Appendix C
Nutting Engineers Reports
(Geotechnical and Concrete Testing)

REPORT OF
GEOTECHNICAL EXPLORATION
CONCRETE CORE TESTING
AND FOUNDATION EXCAVATIONS

GLYNN ARCHER SCHOOL BUILDING
1300 WHITE STREET
KEY WEST, FLORIDA

FOR

CH2M HILL
6410 FIFTH STREET, SUITE 2A
KEY WEST, FLORIDA 33040

PREPARED BY

NUTTING ENGINEERS OF FLORIDA, INC.
2051 NW 112th AVENUE
MIAMI, FLORIDA 33172

ORDER NO. 126.24

AUGUST, 2012

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TABLE OF CONTENTS

PROJECT INFORMATION 3
SOIL TEST BORINGS AND RESULTS 4
Groundwater Information 4
Bearing Capacity Analysis 4
CONCRETE TESTING RESULTS 4
FOUNDATION EXPLORATION RESULTS 5
General 6

APPENDIX

Appendix 1: Boring Location Plan (Figure 1), Test Boring Records (4)
Appendix 2: Concrete Testing and Footing Excavation Location Plan (Figure 2)
Appendix 3: Building Footing Dimensions (Figures 3 and 4)
Appendix 4: Concrete Core Break Test Results (Reports 1 and 2)
Appendix 5: Representative Photographs
Limitations of Liability, Soil Classification Criteria

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August 10, 2012

CH2M Hill
6410 Fifth Street, Suite 2A
Key West, Florida 33040
Attn: Mr. Dean Garcia, P.E.

Subject: Report of Geotechnical Exploration, Concrete Core Testing, and Foundation Excavations
Glynn Archer School Building
1300 White Street
Key West, Florida 33040

Dear Mr. Garcia:

Nutting Engineers of Florida, Inc. has performed a geotechnical exploration, concrete core testing, and foundation excavations for the Glynn Archer School building at the above referenced site in Key West, Florida. This exploration was performed in accordance with our proposal dated May 18, 2012 and the purchase order dated July 19, 2012. The purpose of this exploration was to obtain information concerning the site and subsurface conditions at specific test boring locations in order to evaluate the soil bearing capacity. In addition, concrete cores were collected and tested for compressive strength, and foundations were exposed to provide information concerning the dimensions of the footings. This report presents our findings and recommendations.

PROJECT INFORMATION

The Glynn Archer School was constructed in approximately 1926 (Building A and Auditorium) with additional buildings being constructed in approximately 1936 (Building B) and 1950 (cafeteria). There is also a separate gymnasium building. The work performed for this study included Buildings A, B, and the Auditorium only.

Plans include turning the buildings over to the City of Key West with the intention of converting the buildings to a City Hall facility. In order to determine the condition of the existing building, several studies are being conducted by various entities. The focus of our portion of the project was to perform soil borings for bearing capacity analysis, expose representative footings to

determine the dimensions of the footings, and perform concrete cores within the walls to provide information concerning the compressive strength of the concrete.

SOIL TEST BORINGS AND RESULTS

In order to explore the subsurface conditions at the subject site, four Standard Penetration Test (SPT) borings were performed to depths of twenty-five feet. The drill technician maintained field boring reports, which indicate the depth of each stratum, material type, blow counts, groundwater levels and other pertinent information. All samples were inspected in our laboratory and final test boring reports prepared. The borings were established in the field using available surface controls and therefore, the boring locations should be considered to be approximate. These reports are included in the appendix.

In general, beneath the surficial layer of topsoil/asphalt, the borings revealed calcareous oolitic sand and limestone formation from the ground surface to twenty-five feet, the maximum depth explored. 'N'-values ranged from 25 blows per foot to refusal. We note that all borings revealed refusal conditions from two to at least ten feet. Please see the enclosed soil classification sheets in the Appendix of this report for additional important information regarding these descriptions, the field evaluation and other related information.

Groundwater Information

The groundwater level was measured at the boring locations at the time of drilling. The groundwater level was encountered at approximately five to six feet below the existing ground surface. Fluctuation in the observed groundwater levels should be expected due to tidal fluctuations, rainfall variations, seasonal climatic changes, construction activity and other site-specific factors.

The immediate depth to groundwater measurements presented in this report may not provide a reliable indication of stabilized or more long term depth to groundwater at this site. Water table elevations can vary dramatically with time through rainfall, droughts, storm events, flood control activities, nearby surface water bodies, tidal activity, pumping and many other factors. For these reasons, this immediate depth to water data should not be relied upon alone for project design considerations.

Bearing Capacity Analysis

Based on the boring results, the soils at the existing foundation levels are suitable for support of the building using a minimum allowable bearing pressure of 4,000 pounds per square foot.

CONCRETE TESTING RESULTS

As part of this study, a total of seven concrete cores were taken at various wall and footing locations. The locations of the concrete cores are shown on the test location plan in the

Appendix. The cores indicated an average compressive strength for building A of approximately 1,835 pounds per square inch, and for building B, an average of approximately 3,813 pounds per square inch. We did note that the cores from building A were less dense and contained relatively large aggregate, with some particles in the two-inch diameter range. The results of the testing are presented in the table below, and a more detailed table is presented in the Appendix section of this report.

Core Number	Core Location	Compressive Strength (psi)
1	Bldg A, East Wall North of Front Entrance, 1st Level	1952
2	Bldg A, South Wall, 2nd Level at Stairs	1717
3	Bldg B, Approx. Center of East Wall, 1st Level	4229
4	Bldg B, Approx. Center of West Wall, 1st Level	3183
5	Bldg B, South Wall at Stairs, 2nd Level	4193
6	Bldg B, Footing at SW Corner of Building	3634
7	Bldg B, Footing at NE Corner of Building	3824

In addition, four Windsor probes were performed to provide additional information concerning the compressive strength of the concrete. One Windsor probe was performed on the slab in the classroom on the southeast corner of building B where a cistern was constructed and resulted in the floor slab being concrete in this room. The results of the Windsor probe indicated a compressive strength of 7,500 psi. Windsor probes were also performed on columns at the auditorium and resulted in considerable variation with 1,713 psi on a column on the north side of the building to 4,187 psi on a column on the south side of the building. We note that we were attempting to perform additional Windsor probes, however, the principal of the school requested that we suspend testing.

FOUNDATION EXPLORATION RESULTS

Another aspect of this study was to expose representative wall and column footings to determine their dimensions. Specifically, four wall footings on the exterior and three column footings beneath the wood floor were exposed and these locations are shown on the test location plan presented in the Appendix. In general, the column footing dimensions were consistent and consisted of a 32-inch square concrete base, with a 12-inch square concrete column supporting the wood floor joist system. The exterior wall footing excavations revealed varying dimensions

depending on the location. Details of the explored footings are shown on the footing detail drawings presented in the Appendix.

General Information

Our client for this geotechnical evaluation was:

CH2M Hill
6410 5th Street, Suite 2A
Key West, Florida 33040

The contents of this report are for the exclusive use of the client, the client's design & construction team and governmental authorities for this specific project exclusively. Information conveyed in this report shall not be used or relied upon by other parties or for other projects without the expressed written consent of NUTTING ENGINEERS OF FLORIDA, INC. This report discusses geotechnical considerations for this site based upon observed conditions and our understanding of proposed construction for foundation support. Environmental issues including (but not limited to), soil and/or groundwater contamination are beyond our scope of service for this project.

If conditions are encountered which are not consistent with the findings presented in this report, or if proposed construction is moved from the location studied, this office shall be notified immediately so that the condition or change can be evaluated and appropriate action taken.

We appreciate the opportunity to provide these services for you. If we can be of any further assistance, or if you need additional information, please feel free to contact us.

Sincerely,
NUTTING ENGINEERS OF FLORIDA, INC.

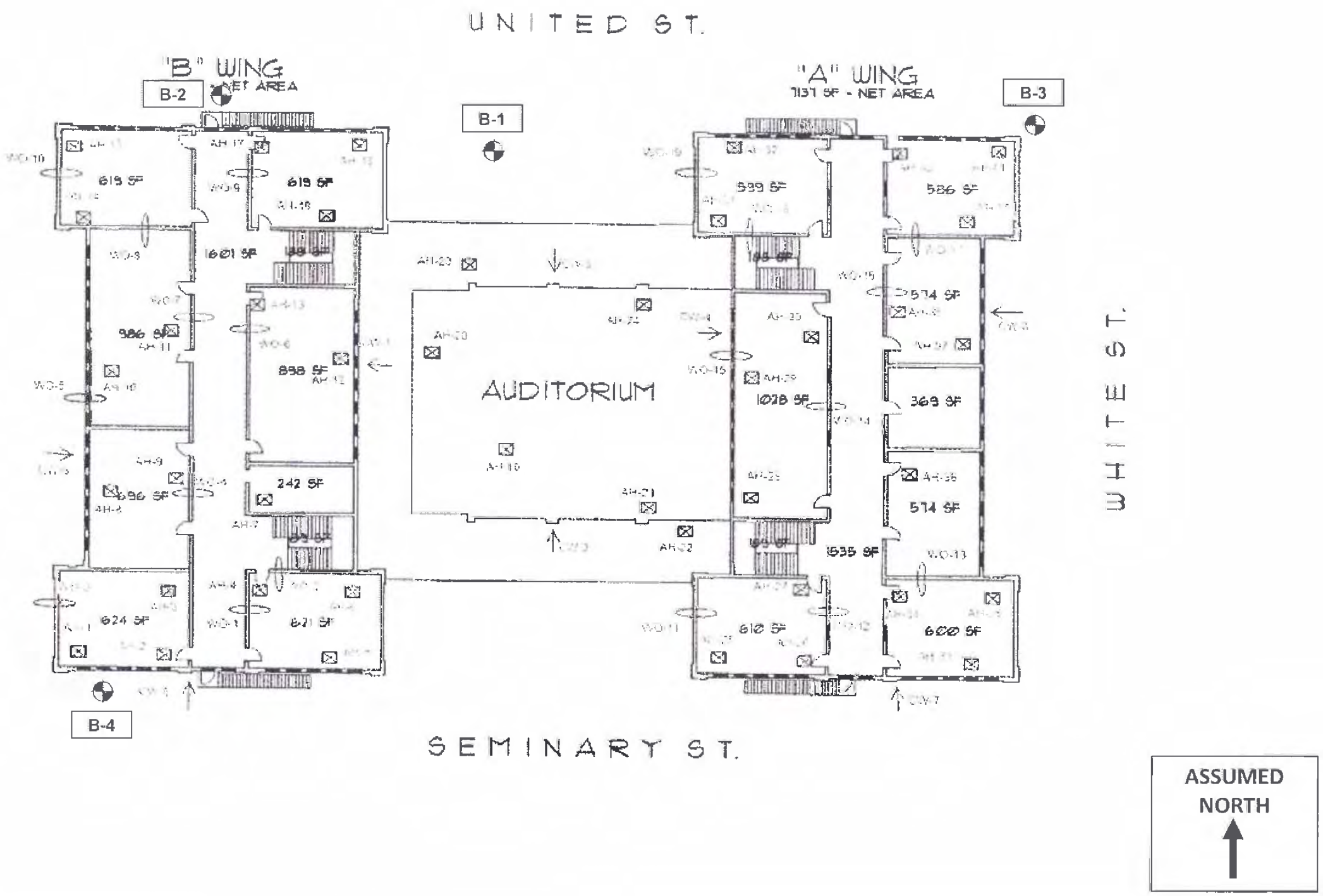
Christopher E. Gworek, P.E.
Senior Engineer

Richard Wohlfarth 8/15/12
Richard Wohlfarth, P.E. #50858
Director of Engineering

APPENDIX SECTION

APPENDIX 1:

BORING LOCATION PLAN (FIG.1)
TEST BORING RECORDS (4)



NOT TO SCALE

PROJECT NO. 126.24

Glynn Archer School
1300 White Street
Key West, Florida

BORING LOCATION PLAN

FIGURE 1

NUTTING ENGINEERS OF FLORIDA, INC.
ESTABLISHED 1967

Nutting Engineers of FLorida, Inc.
1310 Neptune Drive
Boynton Beach Fl., 33426
Telephone: (561) 736-4900
Fax: (561) 737-9975

BORING NUMBER B-1

PROJECT NUMBER 126.24
CLIENT CH2M Hill
PROJECT NAME City of Key West - Glynn Archer School
PROJECT LOCATION Key West, Florida

DATE STARTED 7/16/12 COMPLETED 7/16/12
SURFACE ELEVATION REFERENCE Approx. @ Road Crown
DRILLING METHOD Standard Penetration Boring
GROUND WATER LEVELS:
LOGGED BY D. Tyson CHECKED BY R.C. Wolfarth
∇ AT TIME OF DRILLING 5.5 ft
APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲ 10 20 30 40 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0		Gray quartz medium SAND and LIMESTONE fragments	SS 1	7-19-21-50/3"	100+	>>
		Lt. tan oolitic LIMESTONE	AU 2			
5		∇	SS 3	30-50/4"	100+	>>
			AU 4			
			SS 5	48-50/3"	100+	>>
10			AU 6			
			SS 7	40-50/5"	100+	>>
15						
			SS 8	18-20-18	38	▲
20						
		Lt. tan oolitic LIMESTONE and lt. tan slightly silty quartz fine SAND				
		Bottom of hole at 23.8 feet.	SS 9	50/4"	100+	>>

TEST NUTTING BOREHOLE 2-126.24 CH2M HILL - CITY OF KEY WEST GLYNN ARCHER SCHOOL.GPJ GINT US.GDT 7/25/12

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Boynton Beach Fl., 33426
Telephone: (561) 736-4900
Fax: (561) 737-9975

BORING NUMBER B-2

PROJECT NUMBER 126.24

CLIENT CH2M Hill

PROJECT NAME City of Key West - Glynn Archer School

PROJECT LOCATION Key West, Florida

DATE STARTED 7/16/12 COMPLETED 7/16/12

SURFACE ELEVATION REFERENCE Approx. @ Road Crown

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY D. Tyson CHECKED BY R.C. Wolfarth

∇ AT TIME OF DRILLING 5.6 ft

APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value
0		Gray quartz medium SAND and LIMESTONE fragments	SS 1	7-10-15-31	25
		Lt. tan oolitic LIMESTONE	SS 2	50/2"	100+
5			SS 3	39-50/4"	100+
	∇		AU 4		
10			SS 5	35-50/5"	100+
			AU 6		
15			SS 7	32-50/4"	100+
		Lt. tan oolitic LIMESTONE and lt. tan slightly silty quartz fine SAND			
20			SS 8	14-14-15	29
25			SS 9	15-20-22	42
		Bottom of hole at 25.0 feet.			

▲ SPT N VALUE ▲ (10 20 30 40)

PL MC LL (20 40 60 80)

☐ FINES CONTENT (%) ☐ (20 40 60 80)

TEST NUTTING BOREHOLE 2-126.24 CH2M HILL - CITY OF KEY WEST GLYNN ARCHER SCHOOL.GPJ GINT US.GDT 7/25/12

Nutting Engineers of FLorida, Inc.
1310 Neptune Drive
Boynton Beach Fl., 33426
Telephone: (561) 736-4900
Fax: (561) 737-9975

BORING NUMBER B-3

PROJECT NUMBER 126.24

CLIENT CH2M Hill

PROJECT NAME City of Key West - Glynn Archer School

PROJECT LOCATION Key West, Florida

DATE STARTED 7/17/12 COMPLETED 7/17/12

SURFACE ELEVATION REFERENCE Approx. @ Road Crown

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY D. Tyson CHECKED BY R.C. Wolfarth

∇ AT TIME OF DRILLING 5.5 ft

APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲ 10 20 30 40 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0		ASPHALT and baserock	SS 1	17-16-38-50/2"	100+	>>
		Lt. tan oolitic LIMESTONE	AU 2			
			SS 3	50/4"	100+	>>
5	∇					
			AU 4			
			SS 5	50/5"	100+	>>
10			AU 6			
		Lt. tan oolitic LIMESTONE and lt. tan slightly silty SAND				
			SS 7	37-43-37	80	>>
15						
			SS 8	20-20-24	44	▲
20						
			SS 9	30-36-41	77	>>
25		Bottom of hole at 25.0 feet.				

TEST NUTTING BOREHOLE 2-126.24 CH2M HILL - CITY OF KEY WEST GLYNN ARCHER SCHOOL.GPJ GINT US.GDT 7/25/12

Nutting Engineers of FLorida, Inc.
1310 Neptune Drive
Boynton Beach Fl., 33426
Telephone: (561) 736-4900
Fax: (561) 737-9975

BORING NUMBER B-4

PROJECT NUMBER 126.24

CLIENT CH2M Hill

PROJECT NAME City of Key West - Glynn Archer School

PROJECT LOCATION Key West, Florida

DATE STARTED 7/17/12 COMPLETED 7/17/12

SURFACE ELEVATION REFERENCE Approx. @ Road Crown

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY D. Tyson CHECKED BY R.C. Wolfarth

∇ AT TIME OF DRILLING 5.5 ft

APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value
0		Gray quartz medium SAND, some limestone fragments	SS 1	14-16-19-37	35
		Lt. tan oolitic LIMESTONE	SS 2	50/3"	100+
5			SS 3	50/4"	100+
			AU 4		
			SS 5	50/3"	100+
10			AU 6		
			SS 7	50/4"	100+
15					
		Lt. tan oolitic LIMESTONE and lt. tan slightly silty quartz fine SAND			
20			SS 8	25-36-46	82
25			SS 9	18-22-20	42
		Bottom of hole at 25.0 feet.			

▲ SPT N VALUE ▲ 10 20 30 40

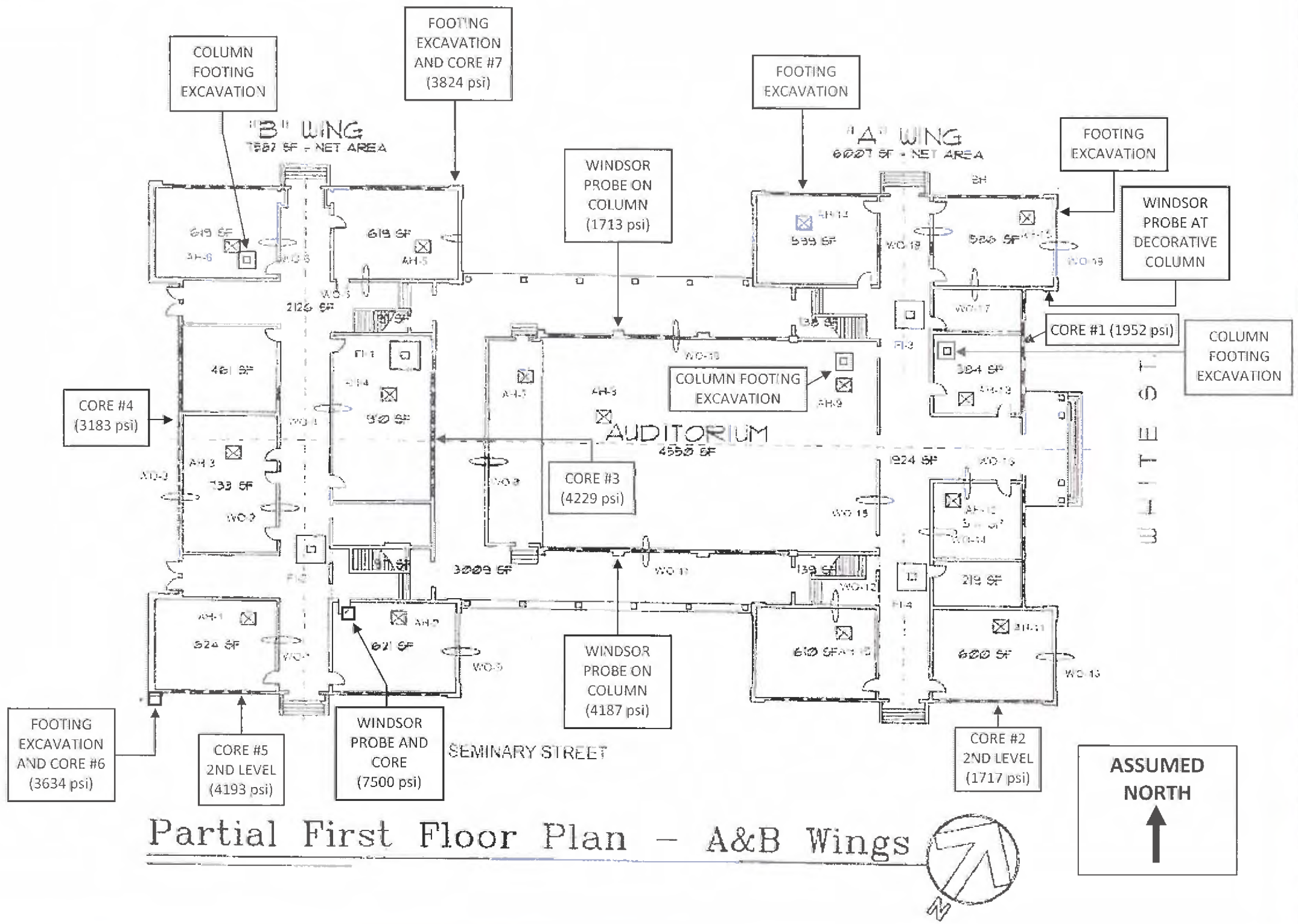
PL MC LL 20 40 60 80

☐ FINES CONTENT (%) ☐ 20 40 60 80

APPENDIX 2:

CONCRETE TESTING AND FOOTING TESTING LOCATION PLAN (FIG. 2)

STRUCTURAL INVESTIGATION
BUILDINGS A & B AND AUDITORIUM - FIRST FLOOR PLAN



NOT TO SCALE
PROJECT NO. 126.24

Glynn Archer School
1300 White Street
Key West, Florida

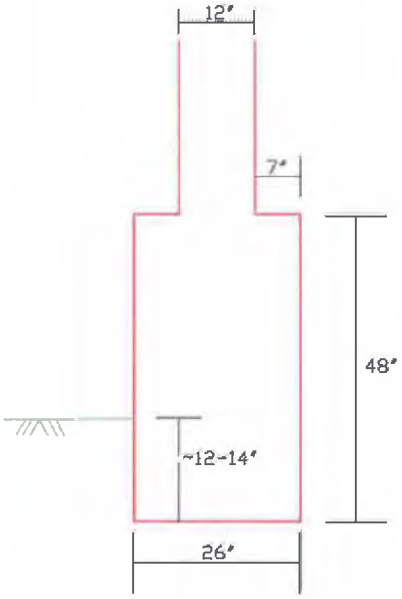
CONCRETE CORE LOCATIONS
WINDSOR PROBE LOCATIONS
FOOTING EXCAVATION LOCATIONS

FIGURE 2

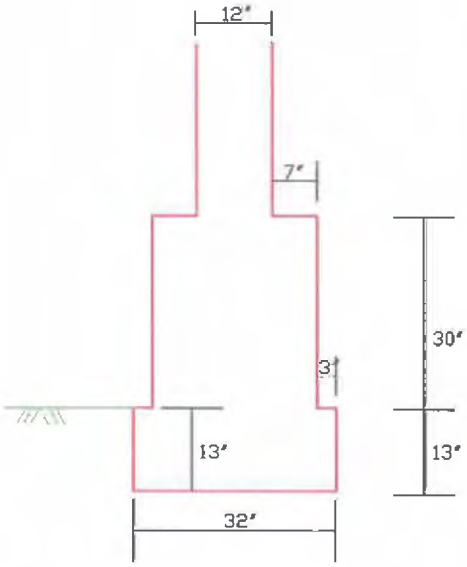
NUTTING ENGINEERS OF FLORIDA, INC.
ESTABLISHED 1967

APPENDIX 3:

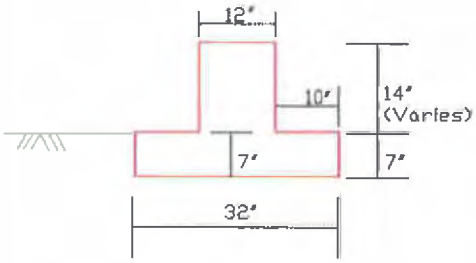
BUILDING FOOTING DIMENSIONS (FIG. 3 and 4)



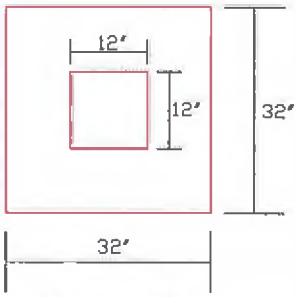
WALL FOUNDATION AT
EAST SIDE OF BUILDING BY
NORTHEAST BUILDING CORNER
(Side Profile)



WALL FOUNDATION AT
NORTH SIDE OF BUILDING AT
NORTHWEST CORNER
(Side Profile)



(Side Profile)

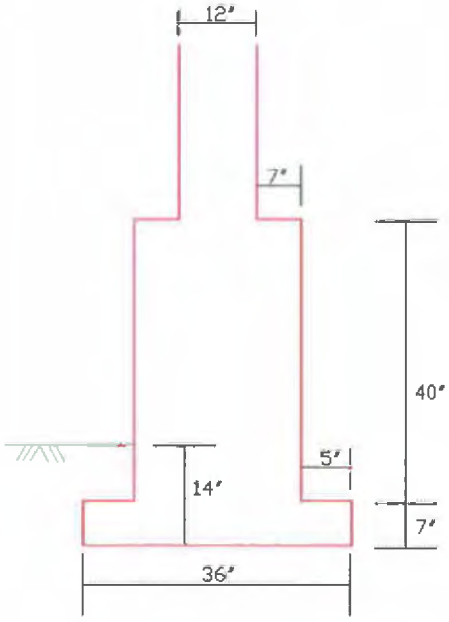


(Top View)

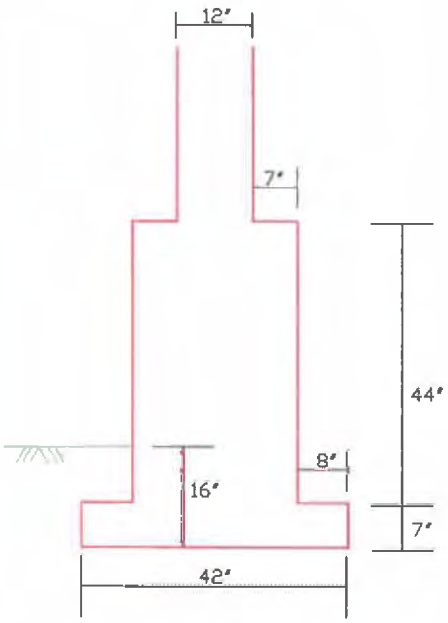
COLUMN FOUNDATION IN
AUDITORIUM BY BLDG. "A", AND
CLOSET IN ADMINISTRATION OFFICE

ALL DIMENSIONS PROVIDED HEREIN SHALL BE CONSIDERED APPROXIMATE
DIAGRAMS PROVIDED ARE SPECIFIC TO EXCAVATION AREAS AND MAY VARY THROUGHOUT THE BUILDING

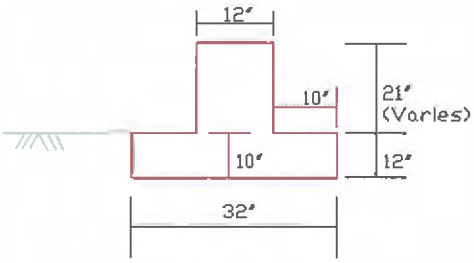
NUTTING ENGINEERS OF FLORIDA, INC. ESTABLISHED 1967	GLYNN ARCHER SCHOOL 1300 WHITE STREET KEY WEST, FLORIDA *FOOTING EXCAVATION RESULTS*	*BUILDING "A" FOUNDATIONS*	FIG. 3



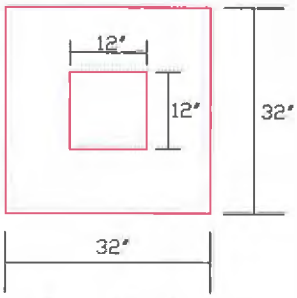
WALL FOUNDATION AT
NORTH SIDE OF BUILDING BY
NORTHEAST BUILDING CORNER
(Side Profile)



WALL FOUNDATION AT
SOUTH SIDE OF BUILDING AT
SOUTHWEST BUILDING CORNER
(Side Profile)



(Side Profile)



(Top View)

COLUMN FOUNDATION IN
ROOM 107 AT BLDG. "B"

ALL DIMENSIONS PROVIDED HEREIN SHALL BE CONSIDERED APPROXIMATE
DIAGRAMS PROVIDED ARE SPECIFIC TO EXCAVATION AREAS AND MAY VARY THROUGHOUT THE BUILDING

NUTTING ENGINEERS OF FLORIDA, INC.
ESTABLISHED 1967

GLYNN ARCHER SCHOOL
1300 WHITE STREET
KEY WEST, FLORIDA
FOOTING EXCAVATION RESULTS

BUILDING "B" FOUNDATIONS

FIG. 4

APPENDIX 4:

CONCRETE CORE BREAK TEST RESULTS
(REPORTS 1 and 2)

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REPORT OF CONCRETE CORE TEST

Client: CH2M Hill
Project: Glynn Archer School
Project Address: 1300 White St., Key West, Fl
Area Cored: Various Walls of Building A and B

Report No.: 1
Date Drilled: 7/17/2012
Lab Technician: R. Ward

Lab Number	#1	#2	#3	#4
Identification	Core-1	Core-2	Core-3	Core-4
Location of Cores	Bldg.A, E. Wall, N. of Front Entr.	Bldg.A, S. Wall, 2nd Level At Stairs	Bldg.B, Approx Center of E. Wall, 1st Level	Bldg.B, Approx. Center of W. Wall, 1st Level
Condition of Cores	Good	Good	Good	Good
Date Concrete Placed	Unknown	Unknown	Unknown	Unknown
Date Tested	8/13/2012	8/13/2012	8/13/2012	8/13/2012
Age of Concrete (days)	N/A	N/A	N/A	N/A
Length of Core (capped, in.)	5.70	5.85	5.18	5.64
Diameter of Core (in.)	3.72	3.72	3.72	3.72
Area of Core	10.86	10.86	10.86	10.86
Ratio: Length/Diameter	1.532	1.573	1.392	1.516
Correction Factor	0.96	0.97	0.95	0.96
Total Load Lbs.	22,090	19,230	48,360	36,020
Corrected Total Load Lbs.	21,206	18,653	45,942	34,579
Unit Load Lbs Per Sq. Inch	1952	1717	4229	3183
Type of Break	Cone/Shear	Cone/Shear	Cone/Split	Cone/Shear

Remarks:

CORES GLYNN ARCHER 1 CEG

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REPORT OF CONCRETE CORE TEST

Client:	CH2M Hill	Report No.:	2
Project:	Glynn Archer School	Date Drilled:	7/17/2012
Project Address:	1300 White St., Key West, Fl	Lab Technician:	R. Ward
Area Cored:	Various Walls and Footings of Building A and B		

Lab Number	#5	#6	#7	
Identification	Core-5	Core-6	Core-7	
Location of Cores	Bldg.B, S. Wall at Stairs, 2nd Level	Bldg.B, Footing at SW Corner	Bldg.B, Footing at NE Corner	
Condition of Cores	Good	Good	Good	
Date Concrete Placed	Unknown	Unknown	Unknown	
Date Tested	8/13/2012	8/13/2012	8/13/2012	
Age of Concrete (days)	N/A	N/A	N/A	
Length of Core (capped, in.)	4.82	7.18	6.27	
Diameter of Core (in.)	3.72	3.72	3.72	
Area of Core	10.86	10.86	10.86	
Ratio: Length/Diameter	1.296	1.930	1.685	
Correction Factor	0.94	1.00	0.97	
Total Load Lbs.	48,460	39,480	42,830	
Corrected Total Load Lbs.	45,552	39,480	41,545	
Unit Load Lbs Per Sq. Inch	4193	3634	3824	
Type of Break	Cone/Shear	Cone/Split	Cone/Shear	

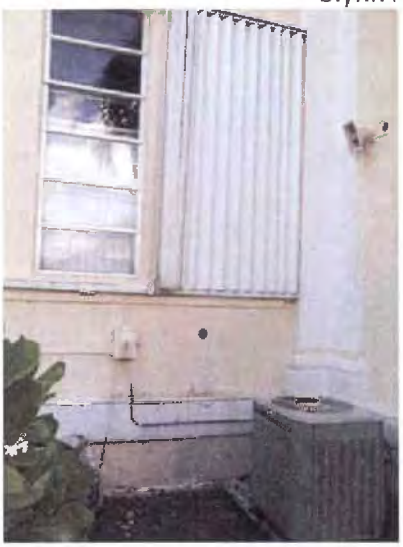
Remarks:

CORES GLYNN ARCHER 2 CEG

APPENDIX 5:

REPRESENTATIVE SITE PHOTOGRAPHS
LIMITATIONS OF LIABILITY
SOIL CLASSIFICATION CRITERIA

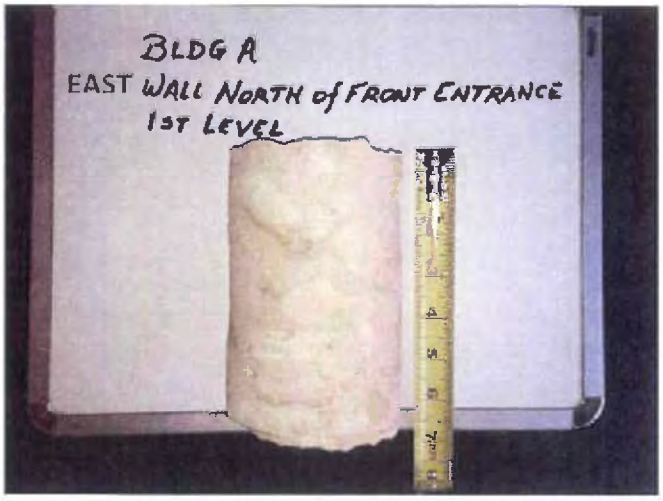
Glynn Archer School Building Overview



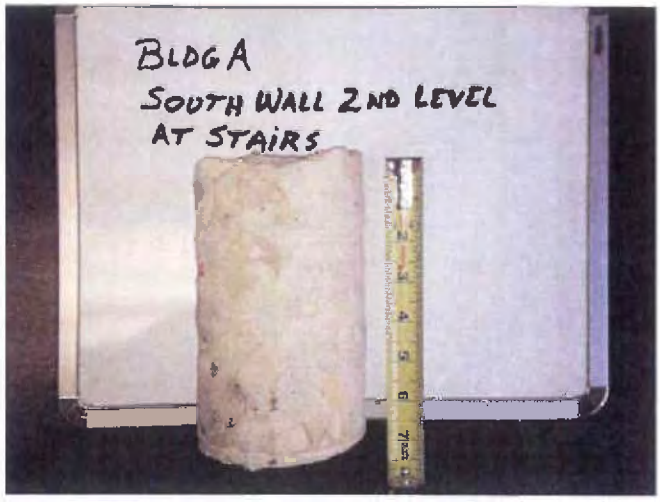
Core #1 - E. Side of Building A North of Front Entrance

Core #2 – Building A South Wall at Stairs, 2nd Level

Core #4 - Building B Approx. Center of West Wall, 1st Level

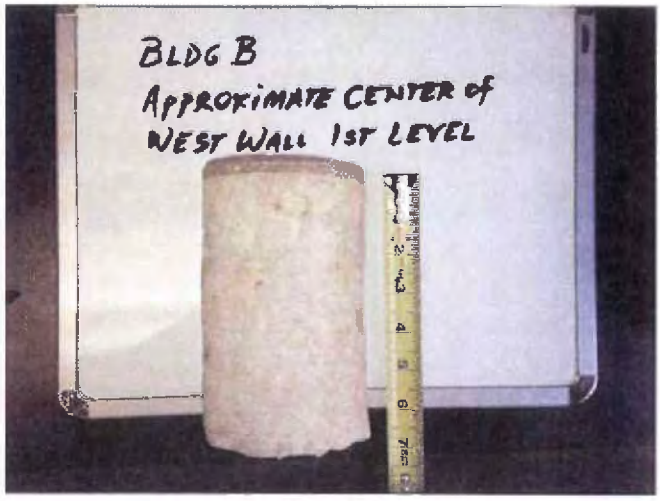


Core #1

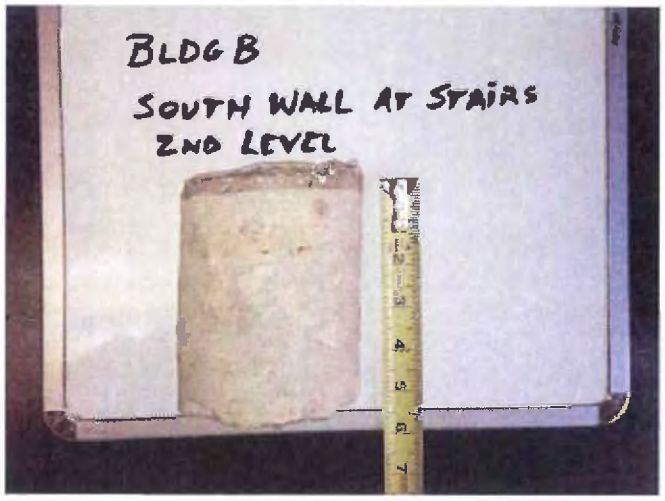


Core #2

Core #3

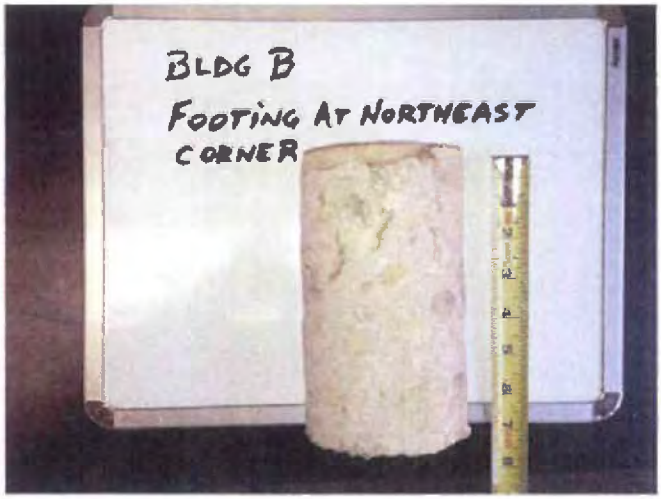


Core #4



Core #5

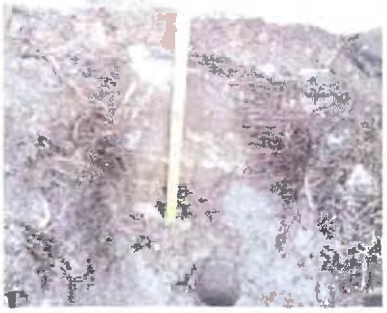
Core #6



Core #7

Column Footing Beneath Auditorium

Building A Column Footing Beneath Floor System

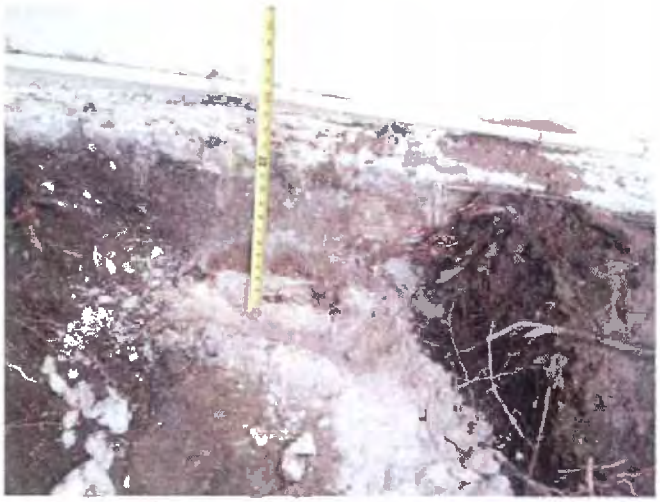


Building B North Wall Footing at NE Corner of Building

Building A East Wall Footing at NE Corner of Building

Building A Windsor Probe Penetrated Decorative Column Feature

Building B South Wall Footing at SW Corner of Building



Building A North Wall Footing at NW Corner of Building

SOIL AND ROCK CLASSIFICATION CRITERIA

SAND/SILT

N-VALUE (bpf)	RELATIVE DENSITY
0 – 4	Very Loose
5 – 10	Loose
11 – 29	Medium
30 – 49	Dense
>50	Very dense
100	Refusal

CLAY/SILTY CLAY

N-VALUE (bpf)	UNCONFINED COMP. STRENGTH (tsf)	CONSISTENCY
<2	<0.25	v. Soft
2 – 4	0.25 – 0.50	Soft
5 – 8	0.50 – 1.00	Medium
9 – 15	1.00 – 2.00	Soft
16 – 30	2.00 – 4.00	v. Stiff
>30	>4.00	Hard

ROCK

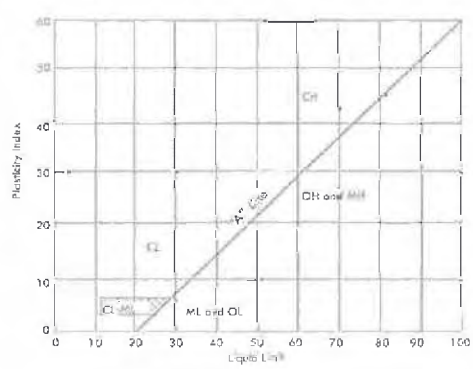
N-VALUE (bpf)	RELATIVE HARDNESS	ROCK CHARACTERISTICS
N> 100	Hard to v. hard	Local rock formations vary in hardness from soft to very hard within short vertical and horizontal distances and often contain vertical solution holes of 3 to 36 inch diameter to varying depths and horizontal solution features. Rock may be brittle to split spoon impact, but more resistant to excavation.
25≤ N ≤ 100	Medium hard to hard	
5≤ N ≤ 25	Soft to medium hard	

PARTICLE SIZE

Boulder	>12 in.
Cobble	3 to 12 in.
Gravel	4.76 mm to 3 in.
Sand	0.074 mm to 4.76 mm
Silt	0.005 mm to 0.074 mm
Clay	<0.005 mm

DESCRIPTION MODIFIERS

0 – 5%	Slight trace
6 – 10%	Trace
11 – 20%	Little
21 – 35%	Some
>35%	And

Major Divisions			Group Symbols	Typical names	Laboratory classification criteria		
Coarse-grained soils (More than half of material is larger than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean gravels (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows: Less than five percent.....GW, GP, SW, SP; More than 12 percent.....GM, GC, SM, SC; 5 to 12 percent.....Borderline cases requiring dual symbols*	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_z = \frac{(D_{30})^2}{D_{10} x D_{60}}$ between 1 and 3	
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines		Not meeting all gradation requirements for GW	
		Gravels with fines (Appreciable amount of fines)	GW* d u	Silty gravels, gravel-sand-silt mixtures		Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
			GC	Clayey gravels, gravel-sand-clay mixtures		Atterberg limits above "A" line with P.I. greater than 7	
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines		$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_z = \frac{(D_{30})^2}{D_{10} x D_{60}}$ between 1 and 3	
			SP	Poorly graded sands, gravelly sands, little or no fines		Not meeting all gradation requirements for SW	
		Sands with fines (Appreciable amount of fines)	SM* d u	Silty sands, sand-silt mixtures		Atterberg limits below "A" line or P.I. less than 4	Limits plotting in hatched zone with P.I. between 4 and 7 are borderline cases requiring use of dual system.
			SC	Clayey sands, sand-clay mixtures		Atterberg limits above "A" line with P.I. more than 7	
Fine-grained soils (More than half of material is smaller than No. 200 sieve size)	Silts and clays (Liquid limit less than 50)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity			
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays			
			OL	Organic silts and organic silty clays of low plasticity			
	Silts and clays (Liquid limit greater than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts			
			CH	Inorganic clays of high plasticity, fat clays			
			OH	Organic clays of medium to high plasticity, organic silts			
	Highly organic soils		PT	Peat and other highly organic soils			

Plasticity Chart

Nutting Engineers of Florida Inc. Established 1967
Your Project & Our Commitment

LIMITATIONS OF LIABLILITY

WARRANTY

We warranty that the services performed by Nutting Engineers of Florida, Inc. are conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession in our area currently practicing under similar conditions at the time our services were performed. ***No other warranties, expressed or implied, are made***. While the services of Nutting Engineers of Florida, Inc. are a valuable and integral part of the design and construction teams, we do not warrant, guarantee or insure the quality, completeness, or satisfactory performance of designs, construction plans, specifications we have not prepared, nor the ultimate performance of building site materials or assembly/construction.

SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings; test pits are sometimes employed. The method of determining the boring location and the surface elevation at the boring is noted in the report. This information is represented in the soil boring logs and/or a drawing. The location and elevation of the borings should be considered accurate only to the degree inherent with the method used and may be approximate.

The soil boring log includes sampling information, description of the materials recovered, approximate depths of boundaries between soil and rock strata as encountered and immediate depth to water data. The log represents conditions recorded specifically at the location where and when the boring was made. Site conditions may vary through time as will subsurface conditions. The boundaries between different soil strata as encountered are indicated at specific depths; however, these depths are in fact approximate and dependent upon the frequency of sampling, nature and consistency of the respective strata. Substantial variation between soil borings may commonly exist in subsurface conditions. Water level readings are made at the time and under conditions stated on the boring logs. Water levels change with time, precipitation, canal level, local well drawdown and other factors. Water level data provided on soil boring logs shall not be relied upon for groundwater based design or construction considerations.

LABORATORY AND FIELD TESTS

Tests are performed in *general* accordance with specific ASTM Standards unless otherwise indicated. All criteria included in a given ASTM Standard are not always required and performed. Each test boring report indicates the measurements and data developed at each specific test location.

ANALYSIS AND RECOMMENDATIONS

The geotechnical report is prepared primarily to aid in the design of site work and structural foundations. Although the information in the report is expected to be sufficient for these purposes, it shall not be utilized to determine the cost of construction nor to stand alone as a construction specification. Contractors shall verify subsurface conditions as may be appropriate prior to undertaking subsurface work.

Report recommendations are based primarily on data from test borings made at the locations shown on the test boring reports. Soil variations commonly exist between boring locations. Such variations may not become evident until construction. Test pits sometimes provide valuable supplemental information that derived from soil borings. If variations are then noted, the geotechnical engineer shall be contacted in writing immediately so that field conditions can be examined and recommendations revised if necessary.

The geotechnical report states our understanding as to the location, dimensions and structural features proposed for the site. ***Any significant changes of the site improvements or site conditions must be communicated in writing to the geotechnical engineer immediately*** so that the geotechnical analysis, conclusions, and recommendations can be reviewed and appropriately adjusted as necessary.

CONSTRUCTION OBSERVATION

Construction observation and testing is an important element of geotechnical services. The geotechnical engineer's field representative (G.E.F.R.) is the "owner's representative" observing the work of the contractor, performing tests and reporting data from such tests and observations. ***The geotechnical engineer's field representative does not direct the contractor's construction means, methods, operations or personnel.*** The G.E.F.R. does not interfere with the relationship between the owner and the contractor and, except as an observer, does not become a substitute owner on site. The G.E.F.R. is responsible for his/her safety, but has no responsibility for the safety of other personnel at the site. The G.E.F.R. is an important member of a team whose responsibility is to observe and test the work being done and report to the owner whether that work is being carried out in general conformance with the plans and specifications. The enclosed report may be relied upon solely by the named client.

LIMITED SOIL QUALITY EVALUATION

OF

GLYNN ARCHER SCHOOL BUILDING
1300 WHITE STREET
KEY WEST, MONROE COUNTY, FLORIDA

PREPARED FOR

CH2M HILL
6410 5TH STREET
SUITE 2A
KEY WEST, FL 33040

PREPARED BY

NUTTING ENVIRONMENTAL OF FLORIDA, INC.
1310 NEPTUNE DRIVE
BOYNTON BEACH, FLORIDA 33426

AUGUST 2012

NUTTING ENVIRONMENTAL
OF FLORIDA, INC.
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Environmental Property Assessments
Contamination Assessments
Remediation
Monitoring Wells
IAQ / Mold Evaluation

NUTTING ENVIRONMENTAL
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- Environmental Property Assessments
- Contamination Assessments
- Remediation
- Monitoring Wells
- IAQ / Mold Evaluation

August 31, 2012

CH2M HILL
6410 5th St, Suite 2A
Key West, FL 33040
Attn.: Andrew H. Smyth, P.E.

RE: Limited Soil Quality Evaluation Report
Glynn Archer School-Building
1300 White Street
Key West, Florida

Dear: Andrew,

NUTTING ENVIRONMENTAL OF FLORIDA, INC. (NEF) has performed a Limited Soil Quality Evaluation on the above referenced property. The intent of this evaluation was to develop information regarding soil quality on the subject property at specific locations for certain test parameters.

The scope of work of this investigation was specified by the client and consisted of the performance of a total of four (4) manual soil borings to facilitate the collection of soil samples from the surficial soils (0-2' interval BLS) for laboratory analysis for volatile organic compounds per EPA Method 8260, arsenic and cyanide.

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PURPOSE AND SCOPE

Limitations and Exceptions of Assessment

The work conducted by NEF is limited to the services authorized by the client, and no other services beyond those explicitly stated should be inferred or implied.

Subsurface conditions can vary significantly between test locations for a variety of reasons including potential latent, undisclosed conditions. The client is at liberty to request additional tests in an effort to reduce this potential variability.

Future use and changes to the property were not considered in this scope of work unless specifically stated to the contrary in our proposal. It is possible that documented and/or latent soil and groundwater quality conditions and underground structures (e.g. septic tanks, oil water separators, etc.), may play a significant role in permitting for and physical implementation of future property use. NEF would be pleased to provide additional consulting services upon receipt of specific written request and following receipt of details for the proposed land use and/or modifications.

The client should be aware that the information contained in this report is being held in confidence. NEF has no obligation under Florida law to report to regulatory agencies the presence of limited contamination detected during the performance of environmental property assessments. However, the client or owner of the property may have such a reporting obligation. A legal opinion relative to these responsibilities should be obtained by the client or owner.

NEF warrants that the services performed by NEF were conducted in a manner consistent with the normal level of care and skill ordinarily exercised by members of this profession in Florida at the time and under the conditions in which the services were performed. No other warranties, expressed or implied are made.

Limiting Conditions and Methodology Used

It is understood that an environmental assessment generates information upon which to form an opinion regarding site conditions and does not lead to full knowledge of property conditions. There can be no assurance nor does NEF offer any assurance that property conditions do not exist or could not exist in the future which were undetected at the time of the assessment and could lead to liability in connection with the property. In conducting the investigation, NEF analyzed records and site conditions in accordance with industry accepted environmental property assessment practice. We cannot predict what actions, if any, a given regulatory agency may presently take or what standards and practices may apply to the property in the future nor do we accept liability for the consequences of such changes should they occur.

The findings of this investigation are based upon conditions identified at the time of our study and may not necessarily represent concealed conditions or conditions which may develop subsequent to our study. All field testing performed as a part of the scope of work of this investigation was conducted in general accordance with Florida Department of Environmental Protection (FDEP) Standard Operating Procedures (SOP) for Field Activities (DEP-SOP-001/01).

The client provided NEF with a site diagram defining the boundaries of the subject property Resurveying or confirmation of the actual legal boundaries of the subject property was not included as a part of this investigation. NEF will not be held responsible for inaccuracies in site boundary information provided by the client.

Certain sections of the report may contain information derived from regulatory agency databases and files, historical information resources, laboratories and interviews with persons familiar with the subject property. NEF cannot be held responsible for the accuracy or completeness of the information from these sources. Therefore, NEF assumes no liability for any loss resulting from errors or omissions arising from the use of inaccurate or incomplete information or misrepresentations or omissions made by others.

Field headspace testing, performed with a Flame Ionization Detector (FID), is frequently used to screen soil samples for the presence of certain Volatile Organic Compounds (VOCs) present in gasoline, diesel fuel, and some solvents. Field headspace testing is conducted by NEF in accordance with procedures outlined in Chapter 62-770 Florida Administrative Code (FAC) for the presence of detectable concentrations of VOCs. An in-line condensable carbon filter is used to obtain filtered readings to correct for the presence of naturally occurring VOCs. Net VOC readings are calculated by subtracting the filtered reading from the unfiltered reading for each sample. Although valuable in estimating the degree of impact from certain types of contaminants, many petroleum and non-petroleum contaminants cannot be detected with this method; therefore, the results of the field headspace testing should not be used to construe that the subject property is free of environmental contamination.

Laboratory results are expressed in this report in parts per million (ppm, mg/L or mg/Kg) or parts per billion (ppb, ug/L or ug/Kg). Field headspace screening results are expressed in parts per million (ppm). Sampling depths are expressed in feet below land surface (BLS).

Test data presented in this report pertains to the actual soil and groundwater samples recovered at the subject site. Substantial variation in soil and groundwater quality can occur between test locations. NEF has attempted to exercise due care in the selection of test locations and test parameters to provide the basis for the opinions expressed in this report.

Performance of Soil Borings and Collection of Soil Samples

On August 13, 2012, NEF personnel mobilized to the subject property to perform a total of four (4) manual soil borings on the subject property. The soil borings, designated as SB-1 through SB-4, were performed using a stainless steel hand auger to obtain soil samples to a depth of approximately two feet below the land surface. NEF visually classified the soil samples recovered. Please see the attached site map (Figure 1) for the specific locations of the soil borings. The sampling equipment was decontaminated between each sampling event in general accordance with the Florida Department of Environmental Protection (FDEP) Standard Operating Procedures (SOP) for Field Activities (DEP-SOP-001/01).

A total of four soil samples were collected from the approximate 0-2' interval BLS at the SB-1 through SB-4 soil boring locations in laboratory provided sample containers in general accordance with the Florida Department of Environmental Protection (FDEP) Standard Operating Procedures (SOP) for Field Activities (DEP-SOP-001/01). Upon completion of soil sample collection activities, the outside of the samples containers were cleaned to remove excess soil and the sample containers were placed on wet ice and delivered to a NELAP certified laboratory (Pace Analytical) for laboratory analysis.

Soil samples collected were submitted for laboratory analysis for VOCs per EPA Method 8260, arsenic per EPA Method 6010 and total cyanide per EPA Method 9012. Chain of Custody records were maintained to control the transfer of the soil samples. Chain of Custody records are attached.

Results of Laboratory Analysis of Soil Samples

The soil samples collected consisted of brown calcareous fine sand and limestone fragments at each of the four soil borings. The water table was not encountered in any of the soil borings, as soil borings were terminated at 2' BLS.

Results of the laboratory analysis of the soil samples were below detection limits for all parameters tested, with the exception of the following parameters listed below. Copies of the laboratory reports and chain of custody forms are attached. The analytical data is tabulated and compared to the Residential Direct Exposure and Leachability Soil Cleanup Target Levels (SCTLs) as listed in Chapter 62-777, Florida Administrative Code (FAC) below:

Summary of Soil Analytical Results

Glynn Archer School Building
1300 White Street
Key West, Monroe CountyFlorida

August 15, 2012

Results Stated in Parts Per Million (mg/kg)

Compound	SB-1 0-2' BLS	SB-2 0-2' BLS	SB-3 0-2' BLS	SB-4 0-2' BLS	SCTLs	
					Direct Exposure	Leachability
VOCs	U	U	U	U	N/A	N/A
Total Cyanide* (b)	0.13U	0.34 I	0.15U	0.13U	34**	0.8
Arsenic	**3.6**	**4.5**	**2.9**	1.7	2.1	***

SCTLs: Soil Cleanup Target Levels established for chemical constituents in soil as defined in Chapter 62-777 FAC. (Direct Exposure Residential Column I criteria and Leachability Column III criteria).
U = Below Laboratory Method Detection Limits
I = Estimated value, reported between Method Detection Limit (MDL) and Practical Quantitation Limit (PQL)
* Soil Cleanup Target Levels listed for Total Cyanide are for Free Cyanide (most stringent SCTL)
** Direct Exposure value based on acute toxicity considerations.
*** Leachability value may be derived using SPLP Test to calculate site-specific SCTLs or may be determined using TCLP in the event oily wastes are present.
(b) = Leachability values derived from USEPA Soil Screening Guidance (1996). These values were derived assuming soil pH 6.8. These leachability values are dependent upon both the metal concentration in soil and soil characteristics. Thus, if site-specific soil characteristics are different than the defaults, these leachability values may not apply. If this is the case, site-specific leachability values should be derived using methods such as TCLP or SPLP.

Conclusions and Recommendations

Laboratory analytical results of the soil samples collected from the 0-2 foot interval BLS were below the State of Florida Residential Direct Exposure and Leachability Soil Cleanup Target Levels (SCTLs) ~~and Leachability~~, as listed in Chapter 62-777, Florida Administrative Code (FAC), for all parameters tested with the exception of arsenic in soil samples collected from the 0-2' interval BLS at the SB-1, SB-2 and SB-3 soil boring locations.

Elevated arsenic soil concentrations were recorded in three of the four samples above Residential Direct Exposure Soil Cleanup Target Levels, as listed in Chapter 62-777 FAC. NEF has no knowledge regarding historical onsite activities that may be the source of the elevated arsenic concentration in the above identified soil samples collected as part of this investigation. It is NEF's understanding a Phase I Environmental Site Assessment Report may have recently been completed for the subject site and such assessment may have revealed a source for the reported elevated arsenic concentrations onsite.

The client should be aware that certain contaminants may be present in soil and/or groundwater above their respective Soil and/or Groundwater Cleanup Target Levels, as listed in Chapter 62-777, Florida Administrative Code (FAC) on any property as a result of "non-point" sources (e.g. from the application of pesticides/herbicides in landscaped areas and presence of pressure treated lumber) and natural occurring conditions (as a result of geochemical processes that have not been influenced by human activity). It should be noted that elevated background arsenic concentrations can be commonly found in soils in the Florida Keys.

The elevated arsenic concentrations, despite the possibility they may represent background conditions, may constitute a reportable release requiring notification of the Florida Department of Environmental Protection (FDEP). We recommend that you consult with qualified environmental legal counsel in regard to the question of FDEP notification.

NEF appreciates this opportunity to be of service. Should you have any further questions or concerns, please do not hesitate to contact the undersigned at your convenience. For further information regarding our firm's qualifications, please visit our website at http://www.nef.cc or contact our office.

Sincerely,
NUTTING ENVIRONMENTAL OF FLORIDA, INC.

Richard G. Iossi, P.E.
President

Attachments: Figure
Laboratory Analytical Results and Chain of Custody Forms

Filename: Glynn Archer School, Key West, Limited Soil Quality Evaluation, August 2012

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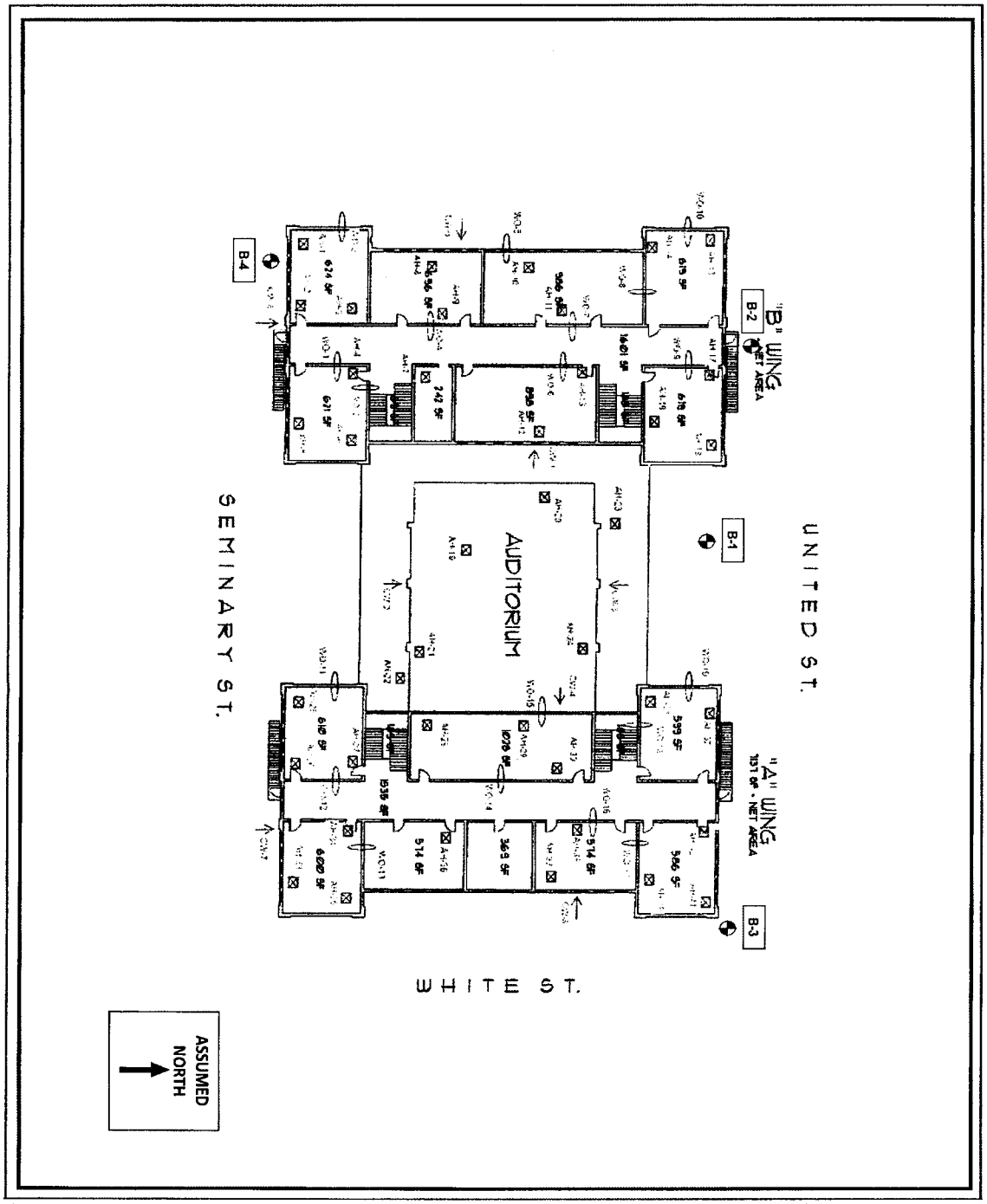

NOT TO SCALE
PROJECT NO. 126.24

Glynn Archer School
1300 White Street
Key West, Florida

BORING LOCATION PLAN

FIGURE 1

NUTTING ENGINEERS
OF FLORIDA, INC.
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Pace Analytical Services, Inc.
3610 Park Central Blvd N
Pompano Beach, FL 33064
954-582-4300

August 22, 2012

Jan Beernink
Nutting Environmental of Florida, Inc.
1310 Neptune Drive
Boynton Beach, FL 33426

RE: Project: Glynn Archer
Pace Project No.: 3565267

Dear Jan Beernink:
Enclosed are the analytical results for sample(s) received by the laboratory on August 15, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Christina Raschke

christina.raschke@pacelabs.com
Project Manager

Enclosures

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without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
3610 Park Central Blvd N
Pompano Beach, FL 33064
954-582-4300

CERTIFICATIONS

Project: Glynn Archer
Pace Project No.: 3565267

Ormond Beach Certification IDs
8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Arizona Certification #: AZ0735
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH 0216
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL765
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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Pace Analytical Services, Inc.
3610 Park Central Blvd N
Pompano Beach, FL 33064
954-582-4300

SAMPLE SUMMARY

Project: Glynn Archer
Pace Project No.: 3565267

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3565267001	**SB-1 0-2'**	Solid	08/13/12 12:27	08/15/12 16:10
3565267002	**SB-2 0-2'**	Solid	08/13/12 12:42	08/15/12 16:10
3565267003	**SB-3 0-2'**	Solid	08/13/12 12:00	08/15/12 16:10
3565267004	**SB-4 0-2'**	Solid	08/13/12 11:43	08/15/12 16:10

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3610 Park Central Blvd N
Pompano Beach, FL 33064
954-582-4300

SAMPLE ANALYTE COUNT

Project: Glynn Archer
Pace Project No.: 3565267

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3565267001	**SB-1 0-2'**	EPA 6010	JTJ	1	PASI-O
		EPA 8260	JBH	76	PASI-O
		ASTM D2974-87	WMW	1	PASI-O
		EPA 9012	SOA	1	PASI-O
3565267002	**SB-2 0-2'**	EPA 6010	JTJ	1	PASI-O
		EPA 8260	JBH	76	PASI-O
		ASTM D2974-87	WMW	1	PASI-O
		EPA 9012	SOA	1	PASI-O
3565267003	**SB-3 0-2'**	EPA 6010	JTJ	1	PASI-O
		EPA 8260	JBH	76	PASI-O
		ASTM D2974-87	WMW	1	PASI-O
		EPA 9012	SOA	1	PASI-O
3565267004	**SB-4 0-2'**	EPA 6010	JTJ	1	PASI-O
		EPA 8260	JBH	76	PASI-O
		ASTM D2974-87	WMW	1	PASI-O
		EPA 9012	SOA	1	PASI-O

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Pace Analytical Services, Inc.
3610 Park Central Blvd N
Pompano Beach, FL 33064
954-582-4300

HITS ONLY

Project: Glynn Archer
Pace Project No.: 3565267

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
3565267001	**SB-1 0-2'**					
EPA 6010	Arsenic	3.6	mg/kg	0.53	08/21/12 16:00	J(M1)
ASTM D2974-87	Percent Moisture	10.1	%	0.10	08/17/12 00:36	
3565267002	**SB-2 0-2'**					
EPA 6010	Arsenic	4.5	mg/kg	0.79	08/20/12 22:19	
ASTM D2974-87	Percent Moisture	34.9	%	0.10	08/17/12 00:37	
EPA 9012	Cyanide	0.34 I	mg/kg	0.38	08/17/12 12:51	
3565267003	**SB-3 0-2'**					
EPA 6010	Arsenic	2.9	mg/kg	0.62	08/20/12 22:23	
ASTM D2974-87	Percent Moisture	18.5	%	0.10	08/17/12 00:37	
3565267004	**SB-4 0-2'**					
EPA 6010	Arsenic	1.7	mg/kg	0.52	08/20/12 22:28	
ASTM D2974-87	Percent Moisture	9.1	%	0.10	08/17/12 00:38	
EPA 9012	Cyanide	0.13U	mg/kg	0.27	08/17/12 12:53	

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ANALYTICAL RESULTS

Project: Glynn Archer
Pace Project No.: 3565267

Sample: SB-1 0-2' **Lab ID: 3565267001** Collected: 08/13/12 12:27 Received: 08/15/12 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	**3.6**	mg/kg	0.53	0.26	1	08/20/12 16:30	08/21/12 16:00	7440-38-2	J(M1)
8260 MSV 5030 Low Level	Analytical Method: EPA 8260								
1,1,1,2-Tetrachloroethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	630-20-6	
1,1,1-Trichloroethane	**0.0037U**	mg/kg	0.0068	0.0037	1		08/18/12 12:45	71-55-6	
1,1,2,2-Tetrachloroethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	79-34-5	
1,1,2-Trichloroethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	79-00-5	
1,1-Dichloroethane	**0.0037U**	mg/kg	0.0068	0.0037	1		08/18/12 12:45	75-34-3	
1,1-Dichloroethene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	75-35-4	
1,1-Dichloropropene	**0.0035U**	mg/kg	0.0068	0.0035	1		08/18/12 12:45	563-58-6	
1,2,3-Trichlorobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	87-61-6	
1,2,3-Trichloropropane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	96-18-4	
1,2,3-Trimethylbenzene	**0.0014U**	mg/kg	0.0014	0.0014	1		08/18/12 12:45	526-73-8	N2
1,2,4-Trichlorobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	120-82-1	
1,2,4-Trimethylbenzene	**0.0038U**	mg/kg	0.0068	0.0038	1		08/18/12 12:45	95-63-6	
1,2-Dibromoethane (EDB)	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	106-93-4	
1,2-Dichlorobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	95-50-1	
1,2-Dichloroethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	107-06-2	
1,2-Dichloropropane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	78-87-5	
1,3,5-Trimethylbenzene	**0.0039U**	mg/kg	0.0068	0.0039	1		08/18/12 12:45	108-67-8	
1,3-Dichlorobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	541-73-1	
1,3-Dichloropropane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	142-28-9	
1,4-Dichlorobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	106-46-7	
2,2-Dichloropropane	**0.0035U**	mg/kg	0.0068	0.0035	1		08/18/12 12:45	594-20-7	
2-Butanone (MEK)	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	78-93-3	
2-Chloroethylvinyl ether	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	110-75-8	
2-Chlorotoluene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	95-49-8	
2-Hexanone	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	591-78-6	
4-Chlorotoluene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	106-43-4	
4-Methyl-2-pentanone (MIBK)	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	108-10-1	
Acetone	**0.014U**	mg/kg	0.027	0.014	1		08/18/12 12:45	67-64-1	
Acrolein	**0.048U**	mg/kg	0.068	0.048	1		08/18/12 12:45	107-02-8	
Acrylonitrile	**0.037U**	mg/kg	0.068	0.037	1		08/18/12 12:45	107-13-1	
Benzene	**0.0035U**	mg/kg	0.0068	0.0035	1		08/18/12 12:45	71-43-2	
Bromobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	108-86-1	
Bromochloromethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	74-97-5	
Bromodichloromethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	75-27-4	
Bromoform	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	75-25-2	
Bromomethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	74-83-9	
Carbon disulfide	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	75-15-0	
Carbon tetrachloride	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	56-23-5	
Chlorobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	108-90-7	
Chloroethane	**0.0049U**	mg/kg	0.0068	0.0049	1		08/18/12 12:45	75-00-3	
Chloroform	**0.0040U**	mg/kg	0.0068	0.0040	1		08/18/12 12:45	67-66-3	
Chloromethane	**0.0038U**	mg/kg	0.0068	0.0038	1		08/18/12 12:45	74-87-3	

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ANALYTICAL RESULTS

Project: Glynn Archer
Pace Project No.: 3565267

Sample: SB-1 0-2' **Lab ID: 3565267001** Collected: 08/13/12 12:27 Received: 08/15/12 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method: EPA 8260								
Dibromochloromethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	124-48-1	
Dibromomethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	74-95-3	
Dichlorodifluoromethane	**0.0036U**	mg/kg	0.0068	0.0036	1		08/18/12 12:45	75-71-8	
Ethylbenzene	**0.0039U**	mg/kg	0.0068	0.0039	1		08/18/12 12:45	100-41-4	
Hexachloro-1,3-butadiene	**0.0038U**	mg/kg	0.0068	0.0038	1		08/18/12 12:45	87-68-3	
Iodomethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	74-88-4	
Isopropylbenzene (Cumene)	**0.0040U**	mg/kg	0.0068	0.0040	1		08/18/12 12:45	98-82-8	
Methyl-tert-butyl ether	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	1634-04-4	
Methylene Chloride	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	75-09-2	
Naphthalene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	91-20-3	
Pentachloroethane	**0.0054U**	mg/kg	0.0068	0.0054	1		08/18/12 12:45	76-01-7	J(L2)
Styrene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	100-42-5	
Tetrachloroethene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	127-18-4	L3
Toluene	**0.0037U**	mg/kg	0.0068	0.0037	1		08/18/12 12:45	108-88-3	
Trichloroethene	**0.0038U**	mg/kg	0.0068	0.0038	1		08/18/12 12:45	79-01-6	
Trichlorofluoromethane	**0.0037U**	mg/kg	0.0068	0.0037	1		08/18/12 12:45	75-69-4	
Vinyl acetate	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	108-05-4	
Vinyl chloride	**0.0037U**	mg/kg	0.0068	0.0037	1		08/18/12 12:45	75-01-4	
Xylene (Total)	**0.0070U**	mg/kg	0.020	0.0070	1		08/18/12 12:45	1330-20-7	
cis-1,2-Dichloroethene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	156-59-2	
cis-1,3-Dichloropropene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	10061-01-5	
m&p-Xylene	**0.0070U**	mg/kg	0.014	0.0070	1		08/18/12 12:45	179601-23-1	
n-Butylbenzene	**0.0041U**	mg/kg	0.0068	0.0041	1		08/18/12 12:45	104-51-8	
n-Propylbenzene	**0.0036U**	mg/kg	0.0068	0.0036	1		08/18/12 12:45	103-65-1	
o-Xylene	**0.0035U**	mg/kg	0.0068	0.0035	1		08/18/12 12:45	95-47-6	
p-Isopropyltoluene	**0.0041U**	mg/kg	0.0068	0.0041	1		08/18/12 12:45	99-87-6	
sec-Butylbenzene	**0.0039U**	mg/kg	0.0068	0.0039	1		08/18/12 12:45	135-98-8	
tert-Butylbenzene	**0.0039U**	mg/kg	0.0068	0.0039	1		08/18/12 12:45	98-06-6	
trans-1,2-Dichloroethene	**0.0042U**	mg/kg	0.0068	0.0042	1		08/18/12 12:45	156-60-5	
trans-1,3-Dichloropropene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 12:45	10061-02-6	
Surrogates									
Dibromofluoromethane (S)	101	%	82-115		1		08/18/12 12:45	1868-53-7	
Toluene-d8 (S)	107	%	84-117		1		08/18/12 12:45	2037-26-5	
4-Bromofluorobenzene (S)	129	%	55-148		1		08/18/12 12:45	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	80-131		1		08/18/12 12:45	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**10.1**	%	0.10	0.10	1		08/17/12 00:36		
9012 Cyanide, Total	Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	**0.13U**	mg/kg	0.26	0.13	1	08/17/12 07:00	08/17/12 12:47	57-12-5	

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ANALYTICAL RESULTS

Project: Glynn Archer
Pace Project No.: 3565267

Sample: SB-2 0-2' **Lab ID: 3565267002** Collected: 08/13/12 12:42 Received: 08/15/12 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	**4.5**	mg/kg	0.79	0.40	1	08/20/12 16:30	08/20/12 22:19	7440-38-2	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260								
1,1,1,2-Tetrachloroethane	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	630-20-6	
1,1,1-Trichloroethane	**0.0039U**	mg/kg	0.0071	0.0039	1		08/18/12 13:13	71-55-6	
1,1,2,2-Tetrachloroethane	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	79-34-5	
1,1,2-Trichloroethane	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	79-00-5	
1,1-Dichloroethane	**0.0039U**	mg/kg	0.0071	0.0039	1		08/18/12 13:13	75-34-3	
1,1-Dichloroethene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	75-35-4	
1,1-Dichloropropene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	563-58-6	
1,2,3-Trichlorobenzene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	87-61-6	
1,2,3-Trichloropropane	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	96-18-4	
1,2,3-Trimethylbenzene	**0.0014U**	mg/kg	0.0014	0.0014	1		08/18/12 13:13	526-73-8	N2
1,2,4-Trichlorobenzene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	120-82-1	
1,2,4-Trimethylbenzene	**0.0040U**	mg/kg	0.0071	0.0040	1		08/18/12 13:13	95-63-6	
1,2-Dibromoethane (EDB)	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	106-93-4	
1,2-Dichlorobenzene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	95-50-1	
1,2-Dichloroethane	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	107-06-2	
1,2-Dichloropropane	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	78-87-5	
1,3,5-Trimethylbenzene	**0.0041U**	mg/kg	0.0071	0.0041	1		08/18/12 13:13	108-67-8	
1,3-Dichlorobenzene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	541-73-1	
1,3-Dichloropropane	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	142-28-9	
1,4-Dichlorobenzene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	106-46-7	
2,2-Dichloropropane	**0.0037U**	mg/kg	0.0071	0.0037	1		08/18/12 13:13	594-20-7	
2-Butanone (MEK)	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	78-93-3	
2-Chloroethylvinyl ether	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	110-75-8	
2-Chlorotoluene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	95-49-8	
2-Hexanone	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	591-78-6	
4-Chlorotoluene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	106-43-4	
4-Methyl-2-pentanone (MIBK)	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	108-10-1	
Acetone	**0.014U**	mg/kg	0.029	0.014	1		08/18/12 13:13	67-64-1	
Acrolein	**0.050U**	mg/kg	0.071	0.050	1		08/18/12 13:13	107-02-8	
Acrylonitrile	**0.038U**	mg/kg	0.071	0.038	1		08/18/12 13:13	107-13-1	
Benzene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	71-43-2	
Bromobenzene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	108-86-1	
Bromochloromethane	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	74-97-5	
Bromodichloromethane	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	75-27-4	
Bromoform	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	75-25-2	
Bromomethane	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	74-83-9	
Carbon disulfide	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	75-15-0	
Carbon tetrachloride	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	56-23-5	
Chlorobenzene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	108-90-7	
Chloroethane	**0.0051U**	mg/kg	0.0071	0.0051	1		08/18/12 13:13	75-00-3	
Chloroform	**0.0042U**	mg/kg	0.0071	0.0042	1		08/18/12 13:13	67-66-3	
Chloromethane	**0.0040U**	mg/kg	0.0071	0.0040	1		08/18/12 13:13	74-87-3	

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ANALYTICAL RESULTS

Project: Glynn Archer
Pace Project No.: 3565267

Sample: SB-2 0-2' **Lab ID: 3565267002** Collected: 08/13/12 12:42 Received: 08/15/12 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method: EPA 8260								
Dibromochloromethane	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	124-48-1	
Dibromomethane	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	74-95-3	
Dichlorodifluoromethane	**0.0038U**	mg/kg	0.0071	0.0038	1		08/18/12 13:13	75-71-8	
Ethylbenzene	**0.0040U**	mg/kg	0.0071	0.0040	1		08/18/12 13:13	100-41-4	
Hexachloro-1,3-butadiene	**0.0040U**	mg/kg	0.0071	0.0040	1		08/18/12 13:13	87-68-3	
Iodomethane	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	74-88-4	
Isopropylbenzene (Cumene)	**0.0041U**	mg/kg	0.0071	0.0041	1		08/18/12 13:13	98-82-8	
Methyl-tert-butyl ether	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	1634-04-4	
Methylene Chloride	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	75-09-2	
Naphthalene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	91-20-3	
Pentachloroethane	**0.0056U**	mg/kg	0.0071	0.0056	1		08/18/12 13:13	76-01-7	J(L2)
Styrene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	100-42-5	
Tetrachloroethene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	127-18-4	L3
Toluene	**0.0038U**	mg/kg	0.0071	0.0038	1		08/18/12 13:13	108-88-3	
Trichloroethene	**0.0040U**	mg/kg	0.0071	0.0040	1		08/18/12 13:13	79-01-6	
Trichlorofluoromethane	**0.0039U**	mg/kg	0.0071	0.0039	1		08/18/12 13:13	75-69-4	
Vinyl acetate	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	108-05-4	
Vinyl chloride	**0.0038U**	mg/kg	0.0071	0.0038	1		08/18/12 13:13	75-01-4	
Xylene (Total)	**0.0073U**	mg/kg	0.021	0.0073	1		08/18/12 13:13	1330-20-7	
cis-1,2-Dichloroethene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	156-59-2	
cis-1,3-Dichloropropene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	10061-01-5	
m&p-Xylene	**0.0073U**	mg/kg	0.014	0.0073	1		08/18/12 13:13	179601-23-1	
n-Butylbenzene	**0.0043U**	mg/kg	0.0071	0.0043	1		08/18/12 13:13	104-51-8	
n-Propylbenzene	**0.0038U**	mg/kg	0.0071	0.0038	1		08/18/12 13:13	103-65-1	
o-Xylene	**0.0037U**	mg/kg	0.0071	0.0037	1		08/18/12 13:13	95-47-6	
p-Isopropyltoluene	**0.0043U**	mg/kg	0.0071	0.0043	1		08/18/12 13:13	99-87-6	
sec-Butylbenzene	**0.0041U**	mg/kg	0.0071	0.0041	1		08/18/12 13:13	135-98-8	
tert-Butylbenzene	**0.0041U**	mg/kg	0.0071	0.0041	1		08/18/12 13:13	98-06-6	
trans-1,2-Dichloroethene	**0.0043U**	mg/kg	0.0071	0.0043	1		08/18/12 13:13	156-60-5	
trans-1,3-Dichloropropene	**0.0036U**	mg/kg	0.0071	0.0036	1		08/18/12 13:13	10061-02-6	
Surrogates									
Dibromofluoromethane (S)	106	%	82-115		1		08/18/12 13:13	1868-53-7	
Toluene-d8 (S)	105	%	84-117		1		08/18/12 13:13	2037-26-5	
4-Bromofluorobenzene (S)	124	%	55-148		1		08/18/12 13:13	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	80-131		1		08/18/12 13:13	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**34.9**	%	0.10	0.10	1		08/17/12 00:37		
9012 Cyanide, Total	Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	**0.34 I**	mg/kg	0.38	0.19	1	08/17/12 07:00	08/17/12 12:51	57-12-5	

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ANALYTICAL RESULTS

Project: Glynn Archer
Pace Project No.: 3565267

Sample: SB-3 0-2' **Lab ID: 3565267003** Collected: 08/13/12 12:00 Received: 08/15/12 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	**2.9**	mg/kg	0.62	0.31	1	08/20/12 16:30	08/20/12 22:23	7440-38-2	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260								
1,1,1,2-Tetrachloroethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	630-20-6	
1,1,1-Trichloroethane	**0.0037U**	mg/kg	0.0068	0.0037	1		08/18/12 13:41	71-55-6	
1,1,2,2-Tetrachloroethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	79-34-5	
1,1,2-Trichloroethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	79-00-5	
1,1-Dichloroethane	**0.0037U**	mg/kg	0.0068	0.0037	1		08/18/12 13:41	75-34-3	
1,1-Dichloroethene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	75-35-4	
1,1-Dichloropropene	**0.0035U**	mg/kg	0.0068	0.0035	1		08/18/12 13:41	563-58-6	
1,2,3-Trichlorobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	87-61-6	
1,2,3-Trichloropropane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	96-18-4	
1,2,3-Trimethylbenzene	**0.0014U**	mg/kg	0.0014	0.0014	1		08/18/12 13:41	526-73-8	N2
1,2,4-Trichlorobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	120-82-1	
1,2,4-Trimethylbenzene	**0.0038U**	mg/kg	0.0068	0.0038	1		08/18/12 13:41	95-63-6	
1,2-Dibromoethane (EDB)	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	106-93-4	
1,2-Dichlorobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	95-50-1	
1,2-Dichloroethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	107-06-2	
1,2-Dichloropropane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	78-87-5	
1,3,5-Trimethylbenzene	**0.0039U**	mg/kg	0.0068	0.0039	1		08/18/12 13:41	108-67-8	
1,3-Dichlorobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	541-73-1	
1,3-Dichloropropane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	142-28-9	
1,4-Dichlorobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	106-46-7	
2,2-Dichloropropane	**0.0035U**	mg/kg	0.0068	0.0035	1		08/18/12 13:41	594-20-7	
2-Butanone (MEK)	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	78-93-3	
2-Chloroethylvinyl ether	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	110-75-8	
2-Chlorotoluene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	95-49-8	
2-Hexanone	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	591-78-6	
4-Chlorotoluene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	106-43-4	
4-Methyl-2-pentanone (MIBK)	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	108-10-1	
Acetone	**0.014U**	mg/kg	0.027	0.014	1		08/18/12 13:41	67-64-1	
Acrolein	**0.048U**	mg/kg	0.068	0.048	1		08/18/12 13:41	107-02-8	
Acrylonitrile	**0.036U**	mg/kg	0.068	0.036	1		08/18/12 13:41	107-13-1	
Benzene	**0.0035U**	mg/kg	0.0068	0.0035	1		08/18/12 13:41	71-43-2	
Bromobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	108-86-1	
Bromochloromethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	74-97-5	
Bromodichloromethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	75-27-4	
Bromoform	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	75-25-2	
Bromomethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	74-83-9	
Carbon disulfide	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	75-15-0	
Carbon tetrachloride	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	56-23-5	
Chlorobenzene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	108-90-7	
Chloroethane	**0.0048U**	mg/kg	0.0068	0.0048	1		08/18/12 13:41	75-00-3	
Chloroform	**0.0040U**	mg/kg	0.0068	0.0040	1		08/18/12 13:41	67-66-3	
Chloromethane	**0.0038U**	mg/kg	0.0068	0.0038	1		08/18/12 13:41	74-87-3	

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ANALYTICAL RESULTS

Project: Glynn Archer
Pace Project No.: 3565267

Sample: SB-3 0-2' **Lab ID: 3565267003** Collected: 08/13/12 12:00 Received: 08/15/12 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method: EPA 8260								
Dibromochloromethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	124-48-1	
Dibromomethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	74-95-3	
Dichlorodifluoromethane	**0.0036U**	mg/kg	0.0068	0.0036	1		08/18/12 13:41	75-71-8	
Ethylbenzene	**0.0038U**	mg/kg	0.0068	0.0038	1		08/18/12 13:41	100-41-4	
Hexachloro-1,3-butadiene	**0.0038U**	mg/kg	0.0068	0.0038	1		08/18/12 13:41	87-68-3	
Iodomethane	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	74-88-4	
Isopropylbenzene (Cumene)	**0.0039U**	mg/kg	0.0068	0.0039	1		08/18/12 13:41	98-82-8	
Methyl-tert-butyl ether	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	1634-04-4	
Methylene Chloride	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	75-09-2	
Naphthalene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	91-20-3	
Pentachloroethane	**0.0053U**	mg/kg	0.0068	0.0053	1		08/18/12 13:41	76-01-7	J(L2)
Styrene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	100-42-5	
Tetrachloroethene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	127-18-4	L3
Toluene	**0.0036U**	mg/kg	0.0068	0.0036	1		08/18/12 13:41	108-88-3	
Trichloroethene	**0.0038U**	mg/kg	0.0068	0.0038	1		08/18/12 13:41	79-01-6	
Trichlorofluoromethane	**0.0037U**	mg/kg	0.0068	0.0037	1		08/18/12 13:41	75-69-4	
Vinyl acetate	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	108-05-4	
Vinyl chloride	**0.0036U**	mg/kg	0.0068	0.0036	1		08/18/12 13:41	75-01-4	
Xylene (Total)	**0.0069U**	mg/kg	0.020	0.0069	1		08/18/12 13:41	1330-20-7	
cis-1,2-Dichloroethene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	156-59-2	
cis-1,3-Dichloropropene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	10061-01-5	
m&p-Xylene	**0.0069U**	mg/kg	0.014	0.0069	1		08/18/12 13:41	179601-23-1	
n-Butylbenzene	**0.0041U**	mg/kg	0.0068	0.0041	1		08/18/12 13:41	104-51-8	
n-Propylbenzene	**0.0036U**	mg/kg	0.0068	0.0036	1		08/18/12 13:41	103-65-1	
o-Xylene	**0.0035U**	mg/kg	0.0068	0.0035	1		08/18/12 13:41	95-47-6	
p-Isopropyltoluene	**0.0041U**	mg/kg	0.0068	0.0041	1		08/18/12 13:41	99-87-6	
sec-Butylbenzene	**0.0039U**	mg/kg	0.0068	0.0039	1		08/18/12 13:41	135-98-8	
tert-Butylbenzene	**0.0039U**	mg/kg	0.0068	0.0039	1		08/18/12 13:41	98-06-6	
trans-1,2-Dichloroethene	**0.0041U**	mg/kg	0.0068	0.0041	1		08/18/12 13:41	156-60-5	
trans-1,3-Dichloropropene	**0.0034U**	mg/kg	0.0068	0.0034	1		08/18/12 13:41	10061-02-6	
Surrogates									
Dibromofluoromethane (S)	106	%	82-115		1		08/18/12 13:41	1868-53-7	
Toluene-d8 (S)	105	%	84-117		1		08/18/12 13:41	2037-26-5	
4-Bromofluorobenzene (S)	126	%	55-148		1		08/18/12 13:41	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	80-131		1		08/18/12 13:41	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**18.5**	%	0.10	0.10	1		08/17/12 00:37		
9012 Cyanide, Total	Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	**0.15U**	mg/kg	0.29	0.15	1	08/17/12 07:00	08/17/12 12:52	57-12-5	

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ANALYTICAL RESULTS

Project: Glynn Archer
Pace Project No.: 3565267

Sample: SB-4 0-2' **Lab ID: 3565267004** Collected: 08/13/12 11:43 Received: 08/15/12 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	**1.7**	mg/kg	0.52	0.26	1	08/20/12 16:30	08/20/12 22:28	7440-38-2	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260								
1,1,1,2-Tetrachloroethane	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	630-20-6	
1,1,1-Trichloroethane	**0.0028U**	mg/kg	0.0052	0.0028	1		08/18/12 14:09	71-55-6	
1,1,2,2-Tetrachloroethane	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	79-34-5	
1,1,2-Trichloroethane	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	79-00-5	
1,1-Dichloroethane	**0.0028U**	mg/kg	0.0052	0.0028	1		08/18/12 14:09	75-34-3	
1,1-Dichloroethene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	75-35-4	
1,1-Dichloropropene	**0.0027U**	mg/kg	0.0052	0.0027	1		08/18/12 14:09	563-58-6	
1,2,3-Trichlorobenzene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	87-61-6	
1,2,3-Trichloropropane	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	96-18-4	
1,2,3-Trimethylbenzene	**0.0010U**	mg/kg	0.0010	0.0010	1		08/18/12 14:09	526-73-8	N2
1,2,4-Trichlorobenzene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	120-82-1	
1,2,4-Trimethylbenzene	**0.0029U**	mg/kg	0.0052	0.0029	1		08/18/12 14:09	95-63-6	
1,2-Dibromoethane (EDB)	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	106-93-4	
1,2-Dichlorobenzene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	95-50-1	
1,2-Dichloroethane	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	107-06-2	
1,2-Dichloropropane	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	78-87-5	
1,3,5-Trimethylbenzene	**0.0030U**	mg/kg	0.0052	0.0030	1		08/18/12 14:09	108-67-8	
1,3-Dichlorobenzene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	541-73-1	
1,3-Dichloropropane	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	142-28-9	
1,4-Dichlorobenzene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	106-46-7	
2,2-Dichloropropane	**0.0027U**	mg/kg	0.0052	0.0027	1		08/18/12 14:09	594-20-7	
2-Butanone (MEK)	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	78-93-3	
2-Chloroethylvinyl ether	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	110-75-8	
2-Chlorotoluene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	95-49-8	
2-Hexanone	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	591-78-6	
4-Chlorotoluene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	106-43-4	
4-Methyl-2-pentanone (MIBK)	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	108-10-1	
Acetone	**0.010U**	mg/kg	0.021	0.010	1		08/18/12 14:09	67-64-1	
Acrolein	**0.037U**	mg/kg	0.052	0.037	1		08/18/12 14:09	107-02-8	
Acrylonitrile	**0.028U**	mg/kg	0.052	0.028	1		08/18/12 14:09	107-13-1	
Benzene	**0.0027U**	mg/kg	0.0052	0.0027	1		08/18/12 14:09	71-43-2	
Bromobenzene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	108-86-1	
Bromochloromethane	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	74-97-5	
Bromodichloromethane	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	75-27-4	
Bromoform	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	75-25-2	
Bromomethane	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	74-83-9	
Carbon disulfide	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	75-15-0	
Carbon tetrachloride	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	56-23-5	
Chlorobenzene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	108-90-7	
Chloroethane	**0.0037U**	mg/kg	0.0052	0.0037	1		08/18/12 14:09	75-00-3	
Chloroform	**0.0031U**	mg/kg	0.0052	0.0031	1		08/18/12 14:09	67-66-3	
Chloromethane	**0.0029U**	mg/kg	0.0052	0.0029	1		08/18/12 14:09	74-87-3	

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ANALYTICAL RESULTS

Project: Glynn Archer
Pace Project No.: 3565267

Sample: SB-4 0-2' **Lab ID: 3565267004** Collected: 08/13/12 11:43 Received: 08/15/12 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method: EPA 8260								
Dibromochloromethane	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	124-48-1	
Dibromomethane	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	74-95-3	
Dichlorodifluoromethane	**0.0028U**	mg/kg	0.0052	0.0028	1		08/18/12 14:09	75-71-8	
Ethylbenzene	**0.0029U**	mg/kg	0.0052	0.0029	1		08/18/12 14:09	100-41-4	
Hexachloro-1,3-butadiene	**0.0029U**	mg/kg	0.0052	0.0029	1		08/18/12 14:09	87-68-3	
Iodomethane	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	74-88-4	
Isopropylbenzene (Cumene)	**0.0030U**	mg/kg	0.0052	0.0030	1		08/18/12 14:09	98-82-8	
Methyl-tert-butyl ether	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	1634-04-4	
Methylene Chloride	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	75-09-2	
Naphthalene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	91-20-3	
Pentachloroethane	**0.0041U**	mg/kg	0.0052	0.0041	1		08/18/12 14:09	76-01-7	J(L2)
Styrene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	100-42-5	
Tetrachloroethene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	127-18-4	L3
Toluene	**0.0028U**	mg/kg	0.0052	0.0028	1		08/18/12 14:09	108-88-3	
Trichloroethene	**0.0029U**	mg/kg	0.0052	0.0029	1		08/18/12 14:09	79-01-6	
Trichlorofluoromethane	**0.0028U**	mg/kg	0.0052	0.0028	1		08/18/12 14:09	75-69-4	
Vinyl acetate	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	108-05-4	
Vinyl chloride	**0.0028U**	mg/kg	0.0052	0.0028	1		08/18/12 14:09	75-01-4	
Xylene (Total)	**0.0053U**	mg/kg	0.016	0.0053	1		08/18/12 14:09	1330-20-7	
cis-1,2-Dichloroethene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	156-59-2	
cis-1,3-Dichloropropene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	10061-01-5	
m&p-Xylene	**0.0053U**	mg/kg	0.010	0.0053	1		08/18/12 14:09	179601-23-1	
n-Butylbenzene	**0.0031U**	mg/kg	0.0052	0.0031	1		08/18/12 14:09	104-51-8	
n-Propylbenzene	**0.0027U**	mg/kg	0.0052	0.0027	1		08/18/12 14:09	103-65-1	
o-Xylene	**0.0027U**	mg/kg	0.0052	0.0027	1		08/18/12 14:09	95-47-6	
p-Isopropyltoluene	**0.0031U**	mg/kg	0.0052	0.0031	1		08/18/12 14:09	99-87-6	
sec-Butylbenzene	**0.0030U**	mg/kg	0.0052	0.0030	1		08/18/12 14:09	135-98-8	
tert-Butylbenzene	**0.0030U**	mg/kg	0.0052	0.0030	1		08/18/12 14:09	98-06-6	
trans-1,2-Dichloroethene	**0.0032U**	mg/kg	0.0052	0.0032	1		08/18/12 14:09	156-60-5	
trans-1,3-Dichloropropene	**0.0026U**	mg/kg	0.0052	0.0026	1		08/18/12 14:09	10061-02-6	
Surrogates									
Dibromofluoromethane (S)	108	%	82-115		1		08/18/12 14:09	1868-53-7	
Toluene-d8 (S)	107	%	84-117		1		08/18/12 14:09	2037-26-5	
4-Bromofluorobenzene (S)	128	%	55-148		1		08/18/12 14:09	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	80-131		1		08/18/12 14:09	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**9.1**	%	0.10	0.10	1		08/17/12 00:38		
9012 Cyanide, Total	Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	**0.13U**	mg/kg	0.27	0.13	1	08/17/12 07:00	08/17/12 12:53	57-12-5	

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954-582-4300

QUALITY CONTROL DATA

Project: Glynn Archer
Pace Project No.: 3565267

QC Batch: MPRP/9942 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 3565267001, 3565267002, 3565267003, 3565267004

METHOD BLANK: 450141 Matrix: Solid
Associated Lab Samples: 3565267001, 3565267002, 3565267003, 3565267004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	0.26U	0.51	08/21/12 15:48	

LABORATORY CONTROL SAMPLE: 450142

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	13	12.6	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 450143 450144

Parameter	Units	3565267001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	3.6	14.7	14.2	20.1	17.9	113	101	75-125	12	20	

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QUALITY CONTROL DATA

Project: Glynn Archer
Pace Project No.: 3565267

QC Batch: MSV/6327 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5030 Low
Associated Lab Samples: 3565267001, 3565267002, 3565267003, 3565267004

METHOD BLANK: 450233 Matrix: Solid
Associated Lab Samples: 3565267001, 3565267002, 3565267003, 3565267004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,1,1-Trichloroethane	mg/kg	0.0028U	0.0052	08/18/12 10:24	
1,1,2,2-Tetrachloroethane	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,1,2-Trichloroethane	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,1-Dichloroethane	mg/kg	0.0028U	0.0052	08/18/12 10:24	
1,1-Dichloroethene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,1-Dichloropropene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,2,3-Trichlorobenzene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,2,3-Trichloropropane	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,2,3-Trimethylbenzene	mg/kg	0.0010U	0.0010	08/18/12 10:24	N2
1,2,4-Trichlorobenzene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,2,4-Trimethylbenzene	mg/kg	0.0029U	0.0052	08/18/12 10:24	
1,2-Dibromoethane (EDB)	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,2-Dichlorobenzene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,2-Dichloroethane	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,2-Dichloropropane	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,3,5-Trimethylbenzene	mg/kg	0.0030U	0.0052	08/18/12 10:24	
1,3-Dichlorobenzene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,3-Dichloropropane	mg/kg	0.0026U	0.0052	08/18/12 10:24	
1,4-Dichlorobenzene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
2,2-Dichloropropane	mg/kg	0.0027U	0.0052	08/18/12 10:24	
2-Butanone (MEK)	mg/kg	0.012	0.0052	08/18/12 10:24	
2-Chloroethylvinyl ether	mg/kg	0.0026U	0.0052	08/18/12 10:24	
2-Chlorotoluene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
2-Hexanone	mg/kg	0.0026U	0.0052	08/18/12 10:24	
4-Chlorotoluene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
4-Methyl-2-pentanone (MIBK)	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Acetone	mg/kg	0.010U	0.021	08/18/12 10:24	
Acrolein	mg/kg	0.036U	0.052	08/18/12 10:24	
Acrylonitrile	mg/kg	0.028U	0.052	08/18/12 10:24	
Benzene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Bromobenzene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Bromochloromethane	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Bromodichloromethane	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Bromoform	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Bromomethane	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Carbon disulfide	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Carbon tetrachloride	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Chlorobenzene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Chloroethane	mg/kg	0.0037U	0.0052	08/18/12 10:24	
Chloroform	mg/kg	0.0031U	0.0052	08/18/12 10:24	
Chloromethane	mg/kg	0.0029U	0.0052	08/18/12 10:24	
cis-1,2-Dichloroethene	mg/kg	0.0026U	0.0052	08/18/12 10:24	

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QUALITY CONTROL DATA

Project: Glynn Archer
Pace Project No.: 3565267

METHOD BLANK: 450233 Matrix: Solid

Associated Lab Samples: 3565267001, 3565267002, 3565267003, 3565267004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Dibromochloromethane	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Dibromomethane	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Dichlorodifluoromethane	mg/kg	0.0027U	0.0052	08/18/12 10:24	
Ethylbenzene	mg/kg	0.0029U	0.0052	08/18/12 10:24	
Hexachloro-1,3-butadiene	mg/kg	0.0029U	0.0052	08/18/12 10:24	
Iodomethane	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Isopropylbenzene (Cumene)	mg/kg	0.0030U	0.0052	08/18/12 10:24	
m&p-Xylene	mg/kg	0.0053U	0.010	08/18/12 10:24	
Methyl-tert-butyl ether	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Methylene Chloride	mg/kg	0.0026U	0.0052	08/18/12 10:24	
n-Butylbenzene	mg/kg	0.0031U	0.0052	08/18/12 10:24	
n-Propylbenzene	mg/kg	0.0027U	0.0052	08/18/12 10:24	
Naphthalene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
o-Xylene	mg/kg	0.0027U	0.0052	08/18/12 10:24	
p-Isopropyltoluene	mg/kg	0.0031U	0.0052	08/18/12 10:24	
Pentachloroethane	mg/kg	0.0041U	0.0052	08/18/12 10:24	
sec-Butylbenzene	mg/kg	0.0030U	0.0052	08/18/12 10:24	
Styrene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
tert-Butylbenzene	mg/kg	0.0030U	0.0052	08/18/12 10:24	
Tetrachloroethene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Toluene	mg/kg	0.0028U	0.0052	08/18/12 10:24	
trans-1,2-Dichloroethene	mg/kg	0.0031U	0.0052	08/18/12 10:24	
trans-1,3-Dichloropropene	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Trichloroethene	mg/kg	0.0029U	0.0052	08/18/12 10:24	
Trichlorofluoromethane	mg/kg	0.0028U	0.0052	08/18/12 10:24	
Vinyl acetate	mg/kg	0.0026U	0.0052	08/18/12 10:24	
Vinyl chloride	mg/kg	0.0028U	0.0052	08/18/12 10:24	
Xylene (Total)	mg/kg	0.0053U	0.015	08/18/12 10:24	
1,2-Dichloroethane-d4 (S)	%	93	80-131	08/18/12 10:24	
4-Bromofluorobenzene (S)	%	129	55-148	08/18/12 10:24	
Dibromofluoromethane (S)	%	104	82-115	08/18/12 10:24	
Toluene-d8 (S)	%	106	84-117	08/18/12 10:24	

LABORATORY CONTROL SAMPLE: 450234

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	mg/kg	.02	0.020	104	70-130	
1,1,1-Trichloroethane	mg/kg	.02	0.019	99	68-130	
1,1,2,2-Tetrachloroethane	mg/kg	.02	0.015	76	70-130	
1,1,2-Trichloroethane	mg/kg	.02	0.018	92	70-130	
1,1-Dichloroethane	mg/kg	.02	0.016	82	69-130	
1,1-Dichloroethene	mg/kg	.02	0.017	85	67-130	
1,1-Dichloropropene	mg/kg	.02	0.019	99	70-130	
1,2,3-Trichlorobenzene	mg/kg	.02	0.021	105	70-130	

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QUALITY CONTROL DATA

Project: Glynn Archer
Pace Project No.: 3565267

LABORATORY CONTROL SAMPLE: 450234

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,3-Trichloropropane	mg/kg	.02	0.016	80	70-130	
1,2,3-Trimethylbenzene	mg/kg	.02	0.017	88	67-130	N2
1,2,4-Trichlorobenzene	mg/kg	.02	0.021	106	70-130	
1,2,4-Trimethylbenzene	mg/kg	.02	0.018	90	70-130	
1,2-Dibromoethane (EDB)	mg/kg	.02	0.020	101	70-130	
1,2-Dichlorobenzene	mg/kg	.02	0.018	93	70-130	
1,2-Dichloroethane	mg/kg	.02	0.019	95	70-130	
1,2-Dichloropropane	mg/kg	.02	0.021	104	70-130	
1,3,5-Trimethylbenzene	mg/kg	.02	0.018	90	70-130	
1,3-Dichlorobenzene	mg/kg	.02	0.020	104	70-130	
1,3-Dichloropropane	mg/kg	.02	0.018	94	70-130	
1,4-Dichlorobenzene	mg/kg	.02	0.017	86	70-130	
2,2-Dichloropropane	mg/kg	.02	0.019	96	70-130	
2-Butanone (MEK)	mg/kg	.02	0.028	140	51-161	
2-Chloroethylvinyl ether	mg/kg	.02	0.021	108	20-150	
2-Chlorotoluene	mg/kg	.02	0.017	87	70-130	
2-Hexanone	mg/kg	.02	0.016	82	59-137	
4-Chlorotoluene	mg/kg	.02	0.018	90	70-130	
4-Methyl-2-pentanone (MIBK)	mg/kg	.02	0.019	98	64-143	
Acetone	mg/kg	.02	0.017 I	87	32-175	
Acrolein	mg/kg	.2	0.20	101	37-163	
Acrylonitrile	mg/kg	.2	0.17	86	70-130	
Benzene	mg/kg	.02	0.020	99	70-130	
Bromobenzene	mg/kg	.02	0.015	78	70-130	
Bromochloromethane	mg/kg	.02	0.022	113	70-130	
Bromodichloromethane	mg/kg	.02	0.020	99	70-130	
Bromoform	mg/kg	.02	0.022	113	70-130	
Bromomethane	mg/kg	.02	0.012	63	42-156	
Carbon disulfide	mg/kg	.02	0.015	75	49-152	
Carbon tetrachloride	mg/kg	.02	0.020	99	65-132	
Chlorobenzene	mg/kg	.02	0.019	95	70-130	
Chloroethane	mg/kg	.02	0.012	62	56-146	
Chloroform	mg/kg	.02	0.019	98	69-130	
Chloromethane	mg/kg	.02	0.019	96	50-145	
cis-1,2-Dichloroethene	mg/kg	.02	0.019	96	70-130	
cis-1,3-Dichloropropene	mg/kg	.02	0.021	105	70-130	
Dibromochloromethane	mg/kg	.02	0.020	103	70-130	
Dibromomethane	mg/kg	.02	0.026	130	68-133	
Dichlorodifluoromethane	mg/kg	.02	0.017	86	58-138	
Ethylbenzene	mg/kg	.02	0.019	96	70-130	
Hexachloro-1,3-butadiene	mg/kg	.02	0.022	110	70-130	
Iodomethane	mg/kg	.02	0.019	95	59-142	
Isopropylbenzene (Cumene)	mg/kg	.02	0.021	104	70-130	
m&p-Xylene	mg/kg	.039	0.039	100	70-130	
Methyl-tert-butyl ether	mg/kg	.02	0.016	79	70-130	
Methylene Chloride	mg/kg	.02	0.017	87	40-159	
n-Butylbenzene	mg/kg	.02	0.017	86	70-130	
n-Propylbenzene	mg/kg	.02	0.016	83	70-130	

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QUALITY CONTROL DATA

Project: Glynn Archer
Pace Project No.: 3565267

LABORATORY CONTROL SAMPLE: 450234

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	mg/kg	.02	0.018	93	67-133	
o-Xylene	mg/kg	.02	0.020	100	70-130	
p-Isopropyltoluene	mg/kg	.02	0.018	90	70-130	
Pentachloroethane	mg/kg	.02	0.012	63	69-135	
sec-Butylbenzene	mg/kg	.02	0.017	88	70-130	
Styrene	mg/kg	.02	0.020	104	70-130	
tert-Butylbenzene	mg/kg	.02	0.017	86	70-130	
Tetrachloroethene	mg/kg	.02	0.028	143	63-130	
Toluene	mg/kg	.02	0.018	93	70-130	
trans-1,2-Dichloroethene	mg/kg	.02	0.016	80	70-130	
trans-1,3-Dichloropropene	mg/kg	.02	0.021	108	70-130	
Trichloroethene	mg/kg	.02	0.021	109	69-130	
Trichlorofluoromethane	mg/kg	.02	0.016	79	67-130	
Vinyl acetate	mg/kg	.02	0.015	74	53-146	
Vinyl chloride	mg/kg	.02	0.016	79	67-130	
Xylene (Total)	mg/kg	.059	0.059	100	70-130	
1,2-Dichloroethane-d4 (S)	%			96	80-131	
4-Bromofluorobenzene (S)	%			130	55-148	
Dibromofluoromethane (S)	%			107	82-115	
Toluene-d8 (S)	%			108	84-117	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 450237 450238

Parameter	Units	3565271006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	mg/kg	2.5U ug/kg	.021	.021	0.021	0.019	98	90	42-130	8	40	
1,1,1-Trichloroethane	mg/kg	2.7U ug/kg	.021	.021	0.021	0.021	103	98	42-131	4	40	
1,1,2,2-Tetrachloroethane	mg/kg	2.5U ug/kg	.021	.021	0.015	0.014	72	68	50-130	5	40	
1,1,2-Trichloroethane	mg/kg	2.5U ug/kg	.021	.021	0.021	0.021	100	98	59-130	2	40	
1,1-Dichloroethane	mg/kg	2.7U ug/kg	.021	.021	0.018	0.019	88	89	50-130	.8	40	
1,1-Dichloroethene	mg/kg	2.5U ug/kg	.021	.021	0.019	0.018	89	85	51-130	4	40	
1,1-Dichloropropene	mg/kg	2.5U ug/kg	.021	.021	0.020	0.019	96	89	41-130	7	40	
1,2,3-Trichlorobenzene	mg/kg	2.5U ug/kg	.021	.021	0.0084	0.0070	40	34	20-143	19	40	
1,2,3-Trichloropropane	mg/kg	2.5U ug/kg	.021	.021	0.019	0.018	90	87	49-130	3	40	
1,2,3-Trimethylbenzene	mg/kg	0.98U ug/kg	.021	.021	0.012	0.010	56	48	20-130	15	40	N2
1,2,4-Trichlorobenzene	mg/kg	2.5U ug/kg	.021	.021	0.0086	0.0068	41	33	20-142	23	40	
1,2,4-Trimethylbenzene	mg/kg	2.8U ug/kg	.021	.021	0.011	0.0094	54	44	20-133	20	40	

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QUALITY CONTROL DATA

Project: Glynn Archer
Pace Project No.: 3565267

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 450237 450238

Parameter	Units	3565271006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	mg/kg	2.5U ug/kg	.021	.021	0.023	0.022	110	107	30-134	2	40	
1,2-Dichlorobenzene	mg/kg	2.5U ug/kg	.021	.021	0.012	0.010	55	50	20-134	11	40	
1,2-Dichloroethane	mg/kg	2.5U ug/kg	.021	.021	0.022	0.022	105	107	57-130	2	40	
1,2-Dichloropropane	mg/kg	2.5U ug/kg	.021	.021	0.024	0.023	113	108	52-130	4	40	
1,3,5-Trimethylbenzene	mg/kg	2.8U ug/kg	.021	.021	0.013	0.011	60	50	26-130	18	40	
1,3-Dichlorobenzene	mg/kg	2.5U ug/kg	.021	.021	0.013	0.011	61	54	20-133	12	40	
1,3-Dichloropropane	mg/kg	2.5U ug/kg	.021	.021	0.022	0.021	105	101	57-130	4	40	
1,4-Dichlorobenzene	mg/kg	2.5U ug/kg	.021	.021	0.011	0.0094	52	45	20-134	13	40	
2,2-Dichloropropane	mg/kg	2.5U ug/kg	.021	.021	0.015	0.015	73	73	35-130	.2	40	
2-Butanone (MEK)	mg/kg	2.5U ug/kg	.021	.021	0.018	0.018	86	85	20-217	2	40	
2-Chloroethylvinyl ether	mg/kg	2.5U ug/kg	.021	.021	0.021	0.021	99	100	20-137	.6	40	
2-Chlorotoluene	mg/kg	2.5U ug/kg	.021	.021	0.013	0.011	61	55	26-130	11	40	
2-Hexanone	mg/kg	2.5U ug/kg	.021	.021	0.015	0.013	71	63	20-136	11	40	
4-Chlorotoluene	mg/kg	2.5U ug/kg	.021	.021	0.013	0.011	60	53	21-132	13	40	
4-Methyl-2-pentanone (MIBK)	mg/kg	2.5U ug/kg	.021	.021	0.019	0.019	93	90	21-151	3	40	
Acetone	mg/kg	10.9 I ug/kg	.021	.021	0.012 I	0.012 I	4	3	20-219		40	J(M1)
Acrolein	mg/kg	34.7U ug/kg	.21	.21	0.037U	0.037U	0	0	20-152		40	J(M1)
Acrylonitrile	mg/kg	26.4U ug/kg	.21	.21	0.18	0.19	87	91	24-140	4	40	
Benzene	mg/kg	0.0025 U	.021	.021	0.015	0.014	71	68	24-141	5	40	
Bromobenzene	mg/kg	2.5U ug/kg	.021	.021	0.013	0.011	61	54	20-138	12	40	
Bromochloromethane	mg/kg	2.5U ug/kg	.021	.021	0.026	0.026	124	123	53-141	.4	40	
Bromodichloromethane	mg/kg	2.5U ug/kg	.021	.021	0.021	0.021	100	100	20-155	.4	40	
Bromoform	mg/kg	2.5U ug/kg	.021	.021	0.022	0.021	107	99	30-130	8	40	
Bromomethane	mg/kg	2.5U ug/kg	.021	.021	0.013	0.013	61	60	22-152	1	40	
Carbon disulfide	mg/kg	2.5U ug/kg	.021	.021	0.0097	0.011	46	54	20-160	15	40	
Carbon tetrachloride	mg/kg	2.5U ug/kg	.021	.021	0.020	0.020	98	96	23-141	2	40	
Chlorobenzene	mg/kg	2.5U ug/kg	.021	.021	0.016	0.015	78	72	34-130	8	40	

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3610 Park Central Blvd N
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954-582-4300

QUALITY CONTROL DATA

Project: Glynn Archer
Pace Project No.: 3565267

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 450237 450238

Parameter	Units	3565271006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloroethane	mg/kg	3.5U ug/kg	.021	.021	0.014	0.014	66	66	43-146	.8	40	
Chloroform	mg/kg	2.9U ug/kg	.021	.021	0.022	0.021	104	101	42-132	4	40	
Chloromethane	mg/kg	2.8U ug/kg	.021	.021	0.019	0.019	89	90	31-144	1	40	
cis-1,2-Dichloroethene	mg/kg	2.5U ug/kg	.021	.021	0.021	0.021	100	99	45-131	1	40	
cis-1,3-Dichloropropene	mg/kg	2.5U ug/kg	.021	.021	0.018	0.018	88	87	33-132	.9	40	
Dibromochloromethane	mg/kg	2.5U ug/kg	.021	.021	0.021	0.021	102	98	20-151	4	40	
Dibromomethane	mg/kg	2.5U ug/kg	.021	.021	0.029	0.029	138	140	49-137	2	40	J(M1)
Dichlorodifluoromethane	mg/kg	2.6U ug/kg	.021	.021	0.019	0.018	93	87	39-130	6	40	
Ethylbenzene	mg/kg	0.0028 U	.021	.021	0.017	0.015	80	71	30-130	11	40	
Hexachloro-1,3-butadiene	mg/kg	2.8U ug/kg	.021	.021	0.010	0.0080	48	38	20-130	23	40	
Iodomethane	mg/kg	2.5U ug/kg	.021	.021	0.018	0.018	85	86	20-155	1	40	
Isopropylbenzene (Cumene)	mg/kg	2.9U ug/kg	.021	.021	0.0030U	0.015	0	71	28-130		40	J(M1)
m&p-Xylene	mg/kg		.042	.042	0.033	0.029	77	67	27-150	13	40	
Methyl-tert-butyl ether	mg/kg	0.0025 U	.021	.021	0.019	0.019	91	92	31-156	1	40	
Methylene Chloride	mg/kg	2.5U ug/kg	.021	.021	0.021	0.021	100	100	20-150	.1	40	
n-Butylbenzene	mg/kg	3.0U ug/kg	.021	.021	0.0096	0.0077	46	37	20-132	22	40	
n-Propylbenzene	mg/kg	2.6U ug/kg	.021	.021	0.013	0.011	60	53	24-130	14	40	
Naphthalene	mg/kg	2.5U ug/kg	.021	.021	0.0086	0.0054	40	25	20-141	45	40	J(D6)
o-Xylene	mg/kg		.021	.021	0.017	0.015	81	70	27-150	14	40	
p-Isopropyltoluene	mg/kg	3.0U ug/kg	.021	.021	0.012	0.010	55	48	20-133	15	40	
Pentachloroethane	mg/kg	3.9U ug/kg	.021	.021	0.0041U	0.0041U	11	12	20-194		40	J(M0)
sec-Butylbenzene	mg/kg	2.8U ug/kg	.021	.021	0.013	0.011	60	52	20-131	14	40	
Styrene	mg/kg	2.5U ug/kg	.021	.021	0.016	0.014	74	67	20-137	10	40	
tert-Butylbenzene	mg/kg	2.8U ug/kg	.021	.021	0.013	0.011	60	52	20-131	14	40	
Tetrachloroethene	mg/kg	2.5U ug/kg	.021	.021	0.032	0.028	154	132	23-144	15	40	J(M0)
Toluene	mg/kg	0.0027 U	.021	.021	0.016	0.015	71	66	24-137	7	40	
trans-1,2-Dichloroethene	mg/kg	3.0U ug/kg	.021	.021	0.016	0.016	78	78	50-130	.3	40	
trans-1,3-Dichloropropene	mg/kg	2.5U ug/kg	.021	.021	0.020	0.019	95	90	33-130	5	40	

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QUALITY CONTROL DATA

Project: Glynn Archer
Pace Project No.: 3565267

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 450237 450238

Parameter	Units	3565271006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Trichloroethene	mg/kg	2.8U ug/kg	.021	.021	0.023	0.022	110	106	42-130	4	40	
Trichlorofluoromethane	mg/kg	2.7U ug/kg	.021	.021	0.017	0.017	82	81	40-130	2	40	
Vinyl acetate	mg/kg	2.5U ug/kg	.021	.021	0.0026U	0.0026U	0	0	20-156		40	J(M1)
Vinyl chloride	mg/kg	2.6U ug/kg	.021	.021	0.018	0.016	84	79	47-130	6	40	
Xylene (Total)	mg/kg	0.0051 U	.063	.063	0.050	0.044	78	68	26-130	13	40	
1,2-Dichloroethane-d4 (S)	%						96	96	80-131			
4-Bromofluorobenzene (S)	%						125	125	55-148			
Dibromofluoromethane (S)	%						112	114	82-115			
Toluene-d8 (S)	%						106	109	84-117			

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QUALITY CONTROL DATA

Project: Glynn Archer
Pace Project No.: 3565267

QC Batch: PMST/1309 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 3565267001, 3565267002, 3565267003, 3565267004

SAMPLE DUPLICATE: 448995

Parameter	Units	3565115003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	10.3	10.8	4	10	

SAMPLE DUPLICATE: 448997

Parameter	Units	3565275003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.1	14.9	5	10	

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QUALITY CONTROL DATA

Project: Glynn Archer
Pace Project No.: 3565267

QC Batch: WETA/19360 Analysis Method: EPA 9012
QC Batch Method: EPA 9012 Analysis Description: 9012 Cyanide
Associated Lab Samples: 3565267001, 3565267002, 3565267003, 3565267004

METHOD BLANK: 449289 Matrix: Solid
Associated Lab Samples: 3565267001, 3565267002, 3565267003, 3565267004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/kg	0.12U	0.24	08/17/12 12:40	

LABORATORY CONTROL SAMPLE: 449290

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/kg	1.2	1.3	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 449291 449292

Parameter	Units	3565267001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/kg	0.13U	1.3	1.3	1.3	1.4	95	96	80-120	6	20	

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QUALIFIERS

Project: Glynn Archer
Pace Project No.: 3565267

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J(D6)	Estimated Value. The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
J(L2)	Estimated Value. Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
J(M0)	Estimated Value. Matrix spike recovery was outside laboratory control limits.
J(M1)	Estimated Value. Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
N2	The lab does not hold TNI accreditation for this parameter.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Glynn Archer
Pace Project No.: 3565267

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3565267001	**SB-1 0-2'**	EPA 3050	MPRP/9942	EPA 6010	ICP/6493
3565267002	**SB-2 0-2'**	EPA 3050	MPRP/9942	EPA 6010	ICP/6493
3565267003	**SB-3 0-2'**	EPA 3050	MPRP/9942	EPA 6010	ICP/6493
3565267004	**SB-4 0-2'**	EPA 3050	MPRP/9942	EPA 6010	ICP/6493
3565267001	**SB-1 0-2'**	EPA 8260	MSV/6327		
3565267002	**SB-2 0-2'**	EPA 8260	MSV/6327		
3565267003	**SB-3 0-2'**	EPA 8260	MSV/6327		
3565267004	**SB-4 0-2'**	EPA 8260	MSV/6327		
3565267001	**SB-1 0-2'**	ASTM D2974-87	PMST/1309		
3565267002	**SB-2 0-2'**	ASTM D2974-87	PMST/1309		
3565267003	**SB-3 0-2'**	ASTM D2974-87	PMST/1309		
3565267004	**SB-4 0-2'**	ASTM D2974-87	PMST/1309		
3565267001	**SB-1 0-2'**	EPA 9012	WETA/19360	EPA 9012	WETA/19370
3565267002	**SB-2 0-2'**	EPA 9012	WETA/19360	EPA 9012	WETA/19370
3565267003	**SB-3 0-2'**	EPA 9012	WETA/19360	EPA 9012	WETA/19370
3565267004	**SB-4 0-2'**	EPA 9012	WETA/19360	EPA 9012	WETA/19370

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CHAIN OF CUSTODY RECORD

LAB W.O #_____ Quote:_____ Page 1 of 1

Company Name: Nutting Envi PO#
Address: 1310 Neptune Dr.
City: Boynton Bch State: Fl Zip: 33426
Attn: Jon Beerninck Fax#
email: Phone:
Project Name: Glynn Archer Proj #
Sampler Signature: T. Ruiz
Circle One Event: Daily Weekly Monthly Quartely Semi-Annual Annual N/A

LAB ANALYSIS

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code*	Field Filtered	Integrity OK(Y/N)	Total # of containers	Parameters: Nutrients 8260	Arsenic	Cyanide							EXAMPLE Diss. Lead 6010
								# of Containers / Size/Type									1 / 16ozP
1	SB-1 0-2'	8-13-12	12:27	SO			5	✓	✓	✓							
2	SB-2 0-2'	8-13-12	12:42	SO			5	✓	✓	✓							
3	SB-3 0-2'	8-13-12	12:00	SO			5	✓	✓	✓							
4	SB-4 0-2'	8-13-12	11:43	SO			5	✓	✓	✓							
5																	
6																	
7																	
8																	
9																	
10																	

Sample / TRC / pH / Pres Codes

Container Type Codes

AV	Amber Vial	ES	Encore Sampler
CV	Clear Vial	PPV	Prepreserved vial
P	Plastic	PL C	Plastic container
AL	Amber Liter	PL J	Plastic Jar
CL	Clear Liter	Z	Ziploc bag
AP	Amber Plastic	TB	Tedlar bag
AG	Amber Glass	WP	Whirl pak
SJ	Soil Jar	G	Gallon Jug
Other_____		TC	Terra-core

PPV Prepreserved vial
Size(s): 2oz, 4oz, 8oz, 16oz, 32oz or 1L, other_____
40ml 500ml 250ml 125 ml
Example: 4ozP = 4oz Plastic, 8ozSJ= 8oz Soil Jar

Matrix Codes

SD	Solid Waste	OL	Oil
GW	Ground Water	SL	Sludge
EFF	Effluent	SO	Soil Sediment
AFW	Analyte Free H20	AQ	Aqueous
WW	Waste Water	NA	Nonaqueous
DW	Drinking Water	PE	Petroleum
SW	Surface Water	O	Other_____ (Please specify)
ML	Misc. Liquid		

Preservative Type Codes

A. None	E. HCL	I. Ice
B. HNO3	F. MeOH	J. MCAA
C. H2SO4	G. Na2S2O3	K. Zn Acetate
D. NaOH	H. NaHSO4	O. Other

REMARKS

Circle T.A.T. REQUEST (Rush Fees Approved)		Short Hold	Circle QA/QC Report Level	EDD (Fees May Apply)		COC Condition	Required State Certification	Coolers #'s - Temp °C
Standard	RUSH							
Y N	Today 1D 2D 3D 4D 5D ___	Y_____ N_____	1 2 3 4 CLP AFCEE QAPP Other_____	ADaPT SEDD ERPIMS TSV CSV Other _____		OK Incomplete	FL GA SC NC NJ PA LA TX IL ___	1 ___ 2 ___ 3 ___ 4 ___ 5 ___

Item	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Tony Ruiz	NEF	4-15-12	11:30	MW	Pace	8-15-12	1324
2								
3								
4								

Lab Use Only	YES	NO	N/A
Non-Conformance Found?	___	___	___
Samples INTACT upon arrival?	___	___	___
Received on Wet Ice?	___	___	___
Proper Preservatives Indicated?	___	___	___
Received within holding time?	___	___	___
Custody seals Intact?	___	___	___
Volatiles rec'd without headspace?	___	___	___
Proper Containers Used?	___	___	___

Pace Analytical Services, Inc.
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954-582-4300

August 27, 2012

Chris Gworek
Nutting Environmental of Florida, Inc.
1310 Neptune Drive
Boynton Beach, FL 33426

RE: Project: CH2M Hill
Pace Project No.: 3566143

Dear Chris Gworek:
Enclosed are the analytical results for sample(s) received by the laboratory on August 24, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Christina Raschke

christina.raschke@pacelabs.com
Project Manager

Enclosures

cc: Jan Beernink, Nutting Environmental of Florida, Inc.

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CERTIFICATIONS

Project: CH2M Hill
Pace Project No.: 3566143

Ormond Beach Certification IDs
8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Arizona Certification #: AZ0735
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH 0216
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL765
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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SAMPLE SUMMARY

Project: CH2M Hill
Pace Project No.: 3566143

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3566143001	**SS-1**	Solid	08/10/12 00:00	08/24/12 16:30
3566143002	**SS-2**	Solid	08/10/12 00:00	08/24/12 16:30
3566143003	**SS-3**	Solid	08/10/12 00:00	08/24/12 16:30
3566143004	**SS-4**	Solid	08/10/12 00:00	08/24/12 16:30
3566143005	**SS-5**	Solid	08/10/12 00:00	08/24/12 16:30
3566143006	**SS-6**	Solid	08/10/12 00:00	08/24/12 16:30
3566143007	**SS-7**	Solid	08/10/12 00:00	08/24/12 16:30

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SAMPLE ANALYTE COUNT

Project: CH2M Hill
Pace Project No.: 3566143

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3566143001	**SS-1**	ASTM D2974-87	WMW	1	PASI-O
		EPA 9045	MMD	1	PASI-O
		EPA 9056	IRL	1	PASI-O
3566143002	**SS-2**	ASTM D2974-87	WMW	1	PASI-O
		EPA 9045	MMD	1	PASI-O
		EPA 9056	IRL	1	PASI-O
3566143003	**SS-3**	ASTM D2974-87	WMW	1	PASI-O
		EPA 9045	MMD	1	PASI-O
		EPA 9056	IRL	1	PASI-O
3566143004	**SS-4**	ASTM D2974-87	WMW	1	PASI-O
		EPA 9045	MMD	1	PASI-O
		EPA 9056	IRL	1	PASI-O
3566143005	**SS-5**	ASTM D2974-87	WMW	1	PASI-O
		EPA 9045	MMD	1	PASI-O
		EPA 9056	IRL	1	PASI-O
3566143006	**SS-6**	ASTM D2974-87	WMW	1	PASI-O
		EPA 9045	MMD	1	PASI-O
		EPA 9056	IRL	1	PASI-O
3566143007	**SS-7**	ASTM D2974-87	WMW	1	PASI-O
		EPA 9045	MMD	1	PASI-O
		EPA 9056	IRL	1	PASI-O

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HITS ONLY

Project: CH2M Hill
Pace Project No.: 3566143

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
3566143001	**SS-1**					
ASTM D2974-87	Percent Moisture	2.1	%	0.10	08/25/12 01:34	
EPA 9045	pH at 25 Degrees C	12.4	Std. Units	0.10	08/27/12 13:31	Q
3566143002	**SS-2**					
ASTM D2974-87	Percent Moisture	2.0	%	0.10	08/25/12 01:34	
EPA 9045	pH at 25 Degrees C	12.5	Std. Units	0.10	08/27/12 13:31	Q
3566143003	**SS-3**					
ASTM D2974-87	Percent Moisture	1.8	%	0.10	08/25/12 01:35	
EPA 9045	pH at 25 Degrees C	12.4	Std. Units	0.10	08/27/12 13:31	Q
EPA 9056	Chloride	507	mg/kg	253	08/26/12 22:56	
3566143004	**SS-4**					
ASTM D2974-87	Percent Moisture	2.2	%	0.10	08/25/12 01:36	
EPA 9045	pH at 25 Degrees C	11.3	Std. Units	0.10	08/27/12 13:31	Q
EPA 9056	Chloride	745	mg/kg	256	08/26/12 23:08	
3566143005	**SS-5**					
ASTM D2974-87	Percent Moisture	2.2	%	0.10	08/25/12 01:37	
EPA 9045	pH at 25 Degrees C	11.3	Std. Units	0.10	08/27/12 13:31	Q
EPA 9056	Chloride	348	mg/kg	257	08/26/12 23:20	
3566143006	**SS-6**					
ASTM D2974-87	Percent Moisture	2.7	%	0.10	08/25/12 01:39	
EPA 9045	pH at 25 Degrees C	9.9	Std. Units	0.10	08/27/12 13:31	Q
3566143007	**SS-7**					
ASTM D2974-87	Percent Moisture	2.6	%	0.10	08/25/12 01:39	
EPA 9045	pH at 25 Degrees C	11.0	Std. Units	0.10	08/27/12 13:31	Q
EPA 9056	Chloride	252 I	mg/kg	258	08/26/12 23:44	

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ANALYTICAL RESULTS

Project: CH2M Hill
Pace Project No.: 3566143

Sample: SS-1 **Lab ID: 3566143001** Collected: 08/10/12 00:00 Received: 08/24/12 16:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**2.1**	%	0.10	0.10	1		08/25/12 01:34		
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**12.4**	Std. Units	0.10	0.10	1		08/27/12 13:31		Q
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**128U**	mg/kg	255	128	5		08/26/12 22:07	16887-00-6	

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ANALYTICAL RESULTS

Project: CH2M Hill
Pace Project No.: 3566143

Sample: SS-2 **Lab ID: 3566143002** Collected: 08/10/12 00:00 Received: 08/24/12 16:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**2.0**	%	0.10	0.10	1		08/25/12 01:34		
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**12.5**	Std. Units	0.10	0.10	1		08/27/12 13:31		Q
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**128U**	mg/kg	256	128	5		08/26/12 22:44	16887-00-6	

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ANALYTICAL RESULTS

Project: CH2M Hill
Pace Project No.: 3566143

Sample: SS-3 **Lab ID: 3566143003** Collected: 08/10/12 00:00 Received: 08/24/12 16:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**1.8**	%	0.10	0.10	1		08/25/12 01:35		
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**12.4**	Std. Units	0.10	0.10	1		08/27/12 13:31		Q
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**507**	mg/kg	253	126	5		08/26/12 22:56	16887-00-6	

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ANALYTICAL RESULTS

Project: CH2M Hill
Pace Project No.: 3566143

Sample: SS-4 **Lab ID: 3566143004** Collected: 08/10/12 00:00 Received: 08/24/12 16:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**2.2**	%	0.10	0.10	1		08/25/12 01:36		
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**11.3**	Std. Units	0.10	0.10	1		08/27/12 13:31		Q
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**745**	mg/kg	256	128	5		08/26/12 23:08	16887-00-6	

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ANALYTICAL RESULTS

Project: CH2M Hill
Pace Project No.: 3566143

Sample: SS-5 **Lab ID: 3566143005** Collected: 08/10/12 00:00 Received: 08/24/12 16:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**2.2**	%	0.10	0.10	1		08/25/12 01:37		
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**11.3**	Std. Units	0.10	0.10	1		08/27/12 13:31		Q
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**348**	mg/kg	257	128	5		08/26/12 23:20	16887-00-6	

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ANALYTICAL RESULTS

Project: CH2M Hill
Pace Project No.: 3566143

Sample: SS-6 **Lab ID: 3566143006** Collected: 08/10/12 00:00 Received: 08/24/12 16:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**2.7**	%	0.10	0.10	1		08/25/12 01:39		
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**9.9**	Std. Units	0.10	0.10	1		08/27/12 13:31		Q
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**129U**	mg/kg	258	129	5		08/26/12 23:32	16887-00-6	

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ANALYTICAL RESULTS

Project: CH2M Hill
Pace Project No.: 3566143

Sample: SS-7 **Lab ID: 3566143007** Collected: 08/10/12 00:00 Received: 08/24/12 16:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**2.6**	%	0.10	0.10	1		08/25/12 01:39		
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**11.0**	Std. Units	0.10	0.10	1		08/27/12 13:31		Q
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**252 I**	mg/kg	258	129	5		08/26/12 23:44	16887-00-6	

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QUALITY CONTROL DATA

Project: CH2M Hill
Pace Project No.: 3566143

QC Batch: PMST/1325 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 3566143001, 3566143002, 3566143003, 3566143004, 3566143005, 3566143006, 3566143007

SAMPLE DUPLICATE: 454013

Parameter	Units	3565963001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	0.11	0.11	2	10	

SAMPLE DUPLICATE: 454014

Parameter	Units	3566143002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	2.0	2.2	8	10	

SAMPLE DUPLICATE: 454015

Parameter	Units	3566023006 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	5.6	5.6	.08	10	

SAMPLE DUPLICATE: 454016

Parameter	Units	3566033005 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.9	17.7	17	10	J(D6)

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QUALITY CONTROL DATA

Project: CH2M Hill
Pace Project No.: 3566143

QC Batch: WET/14818 Analysis Method: EPA 9045
QC Batch Method: EPA 9045 Analysis Description: 9045 pH
Associated Lab Samples: 3566143001, 3566143002, 3566143003, 3566143004, 3566143005, 3566143006, 3566143007

SAMPLE DUPLICATE: 454424

Parameter	Units	3565783001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.2	6.2	0	20	Q

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QUALITY CONTROL DATA

Project: CH2M Hill
Pace Project No.: 3566143

QC Batch: WETA/19543 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 3566143001, 3566143002, 3566143003, 3566143004, 3566143005, 3566143006, 3566143007

METHOD BLANK: 454281 Matrix: Solid
Associated Lab Samples: 3566143001, 3566143002, 3566143003, 3566143004, 3566143005, 3566143006, 3566143007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/kg	25.0U	50.0	08/26/12 21:43	

LABORATORY CONTROL SAMPLE: 454282

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/kg	500	532	106	80-120	

MATRIX SPIKE SAMPLE: 454284

Parameter	Units	3566143001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/kg	128U	2550	2550	95	80-120	

SAMPLE DUPLICATE: 454283

Parameter	Units	3566143001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/kg	128U	128U		20	

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QUALIFIERS

Project: CH2M Hill
Pace Project No.: 3566143

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J(D6)	Estimated Value. The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
Q	Sample held beyond the accepted holding time.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CH2M Hill
Pace Project No.: 3566143

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3566143001	**SS-1**	ASTM D2974-87	PMST/1325		
3566143002	**SS-2**	ASTM D2974-87	PMST/1325		
3566143003	**SS-3**	ASTM D2974-87	PMST/1325		
3566143004	**SS-4**	ASTM D2974-87	PMST/1325		
3566143005	**SS-5**	ASTM D2974-87	PMST/1325		
3566143006	**SS-6**	ASTM D2974-87	PMST/1325		
3566143007	**SS-7**	ASTM D2974-87	PMST/1325		
3566143001	**SS-1**	EPA 9045	WET/14818		
3566143002	**SS-2**	EPA 9045	WET/14818		
3566143003	**SS-3**	EPA 9045	WET/14818		
3566143004	**SS-4**	EPA 9045	WET/14818		
3566143005	**SS-5**	EPA 9045	WET/14818		
3566143006	**SS-6**	EPA 9045	WET/14818		
3566143007	**SS-7**	EPA 9045	WET/14818		
3566143001	**SS-1**	EPA 9056	WETA/19543		
3566143002	**SS-2**	EPA 9056	WETA/19543		
3566143003	**SS-3**	EPA 9056	WETA/19543		
3566143004	**SS-4**	EPA 9056	WETA/19543		
3566143005	**SS-5**	EPA 9056	WETA/19543		
3566143006	**SS-6**	EPA 9056	WETA/19543		
3566143007	**SS-7**	EPA 9056	WETA/19543		

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