
J2407489006	PC-24-3	SO	EPA 8081	05/21/2024 10:48	05/22/2024 10:21	19	Dry
J2407489006	PC-24-3	SO	FL-PRO	05/21/2024 10:48	05/22/2024 10:21	1	Dry
J2407489006	PC-24-3	SO	SM 2540G	05/21/2024 10:48	05/22/2024 10:21	1	Dry
J2407489006	PC-24-3	SO	SW-846 6010	05/21/2024 10:48	05/22/2024 10:21	11	Dry
J2407489006	PC-24-3	SO	SW-846 7471A	05/21/2024 10:48	05/22/2024 10:21	1	Dry
J2407489006	PC-24-3	SO	SW-846 8082A	05/21/2024 10:48	05/22/2024 10:21	7	Dry
J2407489006	PC-24-3	SO	SW-846 8270C (SIM)	05/21/2024 10:48	05/22/2024 10:21	18	Dry
J2407489007	PC-24-2	SO	EPA 8081	05/21/2024 11:10	05/22/2024 10:21	19	Dry
J2407489007	PC-24-2	SO	FL-PRO	05/21/2024 11:10	05/22/2024 10:21	1	Dry
J2407489007	PC-24-2	SO	SM 2540G	05/21/2024 11:10	05/22/2024 10:21	1	Dry
J2407489007	PC-24-2	SO	SW-846 6010	05/21/2024 11:10	05/22/2024 10:21	11	Dry
J2407489007	PC-24-2	SO	SW-846 7471A	05/21/2024 11:10	05/22/2024 10:21	1	Dry
J2407489007	PC-24-2	SO	SW-846 8082A	05/21/2024 11:10	05/22/2024 10:21	7	Dry
J2407489007	PC-24-2	SO	SW-846 8270C (SIM)	05/21/2024 11:10	05/22/2024 10:21	18	Dry
J2407489008	PC-24-1	SO	EPA 8081	05/21/2024 11:35	05/22/2024 10:21	19	Dry
J2407489008	PC-24-1	SO	FL-PRO	05/21/2024 11:35	05/22/2024 10:21	1	Dry
J2407489008	PC-24-1	SO	SM 2540G	05/21/2024 11:35	05/22/2024 10:21	1	Dry
J2407489008	PC-24-1	SO	SW-846 6010	05/21/2024 11:35	05/22/2024 10:21	11	Dry
J2407489008	PC-24-1	SO	SW-846 7471A	05/21/2024 11:35	05/22/2024 10:21	1	Dry
J2407489008	PC-24-1	SO	SW-846 8082A	05/21/2024 11:35	05/22/2024 10:21	7	Dry
J2407489008	PC-24-1	SO	SW-846 8270C (SIM)	05/21/2024 11:35	05/22/2024 10:21	18	Dry

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Workorder: Phillippi Creek Dredging Study (J2407489)

Workorder Summary

Batch Comments

CVAj/2440 - HG Analysis,CVAA,Non-Aqueous

The Method Blank associated with batch 2440 contained a low level concentration of mercury above the Method Reporting Limit (MDL). The associated sample(s) contained this/these compound(s) at a concentration of at least ten times that found in the Method Blank. Blank contamination less than ten times that found in the associated samples is deemed insignificant and the data is reported with no further corrective action required.

GCSj/6434 - 8081/8082/608 Analysis,Soil

The upper control criterion was exceeded for several target analytes in Continuing Calibration Verification (CCV) standards for analytical batch GCSj: 6434, indicating increased sensitivity. The client samples reported in this batch did not contain the analytes in question. Since the apparent problem equates to a potential high bias, the data quality is not affected. Client samples with target analytes above the Method Detection Limit (MDL) were re-analyzed and reported with passing Continuing Calibration Verification (CCV) standards. No further corrective action was required.

Task Comments

J2407489001 (PC-24-7) - GCSj/6450 - 8081/8082/608 Analysis,Soil

The sample J2407489001 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489001 (PC-24-7) - GCSj/6434 - 8081/8082/608 Analysis,Soil

The sample J2407489001 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489002 (PC-24-8) - GCSj/6450 - 8081/8082/608 Analysis,Soil

The sample J2407489002 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489002 (PC-24-8) - GCSj/6434 - 8081/8082/608 Analysis,Soil

The sample J2407489002 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489003 (PC-24-6) - GCSj/6450 - 8081/8082/608 Analysis,Soil

The sample J2407489003 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489003 (PC-24-6) - GCSj/6434 - 8081/8082/608 Analysis,Soil

The sample J2407489003 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489004 (PC-24-5) - GCSj/6450 - 8081/8082/608 Analysis,Soil

The sample J2407489004 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489004 (PC-24-5) - GCSj/6434 - 8081/8082/608 Analysis,Soil

The sample J2407489004 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489005 (PC-24-4) - GCSj/6450 - 8081/8082/608 Analysis,Soil

The sample J2407489005 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489005 (PC-24-4) - GCSj/6434 - 8081/8082/608 Analysis,Soil

The sample J2407489005 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489006 (PC-24-3) - GCSj/6450 - 8081/8082/608 Analysis,Soil

The sample J2407489006 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

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Workorder: Phillippi Creek Dredging Study (J2407489)

Workorder Summary

Task Comments

J2407489006 (PC-24-3) - GCSj/6434 - 8081/8082/608 Analysis, Soil

The sample J2407489006 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489007 (PC-24-2) - GCSj/6450 - 8081/8082/608 Analysis, Soil

The sample J2407489007 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489007 (PC-24-2) - GCSj/6434 - 8081/8082/608 Analysis, Soil

The sample J2407489007 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489008 (PC-24-1) - GCSj/6450 - 8081/8082/608 Analysis, Soil

The sample J2407489008 and associated matrix spike and matrix spike duplicate was diluted prior to instrumental analysis. The extracts were highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

J2407489008 (PC-24-1) - GCSj/6434 - 8081/8082/608 Analysis, Soil

The sample J2407489008 was diluted prior to instrumental analysis. The extract was highly colored and viscous which indicated the need to perform a dilution prior to injection into the instrument.

Analysis Results Comments

J2407489001 (PC-24-7) - Aluminum

The control criteria for matrix spike recoveries of Aluminum for J2407489001 are not applicable. The analyte concentration in the sample was greater than 4 times the added spike concentrations, preventing accurate evaluation of the spike recovery. No further corrective action was required.

J2407489001 (PC-24-7) - Chromium

The matrix spike recoveries of Aluminum, Chromium, and Cadmium for J2407489001 were outside control criteria due to the presence of target analytes in the sample. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicates the analytical batch was in control. The affected sample is qualified to indicate matrix interference.

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results Qualifiers

Parameter Qualifiers

- U The compound was analyzed for but not detected.
- I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- V Method Blank Contamination

Lab Qualifiers

- J DOH Certification #E82574 (FL NELAC) AEL-Jacksonville
DOD-ELAP Certification #L23-514 (ISO/IEC 17025:2017) AEL-Jacksonville

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID:	J2407489001	Date Collected:	05/21/2024 08:44			Matrix:	Soil		
Sample ID:	PC-24-7	Date Received:	05/22/2024 10:21						
Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab	
METALS (SW-846 3050B/SW-846 6010)									
Aluminum	16000	mg/Kg	1400	360	10	05/24/2024 11:23	06/03/2024 15:08	J	
Arsenic	2.0 I	mg/Kg	7.2	1.8	1	05/24/2024 11:23	05/28/2024 16:43	J	
Barium	45	mg/Kg	7.2	1.8	1	05/24/2024 11:23	05/28/2024 16:43	J	
Cadmium	0.72	mg/Kg	0.72	0.18	1	05/24/2024 11:23	05/28/2024 16:43	J	
Chromium	41	mg/Kg	2.9	0.72	1	05/24/2024 11:23	05/28/2024 16:43	J	
Copper	81	mg/Kg	7.2	1.8	1	05/24/2024 11:23	05/28/2024 16:43	J	
Lead	33	mg/Kg	7.2	1.8	1	05/24/2024 11:23	05/28/2024 16:43	J	
Nickel	10	mg/Kg	7.2	1.8	1	05/24/2024 11:23	05/28/2024 16:43	J	
Selenium	3.6 U	mg/Kg	14	3.6	1	05/24/2024 11:23	05/28/2024 16:43	J	
Silver	0.72 U	mg/Kg	2.9	0.72	1	05/24/2024 11:23	05/28/2024 16:43	J	
Zinc	200	mg/Kg	140	36	1	05/24/2024 11:23	05/28/2024 16:43	J	
METALS (SW-846 7471A)									
Mercury	0.19	mg/Kg	0.019	0.0048	1	05/28/2024 11:51	05/28/2024 17:52	J	
SEMIVOLATILES (EPA 3546/SW-846 8082A)									
Aroclor 1016 (PCB-1016)	0.84 U	mg/Kg	3.4	0.84	10	05/28/2024 09:00	05/31/2024 10:48	J	
Aroclor 1221 (PCB-1221)	0.84 U	mg/Kg	3.4	0.84	10	05/28/2024 09:00	05/31/2024 10:48	J	
Aroclor 1232 (PCB-1232)	0.84 U	mg/Kg	3.4	0.84	10	05/28/2024 09:00	05/31/2024 10:48	J	
Aroclor 1242 (PCB-1242)	0.84 U	mg/Kg	3.4	0.84	10	05/28/2024 09:00	05/31/2024 10:48	J	
Aroclor 1248 (PCB-1248)	0.84 U	mg/Kg	3.4	0.84	10	05/28/2024 09:00	05/31/2024 10:48	J	
Aroclor 1254 (PCB-1254)	0.84 U	mg/Kg	3.4	0.84	10	05/28/2024 09:00	05/31/2024 10:48	J	
Aroclor 1260 (PCB-1260)	0.84 U	mg/Kg	3.4	0.84	10	05/28/2024 09:00	05/31/2024 10:48	J	
SEMIVOLATILES (FL-PRO)									
TPH	35 U	mg/Kg	61	35	1	05/24/2024 10:00	05/29/2024 17:07	J	
SEMIVOLATILES (SW-846 3550B/EPA 8081)									
4,4' -DDD	0.018 U	mg/Kg	0.11	0.018	10	05/28/2024 09:00	05/31/2024 22:09	J	
4,4' -DDE	0.014 U	mg/Kg	0.11	0.014	10	05/28/2024 09:00	05/31/2024 22:09	J	
4,4' -DDT	0.031 U	mg/Kg	0.11	0.031	10	05/28/2024 09:00	05/31/2024 22:09	J	





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489001
Sample ID: PC-24-7

Date Collected: 05/21/2024 08:44
Date Received: 05/22/2024 10:21

Matrix: Soil

Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Aldrin	0.017 U	mg/Kg	0.11	0.017	10	05/28/2024 09:00	05/31/2024 22:09	J
Chlordane (technical)	0.45 U	mg/Kg	1.1	0.45	10	05/28/2024 09:00	05/31/2024 22:09	J
Dieldrin	0.014 U	mg/Kg	0.11	0.014	10	05/28/2024 09:00	05/31/2024 22:09	J
Endosulfan I	0.017 U	mg/Kg	0.11	0.017	10	05/28/2024 09:00	05/31/2024 22:09	J
Endosulfan II	0.012 U	mg/Kg	0.11	0.012	10	05/28/2024 09:00	05/31/2024 22:09	J
Endosulfan Sulfate	0.020 U	mg/Kg	0.11	0.020	10	05/28/2024 09:00	05/31/2024 22:09	J
Endrin	0.031 U	mg/Kg	0.11	0.031	10	05/28/2024 09:00	05/31/2024 22:09	J
Endrin Aldehyde	0.018 U	mg/Kg	0.11	0.018	10	05/28/2024 09:00	05/31/2024 22:09	J
Heptachlor	0.021 U	mg/Kg	0.11	0.021	10	05/28/2024 09:00	05/31/2024 22:09	J
Heptachlor Epoxide	0.015 U	mg/Kg	0.11	0.015	10	05/28/2024 09:00	05/31/2024 22:09	J
Methoxychlor	0.023 U	mg/Kg	0.11	0.023	10	05/28/2024 09:00	05/31/2024 22:09	J
Toxaphene	0.79 U	mg/Kg	1.1	0.79	10	05/28/2024 09:00	05/31/2024 22:09	J
alpha-BHC	0.019 U	mg/Kg	0.11	0.019	10	05/28/2024 09:00	05/31/2024 22:09	J
beta-BHC	0.013 U	mg/Kg	0.11	0.013	10	05/28/2024 09:00	05/31/2024 22:09	J
delta-BHC	0.013 U	mg/Kg	0.11	0.013	10	05/28/2024 09:00	05/31/2024 22:09	J
gamma-BHC (Lindane)	0.020 U	mg/Kg	0.11	0.020	10	05/28/2024 09:00	05/31/2024 22:09	J
SEMIVOLATILES (SW-846 3550B/SW-846 8270C (SIM))								
1-Methylnaphthalene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
2-Methylnaphthalene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Acenaphthene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Acenaphthylene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Anthracene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Benzo[a]anthracene	0.031	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Benzo[a]pyrene	0.053	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Benzo[b]fluoranthene	0.090	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Benzo[g,h,i]perylene	0.059	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Benzo[k]fluoranthene	0.034	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489001	Date Collected: 05/21/2024 08:44	Matrix: Soil
Sample ID: PC-24-7	Date Received: 05/22/2024 10:21	

Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Chrysene	0.053	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Dibenzo[a,h]anthracene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Fluoranthene	0.074	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Fluorene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Indeno(1,2,3-cd)pyrene	0.054	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Naphthalene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Phenanthrene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
Pyrene	0.060	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 00:58	J
(SM 2540G)								
Percent Moisture	72	%	0.0010	0.0010	1	05/28/2024 15:44	05/28/2024 15:44	J

Analysis Results Comments

Mercury

V|Method Blank Contamination

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
2-Fluorobiphenyl (S)	mg/Kg	0.40	0.20	49	37 - 127	J
Nitrobenzene-d5 (S)	mg/Kg	0.40	0.17	43	33 - 134	J
p-Terphenyl-d14 (S)	mg/Kg	0.40	0.29	73	42 - 141	J
Nonatricontane-C39 (S)	mg/Kg	6	3.30	55	36 - 132	J
o-Terphenyl (S)	mg/Kg	2	1.30	66	66 - 136	J
Decachlorobiphenyl (S)	ug/Kg	78	66	85	63 - 130	J
Tetrachloro-m-xylene (S)	ug/Kg	160	120	80	42 - 129	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Decachlorobiphenyl (S)	ug/Kg	78	82	106	61 - 147	J
Tetrachloro-m-xylene (S)	ug/Kg	160	120	76	44 - 130	J

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID:	J2407489002	Date Collected:	05/21/2024 09:17			Matrix:	Soil	
Sample ID:	PC-24-8	Date Received:	05/22/2024 10:21					
Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
METALS (SW-846 3050B/SW-846 6010)								
Aluminum	4000	mg/Kg	920	230	10	05/24/2024 11:23	06/03/2024 15:18	J
Arsenic	1.6 I	mg/Kg	4.6	1.1	1	05/24/2024 11:23	05/28/2024 16:53	J
Barium	12	mg/Kg	4.6	1.1	1	05/24/2024 11:23	05/28/2024 16:53	J
Cadmium	0.15 I	mg/Kg	0.46	0.11	1	05/24/2024 11:23	05/28/2024 16:53	J
Chromium	12	mg/Kg	1.8	0.46	1	05/24/2024 11:23	05/28/2024 16:53	J
Copper	23	mg/Kg	4.6	1.1	1	05/24/2024 11:23	05/28/2024 16:53	J
Lead	9.7	mg/Kg	4.6	1.1	1	05/24/2024 11:23	05/28/2024 16:53	J
Nickel	3.3 I	mg/Kg	4.6	1.1	1	05/24/2024 11:23	05/28/2024 16:53	J
Selenium	2.3 U	mg/Kg	9.2	2.3	1	05/24/2024 11:23	05/28/2024 16:53	J
Silver	0.46 U	mg/Kg	1.8	0.46	1	05/24/2024 11:23	05/28/2024 16:53	J
Zinc	65 I	mg/Kg	92	23	1	05/24/2024 11:23	05/28/2024 16:53	J
METALS (SW-846 7471A)								
Mercury	0.054	mg/Kg	0.011	0.0029	1	05/30/2024 11:41	05/30/2024 14:16	J
SEMIVOLATILES (EPA 3546/SW-846 8082A)								
Aroclor 1016 (PCB-1016)	0.52 U	mg/Kg	2.1	0.52	10	05/28/2024 09:00	05/31/2024 11:09	J
Aroclor 1221 (PCB-1221)	0.52 U	mg/Kg	2.1	0.52	10	05/28/2024 09:00	05/31/2024 11:09	J
Aroclor 1232 (PCB-1232)	0.52 U	mg/Kg	2.1	0.52	10	05/28/2024 09:00	05/31/2024 11:09	J
Aroclor 1242 (PCB-1242)	0.52 U	mg/Kg	2.1	0.52	10	05/28/2024 09:00	05/31/2024 11:09	J
Aroclor 1248 (PCB-1248)	0.52 U	mg/Kg	2.1	0.52	10	05/28/2024 09:00	05/31/2024 11:09	J
Aroclor 1254 (PCB-1254)	0.52 U	mg/Kg	2.1	0.52	10	05/28/2024 09:00	05/31/2024 11:09	J
Aroclor 1260 (PCB-1260)	0.52 U	mg/Kg	2.1	0.52	10	05/28/2024 09:00	05/31/2024 11:09	J
SEMIVOLATILES (FL-PRO)								
TPH	22 U	mg/Kg	38	22	1	05/24/2024 10:00	05/29/2024 17:25	J
SEMIVOLATILES (SW-846 3550B/EPA 8081)								
4,4'-DDD	0.011 U	mg/Kg	0.069	0.011	10	05/28/2024 09:00	05/31/2024 22:30	J
4,4'-DDE	0.0086 U	mg/Kg	0.069	0.0086	10	05/28/2024 09:00	05/31/2024 22:30	J
4,4'-DDT	0.019 U	mg/Kg	0.069	0.019	10	05/28/2024 09:00	05/31/2024 22:30	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489002
Sample ID: PC-24-8

Date Collected: 05/21/2024 09:17
Date Received: 05/22/2024 10:21

Matrix: Soil

Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Aldrin	0.010 U	mg/Kg	0.069	0.010	10	05/28/2024 09:00	05/31/2024 22:30	J
Chlordane (technical)	0.28 U	mg/Kg	0.69	0.28	10	05/28/2024 09:00	05/31/2024 22:30	J
Dieldrin	0.0088 U	mg/Kg	0.069	0.0088	10	05/28/2024 09:00	05/31/2024 22:30	J
Endosulfan I	0.011 U	mg/Kg	0.069	0.011	10	05/28/2024 09:00	05/31/2024 22:30	J
Endosulfan II	0.0074 U	mg/Kg	0.069	0.0074	10	05/28/2024 09:00	05/31/2024 22:30	J
Endosulfan Sulfate	0.013 U	mg/Kg	0.069	0.013	10	05/28/2024 09:00	05/31/2024 22:30	J
Endrin	0.019 U	mg/Kg	0.069	0.019	10	05/28/2024 09:00	05/31/2024 22:30	J
Endrin Aldehyde	0.011 U	mg/Kg	0.069	0.011	10	05/28/2024 09:00	05/31/2024 22:30	J
Heptachlor	0.013 U	mg/Kg	0.069	0.013	10	05/28/2024 09:00	05/31/2024 22:30	J
Heptachlor Epoxide	0.0094 U	mg/Kg	0.069	0.0094	10	05/28/2024 09:00	05/31/2024 22:30	J
Methoxychlor	0.014 U	mg/Kg	0.069	0.014	10	05/28/2024 09:00	05/31/2024 22:30	J
Toxaphene	0.49 U	mg/Kg	0.69	0.49	10	05/28/2024 09:00	05/31/2024 22:30	J
alpha-BHC	0.012 U	mg/Kg	0.069	0.012	10	05/28/2024 09:00	05/31/2024 22:30	J
beta-BHC	0.0080 U	mg/Kg	0.069	0.0080	10	05/28/2024 09:00	05/31/2024 22:30	J
delta-BHC	0.0082 U	mg/Kg	0.069	0.0082	10	05/28/2024 09:00	05/31/2024 22:30	J
gamma-BHC (Lindane)	0.012 U	mg/Kg	0.069	0.012	10	05/28/2024 09:00	05/31/2024 22:30	J
SEMIVOLATILES (SW-846 3550B/SW-846 8270C (SIM))								
1-Methylnaphthalene	0.0089 U	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
2-Methylnaphthalene	0.0089 U	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Acenaphthene	0.0089 U	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Acenaphthylene	0.0089 U	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Anthracene	0.0089 U	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Benzo[a]anthracene	0.012 I	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Benzo[a]pyrene	0.019	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Benzo[b]fluoranthene	0.034	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Benzo[g,h,i]perylene	0.021	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Benzo[k]fluoranthene	0.0089 U	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489002	Date Collected: 05/21/2024 09:17					Matrix: Soil		
Sample ID: PC-24-8	Date Received: 05/22/2024 10:21							
Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Chrysene	0.020	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Dibenzo[a,h]anthracene	0.0089 U	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Fluoranthene	0.028	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Fluorene	0.0089 U	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Indeno(1,2,3-cd)pyrene	0.022	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Naphthalene	0.0089 U	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Phenanthrene	0.0089 U	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
Pyrene	0.023	mg/Kg	0.018	0.0089	1	05/24/2024 16:46	05/29/2024 01:24	J
(SM 2540G)								
Percent Moisture	55	%	0.0010	0.0010	1	05/28/2024 15:44	05/28/2024 15:44	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
2-Fluorobiphenyl (S)	mg/Kg	0.40	0.25	63	37 - 127	J
Nitrobenzene-d5 (S)	mg/Kg	0.40	0.23	58	33 - 134	J
p-Terphenyl-d14 (S)	mg/Kg	0.40	0.35	87	42 - 141	J
Nonatricontane-C39 (S)	mg/Kg	6	4	67	36 - 132	J
o-Terphenyl (S)	mg/Kg	2	1.70	85	66 - 136	J
Decachlorobiphenyl (S)	ug/Kg	78	71	91	63 - 130	J
Tetrachloro-m-xylene (S)	ug/Kg	160	110	71	42 - 129	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Decachlorobiphenyl (S)	ug/Kg	78	87	112	61 - 147	J
Tetrachloro-m-xylene (S)	ug/Kg	160	130	86	44 - 130	J

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID:	J2407489003	Date Collected:	05/21/2024 09:34			Matrix:	Soil	
Sample ID:	PC-24-6	Date Received:	05/22/2024 10:21					
Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
METALS (SW-846 3050B/SW-846 6010)								
Aluminum	19000	mg/Kg	1300	330	10	05/24/2024 11:23	06/03/2024 15:21	J
Arsenic	1.6 U	mg/Kg	6.5	1.6	1	05/24/2024 11:23	05/28/2024 16:57	J
Barium	51	mg/Kg	6.5	1.6	1	05/24/2024 11:23	05/28/2024 16:57	J
Cadmium	0.92	mg/Kg	0.65	0.16	1	05/24/2024 11:23	05/28/2024 16:57	J
Chromium	51	mg/Kg	2.6	0.65	1	05/24/2024 11:23	05/28/2024 16:57	J
Copper	110	mg/Kg	6.5	1.6	1	05/24/2024 11:23	05/28/2024 16:57	J
Lead	71	mg/Kg	6.5	1.6	1	05/24/2024 11:23	05/28/2024 16:57	J
Nickel	12	mg/Kg	6.5	1.6	1	05/24/2024 11:23	05/28/2024 16:57	J
Selenium	3.3 U	mg/Kg	13	3.3	1	05/24/2024 11:23	05/28/2024 16:57	J
Silver	0.65 U	mg/Kg	2.6	0.65	1	05/24/2024 11:23	05/28/2024 16:57	J
Zinc	200	mg/Kg	130	33	1	05/24/2024 11:23	05/28/2024 16:57	J
METALS (SW-846 7471A)								
Mercury	0.25	mg/Kg	0.018	0.0044	1	05/28/2024 11:51	05/28/2024 17:58	J
SEMIVOLATILES (EPA 3546/SW-846 8082A)								
Aroclor 1016 (PCB-1016)	0.77 U	mg/Kg	3.1	0.77	10	05/28/2024 09:00	05/31/2024 11:30	J
Aroclor 1221 (PCB-1221)	0.77 U	mg/Kg	3.1	0.77	10	05/28/2024 09:00	05/31/2024 11:30	J
Aroclor 1232 (PCB-1232)	0.77 U	mg/Kg	3.1	0.77	10	05/28/2024 09:00	05/31/2024 11:30	J
Aroclor 1242 (PCB-1242)	0.77 U	mg/Kg	3.1	0.77	10	05/28/2024 09:00	05/31/2024 11:30	J
Aroclor 1248 (PCB-1248)	0.77 U	mg/Kg	3.1	0.77	10	05/28/2024 09:00	05/31/2024 11:30	J
Aroclor 1254 (PCB-1254)	0.77 U	mg/Kg	3.1	0.77	10	05/28/2024 09:00	05/31/2024 11:30	J
Aroclor 1260 (PCB-1260)	0.77 U	mg/Kg	3.1	0.77	10	05/28/2024 09:00	05/31/2024 11:30	J
SEMIVOLATILES (FL-PRO)								
TPH	31 U	mg/Kg	54	31	1	05/24/2024 10:00	05/29/2024 17:44	J
SEMIVOLATILES (SW-846 3550B/EPA 8081)								
4,4'-DDD	0.017 U	mg/Kg	0.10	0.017	10	05/28/2024 09:00	05/31/2024 22:50	J
4,4'-DDE	0.013 U	mg/Kg	0.10	0.013	10	05/28/2024 09:00	05/31/2024 22:50	J
4,4'-DDT	0.028 U	mg/Kg	0.10	0.028	10	05/28/2024 09:00	05/31/2024 22:50	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID:	J2407489003	Date Collected:	05/21/2024 09:34			Matrix:	Soil	
Sample ID:	PC-24-6	Date Received:	05/22/2024 10:21					
Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Aldrin	0.015 U	mg/Kg	0.10	0.015	10	05/28/2024 09:00	05/31/2024 22:50	J
Chlordane (technical)	0.42 U	mg/Kg	1.0	0.42	10	05/28/2024 09:00	05/31/2024 22:50	J
Dieldrin	0.013 U	mg/Kg	0.10	0.013	10	05/28/2024 09:00	05/31/2024 22:50	J
Endosulfan I	0.016 U	mg/Kg	0.10	0.016	10	05/28/2024 09:00	05/31/2024 22:50	J
Endosulfan II	0.011 U	mg/Kg	0.10	0.011	10	05/28/2024 09:00	05/31/2024 22:50	J
Endosulfan Sulfate	0.019 U	mg/Kg	0.10	0.019	10	05/28/2024 09:00	05/31/2024 22:50	J
Endrin	0.028 U	mg/Kg	0.10	0.028	10	05/28/2024 09:00	05/31/2024 22:50	J
Endrin Aldehyde	0.017 U	mg/Kg	0.10	0.017	10	05/28/2024 09:00	05/31/2024 22:50	J
Heptachlor	0.019 U	mg/Kg	0.10	0.019	10	05/28/2024 09:00	05/31/2024 22:50	J
Heptachlor Epoxide	0.014 U	mg/Kg	0.10	0.014	10	05/28/2024 09:00	05/31/2024 22:50	J
Methoxychlor	0.021 U	mg/Kg	0.10	0.021	10	05/28/2024 09:00	05/31/2024 22:50	J
Toxaphene	0.73 U	mg/Kg	1.0	0.73	10	05/28/2024 09:00	05/31/2024 22:50	J
alpha-BHC	0.017 U	mg/Kg	0.10	0.017	10	05/28/2024 09:00	05/31/2024 22:50	J
beta-BHC	0.012 U	mg/Kg	0.10	0.012	10	05/28/2024 09:00	05/31/2024 22:50	J
delta-BHC	0.012 U	mg/Kg	0.10	0.012	10	05/28/2024 09:00	05/31/2024 22:50	J
gamma-BHC (Lindane)	0.018 U	mg/Kg	0.10	0.018	10	05/28/2024 09:00	05/31/2024 22:50	J
SEMIVOLATILES (SW-846 3550B/SW-846 8270C (SIM))								
1-Methylnaphthalene	0.013 U	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
2-Methylnaphthalene	0.013 U	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Acenaphthene	0.013 U	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Acenaphthylene	0.013 U	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Anthracene	0.013 U	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Benzo[a]anthracene	0.019 I	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Benzo[a]pyrene	0.030	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Benzo[b]fluoranthene	0.049	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Benzo[g,h,i]perylene	0.030	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Benzo[k]fluoranthene	0.013 U	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489003	Date Collected: 05/21/2024 09:34					Matrix: Soil		
Sample ID: PC-24-6	Date Received: 05/22/2024 10:21							
Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Chrysene	0.029	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Dibenzo[a,h]anthracene	0.013 U	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Fluoranthene	0.033	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Fluorene	0.013 U	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Indeno(1,2,3-cd)pyrene	0.030	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Naphthalene	0.013 U	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Phenanthrene	0.013 U	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
Pyrene	0.032	mg/Kg	0.025	0.013	1	05/24/2024 16:46	05/29/2024 01:51	J
(SM 2540G)								
Percent Moisture	69	%	0.0010	0.0010	1	05/28/2024 15:44	05/28/2024 15:44	J

Analysis Results Comments

Mercury

V|Method Blank Contamination

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
p-Terphenyl-d14 (S)	mg/Kg	0.39	0.36	92	42 - 141	J
2-Fluorobiphenyl (S)	mg/Kg	0.39	0.26	65	37 - 127	J
Nitrobenzene-d5 (S)	mg/Kg	0.39	0.23	58	33 - 134	J
Nonatricontane-C39 (S)	mg/Kg	5.90	3.80	64	36 - 132	J
o-Terphenyl (S)	mg/Kg	2	1.50	76	66 - 136	J
Decachlorobiphenyl (S)	ug/Kg	80	69	86	63 - 130	J
Tetrachloro-m-xylene (S)	ug/Kg	160	88	55	42 - 129	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Decachlorobiphenyl (S)	ug/Kg	80	92	115	61 - 147	J
Tetrachloro-m-xylene (S)	ug/Kg	160	130	80	44 - 130	J

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID:	J2407489004	Date Collected:	05/21/2024 09:55			Matrix:	Soil		
Sample ID:	PC-24-5	Date Received:	05/22/2024 10:21						
Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab	
METALS (SW-846 3050B/SW-846 6010)									
Aluminum	19000	mg/Kg	1300	330	10	05/24/2024 11:23	06/03/2024 15:25	J	
Arsenic	1.8 I	mg/Kg	6.6	1.6	1	05/24/2024 11:23	05/28/2024 17:01	J	
Barium	45	mg/Kg	6.6	1.6	1	05/24/2024 11:23	05/28/2024 17:01	J	
Cadmium	0.67	mg/Kg	0.66	0.16	1	05/24/2024 11:23	05/28/2024 17:01	J	
Chromium	49	mg/Kg	2.6	0.66	1	05/24/2024 11:23	05/28/2024 17:01	J	
Copper	92	mg/Kg	6.6	1.6	1	05/24/2024 11:23	05/28/2024 17:01	J	
Lead	67	mg/Kg	6.6	1.6	1	05/24/2024 11:23	05/28/2024 17:01	J	
Nickel	11	mg/Kg	6.6	1.6	1	05/24/2024 11:23	05/28/2024 17:01	J	
Selenium	3.3 U	mg/Kg	13	3.3	1	05/24/2024 11:23	05/28/2024 17:01	J	
Silver	0.66 U	mg/Kg	2.6	0.66	1	05/24/2024 11:23	05/28/2024 17:01	J	
Zinc	180	mg/Kg	130	33	1	05/24/2024 11:23	05/28/2024 17:01	J	
METALS (SW-846 7471A)									
Mercury	0.23	mg/Kg	0.016	0.0040	1	05/28/2024 11:51	05/28/2024 18:01	J	
SEMIVOLATILES (EPA 3546/SW-846 8082A)									
Aroclor 1016 (PCB-1016)	0.73 U	mg/Kg	2.9	0.73	10	05/28/2024 09:00	05/31/2024 11:50	J	
Aroclor 1221 (PCB-1221)	0.73 U	mg/Kg	2.9	0.73	10	05/28/2024 09:00	05/31/2024 11:50	J	
Aroclor 1232 (PCB-1232)	0.73 U	mg/Kg	2.9	0.73	10	05/28/2024 09:00	05/31/2024 11:50	J	
Aroclor 1242 (PCB-1242)	0.73 U	mg/Kg	2.9	0.73	10	05/28/2024 09:00	05/31/2024 11:50	J	
Aroclor 1248 (PCB-1248)	0.73 U	mg/Kg	2.9	0.73	10	05/28/2024 09:00	05/31/2024 11:50	J	
Aroclor 1254 (PCB-1254)	0.73 U	mg/Kg	2.9	0.73	10	05/28/2024 09:00	05/31/2024 11:50	J	
Aroclor 1260 (PCB-1260)	0.73 U	mg/Kg	2.9	0.73	10	05/28/2024 09:00	05/31/2024 11:50	J	
SEMIVOLATILES (FL-PRO)									
TPH	32 U	mg/Kg	55	32	1	05/24/2024 10:00	05/29/2024 18:03	J	
SEMIVOLATILES (SW-846 3550B/EPA 8081)									
4,4'-DDD	0.016 U	mg/Kg	0.098	0.016	10	05/28/2024 09:00	05/31/2024 23:11	J	
4,4'-DDE	0.012 U	mg/Kg	0.098	0.012	10	05/28/2024 09:00	05/31/2024 23:11	J	
4,4'-DDT	0.027 U	mg/Kg	0.098	0.027	10	05/28/2024 09:00	05/31/2024 23:11	J	





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489004
Sample ID: PC-24-5

Date Collected: 05/21/2024 09:55
Date Received: 05/22/2024 10:21

Matrix: Soil

Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Aldrin	0.015 U	mg/Kg	0.098	0.015	10	05/28/2024 09:00	05/31/2024 23:11	J
Chlordane (technical)	0.40 U	mg/Kg	0.98	0.40	10	05/28/2024 09:00	05/31/2024 23:11	J
Dieldrin	0.012 U	mg/Kg	0.098	0.012	10	05/28/2024 09:00	05/31/2024 23:11	J
Endosulfan I	0.015 U	mg/Kg	0.098	0.015	10	05/28/2024 09:00	05/31/2024 23:11	J
Endosulfan II	0.010 U	mg/Kg	0.098	0.010	10	05/28/2024 09:00	05/31/2024 23:11	J
Endosulfan Sulfate	0.018 U	mg/Kg	0.098	0.018	10	05/28/2024 09:00	05/31/2024 23:11	J
Endrin	0.027 U	mg/Kg	0.098	0.027	10	05/28/2024 09:00	05/31/2024 23:11	J
Endrin Aldehyde	0.016 U	mg/Kg	0.098	0.016	10	05/28/2024 09:00	05/31/2024 23:11	J
Heptachlor	0.018 U	mg/Kg	0.098	0.018	10	05/28/2024 09:00	05/31/2024 23:11	J
Heptachlor Epoxide	0.013 U	mg/Kg	0.098	0.013	10	05/28/2024 09:00	05/31/2024 23:11	J
Methoxychlor	0.020 U	mg/Kg	0.098	0.020	10	05/28/2024 09:00	05/31/2024 23:11	J
Toxaphene	0.69 U	mg/Kg	0.98	0.69	10	05/28/2024 09:00	05/31/2024 23:11	J
alpha-BHC	0.016 U	mg/Kg	0.098	0.016	10	05/28/2024 09:00	05/31/2024 23:11	J
beta-BHC	0.011 U	mg/Kg	0.098	0.011	10	05/28/2024 09:00	05/31/2024 23:11	J
delta-BHC	0.012 U	mg/Kg	0.098	0.012	10	05/28/2024 09:00	05/31/2024 23:11	J
gamma-BHC (Lindane)	0.017 U	mg/Kg	0.098	0.017	10	05/28/2024 09:00	05/31/2024 23:11	J
SEMIVOLATILES (SW-846 3550B/SW-846 8270C (SIM))								
1-Methylnaphthalene	0.013 U	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
2-Methylnaphthalene	0.013 U	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Acenaphthene	0.013 U	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Acenaphthylene	0.013 U	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Anthracene	0.013 U	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Benzo[a]anthracene	0.019 I	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Benzo[a]pyrene	0.029	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Benzo[b]fluoranthene	0.054	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Benzo[g,h,i]perylene	0.034	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Benzo[k]fluoranthene	0.013 U	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489004	Date Collected: 05/21/2024 09:55	Matrix: Soil
Sample ID: PC-24-5	Date Received: 05/22/2024 10:21	

Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Chrysene	0.031	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Dibenzo[a,h]anthracene	0.013 U	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Fluoranthene	0.034	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Fluorene	0.013 U	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Indeno(1,2,3-cd)pyrene	0.032	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Naphthalene	0.013 U	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Phenanthrene	0.013 U	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
Pyrene	0.029	mg/Kg	0.026	0.013	1	05/24/2024 16:46	05/29/2024 02:18	J
(SM 2540G)								
Percent Moisture	69	%	0.0010	0.0010	1	05/28/2024 15:44	05/28/2024 15:44	J

Analysis Results Comments

Mercury

V|Method Blank Contamination

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
2-Fluorobiphenyl (S)	mg/Kg	0.40	0.26	64	37 - 127	J
Nitrobenzene-d5 (S)	mg/Kg	0.40	0.25	63	33 - 134	J
p-Terphenyl-d14 (S)	mg/Kg	0.40	0.32	79	42 - 141	J
Nonatricontane-C39 (S)	mg/Kg	6.10	3.50	58	36 - 132	J
o-Terphenyl (S)	mg/Kg	2	1.40	70	66 - 136	J
Decachlorobiphenyl (S)	ug/Kg	77	70	91	63 - 130	J
Tetrachloro-m-xylene (S)	ug/Kg	150	100	65	42 - 129	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Decachlorobiphenyl (S)	ug/Kg	77	90	117	61 - 147	J
Tetrachloro-m-xylene (S)	ug/Kg	150	150	96	44 - 130	J

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID:	J2407489005	Date Collected:	05/21/2024 10:29			Matrix:	Soil		
Sample ID:	PC-24-4	Date Received:	05/22/2024 10:21						
Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab	
METALS (SW-846 3050B/SW-846 6010)									
Aluminum	24000	mg/Kg	1500	370	10	05/24/2024 11:23	06/03/2024 15:28	J	
Arsenic	2.0 I	mg/Kg	7.5	1.9	1	05/24/2024 11:23	05/28/2024 17:04	J	
Barium	52	mg/Kg	7.5	1.9	1	05/24/2024 11:23	05/28/2024 17:04	J	
Cadmium	0.73 I	mg/Kg	0.75	0.19	1	05/24/2024 11:23	05/28/2024 17:04	J	
Chromium	61	mg/Kg	3.0	0.75	1	05/24/2024 11:23	05/28/2024 17:04	J	
Copper	91	mg/Kg	7.5	1.9	1	05/24/2024 11:23	05/28/2024 17:04	J	
Lead	59	mg/Kg	7.5	1.9	1	05/24/2024 11:23	05/28/2024 17:04	J	
Nickel	14	mg/Kg	7.5	1.9	1	05/24/2024 11:23	05/28/2024 17:04	J	
Selenium	3.7 U	mg/Kg	15	3.7	1	05/24/2024 11:23	05/28/2024 17:04	J	
Silver	0.75 U	mg/Kg	3.0	0.75	1	05/24/2024 11:23	05/28/2024 17:04	J	
Zinc	120 I	mg/Kg	150	37	1	05/24/2024 11:23	05/28/2024 17:04	J	
METALS (SW-846 7471A)									
Mercury	0.35	mg/Kg	0.019	0.0047	1	05/28/2024 11:51	05/28/2024 18:04	J	
SEMIVOLATILES (EPA 3546/SW-846 8082A)									
Aroclor 1016 (PCB-1016)	0.87 U	mg/Kg	3.5	0.87	10	05/28/2024 09:00	05/31/2024 12:11	J	
Aroclor 1221 (PCB-1221)	0.87 U	mg/Kg	3.5	0.87	10	05/28/2024 09:00	05/31/2024 12:11	J	
Aroclor 1232 (PCB-1232)	0.87 U	mg/Kg	3.5	0.87	10	05/28/2024 09:00	05/31/2024 12:11	J	
Aroclor 1242 (PCB-1242)	0.87 U	mg/Kg	3.5	0.87	10	05/28/2024 09:00	05/31/2024 12:11	J	
Aroclor 1248 (PCB-1248)	0.87 U	mg/Kg	3.5	0.87	10	05/28/2024 09:00	05/31/2024 12:11	J	
Aroclor 1254 (PCB-1254)	0.87 U	mg/Kg	3.5	0.87	10	05/28/2024 09:00	05/31/2024 12:11	J	
Aroclor 1260 (PCB-1260)	0.87 U	mg/Kg	3.5	0.87	10	05/28/2024 09:00	05/31/2024 12:11	J	
SEMIVOLATILES (FL-PRO)									
TPH	35 U	mg/Kg	61	35	1	05/24/2024 10:00	05/29/2024 18:21	J	
SEMIVOLATILES (SW-846 3550B/EPA 8081)									
4,4'-DDD	0.019 U	mg/Kg	0.12	0.019	10	05/28/2024 09:00	05/31/2024 23:32	J	
4,4'-DDE	0.014 U	mg/Kg	0.12	0.014	10	05/28/2024 09:00	05/31/2024 23:32	J	
4,4'-DDT	0.032 U	mg/Kg	0.12	0.032	10	05/28/2024 09:00	05/31/2024 23:32	J	





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489005
Sample ID: PC-24-4

Date Collected: 05/21/2024 10:29
Date Received: 05/22/2024 10:21

Matrix: Soil

Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Aldrin	0.017 U	mg/Kg	0.12	0.017	10	05/28/2024 09:00	05/31/2024 23:32	J
Chlordane (technical)	0.47 U	mg/Kg	1.2	0.47	10	05/28/2024 09:00	05/31/2024 23:32	J
Dieldrin	0.015 U	mg/Kg	0.12	0.015	10	05/28/2024 09:00	05/31/2024 23:32	J
Endosulfan I	0.018 U	mg/Kg	0.12	0.018	10	05/28/2024 09:00	05/31/2024 23:32	J
Endosulfan II	0.012 U	mg/Kg	0.12	0.012	10	05/28/2024 09:00	05/31/2024 23:32	J
Endosulfan Sulfate	0.021 U	mg/Kg	0.12	0.021	10	05/28/2024 09:00	05/31/2024 23:32	J
Endrin	0.032 U	mg/Kg	0.12	0.032	10	05/28/2024 09:00	05/31/2024 23:32	J
Endrin Aldehyde	0.019 U	mg/Kg	0.12	0.019	10	05/28/2024 09:00	05/31/2024 23:32	J
Heptachlor	0.021 U	mg/Kg	0.12	0.021	10	05/28/2024 09:00	05/31/2024 23:32	J
Heptachlor Epoxide	0.016 U	mg/Kg	0.12	0.016	10	05/28/2024 09:00	05/31/2024 23:32	J
Methoxychlor	0.023 U	mg/Kg	0.12	0.023	10	05/28/2024 09:00	05/31/2024 23:32	J
Toxaphene	0.81 U	mg/Kg	1.2	0.81	10	05/28/2024 09:00	05/31/2024 23:32	J
alpha-BHC	0.019 U	mg/Kg	0.12	0.019	10	05/28/2024 09:00	05/31/2024 23:32	J
beta-BHC	0.013 U	mg/Kg	0.12	0.013	10	05/28/2024 09:00	05/31/2024 23:32	J
delta-BHC	0.014 U	mg/Kg	0.12	0.014	10	05/28/2024 09:00	05/31/2024 23:32	J
gamma-BHC (Lindane)	0.020 U	mg/Kg	0.12	0.020	10	05/28/2024 09:00	05/31/2024 23:32	J
SEMIVOLATILES (SW-846 3550B/SW-846 8270C (SIM))								
1-Methylnaphthalene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
2-Methylnaphthalene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Acenaphthene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Acenaphthylene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Anthracene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Benzo[a]anthracene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Benzo[a]pyrene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Benzo[b]fluoranthene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Benzo[g,h,i]perylene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Benzo[k]fluoranthene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489005	Date Collected: 05/21/2024 10:29	Matrix: Soil
Sample ID: PC-24-4	Date Received: 05/22/2024 10:21	

Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Chrysene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Dibenzo[a,h]anthracene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Fluoranthene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Fluorene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Indeno(1,2,3-cd)pyrene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Naphthalene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Phenanthrene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
Pyrene	0.014 U	mg/Kg	0.029	0.014	1	05/24/2024 16:46	05/29/2024 02:45	J
(SM 2540G)								
Percent Moisture	72	%	0.0010	0.0010	1	05/28/2024 15:44	05/28/2024 15:44	J

Analysis Results Comments

Mercury

V|Method Blank Contamination

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
2-Fluorobiphenyl (S)	mg/Kg	0.40	0.32	80	37 - 127	J
Nitrobenzene-d5 (S)	mg/Kg	0.40	0.30	75	33 - 134	J
p-Terphenyl-d14 (S)	mg/Kg	0.40	0.36	91	42 - 141	J
Nonatricontane-C39 (S)	mg/Kg	6	4.20	70	36 - 132	J
o-Terphenyl (S)	mg/Kg	2	1.70	84	66 - 136	J
Decachlorobiphenyl (S)	ug/Kg	80	84	105	63 - 130	J
Tetrachloro-m-xylene (S)	ug/Kg	160	130	84	42 - 129	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Decachlorobiphenyl (S)	ug/Kg	80	87	109	61 - 147	J
Tetrachloro-m-xylene (S)	ug/Kg	160	150	94	44 - 130	J

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID:	J2407489006	Date Collected:	05/21/2024 10:48			Matrix:	Soil		
Sample ID:	PC-24-3	Date Received:	05/22/2024 10:21						
Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab	
METALS (SW-846 3050B/SW-846 6010)									
Aluminum	3700	mg/Kg	550	140	10	05/24/2024 11:23	06/03/2024 15:32	J	
Arsenic	1.6 I	mg/Kg	2.7	0.68	1	05/24/2024 11:23	05/28/2024 17:15	J	
Barium	7.7	mg/Kg	2.7	0.68	1	05/24/2024 11:23	05/28/2024 17:15	J	
Cadmium	0.068 I	mg/Kg	0.27	0.068	1	05/24/2024 11:23	05/28/2024 17:15	J	
Chromium	9.2	mg/Kg	1.1	0.27	1	05/24/2024 11:23	05/28/2024 17:15	J	
Copper	23	mg/Kg	2.7	0.68	1	05/24/2024 11:23	05/28/2024 17:15	J	
Lead	11	mg/Kg	2.7	0.68	1	05/24/2024 11:23	05/28/2024 17:15	J	
Nickel	2.1 I	mg/Kg	2.7	0.68	1	05/24/2024 11:23	05/28/2024 17:15	J	
Selenium	1.4 U	mg/Kg	5.5	1.4	1	05/24/2024 11:23	05/28/2024 17:15	J	
Silver	0.27 U	mg/Kg	1.1	0.27	1	05/24/2024 11:23	05/28/2024 17:15	J	
Zinc	16 I	mg/Kg	55	14	1	05/24/2024 11:23	05/28/2024 17:15	J	
METALS (SW-846 7471A)									
Mercury	0.037	mg/Kg	0.0064	0.0016	1	05/30/2024 11:41	05/30/2024 14:25	J	
SEMIVOLATILES (EPA 3546/SW-846 8082A)									
Aroclor 1016 (PCB-1016)	0.17 U	mg/Kg	0.67	0.17	5	05/28/2024 09:00	05/31/2024 12:32	J	
Aroclor 1221 (PCB-1221)	0.17 U	mg/Kg	0.67	0.17	5	05/28/2024 09:00	05/31/2024 12:32	J	
Aroclor 1232 (PCB-1232)	0.17 U	mg/Kg	0.67	0.17	5	05/28/2024 09:00	05/31/2024 12:32	J	
Aroclor 1242 (PCB-1242)	0.17 U	mg/Kg	0.67	0.17	5	05/28/2024 09:00	05/31/2024 12:32	J	
Aroclor 1248 (PCB-1248)	0.17 U	mg/Kg	0.67	0.17	5	05/28/2024 09:00	05/31/2024 12:32	J	
Aroclor 1254 (PCB-1254)	0.17 U	mg/Kg	0.67	0.17	5	05/28/2024 09:00	05/31/2024 12:32	J	
Aroclor 1260 (PCB-1260)	0.17 U	mg/Kg	0.67	0.17	5	05/28/2024 09:00	05/31/2024 12:32	J	
SEMIVOLATILES (FL-PRO)									
TPH	14 U	mg/Kg	24	14	1	05/24/2024 10:00	05/29/2024 19:54	J	
SEMIVOLATILES (SW-846 3550B/EPA 8081)									
4,4' -DDD	0.0073 U	mg/Kg	0.045	0.0073	10	05/28/2024 09:00	05/31/2024 23:52	J	
4,4' -DDE	0.0056 U	mg/Kg	0.045	0.0056	10	05/28/2024 09:00	05/31/2024 23:52	J	
4,4' -DDT	0.012 U	mg/Kg	0.045	0.012	10	05/28/2024 09:00	05/31/2024 23:52	J	





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489006
Sample ID: PC-24-3

Date Collected: 05/21/2024 10:48
Date Received: 05/22/2024 10:21

Matrix: Soil

Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Aldrin	0.0067 U	mg/Kg	0.045	0.0067	10	05/28/2024 09:00	05/31/2024 23:52	J
Chlordane (technical)	0.18 U	mg/Kg	0.45	0.18	10	05/28/2024 09:00	05/31/2024 23:52	J
Dieldrin	0.0057 U	mg/Kg	0.045	0.0057	10	05/28/2024 09:00	05/31/2024 23:52	J
Endosulfan I	0.0070 U	mg/Kg	0.045	0.0070	10	05/28/2024 09:00	05/31/2024 23:52	J
Endosulfan II	0.0048 U	mg/Kg	0.045	0.0048	10	05/28/2024 09:00	05/31/2024 23:52	J
Endosulfan Sulfate	0.0082 U	mg/Kg	0.045	0.0082	10	05/28/2024 09:00	05/31/2024 23:52	J
Endrin	0.012 U	mg/Kg	0.045	0.012	10	05/28/2024 09:00	05/31/2024 23:52	J
Endrin Aldehyde	0.0074 U	mg/Kg	0.045	0.0074	10	05/28/2024 09:00	05/31/2024 23:52	J
Heptachlor	0.0084 U	mg/Kg	0.045	0.0084	10	05/28/2024 09:00	05/31/2024 23:52	J
Heptachlor Epoxide	0.0062 U	mg/Kg	0.045	0.0062	10	05/28/2024 09:00	05/31/2024 23:52	J
Methoxychlor	0.0091 U	mg/Kg	0.045	0.0091	10	05/28/2024 09:00	05/31/2024 23:52	J
Toxaphene	0.32 U	mg/Kg	0.45	0.32	10	05/28/2024 09:00	05/31/2024 23:52	J
alpha-BHC	0.0075 U	mg/Kg	0.045	0.0075	10	05/28/2024 09:00	05/31/2024 23:52	J
beta-BHC	0.0052 U	mg/Kg	0.045	0.0052	10	05/28/2024 09:00	05/31/2024 23:52	J
delta-BHC	0.0053 U	mg/Kg	0.045	0.0053	10	05/28/2024 09:00	05/31/2024 23:52	J
gamma-BHC (Lindane)	0.0079 U	mg/Kg	0.045	0.0079	10	05/28/2024 09:00	05/31/2024 23:52	J
SEMIVOLATILES (SW-846 3550B/SW-846 8270C (SIM))								
1-Methylnaphthalene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
2-Methylnaphthalene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Acenaphthene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Acenaphthylene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Anthracene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Benzo[a]anthracene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Benzo[a]pyrene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Benzo[b]fluoranthene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Benzo[g,h,i]perylene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Benzo[k]fluoranthene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489006	Date Collected: 05/21/2024 10:48					Matrix: Soil		
Sample ID: PC-24-3	Date Received: 05/22/2024 10:21							
Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Chrysene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Dibenzo[a,h]anthracene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Fluoranthene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Fluorene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Indeno(1,2,3-cd)pyrene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Naphthalene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Phenanthrene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
Pyrene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:12	J
(SM 2540G)								
Percent Moisture	28	%	0.0010	0.0010	1	05/28/2024 15:44	05/28/2024 15:44	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
2-Fluorobiphenyl (S)	mg/Kg	0.40	0.34	84	37 - 127	J
Nitrobenzene-d5 (S)	mg/Kg	0.40	0.32	80	33 - 134	J
p-Terphenyl-d14 (S)	mg/Kg	0.40	0.38	94	42 - 141	J
Nonatricontane-C39 (S)	mg/Kg	6	4.60	76	36 - 132	J
o-Terphenyl (S)	mg/Kg	2	1.80	89	66 - 136	J
Decachlorobiphenyl (S)	ug/Kg	81	77	96	63 - 130	J
Tetrachloro-m-xylene (S)	ug/Kg	160	120	77	42 - 129	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Decachlorobiphenyl (S)	ug/Kg	81	71	89	61 - 147	J
Tetrachloro-m-xylene (S)	ug/Kg	160	150	95	44 - 130	J

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID:	J2407489007	Date Collected:	05/21/2024 11:10	Matrix:	Soil			
Sample ID:	PC-24-2	Date Received:	05/22/2024 10:21					
Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
METALS (SW-846 3050B/SW-846 6010)								
Aluminum	1400	mg/Kg	570	140	10	05/24/2024 11:23	06/03/2024 15:35	J
Arsenic	1.5 I	mg/Kg	2.9	0.71	1	05/24/2024 11:23	05/28/2024 17:19	J
Barium	3.5	mg/Kg	2.9	0.71	1	05/24/2024 11:23	05/28/2024 17:19	J
Cadmium	0.071 U	mg/Kg	0.29	0.071	1	05/24/2024 11:23	05/28/2024 17:19	J
Chromium	4.4	mg/Kg	1.1	0.29	1	05/24/2024 11:23	05/28/2024 17:19	J
Copper	5.8	mg/Kg	2.9	0.71	1	05/24/2024 11:23	05/28/2024 17:19	J
Lead	3.0	mg/Kg	2.9	0.71	1	05/24/2024 11:23	05/28/2024 17:19	J
Nickel	1.0 I	mg/Kg	2.9	0.71	1	05/24/2024 11:23	05/28/2024 17:19	J
Selenium	1.4 U	mg/Kg	5.7	1.4	1	05/24/2024 11:23	05/28/2024 17:19	J
Silver	0.29 U	mg/Kg	1.1	0.29	1	05/24/2024 11:23	05/28/2024 17:19	J
Zinc	14 U	mg/Kg	57	14	1	05/24/2024 11:23	05/28/2024 17:19	J
METALS (SW-846 7471A)								
Mercury	0.015	mg/Kg	0.0073	0.0018	1	05/30/2024 11:41	05/30/2024 14:27	J
SEMIVOLATILES (EPA 3546/SW-846 8082A)								
Aroclor 1016 (PCB-1016)	0.31 U	mg/Kg	1.2	0.31	10	05/28/2024 09:00	05/31/2024 12:53	J
Aroclor 1221 (PCB-1221)	0.31 U	mg/Kg	1.2	0.31	10	05/28/2024 09:00	05/31/2024 12:53	J
Aroclor 1232 (PCB-1232)	0.31 U	mg/Kg	1.2	0.31	10	05/28/2024 09:00	05/31/2024 12:53	J
Aroclor 1242 (PCB-1242)	0.31 U	mg/Kg	1.2	0.31	10	05/28/2024 09:00	05/31/2024 12:53	J
Aroclor 1248 (PCB-1248)	0.31 U	mg/Kg	1.2	0.31	10	05/28/2024 09:00	05/31/2024 12:53	J
Aroclor 1254 (PCB-1254)	0.31 U	mg/Kg	1.2	0.31	10	05/28/2024 09:00	05/31/2024 12:53	J
Aroclor 1260 (PCB-1260)	0.31 U	mg/Kg	1.2	0.31	10	05/28/2024 09:00	05/31/2024 12:53	J
SEMIVOLATILES (FL-PRO)								
TPH	14 U	mg/Kg	24	14	1	05/24/2024 10:00	05/29/2024 20:12	J
SEMIVOLATILES (SW-846 3550B/EPA 8081)								
4,4'-DDD	0.0067 U	mg/Kg	0.042	0.0067	10	05/28/2024 09:00	06/01/2024 00:13	J
4,4'-DDE	0.0052 U	mg/Kg	0.042	0.0052	10	05/28/2024 09:00	06/01/2024 00:13	J
4,4'-DDT	0.011 U	mg/Kg	0.042	0.011	10	05/28/2024 09:00	06/01/2024 00:13	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489007
Sample ID: PC-24-2

Date Collected: 05/21/2024 11:10
Date Received: 05/22/2024 10:21

Matrix: Soil

Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Aldrin	0.0061 U	mg/Kg	0.042	0.0061	10	05/28/2024 09:00	06/01/2024 00:13	J
Chlordane (technical)	0.17 U	mg/Kg	0.42	0.17	10	05/28/2024 09:00	06/01/2024 00:13	J
Dieldrin	0.0053 U	mg/Kg	0.042	0.0053	10	05/28/2024 09:00	06/01/2024 00:13	J
Endosulfan I	0.0065 U	mg/Kg	0.042	0.0065	10	05/28/2024 09:00	06/01/2024 00:13	J
Endosulfan II	0.0044 U	mg/Kg	0.042	0.0044	10	05/28/2024 09:00	06/01/2024 00:13	J
Endosulfan Sulfate	0.0076 U	mg/Kg	0.042	0.0076	10	05/28/2024 09:00	06/01/2024 00:13	J
Endrin	0.011 U	mg/Kg	0.042	0.011	10	05/28/2024 09:00	06/01/2024 00:13	J
Endrin Aldehyde	0.0068 U	mg/Kg	0.042	0.0068	10	05/28/2024 09:00	06/01/2024 00:13	J
Heptachlor	0.0077 U	mg/Kg	0.042	0.0077	10	05/28/2024 09:00	06/01/2024 00:13	J
Heptachlor Epoxide	0.0057 U	mg/Kg	0.042	0.0057	10	05/28/2024 09:00	06/01/2024 00:13	J
Methoxychlor	0.0084 U	mg/Kg	0.042	0.0084	10	05/28/2024 09:00	06/01/2024 00:13	J
Toxaphene	0.29 U	mg/Kg	0.42	0.29	10	05/28/2024 09:00	06/01/2024 00:13	J
alpha-BHC	0.0070 U	mg/Kg	0.042	0.0070	10	05/28/2024 09:00	06/01/2024 00:13	J
beta-BHC	0.0048 U	mg/Kg	0.042	0.0048	10	05/28/2024 09:00	06/01/2024 00:13	J
delta-BHC	0.0049 U	mg/Kg	0.042	0.0049	10	05/28/2024 09:00	06/01/2024 00:13	J
gamma-BHC (Lindane)	0.0073 U	mg/Kg	0.042	0.0073	10	05/28/2024 09:00	06/01/2024 00:13	J
SEMIVOLATILES (SW-846 3550B/SW-846 8270C (SIM))								
1-Methylnaphthalene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
2-Methylnaphthalene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Acenaphthene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Acenaphthylene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Anthracene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Benzo[a]anthracene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Benzo[a]pyrene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Benzo[b]fluoranthene	0.0066 I	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Benzo[g,h,i]perylene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Benzo[k]fluoranthene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489007	Date Collected: 05/21/2024 11:10					Matrix: Soil		
Sample ID: PC-24-2	Date Received: 05/22/2024 10:21							
Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Chrysene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Dibenzo[a,h]anthracene	0.0056 I	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Fluoranthene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Fluorene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Indeno(1,2,3-cd)pyrene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Naphthalene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Phenanthrene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
Pyrene	0.0056 U	mg/Kg	0.011	0.0056	1	05/24/2024 16:46	05/29/2024 03:38	J
(SM 2540G)								
Percent Moisture	27	%	0.0010	0.0010	1	05/28/2024 15:44	05/28/2024 15:44	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
2-Fluorobiphenyl (S)	mg/Kg	0.41	0.30	74	37 - 127	J
Nitrobenzene-d5 (S)	mg/Kg	0.41	0.27	68	33 - 134	J
p-Terphenyl-d14 (S)	mg/Kg	0.41	0.33	80	42 - 141	J
Nonatricontane-C39 (S)	mg/Kg	6.10	3.70	60	36 - 132	J
o-Terphenyl (S)	mg/Kg	2	1.70	83	66 - 136	J
Decachlorobiphenyl (S)	ug/Kg	76	87	115	63 - 130	J
Tetrachloro-m-xylene (S)	ug/Kg	150	120	79	42 - 129	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Decachlorobiphenyl (S)	ug/Kg	76	91	120	61 - 147	J
Tetrachloro-m-xylene (S)	ug/Kg	150	170	112	44 - 130	J

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Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID:	J2407489008	Date Collected:	05/21/2024 11:35			Matrix:	Soil		
Sample ID:	PC-24-1	Date Received:	05/22/2024 10:21						
Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab	
METALS (SW-846 3050B/SW-846 6010)									
Aluminum	2000	mg/Kg	570	140	10	05/24/2024 11:23	06/03/2024 15:39	J	
Arsenic	0.71 U	mg/Kg	2.8	0.71	1	05/24/2024 11:23	05/28/2024 17:22	J	
Barium	5.3	mg/Kg	2.8	0.71	1	05/24/2024 11:23	05/28/2024 17:22	J	
Cadmium	0.071 U	mg/Kg	0.28	0.071	1	05/24/2024 11:23	05/28/2024 17:22	J	
Chromium	6.2	mg/Kg	1.1	0.28	1	05/24/2024 11:23	05/28/2024 17:22	J	
Copper	13	mg/Kg	2.8	0.71	1	05/24/2024 11:23	05/28/2024 17:22	J	
Lead	4.9	mg/Kg	2.8	0.71	1	05/24/2024 11:23	05/28/2024 17:22	J	
Nickel	1.5 I	mg/Kg	2.8	0.71	1	05/24/2024 11:23	05/28/2024 17:22	J	
Selenium	1.4 U	mg/Kg	5.7	1.4	1	05/24/2024 11:23	05/28/2024 17:22	J	
Silver	0.28 U	mg/Kg	1.1	0.28	1	05/24/2024 11:23	05/28/2024 17:22	J	
Zinc	25 I	mg/Kg	57	14	1	05/24/2024 11:23	05/28/2024 17:22	J	
METALS (SW-846 7471A)									
Mercury	0.021	mg/Kg	0.0070	0.0017	1	05/30/2024 11:41	05/30/2024 14:30	J	
SEMIVOLATILES (EPA 3546/SW-846 8082A)									
Aroclor 1016 (PCB-1016)	0.37 U	mg/Kg	1.5	0.37	10	05/28/2024 09:00	05/31/2024 13:14	J	
Aroclor 1221 (PCB-1221)	0.37 U	mg/Kg	1.5	0.37	10	05/28/2024 09:00	05/31/2024 13:14	J	
Aroclor 1232 (PCB-1232)	0.37 U	mg/Kg	1.5	0.37	10	05/28/2024 09:00	05/31/2024 13:14	J	
Aroclor 1242 (PCB-1242)	0.37 U	mg/Kg	1.5	0.37	10	05/28/2024 09:00	05/31/2024 13:14	J	
Aroclor 1248 (PCB-1248)	0.37 U	mg/Kg	1.5	0.37	10	05/28/2024 09:00	05/31/2024 13:14	J	
Aroclor 1254 (PCB-1254)	0.37 U	mg/Kg	1.5	0.37	10	05/28/2024 09:00	05/31/2024 13:14	J	
Aroclor 1260 (PCB-1260)	0.37 U	mg/Kg	1.5	0.37	10	05/28/2024 09:00	05/31/2024 13:14	J	
SEMIVOLATILES (FL-PRO)									
TPH	15 U	mg/Kg	25	15	1	05/24/2024 10:00	05/29/2024 20:31	J	
SEMIVOLATILES (SW-846 3550B/EPA 8081)									
4,4'-DDD	0.0080 U	mg/Kg	0.049	0.0080	10	05/28/2024 09:00	06/01/2024 00:34	J	
4,4'-DDE	0.0062 U	mg/Kg	0.049	0.0062	10	05/28/2024 09:00	06/01/2024 00:34	J	
4,4'-DDT	0.014 U	mg/Kg	0.049	0.014	10	05/28/2024 09:00	06/01/2024 00:34	J	





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489008
Sample ID: PC-24-1

Date Collected: 05/21/2024 11:35
Date Received: 05/22/2024 10:21

Matrix: Soil

Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Aldrin	0.0073 U	mg/Kg	0.049	0.0073	10	05/28/2024 09:00	06/01/2024 00:34	J
Chlordane (technical)	0.20 U	mg/Kg	0.49	0.20	10	05/28/2024 09:00	06/01/2024 00:34	J
Dieldrin	0.0063 U	mg/Kg	0.049	0.0063	10	05/28/2024 09:00	06/01/2024 00:34	J
Endosulfan I	0.0077 U	mg/Kg	0.049	0.0077	10	05/28/2024 09:00	06/01/2024 00:34	J
Endosulfan II	0.0053 U	mg/Kg	0.049	0.0053	10	05/28/2024 09:00	06/01/2024 00:34	J
Endosulfan Sulfate	0.0090 U	mg/Kg	0.049	0.0090	10	05/28/2024 09:00	06/01/2024 00:34	J
Endrin	0.014 U	mg/Kg	0.049	0.014	10	05/28/2024 09:00	06/01/2024 00:34	J
Endrin Aldehyde	0.0081 U	mg/Kg	0.049	0.0081	10	05/28/2024 09:00	06/01/2024 00:34	J
Heptachlor	0.0092 U	mg/Kg	0.049	0.0092	10	05/28/2024 09:00	06/01/2024 00:34	J
Heptachlor Epoxide	0.0068 U	mg/Kg	0.049	0.0068	10	05/28/2024 09:00	06/01/2024 00:34	J
Methoxychlor	0.010 U	mg/Kg	0.049	0.010	10	05/28/2024 09:00	06/01/2024 00:34	J
Toxaphene	0.35 U	mg/Kg	0.49	0.35	10	05/28/2024 09:00	06/01/2024 00:34	J
alpha-BHC	0.0083 U	mg/Kg	0.049	0.0083	10	05/28/2024 09:00	06/01/2024 00:34	J
beta-BHC	0.0057 U	mg/Kg	0.049	0.0057	10	05/28/2024 09:00	06/01/2024 00:34	J
delta-BHC	0.0058 U	mg/Kg	0.049	0.0058	10	05/28/2024 09:00	06/01/2024 00:34	J
gamma-BHC (Lindane)	0.0087 U	mg/Kg	0.049	0.0087	10	05/28/2024 09:00	06/01/2024 00:34	J
SEMIVOLATILES (SW-846 3550B/SW-846 8270C (SIM))								
1-Methylnaphthalene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
2-Methylnaphthalene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Acenaphthene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Acenaphthylene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Anthracene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Benzo[a]anthracene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Benzo[a]pyrene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Benzo[b]fluoranthene	0.011 I	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Benzo[g,h,i]perylene	0.0072 I	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Benzo[k]fluoranthene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Lab ID: J2407489008
Sample ID: PC-24-1

Date Collected: 05/21/2024 11:35
Date Received: 05/22/2024 10:21

Matrix: Soil

Parameter	Results	Units	PQL	MDL	DF	Prepared	Analyzed	Lab
Chrysene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Dibenzo[a,h]anthracene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Fluoranthene	0.0060 I	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Fluorene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Indeno(1,2,3-cd)pyrene	0.0065 I	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Naphthalene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Phenanthrene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
Pyrene	0.0059 U	mg/Kg	0.012	0.0059	1	05/24/2024 16:46	05/29/2024 04:05	J
(SM 2540G)								
Percent Moisture	33	%	0.0010	0.0010	1	05/28/2024 15:44	05/28/2024 15:44	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
2-Fluorobiphenyl (S)	mg/Kg	0.40	0.21	53	37 - 127	J
Nitrobenzene-d5 (S)	mg/Kg	0.40	0.19	48	33 - 134	J
p-Terphenyl-d14 (S)	mg/Kg	0.40	0.28	71	42 - 141	J
Nonatricontane-C39 (S)	mg/Kg	6	3	51	36 - 132	J
o-Terphenyl (S)	mg/Kg	2	1.40	71	66 - 136	J
Decachlorobiphenyl (S)	ug/Kg	83	78	94	63 - 130	J
Tetrachloro-m-xylene (S)	ug/Kg	170	110	64	42 - 129	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

Analytical Results

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Decachlorobiphenyl (S)	ug/Kg	83	81	97	61 - 147	J
Tetrachloro-m-xylene (S)	ug/Kg	170	170	100	44 - 130	J

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Workorder: Phillippi Creek Dredging Study (J2407489)

QC Results

QC Batch: CVAj/2440 **Analysis Method:** SW-846 7471A
Preparation Method: SW-846 7471A
Associated Lab IDs: J2407489001, J2407489002, J2407489003, J2407489004, J2407489005, J2407489006, J2407489007, J2407489008

Method Blank(5322873)

Parameter	Results	Units	PQL	MDL	Lab
Mercury	0.0021 I	mg/Kg	0.0050	0.0012	J

Lab Control Sample (5322874)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Mercury	mg/Kg	0.10	0.11	111	80 - 120	J

QC Result Comments

Method Blank - 5322873 - Mercury

V|Method Blank Contamination





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

QC Results

QC Batch: CVAj/2443
Preparation Method: SW-846 7471A
Associated Lab IDs: J2407489002, J2407489006, J2407489007, J2407489008

Analysis Method: SW-846 7471A

Method Blank(5326298)

Parameter	Results	Units	PQL	MDL	Lab
Mercury	0.0012 U	mg/Kg	0.0050	0.0012	J

Lab Control Sample (5326299)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Mercury	mg/Kg	0.10	0.1	101	80 - 120	J

Matrix Spike (5326300); Matrix Spike Duplicate (5326301); Original (S2401324007); Parent Lab Sample (S2401324007)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	Lab
Mercury	mg/Kg	0.0920	0.11	103	80 - 120	0.11	101	8	20	J

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FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

QC Results

QC Batch: GCSJ/6434 **Analysis Method:** EPA 8081
Preparation Method: SW-846 3550B
Associated Lab IDs: J2407489001, J2407489002, J2407489003, J2407489004, J2407489005, J2407489006, J2407489007, J2407489008

Method Blank(5324200)

Parameter	Results	Units	PQL	MDL	Lab
alpha-BHC	0.00054 U	mg/Kg	0.0032	0.00054	J
gamma-BHC (Lindane)	0.00057 U	mg/Kg	0.0032	0.00057	J
beta-BHC	0.00037 U	mg/Kg	0.0032	0.00037	J
delta-BHC	0.00038 U	mg/Kg	0.0032	0.00038	J
Heptachlor	0.00060 U	mg/Kg	0.0032	0.00060	J
Aldrin	0.00048 U	mg/Kg	0.0032	0.00048	J
Heptachlor Epoxide	0.00044 U	mg/Kg	0.0032	0.00044	J
Endosulfan I	0.00050 U	mg/Kg	0.0032	0.00050	J
4,4'-DDE	0.00040 U	mg/Kg	0.0032	0.00040	J
Dieldrin	0.00041 U	mg/Kg	0.0032	0.00041	J
Endrin	0.00089 U	mg/Kg	0.0032	0.00089	J
4,4'-DDD	0.00052 U	mg/Kg	0.0032	0.00052	J
Endosulfan II	0.00035 U	mg/Kg	0.0032	0.00035	J
Endrin Aldehyde	0.00053 U	mg/Kg	0.0032	0.00053	J
4,4'-DDT	0.00089 U	mg/Kg	0.0032	0.00089	J
Endosulfan Sulfate	0.00059 U	mg/Kg	0.0032	0.00059	J
Methoxychlor	0.00065 U	mg/Kg	0.0032	0.00065	J
Chlordane (technical)	0.013 U	mg/Kg	0.032	0.013	J
Toxaphene	0.023 U	mg/Kg	0.032	0.023	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Decachlorobiphenyl (S)	mg/L	0.0810	0.0590	73	63 - 130	J
Tetrachloro-m-xylene (S)	mg/L	0.16	0.0770	48	42 - 129	J

Lab Control Sample (5324201)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
alpha-BHC	mg/Kg	0.0160	0.017	110	45 - 137	J
gamma-BHC (Lindane)	mg/Kg	0.0160	0.016	105	49 - 135	J
beta-BHC	mg/Kg	0.0160	0.016	100	50 - 136	J
delta-BHC	mg/Kg	0.0160	0.016	103	47 - 139	J
Heptachlor	mg/Kg	0.0160	0.015	98	47 - 136	J
Aldrin	mg/Kg	0.0160	0.014	88	45 - 136	J

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FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

QC Batch: GCSJ/6434 **Analysis Method:** EPA 8081
Preparation Method: SW-846 3550B
Associated Lab IDs: J2407489001, J2407489002, J2407489003, J2407489004, J2407489005, J2407489006, J2407489007, J2407489008

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Heptachlor Epoxide	mg/Kg	0.0160	0.014	91	52 - 136	J
Endosulfan I	mg/Kg	0.0160	0.015	98	53 - 132	J
4,4'-DDE	mg/Kg	0.0160	0.014	92	56 - 134	J
Dieldrin	mg/Kg	0.0160	0.015	95	56 - 136	J
Endrin	mg/Kg	0.0160	0.015	94	57 - 140	J
4,4'-DDD	mg/Kg	0.0160	0.015	99	56 - 139	J
Endosulfan II	mg/Kg	0.0160	0.013	84	53 - 134	J
Endrin Aldehyde	mg/Kg	0.0160	0.016	100	35 - 137	J
4,4'-DDT	mg/Kg	0.0160	0.016	101	50 - 141	J
Endosulfan Sulfate	mg/Kg	0.0160	0.014	90	55 - 136	J
Methoxychlor	mg/Kg	0.0160	0.019	119	52 - 143	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Decachlorobiphenyl (S)	mg/L	0.0780	0.0760	97	63 - 130	J
Tetrachloro-m-xylene (S)	mg/L	0.16	0.16	105	42 - 129	J

Matrix Spike (5324202); Matrix Spike Duplicate (5324203); Original (F2403180005); Parent Lab Sample (F2403180005)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	Lab
alpha-BHC	mg/Kg	0.0160	0.0077	48	45 - 137	0.0066	41	15	30	J
beta-BHC	mg/Kg	0.0160	0.012	74	50 - 136	0.011	72	3	30	J
delta-BHC	mg/Kg	0.0160	0.012	77	47 - 139	0.014	86	10	30	J
Heptachlor	mg/Kg	0.0160	0.011	67	47 - 136	0.0095	59	12	30	J
Aldrin	mg/Kg	0.0160	0.0084	53	45 - 136	0.0074	46	13	30	J
Heptachlor Epoxide	mg/Kg	0.0160	0.0094	59	52 - 136	0.0089	56	5	30	J
Endosulfan I	mg/Kg	0.0160	0.011	66	53 - 132	0.0096	60	9	30	J
4,4'-DDE	mg/Kg	0.0160	0.01	62	56 - 134	0.0096	60	4	30	J
Dieldrin	mg/Kg	0.0160	0.01	63	56 - 136	0.0093	58	7	30	J
Endrin	mg/Kg	0.0160	0.01	66	57 - 140	0.0095	59	10	30	J
4,4'-DDD	mg/Kg	0.0160	0.012	75	56 - 139	0.011	72	4	30	J
Endosulfan II	mg/Kg	0.0160	0.01	63	53 - 134	0.0092	58	8	30	J
Endrin Aldehyde	mg/Kg	0.0160	0.012	75	35 - 137	0.011	69	9	30	J
4,4'-DDT	mg/Kg	0.0160	0.011	71	50 - 141	0.011	67	6	30	J
Endosulfan Sulfate	mg/Kg	0.0160	0.011	71	55 - 136	0.01	65	9	30	J
Methoxychlor	mg/Kg	0.0160	0.018	115	52 - 143	0.017	104	11	30	J

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FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

QC Batch: GCSj/6434 **Analysis Method:** EPA 8081
Preparation Method: SW-846 3550B
Associated Lab IDs: J2407489001, J2407489002, J2407489003, J2407489004, J2407489005, J2407489006, J2407489007, J2407489008

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	Lab
Decachlorobiphenyl (S)	mg/L	0.08	0.0530	67	63 - 130	0.0530	66	1		J
Tetrachloro-m-xylene (S)	mg/L	0.16	0.0670	42	42 - 129	0.0550	35	19		J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

QC Results

QC Batch: GCSJ/6436 Analysis Method: FL-PRO
Preparation Method: FL-PRO
Associated Lab IDs: J2407489001, J2407489002, J2407489003, J2407489004, J2407489005, J2407489006, J2407489007, J2407489008

Method Blank(5321282)

Parameter	Results	Units	PQL	MDL	Lab
TPH	9.9 U	mg/Kg	17	9.9	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Nonatricontane-C39 (S)	mg/L	6	2.30	38	36 - 132	J
o-Terphenyl (S)	mg/L	2	1.40	68	66 - 136	J

Lab Control Sample (5321283)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
TPH	mg/Kg	34	23	68	49 - 128	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Nonatricontane-C39 (S)	mg/L	5.90	3.20	54	36 - 132	J
o-Terphenyl (S)	mg/L	2	1.60	80	66 - 136	J

Matrix Spike (5321833); Matrix Spike Duplicate (5321834); Original (J2407336003); Parent Lab Sample (J2407336003)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	Lab
TPH	mg/Kg	34	2100	-294	49 - 128	2500	895	17	25	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	Lab
Nonatricontane-C39 (S)	mg/L	6	3.20	53	36 - 132	24	406	153	25	J
o-Terphenyl (S)	mg/L	2	1.50	74	66 - 136	1.30	67	12	25	J

QC Result Comments

Matrix Spike - 5321833 - TPH

J4|Estimated Result

Matrix Spike Duplicate - 5321834 - TPH

J4|Estimated Result





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

QC Results

QC Batch: GCSJ/6450 Analysis Method: SW-846 8082A
Preparation Method: EPA 3546
Associated Lab IDs: J2407489001, J2407489002, J2407489003, J2407489004, J2407489005, J2407489006, J2407489007, J2407489008

Method Blank(5326179)

Parameter	Results	Units	PQL	MDL	Lab
Aroclor 1016 (PCB-1016)	0.023 U	mg/Kg	0.092	0.023	J
Aroclor 1221 (PCB-1221)	0.023 U	mg/Kg	0.092	0.023	J
Aroclor 1232 (PCB-1232)	0.023 U	mg/Kg	0.092	0.023	J
Aroclor 1242 (PCB-1242)	0.023 U	mg/Kg	0.092	0.023	J
Aroclor 1248 (PCB-1248)	0.023 U	mg/Kg	0.092	0.023	J
Aroclor 1254 (PCB-1254)	0.023 U	mg/Kg	0.092	0.023	J
Aroclor 1260 (PCB-1260)	0.023 U	mg/Kg	0.092	0.023	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Decachlorobiphenyl (S)	mg/L	0.0770	0.0710	92	61 - 147	J
Tetrachloro-m-xylene (S)	mg/L	0.15	0.12	80	44 - 130	J

Lab Control Sample (5326180)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Aroclor 1016 (PCB-1016)	mg/Kg	0.16	0.16	100	47 - 134	J
Aroclor 1260 (PCB-1260)	mg/Kg	0.16	0.16	97	53 - 140	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Decachlorobiphenyl (S)	mg/L	0.0810	0.0760	94	61 - 147	J
Tetrachloro-m-xylene (S)	mg/L	0.16	0.14	86	44 - 130	J

Matrix Spike (5324231); Matrix Spike Duplicate (5324232); Original (J2407489007); Parent Lab Sample (J2407489007)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	Lab
Aroclor 1016 (PCB-1016)	mg/Kg	0.16	0.13	83	47 - 134	0.11	70	18		J
Aroclor 1260 (PCB-1260)	mg/Kg	0.16	0.16	98	53 - 140	0.15	95	5		J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	Lab
Decachlorobiphenyl (S)	mg/L	0.0790	0.0980	123	61 - 147	0.0970	124	1		J
Tetrachloro-m-xylene (S)	mg/L	0.16	0.20	124	44 - 130	0.19	124	2		J

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FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

QC Results

QC Batch: ICPj/3605 **Analysis Method:** SW-846 6010
Preparation Method: SW-846 3050B
Associated Lab IDs: J2407489001, J2407489002, J2407489003, J2407489004, J2407489005, J2407489006, J2407489007, J2407489008

Method Blank(5321134)

Parameter	Results	Units	PQL	MDL	Lab
Silver	0.20 U	mg/Kg	0.80	0.20	J
Aluminum	10 U	mg/Kg	40	10	J
Arsenic	0.50 U	mg/Kg	2.0	0.50	J
Barium	0.50 U	mg/Kg	2.0	0.50	J
Cadmium	0.050 U	mg/Kg	0.20	0.050	J
Chromium	0.20 U	mg/Kg	0.80	0.20	J
Copper	0.50 U	mg/Kg	2.0	0.50	J
Nickel	0.50 U	mg/Kg	2.0	0.50	J
Lead	0.50 U	mg/Kg	2.0	0.50	J
Selenium	1.0 U	mg/Kg	4.0	1.0	J
Zinc	10 U	mg/Kg	40	10	J

Lab Control Sample (5321135)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Silver	mg/Kg	4	4.6	115	80 - 120	J
Aluminum	mg/Kg	200	180	92	80 - 120	J
Arsenic	mg/Kg	10	9.2	92	80 - 120	J
Barium	mg/Kg	10	9.2	92	80 - 120	J
Cadmium	mg/Kg	1	0.93	93	80 - 120	J
Chromium	mg/Kg	4	3.7	94	80 - 120	J
Copper	mg/Kg	10	9.2	92	80 - 120	J
Nickel	mg/Kg	10	9.3	93	80 - 120	J
Lead	mg/Kg	10	8.8	88	80 - 120	J
Selenium	mg/Kg	20	19	93	80 - 120	J
Zinc	mg/Kg	200	190	94	80 - 120	J

Matrix Spike (5321136); Matrix Spike Duplicate (5321137); Original (J2407489001); Parent Lab Sample (J2407489001)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	Lab
Silver	mg/Kg	3.70	4	107	75 - 125	4.2	103	4	20	J
Aluminum	mg/Kg	190	5900	820	75 - 125	5400	502	9	20	J
Arsenic	mg/Kg	9.30	8.6	86	75 - 125	8.7	81	1	20	J
Barium	mg/Kg	9.30	21	96	75 - 125	21	85	2	20	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

QC Batch: ICPJ/3605 **Analysis Method:** SW-846 6010
Preparation Method: SW-846 3050B
Associated Lab IDs: J2407489001, J2407489002, J2407489003, J2407489004, J2407489005, J2407489006, J2407489007, J2407489008

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	Lab
Cadmium	mg/Kg	0.93	0.93	78	75 - 125	0.94	73	1	20	J
Chromium	mg/Kg	3.70	17	145	75 - 125	16	123	3	20	J
Copper	mg/Kg	9.30	33	114	75 - 125	32	97	3	20	J
Nickel	mg/Kg	9.30	11	84	75 - 125	11	80	2	20	J
Lead	mg/Kg	9.30	20	113	75 - 125	19	96	5	20	J
Selenium	mg/Kg	19	17	90	75 - 125	17	84	1	20	J
Zinc	mg/Kg	190	220	88	75 - 125	220	83	2	20	J

Matrix Spike (5321136); Matrix Spike Duplicate (5321137); Original (J2407489001); Parent Lab Sample (J2407489001)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	Lab
Silver	mg/Kg	3.70	4	107	75 - 125	4.2	103	4	20	J
Aluminum	mg/Kg	190	5900	820	75 - 125	5400	502	9	20	J
Arsenic	mg/Kg	9.30	8.6	86	75 - 125	8.7	81	1	20	J
Barium	mg/Kg	9.30	21	96	75 - 125	21	85	2	20	J
Cadmium	mg/Kg	0.93	0.93	78	75 - 125	0.94	73	1	20	J
Chromium	mg/Kg	3.70	17	145	75 - 125	16	123	3	20	J
Copper	mg/Kg	9.30	33	114	75 - 125	32	97	3	20	J
Nickel	mg/Kg	9.30	11	84	75 - 125	11	80	2	20	J
Lead	mg/Kg	9.30	20	113	75 - 125	19	96	5	20	J
Selenium	mg/Kg	19	17	90	75 - 125	17	84	1	20	J
Zinc	mg/Kg	190	220	88	75 - 125	220	83	2	20	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

QC Results

QC Batch: MSSJ/3992 **Analysis Method:** SW-846 8270C (SIM)
Preparation Method: SW-846 3550B
Associated Lab IDs: J2407489001, J2407489002, J2407489003, J2407489004, J2407489005, J2407489006, J2407489007, J2407489008

Method Blank(5321289)

Parameter	Results	Units	PQL	MDL	Lab
Naphthalene	0.0040 U	mg/Kg	0.0081	0.0040	J
2-Methylnaphthalene	0.0040 U	mg/Kg	0.0081	0.0040	J
1-Methylnaphthalene	0.0040 U	mg/Kg	0.0081	0.0040	J
Acenaphthylene	0.0040 U	mg/Kg	0.0081	0.0040	J
Acenaphthene	0.0040 U	mg/Kg	0.0081	0.0040	J
Fluorene	0.0040 U	mg/Kg	0.0081	0.0040	J
Phenanthrene	0.0040 U	mg/Kg	0.0081	0.0040	J
Anthracene	0.0040 U	mg/Kg	0.0081	0.0040	J
Fluoranthene	0.0040 U	mg/Kg	0.0081	0.0040	J
Pyrene	0.0040 U	mg/Kg	0.0081	0.0040	J
Benzo[a]anthracene	0.0040 U	mg/Kg	0.0081	0.0040	J
Chrysene	0.0040 U	mg/Kg	0.0081	0.0040	J
Benzo[b]fluoranthene	0.0040 U	mg/Kg	0.0081	0.0040	J
Benzo[k]fluoranthene	0.0040 U	mg/Kg	0.0081	0.0040	J
Benzo[a]pyrene	0.0040 U	mg/Kg	0.0081	0.0040	J
Indeno(1,2,3-cd)pyrene	0.0040 U	mg/Kg	0.0081	0.0040	J
Dibenzo[a,h]anthracene	0.0040 U	mg/Kg	0.0081	0.0040	J
Benzo[g,h,i]perylene	0.0040 U	mg/Kg	0.0081	0.0040	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
2-Fluorobiphenyl (S)	mg/L	0.40	0.27	67	37 - 127	J
Nitrobenzene-d5 (S)	mg/L	0.40	0.28	68	33 - 134	J
p-Terphenyl-d14 (S)	mg/L	0.40	0.35	86	42 - 141	J

Lab Control Sample (5321290)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Naphthalene	mg/Kg	0.20	0.13	64	38 - 120	J
2-Methylnaphthalene	mg/Kg	0.20	0.14	69	39 - 120	J
1-Methylnaphthalene	mg/Kg	0.20	0.15	73	43 - 120	J
Acenaphthylene	mg/Kg	0.20	0.14	68	39 - 118	J
Acenaphthene	mg/Kg	0.20	0.13	66	44 - 117	J
Fluorene	mg/Kg	0.20	0.14	71	47 - 121	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

QC Batch: MSSj/3992 **Analysis Method:** SW-846 8270C (SIM)
Preparation Method: SW-846 3550B
Associated Lab IDs: J2407489001, J2407489002, J2407489003, J2407489004, J2407489005, J2407489006, J2407489007, J2407489008

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
Phenanthrene	mg/Kg	0.20	0.14	71	49 - 122	J
Anthracene	mg/Kg	0.20	0.15	76	50 - 123	J
Fluoranthene	mg/Kg	0.20	0.15	75	51 - 126	J
Pyrene	mg/Kg	0.20	0.15	74	51 - 127	J
Benzo[a]anthracene	mg/Kg	0.20	0.15	72	52 - 126	J
Chrysene	mg/Kg	0.20	0.15	74	52 - 128	J
Benzo[b]fluoranthene	mg/Kg	0.20	0.14	70	43 - 132	J
Benzo[k]fluoranthene	mg/Kg	0.20	0.15	73	46 - 133	J
Benzo[a]pyrene	mg/Kg	0.20	0.15	75	42 - 129	J
Indeno(1,2,3-cd)pyrene	mg/Kg	0.20	0.16	78	39 - 135	J
Dibenzo[a,h]anthracene	mg/Kg	0.20	0.15	77	40 - 139	J
Benzo[g,h,i]perylene	mg/Kg	0.20	0.14	71	41 - 133	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Lab
2-Fluorobiphenyl (S)	mg/L	0.40	0.30	75	37 - 127	J
Nitrobenzene-d5 (S)	mg/L	0.40	0.29	71	33 - 134	J
p-Terphenyl-d14 (S)	mg/L	0.40	0.36	90	42 - 141	J

Matrix Spike (5321601); Matrix Spike Duplicate (5321602); Original (J2407336003); Parent Lab Sample (J2407336003)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	Lab
Naphthalene	mg/Kg	0.20	0.12	62	38 - 120	0.12	56	4	30	J
2-Methylnaphthalene	mg/Kg	0.20	0.13	66	39 - 120	0.13	65	3	30	J
1-Methylnaphthalene	mg/Kg	0.20	0.13	68	43 - 120	0.13	63	2	30	J
Acenaphthylene	mg/Kg	0.20	0.13	64	39 - 118	0.12	57	6	30	J
Acenaphthene	mg/Kg	0.20	0.13	67	44 - 117	0.12	60	5	30	J
Fluorene	mg/Kg	0.20	0.14	72	47 - 121	0.13	64	7	30	J
Phenanthrene	mg/Kg	0.20	0.14	71	49 - 122	0.13	64	5	30	J
Anthracene	mg/Kg	0.20	0.15	74	50 - 123	0.14	68	3	30	J
Fluoranthene	mg/Kg	0.20	0.14	70	51 - 126	0.13	63	5	30	J
Pyrene	mg/Kg	0.20	0.13	66	51 - 127	0.13	59	5	30	J
Benzo[a]anthracene	mg/Kg	0.20	0.13	68	52 - 126	0.13	62	5	30	J
Chrysene	mg/Kg	0.20	0.13	68	52 - 128	0.13	62	4	30	J
Benzo[b]fluoranthene	mg/Kg	0.20	0.14	70	43 - 132	0.12	60	10	30	J
Benzo[k]fluoranthene	mg/Kg	0.20	0.14	71	46 - 133	0.13	61	9	30	J

Wednesday, June 5, 2024 9:59:42 AM
Dates and times are displayed using (-04:00)
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FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

QC Batch: MSSj/3992 **Analysis Method:** SW-846 8270C (SIM)
Preparation Method: SW-846 3550B
Associated Lab IDs: J2407489001, J2407489002, J2407489003, J2407489004, J2407489005, J2407489006, J2407489007, J2407489008

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	Lab
Benzo[a]pyrene	mg/Kg	0.20	0.14	72	42 - 129	0.13	61	11	30	J
Indeno(1,2,3-cd)pyrene	mg/Kg	0.20	0.16	84	39 - 135	0.15	71	11	30	J
Dibenzo[a,h]anthracene	mg/Kg	0.20	0.16	79	40 - 139	0.15	70	7	30	J
Benzo[g,h,i]perylene	mg/Kg	0.20	0.14	72	41 - 133	0.13	62	9	30	J

Surrogates

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	Lab
2-Fluorobiphenyl (S)	mg/L	0.39	0.30	76	37 - 127	0.28	67	7	30	J
Nitrobenzene-d5 (S)	mg/L	0.39	0.26	66	33 - 134	0.24	58	8	30	J
p-Terphenyl-d14 (S)	mg/L	0.39	0.32	81	42 - 141	0.30	72	6	30	J





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

QC Cross Reference

Lab ID	Sample ID	Prep Batch	Prep Method
CVAj/2440 - SW-846 7471A			
J2407489001	PC-24-7	DGMj/8366	SW-846 7471A
J2407489003	PC-24-6	DGMj/8366	SW-846 7471A
J2407489004	PC-24-5	DGMj/8366	SW-846 7471A
J2407489005	PC-24-4	DGMj/8366	SW-846 7471A
CVAj/2443 - SW-846 7471A			
J2407489002	PC-24-8	DGMj/8382	SW-846 7471A
J2407489006	PC-24-3	DGMj/8382	SW-846 7471A
J2407489007	PC-24-2	DGMj/8382	SW-846 7471A
J2407489008	PC-24-1	DGMj/8382	SW-846 7471A
GCSj/6434 - EPA 8081			
J2407489001	PC-24-7	EXTj/9144	SW-846 3550B
J2407489002	PC-24-8	EXTj/9144	SW-846 3550B
J2407489003	PC-24-6	EXTj/9144	SW-846 3550B
J2407489004	PC-24-5	EXTj/9144	SW-846 3550B
J2407489005	PC-24-4	EXTj/9144	SW-846 3550B
J2407489006	PC-24-3	EXTj/9144	SW-846 3550B
J2407489007	PC-24-2	EXTj/9144	SW-846 3550B
J2407489008	PC-24-1	EXTj/9144	SW-846 3550B
GCSj/6436 - FL-PRO			
J2407489001	PC-24-7	EXTj/9125	FL-PRO
J2407489002	PC-24-8	EXTj/9125	FL-PRO
J2407489003	PC-24-6	EXTj/9125	FL-PRO
J2407489004	PC-24-5	EXTj/9125	FL-PRO
J2407489005	PC-24-4	EXTj/9125	FL-PRO
J2407489006	PC-24-3	EXTj/9125	FL-PRO
J2407489007	PC-24-2	EXTj/9125	FL-PRO
J2407489008	PC-24-1	EXTj/9125	FL-PRO





FINAL

Workorder: Phillippi Creek Dredging Study (J2407489)

QC Cross Reference

Lab ID	Sample ID	Prep Batch	Prep Method
GCSj/6450 - SW-846 8082A			
J2407489001	PC-24-7	EXTj/9158	EPA 3546
J2407489002	PC-24-8	EXTj/9158	EPA 3546
J2407489003	PC-24-6	EXTj/9158	EPA 3546
J2407489004	PC-24-5	EXTj/9158	EPA 3546
J2407489005	PC-24-4	EXTj/9158	EPA 3546
J2407489006	PC-24-3	EXTj/9158	EPA 3546
J2407489007	PC-24-2	EXTj/9158	EPA 3546
J2407489008	PC-24-1	EXTj/9158	EPA 3546
ICPj/3605 - SW-846 6010			
J2407489001	PC-24-7	DGMj/8344	SW-846 3050B
J2407489002	PC-24-8	DGMj/8344	SW-846 3050B
J2407489003	PC-24-6	DGMj/8344	SW-846 3050B
J2407489004	PC-24-5	DGMj/8344	SW-846 3050B
J2407489005	PC-24-4	DGMj/8344	SW-846 3050B
J2407489006	PC-24-3	DGMj/8344	SW-846 3050B
J2407489007	PC-24-2	DGMj/8344	SW-846 3050B
J2407489008	PC-24-1	DGMj/8344	SW-846 3050B
MSSj/3992 - SW-846 8270C (SIM)			
J2407489001	PC-24-7	EXTj/9126	SW-846 3550B
J2407489002	PC-24-8	EXTj/9126	SW-846 3550B
J2407489003	PC-24-6	EXTj/9126	SW-846 3550B
J2407489004	PC-24-5	EXTj/9126	SW-846 3550B
J2407489005	PC-24-4	EXTj/9126	SW-846 3550B
J2407489006	PC-24-3	EXTj/9126	SW-846 3550B
J2407489007	PC-24-2	EXTj/9126	SW-846 3550B
J2407489008	PC-24-1	EXTj/9126	SW-846 3550B

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Workorder: Phillippi Creek Dredging Study (J2407489)

QC Cross Reference

Lab ID	Sample ID	Prep Batch	Prep Method
WCAj/14607 - SM 2540G			
J2407489001	PC-24-7		
J2407489002	PC-24-8		
J2407489003	PC-24-6		
J2407489004	PC-24-5		
J2407489005	PC-24-4		
J2407489006	PC-24-3		
J2407489007	PC-24-2		
J2407489008	PC-24-1		





* J2407489 *

Client Name: Athena Technologies						Project Name: Phillippi Creek Dredging Study										
Address: 1293 Graham Farm Rd						Project Number:										
McCellanville, SC 29458						PO Number:										
Phone: 561-702-0768						FDEP Facility No:										
Fax:						FDEP Facility Addr:										
Contact: Lucy Thein						Special Instructions:										
Sampled By:																
Turn Around Time: Standard Rush																
AEL Profile #: 77037						ADAPT EQUIS Other										
SAMPLE ID	SAMPLE DESCRIPTION					Grab Comp	SAMPLING DATE TIME		MATRIX	NO. COUNT	ANALYSIS REQUIRED					BOTTLE SIZE & TYPE
PC224-7	SEDIMENT COMP					Comp	5/21	0844	SO	1	PAH by 8270SIM					8 oz Jar
PC224-8	SEDIMENT					Comp	5/21	0917	SO	1	TRPH by FLPOR					
PC224-6	SEDIMENT					Comp	5/21	0934	SO	1	8081/8082					
PC224-5	SEDIMENT					Comp	5/21	0955	SO	1	Al,As,Ba,Cd,Cr,Cu,Pb,Hg,Ni,Se,Ag,Zn					
PC224-4	SEDIMENT					Comp	5/21	1029	SO	1						
PC224-3	SEDIMENT					Comp	5/21	1048	SO	1						
PC224-2	SEDIMENT					Comp	5/21	1110	SO	1						
PC224-1	SEDIMENT					Comp	5/21	1135	SO	1						
Matrix Code: WW = wastewater SW = surface water GW = ground water DW = drinking water O = oil A = air SO = soil SL = sludge											Preservation Code: I = ice H=(HCl) S=(H2SO4) N=(HNO3) T=(Sodium Thiosulfate)					
Received on ice Yes No Temp taken from sample Temp from blank Where required, pH checked											Temp. when received (observed) 1.9 °C Temp. when received (corrected) 0.9 °C					
DCN: AD-D051web Form last revised 08/07/2019 Device used for measuring Temp by unique identifier (circle IR temp gun used) J: 9A G: LT-1 LT-2 T: 10A A: 3A M: 3A S: 1V F: 1A																
Relinquished by: Date Time Received by: Date Time											FOR DRINKING WATER USE: (When PWS Information not otherwise supplied) PWS ID: _____ Contact Person: _____ Supplier of Water: _____ Site Address: _____					
1	JACK WILKINSON	5/22	1021	Lugger-Campbell	5-22-14	1021										
2																
3																
4																

Client: Athena TechnologiesProject name: Phillippi Creek Dredging

Date/Time

Rcvd: 5:22:24 1021

Log-In request number:

52407489Received by: Tippini CampbellCompleted by: SC**Cooler/Shipping Information:**Courier: ☐ AEL ☒ Client ☐ UPS ☐ Blue Streak ☐ FedEx ☐ AES ☐ ASAP ☐ Other (describe): _____Type: ☒ Cooler ☐ Box ☐ Other (describe) _____

Cooler temperature: Identify the cooler and document the temperature blank or ice water measurement

Cooler ID	1				
Temp (°C)	0.9				
Temp taken from	☒ Sample Bottle ☐ Cooler	☐ Sample Bottle ☐ Cooler	☐ Sample Bottle ☐ Cooler	☐ Sample Bottle ☐ Cooler	☐ Sample Bottle ☐ Cooler
Temp measured with	☐ IR gun S/N 9333779 ☒ Thermometer (enter ID): <u>9A</u>	☐ IR gun S/N 9333779 ☐ Thermometer (enter ID):	☐ IR gun S/N 9333779 ☐ Thermometer (enter ID):	☐ IR gun S/N 9333779 ☐ Thermometer (enter ID):	☐ IR gun S/N 9333779 ☐ Thermometer (enter ID):

Other Information:

Any discrepancies should be explained in the "Comments" section below.

CHECKLIST	YES	NO	NA
1. Were custody seals on shipping container(s) intact?	✓		
2. Were custody papers properly included with samples?	✓		
3. Were custody papers properly filled out (ink, signed, match labels)?	✓		
4. Did all bottles arrive in good condition (unbroken)?	✓		
5. Were all bottle labels complete (sample #, date, signed, analysis, preservatives)?	✓		
6. Did the sample labels agree with the chain of custody?	✓		
7. Were correct bottles used for the tests indicated?	✓		
8. Were proper sample preservation techniques indicated on the label?	✓		
9. Were samples received within holding times?	✓		
10. Were all VOA vials free of the presence of air bubbles?	✓		✓
11. Have all Soil VOA Vials and Encores been placed in a freezer within 48 hours of collection?	✓		
12. Were samples in direct contact with wet ice? If "No," check one: ☐ NO ICE ☐ BLUE ICE	✓		
13. Was the cooler temperature less than 6°C?	✓		
14. Where pH preservation is required, are sample pHs checked and any anomalies recorded by Sample control? Are all <2 or >10? Note: VOA samples are checked by laboratory analysts.	✓		
15. Was sufficient sample volume provided to perform all tests?	✓		
16. If for Bacteriological testing, were containers supplied by AEL? (See QA officer if answer is no)			✓
17. Were all sample containers provided by AEL? (Other than Bacteriological)	✓		
18. Were samples accepted into the laboratory?	✓		
19. When necessary to split samples into other bottles, is it noted in the comments?	✓		
20. Where Encores received and if so, how many?			✓

Comments: (Note all sample(s) and container (s) with a "No" checklist response in this comment section)

Benzo(a)pyrene Conversion Table

For Direct Exposure Soil Cleanup Target Levels

Facility/Site Name	Phillippi Creek Dredging Study
Location	
Facility/Site ID No.	
Soil Sample No.	PC-24-1
Sample Date	5/21/2024 11:35
Location	
Depth (ft)	

Instructions: Calculate Total Benzo(a)pyrene Equivalents if at least one of the carcinogenic PAHs is detected in the sample at a concentration equal to or higher than the Method Detection Limit (MDL), whether quantified with certainty (the concentration reported has no qualifier) or estimated (the concentration reported has a “J”, “T” or “I” qualifier). Enter the contaminant concentrations (in mg/kg) for all seven carcinogenic PAHs in the yellow boxes using the following criteria (and see table below):

1. If quantified with certainty, or estimated and has the “J” qualifier, enter the reported value.
2. If not detected at the MDL (the concentration reported is the MDL followed by the “U” qualifier) enter 1/2 of the reported value.
3. If detected at a concentration lower than the MDL and the concentration is estimated (has the “T” qualifier) enter the estimated value.
4. If detected at a concentration equal to or higher than the MDL but lower than the Practical Quantitation Limit (PQL) and the concentration is estimated (has the “I” qualifier) enter the estimated value.
5. If detected at a concentration equal to or higher than the MDL but lower than the PQL and it is not estimated (the concentration reported is the PQL followed by the “M” qualifier) enter 1/2 of the reported value.

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	0.00295	1.0	0.0030
Benzo(a)anthracene	0.00295	0.1	0.0003
Benzo(b)fluoranthene	0.011	0.1	0.0011
Benzo(k)fluoranthene	0.00295	0.01	0.0000
Chrysene	0.00295	0.001	0.0000
Dibenz(a,h)anthracene	0.00295	1.0	0.0030
Indeno(1,2,3-cd)pyrene	0.0065	0.1	0.0007

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 0.0

The concentration shown does not exceed the Residential Direct Exposure SCTL of 0.1 mg/kg.

The concentration shown does not exceed the Industrial Direct Exposure SCTL of 0.7 mg/kg.

Summary Criteria for Table Entries			
Detection	Concentration Reported	Data Qualifier	Enter
Various	Quantified with certainty	None	reported value
Various	Estimated	J	reported (estimated) value
ND at MDL	MDL	U	1/2 reported value
< MDL	Estimated	T	reported (estimated) value
≥ MDL but < PQL	Estimated	I	reported (estimated) value
≥ MDL but < PQL	PQL	M	1/2 reported value

Benzo(a)pyrene Conversion Table

For Direct Exposure Soil Cleanup Target Levels

Facility/Site Name	Phillippi Creek Dredging Study
Location	
Facility/Site ID No.	
Soil Sample No.	PC-24-2
Sample Date	5/21/2024 11:10
Location	
Depth (ft)	

Instructions: Calculate Total Benzo(a)pyrene Equivalents if at least one of the carcinogenic PAHs is detected in the sample at a concentration equal to or higher than the Method Detection Limit (MDL), whether quantified with certainty (the concentration reported has no qualifier) or estimated (the concentration reported has a “J”, “T” or “I” qualifier). Enter the contaminant concentrations (in mg/kg) for all seven carcinogenic PAHs in the yellow boxes using the following criteria (and see table below):

1. If quantified with certainty, or estimated and has the “J” qualifier, enter the reported value.
2. If not detected at the MDL (the concentration reported is the MDL followed by the “U” qualifier) enter 1/2 of the reported value.
3. If detected at a concentration lower than the MDL and the concentration is estimated (has the “T” qualifier) enter the estimated value.
4. If detected at a concentration equal to or higher than the MDL but lower than the Practical Quantitation Limit (PQL) and the concentration is estimated (has the “I” qualifier) enter the estimated value.
5. If detected at a concentration equal to or higher than the MDL but lower than the PQL and it is not estimated (the concentration reported is the PQL followed by the “M” qualifier) enter 1/2 of the reported value.

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	0.0028	1.0	0.0028
Benzo(a)anthracene	0.0028	0.1	0.0003
Benzo(b)fluoranthene	0.0066	0.1	0.0007
Benzo(k)fluoranthene	0.0028	0.01	0.0000
Chrysene	0.0028	0.001	0.0000
Dibenz(a,h)anthracene	0.0056	1.0	0.0056
Indeno(1,2,3-cd)pyrene	0.0028	0.1	0.0003

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 0.0

The concentration shown does not exceed the Residential Direct Exposure SCTL of 0.1 mg/kg.

The concentration shown does not exceed the Industrial Direct Exposure SCTL of 0.7 mg/kg.

Summary Criteria for Table Entries			
Detection	Concentration Reported	Data Qualifier	Enter
Various	Quantified with certainty	None	reported value
Various	Estimated	J	reported (estimated) value
ND at MDL	MDL	U	1/2 reported value
< MDL	Estimated	T	reported (estimated) value
≥ MDL but < PQL	Estimated	I	reported (estimated) value
≥ MDL but < PQL	PQL	M	1/2 reported value

Benzo(a)pyrene Conversion Table

For Direct Exposure Soil Cleanup Target Levels

Facility/Site Name	Phillippi Creek Dredging Study
Location	
Facility/Site ID No.	
Soil Sample No.	PC-24-3
Sample Date	5/21/2024 10:48
Location	
Depth (ft)	

Instructions: Calculate Total Benzo(a)pyrene Equivalents if at least one of the carcinogenic PAHs is detected in the sample at a concentration equal to or higher than the Method Detection Limit (MDL), whether quantified with certainty (the concentration reported has no qualifier) or estimated (the concentration reported has a “J”, “T” or “I” qualifier). Enter the contaminant concentrations (in mg/kg) for all seven carcinogenic PAHs in the yellow boxes using the following criteria (and see table below):

1. If quantified with certainty, or estimated and has the “J” qualifier, enter the reported value.
2. If not detected at the MDL (the concentration reported is the MDL followed by the “U” qualifier) enter 1/2 of the reported value.
3. If detected at a concentration lower than the MDL and the concentration is estimated (has the “T” qualifier) enter the estimated value.
4. If detected at a concentration equal to or higher than the MDL but lower than the Practical Quantitation Limit (PQL) and the concentration is estimated (has the “I” qualifier) enter the estimated value.
5. If detected at a concentration equal to or higher than the MDL but lower than the PQL and it is not estimated (the concentration reported is the PQL followed by the “M” qualifier) enter 1/2 of the reported value.

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	0.0028	1.0	0.0028
Benzo(a)anthracene	0.0028	0.1	0.0003
Benzo(b)fluoranthene	0.0028	0.1	0.0003
Benzo(k)fluoranthene	0.0028	0.01	0.0000
Chrysene	0.0028	0.001	0.0000
Dibenz(a,h)anthracene	0.0028	1.0	0.0028
Indeno(1,2,3-cd)pyrene	0.0028	0.1	0.0003

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 0.0

The concentration shown does not exceed the Residential Direct Exposure SCTL of 0.1 mg/kg.

The concentration shown does not exceed the Industrial Direct Exposure SCTL of 0.7 mg/kg.

Summary Criteria for Table Entries			
Detection	Concentration Reported	Data Qualifier	Enter
Various	Quantified with certainty	None	reported value
Various	Estimated	J	reported (estimated) value
ND at MDL	MDL	U	1/2 reported value
< MDL	Estimated	T	reported (estimated) value
≥ MDL but < PQL	Estimated	I	reported (estimated) value
≥ MDL but < PQL	PQL	M	1/2 reported value

Benzo(a)pyrene Conversion Table

For Direct Exposure Soil Cleanup Target Levels

Facility/Site Name	Phillippi Creek Dredging Study
Location	
Facility/Site ID No.	
Soil Sample No.	PC-24-4
Sample Date	5/21/2024 10:29
Location	
Depth (ft)	

Instructions: Calculate Total Benzo(a)pyrene Equivalents if at least one of the carcinogenic PAHs is detected in the sample at a concentration equal to or higher than the Method Detection Limit (MDL), whether quantified with certainty (the concentration reported has no qualifier) or estimated (the concentration reported has a “J”, “T” or “I” qualifier). Enter the contaminant concentrations (in mg/kg) for all seven carcinogenic PAHs in the yellow boxes using the following criteria (and see table below):

1. If quantified with certainty, or estimated and has the “J” qualifier, enter the reported value.
2. If not detected at the MDL (the concentration reported is the MDL followed by the “U” qualifier) enter 1/2 of the reported value.
3. If detected at a concentration lower than the MDL and the concentration is estimated (has the “T” qualifier) enter the estimated value.
4. If detected at a concentration equal to or higher than the MDL but lower than the Practical Quantitation Limit (PQL) and the concentration is estimated (has the “I” qualifier) enter the estimated value.
5. If detected at a concentration equal to or higher than the MDL but lower than the PQL and it is not estimated (the concentration reported is the PQL followed by the “M” qualifier) enter 1/2 of the reported value.

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	0.007	1.0	0.0070
Benzo(a)anthracene	0.007	0.1	0.0007
Benzo(b)fluoranthene	0.007	0.1	0.0007
Benzo(k)fluoranthene	0.007	0.01	0.0001
Chrysene	0.007	0.001	0.0000
Dibenz(a,h)anthracene	0.007	1.0	0.0070
Indeno(1,2,3-cd)pyrene	0.007	0.1	0.0007

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 0.0

The concentration shown does not exceed the Residential Direct Exposure SCTL of 0.1 mg/kg.

The concentration shown does not exceed the Industrial Direct Exposure SCTL of 0.7 mg/kg.

Summary Criteria for Table Entries			
Detection	Concentration Reported	Data Qualifier	Enter
Various	Quantified with certainty	None	reported value
Various	Estimated	J	reported (estimated) value
ND at MDL	MDL	U	1/2 reported value
< MDL	Estimated	T	reported (estimated) value
≥ MDL but < PQL	Estimated	I	reported (estimated) value
≥ MDL but < PQL	PQL	M	1/2 reported value

Benzo(a)pyrene Conversion Table

For Direct Exposure Soil Cleanup Target Levels

Facility/Site Name	Phillippi Creek Dredging Study
Location	
Facility/Site ID No.	
Soil Sample No.	PC-24-5
Sample Date	5/21/2024 9:55
Location	
Depth (ft)	

Instructions: Calculate Total Benzo(a)pyrene Equivalents if at least one of the carcinogenic PAHs is detected in the sample at a concentration equal to or higher than the Method Detection Limit (MDL), whether quantified with certainty (the concentration reported has no qualifier) or estimated (the concentration reported has a “J”, “T” or “I” qualifier). Enter the contaminant concentrations (in mg/kg) for all seven carcinogenic PAHs in the yellow boxes using the following criteria (and see table below):

1. If quantified with certainty, or estimated and has the “J” qualifier, enter the reported value.
2. If not detected at the MDL (the concentration reported is the MDL followed by the “U” qualifier) enter 1/2 of the reported value.
3. If detected at a concentration lower than the MDL and the concentration is estimated (has the “T” qualifier) enter the estimated value.
4. If detected at a concentration equal to or higher than the MDL but lower than the Practical Quantitation Limit (PQL) and the concentration is estimated (has the “I” qualifier) enter the estimated value.
5. If detected at a concentration equal to or higher than the MDL but lower than the PQL and it is not estimated (the concentration reported is the PQL followed by the “M” qualifier) enter 1/2 of the reported value.

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	0.029	1.0	0.0290
Benzo(a)anthracene	0.019	0.1	0.0019
Benzo(b)fluoranthene	0.054	0.1	0.0054
Benzo(k)fluoranthene	0.0065	0.01	0.0001
Chrysene	0.031	0.001	0.0000
Dibenz(a,h)anthracene	0.0065	1.0	0.0065
Indeno(1,2,3-cd)pyrene	0.032	0.1	0.0032

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 0.0

The concentration shown does not exceed the Residential Direct Exposure SCTL of 0.1 mg/kg.

The concentration shown does not exceed the Industrial Direct Exposure SCTL of 0.7 mg/kg.

Summary Criteria for Table Entries			
Detection	Concentration Reported	Data Qualifier	Enter
Various	Quantified with certainty	None	reported value
Various	Estimated	J	reported (estimated) value
ND at MDL	MDL	U	1/2 reported value
< MDL	Estimated	T	reported (estimated) value
≥ MDL but < PQL	Estimated	I	reported (estimated) value
≥ MDL but < PQL	PQL	M	1/2 reported value

Benzo(a)pyrene Conversion Table

For Direct Exposure Soil Cleanup Target Levels

Facility/Site Name	Phillippi Creek Dredging Study
Location	
Facility/Site ID No.	
Soil Sample No.	PC-24-6
Sample Date	5/21/2024 9:34
Location	
Depth (ft)	

Instructions: Calculate Total Benzo(a)pyrene Equivalents if at least one of the carcinogenic PAHs is detected in the sample at a concentration equal to or higher than the Method Detection Limit (MDL), whether quantified with certainty (the concentration reported has no qualifier) or estimated (the concentration reported has a “J”, “T” or “I” qualifier). Enter the contaminant concentrations (in mg/kg) for all seven carcinogenic PAHs in the yellow boxes using the following criteria (and see table below):

1. If quantified with certainty, or estimated and has the “J” qualifier, enter the reported value.
2. If not detected at the MDL (the concentration reported is the MDL followed by the “U” qualifier) enter 1/2 of the reported value.
3. If detected at a concentration lower than the MDL and the concentration is estimated (has the “T” qualifier) enter the estimated value.
4. If detected at a concentration equal to or higher than the MDL but lower than the Practical Quantitation Limit (PQL) and the concentration is estimated (has the “I” qualifier) enter the estimated value.
5. If detected at a concentration equal to or higher than the MDL but lower than the PQL and it is not estimated (the concentration reported is the PQL followed by the “M” qualifier) enter 1/2 of the reported value.

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	0.03	1.0	0.0300
Benzo(a)anthracene	0.019	0.1	0.0019
Benzo(b)fluoranthene	0.049	0.1	0.0049
Benzo(k)fluoranthene	0.0065	0.01	0.0001
Chrysene	0.029	0.001	0.0000
Dibenz(a,h)anthracene	0.0065	1.0	0.0065
Indeno(1,2,3-cd)pyrene	0.03	0.1	0.0030

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 0.0

The concentration shown does not exceed the Residential Direct Exposure SCTL of 0.1 mg/kg.

The concentration shown does not exceed the Industrial Direct Exposure SCTL of 0.7 mg/kg.

Summary Criteria for Table Entries			
Detection	Concentration Reported	Data Qualifier	Enter
Various	Quantified with certainty	None	reported value
Various	Estimated	J	reported (estimated) value
ND at MDL	MDL	U	1/2 reported value
< MDL	Estimated	T	reported (estimated) value
≥ MDL but < PQL	Estimated	I	reported (estimated) value
≥ MDL but < PQL	PQL	M	1/2 reported value

Benzo(a)pyrene Conversion Table

For Direct Exposure Soil Cleanup Target Levels

Facility/Site Name	Phillippi Creek Dredging Study
Location	
Facility/Site ID No.	
Soil Sample No.	PC-24-7
Sample Date	5/21/2024 8:44
Location	
Depth (ft)	

Instructions: Calculate Total Benzo(a)pyrene Equivalents if at least one of the carcinogenic PAHs is detected in the sample at a concentration equal to or higher than the Method Detection Limit (MDL), whether quantified with certainty (the concentration reported has no qualifier) or estimated (the concentration reported has a “J”, “T” or “I” qualifier). Enter the contaminant concentrations (in mg/kg) for all seven carcinogenic PAHs in the yellow boxes using the following criteria (and see table below):

1. If quantified with certainty, or estimated and has the “J” qualifier, enter the reported value.
2. If not detected at the MDL (the concentration reported is the MDL followed by the “U” qualifier) enter 1/2 of the reported value.
3. If detected at a concentration lower than the MDL and the concentration is estimated (has the “T” qualifier) enter the estimated value.
4. If detected at a concentration equal to or higher than the MDL but lower than the Practical Quantitation Limit (PQL) and the concentration is estimated (has the “I” qualifier) enter the estimated value.
5. If detected at a concentration equal to or higher than the MDL but lower than the PQL and it is not estimated (the concentration reported is the PQL followed by the “M” qualifier) enter 1/2 of the reported value.

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	0.053	1.0	0.0530
Benzo(a)anthracene	0.031	0.1	0.0031
Benzo(b)fluoranthene	0.09	0.1	0.0090
Benzo(k)fluoranthene	0.034	0.01	0.0003
Chrysene	0.053	0.001	0.0001
Dibenz(a,h)anthracene	0.007	1.0	0.0070
Indeno(1,2,3-cd)pyrene	0.054	0.1	0.0054

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 0.1

The concentration shown does not exceed the Residential Direct Exposure SCTL of 0.1 mg/kg.

The concentration shown does not exceed the Industrial Direct Exposure SCTL of 0.7 mg/kg.

Summary Criteria for Table Entries			
Detection	Concentration Reported	Data Qualifier	Enter
Various	Quantified with certainty	None	reported value
Various	Estimated	J	reported (estimated) value
ND at MDL	MDL	U	1/2 reported value
< MDL	Estimated	T	reported (estimated) value
≥ MDL but < PQL	Estimated	I	reported (estimated) value
≥ MDL but < PQL	PQL	M	1/2 reported value

Benzo(a)pyrene Conversion Table

For Direct Exposure Soil Cleanup Target Levels

Facility/Site Name	Phillippi Creek Dredging Study
Location	
Facility/Site ID No.	
Soil Sample No.	PC-24-8
Sample Date	5/21/2024 9:17
Location	
Depth (ft)	

Instructions: Calculate Total Benzo(a)pyrene Equivalents if at least one of the carcinogenic PAHs is detected in the sample at a concentration equal to or higher than the Method Detection Limit (MDL), whether quantified with certainty (the concentration reported has no qualifier) or estimated (the concentration reported has a “J”, “T” or “I” qualifier). Enter the contaminant concentrations (in mg/kg) for all seven carcinogenic PAHs in the yellow boxes using the following criteria (and see table below):

1. If quantified with certainty, or estimated and has the “J” qualifier, enter the reported value.
2. If not detected at the MDL (the concentration reported is the MDL followed by the “U” qualifier) enter 1/2 of the reported value.
3. If detected at a concentration lower than the MDL and the concentration is estimated (has the “T” qualifier) enter the estimated value.
4. If detected at a concentration equal to or higher than the MDL but lower than the Practical Quantitation Limit (PQL) and the concentration is estimated (has the “I” qualifier) enter the estimated value.
5. If detected at a concentration equal to or higher than the MDL but lower than the PQL and it is not estimated (the concentration reported is the PQL followed by the “M” qualifier) enter 1/2 of the reported value.

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	0.019	1.0	0.0190
Benzo(a)anthracene	0.012	0.1	0.0012
Benzo(b)fluoranthene	0.034	0.1	0.0034
Benzo(k)fluoranthene	0.00445	0.01	0.0000
Chrysene	0.02	0.001	0.0000
Dibenz(a,h)anthracene	0.00445	1.0	0.0045
Indeno(1,2,3-cd)pyrene	0.022	0.1	0.0022

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 0.0

The concentration shown does not exceed the Residential Direct Exposure SCTL of 0.1 mg/kg.

The concentration shown does not exceed the Industrial Direct Exposure SCTL of 0.7 mg/kg.

Summary Criteria for Table Entries			
Detection	Concentration Reported	Data Qualifier	Enter
Various	Quantified with certainty	None	reported value
Various	Estimated	J	reported (estimated) value
ND at MDL	MDL	U	1/2 reported value
< MDL	Estimated	T	reported (estimated) value
≥ MDL but < PQL	Estimated	I	reported (estimated) value
≥ MDL but < PQL	PQL	M	1/2 reported value

TABLE _: SOIL ANALYTICAL SUMMARY - VOAs, TRPHs and Metals

Facility ID#: Phillippi Creek Dredging Study

See notes at end of table.

Sample				OVA	Laboratory Analyses										Comments
Boring/ Well No.	Date Collected	Depth to Water (ft)	Sample Interval (fbls)	Net OVA Reading (ppm)	Benzene (mg/kg)	Ethyl-benzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TRPHs (mg/kg)	Arsenic (mg/kg)	Cad-mium (mg/kg)	Chro-mium (mg/kg)	Lead (mg/kg)	
PC-24-7	5/21/2024 8:44									35 U	2.0 I	0.72	41	33	
PC-24-8	5/21/2024 9:17									22 U	1.6 I	0.15 I	12	9.7	
PC-24-6	5/21/2024 9:34									31 U	1.6 U	0.92	51	71	
PC-24-5	5/21/2024 9:55									32 U	1.8 I	0.67	49	67	
PC-24-4	5/21/2024 10:29									35 U	2.0 I	0.73 I	61	59	
PC-24-3	5/21/2024 10:48									14 U	1.6 I	0.068 I	9.2	11	
PC-24-2	5/21/2024 11:10									14 U	1.5 I	0.071 U	4.4	3.0	
PC-24-1	5/21/2024 11:35									15 U	0.71 U	0.071 U	6.2	4.9	
Leachability Based on Groundwater Criteria (mg/kg)					0.007	0.6	0.5	0.2	0.09	340	*	7.5	38	*	
Direct Exposure Residential (mg/kg)					1.2	1,500	7,500	130	4,400	460	2.1	82	210	400	

Notes:

NA = Not Available.

NS = Not Sampled.

* = Leachability value may be determined using TCLP.

If an analyte is not detected, report the method detection limit [i.e., 0.01 U or ND(0.01); BDL or <0.01 are not acceptable].

TABLE _ : SOIL ANALYTICAL SUMMARY - Non-Carcinogenic PAHs

Facility ID#: Phillippi Creek Dredging Study Facility Name: See notes at end of table.

Sample			OVA	Laboratory Analyses										Comments		
Boring/ Well No.	Date Collected	Depth to Water (ft)	Sample Interval (fbls)	Net OVA Reading (ppm)	Naph- thalene (mg/kg)	1-Methyl- naph- thalene (mg/kg)	2-Methyl- naph- thalene (mg/kg)	Acen- aph- thene (mg/kg)	Acen- aph- thylene (mg/kg)	Anthra- cene (mg/kg)	Benzo (g,h,i) pery- lene (mg/kg)	Fluoran- thene (mg/kg)	Fluor- ene (mg/kg)		Phenan- threne (mg/kg)	Pyrene (mg/kg)
PC-24-7	5/21/2024 8:44				0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.059 U	0.074 U	0.014 U	0.014 U	0.060 U	
PC-24-8	5/21/2024 9:17				0.0089 U	0.0089 U	0.0089 U	0.0089 U	0.0089 U	0.0089 U	0.021 U	0.028 U	0.0089 U	0.0089 U	0.023 U	
PC-24-6	5/21/2024 9:34				0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.030 U	0.033 U	0.013 U	0.013 U	0.032 U	
PC-24-5	5/21/2024 9:55				0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.034 U	0.034 U	0.013 U	0.013 U	0.029 U	
PC-24-4	5/21/2024 10:29				0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	
PC-24-3	5/21/2024 10:48				0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	
PC-24-2	5/21/2024 11:10				0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	
PC-24-1	5/21/2024 11:35				0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0072 U	0.0060 U	0.0059 U	0.0059 U	0.0059 U	
Leachability Based on Groundwater Criteria (mg/kg)					1.2	3.1	8.5	2.1	27	2,500	32,000	1,200	160	250	880	
Direct Exposure Residential (mg/kg)					55	200	210	2,400	1,800	21,000	2,500	3,200	2,600	2,200	2,400	

Notes: NA = Not Available.
NS = Not Sampled.

If analyte is not detected, report the method detection limit [i.e., 0.01 U or ND(0.01)]; BDL or <0.01 are not acceptable].

TABLE : SOIL ANALYTICAL SUMMARY - Carcinogenic PAHs

Facility ID#: Phillippi Creek Dredging Study

[illegible]

Notes:

NA = Not Available.

NS = Not Sampled.

** = Leachability value not applicable.

= Direct Exposure value not applicable except as part of the Benzo(a)pyrene equivalent.

If analyte is not detected, report the method detection limit [i.e., 0.01 U or ND(0.01); BDL or <0.01 are not acceptable].

Site Name	Phillippi Creek	Lab Sample ID	J2407489001	J2407489002	J2407489003	J2407489004	J2407489005	J2407489006	J2407489007	J2407489008						
Site Location		Sample Number	PC-24-7	PC-24-8	PC-24-6	PC-24-5	PC-24-4	PC-24-3	PC-24-2	PC-24-1						
Project Manager		Date/ Time Sampled	5/21/2024 8:44	5/21/2024 9:17	5/21/2024 9:34	5/21/2024 9:55	5/21/2024 10:29	5/21/2024 10:48	5/21/2024 11:10	5/21/2024 11:35						
Checked By		Sample Interval (ft.blis)														
Analyte	CAS #	Method	Units	RES (1)	COM (2)	LOW (3)	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	
BENZO(a)ANTHRACENE	56-55-3	EPA 8270/PAH Low Level	mg/kg	N/A	N/A	0.8	0.031		0.012	I			0.014	U	0.006	U
BENZO(a)PYRENE	50-32-8	EPA 8270/PAH Low Level	mg/kg	0.1	0.7	8	0.053		0.019				0.014	U	0.006	U
BENZO(b)FLUORANTHENE	205-99-2	EPA 8270/PAH Low Level	mg/kg	N/A	N/A	2.4	0.09		0.034				0.014	U	0.007	I
BENZO(k)FLUORANTHENE	207-08-9	EPA 8270/PAH Low Level	mg/kg	N/A	N/A	24	0.034		0.009	U			0.014	U	0.006	U
CHRYSENE	218-01-9	EPA 8270/PAH Low Level	mg/kg	N/A	N/A	77	0.053		0.02				0.014	U	0.006	U
DIBENZO(a,h)ANTHRACENE	53-70-3	EPA 8270/PAH Low Level	mg/kg	N/A	N/A	0.7	0.014	U	0.009	U			0.014	U	0.006	I
INDENO(1,2,3-c,d)PYRENE	193-39-5	EPA 8270/PAH Low Level	mg/kg	N/A	N/A	6.6	0.054		0.022				0.014	U	0.006	U
Total Benzo(a)pyrene Equivalents	Total B(a)P	Calculation	mg/kg	0.1	0.7		0.078		0.03				0.016	0.007	0.01	0.008

Site Name	Phillippi Creek			Lab Sample ID			J2407489001			J2407489002			J2407489003			J2407489004			J2407489005			J2407489006			J2407489007			J2407489008		
Site Location				Sample Number			PC-24-7			PC-24-8			PC-24-6			PC-24-5			PC-24-4			PC-24-3			PC-24-2			PC-24-1		
Project Manager				Date/Time Sampled			5/21/2024 8:44			5/21/2024 9:17			5/21/2024 9:34			5/21/2024 9:55			5/21/2024 10:29			5/21/2024 10:48			5/21/2024 11:10			5/21/2024 11:35		
Checked By				Sample Interval (ft.bis)																										
Analyte	CAS #	Method	Units	RES (1)	COM (2)	LGW (3)	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds
1-METHYLNAPHTHALENE	90-12-0	EPA 8270/PAH Low Level	mg/kg	200	1800	3.1	0.014	U		0.009	U		0.013	U		0.014	U		0.006	U		0.006	U		0.006	U		0.006	U	
2-METHYLNAPHTHALENE	91-57-6	EPA 8270/PAH Low Level	mg/kg	210	2100	8.5	0.014	U		0.009	U		0.013	U		0.014	U		0.006	U		0.006	U		0.006	U		0.006	U	
ACENAPHTHENE	83-32-9	EPA 8270/PAH Low Level	mg/kg	2400	20000	2.1	0.014	U		0.009	U		0.013	U		0.014	U		0.006	U		0.006	U		0.006	U		0.006	U	
ACENAPHTHYLENE	208-96-8	EPA 8270/PAH Low Level	mg/kg	1800	20000	27	0.014	U		0.009	U		0.013	U		0.014	U		0.006	U		0.006	U		0.006	U		0.006	U	
ANTHRACENE	120-12-7	EPA 8270/PAH Low Level	mg/kg	21000	300000	2500	0.014	U		0.009	U		0.013	U		0.014	U		0.006	U		0.006	U		0.006	U		0.006	U	
BENZO(a,h,i)PERYLENE	191-24-2	EPA 8270/PAH Low Level	mg/kg	2500	52000	32000	0.059			0.021			0.03			0.014	U		0.006	U		0.006	U		0.007	I		0.006	U	
FLUORANTHENE	206-44-0	EPA 8270/PAH Low Level	mg/kg	3200	59000	1200	0.074			0.028			0.033			0.014	U		0.006	U		0.006	U		0.006	U		0.006	I	
FLUORENE	86-73-7	EPA 8270/PAH Low Level	mg/kg	2600	33000	160	0.014	U		0.009	U		0.013	U		0.014	U		0.006	U		0.006	U		0.006	U		0.006	U	
NAPHTHALENE	91-20-3	EPA 8270/PAH Low Level	mg/kg	55	300	1.2	0.014	U		0.009	U		0.013	U		0.014	U		0.006	U		0.006	U		0.006	U		0.006	U	
PHENANTHRENE	85-01-8	EPA 8270/PAH Low Level	mg/kg	2200	36000	250	0.014	U		0.009	U		0.013	U		0.014	U		0.006	U		0.006	U		0.006	U		0.006	U	
PYRENE	129-00-0	EPA 8270/PAH Low Level	mg/kg	2400	45000	880	0.06			0.023			0.032			0.014	U		0.006	U		0.006	U		0.006	U		0.006	U	

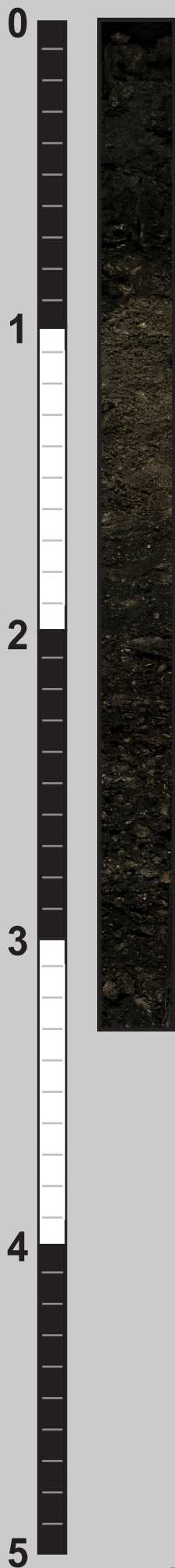
FL-PRO	TRPH	FDEP FL-PRO	mg/kg	460	2700	340	35	U	22	U	31	U	32	U	35	U	35	U	14	U	14	U	15	U	
				RES (1)	COM (2)	LGW (3)	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	
Site Name	Phillippi Creek	Lab Sample ID	J2407489001	J2407489002	J2407489003	J2407489004	J2407489005	J2407489006	J2407489007	J2407489008															
Site Location		Sample Number	PC-24-7	PC-24-8	PC-24-6	PC-24-5	PC-24-4	PC-24-3	PC-24-2	PC-24-1															
Project Manager		Date/ Time Sampled	5/21/2024 8:44	5/21/2024 9:17	5/21/2024 9:34	5/21/2024 9:55	5/21/2024 10:29	5/21/2024 10:48	5/21/2024 11:10	5/21/2024 11:35															
Checked By		Sample Interval (ft,bls)																							

Site Name	Philippi Creek	Lab Sample ID	J2407489001			J2407489002			J2407489003			J2407489004			J2407489005			J2407489006			J2407489007			J2407489008
Site Location		Sample Number	PC-24-7			PC-24-8			PC-24-6			PC-24-5			PC-24-4			PC-24-3			PC-24-2			PC-24-1
Project Manager		Date/Time Sampled	5/21/2024 8:44			5/21/2024 9:17			5/21/2024 9:34			5/21/2024 9:55			5/21/2024 10:29			5/21/2024 10:48			5/21/2024 11:10			5/21/2024 11:35
Checked By		Sample Interval (ft,bis)																						
Analyte	CAS #	Method	Units	RES (1)	COM (2)	LSW (3)	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds
ALUMINUM	7429-90-5	EPA 6010	mg/kg	80000	N/A	N/A	16000																	
ARSENIC	7440-38-2	EPA 6010	mg/kg	2.1	12	N/A	2	I		1.6	U		1.8	I		1.6	I		1.5	I		0.71	U	
BARIUM	7440-39-3	EPA 6010	mg/kg	120	130000	1600	45			51			45			52			3.5			5.3		
CADMIUM	7440-43-9	EPA 6010	mg/kg	82	1700	7.5	0.72			0.15	I		0.67			0.73	I		0.068	I		0.071	U	
CHROMIUM	7440-47-3	EPA 6010	mg/kg	210	470	38	41		3	51			49		3	61		3	9.2		4.4	6.2		
COPPER	7440-50-8	EPA 6010	mg/kg	150	89000	N/A	81			23			92			91			23		5.8	13		
LEAD	7439-92-1	EPA 6010	mg/kg	400	1400	N/A	33			9.7			67			59			11		3	4.9		
MERCURY	7439-97-6	EPA 7471	mg/kg	3	17	2.1	0.19			0.054			0.23			0.35			0.037		0.015	0.021		
NICKEL	7440-02-0	EPA 6010	mg/kg	340	35000	130	10			3.3	I		11			14			2.1	I	1	1.5	I	
SELENIUM	7782-49-2	EPA 6010	mg/kg	440	11000	5.2	3.6	U		2.3	U		3.3	U		3.7	U		1.4	U	1.4	U		
SILVER	7440-22-4	EPA 6010	mg/kg	410	82000	17	0.72	U		0.46	U		0.66	U		0.75	U		0.27	U	0.29	U		
ZINC	7440-66-6	EPA 6010	mg/kg	26000	630000	N/A	200			65	I		180			120	I		16	I	14	25	I	

Site Name	Phillippi Creek	Lab Sample ID		J2407489001		J2407489002		J2407489003		J2407489004		J2407489005		J2407489006		J2407489007		J2407489008			
Site Location		Sample Number		PC-24-7		PC-24-8		PC-24-6		PC-24-5		PC-24-4		PC-24-3		PC-24-2		PC-24-1			
Project Manager		Date/ Time Sampled		5/21/2024 8:44		5/21/2024 9:17		5/21/2024 9:34		5/21/2024 9:55		5/21/2024 10:29		5/21/2024 10:48		5/21/2024 11:10		5/21/2024 11:35			
Checked By		Sample Interval (ft./lbs)																			
Analyte	CAS #	Method	Units	RES (1)	COM (2)	LGW (3)	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds	Result	Qual	Exceeds
ALDRIN	309-00-2	EPA 8081	mg/kg	0.06	0.3	0.2	0.017	U	0.01	U	0.015	U	0.017	U	0.007	U	0.006	U	0.007	U	0.007
alpha-BHC	319-84-6	EPA 8081	mg/kg	0.1	0.6	0.0003	0.019	U	3	0.012	U	3	0.017	U	3	0.008	U	3	0.008	U	3
beta-BHC	319-85-7	EPA 8081	mg/kg	0.5	2.4	0.001	0.013	U	3	0.008	U	3	0.012	U	3	0.005	U	3	0.006	U	3
CHLORDANE	57-74-9	EPA 8081	mg/kg	2.8	14	9.6	0.45	U	0.28	U	0.42	U	0.42	U	0.4	U	0.18	U	0.2	U	0.2
delta-BHC	319-86-8	EPA 8081	mg/kg	24	490	0.2	0.013	U	0.008	U	0.012	U	0.012	U	0.014	U	0.005	U	0.006	U	0.006
DIELDRIN	60-57-1	EPA 8081	mg/kg	0.06	0.3	0.002	0.014	U	3	0.009	U	3	0.013	U	0.012	U	0.005	U	3	0.006	U
ENDOSULFAN I	959-98-8	EPA 8081	mg/kg	N/A	N/A	N/A	0.017	U	0.011	U	0.016	U	0.016	U	0.015	U	0.007	U	0.007	U	0.008
ENDOSULFAN II	33213-65-9	EPA 8081	mg/kg	N/A	N/A	N/A	0.012	U	0.007	U	0.011	U	0.011	U	0.01	U	0.005	U	0.005	U	0.005
ENDOSULFAN SULFATE	1031-07-8	EPA 8081	mg/kg	N/A	N/A	N/A	0.02	U	0.013	U	0.019	U	0.019	U	0.018	U	0.008	U	0.009	U	0.009
ENDRIN	72-20-8	EPA 8081	mg/kg	25	510	1	0.031	U	0.019	U	0.028	U	0.028	U	0.027	U	0.012	U	0.011	U	0.014
ENDRIN ALDEHYDE	7421-93-4	EPA 8081	mg/kg	N/A	N/A	N/A	0.018	U	0.011	U	0.017	U	0.017	U	0.016	U	0.007	U	0.008	U	0.008
gamma-BHC (LINDANE)	58-89-9	EPA 8081	mg/kg	0.7	2.5	0.009	0.02	U	3	0.012	U	3	0.018	U	0.017	U	0.007	U	0.009	U	0.009
HEPTACHLOR	76-44-8	EPA 8081	mg/kg	0.2	1	23	0.021	U	0.013	U	0.013	U	0.013	U	0.018	U	0.008	U	0.009	U	0.009
HEPTACHLOR EPOXIDE	1024-57-3	EPA 8081	mg/kg	0.1	0.5	0.6	0.015	U	0.009	U	0.014	U	0.014	U	0.013	U	0.006	U	0.007	U	0.007
METHOXYCHLOR	72-43-5	EPA 8081	mg/kg	420	8800	160	0.023	U	0.014	U	0.021	U	0.021	U	0.02	U	0.009	U	0.008	U	0.01
p,p-DDD	72-54-8	EPA 8081	mg/kg	4.2	22	5.8	0.018	U	0.011	U	0.017	U	0.017	U	0.016	U	0.007	U	0.008	U	0.008
p,p-DDE	72-55-9	EPA 8081	mg/kg	2.9	15	18	0.014	U	0.009	U	0.013	U	0.013	U	0.012	U	0.006	U	0.006	U	0.006
p,p-DDT	50-29-3	EPA 8081	mg/kg	2.9	15	11	0.031	U	0.019	U	0.028	U	0.028	U	0.027	U	0.012	U	0.011	U	0.014
PCB-1016	12674-11-2	EPA 8082	mg/kg	N/A	N/A	N/A	0.84	U	0.52	U	0.77	U	0.77	U	0.73	U	0.17	U	0.31	U	0.37
PCB-1221	11104-28-2	EPA 8082	mg/kg	N/A	N/A	N/A	0.84	U	0.52	U	0.77	U	0.77	U	0.73	U	0.17	U	0.31	U	0.37
PCB-1232	11141-16-5	EPA 8082	mg/kg	N/A	N/A	N/A	0.84	U	0.52	U	0.77	U	0.77	U	0.73	U	0.17	U	0.31	U	0.37
PCB-1242	53469-21-9	EPA 8082	mg/kg	N/A	N/A	N/A	0.84	U	0.52	U	0.77	U	0.77	U	0.73	U	0.17	U	0.31	U	0.37
PCB-1248	12672-29-6	EPA 8082	mg/kg	N/A	N/A	N/A	0.84	U	0.52	U	0.77	U	0.77	U	0.73	U	0.17	U	0.31	U	0.37
PCB-1254	11097-69-1	EPA 8082	mg/kg	N/A	N/A	N/A	0.84	U	0.52	U	0.77	U	0.77	U	0.73	U	0.17	U	0.31	U	0.37
PCB-1260	11096-82-5	EPA 8082	mg/kg	N/A	N/A	N/A	0.84	U	0.52	U	0.77	U	0.77	U	0.73	U	0.17	U	0.31	U	0.37
TOXAPHENE	8001-35-2	EPA 8081	mg/kg	0.9	4.5	31	0.79	U	0.49	U	0.73	U	0.73	U	0.69	U	0.32	U	0.29	U	0.35
Endosulfan (alpha+beta+sulfate)	115-29-7	Calculation	mg/kg	450	7600	3.8	0.012	U	0.007	U	0.011	U	0.011	U	0.01	U	0.005	U	0.004	U	0.005
Heptachlor (and its epoxide)	D031	Calculation	mg/kg	0.1	0.5	0.6	0.015	U	0.009	U	0.014	U	0.014	U	0.013	U	0.006	U	0.006	U	0.007
PCB, Total	1336-36-3	Calculation	mg/kg	0.5	2.6	17	0.84	U	1	0.52	U	1	0.77	U	0.73	U	0.31	U	0.37	U	0.37

APPENDIX B

Core Photographs and Logs



**Cummins
Cederberg, Inc.**

**Phillippi Creek Maintenance
Dredging Fesibility Study Project
West Coast Inland Navigation District
Sarasota County, Florida**

May 2024

PC-24-01

**Top Elev. (ft MLW): -3.8
Bottom Elev. (ft MLW): -7.1**

Notes:

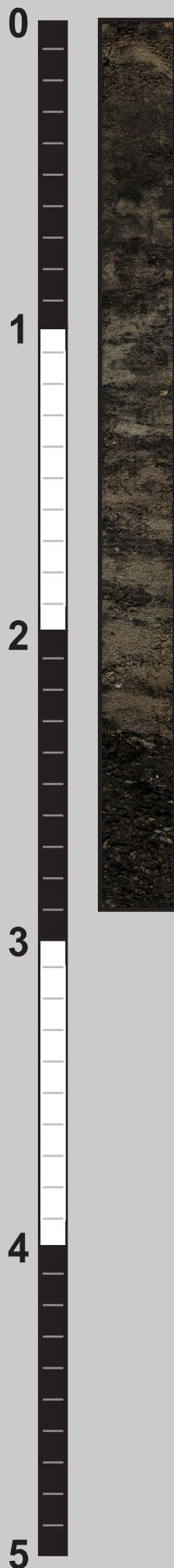
- Photo Mosaic Image
- Photo Scale in Feet



Athena Technologies, Inc.
1293 Graham Farm Road
McClellanville, SC 29458
www.athenatechnologies.com
(843) 887-3800

DRILLING LOG		CLIENT Cummins Cederberg, Inc.		PROJECT OWNER FI West Coast Inland Navigation District		SHEET 1 OF 1 SHEETS	
1. PROJECT 2024 Phillippi Creek Maintenance Dredging Feasibilty Study Sarasota County, FL				9. SIZE AND TYPE OF BIT 3.0 In.			
2. BORING DESIGNATION PC-24-01		LOCATION COORDINATES X = 481,922 Y = 1,068,192		10. COORDINATE SYSTEM/DATUM Florida State Plane West		HORIZONTAL NAD 1983	VERTICAL MLW
3. DRILLING AGENCY Athena Technologies, Inc.		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER			
4. NAME OF DRILLER N. Wicker				12. TOTAL SAMPLES		DISTURBED 2	UNDISTURBED (UD)
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				DEG. FROM VERTICAL	BEARING	13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. WATER DEPTH 5.3 Ft.			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING		STARTED 05-21-24 11:24	COMPLETED 05-21-24
8. TOTAL DEPTH OF BORING 4.0 Ft.				16. ELEVATION TOP OF BORING -3.8 Ft.			
				17. TOTAL RECOVERY FOR BORING 3.3 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR A. Freeze			
ELEV. (ft.) -3.8	SCALE (ft) 0.0	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
			Poorly graded GRAVEL with silt; mostly fine to coarse gravel-sized shells, little fine quartz sand in matrix, few organic silt in matrix, loose, strong organic odor present, black (2.5Y-2.5/1), (GP-GM).		S-1	Sample #S-1, Depth = 0.9' Mean (mm): 2.91, Phi Sorting: 2.45 Shell: 0%, Fines (#200) - 8.54 (GP-GM)	
-4.7	0.9		Poorly graded SAND; fine quartz sand, few medium sand to coarse gravel-sized shells, trace organic silt in matrix and burrows, loose, subangular, dark grayish brown (2.5Y-4/2), (SP).		S-2	Sample #S-2, Depth = 1.2' Mean (mm): 0.58, Phi Sorting: 1.90 Shell: 0%, Fines (#200) - 1.21 (SP)	
-5.4	1.6		Silty SAND; fine quartz sand, little organic silt in matrix, few fine sand to fine gravel-sized shells, loose, bioturbated, organic odor present, black (2.5Y-2.5/1) mottled with, dark grayish brown (2.5Y-4/2), (SM).				
-5.8	2.0						
-7.1	3.3		Silty SAND; fine quartz sand, little fine sand to coarse gravel-sized shells, little organic silt, loose, organic odor present, black (2.5Y-2.5/1) mottled with, dark grayish brown (2.5Y-4/2), (SM).				
			End of Boring				

FLORIDA DEP ROSS CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024).GPJ FL DEP ROSS.GDT 6/8/24



**Cummins
Cederberg, Inc.**

**Phillippi Creek Maintenance
Dredging Fesibility Study Project
West Coast Inland Navigation District
Sarasota County, Florida**

May 2024

PC-24-02

**Top Elev. (ft MLW): -3.6
Bottom Elev. (ft MLW): -6.5**

Notes:

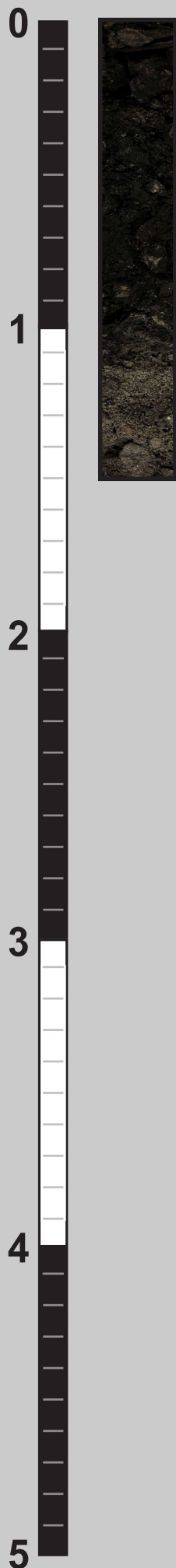
- Photo Mosaic Image
- Photo Scale in Feet



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DRILLING LOG		CLIENT Cummins Cederberg, Inc.		PROJECT OWNER FI West Coast Inland Navigation District		SHEET 1 OF 1 SHEETS		
1. PROJECT 2024 Phillippi Creek Maintenance Dredging Feasibilty Study Sarasota County, FL				9. SIZE AND TYPE OF BIT 3.0 In.				
2. BORING DESIGNATION PC-24-02		LOCATION COORDINATES X = 482,448 Y = 1,068,220		10. COORDINATE SYSTEM/DATUM Florida State Plane West		HORIZONTAL NAD 1983	VERTICAL MLW	
3. DRILLING AGENCY Athena Technologies, Inc.		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER				
4. NAME OF DRILLER N. Wicker				12. TOTAL SAMPLES		DISTURBED 2	UNDISTURBED (UD)	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				DEG. FROM VERTICAL	BEARING	13. TOTAL NUMBER CORE BOXES		
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. WATER DEPTH 5.3 Ft.				
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING		STARTED 05-21-24 11:01	COMPLETED 05-21-24	
8. TOTAL DEPTH OF BORING 3.5 Ft.				16. ELEVATION TOP OF BORING -3.6 Ft.				
				17. TOTAL RECOVERY FOR BORING 2.9 Ft.				
				18. SIGNATURE AND TITLE OF INSPECTOR A. Freeze				
ELEV. (ft) -3.6	SCALE (ft) 0.0	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS		
-4.2	0.6		Poorly graded SAND; fine quartz sand, trace organic silt in matrix and burrows, trace medium sand to fine gravel-sized shells, loose, subangular, bioturbated, very dark grayish brown (2.5Y-3/2) mottled with, grayish brown (2.5Y-5/2), (SP).		S-1	Sample #S-1, Depth = 0.6' Mean (mm): 0.27, Phi Sorting: 0.90 Shell: 0%, Fines (#200) - 3.73 (SP)		
-5.9	2.3			Poorly graded SAND; fine quartz sand, trace organic silt in matrix and burrows, trace fine sand to fine gravel-sized shells, loose, subangular, bioturbated, borderline SP-SM, grayish brown (2.5Y-5/2) and, very dark grayish brown (2.5Y-3/2), (SP).		S-2	Sample #S-2, Depth = 1.4' Mean (mm): 0.24, Phi Sorting: 0.74 Shell: 0%, Fines (#200) - 4.37 (SP)	
-6.5	2.9			Silty SAND; fine quartz sand, some fine sand to fine gravel-sized shells, little organic silt, loose to medium dense, slight organic odor present, black (2.5Y-2.5/1), (SM).				
			End of Boring					

FLORIDA DEP ROSS CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024).GRJ FL DEP ROSS.GDT 8/8/24



**Cummins
Cederberg, Inc.**

**Phillippi Creek Maintenance
Dredging Fesibility Study Project
West Coast Inland Navigation District
Sarasota County, Florida**

May 2024

PC-24-03

**Top Elev. (ft MLW): -3.2
Bottom Elev. (ft MLW): -4.7**

Notes:

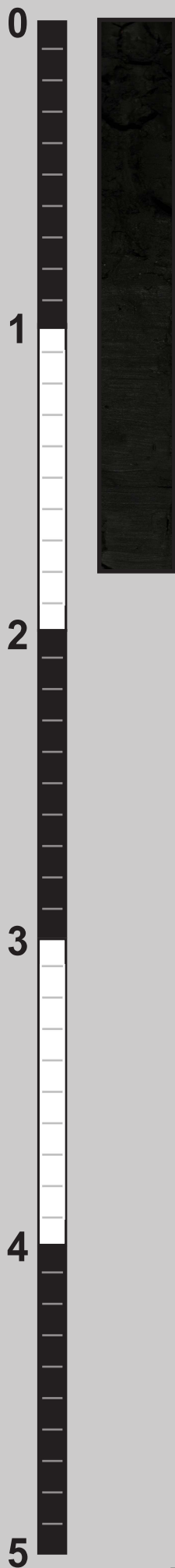
- Photo Mosaic Image
- Photo Scale in Feet



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DRILLING LOG		CLIENT Cummins Cederberg, Inc.		PROJECT OWNER FI West Coast Inland Navigation District		SHEET 1 OF 1 SHEETS	
1. PROJECT 2024 Phillippi Creek Maintenance Dredging Feasibility Study Sarasota County, FL				9. SIZE AND TYPE OF BIT 3.0 In.			
2. BORING DESIGNATION PC-24-03		LOCATION COORDINATES X = 483,375 Y = 1,068,648		10. COORDINATE SYSTEM/DATUM Florida State Plane West		HORIZONTAL NAD 1983	VERTICAL MLW
3. DRILLING AGENCY Athena Technologies, Inc.		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER			
4. NAME OF DRILLER N. Wicker				12. TOTAL SAMPLES		DISTURBED 2	UNDISTURBED (UD)
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				DEG. FROM VERTICAL	BEARING	13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. WATER DEPTH 4.5 Ft.			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING		STARTED 05-21-24 10:33	COMPLETED 05-21-24
8. TOTAL DEPTH OF BORING 2.0 Ft.				16. ELEVATION TOP OF BORING -3.2 Ft.			
				17. TOTAL RECOVERY FOR BORING 1.5 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR A. Freeze			
ELEV. (ft) -3.2	SCALE (ft) 0.0	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-4.2	1.0		Poorly graded SAND with silt; fine quartz sand, some fine sand to coarse gravel-sized shells, few organic silt, loose, strong organic odor present, black (2.5Y-2.5/1), (SP-SM).		S-1	Sample #S-1, Depth = 1.0' Mean (mm): 1.13, Phi Sorting: 2.38 Shell: 0%, Fines (#200) - 9.02 (SP-SM)	
-4.7	1.5		Poorly graded SAND; fine to medium quartz sand, few fine sand to coarse gravel-sized shells, trace organic silt, loose, subangular, grayish brown (2.5Y-5/2), (SP).		S-2	Sample #S-2, Depth = 1.5' Mean (mm): 0.75, Phi Sorting: 1.68 Shell: 0%, Fines (#200) - 2.10 (SP)	
			End of Boring				

FLORIDA DEP ROSS CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024).GPJ FL DEP ROSS.GDT 8/8/24



**Cummins
Cederberg, Inc.**

**Phillippi Creek Maintenance
Dredging Fesibility Study Project
West Coast Inland Navigation District
Sarasota County, Florida**

May 2024

PC-24-04

**Top Elev. (ft MLW): -4.6
Bottom Elev. (ft MLW): -6.4**

Notes:

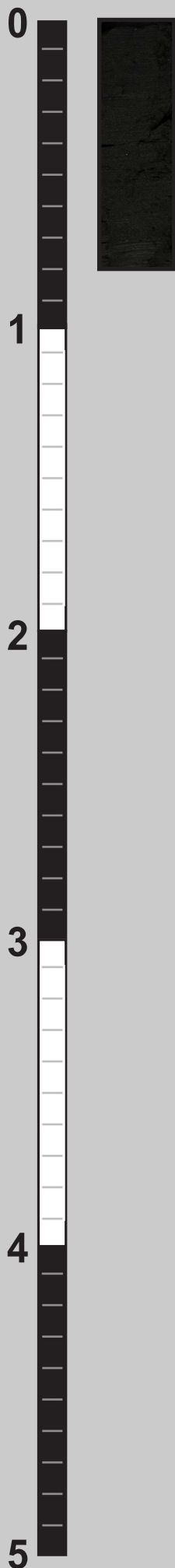
- Photo Mosaic Image
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(843) 887-3800

DRILLING LOG		CLIENT Cummins Cederberg, Inc.		PROJECT OWNER FL West Coast Inland Navigation District		SHEET 1 OF 1 SHEETS		
1. PROJECT 2024 Phillippi Creek Maintenance Dredging Feasibilty Study Sarasota County, FL				9. SIZE AND TYPE OF BIT 3.0 In.				
				10. COORDINATE SYSTEM/DATUM Florida State Plane West		HORIZONTAL NAD 1983		VERTICAL MLW
2. BORING DESIGNATION PC-24-04		LOCATION COORDINATES X = 483,681 Y = 1,069,177		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER				
3. DRILLING AGENCY Athena Technologies, Inc.			CONTRACTOR FILE NO.		12. TOTAL SAMPLES		DISTURBED 1	UNDISTURBED (UD)
4. NAME OF DRILLER N. Wicker				13. TOTAL NUMBER CORE BOXES				
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED		DEG. FROM VERTICAL		BEARING		14. WATER DEPTH 5.9 Ft.		
6. THICKNESS OF OVERBURDEN		0.0 Ft.		15. DATE BORING		STARTED 05-21-24 10:19		COMPLETED 05-21-24
7. DEPTH DRILLED INTO ROCK		0.0 Ft.		16. ELEVATION TOP OF BORING		-4.6 Ft.		
8. TOTAL DEPTH OF BORING		2.0 Ft.		17. TOTAL RECOVERY FOR BORING		1.8 Ft.		
				18. SIGNATURE AND TITLE OF INSPECTOR A. Freeze				

ELEV. (ft)	SCALE (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-4.6	0.0					
					S-1	Sample #S-1, Depth = 0.4' Mean (mm): 0.16, Phi Sorting: 0.91 Shell: 0%, Fines (#200) - 72.57 (MH)
-6.4	1.8		Fat organic SILT; medium plasticity, very soft, possible clay, organic odor present, black (2.5Y-2.5/1), (OH).			
			End of Boring			



**Cummins
Cederberg, Inc.**

**Phillippi Creek Maintenance
Dredging Fesibility Study Project
West Coast Inland Navigation District
Sarasota County, Florida**

May 2024

PC-24-05

**Top Elev. (ft MLW): -3.2
Bottom Elev. (ft MLW): -4.0**

Notes:

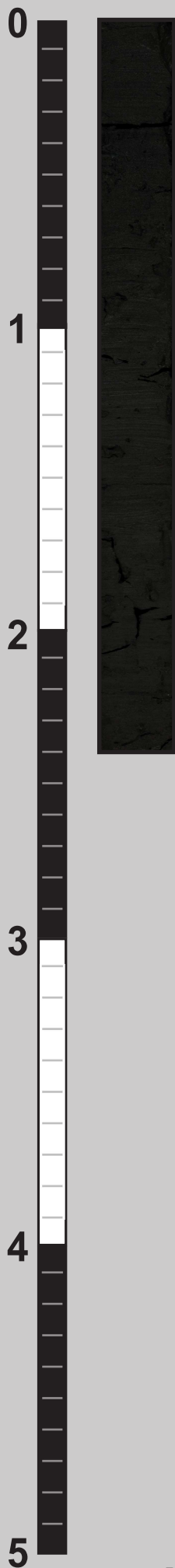
- Photo Mosaic Image
- Photo Scale in Feet



Athena Technologies, Inc.
1293 Graham Farm Road
McClellanville, SC 29458
www.athenatechnologies.com
(843) 887-3800

DRILLING LOG		CLIENT Cummins Cederberg, Inc.		PROJECT OWNER FI West Coast Inland Navigation District		SHEET 1 OF 1 SHEETS	
1. PROJECT 2024 Phillippi Creek Maintenance Dredging Feasibilty Study Sarasota County, FL				9. SIZE AND TYPE OF BIT 3.0 In.			
2. BORING DESIGNATION PC-24-05		LOCATION COORDINATES X = 483,608 Y = 1,069,619		10. COORDINATE SYSTEM/DATUM Florida State Plane West		HORIZONTAL NAD 1983	VERTICAL MLW
3. DRILLING AGENCY Athena Technologies, Inc.		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER			
4. NAME OF DRILLER N. Wicker				12. TOTAL SAMPLES		DISTURBED 1	UNDISTURBED (UD)
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				DEG. FROM VERTICAL	BEARING	13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. WATER DEPTH 5.3 Ft.			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING		STARTED 05-21-24 09:40	COMPLETED 05-21-24
8. TOTAL DEPTH OF BORING 1.0 Ft.				16. ELEVATION TOP OF BORING -3.2 Ft.			
				17. TOTAL RECOVERY FOR BORING 0.8 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR A. Freeze			
ELEV. (ft) -3.2	SCALE (ft) 0.0	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-4.0	0.8		Fat organic SILT; medium plasticity, very soft, possible clay, slight organic odor present, black (2.5Y-2.5/1), (OH).		S-1	Sample #S-1, Depth = 0.8' Mean (mm): 0.15, Phi Sorting: 0.85 Shell: 0%, Fines (#200) - 74.47 (MH)	
			End of Boring				

FLORIDA DEP ROSS CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024).GPJ FL DEP ROSS.GDT 8/8/24



**Cummins
Cederberg, Inc.**

**Phillippi Creek Maintenance
Dredging Fesibility Study Project
West Coast Inland Navigation District
Sarasota County, Florida**

May 2024

PC-24-06

**Top Elev. (ft MLW): -2.3
Bottom Elev. (ft MLW): -4.7**

Notes:

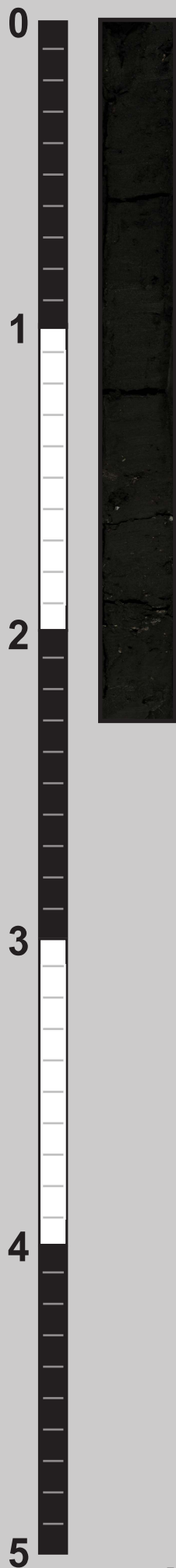
- Photo Mosaic Image
- Photo Scale in Feet



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(843) 887-3800

DRILLING LOG		CLIENT Cummins Cederberg, Inc.		PROJECT OWNER FI West Coast Inland Navigation District		SHEET 1 OF 1 SHEETS	
1. PROJECT 2024 Phillippi Creek Maintenance Dredging Feasibility Study Sarasota County, FL				9. SIZE AND TYPE OF BIT 3.0 In.			
2. BORING DESIGNATION PC-24-06		LOCATION COORDINATES X = 484,103 Y = 1,069,791		10. COORDINATE SYSTEM/DATUM Florida State Plane West		HORIZONTAL NAD 1983	VERTICAL MLW
3. DRILLING AGENCY Athena Technologies, Inc.		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER			
4. NAME OF DRILLER N. Wicker				12. TOTAL SAMPLES		DISTURBED 2	UNDISTURBED (UD)
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				DEG. FROM VERTICAL	BEARING	13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. WATER DEPTH 3.2 Ft.			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING		STARTED 05-21-24 09:28	COMPLETED 05-21-24
8. TOTAL DEPTH OF BORING 2.4 Ft.				16. ELEVATION TOP OF BORING -2.3 Ft.			
				17. TOTAL RECOVERY FOR BORING 2.4 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR A. Freeze			
ELEV. (ft) -2.3	SCALE (ft) 0.0	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
			Fat organic SILT; trace fine quartz sand in occasional burrows, medium plasticity, very soft, possible clay, strong organic odor present, black (2.5Y-2.5/1), (OH).		S-1	Sample #S-1, Depth = 1.2' Mean (mm): 0.14, Phi Sorting: 0.61 Shell: 0%, Fines (#200) - 76.77 (MH)	
					S-2	Sample #S-2, Depth = 2.4' Mean (mm): 0.16, Phi Sorting: 0.61 Shell: 0%, Fines (#200) - 52.38 (MH)	
-4.7	2.4		End of Boring				

FLORIDA DEP ROSS CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024).GPJ FL DEP ROSS.GDT 8/8/24



**Cummins
Cederberg, Inc.**

**Phillippi Creek Maintenance
Dredging Fesibility Study Project
West Coast Inland Navigation District
Sarasota County, Florida**

May 2024

PC-24-07

**Top Elev. (ft MLW): -1.7
Bottom Elev. (ft MLW): -4.0**

Notes:

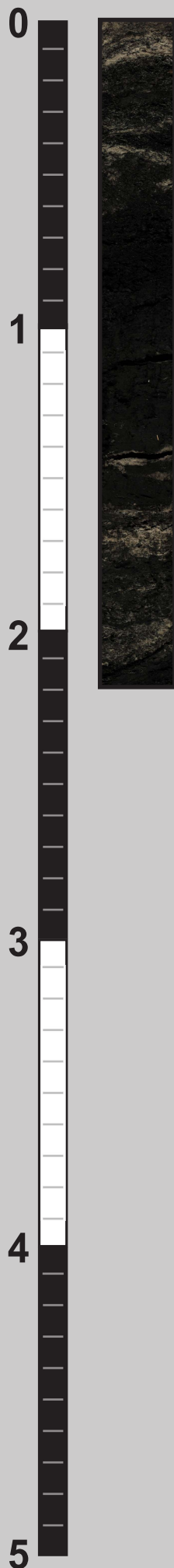
- Photo Mosaic Image
- Photo Scale in Feet



Athena Technologies, Inc.
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McClellanville, SC 29458
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(843) 887-3800

DRILLING LOG		CLIENT Cummins Cederberg, Inc.		PROJECT OWNER FI West Coast Inland Navigation District		SHEET 1 OF 1 SHEETS	
1. PROJECT 2024 Phillippi Creek Maintenance Dredging Feasibility Study Sarasota County, FL				9. SIZE AND TYPE OF BIT 3.0 In.			
2. BORING DESIGNATION PC-24-07		LOCATION COORDINATES X = 484,103 Y = 1,069,440		10. COORDINATE SYSTEM/DATUM Florida State Plane West		HORIZONTAL NAD 1983	VERTICAL MLW
3. DRILLING AGENCY Athena Technologies, Inc.		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER			
4. NAME OF DRILLER N. Wicker				12. TOTAL SAMPLES		DISTURBED 2	UNDISTURBED (UD)
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				DEG. FROM VERTICAL	BEARING	13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. WATER DEPTH 2.7 Ft.			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING		STARTED 05-21-24 08:35	COMPLETED 05-21-24
8. TOTAL DEPTH OF BORING 2.5 Ft.				16. ELEVATION TOP OF BORING -1.7 Ft.			
				17. TOTAL RECOVERY FOR BORING 2.3 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR A. Freeze			
ELEV. (ft) -1.7	SCALE (ft) 0.0	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
			Fat organic SILT; grades to organic clay, trace fine quartz sand in occasional burrows, low to medium plasticity, very soft, black (2.5Y-2.5/1), (OH).		S-1	Sample #S-1, Depth = 1.2' Mean (mm): 0.12, Phi Sorting: 0.63 Shell: 0%, Fines (#200) - 61.01 (MH)	
					S-2	Sample #S-2, Depth = 2.3' Mean (mm): 0.16, Phi Sorting: 0.85 Shell: 0%, Fines (#200) - 43.20 (SM)	
-4.0	2.3		End of Boring				

FLORIDA DEP ROSS CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024).GPJ FL DEP ROSS.GDT 8/8/24



**Cummins
Cederberg, Inc.**

**Phillippi Creek Maintenance
Dredging Fesibility Study Project
West Coast Inland Navigation District
Sarasota County, Florida**

May 2024

PC-24-08

**Top Elev. (ft MLW): -2.0
Bottom Elev. (ft MLW): -4.2**

Notes:

- Photo Mosaic Image
- Photo Scale in Feet



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(843) 887-3800

DRILLING LOG		CLIENT Cummins Cederberg, Inc.		PROJECT OWNER FI West Coast Inland Navigation District		SHEET 1 OF 1 SHEETS	
1. PROJECT 2024 Phillippi Creek Maintenance Dredging Feasibility Study Sarasota County, FL				9. SIZE AND TYPE OF BIT 3.0 In.			
2. BORING DESIGNATION PC-24-08		LOCATION COORDINATES X = 484,078 Y = 1,069,144		10. COORDINATE SYSTEM/DATUM Florida State Plane West		HORIZONTAL NAD 1983	VERTICAL MLW
3. DRILLING AGENCY Athena Technologies, Inc.		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER			
4. NAME OF DRILLER N. Wicker				12. TOTAL SAMPLES		DISTURBED 3	UNDISTURBED (UD)
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				DEG. FROM VERTICAL		BEARING	
6. THICKNESS OF OVERBURDEN 0.0 Ft.				13. TOTAL NUMBER CORE BOXES			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				14. WATER DEPTH 2.8 Ft.			
8. TOTAL DEPTH OF BORING 3.0 Ft.				15. DATE BORING		STARTED 05-21-24 08:57	COMPLETED 05-21-24
				16. ELEVATION TOP OF BORING -2.0 Ft.			
				17. TOTAL RECOVERY FOR BORING 2.2 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR A. Freeze			
ELEV. (ft)	SCALE (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-2.0	0.0						
-2.6	0.6		Poorly graded SAND with silt; fine quartz sand, few organic silt/plant fibers in laminations and layers, loose, grayish brown (2.5Y-5/2) and, black (2.5Y-2.5/1), (SP-SM).		S-1	Sample #S-1, Depth = 0.6' Mean (mm): 0.16, Phi Sorting: 0.54 Shell: 0%, Fines (#200) - 10.82 (SP-SM)	
-2.9	0.9		PEAT; trace fine quartz sand, loose/soft, black (2.5Y-2.5/1), (PT).				
-3.6	1.6		Fat organic SILT; trace fine quartz sand in burrows and laminations, medium plasticity, very soft, possible clay, slight organic odor present, black (2.5Y-2.5/1) and, grayish brown (2.5Y-5/2), (OH).		S-2	Sample #S-2, Depth = 1.6' Mean (mm): 0.15, Phi Sorting: 0.64 Shell: 0%, Fines (#200) - 51.41 (MH)	
-4.0	2.0		Silty SAND; fine quartz sand, little organic silt/plant fibers in laminations and layers, loose, grayish brown (2.5Y-5/2) and, black (2.5Y-2.5/1), (SM).		S-3	Sample #S-3, Depth = 2.0' Mean (mm): 0.16, Phi Sorting: 0.45 Shell: 0%, Fines (#200) - 16.94 (SM)	
-4.2	2.2		PEAT; trace fine quartz sand, loose/soft, black (2.5Y-2.5/1), (PT).				
			End of Boring				

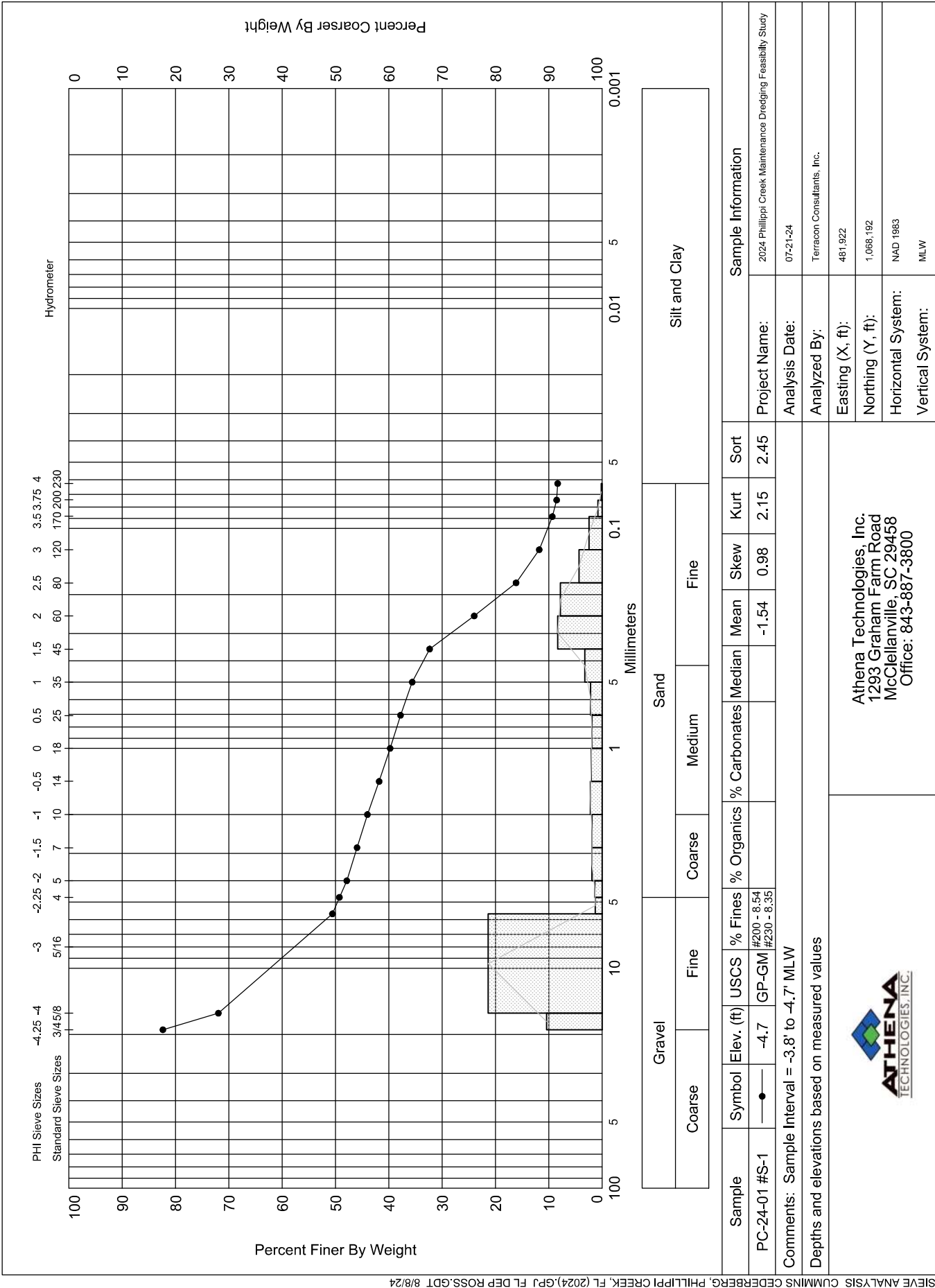
FLORIDA DEP ROSS CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024).GPJ FL DEP ROSS.GDT 8/8/24

APPENDIX C

Grain Size Distribution Data

GRANULARMETRIC REPORT CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024), GPJ FL DEP ROSS.GDT 8/8/24

Granularmetric Report Depths and elevations based on measured values				 Athena Technologies, Inc. 1293 Graham Farm Road McClellanville, SC 29458 Office: 843-887-3800			
Project Name: 2024 Phillippi Creek Maintenance Dredging Feasibility Study							
Sample Name: PC-24-01 #S-1							
Analysis Date: 07-21-24							
Analyzed By: Terracon Consultants, Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
481,922		1,068,192		Florida State Plane West		-4.7 MLW	
USCS:		Munsell:		Comments:			
GP-GM		Wet - 2.5Y-4/2 Moist - 2.5Y-5/1		Sample Interval = -3.8' to -4.7' MLW			
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
118.11	108.23			#200 - 8.54 #230 - 8.35			0
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	% Passing Sieve	
3/4	-4.25	19.03	20.81	17.62	20.81	82.38	
5/8	-4.00	16.00	12.29	10.41	33.10	71.97	
#3.5	-2.50	5.66	25.25	21.38	58.35	50.59	
#4	-2.25	4.76	1.55	1.31	59.90	49.28	
#5	-2.00	4.00	1.64	1.39	61.54	47.89	
#7	-1.50	2.83	2.27	1.92	63.81	45.97	
#10	-1.00	2.00	2.29	1.94	66.10	44.03	
#14	-0.50	1.41	2.60	2.20	68.70	41.83	
#18	0.00	1.00	2.44	2.07	71.14	39.76	
#25	0.50	0.71	2.29	1.94	73.43	37.82	
#35	1.00	0.50	2.59	2.19	76.02	35.63	
#45	1.50	0.35	3.86	3.27	79.88	32.36	
#60	2.00	0.25	9.87	8.36	89.75	24.00	
#80	2.50	0.18	9.27	7.85	99.02	16.15	
#120	3.00	0.13	5.13	4.34	104.15	11.81	
#170	3.50	0.09	2.89	2.45	107.04	9.36	
#200	3.75	0.07	0.97	0.82	108.01	8.54	
#230	4.00	0.06	0.22	0.19	108.23	8.35	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	2.52	1.94	-2.39	-4.07			
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	-1.54	2.91	2.45	0.98	2.15		



Depths and elevations based on measured values



Analyzed By: Terracon Consultants, Inc.

-5.0 MLW

Sample Interval = -4.7' to -5' MLW

0

% Passing
Sieve

95.42

91.32

84.04

83.71

82.99

82.07

81 24

80.39

79 34

77 17

72 27

61 89

33 26

10 26

269

148

1 21

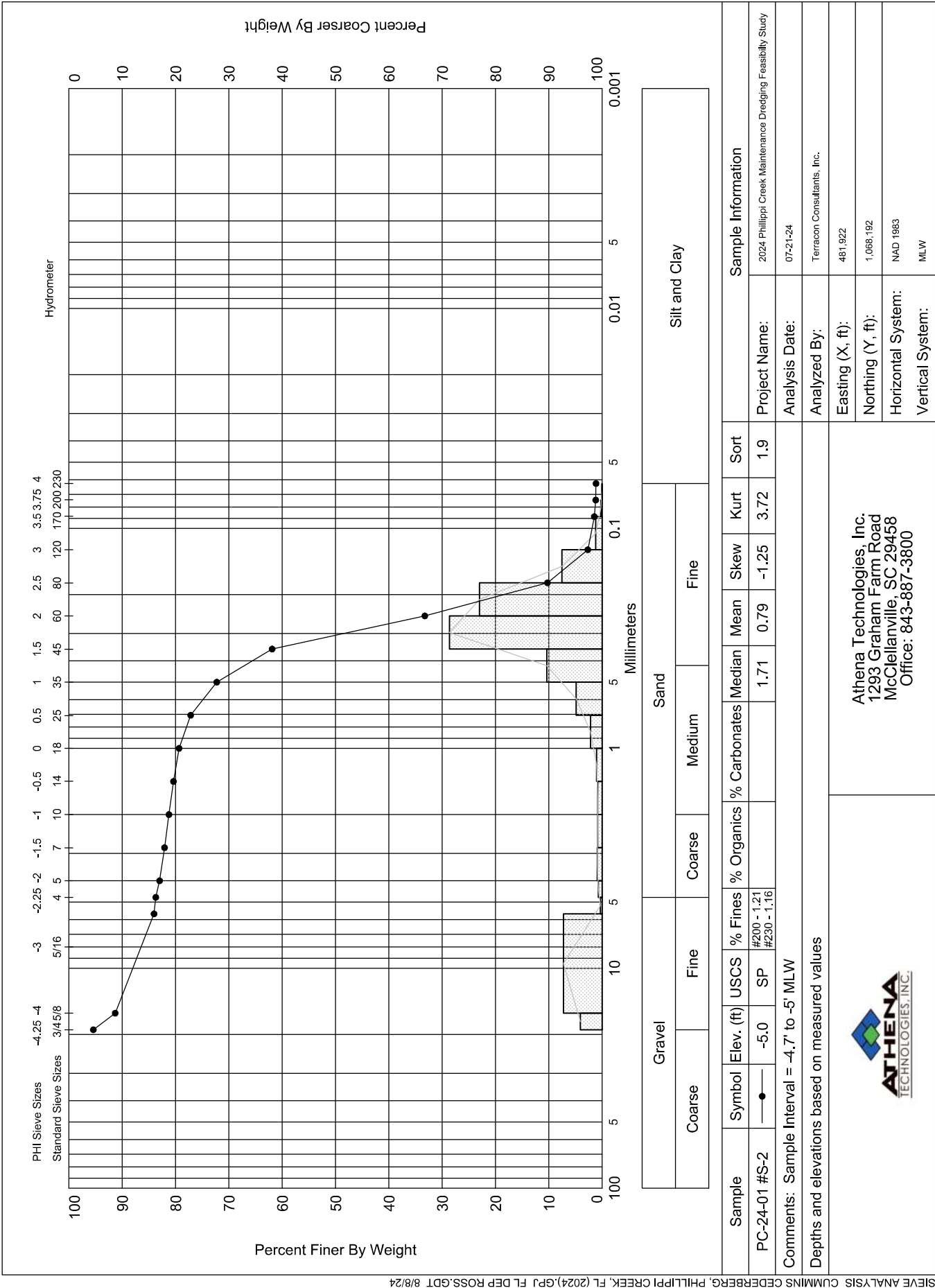
1 16

Phi 95

-422

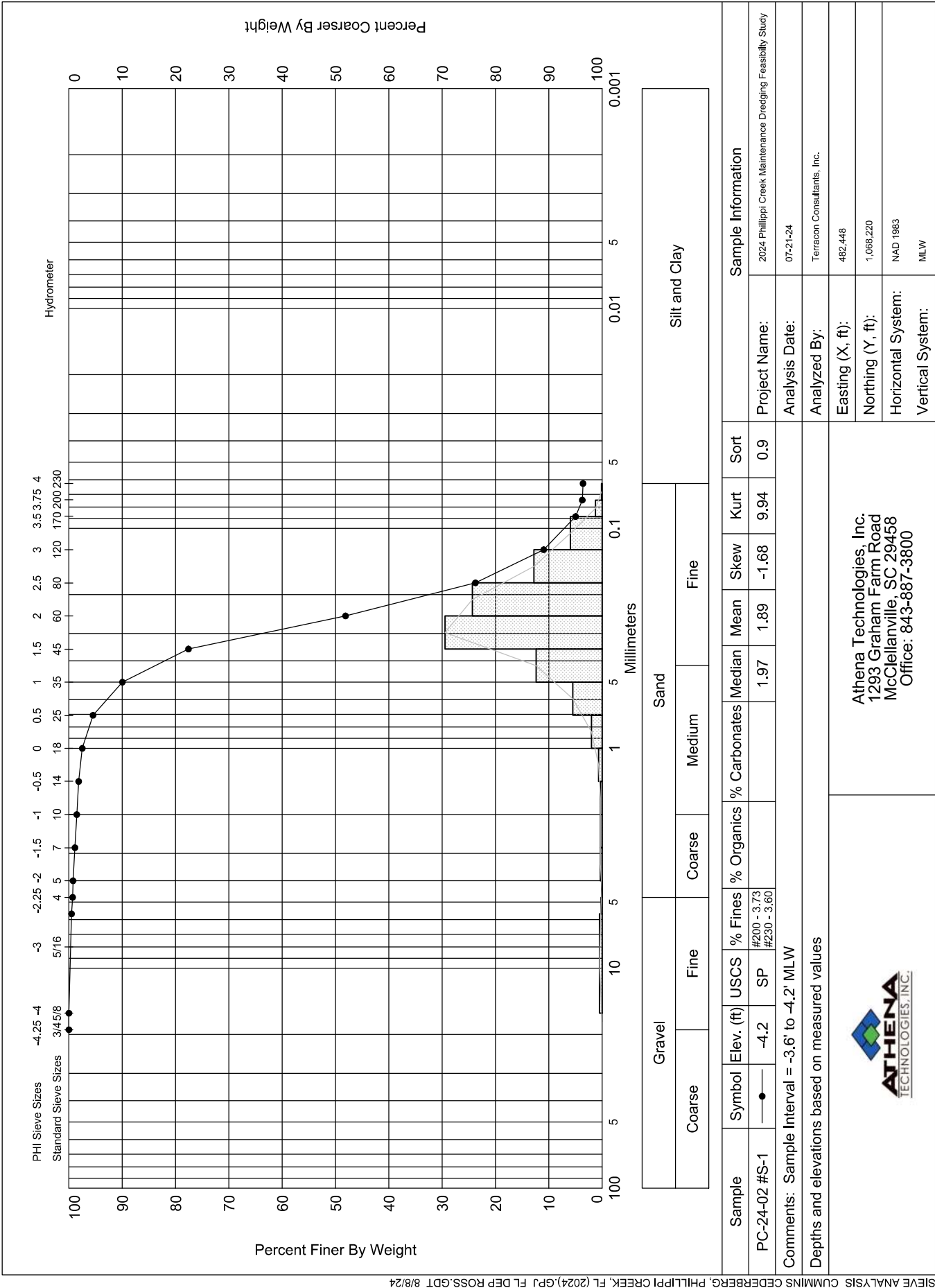
Kurtosis

3.72



GRANULARMETRIC REPORT CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024).GPJ FL DEP ROSS.GDT 8/8/24

Granularmetric Report				 Athena Technologies, Inc. 1293 Graham Farm Road McClellanville, SC 29458 Office: 843-887-3800			
Depths and elevations based on measured values							
Project Name: 2024 Phillippi Creek Maintenance Dredging Feasibility Study							
Sample Name: PC-24-02 #S-1							
Analysis Date: 07-21-24							
Analyzed By: Terracon Consultants, Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
482,448		1,068,220		Florida State Plane West		-4.2 MLW	
USCS:		Munsell:		Comments:			
SP		Wet - 2.5Y-5/2 Moist - 2.5Y-5/2		Sample Interval = -3.6' to -4.2' MLW			
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
146.13	140.85			#200 - 3.73 #230 - 3.60			0
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	% Passing Sieve	
3/4	-4.25	19.03	0.00	0.00	0.00	100.00	
5/8	-4.00	16.00	0.00	0.00	0.00	100.00	
#3.5	-2.50	5.66	0.71	0.49	0.71	99.51	
#4	-2.25	4.76	0.30	0.21	1.01	99.30	
#5	-2.00	4.00	0.10	0.07	1.11	99.23	
#7	-1.50	2.83	0.53	0.36	1.64	98.87	
#10	-1.00	2.00	0.50	0.34	2.14	98.53	
#14	-0.50	1.41	0.52	0.36	2.66	98.17	
#18	0.00	1.00	0.99	0.68	3.65	97.49	
#25	0.50	0.71	2.94	2.01	6.59	95.48	
#35	1.00	0.50	8.05	5.51	14.64	89.97	
#45	1.50	0.35	18.11	12.39	32.75	77.58	
#60	2.00	0.25	43.03	29.45	75.78	48.13	
#80	2.50	0.18	35.60	24.36	111.38	23.77	
#120	3.00	0.13	18.70	12.80	130.08	10.97	
#170	3.50	0.09	8.74	5.98	138.82	4.99	
#200	3.75	0.07	1.84	1.26	140.66	3.73	
#230	4.00	0.06	0.19	0.13	140.85	3.60	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
3.50	2.80	2.47	1.97	1.54	1.24	0.54	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.89	0.27	0.9	-1.68	9.94		



Depths and elevations based on measured values



Analyzed By: Terracon Consultants, Inc.

-5.0 MLW

Sample Interval = -4.2' to -5' MLW

0

% Passing
Sieve

100.00

100.00

100.00

99.99

99.93

99.69

99 52

99.18

98 61

97 28

94 06

85 23

56 50

27 52

11 95

585

437

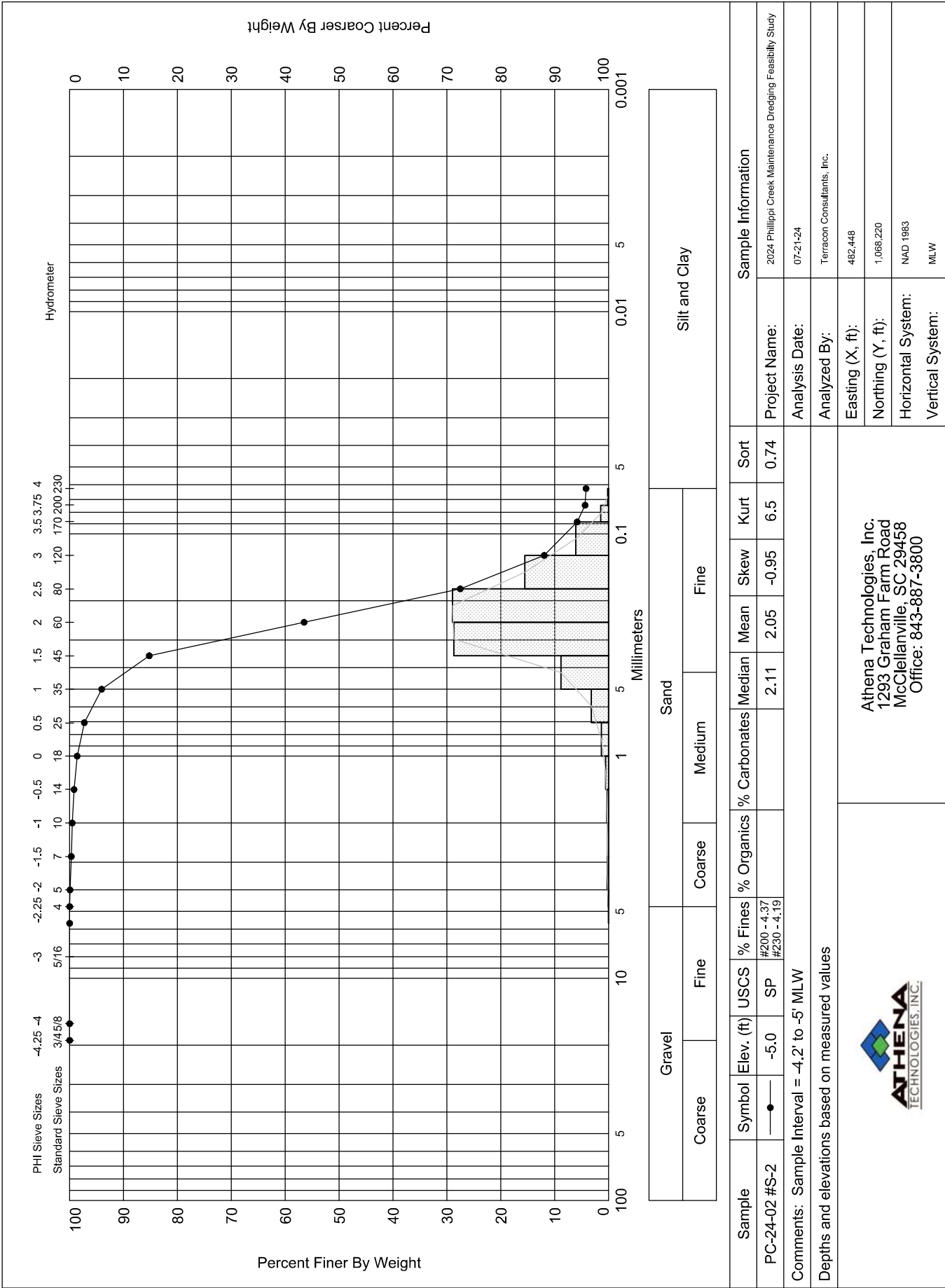
410

Phi 95

0.85

Kurtosis

6.5



Depths and elevations based on measured values



Analyzed By: Terracon Consultants, Inc.

-4.2 MLW

Sample Interval = -3.2' to -4.2' MLW

0

% Passing
Sieve

88.22

85.94

70.63

69.45

68.48

66.06

63 42

60.75

58 40

56 12

53 46

50 06

42 45

29 80

16 07

10 27

902

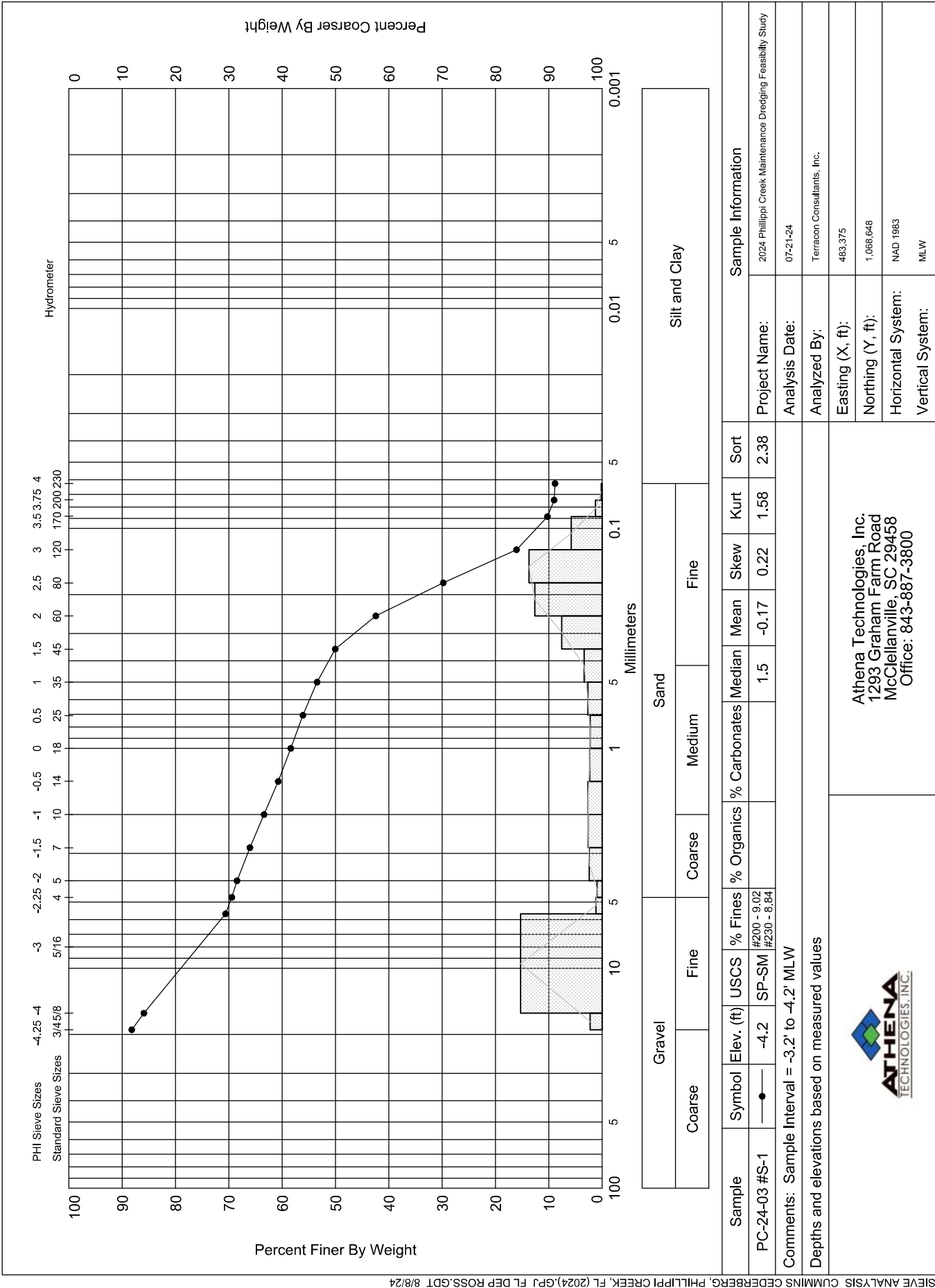
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Phi 95

-3.81

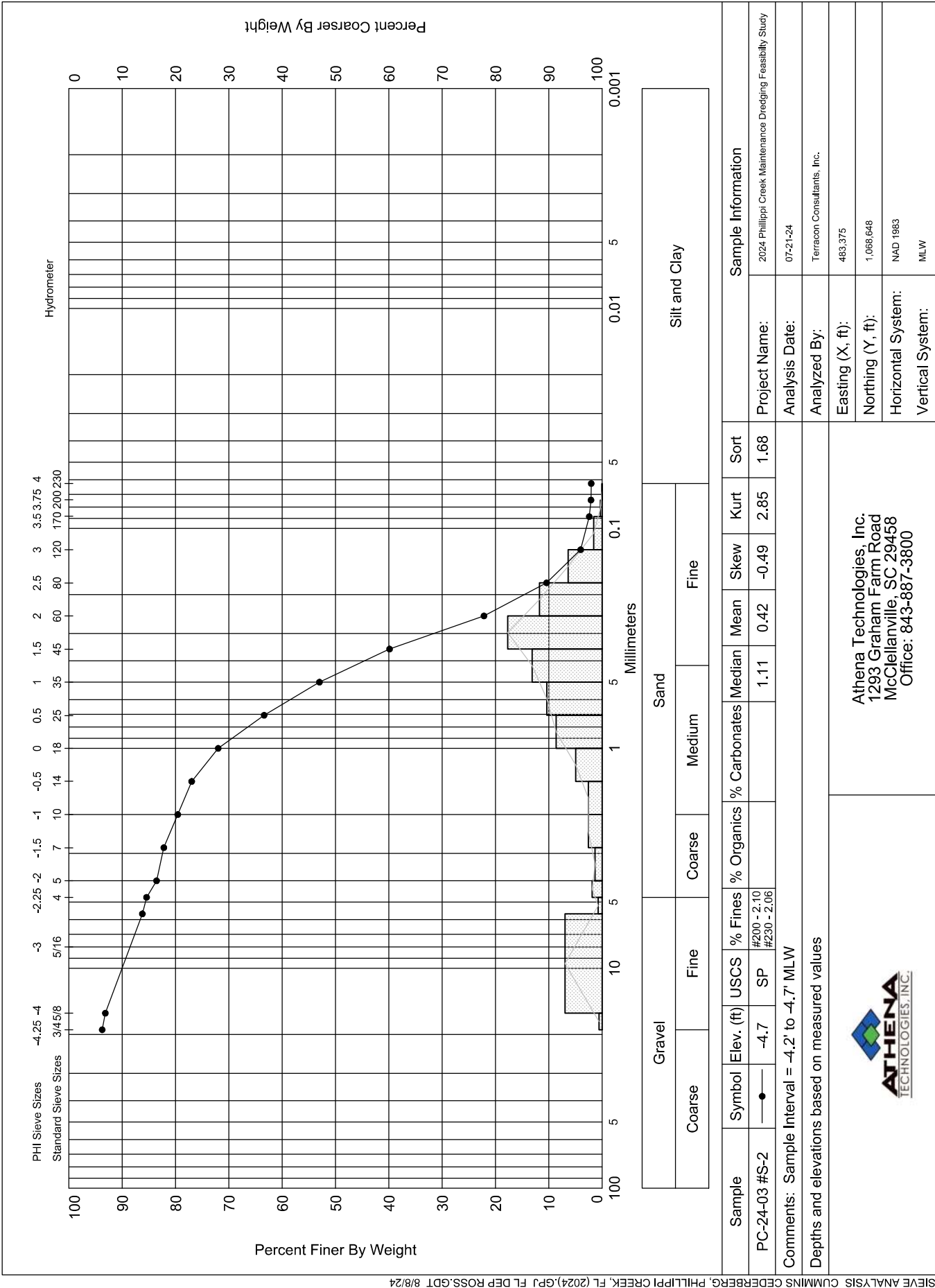
Kurtosis

1.58



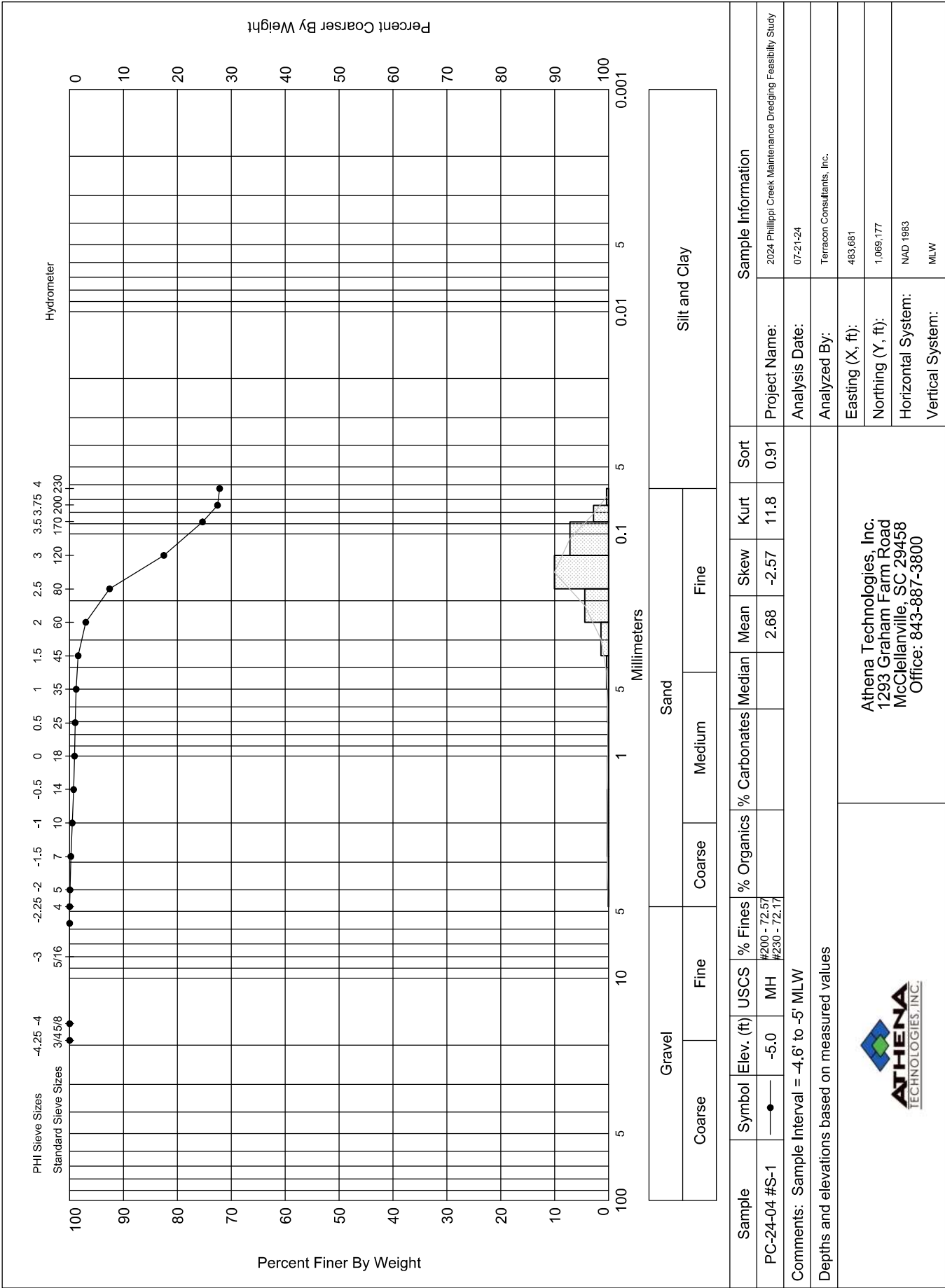
GRANULARMETRIC REPORT CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024).GPJ FL DEP ROSS.GDT 8/8/24

Granularmetric Report				 Athena Technologies, Inc. 1293 Graham Farm Road McClellanville, SC 29458 Office: 843-887-3800			
Depths and elevations based on measured values							
Project Name: 2024 Phillippi Creek Maintenance Dredging Feasibility Study							
Sample Name: PC-24-03 #S-2							
Analysis Date: 07-21-24							
Analyzed By: Terracon Consultants, Inc.				Coordinate System:		Elevation (ft):	
Easting (ft):		Northing (ft):		Florida State Plane West		-4.7 MLW	
USCS:		Munsell:		Comments:			
SP		Wet - 2.5Y-4/2 Moist - 2.5Y-5/2		Sample Interval = -4.2' to -4.7' MLW			
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
161.48	158.15			#200 - 2.10 #230 - 2.06			0
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	% Passing Sieve	
3/4	-4.25	19.03	10.07	6.24	10.07	93.76	
5/8	-4.00	16.00	0.96	0.59	11.03	93.17	
#3.5	-2.50	5.66	11.24	6.96	22.27	86.21	
#4	-2.25	4.76	1.25	0.77	23.52	85.44	
#5	-2.00	4.00	3.04	1.88	26.56	83.56	
#7	-1.50	2.83	2.19	1.36	28.75	82.20	
#10	-1.00	2.00	4.21	2.61	32.96	79.59	
#14	-0.50	1.41	4.21	2.61	37.17	76.98	
#18	0.00	1.00	8.02	4.97	45.19	72.01	
#25	0.50	0.71	13.92	8.62	59.11	63.39	
#35	1.00	0.50	16.75	10.37	75.86	53.02	
#45	1.50	0.35	21.24	13.15	97.10	39.87	
#60	2.00	0.25	28.58	17.70	125.68	22.17	
#80	2.50	0.18	18.95	11.74	144.63	10.43	
#120	3.00	0.13	10.32	6.39	154.95	4.04	
#170	3.50	0.09	2.60	1.61	157.55	2.43	
#200	3.75	0.07	0.53	0.33	158.08	2.10	
#230	4.00	0.06	0.07	0.04	158.15	2.06	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.92	2.26	1.92	1.11	-0.30	-2.06		
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.42	0.75	1.68	-0.49	2.85		



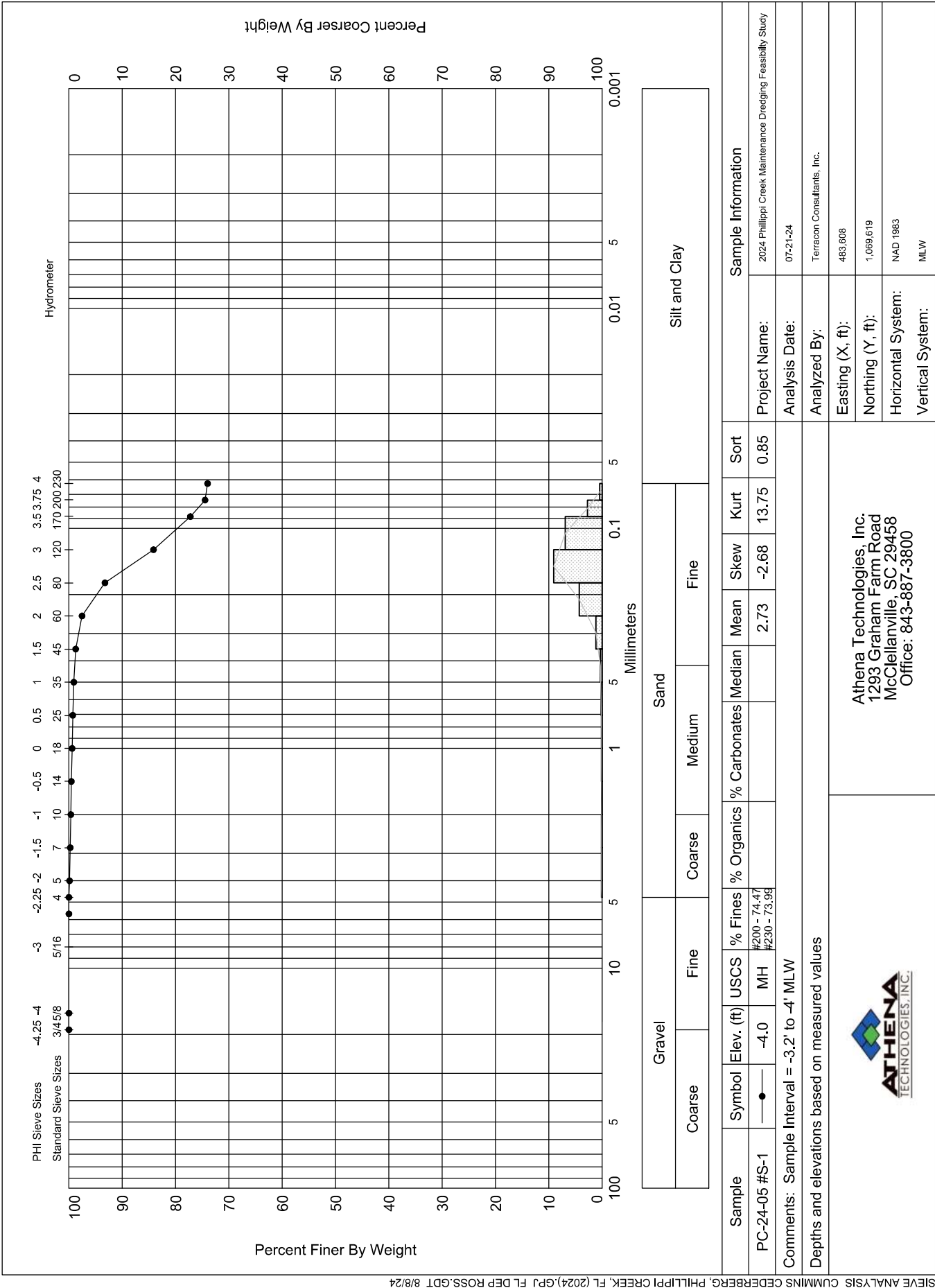
GRANULARMETRIC REPORT CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024).GPJ FL DEP ROSS.GDT 8/8/24

Granularmetric Report Depths and elevations based on measured values				 Athena Technologies, Inc. 1293 Graham Farm Road McClellanville, SC 29458 Office: 843-887-3800			
Project Name: 2024 Phillippi Creek Maintenance Dredging Feasibility Study							
Sample Name: PC-24-04 #S-1							
Analysis Date: 07-21-24							
Analyzed By: Terracon Consultants, Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
483,681		1,069,177		Florida State Plane West		-5.0 MLW	
USCS:		Munsell:		Comments:			
MH		Wet - 2.5Y-3/2 Moist - 2.5Y-4/1		Sample Interval = -4.6' to -5' MLW			
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
80.39	22.37			#200 - 72.57 #230 - 72.17			0
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	% Passing Sieve	
3/4	-4.25	19.03	0.00	0.00	0.00	100.00	
5/8	-4.00	16.00	0.00	0.00	0.00	100.00	
#3.5	-2.50	5.66	0.00	0.00	0.00	100.00	
#4	-2.25	4.76	0.00	0.00	0.00	100.00	
#5	-2.00	4.00	0.05	0.06	0.05	99.94	
#7	-1.50	2.83	0.13	0.16	0.18	99.78	
#10	-1.00	2.00	0.21	0.26	0.39	99.52	
#14	-0.50	1.41	0.21	0.26	0.60	99.26	
#18	0.00	1.00	0.14	0.17	0.74	99.09	
#25	0.50	0.71	0.09	0.11	0.83	98.98	
#35	1.00	0.50	0.15	0.19	0.98	98.79	
#45	1.50	0.35	0.30	0.37	1.28	98.42	
#60	2.00	0.25	1.13	1.41	2.41	97.01	
#80	2.50	0.18	3.55	4.42	5.96	92.59	
#120	3.00	0.13	8.09	10.06	14.05	82.53	
#170	3.50	0.09	5.76	7.17	19.81	75.36	
#200	3.75	0.07	2.24	2.79	22.05	72.57	
#230	4.00	0.06	0.32	0.40	22.37	72.17	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
				3.53	2.93	2.23	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.68	0.16	0.91	-2.57	11.8		



GRANULARMETRIC REPORT CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024), GPJ FL DEP ROSS.GDT 8/8/24

Granularmetric Report Depths and elevations based on measured values				 Athena Technologies, Inc. 1293 Graham Farm Road McClellanville, SC 29458 Office: 843-887-3800			
Project Name: 2024 Phillippi Creek Maintenance Dredging Feasibility Study							
Sample Name: PC-24-05 #S-1							
Analysis Date: 07-21-24							
Analyzed By: Terracon Consultants, Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
483,608		1,069,619		Florida State Plane West		-4.0 MLW	
USCS:		Munsell:		Comments:			
MH		Wet - 2.5Y-3/2 Moist - 2.5Y-4/1		Sample Interval = -3.2' to -4' MLW			
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
76.73	19.95			#200 - 74.47 #230 - 73.99			0
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	% Passing Sieve	
3/4	-4.25	19.03	0.00	0.00	0.00	100.00	
5/8	-4.00	16.00	0.00	0.00	0.00	100.00	
#3.5	-2.50	5.66	0.00	0.00	0.00	100.00	
#4	-2.25	4.76	0.00	0.00	0.00	100.00	
#5	-2.00	4.00	0.09	0.12	0.09	99.88	
#7	-1.50	2.83	0.10	0.13	0.19	99.75	
#10	-1.00	2.00	0.09	0.12	0.28	99.63	
#14	-0.50	1.41	0.07	0.09	0.35	99.54	
#18	0.00	1.00	0.11	0.14	0.46	99.40	
#25	0.50	0.71	0.09	0.12	0.55	99.28	
#35	1.00	0.50	0.15	0.20	0.70	99.08	
#45	1.50	0.35	0.27	0.35	0.97	98.73	
#60	2.00	0.25	0.91	1.19	1.88	97.54	
#80	2.50	0.18	3.30	4.30	5.18	93.24	
#120	3.00	0.13	6.98	9.10	12.16	84.14	
#170	3.50	0.09	5.30	6.91	17.46	77.23	
#200	3.75	0.07	2.12	2.76	19.58	74.47	
#230	4.00	0.06	0.37	0.48	19.95	73.99	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
				3.70	3.01	2.30	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.73	0.15	0.85	-2.68	13.75		



Depths and elevations based on measured values



Analyzed By: Terracon Consultants, Inc.

-3.5 MLW

Sample Interval = -2.3' to -3.5' MLW

0

% Passing
Sieve

100.00

100.00

100.00

100.00

100.00

100.00

100 00

99.95

99 91

99 83

99 72

99 50

98 42

94 42

85 17

79 44

76 77

76 17

Phi 95

2.43

Kurtosis

7.3

Depths and elevations based on measured values



Analyzed By: Terracon Consultants, Inc.

-4.7 MLW

Sample Interval = -3.5' to -4.7' MLW

0

% Passing
Sieve

100.00

100.00

100.00

100.00

99.96

99.96

99 94

99.82

99 59

99 40

99 09

98 47

95 95

86 70

64 22

54 77

52 38

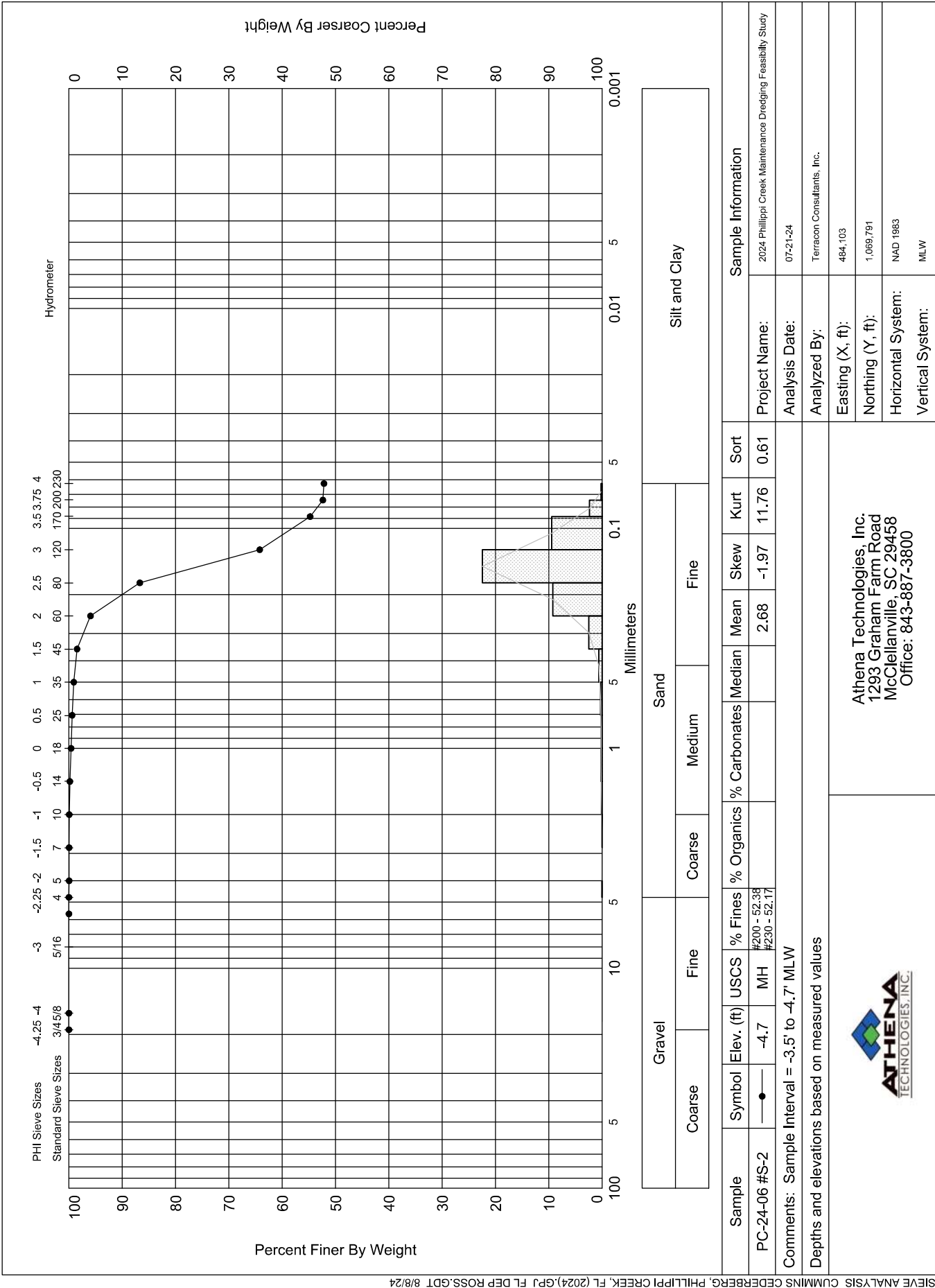
52 17

Phi 95

2.05

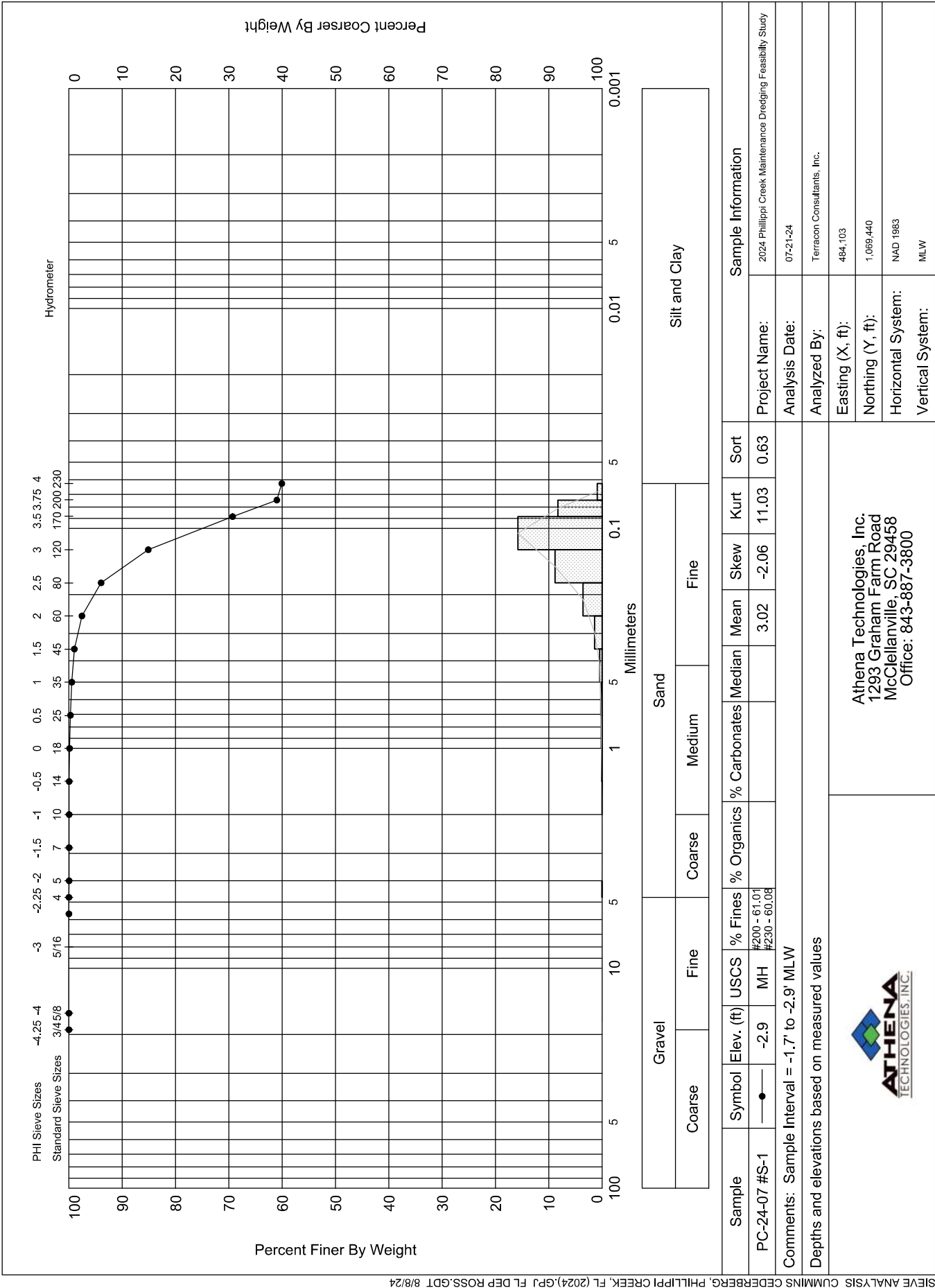
Kurtosis

11.76



GRANULARMETRIC REPORT CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024).GPJ FL DEP ROSS.GDT 8/8/24

Granularmetric Report				 Athena Technologies, Inc. 1293 Graham Farm Road McClellanville, SC 29458 Office: 843-887-3800											
Depths and elevations based on measured values															
Project Name: 2024 Phillippi Creek Maintenance Dredging Feasibility Study															
Sample Name: PC-24-07 #S-1															
Analysis Date: 07-21-24															
Analyzed By: Terracon Consultants, Inc.				Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):					
484,103		1,069,440		Florida State Plane West		-2.9 MLW									
USCS:		Munsell:		Comments:											
MH		Wet - 2.5Y-2.5/1 Moist - 2.5Y-4/2		Sample Interval = -1.7' to -2.9' MLW											
Dry Weight (g):		Wash Weight (g):		Pan Retained (g):		Sieve Loss (%):		Fines (%):		Organics (%):		Carbonates (%):		Shells (%):	
71.91		28.72						#200 - 61.01 #230 - 60.08						0	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	% Passing Sieve									
3/4	-4.25	19.03	0.00	0.00	0.00	100.00									
5/8	-4.00	16.00	0.00	0.00	0.00	100.00									
#3.5	-2.50	5.66	0.00	0.00	0.00	100.00									
#4	-2.25	4.76	0.00	0.00	0.00	100.00									
#5	-2.00	4.00	0.03	0.04	0.03	99.96									
#7	-1.50	2.83	0.00	0.00	0.03	99.96									
#10	-1.00	2.00	0.00	0.00	0.03	99.96									
#14	-0.50	1.41	0.01	0.01	0.04	99.95									
#18	0.00	1.00	0.06	0.08	0.10	99.87									
#25	0.50	0.71	0.12	0.17	0.22	99.70									
#35	1.00	0.50	0.18	0.25	0.40	99.45									
#45	1.50	0.35	0.34	0.47	0.74	98.98									
#60	2.00	0.25	1.02	1.42	1.76	97.56									
#80	2.50	0.18	2.59	3.60	4.35	93.96									
#120	3.00	0.13	6.36	8.84	10.71	85.12									
#170	3.50	0.09	11.37	15.81	22.08	69.31									
#200	3.75	0.07	5.97	8.30	28.05	61.01									
#230	4.00	0.06	0.67	0.93	28.72	60.08									
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95									
				3.32	3.04	2.36									
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis										
Statistics	3.02	0.12	0.63	-2.06	11.03										



GRANULARMETRIC REPORT CUMMINS CEDERBERG, PHILLIPPI CREEK, FL (2024), GPJ FL DEP ROSS.GDT 8/8/24

Granularmetric Report Depths and elevations based on measured values				 Athena Technologies, Inc. 1293 Graham Farm Road McClellanville, SC 29458 Office: 843-887-3800			
Project Name: 2024 Phillippi Creek Maintenance Dredging Feasibility Study							
Sample Name: PC-24-07 #S-2							
Analysis Date: 07-21-24							
Analyzed By: Terracon Consultants, Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
484,103		1,069,440		Florida State Plane West		-4.0 MLW	
USCS:		Munsell:		Comments:			
SM		Wet - 2.5Y-5/1 Moist - 5Y-4/1		Sample Interval = -2.9' to -4' MLW			
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
118.78	67.99			#200 - 43.20 #230 - 42.75			0
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	% Passing Sieve	
3/4	-4.25	19.03	0.00	0.00	0.00	100.00	
5/8	-4.00	16.00	0.00	0.00	0.00	100.00	
#3.5	-2.50	5.66	0.45	0.38	0.45	99.62	
#4	-2.25	4.76	0.00	0.00	0.45	99.62	
#5	-2.00	4.00	0.00	0.00	0.45	99.62	
#7	-1.50	2.83	0.17	0.14	0.62	99.48	
#10	-1.00	2.00	0.26	0.22	0.88	99.26	
#14	-0.50	1.41	0.25	0.21	1.13	99.05	
#18	0.00	1.00	0.35	0.29	1.48	98.76	
#25	0.50	0.71	0.39	0.33	1.87	98.43	
#35	1.00	0.50	0.55	0.46	2.42	97.97	
#45	1.50	0.35	0.72	0.61	3.14	97.36	
#60	2.00	0.25	1.86	1.57	5.00	95.79	
#80	2.50	0.18	12.36	10.41	17.36	85.38	
#120	3.00	0.13	29.81	25.10	47.17	60.28	
#170	3.50	0.09	15.30	12.88	62.47	47.40	
#200	3.75	0.07	4.99	4.20	67.46	43.20	
#230	4.00	0.06	0.53	0.45	67.99	42.75	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
			3.40	2.71	2.53	2.04	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.68	0.16	0.85	-3.56	21.79		

Depths and elevations based on measured values



Analyzed By: Terracon Consultants, Inc.

-2.6 MLW

Sample Interval = -2' to -2.6' MLW

0

% Passing
Sieve

100.00

100.00

100.00

100.00

100.00

99.96

99 94

99.91

99 83

99 63

99 16

98 03

93 94

68 35

34 49

14 29

10 82

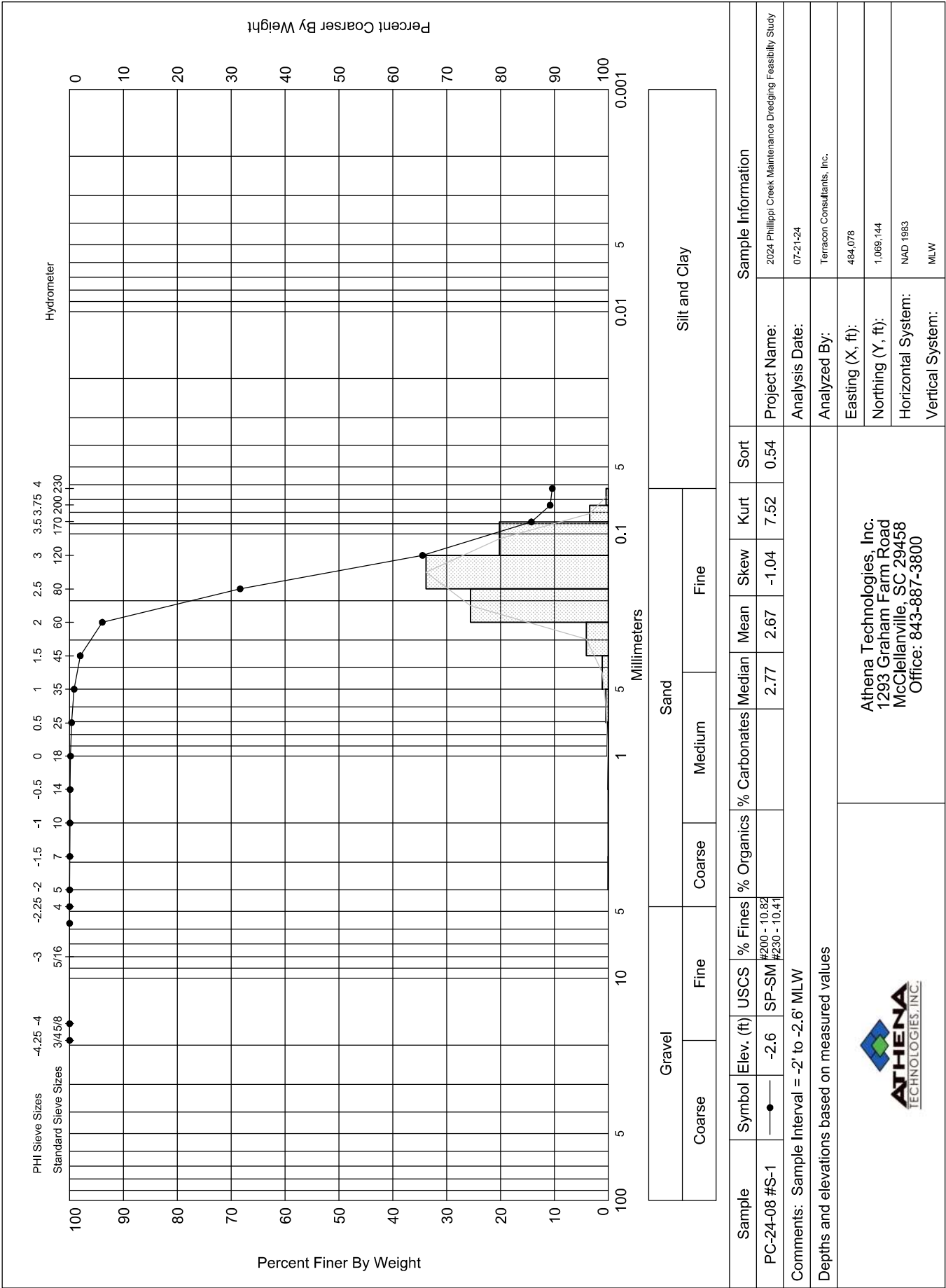
10 41

Phi 95

1.87

Kurtosis

7.52



Depths and elevations based on measured values



Analyzed By: Terracon Consultants, Inc.

-3.6 MLW

Sample Interval = -2.6' to -3.6' MLW

Shells (%):

#230 - 50.96

% Passing
Sieve

100.00

100.00

99.93

99.93

99.93

99.93

99 91

99.87

99 81

99 70

99 39

98 51

95 96

84 84

66 32

55 79

51 41

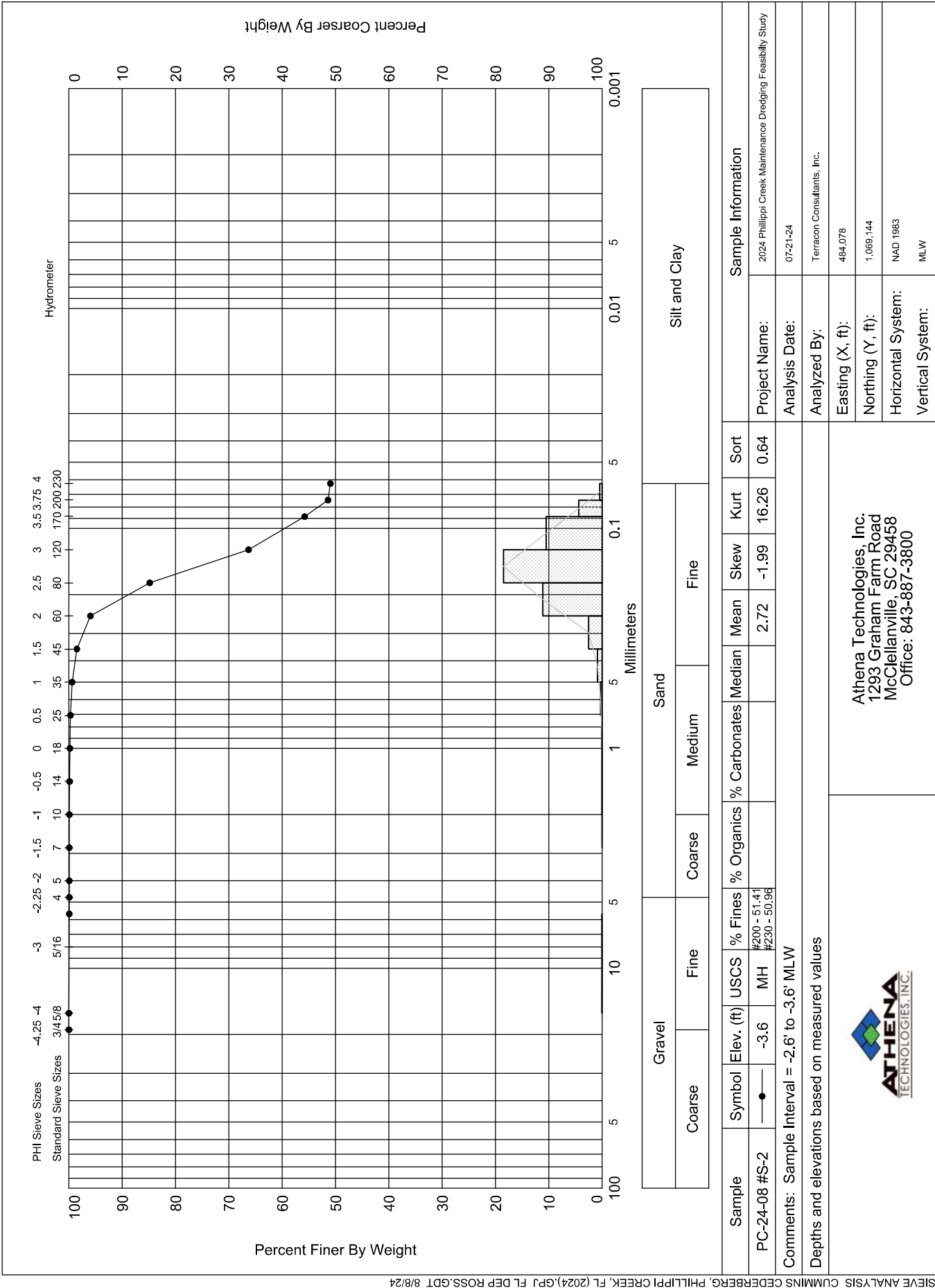
50.06

Phi 95

2.04

Kurtosis

16.26



Depths and elevations based on measured values



Analyzed By: Terracon Consultants, Inc.

-4.0 MLW

Sample Interval = -3.6' to -4' MLW

Shells (%):

#200 - 16.94
#230 - 16.62

% Passing
Sieve

100.00

100.00

100.00

100.00

100.00

99.93

99 88

99.82

99 74

99 63

99 42

99 05

97 62

73 28

28 78

18 00

16 94

16 62

Phi 95

2.05

Kurtosis

18.68

