Report of Groundwater Sampling and Analyses

For

JEA Walnut Street Trunk Sewer Replacement

Jacksonville, Florida

MAE Project No.: 0103-0012

November 16, 2018

Prepared for:

MOTT MACDONALD

JEA Building Community®

Prepared by:

TEN YEARS MAE Meskel & Associates Engineering

Geotechnical • Environmental • Inspection • Testing

8936 Western Way, Suite 12
Jacksonville, Florida 32256
Phone (904) 519-6990
Fax (904) 519-6992

November 16, 2018

Meskel & Associates Engineering
Geotechnical • Environmental
Inspection • Testing

Mr. Bruce A. Neu, P.E.
Mott MacDonald Florida, LLC
10245 Centurion Parkway North, Suite 320
Jacksonville, Florida 32256

Reference: Report of Groundwater Sampling and Analysis
JEA Walnut Street Trunk Sewer Replacement
Jacksonville, Florida
MAE Project No. 0103-0012

Dear Mr. Neu:

Meskel & Associates Engineering, PLLC (MAE) is pleased to provide you with this Report of Groundwater Sampling for JEA Walnut Street Trunk Sewer Replacement project, located in Jacksonville, Duval County, Florida.

If you have any questions or concerns, please contact the undersigned at (904) 519-6990.

Sincerely,

MESKEL & ASSOCIATES ENGINEERING, PLLC
MAE FL Certificate of Authorization No. 28142

Scott A. Davidson, P.G.
Senior Project Geologist

P. Rodney Mank, P.E.
Principal Engineer

Distribution: Mr. Bruce A. Neu, P.E. – Hatch Mott, LLC 2 hard copies, 1 PDF

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List of Acronyms and Abbreviations

BDL .....Below Detection Limits

BLS.....Below Land Surface

BTEX .....Benzene, Toluene, Ethyl benzene, and Xylenes

COC.....Contaminants of Concern

DO .....Dissolved Oxygen

MAE.....Meskel & Associates Engineering, PLLC.

EPA .....United States Environmental Protection Agency

FAC .....Florida Administrative Code

FDEP .....Florida Department of Environmental Protection

FL-PRO.....Florida Petroleum Residual Organic (testing method)

GAC .....Granular Activated Carbon

GCTL .....Groundwater Cleanup Target Levels (as defined in 62-777, FAC)

MSL.....Mean Sea Level

MTBE .....Methyl Tert-Butyl Ether

NADC.....Natural Attenuation Default Concentrations

NPDES.....National Pollutant Discharge Elimination System

NTU .....Nephelometric Turbidity Units

PAH.....Polycyclic Aromatic Hydrocarbons

RAP .....Remedial Action Plan

SVDFW .....Screening Values for Discharges into Fresh Waters

TRPH.....Total Recoverable Petroleum Hydrocarbons

VOA .....Volatile Organic Aromatics

µg/L .....Micrograms per Liter

Report of Groundwater Sampling and Analysis

JEA Walnut Street Trunk Sewer Replacement

Jacksonville, Florida

MAE Report No. 0103-0012

Prepared by:

MESKEL & ASSOCIATES ENGINEERING, PLLC

8963 WESTERN WAY, SUITE 12

JACKSONVILLE, FLORIDA 32256

GEOLOGY BUSINESS LICENSE NUMBER – GB683

In accordance with the provisions of Florida Statutes Chapter 492, this Groundwater Sampling Report for the JEA Walnut Street Trunk Sewer Replacement, located in Jacksonville, Duval County, Florida has been prepared under the direct supervision of a Professional Geologist registered in the State of Florida. This report was prepared in accordance with generally accepted professional practices pursuant to Chapter 492 of the Florida Statutes. The data, findings, recommendations, specifications or professional opinions were prepared solely for the use of the JEA and Mott MacDonald Florida, LLC. Meskel & Associates Engineering, PLLC makes no other warranty, either expressed or implied, and is not responsible for the interpretation by others of these data.

Scott A. Davidson, P.G. Date: 11/16/18
Director of Environmental Engineering
Licensed, Florida No. PG1220

1.0 INTRODUCTION

Meskel & Associates Engineering, PLLC (MAE) has completed a groundwater sampling program to provide chemical background data to assist in the submittal of a Notice of Intent (NOI) to potentially discharge dewatering effluent to '*Waters of the State'* through the Florida Department of Environmental Protection (FDEP) under the auspices of the *Generic Permit for the Discharge of Produced Groundwater from Any Non-Contaminated Site Activity*, FAC 62-621.300(2) and guidance for petroleum contaminated portions of the project area.

Project information was provided to us by Mott MacDonald Florida, LLC (MM). Based on our discussions with Mr. Neu, it is our understanding that the proposed project includes the construction of approximately 3,350 linear feet (LF) of 36-inch gravity trunk sewer along North Liberty Street. The south terminus of the new trunk sewer is at the proposed connection with an existing 72-inch trunk sewer on East 16th Street. The north terminus is at the proposed connection to the existing 20-inch force main along the JEA easement north of the Duval County Public Schools Maintenance facility. We understand that both connections may require deep sheeted or braced excavations. This alignment includes a 54-inch jack-and-bore crossing below Martin Luther King (MLK), Jr. Parkway. We understand the excavation in this area will be approximately 17 feet deep and will be supported with either sheet piles or a trench box. The general site location is shown on **Figure 1**.

2.0 REPORT LIMITATIONS

This report has been prepared for the exclusive use of MM for specific application to the proposed JEA Walnut Street Trunk Sewer project as described in this report. This groundwater evaluation was performed in accordance with generally accepted practices of this profession, undertaken in similar studies at the same time and in the same geographical area. We have endeavored to meet this standard of care, but may be limited by conditions encountered during performance or a client-driven scope of work. Where appropriate, these limitations are discussed in the text of the report, and an evaluation of their significance with respect to our findings has been conducted. No warranty, express or implied, is made.

The evaluation and recommendations contained in this report are based on the data obtained from the water samples collected for this project. The scope of our services did not include any environmental assessment or testing for the presence or absence of hazardous or toxic materials in the soil, groundwater, or surface water above/beyond those parameters and chemical analytes examined. The collection of grab water samples, such as those collected at this site, are of limited scope and cannot eliminate the potential that hazardous, toxic, or petroleum substances are present or have been released at the site beyond what is identified by the limited water sampling and chemical analyses. No limited groundwater sampling program can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for groundwater and surface water impacts. These risks may be further evaluated, but not eliminated, through additional research and/or chemical evaluation and assessment.

If changes in the design or location of the project occur, the conclusions and recommendations contained

in this report may need to be modified. We recommend that these changes be provided to us for our consideration. MAE is not responsible for conclusions, interpretations, opinions or recommendations made by others based on the data contained in this report.

3.0 SITE CONDITIONS

The site at the time of our field exploration consisted of a roadway located within commercial and residential areas. The drilling operations and water sampling areas were within the City of Jacksonville Right of Way of East 21st Street and North Liberty Street. A Site Plan has been provided as **Figure 2**.

4.0 NEARBY CONTAMINATED SOURCES

This investigation included a review of FDEP databases for nearby contaminated sites. The FDEP Contamination Locator Map (CLM) was consulted to evaluate properties near the area of the proposed force main installation. In addition, the FDEP Institutional Controls Map (ICM) was reviewed to evaluate sites within the FDEP-specified 500-foot search radius.

The results of the requisite FDEP database review of the CLM and ICM, showed four impacted sites within the prescribed 500-foot radius of the proposed dewatering area.

The **Aramark Uniform Service (fka Aratex)**, located at 357 East 21st Street, is a commercial laundry facility and a listed waste cleanup site in the FDEP databases. MAE reviewed the FDEP Oculus database for files associated with this facility under Facility ID No. COM_69561. Based on the Semi-Annual Groundwater Monitoring Report dated August 31, 2018, three 4,000-gallon petroleum underground storage tanks (USTs) were removed from the site in October 1988. Two of the former USTs, located on the west side of the facility, held gasoline; the third UST, located off the southeast corner of the facility building, held fuel oil. During removal of the three USTs, petroleum product and chlorinated solvent contamination was detected. Contamination assessment began at the site in May 1989 and resulted in discovery of chlorinated groundwater contamination in addition to the anticipated petroleum compounds. Between May 1989 and April 1997, extensive site assessment was performed resulting in the installation of numerous groundwater monitoring wells, both on and off site, in the shallow, intermediate, and deep aquifer zones. Aramark operated a groundwater extraction and treatment system at the site between March 2001 and November 2011. In July 2013 additional remedial action was implemented, which consisted of the in-situ deployment of SOCORE™ and the installation of a groundwater recirculation system. SOCORE™ is a trade-marked encapsulated potassium permanganate product. The active remediation system was ceased in November 2016 and the site has been undergoing groundwater monitoring. Based on the latest 2018 sampling event, limited chlorinated impacts are present in groundwater on the northern side of this building and groundwater flow is generally to the south in the shallow zone. The groundwater impacts are approximately 250 north of the East 21st Street northern right of way.

The **Phillips 66 Liberty Food Mart**, located at 3015 North Liberty Street, is a vacant gasoline station and a listed Leaking Underground Storage Tank (LUST) site in the FDEP databases. MAE reviewed the FDEP Oculus database for files associated with this facility under Facility ID No. 8521824. A petroleum discharge

was reported at this facility on July 29, 1991 and the facility is eligible for State funded cleanup in the Petroleum Cleanup Participation Program (PCPP). Based on the Natural Attenuation Report dated September 14, 2017, petroleum impacts are present in the groundwater on the southwest portion of this facility. Polynuclear Aromatic Hydrocarbons (PAHs) were detected within 10 feet east of the North Liberty Street eastern right of way and groundwater flow is reported to the west.

The **Gate #1107**, located at 3020 North Liberty Street, is an active gasoline station and a listed LUST site. MAE reviewed the FDEP Oculus database for files associated with this facility under Facility ID No. 8506960. Two petroleum discharges were reported at this facility on March 30, 1987 and December 1, 1992 and the facility is eligible for State funded cleanup in the Early Detection Initiative (EDI) Program and the Petroleum Liability and Restoration Insurance Program (PLIRP). Based on the Low Score Site Initiative (LSSI) Report dated November 26, 2014, petroleum impacts are present in soils and groundwater on the east and northwest portions of this facility. Petroleum impacts were detected within 20 feet west of the North Liberty Street western right of way and groundwater flow is reported to the northwest.

The **Shell First Coast Energy #3023**, located at 247 East 20th Street, is a vacant gasoline station and a listed LUST site. MAE reviewed the FDEP Oculus database for files associated with this facility under Facility ID No. 8507524. A petroleum discharge was reported at this facility on December 6, 1989 and the facility is eligible for State funded cleanup in the PLIRP. Based on the LSSI Report dated July 13, 2012, petroleum impacts are present in soils and groundwater on the central and east portions of this facility. Petroleum impacts were detected within 20 feet west of the North Liberty Street western right of way and groundwater flow is reported to the north-northeast.

Copies of the pertinent regulatory correspondence is provided in **Appendix A**. No other sites, currently reported as active/impacted, were identified within the 500-foot radius.

5.0 WATER SAMPLING AND ANALYTICAL RESULTS

Two monitoring wells (MW-1 and MW-2) were installed on September 20, 2018. MW-1 was installed within the west bound right of way of East 21st Street and south of the Aramark Uniform Service facility. MW-2 was installed within the north bound right of way of North Liberty Street and west of the Phillips 66 Liberty Food Mart facility. The wells were advanced using a direct push rig and installed to a depth of 20-feet below land surface (bls) and 13 feet bls, respectively. The monitoring wells were constructed of 10-feet of 1.5-inch diameter PVC well screen (0.010-inch slot size) that was prepacked with 20-30 silica sand, and PVC riser. The boring anulus included an additional 20-30 silica sand pack with a fine sand seal and cement to surface. The monitoring well was finished at grade with a locking cap and an 8-inch manhole and concrete pad. Boring Logs and Well Completion Logs are provided in **Appendix B**.

Groundwater samples were collected from the MW-1 and MW-2 on September 27, 2018. During the sampling event, depth to water was measured at 4.40 feet bls and 5.09 feet bls, respectively. MAE established stable purging parameters at the respective sampling locations in general accordance with the FDEP Standard Operating Procedures (FS 2212) before the location was sampled. **Appendix C** contains the groundwater sampling log and field equipment calibration sheets.

Following the purging activities, groundwater samples were collected from MW-1 and MW-2 using poly-

tubing connected to a peristaltic pump. The collected samples were placed into laboratory-supplied bottles, stored on wet ice, and submitted to a State of Florida approved analytical laboratory, Pace Analytical Services in Ormond Beach, Florida. Pace is a NELAP-certified laboratory, Number E83079.

The groundwater samples were analyzed for the presence of Volatile Organic Compounds (VOCs) by EPA Method 8260, Polynuclear Aromatic Hydrocarbons (PAHs) by EPA Method 8270, Total Recoverable Petroleum Hydrocarbons (TRPH) by the FL-PRO Method, EDB by EPA Method 8011, and Lead by EPA Method 6010. Copies of the groundwater analytical results are provided in **Appendix D**.

Based on the groundwater analysis, no concentrations were detected above Groundwater Cleanup Target Levels (GCTLs) and Surface Water Criteria as defined in Chapter 62-777, FAC and Chapter 62-302.530, FAC. **Table 1** presents the analytical data and respective FDEP GCTLS and Surface Water Criteria.

6.0 CONCLUSIONS AND PERMIT REQUEST

The results of laboratory analyses of groundwater samples collected indicate that there are no impacts to groundwater in the area of the installed monitoring wells.

Under Chapter 62-621.300(2) FAC when applying the Notice of Intent (NOI) to use the generic permit, it will be noted that the review of regulatory CLM database information indicated one solvent impacted waste cleanup facility and three LUST facilities were identified as contaminated within 500 feet of the proposed dewatering operation. Based on the groundwater sampling and analytical results presented, it appears no contaminants of concern are present in the groundwater at the dewatering site above surface water criteria defined in Chapter 62-302.530 FAC. Therefore, a NOI request for the use of the Generic Permit for the Discharge of Groundwater from Dewatering Operations, February 2015, FAC 62-621.300(2) is applicable for most of the project area.

However, review of the latest groundwater sampling data available, petroleum impacts to groundwater have been identified in close proximity of the western and eastern right of ways of North Liberty Street associated with the two vacant and one active gasoline stations. Dewatering activities in these areas may require the procurement of a Generic Permit for Petroleum Contaminated Site under Chapter 62-621.300(1) FAC.

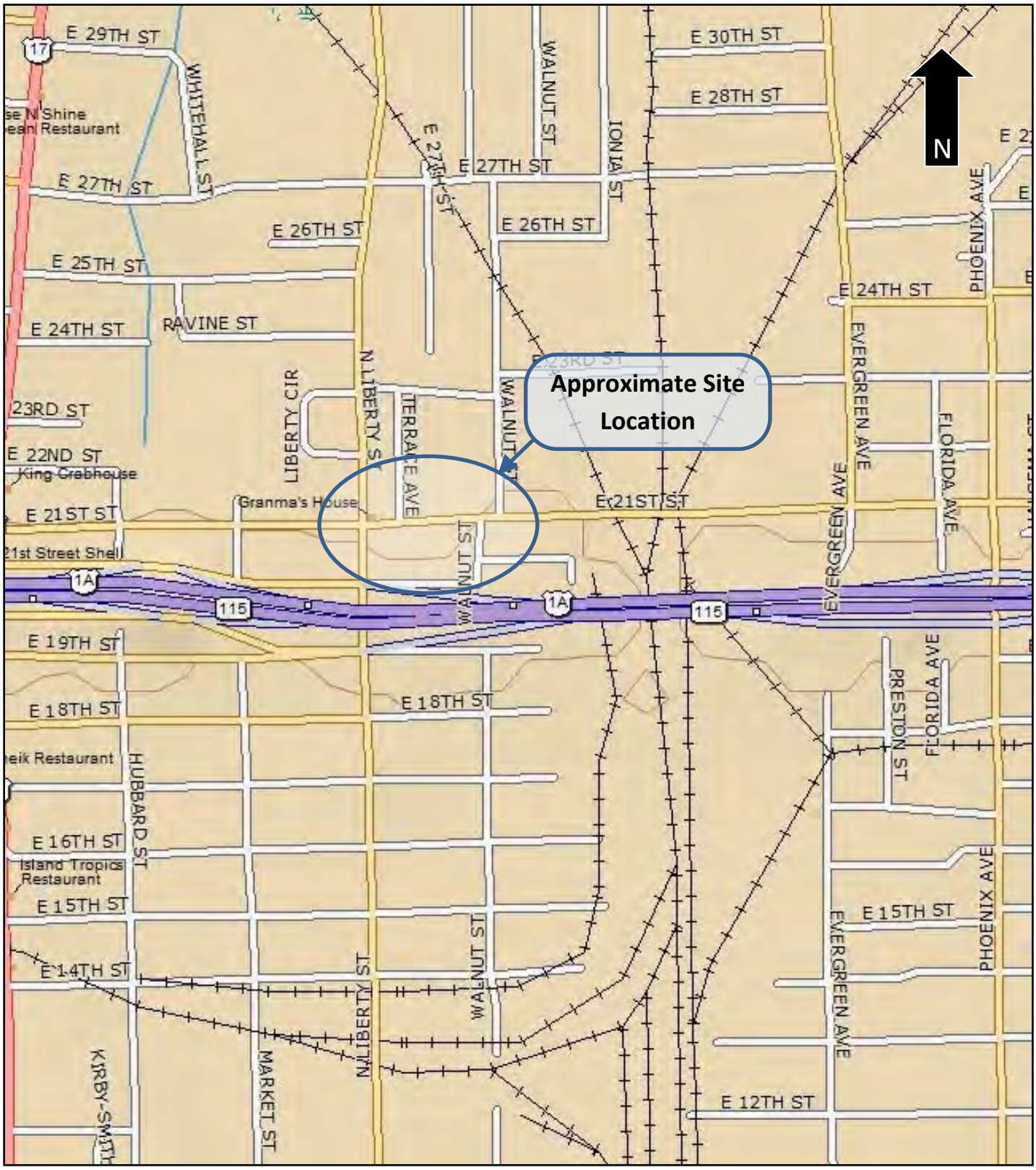
A copy of the NOI application and the Generic Permit requirements of Petroleum Contaminated Sites is provided include in **Appendix E.** This Generic Permit may require the treatment of groundwater prior to discharge to the storm sewer system. Note, the acquisition of this Generic Permit is not necessary if the dewatering plan includes the discharge of dewatering effluent into a JEA wastewater treatment system under JEA permit.

If the proposed area of dewatering is anticipated for a construction activity exceeding 1 acre in size, then MAE recommends the construction contractor acquire the dewatering permit as part of the Construction General Permit (CGP). The dewatering permit will not add any additional cost to the CGP, provided it is applied for at the time of its CGP application. The development of dewatering Best Management Practices (BMPs) will still be required prior to initiation of the dewatering operation, as per FAC 62-621.300(2).

Following the commencement of dewatering operations, per Chapter 62-621.300(1) or (2) FAC, BMPs, developed by the dewatering contractor, must be adhered to including record-keeping, and collection of

effluent samples as required. Please be advised that the FDEP regulations state that the permittee is ultimately responsible for discharges to the waters of the State.

Figures



Site Location Map

PREPARED BY	PROJECT NAME	
Meskel & Associates Engineering	JEA Walnut Street Trunk Sewer Replacement Jacksonville, Florida	
	REFERERENCE	SCALE
	Delorme XMap 7.0	NTS
PREPARED FOR	MAE PROJECT NO.	**FIGURE NO.**
Mott MacDonald Florida, LLC	0103-0012	1

Project Manager:	SAD
Drawn by:	MCV
Checked by:	MCV
Approved by:	GSP

Project No.	0103-0012
Scale:	AS SHOWN
File Name:	0103-0012.BLP
Date:	11/2/2018

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Geotechnical • Environmental • Inspection • Testing

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MONITORING WELL LOCATION PLAN

JEA WALNUT STREET TRUNK SEWER REPLACEMENT
JACKSONVILLE, FLORIDA

FIG NO. 2

Tables

Table 1
Groundwater Analytical Summary
Walnut Street Trunk Sewer Line Replacement
Jacksonville, Duval County, Florida
MAE Project No. 0103-0012

Well No. Sample Date Location Parameter, Method (All Units in micrograms per liter - mg/L)	**MW-1** 9/27/2018 South of Aramark Uniform Services	**MW-2** 9/27/2018 West of Phillip 66-Liberty Food Mart	*Groundwater Cleanup Target Levels, Chapter 62-777, F.A.C. (µg/L)*	*Freshwater Surface Water Criteria, Chapter 62-777, F.A.C. and Chapter 62-302.530, F.A.C. (µg/L)*
Benzene, EPA Method 8260	0.10 U	0.10 U	*1*	*1.18*
Toluene, EPA Method 8260	0.50 U	0.50 U	*40*	*480*
Ethylbenzene, EPA Method 8260	0.50 U	0.50 U	*30*	*610*
Total Xylenes, EPA Method 8260	1.5 U	1.5 U	*20*	*370*
MTBE, EPA Method 8260	0.50 U	0.50 U	*20*	*34,000*
Bromomethane, EPA Method 8260	0.61 I	0.50 U	*9.8*	*35*
All Other Volatile Organic Compounds (VOCs) analyzed by EPA Method 8260	BDL	BDL	*Various*	*Various*
Naphthalene, EPA Method 8270	0.29 U	0.29 U	*14*	*26*
1-Methylnaphthalene, EPA Method 8270	0.19 U	0.19 U	*28*	*95*
2-Methylnaphthalene, EPA Method 8270	0.68 U	0.68 U	*28*	*30*
Fluoranthene,EPA Method 8270	0.026 I	0.018 U	*280*	*0.3*
All other Polycyclic Aromatic Hydrocarbons (PAHS) analyzed by EPA Method 8270	BDL	BDL	*Various*	*Various*
Total Recoverable Petroleum Hydrocarbons analyzed by the FL-PRO Method	750 U	750 U	*5,000*	*5,000*
1,2-Dibromoethane (EDB) by EPA Method 8011	0.0072 U	0.0072 U	*0.02*	*13*
Lead by EPA Method 6010	4.6 U	4.6 U	*15*	*8.5*

Notes:

[1]Florida Department of Environmental Protection Groundwater Cleanup Target Levels (GCTLs) and Freshwater Surface Water Criteria per Table II of Chapter 62-777, FAC and Chapter 62-302.530, FAC

U or BDL - Below Laboratory Method Detection Limits

I - Concentration detected between Method Detection Limit and Practical Quantization Limit

Appendix A

Semiannual Groundwater Monitoring Report

June 2018
Sampling Event

Aramark Uniform & Career Apparel, LLC
357 East 21st Street
Jacksonville, Florida
(FAC# 168629694)

AEM Project No. 1526-1801-2

August 31, 2018

Prepared For:

Aramark Uniform & Career Apparel, LLC
115 North 1st Street
Burbank, California 91502

Prepared By:

ATLANTA ENVIRONMENTAL MANAGEMENT, INC.
Environmental Consulting, Engineering, Hydrogeologic Services
2580 Northeast Expressway • Atlanta, Georgia 30345
Office (404) 329-9006 • Fax (404) 329-2057

SECTION 7.0
SUMMARY AND RECOMMENDATIONS

This *Semiannual Groundwater Monitoring Report* is being submitted in accordance with the Remedial Action Plan (RAP) Approval Order dated April 16, 2013.

7.1 SUMMARY

The groundwater flow directions in the three water-bearing zones at the site are consistent with historical observations. Groundwater flow in the shallow zone is to the southeast and southwest. In the intermediate zone, groundwater flow is to the east. In the deep surficial aquifer zone, groundwater flow is likely toward the east.

In comparing the December 2017 sampling results to the June 2018 sampling results, the PCE, TCE, and cis-1,2-DCE were stable or reduced in MW-3R and JX-5R, and results from JX-5R as well as the remaining eight shallow and intermediate zone wells were below their respective GCTLs.

PCE and TCE are the only VOCs currently exceeding their GCTLs, and these exceedances are only at MW-3R. The current PCE and TCE plume configurations have decreased in area and do not extend beyond the site boundary.

NAM sampling results indicate that degradation of chlorinated VOCs is occurring, and all potential remediation generated constituents are below their respective GCTLs.

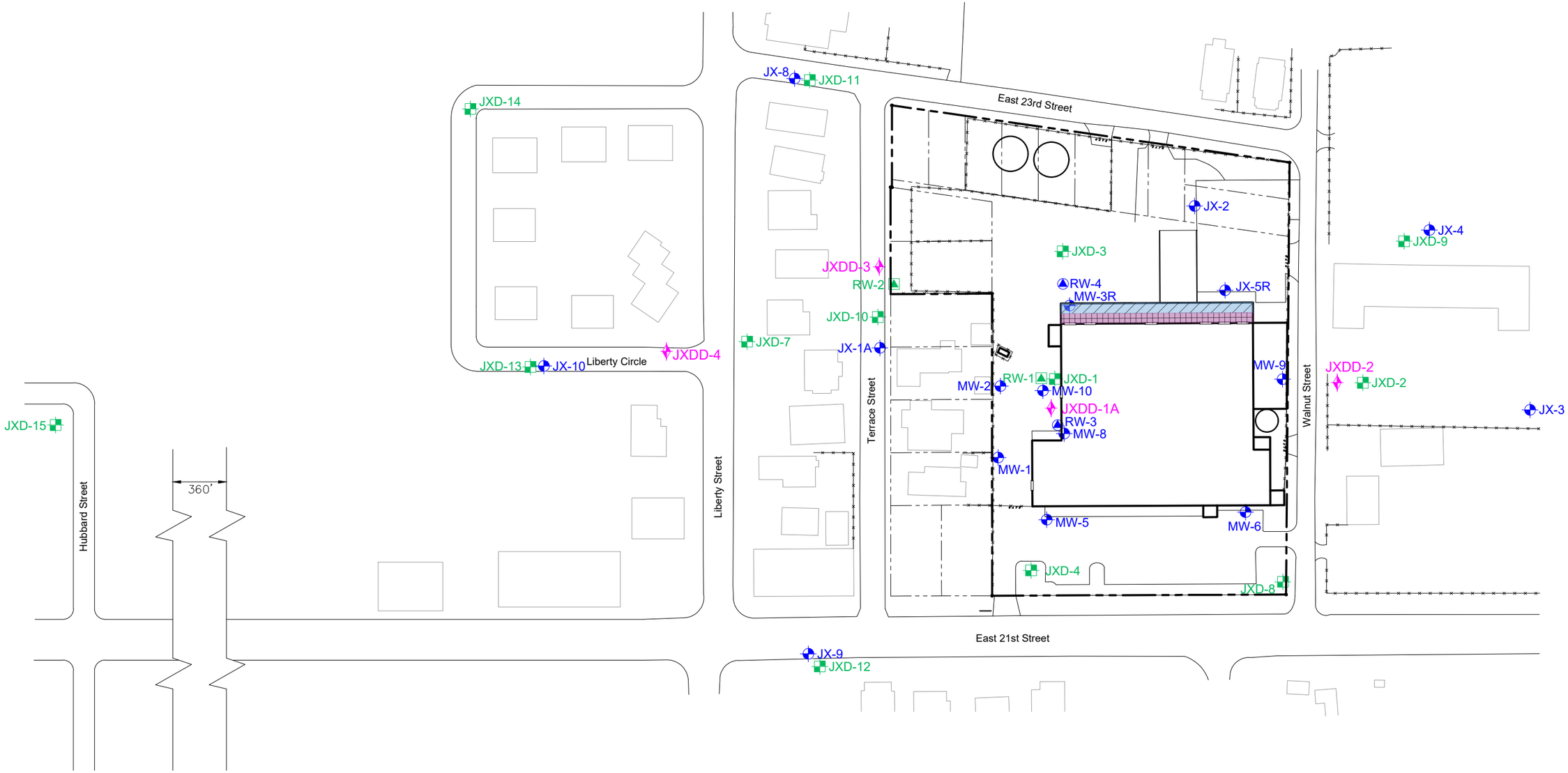
The recirculating pump system has been off since mid-November 2016 with no apparent rebound of dissolved PCE or TCE concentrations in groundwater at the site.

The dissolved PCE and TCE have decreased since active remediation at the site ended in November 2016. However, additional analytical data from future groundwater sampling events are needed to support statistically significant evidence of stable or decreasing plume size.

7.2 RECOMMENDATIONS

Based on these results, AEM recommends continuation of the quarterly and semiannual natural attenuation sampling activities to document plume stabilization. We anticipate that continued groundwater monitoring will demonstrate that future site closure under F.A.C. 62-780.680, Risk Management Option Level II will be appropriate.

The next quarterly groundwater sampling event (sampling of MW-3R and JX-5R only) is scheduled for September 2018. The next semiannual groundwater sampling event is scheduled for December 2018.



Legend

- Shallow Groundwater Recovery Well
- Shallow Groundwater Monitoring Well
- Intermediate Groundwater Recovery Well
- Intermediate Groundwater Monitoring Well
- Deep Groundwater Monitoring Well
- Approximate Property Boundary
- Approximate Adjacent Property Boundary
- Water Feature
- Fenceline
- Area of Recirculation Piezometers
- Area of Direct Push SOCORE Borings

N

Graphic Scale

100 0 50 100 200

1 inch = 100 ft.

Atlanta Environmental Management, Inc.
Environmental Consulting, Engineering, Hydrogeologic Services
2580 Northeast Expressway • Atlanta, Georgia 30345
Phone: 404.329.9006 • Fax: 404.329.2057

PROJECT #:	1526-1801-2	DATE:	July 9, 2018
DRAWN BY:	TL	REVISED:	----
CHECKED BY:	MM	SCALE:	1" = 100'
PROJECT MGR:	TLaw	PRINTED:	7/18/2018 10:11 AM

ARAMARK Uniform Services
357 East 21st Street
Jacksonville, Florida

Site Layout and Well Locations

Figure 2

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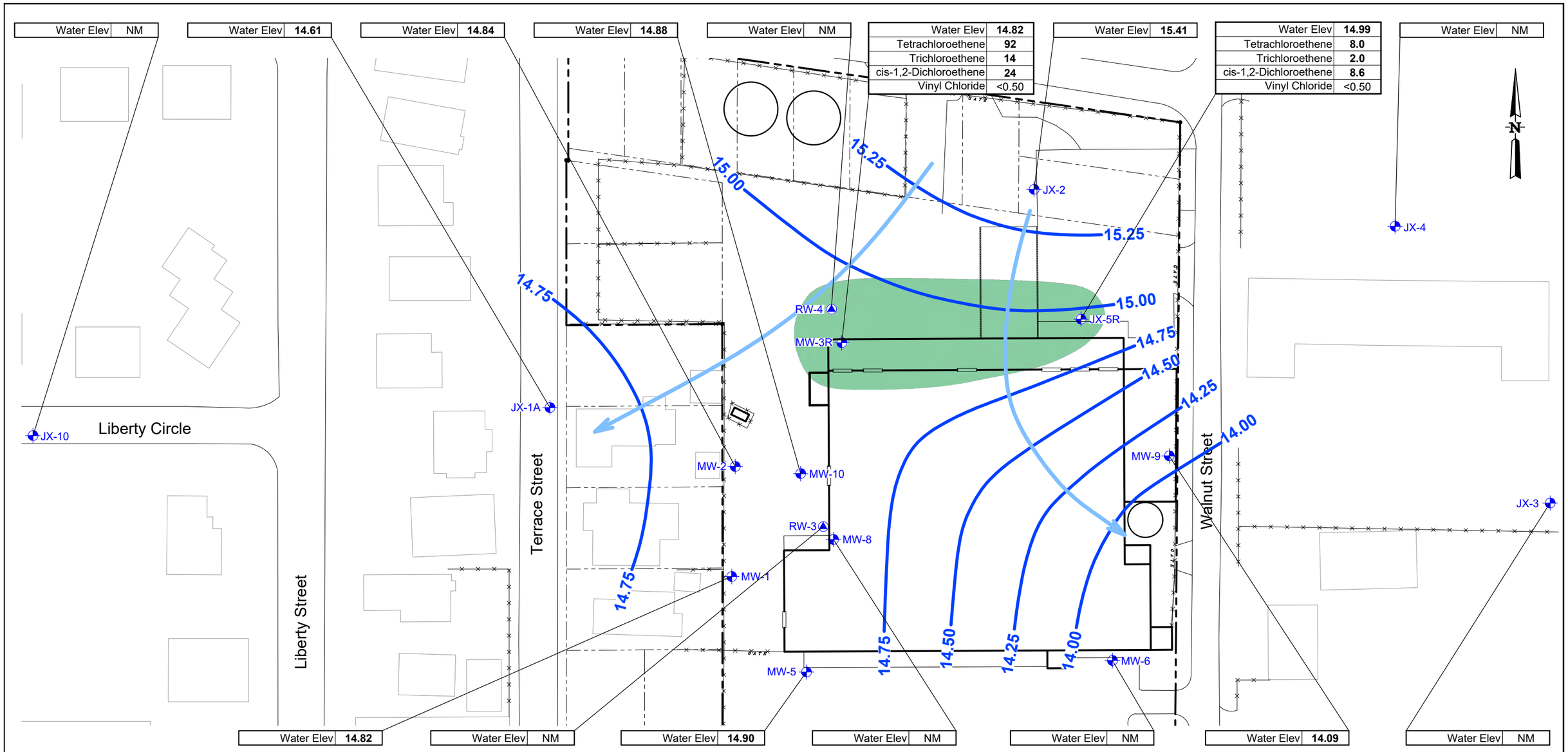

Legend

- Shallow Groundwater Recovery Well
- Shallow Groundwater Monitoring Well
- Ft. AMSL - Feet Above Mean Sea Level
- **14.82** - Water Level Elevation (Ft. AMSL) (3/12/18)
- NM - Not Measured
- NC - Not Calculated (Top of Casing Elevation Not Known)
- Water Table Contour (Ft. AMSL)
- Groundwater Flow Direction

- µg/L - Micrograms per Liter
- **92** - Detected Concentration, µg/L
- <0.50 - Below Detection Limit
- NS - Not Sampled
- Approximate Property Boundary
- Water Feature
- Fenceline

Tetrachloroethene Concentration

- >10,000
- 1,000 - 9,999
- 100 - 999
- 3.5 - 99

Graphic Scale

60 0 30 60 120

1 inch = 60 ft.

Atlanta Environmental Management, Inc.
Environmental Consulting, Engineering, Hydrogeologic Services
2580 Northeast Expressway • Atlanta, Georgia 30345
Phone: 404.329.9006 • Fax: 404.329.2057

PROJECT #:	1526-1801-2	DATE:	July 9, 2018
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PROJECT MGR:	TLaw	PRINTED:	7/18/2018 10:11 AM

ARAMARK Uniform Services
357 East 21st Street
Jacksonville, Florida

Select Groundwater Concentrations
at MW-3R and JX-5R with
Water Table Contour Overlay, Shallow Zone
March 2018

Figure
3

G:\DWG\1526-1801 Aramark 21st Street\01\March 2018 Report\Figures

FLORIDA DEPARTMENT OF
Environmental Protection

Northeast District
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

October 16, 2018

Ms. Rebecca Armbruster, Dir. Environmental Compliance
Aramark Uniform Services, Inc.
8130 S. Meridian Street, Suite 1A
Indianapolis, Indiana 46217
Armbruster-rebecca@aramark.com

Re: Semiannual Groundwater Monitoring Report (June 2018)
Aramark Uniform Services, Inc.
357 East 21st Street, Jacksonville, Florida
Site ID: COM_69561, Project No: 68473
Duval County – Waste Cleanup

Dear Ms. Armbruster:

The Florida Department of Environmental Protection (Department) has reviewed the *Semiannual Groundwater Monitoring Report – June 2018***,** dated and received by email on August 31, 2018, prepared by Atlanta Environmental Management, Inc. (AEM).

The Department's review comments are as follows:

1. Natural Attenuation Default Concentrations (NADC) are met for all contaminants of concern (PCE, TCE, cis-1,2-DCE, and vinyl chloride), however exceedances of the Groundwater Cleanup Target Levels (GCTL) are currently found with PCE and TCE at MW-3R (March and June 2018) and PCE at JX-5R (March 2018).

2. GCTLs are currently met for all remediation generated constituents.

3. Lacking water elevations for wells JXDD-1A (filled with mud) and JXDD-2, the consultant was unable to construct a potentiometric contour map for the deep surficial zone. The Department believes well JXDD-1A should be re-developed and JXDD-2 should be included for future water elevations to accommodate mapping.

4. The supplemental request for monitoring reductions with wells JX-2, JXD-1 and JXDD-2 was considered as detailed below:

    a. Shallow well JX-2 can be dropped from monitoring.

b. The Department believes monitoring of JXD-1 (intermediate zone) should continue as it provides the necessary third elevation for potentiometric mapping and analytically for comparison with wells JXD-3 and JXD-10.

c. Well JXDD-2 (deep zone) was also addressed in comment number 3. The supplemental request for a monitoring reduction with this well is un-clear as the last analytical monitoring of a deep zone JXDD well appears to have been 2013, with only water elevations collected since that time.

5. The Department has previously agreed that active site remediation concluded November 2016. However, as that determination was a rather "soft" approximation, it is believed that the Mann-Kendall Trend Analysis (Attachment D) should begin with June 2017 as opposed to the elevated and possibly skewing values of December 2016.

6. The Department agrees with recommendation for continued semiannual sampling (quarterly for MW-3R and JX-5R) as previously established.

The next semiannual monitoring report, including a response to any issues identified as needing a response above, should be provided by **February 29, 2019**. Please remember to notify the Department in advance of any field activity.

Should you have any questions or concerns, please contact me by phone at (904) 256-1605, or by email at john.davis@FloridaDEP.gov.

Sincerely,

John J. Davis, P.G.
Permitting & Waste Cleanup Programs

jjd/
cdp

cc: Mr. Thomas Lawrence, P.G., AEM, tom-lawrence@aem-net.com
Mr. John Davis, P.G., DEP-NED

September 14, 2017 FDEPPN0005

Mr. Jonathan Taylor
City of Jacksonville
Environmental Quality Division
214 North Hogan Street, 5th Floor
Jacksonville, FL 32202

RE: QUARTERLY NATURAL ATTENUATION MONITORING REPORT
DELIVERABLE 5 TASK 7
PHILLIPS 66 – LIBERTY FOOD MART
3015 NORTH LIBERTY STREET
JACKSONVILLE, DUVAL COUNTY, FLORIDA (NORTH REGION)
FACILITY IDENTIFICATION NUMBER: 16-8521824

Dear Mr. Taylor:

Golder Associates Inc. (Golder) is submitting this Quarterly Natural Attenuation Monitoring Report to the Florida Department of Environmental Protection (FDEP) for the former Philips 66 –Liberty Food Mart facility (the site). This report has been prepared in accordance with the scope of work detailed in change order 5 and in purchase order AE4A5B. Specifically, the report outlines the observations made and analytical results obtained during the groundwater sampling event in Task 7.

SUMMARY OF PREVIOUS ACTIVITIES

Based on the laboratory analytical results from August 2016, naphthalene was reported above Natural Attenuation Default Source Concentrations (NADCs) and 1-methylnaphthalene and 2-methylnaphthalene were reported below the NADCs, but above the Groundwater Cleanup Target Level (GCTL) in GMW-01 and GMW-04. To further delineate the contamination, FDEP requested four new monitoring wells be installed and sampled and additional soil samples taken during the installation of the deep monitoring well. Based on these results additional quarterly groundwater sampling events were requested by the FDEP to monitor the stability of the plume. A site location map and site layout are included as Figures 1 and 2.

CURRENT GROUNDWATER SAMPLING RESULTS

On August 21, 2017, Golder mobilized to the site to collect groundwater samples from monitoring wells GMW-1, GMW-4, and GMW-6 and collect additional water levels from monitoring wells GMW-7 and GMW-8. Prior to collecting water levels and groundwater samples, the monitoring wells were opened and groundwater levels were allowed to equilibrate to atmospheric pressure. The depth to groundwater in each well was measured relative to the top of the well casing using an electronic water level indicator. The depth to water measurements ranged from 3.18 to 3.73 feet below ground surface on August 21, 2017. A summary of the groundwater elevations are presented in Table 1. A summary of the groundwater elevations taken on August 21, 2017 is presented on Figure 3. A potentiometric surface map was produced, but the combination of porous and non-porous (concrete) surfaces in the small sample area produced a lower confidence in flow direction. However, the groundwater exceedances fall within this area.

Groundwater samples were collected in accordance with FDEP's Standard Operating Procedures for groundwater sampling. Groundwater samples were analyzed for PAHs by EPA Method 8270C.

Naphthalene was reported above the GCTL of 14 microgram per liter (µg/L) at GMW-4 (54.2 µg/L) and GMW-6 (15.6 µg/L). Concentrations of 1-methylnaphthalene and 2-methylnaphthalene were also detected above the GCTL in the sample from GMW-4 (17.0 µg/L and 38.0 µg/L, respectively). All other constituents

of concern were reported below the GCTLs. A summary of the groundwater analytical results is presented in Table 2 and is presented on Figure 4. Field documentation is presented in Attachment A. The laboratory analytical report is presented in Attachment B.

CONCLUSIONS AND RECOMMENDATIONS

Golder has completed the quarterly sampling activities, as specified in Task 7 of purchase order AE4A5B. Naphthalene was reported above the GCTL of 14 microgram per liter (µg/L) at GMW-4 (54.2 µg/L) and GMW-6 (15.6 µg/L). Concentrations of 1-methylnaphthalene and 2-methylnaphthalene were also detected above the GCTL in the sample from GMW-4 (17.0 µg/L and 38.0 µg/L, respectively). All constituents of concern were reported below the GCTLs at GMW-1 which reported a groundwater elevation of 94.84 feet, the highest since March 2016. Results of the groundwater sampling events from March 2016 to August 2017 indicated that constituent concentrations appear to be lower at higher groundwater elevation at GMW-1.

Golder recommends performing one year of quarterly groundwater sampling beginning in November 2017 to confirm the correlation between constituent concentrations and groundwater elevation at GMW-1. It is recommended that groundwater from GMW-1, GMW-6, and GMW-7 be collected and analyzed for PAHs.

If you should have any questions concerning the site or this report, please contact the undersigned at (904) 363-3430.

Sincerely,

GOLDER ASSOCIATES INC.

Robert M. Wojcik, PG
Senior Consultant and Associate

KRIS CROCKETT LICENSE NO. 2823 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

Kris D. Crockett, PG
Project Geologist
Florida Professional Geologist No. 2823

9/15/17
Date

Attachments

Table 1	Groundwater Elevation Summary
Table 2	Groundwater Monitoring Well Analytical Summary – PAHs and TRPHs
Figure 1	Site Location Map
Figure 2	Site Boring And Well Location Map
Figure 3	Potentiometric Surface map August 21, 2017
Figure 4	Groundwater Analytical Results (Petroleum Constituents)
Attachment A	Field Documentation
Attachment B	Laboratory Analytical Report

KDC/RMW/as

FN: C:\Projects\DEP-PRP\N Region\Phillips 66 Liberty Food Mart\PO-AE4A5B (new)\Reports\Final\Quarterly NAM\August 2017\Phillips 66 Quarterly NAM_Final.docx

Golder Associates

TABLES

TABLE 1: GROUNDWATER ELEVATION SUMMARY

Facility ID#: 16-8521824 Facility Name: Philips 66- Liberty Food Mart

Well Designation	GMW-1			GMW-2			GMW-3			GMW-4		
Diameter		2	in.		2	in.		2	in.		2	in.
Well Depth		12	feet		12	feet		12	feet		12	feet
Screen Interval		2-12	feet		2-12	feet		2-12	feet		2-12	feet
TOC Elevation		98.57	feet		97.71	feet		NS	feet		98.27	feet
DATE	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP
05/20/15	92.93	5.64	0.00	92.94	4.77	0.00	--	5.66	0.00	--	NA	0.00
03/18/16	93.57	5.00	--	93.56	4.15	--		NA	--	93.50	4.77	--
08/22/16	92.30	6.27	--	92.25	5.46			NA	--	92.28	5.99	--
02/07/17	93.11	5.46	--		NA	--		NA	--	92.97	5.30	--
04/24/17	92.66	5.91	--		NA	--		NA	--	92.54	5.73	--
08/21/17	94.84	3.73	--		NA	--		NA	--	94.64	3.63	--
Well Designation	**GMW-5D**			**GMW-6**			**GMW-7**			**GMW-8**		
Diameter		2	in.		2	in.		2	in.		2	in.
Well Depth		30.52	feet		12.34	feet		12.46	feet		12.39	feet
Screen Interval		25.52-30.52	feet		2.34-12.34	feet		2.46-12.46	feet		2.39-12.39	feet
TOC Elevation		99.19	feet		98.04	feet		98.49	feet		97.95	feet
DATE	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP
12/29/16	93.26	5.93	--	93.23	4.81	--	93.35	5.14	--	93.20	4.75	--
02/07/17	93.06	6.13	--	93.07	4.97	--	93.20	5.29	--	93.05	4.90	--
04/24/17		NA	--	92.66	5.38	--	92.77	5.72	--	92.61	5.34	--
08/21/17		NA	--	94.71	3.33	--	94.87	3.62	--	94.77	3.18	--

Notes:
in - inches
NS - Not Surveyed
TOC Elevation - Top of Casing Elevation based on an arbitrary measurement
DTW - Depth to Water
ELEV - Groundwater Elevation
FP - Free product thickness measured in feet.

TABLE 2: GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY - PAHs and TRPHs

Facility ID#: 16-8521824 **Facility Name: Philips 66- Liberty Food Mart**

See notes at end of table.

Sample Location	Date	TRPHs (µg/L)	Naph-thalene (µg/L)	1-Methyl-naph-thalene (µg/L)	2-Methyl-naph-thalene (µg/L)	Acen-aph-thene (µg/L)	Anthra-cene (µg/L)	Fluoran-thene (µg/L)	Fluorene (µg/L)	Phenan-threne (µg/L)
CW-3	07/09/91	NA	**29**	3	3	NA	NA	NA	NA	NA
GMW-1	05/20/15	2,340	0.530 U	0.730 U	0.630 U	4.20 U	1.60 U	1.40 U	0.840 U	1.40 U
	03/18/16	543	**50.3**	7.30	7.86	0.0612 I	0.0380 U	0.0390 U	0.0725 I	0.0350 U
	08/22/16	NS	**199.0**	**36.2**	**41.5**	0.209	0.0388 U	0.0368 U	0.241	0.106
	02/07/17	NS	**91.8**	13.0	14.7	0.0776 I	0.0388 U	0.0823 I	0.0823 I	0.0358 U
	04/24/17	NS	**138**	**22.2**	**29.4**	0.143	0.0388 U	0.0398 U	0.177	0.0703 I
	08/21/17	NS	0.292	0.0862 I	0.0463 I	0.0423 U	0.0392 U	0.0403 U	0.0485 U	0.0361 U
GMW-2	05/20/15	122 U	0.0398 U	0.0449 U	0.0449 U	0.0419 U	0.0388 U	0.0398 U	0.0480 U	0.0358 U
GMW-3	05/20/15	140	0.0394 U	0.0445 U	0.0445 U	0.0415 U	0.0384 U	0.0394 U	0.0475 U	0.0354 U
GMW-4	03/18/16	293	**17.8**	4.86	7.13	0.0510 I	0.0380 U	0.0390 U	0.0581 I	0.0680 I
	08/22/16	NS	**150.0**	**59.9**	**99.4**	0.328	0.0388 U	0.0368 U	0.304	0.207
	02/07/17	NS	**81.2**	**41.5**	**56.9**	0.261	0.0397 I	0.0368 U	0.257	0.226
	04/24/17	NS	**79.1**	**33.7**	**53.1**	0.234	0.0523 I	0.0398 U	0.261	0.263
	08/21/17	NS	**54.2**	**17.0**	**38.0**	0.135	0.0384 U	0.0394 U	0.145	0.127
GMW-5D	12/29/16	NS	0.0390 U	0.0440 U	0.0440 U	0.0410 U	0.0380 U	0.0390 U	0.0470 U	0.0350 U
GMW-6	12/29/16	NS	**18.2**	10.6	10.6	0.185	0.0389 I	0.0390 U	0.162	0.138
	04/24/17	NS	0.285	0.727	0.0571 I	0.0952 I	0.0423 U	0.0434 U	0.0940 I	0.0918 I
	08/21/17	NS	**15.6**	10.2	11.4	0.166	0.0388 U	0.0547 I	0.161	0.130
GMW-7	12/29/16	NS	0.0398 I	0.0440 U	0.0440 U	0.0410 U	0.0380 U	0.0390 U	0.0470 U	0.0350 U
GMW-8	12/29/16	NS	0.0390 U	0.0440 U	0.0440 U	0.0410 U	0.0380 U	0.0390 U	0.0470 U	0.0400 U
GCTLs		5,000	14	28	28	20	2,100	280	280	210
NADCs		50,000	140	280	280	200	21,000	2,800	2,800	2,100

Notes:
NA - Not Available
NS - Not Sampled
µg/L - micrograms per liter
GCTLs - Groundwater Cleanup Target Levels specified in Table I of Chapter 62-777, FAC
Bolded results exceed the GCTLs
NADCs - Natural Attenuation Default Source Concentrations specified in Table V of Chapter 62-777, FAC
Shaded results exceed the NADCs
** As provided in Chapter 62-550, FAC
[a] - See the October 12, 2004 "Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits" to determine how to evaluate data when the CTL is lower than the PQL.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U - Compound analyzed for, but not detected above the laboratory method detection limit.
Historical data from CAR 1991, RAP 1992, and SSAR 2005 tables.
If an analyte is not detected, report the method detection limit [i.e., 0.01 U or ND(0.01); BDL or <0.01 are not acceptable].
Freshwater Surface Water (FSW), Marine Surface Water (MSW) and Groundwater of Low Yield/Poor Quality (LY/PQ) CTLs should be added to the base of the table as applicable.

FIGURES

REFERENCE(S)

1. USGS TOPOGRAPHIC MAP, 7.5 MIN. QUADRANGLE MAP SERIES: JACKSONVILLE QUADRANGLE, DUVAL COUNTY, FLORIDA.

0 1200 2400
SCALE FEET

CLIENT
FL. DEPT. OF ENVIRONMENTAL PROTECTION

CONSULTANT
Golder Associates

YYYY-MM-DD	2017-09-15
DESIGNED	SN
PREPARED	BCL
REVIEWED	KDC
APPROVED	BMW

PROJECT
PHILLIPS 66 - LIBERTY FOOD MART/FACILITY #16-8521824
3015 N LIBERTY ST., JACKSONVILLE, FLORIDA 32206

TITLE
SITE LOCATION MAP

PROJECT NO.	Control No.	REV.	FIGURE
FDEP-PN0005	FDEP-PN0005-H001		1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

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EAST 21st STREET

GATE STATION
(Active with USTs)

NORTH LIBERTY STREET

SHELL STATION
(Active with USTs)

RESIDENTIAL

EAST 20th STREET

MW-2

MW-1

ABOVEGROUND KEROSENE TANK

SB-1

SB-2

GMW-3

GSB-16

GSB-15

KEROSENE DISPENSER

DESTROYED FUEL DISPENSERS

CANOPY

BUILDING

GMW-2

GSB-13

GSB-12

TW-1

GSB-11

GSB-14

DESTROYED FUEL DISPENSERS

GSB-7

GSB-9

GSB-8

GSB-10

CW-4

GSB-5

CW-1

GMW-8

GMW-5D

GMW-1

GSB-1

GSB-4

GSB-6

GMW-4

GSB-2

GSB-3

GMW-6

CW-3

CW-2

GMW-7

TANK ENCLOSURE

0 12.5 25
SCALE FEET

LEGEND

GSB-1 SOIL BORING LOCATION

GMW-1 MONITORING WELL LOCATION

ABANDONED WELLS

REFERENCE(S)

1. PROPERTY BOUNDARY TAKEN FROM FLORIDA DEPARTMENT OF REVENUE.

CLIENT
FL. DEPT. OF ENVIRONMENTAL PROTECTION

CONSULTANT
Golder Associates

YYYY-MM-DD	2017-09-15
DESIGNED	SN
PREPARED	BCL
REVIEWED	KDC
APPROVED	BMW

PROJECT

PHILLIPS 66 - LIBERTY FOOD MART/FACILITY #16-8521824
3015 N LIBERTY ST., JACKSONVILLE, FLORIDA 32206

TITLE
SITE LAYOUT

PROJECT NO.	Control No.	REV.	FIGURE
FDEP-PN0005	FDEP-PN0005-H002		2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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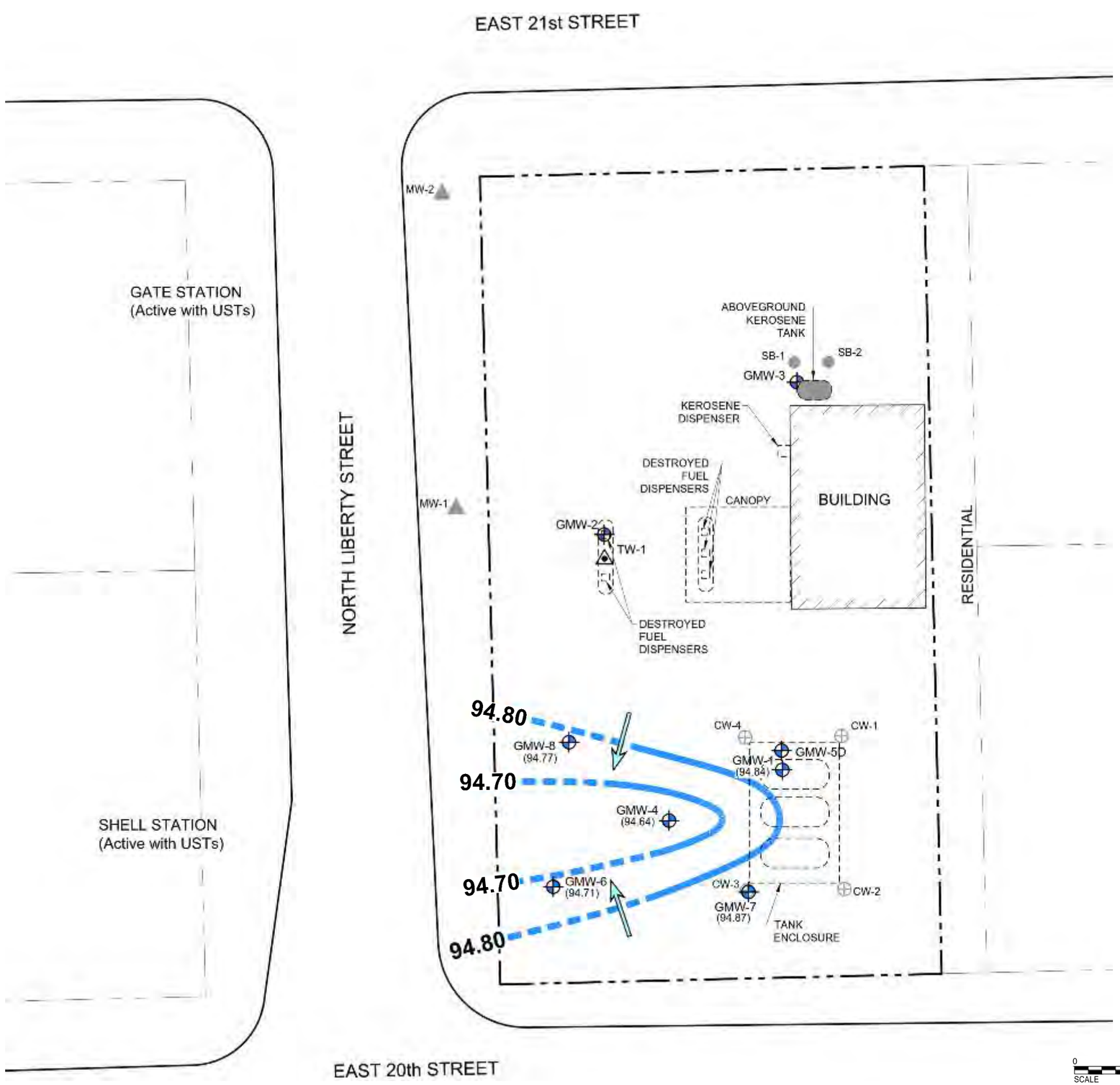

LEGEND

- GMW-1 — MONITORING WELL LOCATION
- ABANDONED WELLS
- (94.84) — GROUNDWATER ELEVATION
- GROUNDWATER CONTOUR INTERVAL (DASHED WHERE INFERRED)
- ESTIMATED GROUNDWATER FLOW DIRECTION

REFERENCE(S)

1. PROPERTY BOUNDARY TAKEN FROM FLORIDA DEPARTMENT OF REVENUE.
2. WATER LEVEL MEASUREMENTS TAKEN ON 02/07/2017.

0 12.5 25
SCALE FEET

CLIENT
FL. DEPT. OF ENVIRONMENTAL PROTECTION

CONSULTANT
Golder Associates

YYYY-MM-DD	2017-09-15
DESIGNED	SN
PREPARED	BCL
REVIEWED	KDC
APPROVED	BMW

PROJECT
PHILLIPS 66 - LIBERTY FOOD MART/FACILITY #16-8521824
3015 N LIBERTY ST., JACKSONVILLE, FLORIDA 32206

TITLE
GROUNDWATER POTENTIOMETRIC MAP

PROJECT NO.	Control No.	REV.	FIGURE
FDEP-PN0005	FDEP-PN0005-H003		3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
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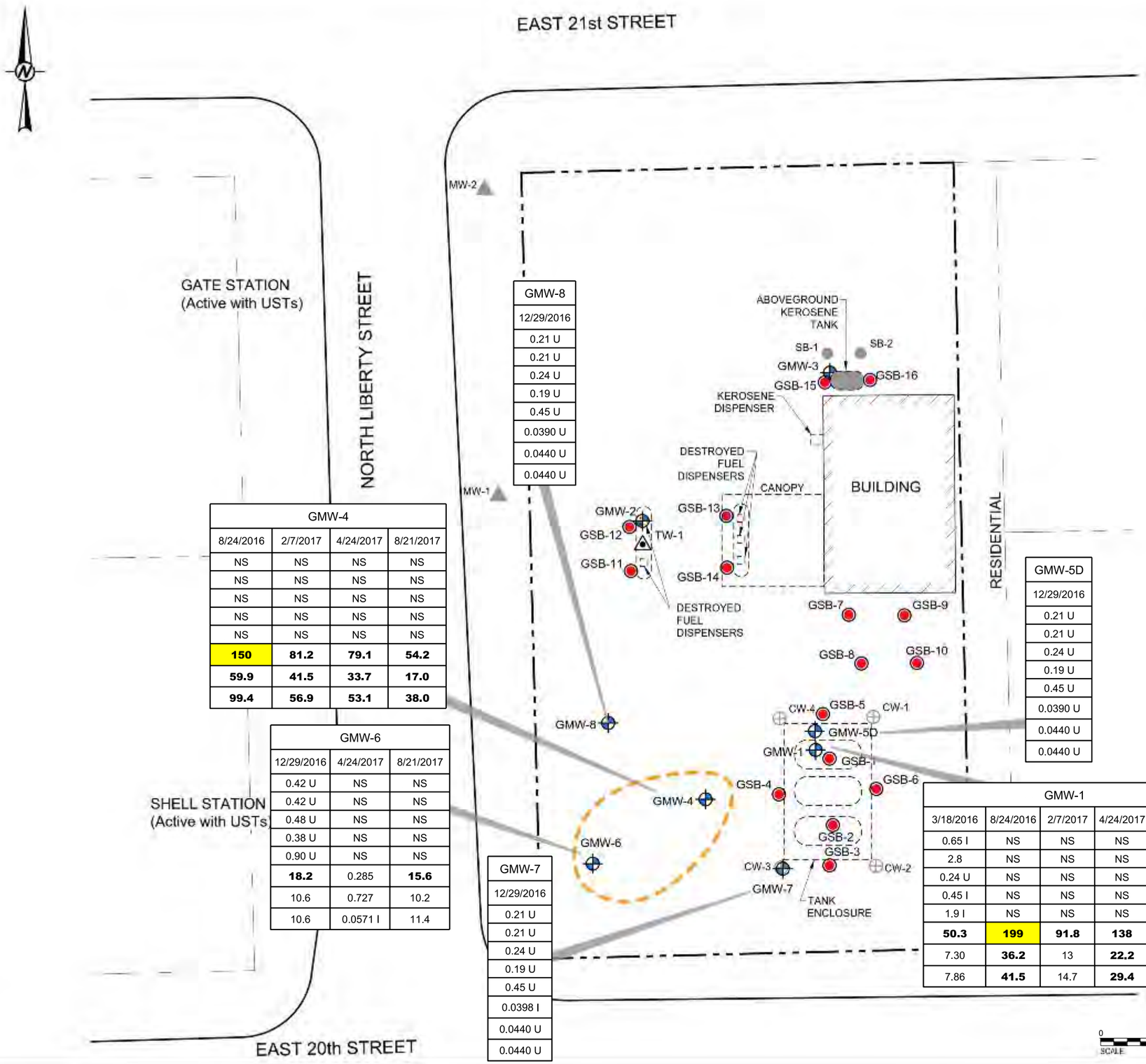

GMW-8
12/29/2016
0.21 U
0.21 U
0.24 U
0.19 U
0.45 U
0.0390 U
0.0440 U
0.0440 U

GMW-4			
8/24/2016	2/7/2017	4/24/2017	8/21/2017
NS	NS	NS	NS
NS	NS	NS	NS
NS	NS	NS	NS
NS	NS	NS	NS
NS	NS	NS	NS
150	**81.2**	**79.1**	**54.2**
59.9	**41.5**	**33.7**	**17.0**
99.4	**56.9**	**53.1**	**38.0**

GMW-6		
12/29/2016	4/24/2017	8/21/2017
0.42 U	NS	NS
0.42 U	NS	NS
0.48 U	NS	NS
0.38 U	NS	NS
0.90 U	NS	NS
18.2	0.285	**15.6**
10.6	0.727	10.2
10.6	0.0571 I	11.4

GMW-7
12/29/2016
0.21 U
0.21 U
0.24 U
0.19 U
0.45 U
0.0398 I
0.0440 U
0.0440 U

GMW-5D
12/29/2016
0.21 U
0.21 U
0.24 U
0.19 U
0.45 U
0.0390 U
0.0440 U
0.0440 U

GMW-1				
3/18/2016	8/24/2016	2/7/2017	4/24/2017	8/21/2017
0.65 I	NS	NS	NS	NS
2.8	NS	NS	NS	NS
0.24 U	NS	NS	NS	NS
0.45 I	NS	NS	NS	NS
1.9 I	NS	NS	NS	NS
50.3	**199**	**91.8**	**138**	0.292
7.30	**36.2**	13	**22.2**	0.0862 I
7.86	**41.5**	14.7	**29.4**	0.0463 I

LEGEND

- GSB-1 — SOIL BORING LOCATION
- GMW-1 — MONITORING WELL LOCATION
- ABANDONED WELLS
- NA — NOT ANALYZED
- GROUNDWATER CONCENTRATION OF PETROLEUM EXCEEDING THE GCTLs.

GMW-1		
12/29/2016		Date Sampled
1	100	Benzene
30	300	Ethylbenzene
20	200	Methyl tert- Buryl Ether
40	400	Toluene
NA	NA	Xylenes, Total
14	140	Naphthalene
28	280	1-Methylnaphthalene
28	280	2-Methylnaphthalene
GCTL	NADC	

NOTE(S)

1. ALL UNITS IN MICROGRAMS PER LITER (ug/L).
2. NA - NOT ANALYZED.
3. I - REPORTED VALUE IS BETWEEN THE LABORATORY METHOD DETECTION LIMIT AND LABORATORY PRACTICAL QUANTITATION LIMIT.
4. U - INDICATES THAT THE COMPOUND WAS ANALYZED FOR BUT NOT DETECTED.
5. BOLD INDICATES CONCENTRATIONS EXCEEDING THE GCTL.
6. BOLD FONT AND YELLOW SHADED CELL INDICATES AN EXCEEDANCE OF THE APPLICABLE NADC.
7. GCTL - GROUNDWATER CLEANUP TARGET LEVEL
8. NADC - NATURAL ATTENUATION DEFAULT CONCENTRATION

REFERENCE(S)

1. PROPERTY BOUNDARY TAKEN FROM FLORIDA DEPARTMENT OF REVENUE.

CLIENT
FL. DEPT. OF ENVIRONMENTAL PROTECTION

CONSULTANT
Golder Associates

YYYY/MM/DD	2017/09/15
DESIGNED	SN
PREPARED	BCL
REVIEWED	KDC
APPROVED	BMW

PROJECT
PHILLIPS 66 - LIBERTY FOOD MART/FACILITY #16-8521824
3015 N LIBERTY ST., JACKSONVILLE, FLORIDA 32206

TITLE
GROUNDWATER ANALYTICAL RESULTS
PETROLEUM CONSTITUENTS

PROJECT NO.	Control No.	REV.	FIGURE
FDEP-PN0005	FDEP-PN0005-H004		4

City of Jacksonville, Florida

Lenny Curry, Mayor

Environmental Quality Division
Ed Ball Building
214 N. Hogan Street, 5th Floor
Jacksonville, Florida 32202

ONE CITY. ONE JACKSONVILLE.

September 28, 2017

Mr. Kris Crockett P.G. sent via e-mail to: Kris_Crockett@golder.com
Golder Associates, Inc.
9428 Baymeadows Road, Suite 400
Jacksonville, FL 32256

RE: DELIVERABLE REVIEW
Task 7 Deliverable: Quarterly Natural Attenuation Monitoring Report
Phillips 66 – Liberty Food Mart
3015 N. Liberty St. Jacksonville, Duval County
FDEP Facility ID#: 168521824
Purchase Order (PO) #: AE4A5B Period of Service End Date: 01/30/2018
Discharge Date: 07/29/1991 (PCPP); Score: 30

Dear Mr. Crockett:

The Environmental Quality Division (EQD) has reviewed the Task 7 Deliverable: Quarterly NAM Report dated September 14, 2017 (received September 15, 2017), prepared and submitted for the above-referenced facility. The deliverable is complete and demonstrates that the work outlined in Purchase Order (PO) # AE4A5B was satisfactorily performed. The approved cost for completion of Task 7 and this PO is $2,355.00 as detailed in the attached rate sheet. This submittal completes the current PO.

A new PO will be prepared to address the impacted groundwater upon completion of a Petroleum Cleanup Participation Program (PCPP Agreement). If you have any questions regarding this letter, please contact me at (904) 255-7140, pparente@coj.net, or at the letterhead address.

Sincerely,

Paul K. Parente
Environmental Scientist Supervisor
Petroleum Cleanup Branch

Attachment: Invoice Rate Sheet

ec: Oculus
File 168521824
Tony Gordon; 119 E. 6th St., Jacksonville, FL 32206

water & air
RESEARCH, INC.

Environmental Engineers, Scientists, & Planners

November 26, 2014

Mr. J. Lance Davis, Site Manager
Petroleum Cleanup Team #5
Mail Station 4575
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Low Score Site Initiative Report
Gate #1107
3020 N Liberty Street, Jacksonville, Florida
Florida Department of Environmental Protection (FDEP) Facility #16/8506960
Work Order #2014-95-W7927A
Score: 26

Dear Mr. Davis:

1.0 INTRODUCTION

The following report summarizes soil and groundwater sampling as authorized in FDEP funded Low Score Site Initiative (LSSI) Work Order #2014-95-W7927A. Gate #1107 (Site) is located at 3020 N Liberty Street, Jacksonville, Duval County, Florida, on the southwest corner of the intersection of North Liberty Street and East 21st Street. A site layout showing associated sampling locations is graphically shown in Figure 1.

2.0 SITE BACKGROUND

The Site is an active gas station and convenience store. One 4,000 gallon kerosene underground storage tank (UST) and two 4,000 gallon vehicular diesel USTs were installed in January 1969; and two 10,000 gallon unleaded gasoline USTs and one 10,000 gallon leaded gasoline UST were installed in September 1974.

In March 1987, a Discharge Reporting Form (DRF) was submitted after strong petroleum odors were observed during installation of compliance wells. The March 1987 DRF was determined eligible for Early Detection Incentive (EDI) funding in February 1989. Another incident occurred in January 1989 when a truck ruptured an elbow in the product line. For this February 1989 incident a fuel system tightness test was conducted and submitted to FDEP after repairs to the pump were finished, which was accepted by FDEP. In May 1992 a second DRF was submitted in response to contamination discovered from a loose connection in the liquid detector. This May 1992 discharge was determined in December 2005 to be eligible for funding in the Petroleum Liability and Restoration Insurance Program (PLIRP). The Site has a priority score of 26.

6821 SW Archer Road
Gainesville, FL 32608
Voice: 352/372-1500
Toll Free: 1/800/242-4927
Fax: 352/378-1500
businessdev@waterandair.com
www.waterandair.com

Petroleum contamination exceeding Groundwater Cleanup Target Levels (GCTLs) for benzene, methyl tert-butyl ether (MTBE), naphthalene, total recoverable petroleum hydrocarbons (TRPH), and lead were reported in the 1990 Contamination Assessment Report (CAR). Soil borings installed at the Site were used to delineate the soil plume with OVA data.

All USTs were removed on December 15, 2009. Dewatering and source removal activities occurred from December 27-31, 2009. During this time under the Limited Source Removal Initiative (LSRI), six hundred seventy-four (674) tons of petroleum-impacted soil were removed and thermally treated. Over-dig sidewall confirmatory soil samples showed petroleum contamination exceeding the Soil Cleanup Target Levels (SCTLs) for benzene, toluene, ethylbenzene, total xylenes, (BTEX), MTBE, and TRPH remain. Details of LSRI activities are in the February 2010 LSRI Source Removal Report.

In January 2010, a 12,000 gallon unleaded gasoline UST and a compartmentalized 22,000 gallon UST containing unleaded gasoline, diesel fuel and kerosene were installed at the Site in the former UST area.

3.0 LSSI ACTIVITIES

3.1 Soil Screening

On August 18-19, 2014, Water & Air mobilized two personnel to the Site to install soil borings. Twenty-three soil borings, identified as SB1 through SB23, were installed by Groundwater Protection (GWP) using direct-push-technology (DPT) and hand auger. Water & Air collected soil samples in accordance with FDEP Standard Operating Procedures (SOPs) from the soil borings at two-foot intervals, from land surface to 9 ft-bls for Organic Vapor Meter (OVM) field screening.

The soil screening samples were placed in 16-ounce jars, filled to half capacity, and covered with aluminum foil for subsequent analysis to detect the presence of petroleum vapors. The soil samples were analyzed in the field with an OVM equipped with a photo ionization detector (PID). Prior to screening, the soil samples were allowed to equilibrate for at least five minutes. Soil headspace testing procedures included calibrating the PID using 100 parts per million (ppm) isobutylene standard calibration gas. The OVM responses were recorded on the soil boring logs. A copy of the field notes, equipment calibration log, and boring logs are provided in Appendix A.

Five soil samples were collected from SB2, SB4, SB6, SB16, and SB21 in new containers obtained from Alpha Analytics, Inc. (Alpha) in Orlando, Florida. Following collection, the samples were packed on wet ice and transported via Greyhound Bus Lines to Alpha for analysis by EPA Method 8260B for BTEX and MTBE, by Method 8310 for PAHs, by the FL-PRO Method for TRPHs, and Method 6010 for arsenic, cadmium, chromium, and lead. An additional sample was collected on October 14, 2014 from a drum for analysis by Method 6010 for lead and Method 1311 for TCLP lead.

3.1 Monitoring Well Installations

On August 19, 2014, Water & Air and GWP installed six monitoring wells (MW-1A, MW-2A, MW-3A, MW-4A, MW-5A, and MW-7A) by hollow stem auger to total depths of 12 ft-bls. Each monitoring well was constructed using 10 feet of 2-inch diameter, Schedule 40, 0.010-inch slot PVC screen, and 2 feet of 2-inch diameter, Schedule 40, PVC riser. The annular space

between the well and formation was filled with 20/30 silica sand, followed by fine sand seal using 30/65, and grout using Portland cement grout to the land surface. The monitoring wells were completed with flush-mount 8-inch manholes, concrete pads with expandable, water-tight, locking caps for protection. After installation, the monitoring wells were developed using a pump until the groundwater appeared clear. Copies of the Well Construction and Development Logs are provided in Appendix B.

3.2 Top of Casing and Groundwater Depth Measurements

Prior to sample collection, monitoring wells were opened, allowing groundwater levels to equilibrate. After equilibration, depth-to-water (DTW) in new monitoring wells and existing monitoring well MW-6 were measured using an electronic water level indicator. DTW measurements were recorded to the nearest one-hundredth of a foot (0.01 ft).

The newly installed monitoring wells top of casing elevations (TOCE) were surveyed to tie into the existing TOC survey network .The DTW measurements and top of casing elevations (TOCEs), based on an arbitrary elevation of 100 feet, were used to determine elevations. The DTW measurements, groundwater elevations, and the computer program Surfer were then used to estimate groundwater flow direction.

3.3 Groundwater Sampling

On September 4, 2014, groundwater samples were collected from the new monitoring wells and existing monitoring well MW-6. Groundwater samples were collected using a reversible, variable-speed peristaltic pump with dedicated disposable tubing. Purging and sampling was conducted as prescribed by the "slow-flow" sampling protocols outlined in FDEP SOPs. The samples were collected in new containers obtained from Alpha. Following collection, the groundwater samples were packed on wet ice and transported via Greyhound Bus Lines to Alpha for analysis by FDEP Chapter 62-780 Table C. Copies of the Water & Air's Field Notes, FDEP Groundwater Sampling Logs, and Equipment Calibration Forms are provided in Appendix C.

4.0 RESULTS AND FINDINGS

4.1 Soil Sampling

Results of the August 2014 soil OVM field screening showed petroleum vapors were present in each of the soil borings with high OVM readings of 12,000 ppm from borings SB5 and SB20, both collected at 5 ft-bls. The Soil OVM data are summarized in Table 1.

Results of the August 2014 soil analytical sampling reported petroleum-related analytes above SCTLs in soil samples SB2-2', SB6-3', SB16-4', and SB21-4'. Petroleum-related analytes were not reported above SCTLs in soil sample SB4-3'. Lead was reported above the hazardous limit of 100 mg/kg in soil sample SB2-2'. Since SB2-2's hold time was exceeded another sample was collected from the drum and analyzed for TCLP lead. The leachate was reported under the hazardous limit. A copy of the Soil Analytical Laboratory Reports are provided as Appendix D. Historical and current soil analytical data are summarized in Table 2 and shown on Figure 2.

4.2 Groundwater Depth and Flow Direction

Results of August 2014 DTW measurements showed the DTW ranged from 4.51 ft-bls in monitoring well MW-4A to 5.74 ft-bls in monitoring well MW-2A. Groundwater elevations varied between 89.79 feet at well MW-1A and 91.16 feet at well MW-6. The resulting` groundwater flow

was generally toward the northwest. A summary of the groundwater DTW and elevation data are included in Table 3. The groundwater flow direction is shown on Figure 3.

4.3 Groundwater Sampling

The August 2014 groundwater sampling laboratory analytical results reported petroleum-related analytes above GCTLs in monitoring wells MW-1A, MW-2A, MW-3A, MW-5A, and MW-6. Petroleum related analytes were not reported above GCTLs in monitoring wells MW-4A and MW-7A. A copy of the groundwater analytical laboratory report is provided as Appendix E. Historical and current groundwater analytical data are summarized in Table 4 and 2014 analytical groundwater results are shown graphically in Figure 4.

4.3 Drum Pickup

On November 4, 2014, Permafix picked up and disposed of seven (7) 55-gallon drums from the site. The drum manifest is included as Appendix F.

5.0 CONCLUSIONS AND RECOMMENDATIONS

LSSI activities have been completed for Work Order #2014-95-W7927A. Petroleum-related analytes were reported above SCTLs, and GCTLs. The owner wants the site cleanup under FAC 62-770 protocols as the site does not qualify for a No Further Action (NFA). Additional site assessment activities to delineate the soil and groundwater impacts should be completed when funds are allocated via in priority score ranking.

Please contact me if you have any questions regarding this report.

Sincerely,
Water & Air Research, Inc.

Prepared by:

Tyler B Leslie
Scientist

Reviewed by:

Mike Shuler
Senior Scientist

Reviewed by:

Tammie L. Gardner, P.G.
Senior Hydrogeologist 11/26/14
Florida License #1609

Enclosures:

Figures
1 Site Layout
2 Soil Analytical Results
3 Groundwater Elevation and Flow Map , September 4, 2014
4 Groundwater Analytical Results, September 4, 2014

Tables
1 Historical Soil Screening Results
2 Soil Analytical Data
3 Groundwater Elevation Data
4 Groundwater Analytical Data

Appendices
A Field Notes, Boring Logs, and Equipment Calibration Forms
B Well Construction and Development Logs
C Groundwater Field Notes, Groundwater Sampling Logs, and Equipment Calibration Forms
D Soil Analytical Laboratory Report
E Groundwater Analytical Laboratory Report
F Drum Manifest

FIGURES

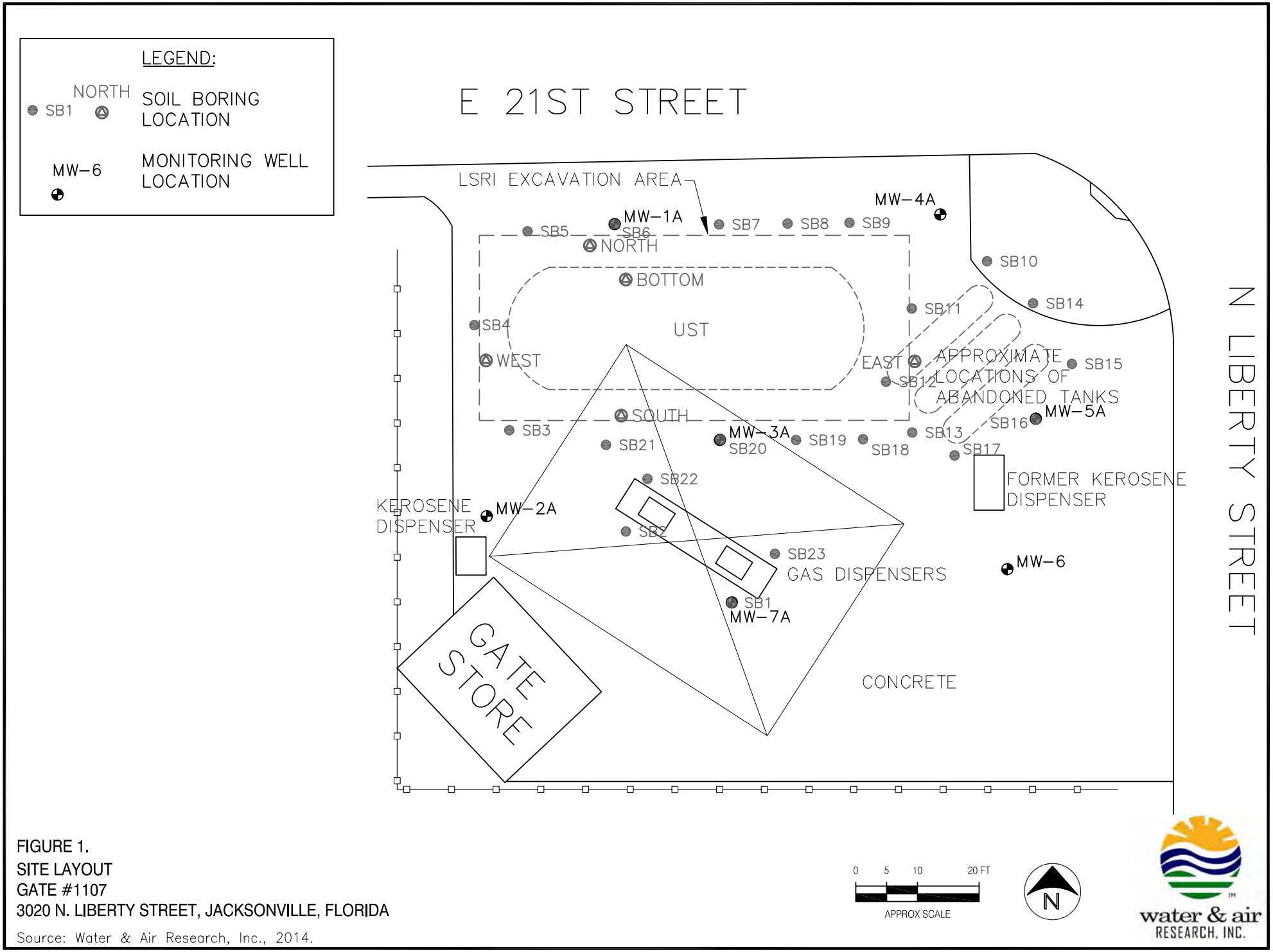

FIGURE 1.
SITE LAYOUT
GATE #1107
3020 N. LIBERTY STREET, JACKSONVILLE, FLORIDA

Source: Water & Air Research, Inc., 2014.

water & air RESEARCH, INC.

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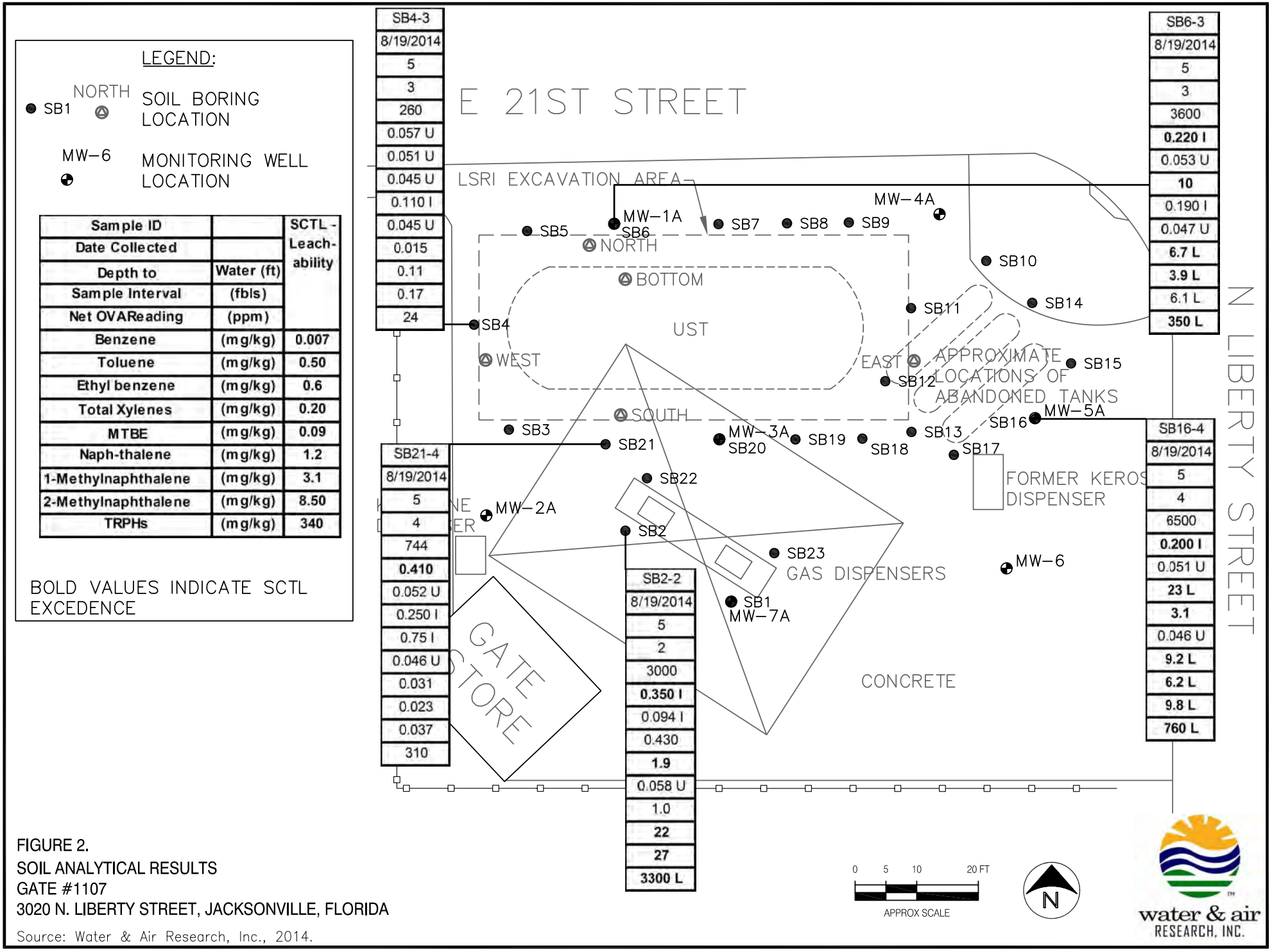

Sample ID		SCTL - Leach-ability
Date Collected		
Depth to	Water (ft)	
Sample Interval	(fbls)	
Net OVAReading	(ppm)	
Benzene	(mg/kg)	0.007
Toluene	(mg/kg)	0.50
Ethyl benzene	(mg/kg)	0.6
Total Xylenes	(mg/kg)	0.20
MTBE	(mg/kg)	0.09
Naph-thalene	(mg/kg)	1.2
1-Methylnaphthalene	(mg/kg)	3.1
2-Methylnaphthalene	(mg/kg)	8.50
TRPHs	(mg/kg)	340

SB4-3
8/19/2014
5
3
260
0.057 U
0.051 U
0.045 U
0.110 I
0.045 U
0.015
0.11
0.17
24

SB6-3
8/19/2014
5
3
3600
0.220 I
0.053 U
10
0.190 I
0.047 U
6.7 L
3.9 L
6.1 L
350 L

SB21-4
8/19/2014
5
4
744
0.410
0.052 U
0.250 I
0.75 I
0.046 U
0.031
0.023
0.037
310

SB2-2
8/19/2014
5
2
3000
0.350 I
0.094 I
0.430
1.9
0.058 U
1.0
22
27
3300 L

SB16-4
8/19/2014
5
4
6500
0.200 I
0.051 U
23 L
3.1
0.046 U
9.2 L
6.2 L
9.8 L
760 L

FIGURE 2.
SOIL ANALYTICAL RESULTS
GATE #1107
3020 N. LIBERTY STREET, JACKSONVILLE, FLORIDA

Source: Water & Air Research, Inc., 2014.

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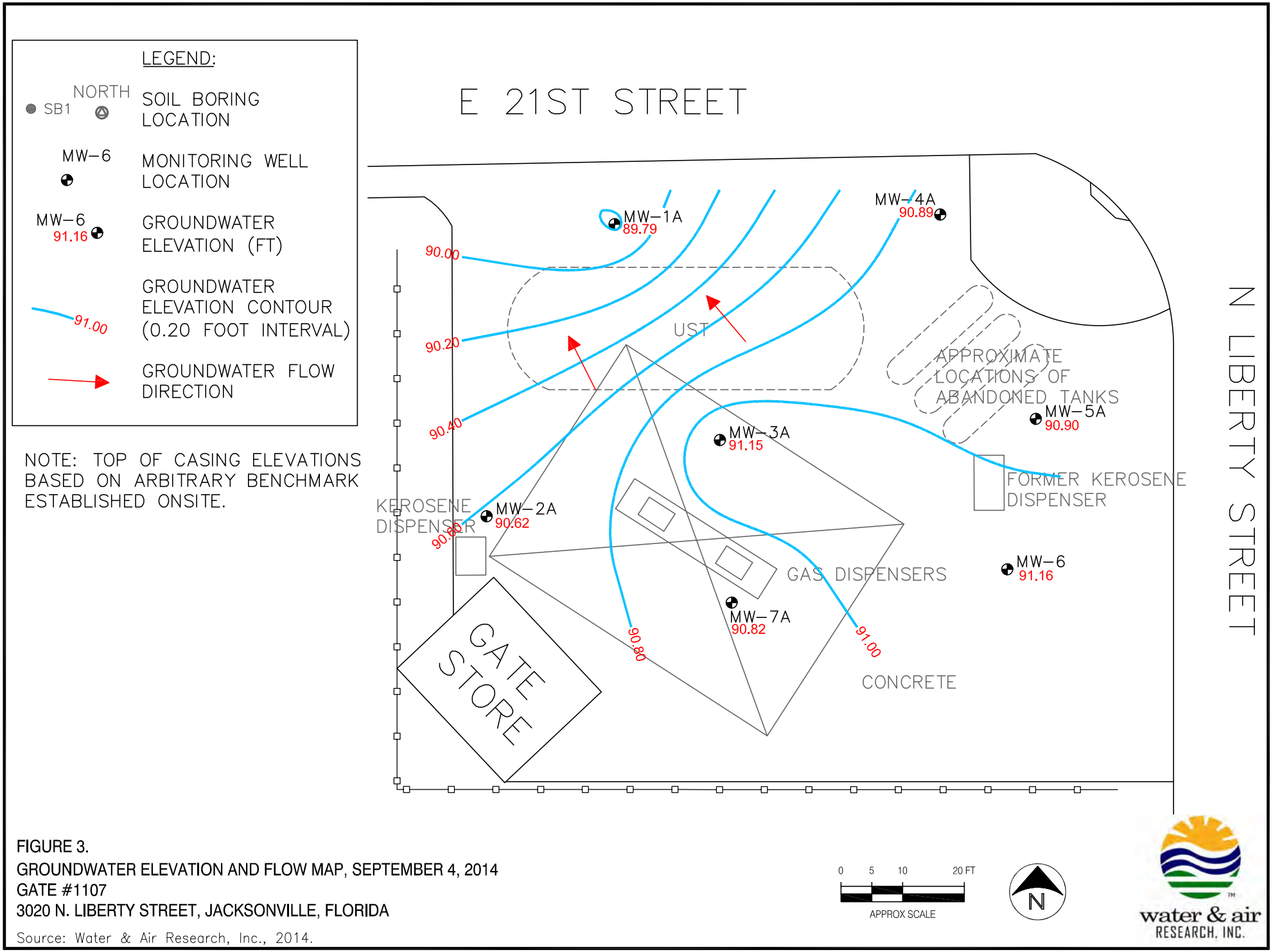

FIGURE 3.
GROUNDWATER ELEVATION AND FLOW MAP, SEPTEMBER 4, 2014
GATE #1107
3020 N. LIBERTY STREET, JACKSONVILLE, FLORIDA

Source: Water & Air Research, Inc., 2014.

water & air RESEARCH, INC.

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LEGEND:

NORTH

SB1 — SOIL BORING LOCATION

MW–6 — MONITORING WELL LOCATION

Sample Location	GCTLs (µg/L)
Benzene	1
Toluene	40
Ethylbenzene	30
Total Xylene	20
MTBE	20
TRPH	5,000
Naphthalene	14
1-Methylnaphthalene	28
2-Methylnaphthalene	28

BOLD VALUES INDICATE GCTL EXCEDENCE

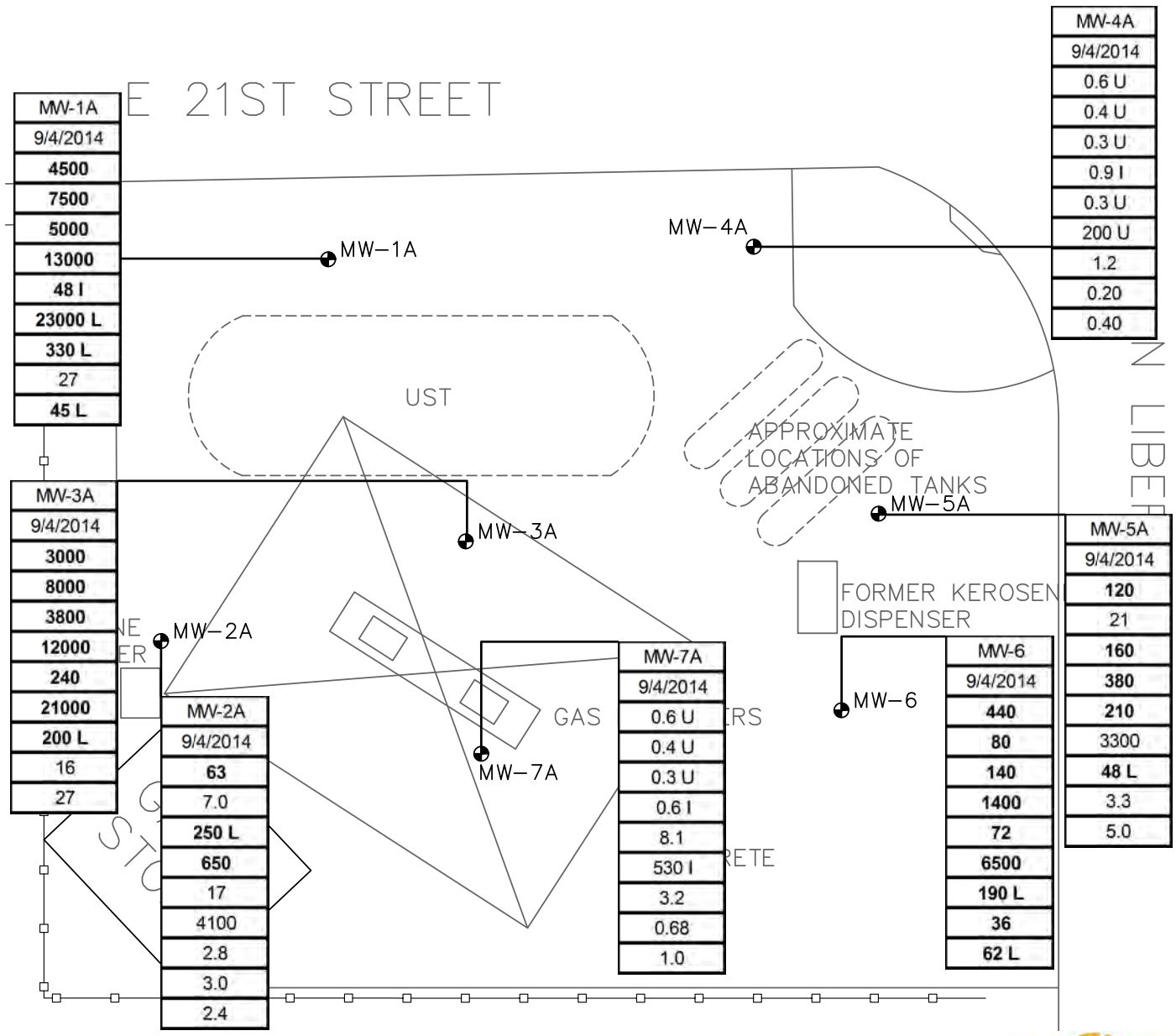

FIGURE 4.
GROUNDWATER ANALYTICAL RESULTS, SEPTEMBER 4, 2014
GATE #1107
3020 N. LIBERTY STREET, JACKSONVILLE, FLORIDA

Source: Water & Air Research, Inc., 2014.

water & air RESEARCH, INC.

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TABLES

TABLE 1: SOIL SCREENING SUMMARY

Facility Name: Gate #1107 **Facility ID#: 16/8506960**

	SAMPLE			OVA SCREENING RESULTS			
BORING NO.	DATE COLLECTED	DEPTH TO WATER	SAMPLE INTERVAL (FBLS)	TOTAL READING (ppm)	CARBON FILTERED (ppm)	NET READING (ppm)	COMMENTS
SB1	12/15/2009	NA	1	1,167	0.00	1,167	LSRI
SB1	12/15/2009	NA	2	994	0	994	LSRI
SB1	12/15/2009	NA	3	1,204	0	1,204	LSRI
SB1	12/15/2009	NA	4	85	0	85	LSRI
SB2	12/15/2009	NA	1	921	0	921	LSRI
SB2	12/15/2009	NA	2	734	0	734	LSRI
SB2	12/15/2009	NA	3	1,321	0	1,321	LSRI
SB2	12/15/2009	NA	4	1,151	0	1,151	LSRI
SB3	12/15/2009	NA	1	982	0	982	LSRI
SB3	12/15/2009	NA	2	54	0	54	LSRI
SB3	12/15/2009	NA	3	109	0	109	LSRI
SB3	12/15/2009	NA	4	1,198	0	1,198	LSRI
A1	12/15/2009	NA	4	125	0	125	LSRI
A1	12/15/2009	NA	8	1,415	0	1,415	LSRI
A1	12/28/2009	NA	10	831	0	831	LSRI
A1	12/28/2009	NA	12	1008	0	1008	LSRI
A2	12/15/2009	NA	4	967	0	967	LSRI
A2	12/15/2009	NA	8	723	0	723	LSRI
A2	12/28/2009	NA	10	954	0	954	LSRI
A2	12/28/2009	NA	12	855	0	855	LSRI
A2	12/28/2009	NA	14	195	0	195	LSRI
A3	12/15/2009	NA	4	931	0	931	LSRI
A3	12/15/2009	NA	8	842	0	842	LSRI
A3	12/28/2009	NA	10	109	0	109	LSRI
A3	12/28/2009	NA	12	877	0	877	LSRI
A3	12/28/2009	NA	14	243	0	243	LSRI
A4	12/15/2009	NA	4	829	0	829	LSRI
A4	12/15/2009	NA	8	799	0	799	LSRI
A4	12/28/2009	NA	10	875	0	875	LSRI
A4	12/28/2009	NA	12	701	0	701	LSRI
A4	12/28/2009	NA	14	280	0	280	LSRI
A5	12/28/2009	NA	10	880	0	880	LSRI
A5	12/28/2009	NA	12	880	0	880	LSRI
A5	12/28/2009	NA	14	193	0	193	LSRI
A6	12/28/2009	NA	10	446	0	446	LSRI
A6	12/28/2009	NA	12	659	0	659	LSRI
A6	12/28/2009	NA	14	61	0	61	LSRI
A7	12/28/2009	NA	10	657	0	657	LSRI
A7	12/28/2009	NA	12	91	0	91	LSRI
A7	12/29/2009	NA	14	28	0	28	LSRI
B1	12/15/2009	NA	4	1,104	0	1,104	LSRI
B1	12/28/2009	NA	10	1095	0	1095	LSRI
B1	12/28/2009	NA	12	987	0	987	LSRI
B2	12/15/2009	NA	4	972	0	972	LSRI
B2	12/28/2009	NA	8	1022	0	1022	LSRI
B2	12/28/2009	NA	10	1228	0	1228	LSRI
B2	12/28/2009	NA	12	911	0	911	LSRI
B2	12/28/2009	NA	14	99	0	99	LSRI
B2	12/28/2009	NA	14	87	0	87	LSRI
B3	12/15/2009	NA	4	531	0	531	LSRI

TABLE 1: SOIL SCREENING SUMMARY

Facility Name: Gate #1107 **Facility ID#: 16/8506960**

	SAMPLE			OVA SCREENING RESULTS			
BORING NO.	DATE COLLECTED	DEPTH TO WATER	SAMPLE INTERVAL (FBLS)	TOTAL READING (ppm)	CARBON FILTERED (ppm)	NET READING (ppm)	COMMENTS
B3	12/28/2009	NA	8	826	0	826	LSRI
B3	12/28/2009	NA	10	865	0	865	LSRI
B3	12/28/2009	NA	12	951	0	951	LSRI
B3	12/28/2009	NA	14	432	0	432	LSRI
B3	12/28/2009	NA	14	222	0	222	LSRI
B4	12/15/2009	NA	4	776	0	776	LSRI
B4	12/28/2009	NA	8	756	0	756	LSRI
B4	12/28/2009	NA	10	821	0	821	LSRI
B4	12/28/2009	NA	12	875	0	875	LSRI
B4	12/28/2009	NA	14	210	0	210	LSRI
B5	12/28/2009	NA	8	810	0	810	LSRI
B5	12/28/2009	NA	12	657	0	657	LSRI
B5	12/28/2009	NA	14	62	0	62	LSRI
B6	12/28/2009	NA	8	852	0	852	LSRI
B6	12/28/2009	NA	10	905	0	905	LSRI
B6	12/28/2009	NA	12	752	0	752	LSRI
B6	12/28/2009	NA	14	110	0	110	LSRI
B7	12/28/2009	NA	8	538	0	538	LSRI
B7	12/28/2009	NA	10	356	0	356	LSRI
B7	12/29/2009	NA	14	49	0	49	LSRI
C1	12/15/2009	NA	4	851	0	851	LSRI
C1	12/28/2009	NA	8	903	0	903	LSRI
C1	12/28/2009	NA	10	972	0	972	LSRI
C1	12/28/2009	NA	12	1113	0	1113	LSRI
C2	12/15/2009	NA	4	794	0	794	LSRI
C2	12/28/2009	NA	8	1316	0	1316	LSRI
C2	12/28/2009	NA	10	985	0	985	LSRI
C2	12/28/2009	NA	12	897	0	897	LSRI
C2	12/28/2009	NA	14	304	0	304	LSRI
C2	12/28/2009	NA	14	101	0	101	LSRI
C3	12/15/2009	NA	4	562	0	562	LSRI
C3	12/28/2009	NA	8	632	0	632	LSRI
C3	12/28/2009	NA	10	884	0	884	LSRI
C3	12/28/2009	NA	12	922	0	922	LSRI
C4	12/15/2009	NA	4	921	0	921	LSRI
C4	12/28/2009	NA	8	799	0	799	LSRI
C4	12/28/2009	NA	10	780	0	780	LSRI
C4	12/28/2009	NA	12	971	0	971	LSRI
C4	12/28/2009	NA	14	131	0	131	LSRI
C5	12/28/2009	NA	8	819	0	819	LSRI
C5	12/28/2009	NA	10	1277	0	1277	LSRI
C5	12/28/2009	NA	12	994	0	994	LSRI
C5	12/28/2009	NA	14	70	0	70	LSRI
C6	12/28/2009	NA	8	907	0	907	LSRI
C6	12/28/2009	NA	10	754	0	754	LSRI
C6	12/28/2009	NA	12	814	0	814	LSRI
C6	12/28/2009	NA	14	91	0	91	LSRI

TABLE 1: SOIL SCREENING SUMMARY

Facility Name: Gate #1107 **Facility ID#: 16/8506960**

	SAMPLE			OVA SCREENING RESULTS			
BORING NO.	DATE COLLECTED	DEPTH TO WATER	SAMPLE INTERVAL (FBLS)	TOTAL READING (ppm)	CARBON FILTERED (ppm)	NET READING (ppm)	COMMENTS
C7	12/28/2009	NA	8	355	0	355	LSRI
C7	12/28/2009	NA	10	457	0	457	LSRI
C7	12/28/2009	NA	12	191	0	191	LSRI
C7	12/29/2009	NA	14	32	0	32	LSRI
D1	12/28/2009	NA	8	1072	0	1072	LSRI
D1	12/28/2009	NA	14	185	0	185	LSRI
D5	12/28/2009	NA	10	944	0	944	LSRI
D7	12/28/2009	NA	12	168	0	168	LSRI
BOTTOM	12/29/2009	NA	15	198	0	198	LSRI
NORTH	12/30/2009	NA	5	999	0	999	LSRI
EAST	12/30/2009	NA	5	229	0	229	LSRI
WEST	12/30/2009	NA	5	1323	0	1323	LSRI
SOUTH	12/30/2009	NA	5	1282	0	1282	LSRI
SB1	8/18/2014	5.0	1	223	NA	223	LSSI
			3	115	NA	115	LSSI
			5	74	NA	74	LSSI
			7	33	NA	33	LSSI
			9	11	NA	11	LSSI
SB2	8/18/2014	5.0	1	1650	NA	1650	LSSI
			3	3021	NA	3021	LSSI
			5	2886	NA	2886	LSSI
			7	153	NA	153	LSSI
			9	110	NA	110	LSSI
SB3	8/18/2014	5.0	1	130	NA	130	LSSI
			3	170	NA	170	LSSI
			5	5100	NA	5100	LSSI
			7	180	NA	180	LSSI
			9	340	NA	340	LSSI
SB4	8/18/2014	5.0	1	120	NA	120	LSSI
			3	260	NA	260	LSSI
			5	140	NA	140	LSSI
			7	320	NA	320	LSSI
			9	6250	NA	6250	LSSI
SB5	8/18/2014	5.0	1	330	NA	330	LSSI
			3	360	NA	360	LSSI
			5	12000	NA	12000	LSSI
			7	5050	NA	5050	LSSI
			9	290	NA	290	LSSI
SB6	8/18/2014	5.0	1	260	NA	260	LSSI
			3	3600	NA	3600	LSSI
			5	2300	NA	2300	LSSI
			7	2700	NA	2700	LSSI
			9	550	NA	550	LSSI
SB7	8/18/2014	5.0	1	1300	NA	1300	LSSI
			3	1800	NA	1800	LSSI
			5	1900	NA	1900	LSSI
			7	265	NA	265	LSSI
			9	80	NA	80	LSSI
SB8	8/18/2014	5.0	1	87	NA	87	LSSI
			3	289	NA	289	LSSI
			5	144	NA	144	LSSI
			7	157	NA	157	LSSI
			9	20	NA	20	LSSI
SB9	8/18/2014	5.0	1	0	NA	0	LSSI
			3	2	NA	2	LSSI
			5	0	NA	0	LSSI
			7	0	NA	0	LSSI
			9	0	NA	0	LSSI

TABLE 1: SOIL SCREENING SUMMARY

Facility Name: Gate #1107 **Facility ID#: 16/8506960**

	SAMPLE			OVA SCREENING RESULTS			
BORING NO.	DATE COLLECTED	DEPTH TO WATER	SAMPLE INTERVAL (FBLS)	TOTAL READING (ppm)	CARBON FILTERED (ppm)	NET READING (ppm)	COMMENTS
SB10	8/18/2014	5.0	1	0	NA	0	LSSI
			3	0	NA	0	LSSI
			5	0	NA	0	LSSI
			7	0	NA	0	LSSI
			9	0	NA	0	LSSI
SB11	8/18/2014	5.0	1	2	NA	2	LSSI
			3	215	NA	215	LSSI
			5	3	NA	3	LSSI
			7	0	NA	0	LSSI
			9	1	NA	1	LSSI
SB12	8/18/2014	5.0	1	0	NA	0	LSSI
			3	0	NA	0	LSSI
			5	25	NA	25	LSSI
			7	0	NA	0	LSSI
			9	0	NA	0	LSSI
SB13	8/18/2014	5.0	1	149	NA	149	LSSI
			3	33	NA	33	LSSI
			5	6	NA	6	LSSI
			7	0	NA	0	LSSI
			9	0	NA	0	LSSI
SB14	8/18/2014	5.0	1	53	NA	53	LSSI
			3	58	NA	58	LSSI
			5	10	NA	10	LSSI
			7	12	NA	12	LSSI
			9	20	NA	20	LSSI
SB15	8/18/2014	5.0	1	196	NA	196	LSSI
			3	212	NA	212	LSSI
			5	35	NA	35	LSSI
			7	51	NA	51	LSSI
			9	43	NA	43	LSSI
SB16	8/18/2014	5.0	1	312	NA	312	LSSI
			3	358	NA	358	LSSI
			5	8870	NA	8870	LSSI
			7	600	NA	600	LSSI
			9	100	NA	100	LSSI
SB17	8/18/2014	5.0	1	97	NA	97	LSSI
			3	160	NA	160	LSSI
			5	247	NA	247	LSSI
			7	232	NA	232	LSSI
			9	2724	NA	2724	LSSI
SB18	8/18/2014	5.0	1	182	NA	182	LSSI
			3	90	NA	90	LSSI
			5	104	NA	104	LSSI
			7	283	NA	283	LSSI
			9	102	NA	102	LSSI
SB19	8/18/2014	5.0	1	70	NA	70	LSSI
			3	50	NA	50	LSSI
			5	85	NA	85	LSSI
			7	105	NA	105	LSSI
			9	35	NA	35	LSSI
SB20	8/18/2014	5.0	1	1090	NA	1090	LSSI
			3	7450	NA	7450	LSSI
			5	12000	NA	12000	LSSI
			7	1580	NA	1580	LSSI
			9	380	NA	380	LSSI

TABLE 1: SOIL SCREENING SUMMARY

Facility Name: Gate #1107 **Facility ID#: 16/8506960**

	SAMPLE			OVA SCREENING RESULTS			
BORING NO.	DATE COLLECTED	DEPTH TO WATER	SAMPLE INTERVAL (FBLS)	TOTAL READING (ppm)	CARBON FILTERED (ppm)	NET READING (ppm)	COMMENTS
SB21	8/18/2014	5.0	1	341	NA	341	LSSI
			3	196	NA	196	LSSI
			5	940	NA	940	LSSI
			7	1750	NA	1750	LSSI
			9	843	NA	843	LSSI
SB22	8/18/2014	5.0	1	340	NA	340	LSSI
			3	2200	NA	2200	LSSI
			5	3900	NA	3900	LSSI
			7	800	NA	800	LSSI
			9	150	NA	150	LSSI
SB23	8/18/2014	5.0	1	60	NA	60	LSSI
			3	75	NA	75	LSSI
			5	15	NA	15	LSSI
			7	5	NA	5	LSSI
			9	0	NA	0	LSSI
MW-2A	8/19/2014	5.0	11	361	NA	361	LSSI
			13	298	NA	298	LSSI
			15	328	NA	328	LSSI
			17	152	NA	152	LSSI
			19	61	NA	61	LSSI
MW-4A	8/19/2014	5.0	21	0	NA	0	LSSI
			23	0	NA	0	LSSI
			25	1	NA	1	LSSI
			27	0	NA	0	LSSI

TABLE 2: SOIL ANALYTICAL SUMMARY

Facility Name: Gate #1107 **Facility ID#: 16/8506960**

Sample				OVA	Laboratory Analytes													
Sample ID	Date Collected	Depth to Water (ft)	Sample Interval (fbls)	Net OVAReadi (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	Naph-thalene (mg/kg)	1-Methyl Naph-thalene (mg/kg)	2-Methyl Naph-thalene (mg/kg)	TRPHs (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Comments
SCTL - Leachability					**0.007**	**0.50**	**0.6**	**0.20**	**0.09**	**1.2**	**3.1**	**8.50**	**340**	*	**7.5**	**38**	*	
SCTL - Residential					**1.2**	**7,500**	**1,500**	**130**	**4,400**	**55**	**200**	**210**	**460**	**2.1**	**82**	**210**	**400**	
SCTL - Commercial/Industrial					**1.7**	**60,000**	**9,200**	**700**	**0.6U**	**300**	**1800**	**2100**	**2,700**	**12**	**1700**	**470**	**1400**	
SB1-2	12/15/2009	5	2	1167	4.8 U	**7.5 I**	**75**	**300**	3.2 U	**5.7**	**52 L**	**10**	150	0.50 U	0.10 U	2.5	1.9	LSRI
SB2-3	12/15/2009	5	3	1321	5 U	**170**	**320**	**1,600**	3.3 U	**21**	**130**	**39**	**490**	NA	NA	NA	NA	LSRI
SB3-4	12/15/2009	5	4	1198	4.8 U	5.3 U	**300**	**1,000**	3.2 U	0.75 U	**11**	**160**	**1,300**	NA	NA	NA	NA	LSRI
NORTH	12/30/2009	NA	5	999	0.051 U	0.057 U	**2.5**	**1**	0.034 U	**4.2**	**7.5**	6.3	**370**	NA	NA	NA	NA	LSRI
SOUTH	12/30/2009	NA	5	1282	**0.460 I**	**19**	**15**	**110**	**0.480 I**	**8.9**	**19**	**14**	**380**	NA	NA	NA	NA	LSRI
EAST	12/30/2009	NA	5	229	0.0049 I	0.007	0.0088	0.120	0.0072	0.04	0.02	0.22	16	NA	NA	NA	NA	LSRI
WEST	12/30/2009	NA	5	1323	**1.7 I**	**59**	**50**	**260**	**0.360**	**13**	**90**	**24**	**600**	NA	NA	NA	NA	LSRI
BOTTOM	12/29/2009	NA	15	198	**0.130**	0.041	0.110	**0.440**	0.030	0.004 U	0.004 U	0.003 U	5.7	NA	NA	NA	NA	LSRI
SB2-2	8/19/2014	5	2	3000	**0.350 I**	0.094 I	0.430	**1.9**	0.058 U	1.0	**22**	**27**	**3300 L**	NA	NA	NA	NA	LSSI
SB4-3	8/19/2014	5	3	260	0.057 U	0.051 U	0.045 U	0.110 I	0.045 U	0.015	0.11	0.17	24	NA	NA	NA	NA	LSSI
SB6-3	8/19/2014	5	3	3600	**0.220 I**	0.053 U	**10**	0.190 I	0.047 U	**6.7 L**	**3.9 L**	6.1 L	**350 L**	NA	NA	NA	NA	LSSI
SB16-4	8/19/2014	5	4	6500	**0.200 I**	0.051 U	**23 L**	**3.1**	0.046 U	**9.2 L**	**6.2 L**	**9.8 L**	**760 L**	NA	NA	NA	NA	LSSI
SB21-4	8/19/2014	5	4	744	**0.410**	0.052 U	0.250 I	0.75 I	0.046 U	0.031	0.023	0.037	310.0	NA	NA	NA	NA	LSSI

Notes:

SCTL = Soil Cleanup Target Levels as referenced in F.A.C. 62-777 Table II

* = Leachability value may be determined using TCLP.

NA = Not Applicable

NS = Not Sampled.

Bold Type indicates SCTL Exceedances

U = Indicates that the compound was analyzed for but not detected

I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

L= The reported value is above the calibration range. The actual value may be higher than the value given.

If an analyte is not detected, state the detection limit (i.e. <1)

TABLE 2: SOIL ANALYTICAL SUMMARY

Facility Name: Gate #1107 **Facility ID#: 16/8506960**

Sample Location	Date	Acenaph-thene mg/kg	Acenaphth-ylene mg/kg	Anthra-cene mg/kg	Flourene mg/kg	Flour-anthene mg/kg	Phenan-threne mg/kg	Chrysene mg/kg	Pyrene mg/kg	Benzo-(a)anthra-cene mg/kg	Benzo(a)pyrene mg/kg	Benzo(b) flouran-thene mg/kg	Benzo(g,h,i)perylene mg/kg	Benzo(k)fluor-anthene mg/kg	Dibenz(a,h)anthracene mg/kg	Indeno (123-cd)-pyrene mg/kg
SCTL - Leachability		**2.1**	**27**	**2,500**	**160**	**1,200**	**250**	**77**	**880**	**0.8**	**8**	**2.4**	**32,000**	**24**	**0.7**	**6.6**
SCTL - Residential Direct		**2,400**	**1,800**	**21,000**	**2,600**	**3,200**	**2,200**	**#**	**2,400**	**#**	**0.1**	**#**	**2,500**	**#**	**#**	**#**
SCTL Commercial/Industrial		**20,000**	**20,000**	**300,000**	**33,000**	**59,000**	**36,000**	**#**	**45,000**	**#**	**0.7**	**#**	**52,000**	**#**	**#**	**#**
SB1-2	12/15/2009	0.50 U	0.08 U	BDL	0.05 U	0.43	0.08 U	0.08 U	0.08 U	0.08 U	BDL	0.08 U	BDL	0.05 U	0.08 U	0.05 U
SB2-3	12/15/2009	2.0 U	4.7	BDL	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	BDL	0.30 U	BDL	0.20 U	0.30 U	0.20 U
SB3-4	12/15/2009	5.0 U	9.3	BDL	0.50 U	2	0.75 U	0.75 U	0.58 I	0.75 U	BDL	0.75 U	BDL	0.50 U	0.75 U	0.50 U
NORTH	12/30/2009	0.10 U	0.80	BDL	0.10 I	0.11	0.10 I	0.05	0.29	0.06	BDL	0.02 U	BDL	0.01 U	0.02 U	0.01 U
SOUTH	12/30/2009	0.20 U	2.8	BDL	0.26 I	0.3	0.12 I	0.53	0.61	0.12	BDL	0.04 U	BDL	0.02 U	0.04 U	0.02 U
EAST	12/30/2009	0.11	0.09	BDL	0.002 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	BDL	0.004 U	BDL	0.002 U	0.004 U	0.002 U
WEST	12/30/2009	1.0 U	4.6	BDL	0.47 I	0.20 U	1.2 I	0.20 U	0.20 U	0.20 U	BDL	0.20 U	BDL	0.10 U	0.20 U	0.10 U
BOTTOM	12/29/2009	0.03 U	0.004 U	BDL	0.003 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	BDL	0.004 U	BDL	0.003 U	0.004 U	0.003 U
SB2-2	8/19/2014	0.86	0.79	0.0	1.2	0.47	1.2	0.043 U	0.65	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.086 U
SB4-3	8/19/2014	0.007 U	0.014 U	0.007 U	0.011 I	0.007 U	0.014 I	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.014 U
SB6-3	8/19/2014	0.053	0.049	0.026	0.16	0.042	0.12	0.016	0.049	0.026	0.021	0.007 U	0.027	0.012	0.007 U	0.019
SB16-4	8/19/2014	0.088	0.059	0.050	0.33	0.038	0.24	0.009 I	0.055	0.019	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.014 U
SB21-4	8/19/2014	0.048	0.041	0.025	0.10	0.034	0.11	0.016	0.043	0.022	0.025	0.028	0.031	0.012 I	0.007 U	0.022

Notes:

SCTL = Soil Cleanup Target Levels as referenced in F.A.C. 62-777 Table II

Bold Type indicates SCTL Exceedances

must convert to Benzo(a)pyrene equivalents

U = Indicates that the compound was analyzed for but not detected

I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

TABLE 3: GROUNDWATER ELEVATION SUMMARY

Facility Name: Gate #1107 **Facility ID#: 16/8506960**

WELL NO.	MW-1A	MW-2A	MW-3A	MW-4A	MW-5A	MW-6	MW-7A
DIAMETER	2"	2"	2"	2"	2"	2"	2"
WELL DEPTH (FT)	12'	12'	12'	12'	12'	14'	12'
SCREEN INTERVAL	2-12'	2-12'	2-12'	2-12'	2-12'	4-14'	2-12'
TOC ELEVATION	95.36	96.36	95.74	95.40	95.64	95.87	96.41

DATE	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP
9/4/2014	89.79	5.57		90.62	5.74		91.15	4.59		90.89	4.51		90.90	4.74		91.16	4.71		90.82	5.59	

Notes: TOC Elevation based of an arbitray 100 foot elevation.

TABLE 4: GROUNDWATER ANALYTICAL SUMMARY - VOCs

Facility Name: Gate #1107 Facility ID#: 16/8506960

Sample		Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TRPH
Location	Date	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
GCTLs		1	40	30	20	20	5,000
NADCs		100	400	300	200	200	50,000
MW-1A	9/4/2014	**4500**	**7500**	**5000**	**13000**	**48 I**	**23000 L**
MW-2A	9/4/2014	**63**	7.0	**250 L**	**650**	17	4100
MW-3A	9/4/2014	**3000**	**8000**	**3800**	**12000**	**240**	**21000**
MW-4A	9/4/2014	0.6 U	0.4 U	0.3 U	0.9 I	0.3 U	200 U
MW-5A	9/4/2014	**120**	21	**160**	**380**	**210**	3300
MW-6	9/4/2014	**440**	**80**	**140**	**1400**	**72**	**6500**
MW-7A	9/4/2014	0.6 U	0.4 U	0.3 U	0.6 I	8.1	530 I

Notes:

GCTLs = Groundwater Cleanup Target Levels specified in Table I of Chapter 62-777, F.A.C.

NADCs = Natural Attenuation Default Source Concentrations specified in Table V of Chapter 62-777, F.A.C.

Bold Type indicates GCTL Exceedances

U = Indicates that the compound was analyzed for but not detected

L = The value reported is above calibration range. The actual value may be higher than the number given.

I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

TABLE 4: GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY - PAHs

Facility Name: Gate #1107 **Facility ID#: 16/8506960**

Sample		Naph-thalene	1-Methyl-naphthalene	2-Methyl-naphthalene	Acen-aphthene	Acen-aphthylene	Anthra-cene	Benzo(g,h,i) perylene	Fluoran-thene	Fluorene	Phenan-threne	Pyrene	Benzo(a) pyrene	Benzo(a) anthracene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chry-sene	Dibenzo(a,h) anthracene	Indeno (1,2,3-cd) pyrene
Location	Date	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
GCTLs		14	28	28	20	210	2,100	210	280	280	210	210	0.2	0.05	0.05	0.5	4.8	0.005	0.05
NADCs		140	280	280	200	2,100	21,000	2,100	2,800	2,800	2,100	2,100	20	5	5	50	480	0.5	5
MW-1A	9/4/2014	**330 L**	27	**45 L**	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
MW-2A	9/4/2014	2.8	3.0	2.4	0.60	0.36	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
MW-3A	9/4/2014	**200 L**	16	27	0.96	0.04 U	0.04 U	0.04 U	0.04 U	0.68	0.40	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
MW-4A	9/4/2014	1.2	0.20	0.40	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
MW-5A	9/4/2014	**48 L**	3.3	5.0	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
MW-6	9/4/2014	**190 L**	**36**	**62 L**	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.44	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
MW-7A	9/4/2014	3.2	0.68	1.0	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U

Notes:

GCTLs = Groundwater Cleanup Target Levels specified in Table I of Chapter 62-777, F.A.C.

NADCs = Natural Attenuation Default Source Concentrations specified in Table V of Chapter 62-777, F.A.C.

Bold Type indicates GCTL Exceedances

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FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
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2600 BLAIRSTONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

November 26, 2014

(Sent via email only to addressee at tleslie@waterandair.com)
Mr. Tyler Leslie
Water & Air Research, Inc.
6821 SW Archer Road
Gainesville, FL 32608

Subject: Deliverable Review
Gate #1107
3020 N Liberty Street
Jacksonville, Duval County
FDEP Facility ID# 16/8506960
Discharge Date: March 30, 1987 (EDI) & December 1, 1992 (PLRIP)
Work Order #2014-95-W7927A

Dear Mr. Leslie:

The Petroleum Restoration Program (PRP) has reviewed the LSSI Site Assessment Report dated November 19, 2014 (received November 20, 2014) response to comments received November 26, 2014, (interim deliverables received September 15, 2014), submitted for this facility. The Low Score Site Initiative report is acceptable and demonstrates that the work outlined in Work Order # 2014-95–W7927A for this report was satisfactorily performed.

Based on the results of the LSSI groundwater assessment we concur with your recommendation to end the work order and the site await cleanup in priority order.

Please remember that pursuant to Petroleum Restoration Program Procedures, the final invoice for this work order must be received 30 days upon receipt of this letter. If you should have any questions about the review, please contact me at (850) 222-6446, ext. 314 or at the letterhead address, Mail Station 4585.

Sincerely,

J. Lance Davis
Northstar Contracting Group, Inc.-Staff Scientist
Petroleum Restoration Program Section Five
jdavis@northstar.com

Reviewed by:

Michelle Allard, P.G.
State of Florida P.G. No. 1383
Northstar Contracting Group, Inc.-Senior Geologist
Petroleum Restoration Program Section Five
Email: mallard@northstar.com

11/26/14
Date

cc: Ellyn Cavin, Environmental Director, ecavin@gatepetro.com

File

LOW SCORED SITE INITIATIVE REPORT

Former Shell Service Station #140784/First Coast Energy #3023

247 East 20th Street

Jacksonville, Duval County, Florida

FDEP FAC ID NO. 16/8507524

FDEP Preapproval Work Order 2012-95-W0884A

Prepared for:

Shell Oil Products US

On behalf of Motiva Enterprises, LLC

7765 Lake Worth Rd., No. 319

Lake Worth, Florida 33467

Prepared by:

GROUNDWATER & ENVIRONMENTAL SERVICES, INC.

6500 Northwest 12th Avenue, Suite 109

Fort Lauderdale, Florida 33309

July 2012

Low Scored Site Initiative Report

Former Shell Service Station # 140784/ First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP FAC ID NO. 16/8507524
FDEP Preapproval Work Order 2012-95-W0884A

Prepared for:

Shell Oil Products US
on behalf of Motiva Enterprises, LLC
7765 Lake Worth Road, #319
Lake Worth, FL 33467

Prepared By:
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6500 NW 12th Avenue, Suite 109
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(866) 565-7650 Phone
(866) 334-9883 Fax

July 2012

Prepared by:

Jessica Sasser
Associate Geologist

Reviewed by:

Michael Berzinsky
Project Manager

PG CERTIFICATION

"I, Jack Wells, P.G. # 793, certify that I currently hold an active license in the State of Florida and am competent through education or experience to provide the geologic service contained in this report. I further certify that in my professional judgment this report meets the pertinent requirements of Section 62-770 FAC and was prepared by me or under my responsible charge. Moreover, I certify that Groundwater and Environmental Services Inc, holds an active certificate of authorization #GB452 to provide the geologic service."

Reviewed By: Jack G. Wells, P.G.
License No. 793

7/13/12

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1.0 INTRODUCTION

1.1 General

Groundwater & Environmental Services, Inc. (GES) has prepared this Low Scored Site Initiative (LSSI) Report on behalf of Shell Oil Products US/Motiva Enterprises, LLC (SOPUS) to document soil and groundwater conditions at the subject property. The LSSI activities were authorized by the Florida Department of Environmental Protection (FDEP) Preapproval Work Order 2012-95-W0884A which is included in **Appendix A**. A site location map is included as **Figure 1** and a site map depicting site features is included as **Figure 2**.

1.2 Background

According to the FDEP Underground Storage Tank (UST) Facility Registration form and the FDEP BPSS Storage Tank Facility Query Report, one used oil UST and one fuel oil UST (550 gallons each) were installed on July 1, 1964 and removed on an unknown date. Three 9,438-gallon double-walled fiberglass unleaded gasoline USTs were installed on July 1, 1978 and were removed from the site in November 2008. One 12,000-gallon, double-walled fiberglass unleaded gasoline UST was installed on December 1, 2008 and is currently in-use. The site has been an active service station since circa 1964.

A Discharge Report Form (DRF) was filed for the subject site when on December 6, 1989. The cause, type, volume and area of discharge is unknown. The cleanup of the discharge is eligible for funding under the Florida (PLRIP).

A site assessment was conducted from October 1991 through February 1994 by Groundwater Technology, Inc. during the preparation of the March 1994 Contamination Assessment Report (CAR). During the assessment, nineteen soil borings and monitoring wells MW-5 through MW-10 and piezometer PZ-1 (DW-1) were installed in the vicinity of the UST area and dispenser islands. The soil borings were advanced to a depth of four feet below land surface (bls) and the organic vapor analysis (OVA) concentrations ranged from non-detect to >1000 parts per million (ppm). The highest OVA concentrations were detected near the UST areas and dispenser islands. The groundwater results indicated concentrations above regulatory levels.

A Site Assessment Report (SAR) and Supplemental Site Assessment Report (SSAR) were submitted in January 2001 and March 2001 by EnviroTrac, Ltd. During the assessment, sixteen soil borings were advanced to four feet bls in the vicinity of the UST area, dispenser islands and surrounding areas. The highest OVA concentrations were detected near the dispenser islands. The soil laboratory data indicated concentrations of sampled analytes above regulatory levels. Dissolved phase hydrocarbons were detected in groundwater samples concentrations above regulatory levels.

A Level 3 General Report (SAR) was submitted by EnviroTrac, Ltd, on July 24, 2001. During the assessment, thirteen soil borings were conducted to six feet bls. The soil laboratory analysis indicated concentrations below regulatory levels. DPH was detected in groundwater samples at concentrations above regulatory levels.

A SAR was submitted by EnviroTrac, Ltd, on March 20, 2002 documenting site assessment activities including groundwater analysis from monitoring wells MW-3, MW-8, MW-11, MW-12D and MW-13 which exhibited concentrations above the Groundwater Cleanup Target Levels (GCTL) for various Polycyclic Aromatic Hydrocarbons (PAHs). Soil data indicated petroleum impacts above leachability Soil Cleanup Target Levels (SCTLs), but below the direct exposure SCTLs. Groundwater data indicated DPH at concentrations above Natural Attenuation Default Concentrations (NADCs).

Voluntary groundwater monitoring has been conducted via the no purge method from 2007 through 2010. Overall, DPH concentrations have decreased from 2000 to 2010.

During the February 19, 2007 sampling event, MW-18 was noted as missing and during the last annual sampling event, wells CW-1, CW-2, CW-4 and MW-17 were noted as destroyed.

On November 9, 2011, the FDEP sent a LSSI Proposal Request to GES.

On March 2, 2012, GES submitted a Cost Proposal to the FDEP. The FDEP issued a Low Scored Site Initiative Work Order dated May 4, 2012 to conduct soil and groundwater assessment, the results of which are documented herein. All available historical analytical data is included on **Tables 1** through **8**.

2.0 SOIL ASSESSMENT

2.1 Quality Assurance

Field activities were conducted in general accordance with Chapter 62-770, Florida Administrative Code (FAC) and FDEP recommended procedures. Laboratory analyses of soil and groundwater samples collected on May 22, 31 and June 4, 2012 were performed by Pace Analytical Services, Inc. (Pace) of Ormond Beach, Florida (Certification Number E83079).

2.2 Soil Sample Collection and Analysis

On May 31, 2012, soil borings designated as MW-19 through MW-22 were advanced at four locations on the subject site utilizing hand clearing and split spoon methodologies. At two foot intervals down to the water table, a hand auger and split spoon was used to collect undisturbed soil samples for analysis. Drilling activities were performed by Preferred Drilling Solutions Inc.

Soil samples were collected and field-screened at each boring and well location in two-foot intervals to the water table utilizing an OVA equipped with a photoionization detector (PID).

The results of the soil headspace analysis indicated soil vapor readings were all below ten ppm. The observed depth to water (DTW) during the investigation was approximately seven feet below land surface (bls).

A total of four soil samples, MW-19 (2'), MW-20 (4') MW-21 (4') and MW-22 (4'), were collected and delivered to Pace for the following analyses: benzene, toluene, ethylbenzene, total xylenes (collectively known as BTEX) and methyl-tert-butyl-ether (MTBE) via EPA Method 8260B, PAHs via EPA Method 8270C and total recoverable petroleum hydrocarbons (TRPH) via the FL-PRO Method.

The soil laboratory analytical results indicated that all tested analytes were below the Chapter 62-777, FAC Table II SCTLs.

The soil boring locations and OVA headspace results from the May 31, 2012 soil sampling event are summarized on **Table 1** and are illustrated on **Figures 3** and **4,** respectively. The laboratory analytical results are illustrated on **Figures 5** and **6** and summarized in **Tables 2** and **3**. Soil boring logs are included in **Appendix B** and copies of the soil laboratory analytical reports are provided in **Appendix C**.

3.0 GROUNDWATER ASSESSMENT

3.1 Quality Assurance

Field activities were conducted in general accordance with the DEP-SOP-001/01 FS 2200 Groundwater Sampling Protocol and FDEP recommended procedures.

3.2 Monitoring Well Installation

On May 31, 2012, monitoring wells MW-19, MW-20, MW-21 and MW-22 were installed by Preferred Drilling Solutions Inc. Monitoring wells MW-19 through MW-22 were installed to a total depth of twelve feet bls and were constructed of two-inch diameter schedule 40 polyvinyl chloride (PVC) pipe with a ten-foot, 0.010-inch slotted screen interval from approximately two feet to twelve feet bls. The wells were completed with eight-inch diameter, steel, manhole covers and expansion caps.

The locations of MW-19 through MW-22 are illustrated on a site map attached as **Figure 2**. The OVA headspace results from the May 31, 2012 monitoring well installation event are summarized on **Table 1** and are illustrated on **Figure 3**.

The monitoring well construction details are summarized on **Table 8**. The soil boring logs are included in **Appendix B**. The well construction and development logs and well completion reports are attached in **Appendix C**.

3.3 Groundwater Elevation and Flow Direction

On May 22, 2012, DTW measurements were gauged within the following monitoring wells: CW-3, MW-5, MW-6, MW-7, MW-10, MW-12, MW-13, MW-14 and MW-15. The DTW measurements and surveyed top of casing (TOC) elevations were used to calculate relative groundwater elevations in each well.
The TOC elevations were previously surveyed and documented in the EnviroTrac Ltd. Site Assessment Report dated August 22, 2002. On May 22, 2012, the interpreted groundwater flow direction was towards the northeast.

On June 4, 2012, DTW measurements were gauged within monitoring wells CW-3, MW-5, MW-6, MW-7, MW-10, MW-19, MW-20, MW-21 and MW-22. The DTW measurements and surveyed TOC elevations were used to calculate relative groundwater elevations in each well. The TOC elevations for monitoring wells MW-19 through MW-21 were surveyed on June 4, 2012. On June 4, 2012, the interpreted groundwater flow direction was towards the northeast.

DTW data measurements and calculated groundwater elevation information are summarized on **Table 4**. **Figure 7** illustrates the calculated water table elevations and interpreted groundwater flow direction on May 22, 2012.

3.4 Groundwater Sample Collection and Analysis

On May 22, 2012, groundwater samples were collected from MW-12, MW-13, MW-14 and MW-15. Samples were collected and delivered to Pace for one or more of the following analyses: BTEX and MTBE via EPA Method 8260B, Lead via EPA Method 6010B, PAHs via EPA Method 8270, TRPH via the FL-PRO Method and Dibromoethane (EDB) via EPA Method 8011.

The laboratory analytical results of the groundwater samples collected on May 22, 2012 indicated the following: monitoring well MW-13 exhibited concentrations of benzene above the FDEP Chapter 62-777 FAC, Table I, GCTL. Monitoring well MW-14 exhibited concentrations of benzene and ethylbenzene above the FDEP Chapter 62-777 FAC, Table I, NADCs. Monitoring well MW-14 also exhibited concentrations of toluene, total xylenes, MTBE and TRPH above the GCTLs.
Monitoring well MW-15 exhibited concentrations of benzene, ethylbenzene and TRPH above the GCTLs. All other tested analytes were below GCTLs or laboratory method detection limits (MDLs).

On June 4, 2012, groundwater samples were collected from CW-3, MW-5, MW-6, MW-7 and MW-10.

Samples were collected and delivered to Pace for one or more of the following analyses: BTEX/MTBE via EPA Method 8260B, Lead via EPA Method 6010B, and PAHs via EPA Method 8270.

The laboratory analytical results of the groundwater samples collected on June 4, 2012 indicated that all tested analytes were below GCTLs.

On June 5, 2012, groundwater samples were collected from MW-19, MW-20, MW-21 and MW-22. Samples were collected and delivered to Pace for one or more of the following analyses: BTEX/MTBE via EPA Method 8260B, Lead via EPA Method 6010B, PAHs via EPA Method 8270, TRPH via the FL-PRO Method and EDB via EPA Method 8011.

The laboratory analytical results of the groundwater samples collected on June 5, 2012 indicated the following: monitoring well MW-20 exhibited concentrations of benzene, ethylbenzene, total xylenes and naphthalene above the NADC. Monitoring well MW-20 also exhibited concentrations of toluene, MTBE, TRPH, 1-methylnaphthalene and 2-methylnaphthalene above the GCTLs. All other tested analytes were below GCTLs or laboratory MDLs.

The FDEP Groundwater Sampling Logs are included in **Appendix E**. Copies of the groundwater laboratory analytical reports from the May 22 and June 4, 2012 groundwater sampling events are provided in **Appendix F**. The groundwater analytical results are summarized in **Tables 5** through **7** and illustrated on **Figures 8** and **9**.

3.5 Disposal

Three drums of soil were generated during monitoring well installation activities on May 31, 2012. On June 21, 2012, the drums were transported from the site to the Clark Environmental facility in Mulberry, Florida for disposal. A copy of the disposal manifest is provided in **Appendix G**.

4.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

4.1 Summary of Findings

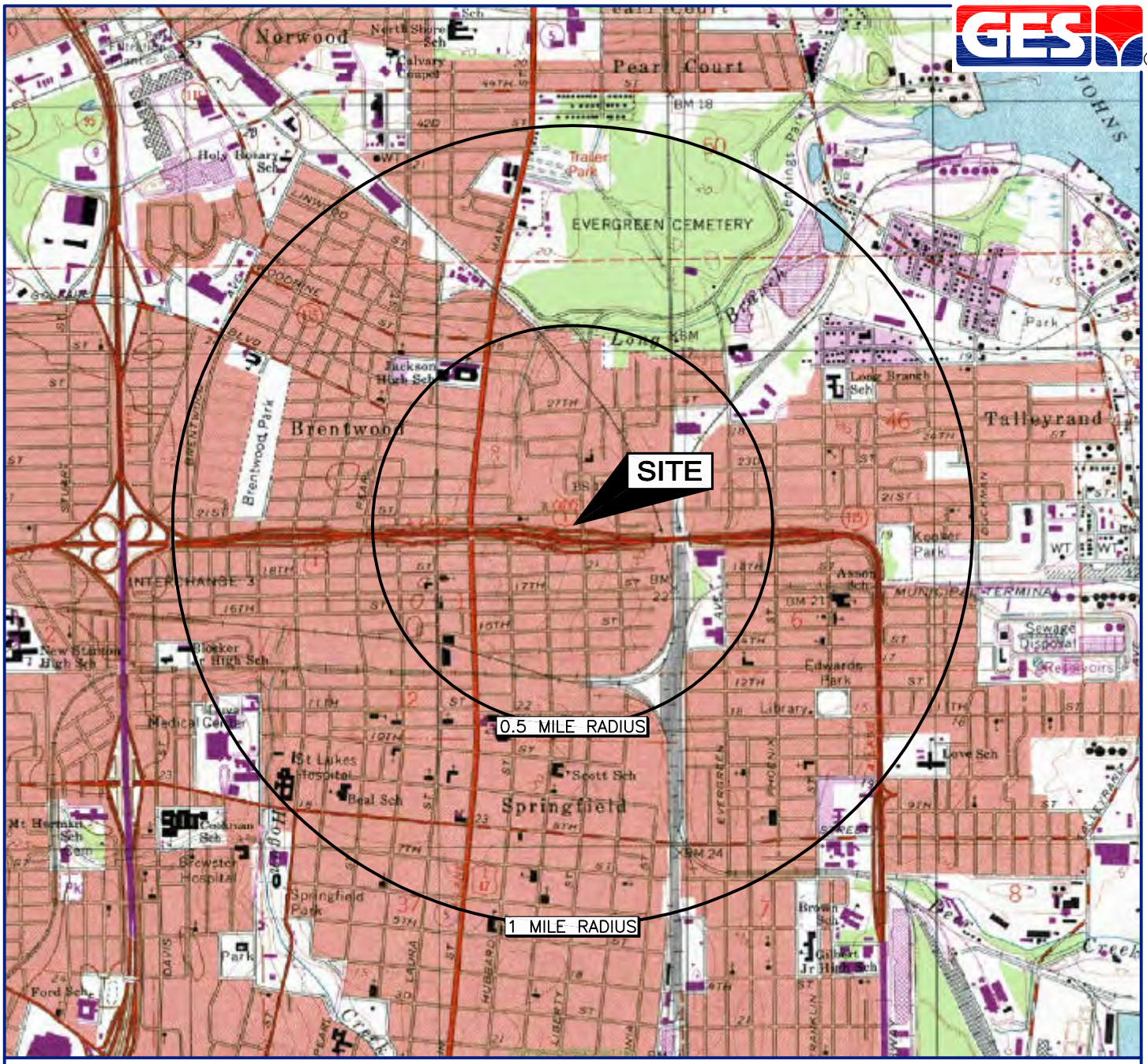
The following is a summary of the findings of the various tasks completed under FDEP Preapproval Work Order 2012-95-W0884A:

- On May 22, 2012, monitoring well MW-13 exhibited concentrations of benzene and 2-methylnaphthalene above the GCTL. Monitoring well MW-14 exhibited concentrations of benzene, ethylbenzene and naphthalene above the NADCs and concentrations of toluene, total xylenes, MTBE, TRPH and 1-methylnaphthalene above the GCTLs. Monitoring well MW-15 exhibited concentrations of naphthalene above the NADC and concentrations of benzene, ethylbenzene, TRPH and lead above the GCTL.
- All tested analytes from the groundwater samples collected on June 4, 2012, were below GCTLs or MDLs.
- On June 5, 2012, monitoring well MW-20 exhibited concentrations of benzene, ethylbenzene, total xylenes and naphthalene above the NADC and concentrations of toluene, MTBE, TRPH, 1-methylnaphthalene and 2-methylnaphthalene above the GCTLs.
- All tested analytes from the soil samples collected on May 31, 2012, were below MDLs.

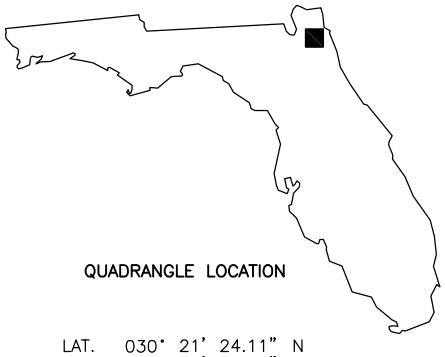
4.2 Recommendations

Based on the findings presented in this report, GES recommended and BPSS Petroleum Cleanup Section 5 agreed that none of the LSSI endpoints are achievable for the December 6, 1989 discharge. Therefore, GES recommends ceasing all LSSI activities associated with FDEP Preapproval Work Order 2012-95-W0884A.

FIGURES



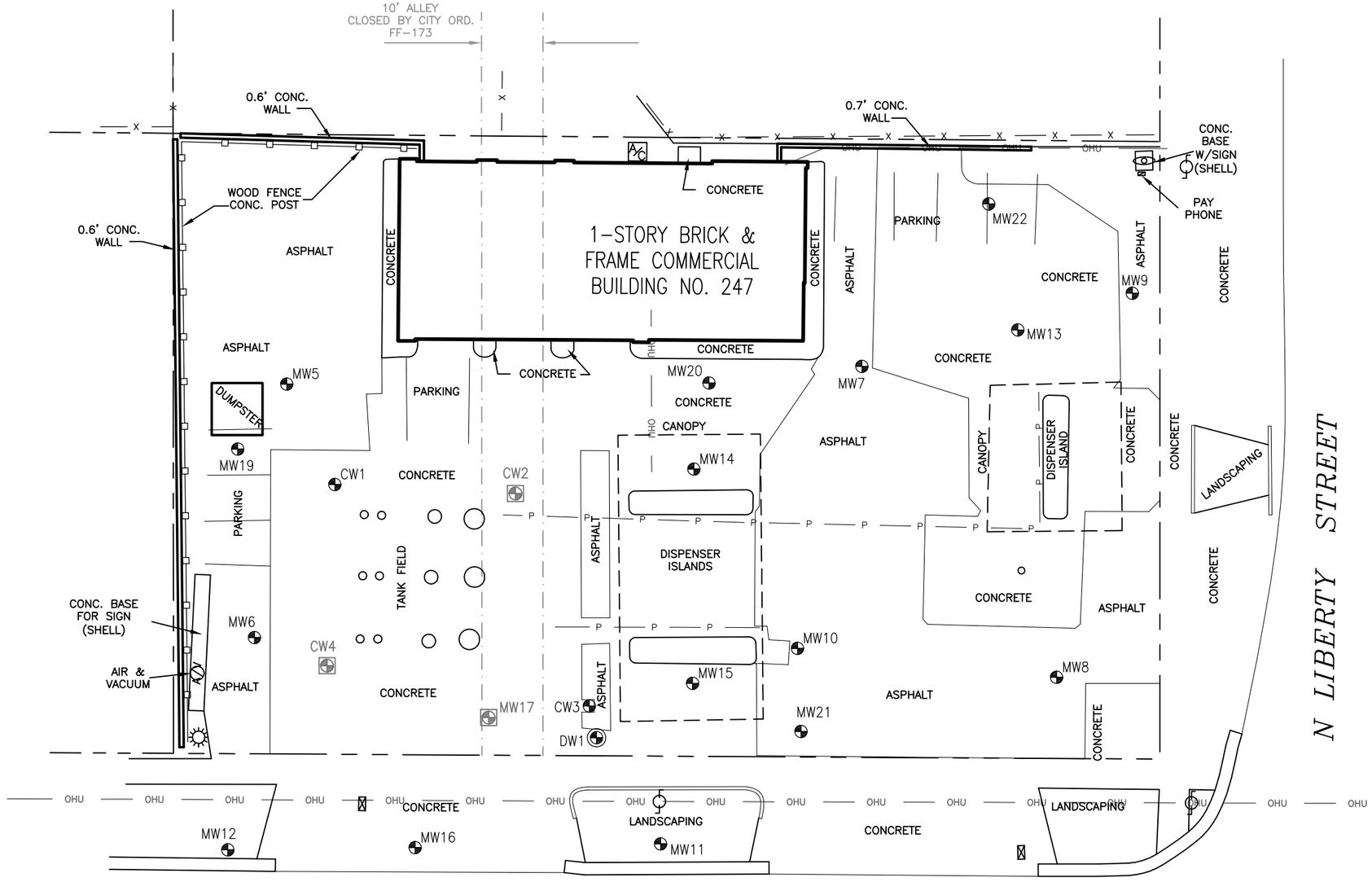
SOURCE: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE 1994
JACKSONVILLE, FLORIDA
CONTOUR INTERVAL = 5'



QUADRANGLE LOCATION

LAT. 030° 21' 24.11" N
LONG. 081° 38' 59.53" W
(APPROXIMATE SITE COORDINATES)

DRAFTED BY: W.A.W (N.J.)	**SITE LOCATION MAP**
CHECKED BY:	**FIRST COAST ENERGY #3023** **FORMER SHELL STATION #140784** **247 EAST 20th STREET** **JACKSONVILLE, FLORIDA**
REVIEWED BY:	**Groundwater & Environmental Services, Inc.** 6500 N W 12th AVENUE, SUITE 109, FORT LAUDERDALE, FLORIDA
NORTH	SCALE IN FEET: 0 — 2000 / DATE: 6-26-12 / FIGURE: 1

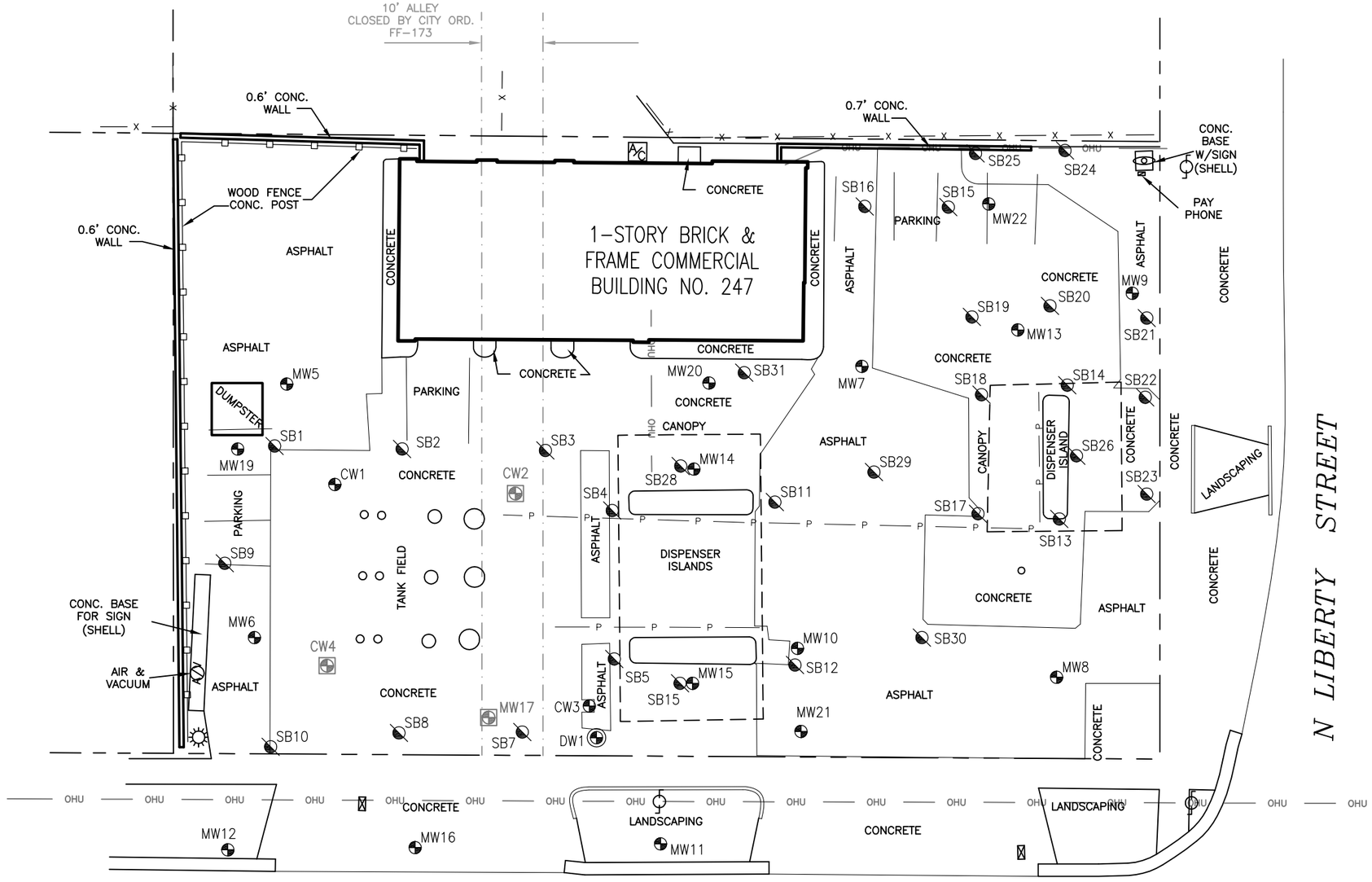


LEGEND

- PRODUCT PIPING LINE
- UTILITY POLE
- AREA LIGHT
- MONITORING WELL
- DEEP MONITORING WELL
- MISSING/DESTROYED MONITORING WELL
- OVERHEAD ELECTRIC/TELEPHONE LINE

DRAFTED BY: W.A.W. (N.J.)	SITE MAP
CHECKED BY:	FIRST COAST ENERGY #3023 FORMER SHELL STATION #140784 247 EAST 20th STREET JACKSONVILLE, FLORIDA
REVIEWED BY:	Groundwater & Environmental Services, Inc. 6500 N W 12th AVENUE, SUITE 109, FORT LAUDERDALE, FLORIDA
NORTH	SCALE IN FEET (APPROXIMATE) 0 20 / DATE 6-26-12 / FIGURE 2

M:\Graphics\2600-Fort_Lauderdale\Shell\140784 (FCE 3023) Jacksonville\140784 (FCE 3023) jacksonville SM.dwg, 6/27/2012 1:57:19 PM, WWesterlund



LEGEND

- PRODUCT PIPING LINE
- UTILITY POLE
- AREA LIGHT
- MONITORING WELL
- DEEP MONITORING WELL
- MISSING/DESTROYED MONITORING WELL
- OVERHEAD ELECTRIC/TELEPHONE LINE
- HISTORICAL SOIL BORING LOCATION (URS)

DRAFTED BY: W.A.W. (N.J.)	SOIL BORING LOCATION MAP 2000-2012
CHECKED BY:	FIRST COAST ENERGY #3023 FORMER SHELL STATION #140784 247 EAST 20th STREET JACKSONVILLE, FLORIDA
REVIEWED BY:	Groundwater & Environmental Services, Inc. 6500 N W 12th AVENUE, SUITE 109, FORT LAUDERDALE, FLORIDA
NORTH	SCALE IN FEET (APPROXIMATE) 0 20 / DATE 6-26-12 / FIGURE 3

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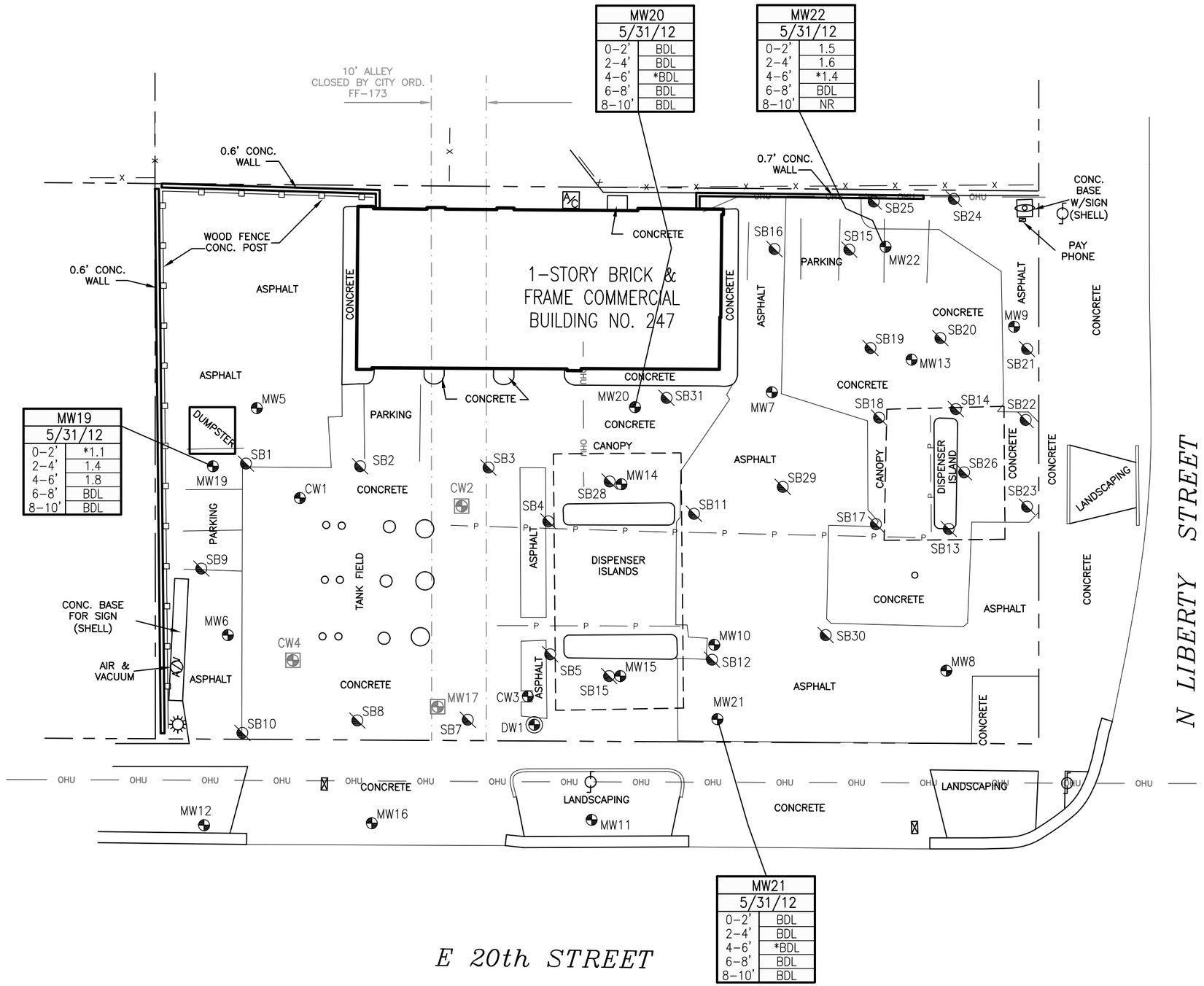

LEGEND

- PRODUCT PIPING LINE
- UTILITY POLE
- AREA LIGHT
- MONITORING WELL
- DEEP MONITORING WELL
- MISSING/DESTROYED MONITORING WELL
- OVERHEAD ELECTRIC/TELEPHONE LINE
- HISTORICAL SOIL BORING LOCATION (URS)

MW19	
5/31/12	
0–2'	*1.1
2–4'	1.4
4–6'	1.8
6–8'	BDL
8–10'	BDL

- OVA READING LOCATION
- OVA READING DATE
- NET OVA @ DEPTH INTERVAL (ppm)
- NET OVA @ DEPTH INTERVAL (ppm)
- NET OVA @ DEPTH INTERVAL (ppm)
- NET OVA @ DEPTH INTERVAL (ppm)
- NET OVA @ DEPTH INTERVAL (ppm)

ppm PARTS PER MILLION

OVA RESULTS WERE OBTAINED UTILIZING A PHOTO IONIZATION DETECTOR (PID)

* SAMPLE COLLECTED FOR LABORATORY ANALYSI

BDL BELOW DETECTION LIMIT (1ppm)

NR NO RECOVERY

DRAFTED BY: W.A.W. (N.J.)	SOIL OVA RESULTS MAP MAY 31, 2012
CHECKED BY:	FIRST COAST ENERGY #3023 FORMER SHELL STATION #140784 247 EAST 20th STREET JACKSONVILLE, FLORIDA
REVIEWED BY:	Groundwater & Environmental Services, Inc. 6500 N W 12th AVENUE, SUITE 109, FORT LAUDERDALE, FLORIDA
NORTH	SCALE IN FEET (APPROXIMATE) 0 20 / DATE 6–26–12 / FIGURE 4

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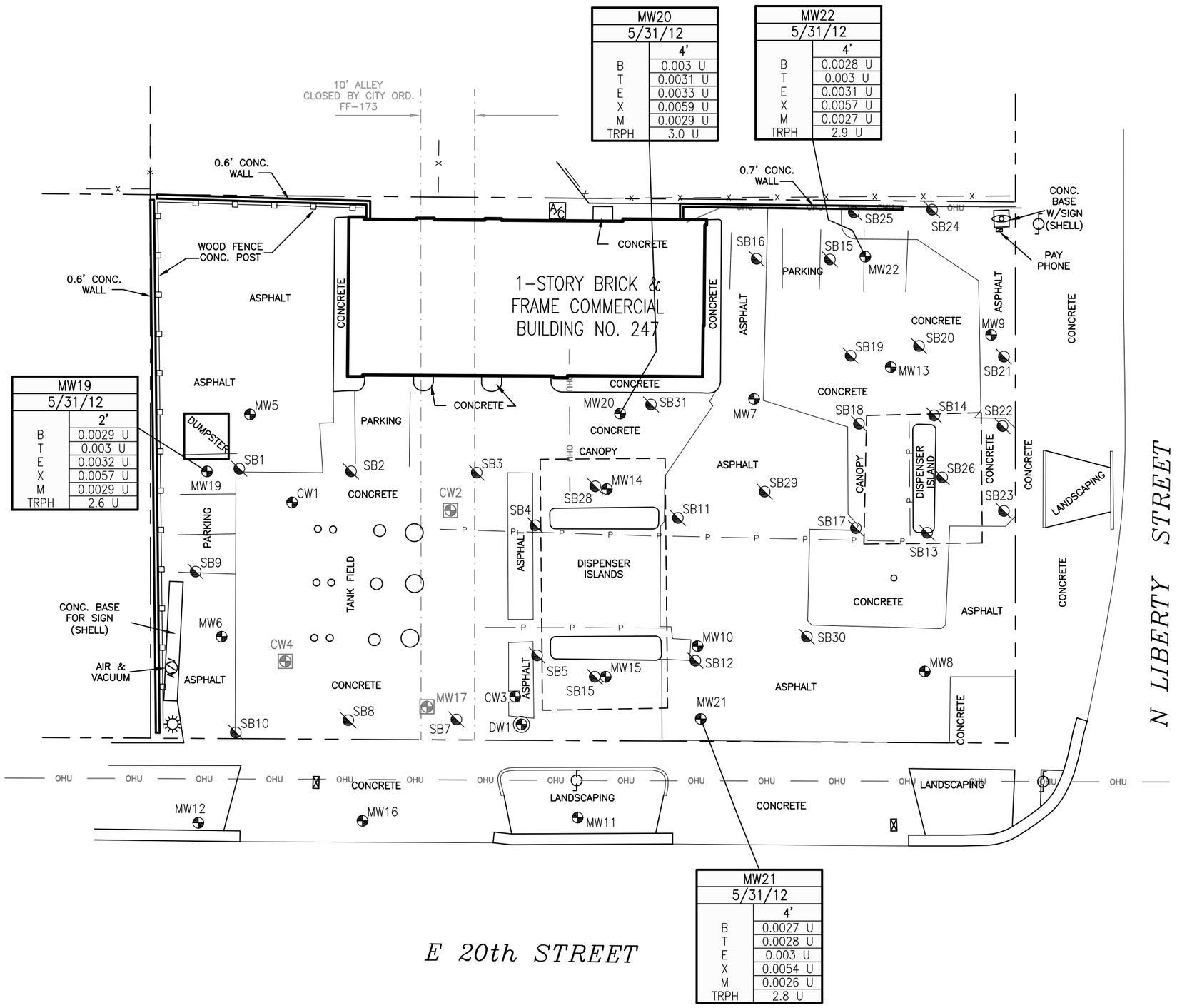

LEGEND

- PRODUCT PIPING LINE
- UTILITY POLE
- AREA LIGHT
- MONITORING WELL
- DEEP MONITORING WELL
- MISSING/DESTROYED MONITORING WELL
- OVERHEAD ELECTRIC/TELEPHONE LINE
- HISTORICAL SOIL BORING LOCATION (URS)

MW	SAMPLE LOCATION
5/31/12	SAMPLE DATE
VARIES	SAMPLE DEPTH (feet)
B 0.007	BENZENE CONCENTRATION (mg/kg)
T 0.5	TOLUENE CONCENTRATION (mg/kg)
E 0.6	ETHYLBENZENE CONCENTRATION (mg/kg)
X 0.2	TOTAL XYLENES CONCENTRATION (mg/kg)
M 0.09	MTBE CONCENTRATION (mg/kg)
TRPH 340	TRPH CONCENTRATION (mg/kg)

mg/kg MILLIGRAMS PER KILOGRAM

MTBE METHYL *tert*-BUTYL ETHER

TRPH TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

NOTE:

SEE LABORATORY ANALYTICAL REPORT AND/OR TABLES FOR DEFINITION OF DATA QUALIFIERS.

DRAFTED BY: W.A.W. (N.J.)	**SOIL ANALYTICAL MAP (BTEX/MTBE/TRPH) MAY 31, 2012**
CHECKED BY:	**FIRST COAST ENERGY #3023 FORMER SHELL STATION #140784 247 EAST 20th STREET JACKSONVILLE, FLORIDA**
REVIEWED BY:	
NORTH	Groundwater & Environmental Services, Inc. 6500 N W 12th AVENUE, SUITE 109, FORT LAUDERDALE, FLORIDA
SCALE IN FEET (APPROXIMATE) 0 20	DATE 6-26-12 / FIGURE 5

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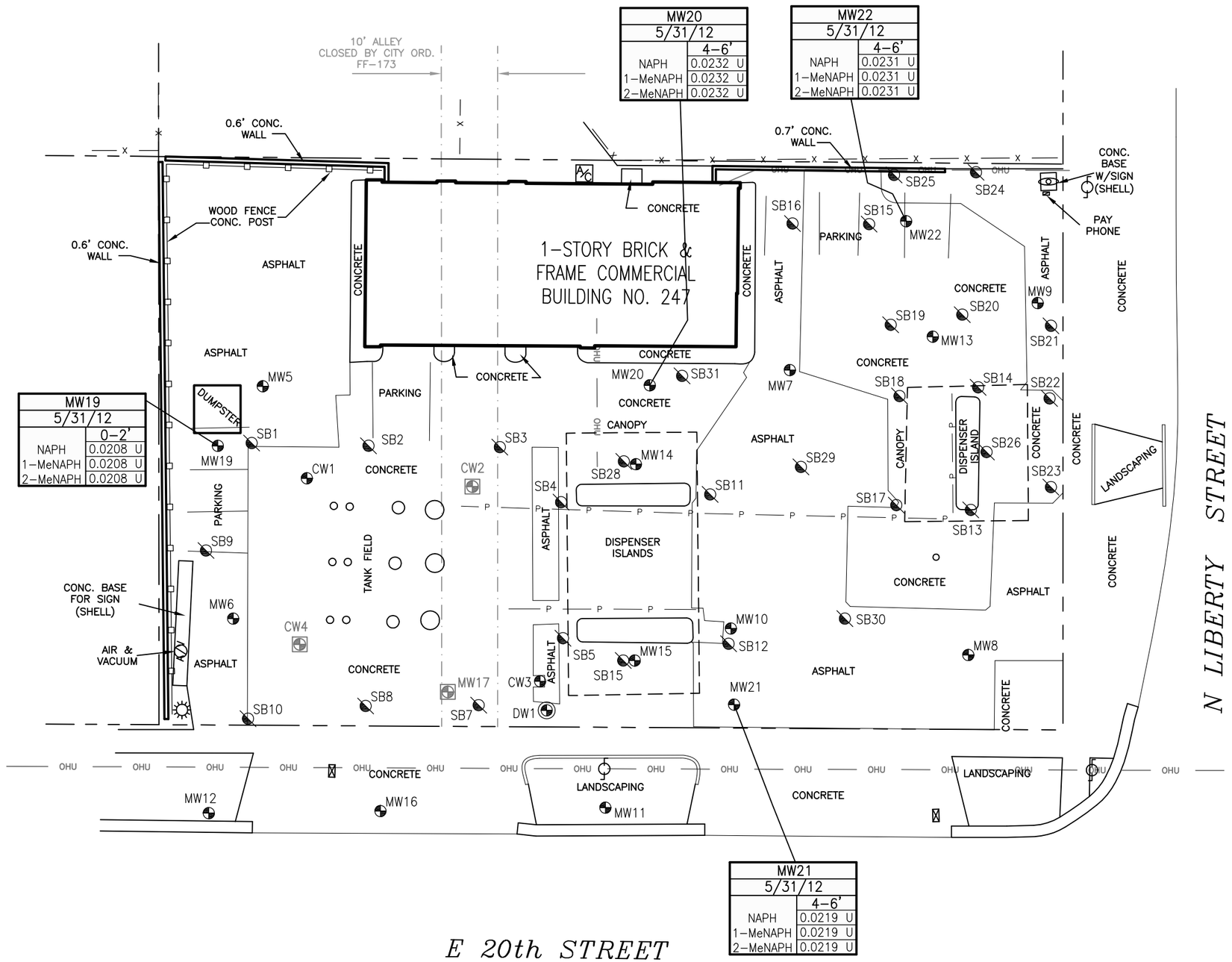

LEGEND

- PRODUCT PIPING LINE
- UTILITY POLE
- AREA LIGHT
- MONITORING WELL
- DEEP MONITORING WELL
- MISSING/DESTROYED MONITORING WELL
- OVERHEAD ELECTRIC/TELEPHONE LINE
- HISTORICAL SOIL BORING LOCATION (URS)

MW	SAMPLE LOCATION
5/31/12	SAMPLE DATE
VARIES	SAMPLE DEPTH (feet)
NAPH 1.2	NAPHTHALENE CONCENTRATION (mg/kg)
1–MeNAPH 3.1	1–MeNAPH CONCENTRATION (mg/kg)
2–MeNAPH 8.5	2–MeNAPH CONCENTRATION (mg/kg)

mg/kg MILLIGRAMS PER KILOGRAM
1–MeNAPH 1–METHYLNAPHTHALENE
2–MeNAPH 2–METHYLNAPHTHALENE

NOTE:

SEE LABORATORY ANALYTICAL REPORT AND/OR TABLES FOR DEFINITION OF DATA QUALIFIERS.

DRAFTED BY: W.A.W. (N.J.)	**SOIL ANALYTICAL MAP (PAH) MAY 31, 2012**
CHECKED BY:	**FIRST COAST ENERGY #3023 FORMER SHELL STATION #140784 247 EAST 20th STREET JACKSONVILLE, FLORIDA**
REVIEWED BY:	
NORTH	Groundwater & Environmental Services, Inc. 6500 N W 12th AVENUE, SUITE 109, FORT LAUDERDALE, FLORIDA
SCALE IN FEET (APPROXIMATE) 0 20	DATE 6–26–12 / FIGURE 6

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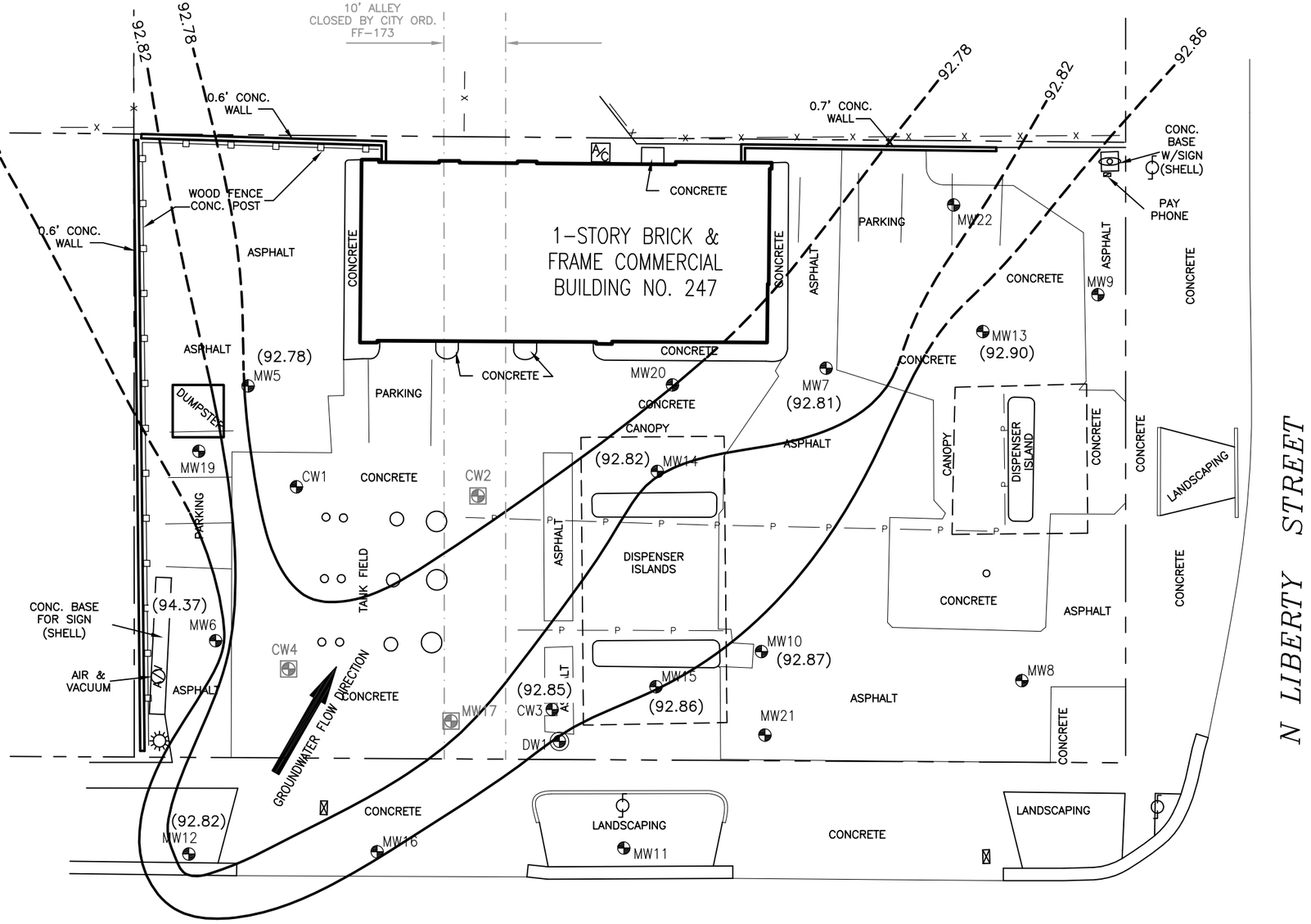

LEGEND

- P — P — PRODUCT PIPING LINE
- UTILITY POLE
- AREA LIGHT
- MONITORING WELL
- DEEP MONITORING WELL
- MISSING/DESTROYED MONITORING WELL
- (92.90) GROUNDWATER ELEVATION (feet)
- 92.82 GROUNDWATER CONTOUR (feet) DASHED WHERE INFERRED

DRAFTED BY: W.A.W. (N.J.)	**GROUNDWATER ELEVATION CONTOUR MAP MAY 22, 2012**
CHECKED BY:	**FIRST COAST ENERGY #3023 FORMER SHELL STATION #140784 247 EAST 20th STREET JACKSONVILLE, FLORIDA**
REVIEWED BY:	
NORTH	Groundwater & Environmental Services, Inc. 6500 N W 12th AVENUE, SUITE 109, FORT LAUDERDALE, FLORIDA
SCALE IN FEET (APPROXIMATE) 0 20	DATE 6-26-12 / FIGURE 7

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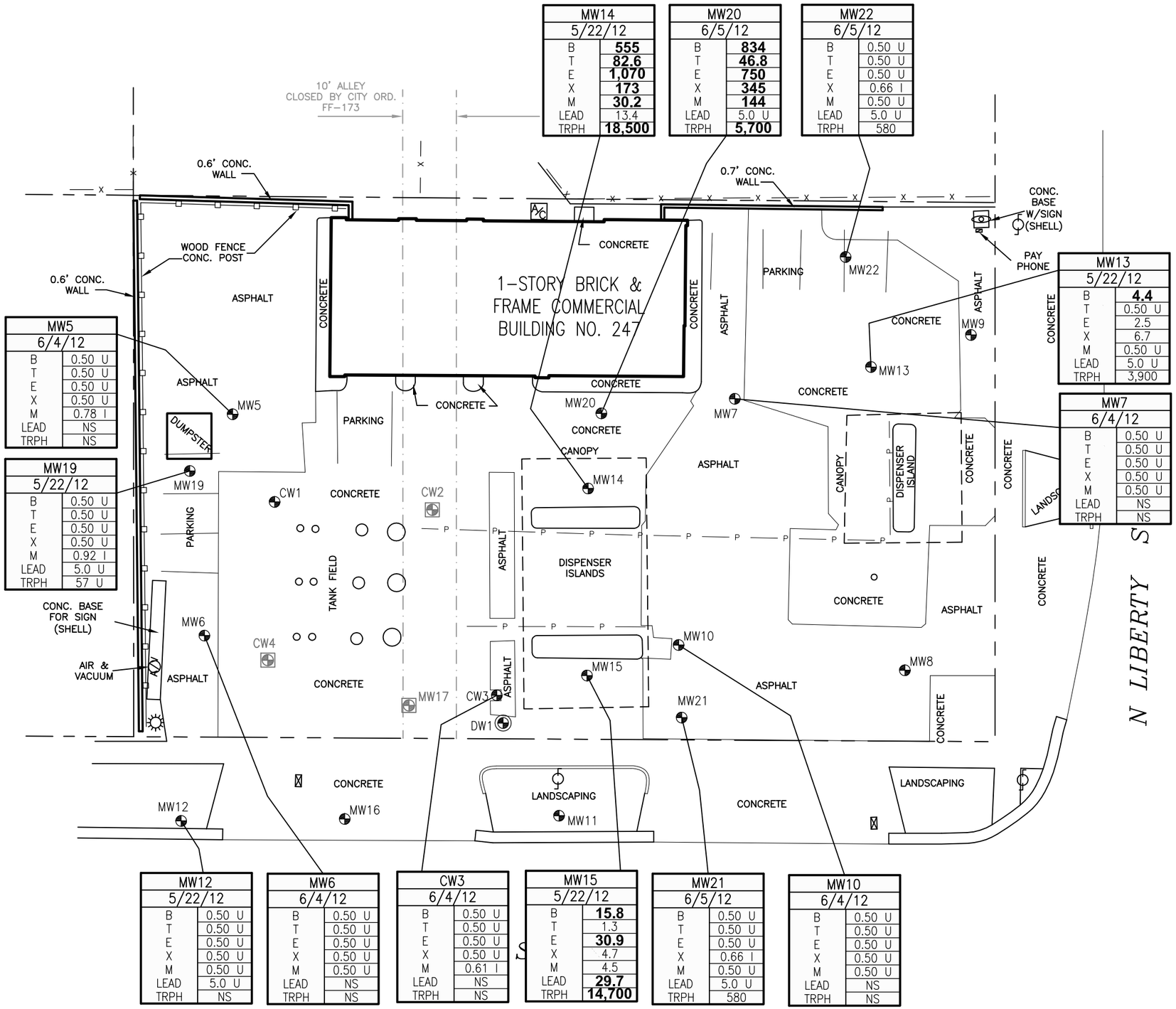

LEGEND

- PRODUCT PIPING LINE
- UTILITY POLE
- AREA LIGHT
- MONITORING WELL
- DEEP MONITORING WELL
- MISSING/DESTROYED MONITORING WELL

MW	SAMPLE LOCATION
VARIES	SAMPLE DATE
B 1	BENZENE CONCENTRATION (ug/L)
T 40	TOLUENE CONCENTRATION (ug/L)
E 30	ETHYLBENZENE CONCENTRATION (ug/L)
X 20	TOTAL XYLENES CONCENTRATION (ug/L)
M 20	MTBE CONCENTRATION (ug/L)
LEAD 15	LEAD CONCENTRATION (ug/L)
TRPH 5,000	TRPH CONCENTRATION (ug/L)

ug/L	MICROGRAMS PER LITER
MTBE	METHYL *tert*-BUTYL ETHER
TRPH	TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

NOTE:

SEE LABORATORY ANALYTICAL REPORT AND/OR TABLES FOR DEFINITION OF DATA QUALIFIERS.

DRAFTED BY: W.A.W. (N.J.)	GROUNDWATER ANALYTICAL MAP (BTEX/MTBE/ TRPH/LEAD) MAY 22, JUNE 4 & 5, 2012
CHECKED BY:	FIRST COAST ENERGY #3023 FORMER SHELL STATION #140784 247 EAST 20th STREET JACKSONVILLE, FLORIDA
REVIEWED BY:	Groundwater & Environmental Services, Inc. 6500 N W 12th AVENUE, SUITE 109, FORT LAUDERDALE, FLORIDA
NORTH	SCALE IN FEET (APPROXIMATE) 0 20 / DATE 6-26-12 / FIGURE 8

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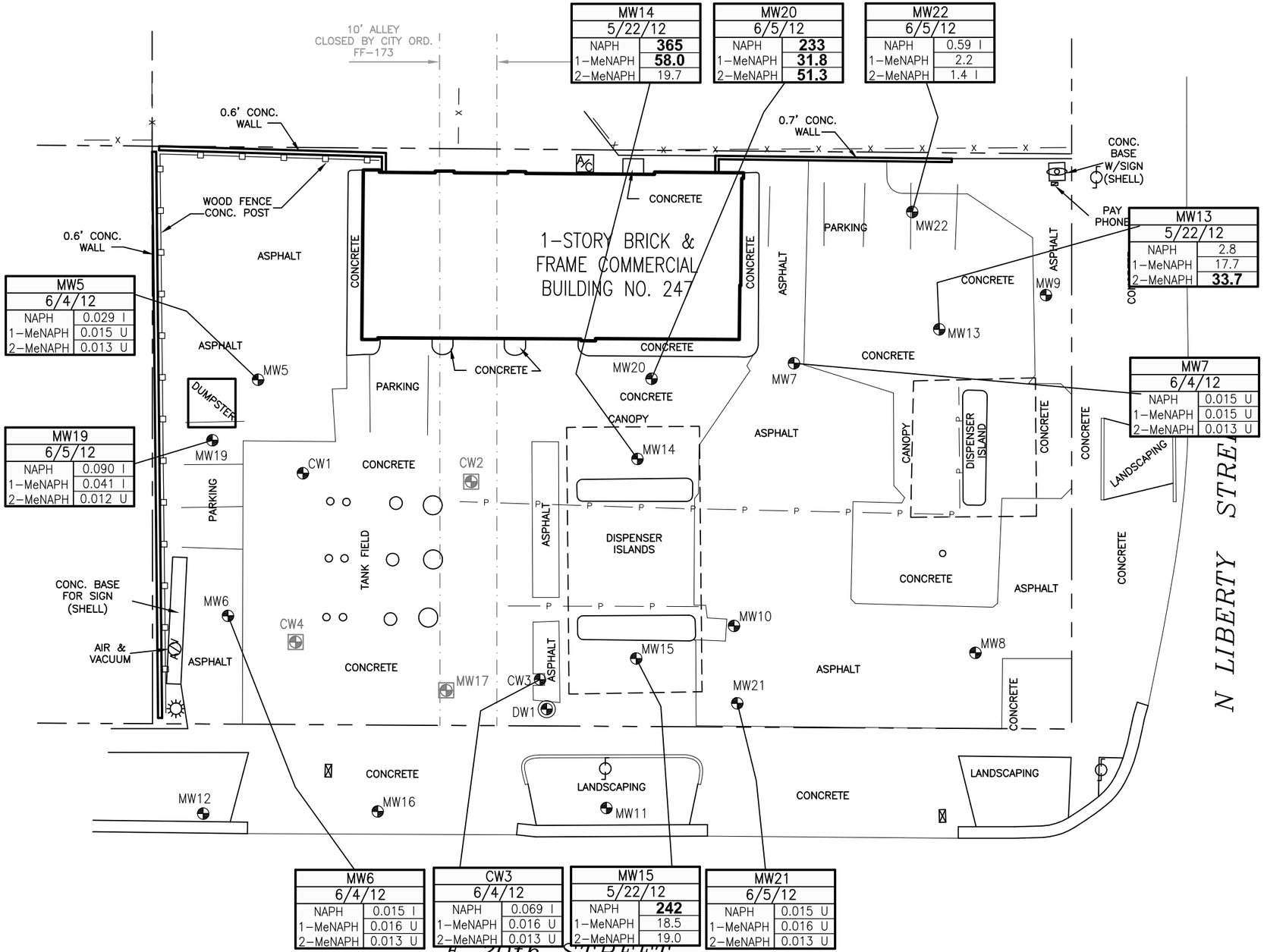

MW14	
5/22/12	
NAPH	**365**
1-MeNAPH	**58.0**
2-MeNAPH	19.7

MW20	
6/5/12	
NAPH	**233**
1-MeNAPH	**31.8**
2-MeNAPH	**51.3**

MW22	
6/5/12	
NAPH	0.59 I
1-MeNAPH	2.2
2-MeNAPH	1.4 I

MW13	
5/22/12	
NAPH	2.8
1-MeNAPH	17.7
2-MeNAPH	**33.7**

MW5	
6/4/12	
NAPH	0.029 I
1-MeNAPH	0.015 U
2-MeNAPH	0.013 U

MW7	
6/4/12	
NAPH	0.015 U
1-MeNAPH	0.015 U
2-MeNAPH	0.013 U

MW19	
6/5/12	
NAPH	0.090 I
1-MeNAPH	0.041 I
2-MeNAPH	0.012 U

MW6	
6/4/12	
NAPH	0.015 I
1-MeNAPH	0.016 U
2-MeNAPH	0.013 U

CW3	
6/4/12	
NAPH	0.069 I
1-MeNAPH	0.016 U
2-MeNAPH	0.013 U

MW15	
5/22/12	
NAPH	**242**
1-MeNAPH	18.5
2-MeNAPH	19.0

MW21	
6/5/12	
NAPH	0.015 U
1-MeNAPH	0.016 U
2-MeNAPH	0.013 U

LEGEND

- PRODUCT PIPING LINE
- UTILITY POLE
- AREA LIGHT
- MONITORING WELL
- DEEP MONITORING WELL
- MISSING/DESTROYED MONITORING WELL

MW	SAMPLE LOCATION
VARIES	SAMPLE DATE
NAPH 14	NAPHTHALENE CONCENTRATION (ug/L)
1-MeNAPH 28	1-MeNAPH CONCENTRATION (ug/L)
2-MeNAPH 28	2-MeNAPH CONCENTRATION (ug/L)

ug/L MICROGRAMS PER LITER
1-MeNAPH 1-METHYLNAPHTHALENE
2-MeNAPH 2-METHYLNAPHTHALENE

NOTE:

SEE LABORATORY ANALYTICAL REPORT AND/OR TABLES FOR DEFINITION OF DATA QUALIFIERS.

DRAFTED BY: W.A.W. (N.J.)	GROUNDWATER ANALYTICAL MAP (PAH) MAY 22, JUNE 4 & 5, 2012
CHECKED BY:	FIRST COAST ENERGY #3023 FORMER SHELL STATION #140784 247 EAST 20th STREET JACKSONVILLE, FLORIDA
REVIEWED BY:	Groundwater & Environmental Services, Inc. 6500 N W 12th AVENUE, SUITE 109, FORT LAUDERDALE, FLORIDA
NORTH	SCALE IN FEET (APPROXIMATE) 0 20 / DATE 6-26-12 / FIGURE 9

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TABLES

Table 1

SUMMARY OF SCREENING RESULTS

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Soil Boring Identification	Date Sampled	Depth Sampled (ft.)	PID Results (ppm)
SB-1	10/11/2000	1	BDL
		2	BDL
		3	BDL
		4	BDL
SB-2	10/11/2000	1	BDL
		2	BDL
		3	BDL
		4	BDL
SB-3	10/11/2000	1	BDL
		2	BDL
		3	BDL
		4	BDL
SB-4	10/11/2000	1	253
		2	272
		3	355
		4	332
SB-5	10/11/2000	1	1,974
		2	2,244
		3	2,264
		4	2,359
SB-6	10/11/2000	1	NA
		2	NA
		3	NA
		4	NA
SB-7	10/11/2000	1	NA
		2	NA
		3	NA
		4	NA
SB-8	10/11/2000	1	BDL
		2	NA
		3	NA
		4	NA
SB-9	10/11/2000	1	BDL
		2	BDL
		3	37
		4	22
SB-10	10/11/2000	1	BDL
		2	BDL
		3	BDL
		4	BDL

Table 1

SUMMARY OF SCREENING RESULTS

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Soil Boring Identification	Date Sampled	Depth Sampled (ft.)	PID Results (ppm)
SB-11	10/11/2000	1	BDL
		2	BDL
		3	BDL
		4	BDL
SB-12	10/11/2000	1	BDL
		2	BDL
		3	BDL
		4	BDL
SB-13	10/11/2000	1	BDL
		2	BDL
		3	BDL
		4	BDL
SB-14	10/11/2000	1	855
		2	1,370
		3	NA
		4	NA
SB-15	10/11/2000	1	11
		2	BDL
		3	BDL
		4	BDL
SB-16	10/11/2000	1	16
		2	BDL
		3	BDL
		4	BDL
SB-17	6/11/2001	1	<10
		2	<10
		3	<10
		4	<10
		5	<10
		6	<10
SB-18	6/11/2001	1	<10
		2	<10
		3	37
		4	420
		5	>2,500
		6	510

Table 1

SUMMARY OF SCREENING RESULTS

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Soil Boring Identification	Date Sampled	Depth Sampled (ft.)	PID Results (ppm)
SB-19	6/11/2001	1	1,056
		2	>2,500
		3	1,810
		4	1,074
		5	349
		6	322
SB-20	6/11/2001	1	1,056
		2	1,773
		3	1,585
		4	935
		5	1,032
		6	120
SB-21	6/11/2001	1	<10
		2	<10
		3	<10
		4	<10
		5	<10
		6	<10
SB-22	6/11/2001	1	<10
		2	<10
		3	<10
		4	<10
		5	<10
		6	<10
SB-23	6/11/2001	1	<10
		2	<10
		3	<10
		4	<10
		5	<10
		6	<10
SB-24	6/11/2001	1	<10
		2	<10
		3	<10
		4	<10
		5	<10
		6	<10
SB-25	6/11/2001	1	<10
		2	<10
		3	<10
		4	<10
		5	<10
		6	<10

Table 1

SUMMARY OF SCREENING RESULTS

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Soil Boring Identification	Date Sampled	Depth Sampled (ft.)	PID Results (ppm)
SB-26	6/11/2001	1	<10
		2	<10
		3	<10
		4	<10
		5	<10
		6	<10
SB-27	6/11/2001	1	2140
		2	>2,500
		3	>2,500
		4	>2,500
		5	>2,500
		6	>2,500
SB-28	6/11/2001	1	>2,500
		2	>2,500
		3	>2,500
		4	>2,500
		5	1,100
		6	1,070
SB-29	6/11/2001	1	<10
		2	15
		3	24
		4	12
		5	<10
SB-30	1/15/2002	1	<10
		2	<10
		3	<10
		4	<10
		5	<10
SB-31	1/15/2002	1	<10
		2	<10
		3	<10
		4	<10
		5	<10
MW-13	1/15/2002	1	406
		2	525
		3	829
		4	258
		5	466

Table 1

SUMMARY OF SCREENING RESULTS

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Soil Boring Identification	Date Sampled	Depth Sampled (ft.)	PID Results (ppm)
MW-14	1/15/2002	1	828
		2	1,966
		3	1,485
		4	1,614
		5	1,397
MW-15	1/15/2002	1	400
		2	626
		3	1,240
		4	1,053
		5	1,142
MW-16	1/15/2002	1	<10
		2	<10
		3	<10
		4	<10
		5	<10
MW-18	7/16/2002	1	<10
		2	<10
		3	<10
		4	<10
		5	<10
MW-19	5/31/2012	*0-2'	1.1
		2-4'	1.4
		4-6'	1.8
		6-8'	BDL
		8-10'	BDL
MW-20	5/31/2012	0-2'	BDL
		2-4'	BDL
		*4-6'	BDL
		6-8'	BDL
		8-10'	BDL
MW-21	5/31/2012	0-2'	BDL
		2-4'	BDL
		*4-6'	BDL
		6-8'	BDL
		8-10'	BDL
MW-22	5/31/2012	0-2'	1.5
		2-4'	1.6
		*4-6'	1.4
		6-8'	BDL
		8-10'	NR

NOTES:

PID - PhotoIonization Detector - MiniRae 2000
BDL - Below Detection Limit- 1 parts per million (ppm)
NA - Not Available.
NR - No Recovery.
* - Sample collected for laboratory analysis.

Table 2

SOIL ANALYTICAL SUMMARY
(BTEX/MTBE/TRPH)

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Sample Identification	Date Sampled	Depth Interval (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TRPH (mg/kg)
Commercial/Industrial Direct Exposure			**1.7**	**60,000**	**9,200**	**700**	**24,000**	**2,700**
Residential Direct Exposure			**1.2**	**7,500**	**1,500**	**130**	**4,400**	**460**
Leachability			**0.007**	**0.5**	**0.6**	**0.2**	**0.09**	**340**
SB-5	10/11/2000	2	**0.125**	**27.3**	**1.67**	**37.5**	<0.260	46.4
SB-9	10/11/2000	3	<0.0011	0.0022	<0.0011	0.0043	<0.0060	49.1
SB-14	10/11/2000	3	<0.0011	0.113	0.0067	0.167	<0.0063	51.9
SB-18	6/11/2001	1	<0.0011	0.009	<0.0011	0.021	<0.0058	45.2
SB-19	6/11/2001	4	<0.0011	<0.0011	<0.0011	<0.0028	<0.0070	<11.5
SB-29	6/11/2001	3	<0.0649	<0.0649	<0.0649	<0.130	<0.325	<13.0
MW-13	1/15/2002	2	<0.0010	<0.0010	<0.0010	<0.0021	<0.0052	<5.00
MW-14	1/15/2002	2	**0.0722**	0.172	0.328	**0.706**	<0.278	35.1
MW-15	1/15/2002	1	**0.0205**	0.0906	0.0259	**0.0809**	<0.0078	13.0
MW-16	1/15/2002	3	<0.0010	<0.0010	<0.0010	<0.0022	<0.0056	<10.0
MW-19	5/31/2012	2	0.0029 U	0.003 U	0.0032 U	0.0057 U	0.0028 U	2.6 U
MW-20	5/31/2012	4	0.003 U	0.0031 U	0.0033 U	0.0059 U	0.0029 U	3.0 U
MW-21	5/31/2012	4	0.0027 U	0.0028 U	0.003 U	0.0054 U	0.0026 U	2.8 U
MW-22	5/31/2012	4	0.0028 U	0.003 U	0.0031 U	0.0057 U	0.0027 U	2.9 U

Notes:
SCTL - Soil Cleanup Target Levels - Table II, Chapter 62-777, FAC.
<#- Less than the method detection limit of #
All concentrations in ppm (mg/kg).
NS - Not Sampled.
U - The compound was analyzed for but not detected.

Table 3

SOIL ANALYTICAL SUMMARY (PAH)

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Sample Identification	Date Sampled	Depth Interval (feet)	Naphthalene (mg/kg)	1-Methyl Naphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenz(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-cd)pyrene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
Comm./Industrial Direct Exposure			**300**	**1,800**	**2,100**	**20,000**	**20,000**	**300,000**	**#**	**0.7**	**#**	**52,000**	**#**	**#**	**#**	**59,000**	**33,000**	**#**	**36,000**	**45,000**
Residential Direct Exposure			**55**	**200**	**210**	**2,400**	**1,800**	**21,000**	**#**	**0.1**	**#**	**2,500**	**#**	**#**	**#**	**3,200**	**2,600**	**#**	**2,200**	**2,400**
Leachability			**1.2**	**3.1**	**8.5**	**2.1**	**27**	**2,500**	**0.8**	**8**	**2.4**	**32,000**	**24**	**77**	**0.7**	**1,200**	**160**	**6.6**	**250**	**880**
SB-5	10/11/2000	2	**3.59**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB-9	10/11/2000	3	<0.043	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB-14	10/11/2000	3	0.661	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB-18	6/11/2001	1	0.955	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB-19	6/11/2001	4	<0.038	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB-29	6/11/2001	3	<0.043	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-13	1/15/2002	2	0.340	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-14	1/15/2002	2	0.348	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-15	1/15/2002	1	0.336	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-16	1/15/2002	3	<0.033	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-19	5/31/2012	2	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U	0.0208 U
MW-20	5/31/2012	4	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U	0.0232 U
MW-21	5/31/2012	4	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U	0.0219 U
MW-22	5/31/2012	4	0.0231 U	0.0231 U	0.0231 U	0.0231 U	0.0231 U	0.0231 U	0.0231 U	0.0231 U	0.0231 U	0.0293 I	0.0231 U	0.0231 U	0.0231 U	0.0231 U	0.0231 U	0.0231 U	0.0231 U	0.0231 U

Notes:
SCTL - Soil Cleanup Target Levels - Table II, Chapter 62-777, FAC.
 # = (Toxic Equivalency Factors for Carcinogenic PAHs) Multiply Analytical Result by TEF
All concentrations in ppm (mg/kg).
<#- Less than the method detection limit of #
U - The compound was analyzed for but not detected.
I - The reported value is between laboratory method detection limit and the laboratory practical quantitation limit.

Contaminant	TEF
benzo(a)pyrene	1
benzo(a)anthracene	0.1
benzo(b)fluoranthene	0.1
benzo(k)fluoranthene	0.01
chrysene	0.001
dibenz(a,h)anthracene	1
indeno(1,2,3-cd)pyrene	0.1

Table 4

GROUNDWATER ELEVATION SUMMARY

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Well Number	CW-1	CW-2	CW-3	CW-4	MW-5
Well Diameter	4"	4"	4"	4"	4"
Well Depth	12.00	12.00	12.00	12.00	15.00
Screen Interval	2.00-12.00	2.00-12.00	2.00-12.00	2.00-12.00	3.00-15.00
TOC Elevation	99.42	99.40	99.00	98.86	99.39

DATE	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**
11/25/91	95.05	4.37	95.08	4.32	94.99	4.01	95.17	3.69	94.89	4.50
03/19/92	95.17	4.25	95.23	4.17	95.10	3.90	95.23	3.63	95.01	4.38
04/17/92	95.01	4.41	95.06	4.34	94.91	4.09	95.08	3.78	94.83	4.56
08/22/94	94.96	4.46	94.95	4.45	95.02	3.98	94.92	3.94	94.87	4.52
10/11/00	95.07	4.35	95.06	4.34	95.11	3.89	95.06	3.80	95.00	4.39
06/11/01	93.92	5.50	93.92	5.48	93.97	5.03	93.90	4.96	NM	NM
01/22/02	95.04	4.38	95.06	4.34	95.07	3.93	94.99	3.87	NM	NM
03/11/02	94.86	4.56	94.84	4.56	94.90	4.10	94.84	4.02	94.79	4.60
02/04/04	NM	NM	NM	NM	93.71	5.29	NM	NM	NM	NM
01/27/05	NM	NM	NM	NM	94.35	4.65	NM	NM	NM	NM
02/08/06	NM	NM	NM	NM	95.09	3.91	NM	NM	NM	NM
02/19/07	93.25	6.17	93.16	6.24	93.32	5.68	93.28	5.58	NM	NM
02/21/08	94.88	4.54	94.90	4.50	94.90	4.10	93.90	4.96	94.89	4.50
04/29/10	NM	NM	NM	NM	93.92	5.08	NM	NM	NM	NM
05/22/12	NM	NM	Destroyed		92.85	6.15	Destroyed		92.78	6.61
06/04/12	NM	NM	NM	NM	~~93.53~~ 93.57	~~5.47~~ 5.43	NM	NM	93.43	5.96

Well Number	MW-6	MW-7	MW-8	MW-9	MW-10
Well Diameter	4"	4"	4"	4"	4"
Well Depth	15.00	15.00	15.00	15.00	15.00
Screen Interval	3.00-15.00	3.00-15.00	3.00-15.00	3.00-15.00	3.00-15.00
TOC Elevation	99.31	99.41	99.45	98.92	99.19

DATE	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**
11/25/91	95.39	3.92	95.05	4.36	95.05	4.40	95.12	3.80	95.01	4.18
03/19/92	95.49	3.82	95.14	4.27	95.10	4.35	95.19	3.73	95.09	4.10
04/17/92	95.31	4.00	94.96	4.45	94.93	4.52	95.00	3.92	94.91	4.28
08/22/94	95.38	3.93	95.06	4.35	95.08	4.37	95.12	3.80	95.05	4.14
10/11/00	95.47	3.84	95.17	4.24	95.09	4.36	95.09	3.83	95.03	4.16
06/11/01	94.38	4.93	93.97	5.44	93.99	5.46	94.00	4.92	93.98	5.21
01/22/02	95.49	3.82	95.12	4.29	NM	NM	95.09	3.83	95.08	4.11
03/11/02	NM	NM	94.89	4.52	94.92	4.53	94.91	4.01	94.92	4.27
02/19/07	93.76	5.55	93.28	6.13	93.34	6.11	93.27	5.65	93.34	5.85
02/21/08	95.35	3.96	94.96	4.45	94.95	4.50	94.92	4.00	94.93	4.26
05/22/12	94.37	4.94	92.81	6.60	NM	NM	NM	NM	92.87	6.32
06/04/12	95.16	4.15	93.52	5.89	NM	NM	NM	NM	93.56	5.63

Table 4

GROUNDWATER ELEVATION SUMMARY

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Well Number	MW-11	MW-12	MW-13	MW-14	MW-15
Well Diameter	2"	2"	2"	2"	2"
Well Depth	15.00	15.00	12.00	12.00	12.00
Screen Interval	2.50-15.00	2.50-15.00	2.00-12.00	2.00-12.00	2.00-12.00
TOC Elevation	99.17	98.64	99.31	99.71	99.22

DATE	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**
08/22/94	95.01	4.16	94.87	3.77	NM	NM	NM	NM	NM	NM
10/11/00	95.02	4.15	95.05	3.59	NM	NM	NM	NM	NM	NM
06/11/01	93.92	5.25	93.94	4.70	NM	NM	NM	NM	NM	NM
01/22/02	NM	NM	95.09	3.55	95.06	4.25	95.13	4.58	95.07	4.15
03/11/02	94.88	4.29	94.88	3.76	94.89	4.42	94.94	4.77	94.93	4.29
02/04/04	NM	NM	NM	NM	93.75	5.56	93.79	5.92	93.72	5.50
01/27/05	NM	NM	NM	NM	94.37	4.94	94.45	5.26	94.37	4.85
02/08/06	NM	NM	NM	NM	95.20	4.11	95.16	4.55	95.11	4.11
02/19/07	93.29	5.88	93.35	5.29	93.33	5.98	93.36	6.35	93.36	5.86
02/21/08	94.87	4.30	94.98	3.66	94.96	4.35	95.12	4.59	94.92	4.30
04/29/10	93.89	5.28	NM	NM	93.71	5.60	94.03	5.68	93.97	5.25
05/22/12	NM	NM	92.82	5.82	92.90	6.41	92.82	6.89	92.86	6.36

Well Number	MW-16	MW-17	MW-18	MW-19	MW-20
Well Diameter	2"	4"	4"	2"	2"
Well Depth	12.00	14.70	14.70	12.00	12.00
Screen Interval	2.00-12.00	4.70-14.70	4.70-14.70	2.00-12.00	2.00-12.00
TOC Elevation	98.19	98.65	99.47	97.86	98.83

DATE	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**
11/25/91	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
03/19/92	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
04/17/92	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
08/22/94	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
10/11/00	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
06/11/01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
01/22/02	95.08	3.11	NM	NM	NM	NM	NM	NM	NM	NM
03/11/02	94.92	3.27	94.81	3.84	NM	NM	NM	NM	NM	NM
07/25/02	NM	NM	NM	NM	95.37	4.10	NM	NM	NM	NM
02/04/04	NM	NM	NM	NM	93.63	5.84	NM	NM	NM	NM
01/27/05	NM	NM	NM	NM	94.26	5.21	NM	NM	NM	NM
02/08/06	NM	NM	NM	NM	95.05	4.42	NM	NM	NM	NM
02/19/07	93.37	4.82	93.25	5.40	Missing		NM	NM	NM	NM
02/21/08	94.99	3.20	94.45	4.20	NM	NM	NM	NM	NM	NM
04/29/10	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
05/22/12	NM	NM	Destroyed		Destroyed		NM	NM	NM	NM
06/04/12	NM	NM	NM	NM	NM	NM	91.91	5.95	92.60	6.23

Well Number	MW-21	MW-22	DW-1
Well Diameter	2"	2"	4"
Well Depth	12.00	12.00	26.00
Screen Interval	2.00-12.00	2.00-12.00	21.00-26.00
TOC Elevation	99.09	100.38	98.84

DATE	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**	**ELEV (ft)**	**DTW (ft)**
11/25/91	NM	NM	NM	NM	94.92	3.92
03/19/92	NM	NM	NM	NM	95.04	3.80
04/17/92	NM	NM	NM	NM	94.86	3.98
08/22/94	NM	NM	NM	NM	95.03	3.81
10/11/00	NM	NM	NM	NM	95.08	3.76
06/11/01	NM	NM	NM	NM	93.91	4.93
01/22/02	NM	NM	NM	NM	NM	NM
03/11/02	NM	NM	NM	NM	94.84	4.00
07/25/02	NM	NM	NM	NM	NM	NM
02/04/04	NM	NM	NM	NM	NM	NM
01/27/05	NM	NM	NM	NM	NM	NM
02/08/06	NM	NM	NM	NM	NM	NM
02/19/07	NM	NM	NM	NM	93.31	5.53
02/21/08	NM	NM	NM	NM	94.93	3.91
04/29/10	NM	NM	NM	NM	93.86	4.98
05/22/12	NM	NM	NM	NM	NM	NM
06/04/12	93.56	5.53	94.62	5.76	NM	NM

Notes:
All Measurements in Feet
ELEV = Elevation
DTW = Depth to Water
NM = Not Measured

Table 5

GROUNDWATER ANALYTICAL DATA
(BTEX/MTBE/TRPH)

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Monitoring Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	tert-Butyl Alcohol (µg/L)	TRPH (FL) (µg/L)
	FDEP GCTLs	**1**	**40**	**30**	**20**	**20**	**1,400**	**5,000**
	FDEP NADCs	**100**	**400**	**300**	**200**	**200**	**14,000**	**50,000**
CW-1	11/25/91	**120**	BDL	**44**	**170**	**1,300**	NS	3
	02/08/94	**140**	33	19	**71**	**4,800**	NS	NS
	08/22/94	**130**	38	22	**61**	**3,000**	NS	NS
	10/11/00	<1	<1	<1	<1	NS	NS	554
	01/22/02	<1	<1	<1	<1	**49.0**	NS	NS
	02/19/07	<0.610	<0.600	<0.460	<0.840	1.21	NS	NS
	02/21/08	0.500 U	0.500 U	0.520 U	1.68 U	<0.590	NS	NS
CW-2	11/25/91	**110**	19	**44**	**89**	**710**	NS	3
	02/08/94	**240**	**73**	29	**130**	**2,100**	NS	NS
	08/22/94	**130**	29	**88**	**33**	**180**	NS	NS
	10/11/00	<1	<1	<1	<1	NS	NS	816
	01/22/02	<1	<1	<1	<1	**30.5**	NS	NS
	02/19/07	<0.610	<0.600	<0.460	2.30	11.4	NS	NS
	02/21/08	0.500 U	0.500 U	0.500 U	1.50 U	2.50 U	NS	NS
CW-3	11/25/91	**790**	20	**440**	**110**	**1,000**	NS	1
	02/08/94	**320**	BDL	**160**	**100**	**370**	NS	NS
	08/22/94	**560**	26	**780**	**230**	**1,300**	NS	NS
	10/11/00	**22**	<1	**46**	<1	NS	NS	<200
	06/11/01	**26.4**	1.8	**47.1**	**21.2**	**28.80**	NS	NS
	01/22/02	1.10	<1	5.20	2.40	6.60	NS	NS
	02/04/04	<1	<1	<1	1.9	10.6	NS	NS
	01/27/05	<1	<5	<5	<5	3.6	NS	NS
	02/08/06	<1	<1	<1	<1.23	**38.9**	NS	NS
	02/19/07	<0.610	<0.600	0.862	2.30	11.2	NS	NS
	02/21/08	0.500 U	0.500 U	0.520 U	3.80	5.05	NS	NS
	04/29/10	0.500 U	0.500 U	0.500 U	1.50 U	2.50 U	10.0 U	NS
	06/04/12	0.50 U	0.50 U	0.50 U	0.50 U	0.61 I	NS	NS
CW-4	11/25/91	**230**	62	100	650	2,000	NS	8
	02/08/94	**150**	31	43	140	5,100	NS	NS
	08/22/94	**250**	47	64	240	3,200	NS	NS
	10/11/00	<1	<1	<1	<1	NS	NS	946
	01/22/02	<1	<1	<1	<1	8.70	NS	NS
	02/19/07	<0.610	<0.600	<0.460	<0.840	0.805	NS	NS
	02/21/08	0.500 U	0.500 U	0.520 U	1.68 U	0.590 U	NS	NS
MW-5	11/25/91	**3**	BDL	BDL	BDL	6.7	NS	BDL
	02/08/94	BDL	BDL	BDL	BDL	BDL	NS	NS
	08/22/94	1.1	BDL	BDL	BDL	17	NS	NS
	10/11/00	<1	<1	<1	<1	NS	NS	2,050
	02/21/08	0.500 U	0.500 U	0.520 U	1.68 U	0.590 U	NS	NS
	06/04/12	0.50 U	0.50 U	0.50 U	0.50 U	0.78 I	NS	NS
MW-6	11/25/91	**200**	**110**	**330**	**470**	**2,200**	NS	1
	02/08/94	**68**	**80**	**420**	**290**	**420**	NS	NS
	08/22/94	**150**	21	**340**	**180**	**1,000**	NS	NS
	10/11/00	**5.6**	<1	3.8	<1	NS	NS	1,840
	06/11/01	**2.9**	<1	3.9	6.5	15.9	NS	NS
	01/22/02	<1	<1	<1	<1	2.00	NS	NS
	02/19/07	<6.10	<0.600	<0.460	<0.840	0.459	NS	NS
	02/21/08	0.500 U	0.500 U	0.520 U	1.68 U	0.590 U	NS	NS
	06/04/12	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NS	NS
MW-7	11/25/91	**3.2**	2	BDL	120	2.9	NS	0.4
	02/08/94	**1.5**	BDL	BDL	BDL	BDL	NS	NS
	08/22/94	BDL	BDL	2.7	1.8	BDL	NS	NS
	10/11/00	<1	<1	<1	<1	NS	NS	1,990
	01/22/02	<1	<1	<1	<1	5.30	NS	NS
	02/19/07	<0.610	<0.600	<0.460	<0.840	<0.380	NS	NS
	02/21/08	0.500 U	0.500 U	0.520 U	3.30	0.590 U	NS	NS
	06/04/12	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NS	NS

Table 5

GROUNDWATER ANALYTICAL DATA
(BTEX/MTBE/TRPH)

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Monitoring Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	tert-Butyl Alcohol (µg/L)	TRPH (FL) (µg/L)
	FDEP GCTLs	**1**	**40**	**30**	**20**	**20**	**1,400**	**5,000**
	FDEP NADCs	**100**	**400**	**300**	**200**	**200**	**14,000**	**50,000**
MW-8	11/25/91	BDL	BDL	BDL	BDL	BDL	NS	1
	02/08/94	BDL	BDL	BDL	BDL	8.4	NS	NS
	08/22/94	BDL	BDL	BDL	BDL	BDL	NS	NS
	10/11/00	<1	<1	<1	<1	NS	NS	NS
	02/19/07	<0.610	<0.600	<0.460	<0.840	1.64	NS	NS
	02/21/08	0.500 U	0.500 U	0.520 U	3.30	0.590 U	NS	NS
MW-9	11/25/91	BDL	BDL	BDL	BDL	BDL	NS	0
	02/08/94	BDL	BDL	BDL	BDL	BDL	NS	NS
	08/22/94	BDL	BDL	BDL	BDL	BDL	NS	NS
	10/11/00	<1	<1	<1	<1	NS	NS	NS
	01/22/02	<1	<1	<1	<1	<1	NS	NS
	02/19/07	<0.610	<0.600	<0.460	<0.840	0.541	NS	NS
	02/21/08	0.500 U	0.500 U	0.520 U	1.68 U	0.590 U	NS	NS
MW-10	11/25/91	BDL	BDL	BDL	BDL	BDL	NS	BDL
	02/08/94	BDL	BDL	BDL	BDL	BDL	NS	NS
	08/22/94	1.2	BDL	4.3	0.9	**42.0**	NS	NS
	10/11/00	<1	<1	<1	<1	NS	NS	NS
	01/22/02	<1	<1	<1	<1	<1	NS	NS
	02/19/07	<0.610	<0.600	<0.460	<0.840	<0.380	NS	NS
	02/21/08	0.500 U	0.500 U	0.520 U	3.42	0.590 U	NS	NS
	06/04/12	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NS	NS
MW-11	08/22/94	BDL	BDL	BDL	BDL	BDL	NS	BDL
	10/11/00	<1	<1	<1	<1	NS	NS	NS
	02/19/07	<0.610	<0.600	<0.4690	<0.840	<0.380	NS	NS
	02/21/08	**3.50**	0.500 U	**31.1**	7.68	0.590 U	NS	NS
	04/29/10	0.500 U	0.500 U	0.500 U	1.50 U	2.50 U	10.0 U	NS
MW-12	08/22/94	**7.6**	BDL	1.2	1.1	**49**	NS	BDL
	10/11/00	<1	<1	<1	<1	<1	NS	NS
	01/22/02	<1	<1	<1	<1	<1	NS	NS
	02/19/07	<0.610	<0.600	<0.4690	<0.840	<0.380	NS	NS
	02/21/08	0.500 U	0.500 U	0.520 U	1.68 U	0.590 U	NS	NS
	05/22/12	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NS	NS
MW-13	01/22/02	**29.7**	<1	42.9	17.4	**21.7**	NS	NS
	02/04/04	**55.8**	2.7	18.4	**22.0**	**33.1**	NS	NS
	01/27/05	**14**	<5	7	<5	3.7	NS	NS
	02/08/06	**58.6**	1.60	**129**	1.28	3.98	NS	NS
	02/19/07	**2.26**	<0.600	<0.460	<0.840	1.00	NS	NS
	02/21/08	0.664	0.500 U	0.520 U	3.73	0.601	NS	NS
	04/29/10	0.500 U	0.500 U	0.500 U	1.50 U	2.50 U	10.0 U	NS
	05/22/12	**4.4**	0.50 U	2.5	6.7	0.50 U	NS	3,900
MW-14	01/22/02	**2,980**	**3,360**	**655**	**1,720**	**6,730**	NS	NS
	02/04/04	**816**	**170**	**122**	**532**	**208**	NS	NS
	01/27/05	**740**	**1,500**	**930**	**2,940**	**190**	NS	NS
	02/08/06	**45.1**	**435**	**312**	**527**	2.90	NS	NS
	02/19/07	**254**	**1,710**	**1,100**	**2,760**	**75.2**	NS	NS
	02/21/08	**607**	**974**	**1,030**	**2,430**	**188**	NS	NS
	04/29/10	**179.2**	**987.5**	**977.3**	**2,022**	2.50 U	10.0 U	NS
	05/22/12	**555**	**82.6**	**1,070**	**173**	**30.2**	NS	**18,500**
MW-15	01/22/02	**82.0**	<1	**324**	**139**	16.0	NS	NS
	02/04/04	**249**	23.2	**969**	**64.2**	**57.6**	NS	NS
	01/27/05	**290**	12	**1,900**	**397**	**140**	NS	NS
	02/08/06	**394**	**65.4**	**2,060**	**511**	**587**	NS	NS
	02/19/07	**144**	20.8	**729**	**160**	**158**	NS	NS
	02/21/08	**101**	6.55	**666**	**209**	**33.0**	NS	NS
	04/29/10	**72.00**	12.90	**814.7**	**176.10**	2.50 U	110	NS
	05/22/12	**15.8**	1.3	**30.9**	4.7	4.5	NS	**14,700**

Table 5

GROUNDWATER ANALYTICAL DATA
(BTEX/MTBE/TRPH)

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Monitoring Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	tert-Butyl Alcohol (µg/L)	TRPH (FL) (µg/L)
	FDEP GCTLs	**1**	**40**	**30**	**20**	**20**	**1,400**	**5,000**
	FDEP NADCs	**100**	**400**	**300**	**200**	**200**	**14,000**	**50,000**
MW-16	01/22/02	<1	<1	<1	<1	<1	NS	NS
	02/19/07	<0.610	<0.600	<0.4690	<0.840	<0.380	NS	NS
	02/21/08	0.500 U	0.500 U	0.520 U	1.68 U	0.590 U	NS	NS
MW-17	02/19/07	<0.610	<0.600	<0.4690	<0.840	1.33	NS	NS
	02/21/08	0.500 U	0.500 U	0.520 U	3.82	0.698	NS	NS
MW-18	07/25/02	**4.3**	2.5	8.3	10.9	**41.7**	NS	NS
	02/04/04	**8.7**	2.3	3.3	4.3	**52.5**	NS	NS
	01/27/05	<1	<5	<5	<5	4.2	NS	NS
	02/08/06	<1	<1	<1	<1.23	<1	NS	NS
MW-19	06/05/12	0.50 U	0.50 U	0.50 U	0.50 U	0.92 I	NS	57 U
MW-20	06/05/12	**834**	**46.8**	**750**	**345**	**144**	NS	**5,700**
MW-21	06/05/12	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NS	180
MW-22	06/05/12	0.50 U	0.50 U	0.50 U	0.66 I	0.50 U	NS	580
DW-1	11/25/91	**7.2**	BDL	1.5	2.3	**82**	NS	0.3
	02/08/94	BDL	BDL	BDL	BDL	BDL	NS	NS
	08/22/94	BDL	BDL	BDL	BDL	BDL	NS	NS
	10/11/00	<1	<1	<1	<1	NS	NS	NS
	02/19/07	<0.610	<0.600	<0.4690	<0.640	0.400	NS	NS
	02/21/08	0.500 U	0.500 U	0.520 U	3.82	0.698	NS	NS
	04/29/10	0.500 U	0.500 U	2.570	1.50 U	2.50 U	10.0 U	NS
SB-17	06/11/01	<1	<1	<1	2.3	<1	NS	NS
SB-18	06/11/01	**45.6**	1.7	**86.4**	9.9	**41.9**	NS	NS
SB-19	06/11/01	**18.6**	3.7	16.6	13.3	15.9	NS	NS
SB-20	06/11/01	1.1	<1	<1	2.3	<1	NS	NS
SB-21	06/11/01	<1	<1	1.4	6.4	<1	NS	NS
SB-22	06/11/01	<1	<1	1.8	5.8	<1	NS	NS
SB-23	06/11/01	<1	<1	<1	<1	<1	NS	NS
SB-24	06/11/01	<1	<1	<1	<1	<1	NS	NS
SB-25	06/11/01	<1	<1	24.3	**88.1**	<1	NS	NS
SB-26	06/11/01	<1	<1	<1	2.7	<1	NS	NS
SB-27	06/11/01	**820**	34	**1,420**	**116**	**78**	NS	NS
SB-28	06/11/01	**189**	**328**	**371**	**826**	**174**	NS	NS
SB-29	06/11/01	**1.9**	1.5	5.4	11.2	<1	NS	NS

Notes:

<# = Less than the method detection limit of #
µg/L = Micrograms/liter
MTBE = Methyl tertiary butyl ether
NS = Not Sampled
BDL = Below Detection Limits
U = The compound was analyzed for but not detected.
I = The reported value is between laboratory method detection limit and the laboratory practical quantitation limit.

Table 6

GROUNDWATER ANALYTICAL RESULTS SUMMARY
(Metals/EDB)

Former Shell Service Station #140784
First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Sample Identification	Date Sampled	Arsenic	Cadmium	Chromium	Lead	1,2-Dibromoethane
FDEP (GCTL)		**10**	**5**	**100**	**15**	**0.02**
FDEP (NADC)		**100**	**50**	**1,000**	**150**	**2**
CW-1	11/25/91	NS	NS	NS	6.2	NS
	10/11/00	NS	NS	NS	**16.0**	NS
CW-2	11/25/91	NS	NS	NS	8	NS
	10/11/00	NS	NS	NS	**16.0**	NS
CW-3	10/11/00	NS	NS	NS	<3.0	NS
CW-4	11/25/91	NS	NS	NS	3.8	NS
	10/11/00	NS	NS	NS	6.0	NS
MW-5	11/25/91	NS	NS	NS	5.3	NS
MW-6	11/25/91	NS	NS	NS	3.1	NS
MW-7	11/25/91	NS	NS	NS	BDL	NS
MW-8	11/25/91	NS	NS	NS	BDL	NS
MW-9	11/25/91	NS	NS	NS	BDL	NS
MW-10	11/25/91	NS	NS	NS	BDL	NS
MW-11	08/22/94	NS	NS	NS	**49**	NS
MW-12	08/22/94	NS	NS	NS	**27**	NS
	05/22/12	NS	NS	NS	5.0 U	NS
MW-13	05/22/12	NS	NS	NS	5.0 U	NS
MW-14	05/22/12	NS	NS	NS	13.4	NS
MW-15	05/22/12	NS	NS	NS	**29.7**	NS
MW-19	06/05/12	NS	NS	NS	5.0 U	0.0063 U
MW-20	06/05/12	NS	NS	NS	5.0 U	0.0063 U
MW-21	06/05/12	NS	NS	NS	5.0 U	0.0066 U
MW-22	06/05/12	NS	NS	NS	5.0 U	0.0062 U
DW-1	11/25/91	NS	NS	NS	BDL	NS

Notes:
GCTLs = Groundwater Cleanup Target Levels
NADCs = Natural Attenuation Default Concentrations
NS = Not Sampled
BDL = Below Detection Limits

Table 7

GROUNDWATER ANALYTICAL DATA (PAH)

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Monitoring Well	Date	Naphthalene (µg/L)	1-Methylnaphthalene (µg/L)	2-Methylnaphthalene (µg/L)	Acenaphthene (µg/L)	Acenaphthylene (µg/L)	Anthracene (µg/L)	Benzo(a)anthracene (µg/L)	Benzo(a)pyrene (µg/L)	Benzo(b)fluoranthene (µg/L)	Benzo(g,h,i)perylene (µg/L)	Benzo(k)fluoranthene (µg/L)	Chrysene (µg/L)	Dibenz(a,h)anthracene (µg/L)	Fluoranthene (µg/L)	Fluorene (µg/L)	Indeno(1,2,3-cd)pyrene (µg/L)	Phenanthrene (µg/L)	Pyrene (µg/L)
	FDEP GCTLs **FDEP NADCs**	**14** **140**	**28** **280**	**28** **280**	**20** **200**	**210** **2,100**	**2,100** **21,000**	**0.05** **5**	**0.2** **2**	**0.05** **5**	**210** **2,100**	**0.5** **50**	**4.8** **480**	**0.005** **0.5**	**280** **2,800**	**280** **2,800**	**0.05** **5**	**210** **2,100**	**210** **2,100**
CW-1	11/25/91	**740**	**390**	**580**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/08/94	**120**	**140**	**190**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	08/22/94	**410**	**31**	**540**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/00	<1.11	<1.11	<1.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/22/02	<1.11	<1.11	<1.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CW-2	11/25/91	**246**	**120**	**110**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/08/94	**52**	**50**	**56**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	08/22/94	**300**	**100**	**130**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/00	<1.11	<1.11	<1.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/22/02	<1.11	<1.11	<1.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CW-3	11/25/91	**650**	**60**	**98**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/08/94	**120**	24	**43**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	08/22/94	**520**	**48**	**160**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/00	NS	**40.4**	**79.6**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	06/11/01	**65.2**	21.3	14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/22/02	11.3	8.27	1.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	06/04/12	0.069 I	0.016 U	0.013 U	0.019 U	0.018 U	0.019 U	0.013 U	0.022 U	0.016 U	0.017 U	0.023 U	0.015 U	0.019 U	0.012 U	0.011 U	0.019 U	0.016 U	0.010 U
CW-4	11/25/91	**1,600**	**500**	**890**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/08/94	**340**	**250**	**350**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	08/22/94	**660**	**370**	**780**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/00	<1.11	<1.11	<1.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/22/02	<1.11	<1.11	<1.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	11/25/91	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/08/94	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	08/22/94	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/00	9.9	24.2	<1.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	06/04/12	0.029 I	0.015 U	0.013 U	0.072 I	0.017 U	0.018 U	0.013 U	0.021 U	0.015 U	0.016 U	0.022 U	0.015 U	0.018 U	0.039 I	0.011 I	0.018 U	0.015 U	0.0097 U
MW-6	11/25/91	**1,300**	**270**	**520**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/08/94	**550**	**130**	**250**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	08/22/94	**700**	**150**	**340**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/00	**61**	**33.8**	14.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	06/11/01	**36.6**	25.1	5.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/22/02	<1.11	<1.11	<1.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	06/04/12	0.015 I	0.016 U	0.013 U	0.018 U	0.018 U	0.018 U	0.013 U	0.021 U	0.016 U	0.017 U	0.022 U	0.015 U	0.018 U	0.033 I	0.011 U	0.018 U	0.016 U	0.017 I
MW-7	11/25/91	**75.0**	8.9	27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/08/94	2.8	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	08/22/94	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/00	3.6	16.3	11.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/22/02	2.72	8.03	1.90	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	06/04/12	0.015 U	0.015 U	0.013 U	0.018 U	0.017 U	0.018 U	0.013 U	0.021 U	0.015 U	0.016 U	0.022 U	0.015 U	0.018 U	0.012 U	0.011 U	0.018 U	0.015 U	0.0097 U
MW-8	11/25/91	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/08/94	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	08/22/94	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	11/25/91	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/08/94	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	08/22/94	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/22/02	<1.11	<1.11	<1.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table 7

GROUNDWATER ANALYTICAL DATA (PAH)

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Monitoring Well	Date	Naphthalene (µg/L)	1-Methylnaphthalene (µg/L)	2-Methylnaphthalene (µg/L)	Acenaphthene (µg/L)	Acenaphthylene (µg/L)	Anthracene (µg/L)	Benzo(a)anthracene (µg/L)	Benzo(a)pyrene (µg/L)	Benzo(b)fluoranthene (µg/L)	Benzo(g,h,i)perylene (µg/L)	Benzo(k)fluoranthene (µg/L)	Chrysene (µg/L)	Dibenzo(a,h)anthracene (µg/L)	Fluoranthene (µg/L)	Fluorene (µg/L)	Indeno(1,2,3-cd)pyrene (µg/L)	Phenanthrene (µg/L)	Pyrene (µg/L)
	FDEP GCTLs **FDEP NADCs**	**14** **140**	**28** **280**	**28** **280**	**20** **200**	**210** **2,100**	**2,100** **21,000**	**0.05** **5**	**0.2** **2**	**0.05** **5**	**210** **2,100**	**0.5** **50**	**4.8** **480**	**0.005** **0.5**	**280** **2,800**	**280** **2,800**	**0.05** **5**	**210** **2,100**	**210** **2,100**
MW-10	11/25/91	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/08/94	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	08/22/94	2.5	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/22/02	<1.11	<1.11	<1.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-11	08/22/94	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12	08/22/94	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/22/02	<1.11	<1.11	<1.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-13	01/22/02	**165**	**55.0**	**119**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	05/22/12	2.8	17.7	**33.7**	0.13 I	0.017 U	0.029 I	0.013 U	0.021 U	0.046 I	0.047 I	0.031 I	0.014 U	0.018 U	0.035 I	0.12 I	0.018 U	0.015 U	0.033 I
MW-14	01/22/02	**515**	**59.0**	**192**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	05/22/12	**365**	**58.0**	19.7	0.018 U	0.017 U	0.018 U	0.013 U	0.021 U	0.015 U	0.016 U	0.022 U	0.014 U	0.018 U	0.012 U	0.011 U	0.018 U	0.015 U	0.0097 U
MW-15	01/22/02	**455**	**54.5**	**147**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	05/22/12	**242**	18.5	19.0	0.16 I	0.017 U	0.018 U	0.013 U	0.021 U	0.015 U	0.016 U	0.022 U	0.015 U	0.018 U	0.012 U	0.011 U	0.018 U	0.015 U	0.0097 U
MW-16	01/22/02	<1.11	<1.11	<1.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-18	07/25/02	6.04	<1.00	<1.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-19	06/05/12	0.090 I	0.041 I	0.012 U	0.079 I	0.017 U	0.059 I	0.012 U	0.021 U	0.015 U	0.016 U	0.022 U	0.014 U	0.018 U	0.080 I	0.044 I	0.018 U	0.019 I	0.0096 U
MW-20	06/05/12	**233**	**31.8**	**51.3**	0.069 I	0.018 U	0.019 U	0.013 U	0.022 U	0.016 U	0.017 U	0.024 U	0.015 U	0.019 U	0.012 U	0.011 U	0.019 U	0.016 U	0.010 U
MW-21	06/05/12	0.015 U	0.016 U	0.013 U	0.019 U	0.018 U	0.019 U	0.013 U	0.022 U	0.016 U	0.017 U	0.023 U	0.015 U	0.019 U	0.045 I	0.011 U	0.019 U	0.016 U	0.028 I
MW-22	06/05/12	0.59 I	2.2	1.4 I	0.31 I	0.018 U	0.061 I	0.013 U	0.022 U	0.016 U	0.017 U	0.023 U	0.015 U	0.019 U	0.15 I	0.14 I	0.019 U	0.28 I	0.11 I
DW-1	11/25/91	8.1	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/08/94	1.7	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	08/22/94	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

µg/L = Micrograms/liter
<# = Less than the method detection limit of #
U = The compound was analyzed for but not detected.
I = The reported value is between The laboratory method detection limit and the laboratory practical quantitation limit.

Table 8

MONITORING WELL CONSTRUCTION DETAILS

First Coast Energy #3023
247 East 20th Street
Jacksonville, Duval County, Florida
FDEP No. 16/8507524

Well ID	Date Installed	Installation Method	Top of Casing Elevation	Riser Length	Total Well Depth (ft)	Screened Interval (ft bls)	Diameter (in)	Lithology of Screened Interval	Status
CW-1	Unknown	Unknown	99.42	To Grade	12.00	2.00-12.00	4	Unknown	Active
CW-2	Unknown	Unknown	99.40	To Grade	12.00	2.00-12.00	4	Unknown	Destroyed
CW-3	Unknown	Unknown	99.00	To Grade	12.00	2.00-12.00	4	Unknown	Active
CW-4	Unknown	Unknown	98.86	To Grade	12.00	2.00-12.00	4	Unknown	Destroyed
MW-5	10/7/91	Hollow Stem Auger	99.39	To Grade	15.00	3.00-15.00	4	Fine Grained Quartz Sand	Active
MW-6	10/7/91	Hollow Stem Auger	99.31	To Grade	15.00	3.00-15.00	4	Fine Grained Quartz Sand	Active
MW-7	10/7/91	Hollow Stem Auger	99.41	To Grade	15.00	3.00-15.00	4	Fine Grained Quartz Sand	Active
MW-8	10/7/91	Hollow Stem Auger	99.45	To Grade	15.00	3.00-15.00	4	Fine Grained Quartz Sand	Active
MW-9	10/8/91	Hollow Stem Auger	98.92	To Grade	15.00	3.00-15.00	4	Fine Grained Quartz Sand	Active
MW-10	10/7/91	Hollow Stem Auger	99.19	To Grade	15.00	3.00-15.00	4	Fine Grained Quartz Sand	Active
MW-11	8/9/94	Hollow Stem Auger	99.17	To Grade	15.00	2.50-15.00	2	Fine Grained Quartz Sand	Active
MW-12	8/9/94	Hollow Stem Auger	98.64	To Grade	15.00	2.50-15.00	2	Fine Grained Quartz Sand	Active
MW-13	1/15/02	Hollow Stem Auger	99.31	To Grade	12.00	2.00-12.00	2	Fine Grained Quartz Sand	Active
MW-14	1/15/02	Hollow Stem Auger	99.71	To Grade	12.00	2.00-12.00	2	Fine Grained Quartz Sand	Active
MW-15	1/15/02	Hollow Stem Auger	99.22	To Grade	12.00	2.00-12.00	2	Fine Grained Quartz Sand	Active
MW-16	1/15/02	Hollow Stem Auger	98.19	To Grade	12.00	2.00-12.00	2	Fine Grained Quartz Sand	Active
MW-17	Unknown	Unknown	98.65	To Grade	14.70	4.70-14.70	2	Unknown	Destroyed
MW-18	7/16/02	Hollow Stem Auger	99.47	To Grade	12.00	2.00-12.00	2	Fine Grained Quartz Sand	Destroyed
MW-19	5/31/12	Hollow Stem Auger	97.86	To Grade	12.00	2.00-12.00	2	Medium Grained Sand	Active
MW-20	5/31/12	Hollow Stem Auger	98.83	To Grade	12.00	2.00-12.00	2	Medium Grained Sand	Active
MW-21	5/31/12	Hollow Stem Auger	99.09	To Grade	12.00	2.00-12.00	2	Medium Grained Sand	Active
MW-22	5/31/12	Hollow Stem Auger	100.38	To Grade	12.00	2.00-12.00	2	Medium Grained Sand	Active
DW-1	10/7/91	Hollow Stem Auger	98.84	To Grade	26.00	21.00-26.00	4	Fine Grained Quartz Sand	Active

ft - feet
in - inches
ft bls - feet below land surface
Unknown - no data available

Florida Department of
Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard Jr.
Secretary

August 3, 2012

Mr. Michael Berzinsky
Groundwater and Environmental Services, Inc.
6500 NW 12th Avenue, Suite 109
Fort Lauderdale, FL 33309

Subject: LSSI Deliverable Review
First Coast Energy #3023
247 E 20th St
Jacksonville, Duval County
FDEP Facility ID# 16/8507524
Discharge Date: 10 (PLRIP)
Priority Score: 10 (LSSI)
Work Order #: 2012-95-W0884A

Dear Mr .Berzinsky:

The Bureau of Petroleum Storage Systems (BPSS) has reviewed the Supplemental Site Assessment (SSA) Report dated July 13, 2012 (received July 24, 2012), submitted for this facility. The report is acceptable and demonstrates that the work outlined in Work Order # 2012-95-W0884A was satisfactorily performed. Please remember that pursuant to Petroleum Cleanup Program Preapproval Procedures, the final invoice for this work order must be received by September 4, 2012.

Based on the results of the LSSI assessment we concur with your recommendation to terminate the assessment and await funding for continued assessment and cleanup in priority order. If you have any questions about the review, please contact me at (850) 222-6446, extension 332, vmolosky@wrscompass.com, or at the letterhead address, Mail Station 4585.

Sincerely,

Vince Molosky
WRScompass Staff Scientist
Petroleum Cleanup Section Five
Bureau of Petroleum Storage Systems
Email: vmolosky@wrscompass.com

Michelle C. Roberts
Environmental Consultant
Petroleum Cleanup Section Five
Bureau of Petroleum Storage Systems
Michelle.Roberts@dep.state.fl.us

Reviewed by:

Michelle Allard, P.G. #1383
WRScompass Senior Geologist
Petroleum Cleanup Section Five
Bureau of Petroleum Storage Systems

8/13/12
Date

cc: Ms. Robin Ryan-Hensen, First Coast Energy, 7014 AC Skinner Parkway, Suite 290, Jacksonville, FL 32256-6940
Mr. Mark Maloney, Shell Oil Products US, PMB 311, 4417 13th St., St. Cloud, FL 34769
ec: Allene Rachal, Duval County – mcintosh@coj.net
File

Appendix B

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
MW-1	JEA Walnut Street Trunk Sewer		9/20/2018

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☑ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: Direct Push

Surface Casing Install Method: PVC

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
20	20	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1.5" PVC	☑ Flush-Threaded ☐ Other (describe)	10 feet from 0 feet to 10 feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1.5" PVC	0.010"	10 feet from 10 feet to 20 feet

1st Surface Casing Material: also check: ☐ Permanent ☐ Temporary	1st Surface Casing I.D. (inches):	1st Surface Casing Length: feet from 0 feet to feet
2nd Surface Casing Material: also check: ☐ Permanent ☐ Temporary	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length: feet from 0 feet to feet
3rd Surface Casing Material: also check: ☐ Permanent ☐ Temporary	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length: feet from 0 feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
20/30 Sand	☑ Yes ☐ No	10 feet from 10 feet to 20 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
30/60 Fine Sand	2 feet from 8 feet to 10 feet

Surface Seal Material:	Surface Seal Length:
Neat Cement	8 feet from 0 feet to 8 feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
09/20/18	☑ Surge/Pump ☐ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☑ Peristaltic ☐ Submersible ☐ Other (describe)	6

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.7	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	20	30	☐ Yes ☑ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Grey cloudy	Clear

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

West bound right of way of East 21st Street, just east of Walnut Street

BORING LOG

Boring/Well Number: MW-1	Permit Number:	FDEP Facility Identification Number: NA
Site Name: JEA Walnut Street Trunk Sewer	Borehole Start Date: 09/20/18 End Date: 09/20/18	Borehole Start Time: 9:45 ☑ AM ☐ PM End Time: 10:00 ☑ AM ☐ PM
Environmental Contractor: Meskel & Associates Engineering PLLC	Geologist's Name: Scott Davidson, P.G.	Field Engineer's Name: Gabriel Pastrana, P.E.

Drilling Company: Transamerican Drilling & Testing	Pavement Thickness (inches): None	Borehole Diameter (inches): 1.25	Borehole Depth (feet): 20
Drilling Method(s): Hand Auger/Direct Push	Apparent Borehole DTW (in feet from soil moisture content): 6	Measured Well DTW (in feet after water recharges in well): 6	OVA (list model and check type): None ☐ FID ☐ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☑ Spread ☐ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☑ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA							1	0-2' FINE SAND; light brown, no odors or staining	SP	D	
							2		SP	D	
							3	2'-4' Grades to light brown	SP	D	
							4		SP	D	
							5	4'-20' Grades to light grey	SP	M	
DP		36"					6		SP	W	
							7	Groundwater at 6 feet bls	SP	S	
							8		SP	S	
							9		SP	S	
							10		SP	S	
DP		48"					11		SP	S	
							12		SP	S	

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date:	09/20/18
MW-1		JEA Walnut Street Trunk	End Date:	09/20/18

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							13	4'-20' FINE SAND; light grey, no odors or staining (continuted)	SP	S	
							14		SP	S	
							15		SP	S	
DP		48"					16		SP	S	
							17		SP	S	
							18		SP	S	
							19		SP	S	
							20		SP	S	
							21	End boring MW-1 to 20 feet bls			
							22				
							23				
							24				
							25				
							26				
							27				
							28				
							29				
							30				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
MW-2	JEA Walnut Street Trunk Sewer		9/20/2018

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☑ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: Direct Push

Surface Casing Install Method: PVC

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
15	13	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1.5" PVC	☑ Flush-Threaded ☐ Other (describe)	3 feet from 0 feet to 3 feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1.5" PVC	0.010"	10 feet from 3 feet to 13 feet

1st Surface Casing Material: also check: ☐ Permanent ☐ Temporary	1st Surface Casing I.D. (inches):	1st Surface Casing Length: feet from 0 feet to feet
2nd Surface Casing Material: also check: ☐ Permanent ☐ Temporary	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length: feet from 0 feet to feet
3rd Surface Casing Material: also check: ☐ Permanent ☐ Temporary	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length: feet from 0 feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
20/30 Sand	☑ Yes ☐ No	10 feet from 3 feet to 13 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
30/60 Fine Sand	1 feet from 2 feet to 3 feet

Surface Seal Material:	Surface Seal Length:
Neat Cement	2 feet from 0 feet to 2 feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
09/20/18	☑ Surge/Pump ☐ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☑ Peristaltic ☐ Submersible ☐ Other (describe)	5

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.7	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	20	30	☐ Yes ☑ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Grey cloudy	Clear

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

North bound right of way of North Liberty Street between East 21st Street and Martin Luther King Blvd.

BORING LOG

Boring/Well Number: MW-2	Permit Number:	FDEP Facility Identification Number: NA
Site Name: JEA Walnut Street Trunk Sewer	Borehole Start Date: 09/20/18 End Date: 09/20/18	Borehole Start Time: 11:40 ☑ AM ☐ PM End Time: 11:55 ☑ AM ☐ PM
Environmental Contractor: Meskel & Associates Engineering PLLC	Geologist's Name: Scott Davidson, P.G.	Field Engineer's Name: Gabriel Pastrana, P.E.
Drilling Company: Transamerican Drilling & Testing	Pavement Thickness (inches): None	Borehole Diameter (inches): 3
Borehole Depth (feet): 15		
Drilling Method(s): Hand Auger/Direct Push	Apparent Borehole DTW (in feet from soil moisture content): 5	Measured Well DTW (in feet after water recharges in well): 5
OVA (list model and check type): None ☐ FID ☐ PID		

\ ☐ Drum ☑ Spread ☐ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☑ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA							1	0-2' FINE SAND; medium brown, no odors or staining	SP	D	
							2		SP	D	
							3	2'-15' Grades to light grey	SP	D	
							4		SP	M	
							5		SP	W	
DP		36"					6	Groundwater at 5 feet bls	SP	S	
							7		SP	S	
							8		SP	S	
							9		SP	S	
							10		SP	S	
DP		60"					11		SP	S	
							12		SP	S	

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date:	09/20/18
MW-2		JEA Walnut Street Trunk	End Date:	09/20/18

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							13	2'-15' FINE SAND; light grey, no odors or staining (continuted)	SP	S	
							14		SP	S	
							15		SP	S	
								End boring MW-2 to 15 feet bls			
							16		SP	S	
							17		SP	S	
							18		SP	S	
							19		SP	S	
							20		SP	S	
							21				
							22				
							23				
							24				
							25				
							26				
							27				
							28				
							29				
							30				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

Appendix C

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: JEA Walnut Street	SITE LOCATION: EAST ROW LIBERTY ST/BETWEEN MLK AND WALNUT ST
WELL NO: MW- 2	SAMPLE ID: MW- 2
	DATE: 9/27/2018

PURGING DATA

WELL DIAMETER (inches): 1.5" 2"	TUBING DIAMETER (inches): 1/4"	WELL SCREEN INTERVAL DEPTH: 2.96 feet to 12.96 feet	STATIC DEPTH TO WATER (feet): 4.40	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.86 feet – 4.40 feet) x 0.11 gallons/foot = 0.93 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 6.40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 6.40	PURGING INITIATED AT: 1242	PURGING ENDED AT: 1258	TOTAL VOLUME PURGED (gallons): 1.6

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/l or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1252	1.0	1.0	0.1	4.67	6.47	28.65	323	0.24	14.5	CLEAR	NONE
1255	0.3	1.3	0.1	4.67	6.51	28.65	31.8	0.23	12.1	CLEAR	NONE
1258	0.3	1.6	0.1	4.67	6.52	28.65	31.7	0.20	9.90	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Gabe Pastrana / MAE	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1253	SAMPLING ENDED AT: 1308
PUMP OR TUBING DEPTH IN WELL (feet): 6.40	TUBING ATERIAL CODE: PE/S	FIELD-FILTERED: (Y) / N Filtration Equipment Type:	FILTER SIZE: 1 µm
FIELD DECONTAMINATION: PUMP Y [N]	TUBING Y [N] (replaced)	DUPLICATE: Y [N]	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40 mL	HCl	-	<2	EPA 8260 (full list)	RFPP	<90
	1	AG	0.25 L	-	-	-	EPA 8270 (PAH)	APP	<90
	2	AG	100 mL	HSO4	-	<2	FL-PRO (TRPH)	APP	<90
	2	HDP	0.25 L	HCl	-	<2	Pb (total, dissolved)	APP	<90
	2	CG	40 mL	-	-	-	EPA 8011 (EDB)	RFPP	<90

REMARKS:
FILTERED TURBIDITY = 2.44

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: JEA Walnut Street	SITE LOCATION: NORTHWEST OF WALNUT ST / 21ST ST	
WELL NO: MW-1	SAMPLE ID: MW-1	DATE: 9/27/2018

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/4"	WELL SCREEN INTERVAL DEPTH: 3.8 feet to 13.8 feet	STATIC DEPTH TO WATER (feet): 5.09	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (13.5 feet − 5.09 feet) X 0.11 gallons/foot = 1.51 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 14.90	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 14.80	PURGING INITIATED AT: 1133	PURGING ENDED AT: 1155	TOTAL VOLUME PURGED (gallons): 2.2

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1149	1.6	1.6	0.1	5.51	7.07	28.20	428	0.27	19.3	CLEAR	NONE
1152	0.3	1.9	0.1	5.51	7.06	28.21	427	0.26	18.7	CLEAR	NONE
1155	0.3	2.2	0.1	5.51	7.05	28.24	425	0.25	15.5	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Gabe Pastrana / MAE	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1155	SAMPLING ENDED AT: 1205
PUMP OR TUBING DEPTH IN WELL (feet): 14.80	TUBING ATERIAL CODE: PE/S	FIELD-FILTERED: (Y) N Filtration Equipment Type:	FILTER SIZE: 1 µm
FIELD DECONTAMINATION: PUMP Y [N]	TUBING Y [N] (replaced)	DUPLICATE: Y [N]	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40 mL	HCl	-	<2	EPA 8260 (full list)	RFPP	<90
	1	AG	0.25 L	-	-	-	EPA 8270 (PAH)	APP	<90
	2	AG	100 mL	HSO4	-	<2	FL-PRO (TRPH)	APP	<90
	2	HDP	0.25 L	HCl	-	<2	Pb (total, dissolved)	APP	<90
	2	CG	40 mL	-	-	-	EPA 8011 (EDB)	RFPP	<90

REMARKS:
FILTERED TURBIDITY = 4.04

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Certificate of Calibration
Multi-Parameter Water Quality

Equipment Type:	YSI 556				
Date	9/26/2018				
Serial #	06A2173AD				
Calibration Standard # 1	pH 4.01				
Calibration Standard # 2	pH 7.00				
Calibration Standard # 3	1000mS Conductivity				
Calibration Standard # 4	100% D.O Saturation				
Calibration Standard # 5	Zobell ORP Solution				
Calibration Standard # 6					
Calibration Standard # 7					
Calibration Standard # 8					
Calibration Standard # 9					
Lot # (s)	pH 4.01	pH 7.00	1,000 uS	ORP	
	6M337	6M338	7L309Z	18F100323	
Expiration Date(s)	9/18	9/18	10/19	Jun-23	
Ambient Temperature	24°C (75.2°F)				
Instrument Reading; Calibrated	pH 4.00	pH 7.01	ORP=224.0	Cond. 1000uS	
		8.56 mg/L D.O.			
Calibrated By:	Chuck Henderson	*Signature:*			

NOTES:

Peterson Environmental, Inc.
1704 W. Grace Street
Tampa, FL 33607
Phone: 813-871-2626| Fax 813-871-1366

Certificate of Calibration
Turbidity Meters

Equipment Type:	HACH2100Q				
Date	9/27/2018		NOTES:		
Serial #	1310C029479				
Calibration Standard # 1	10NTU				
Calibration Standard # 2	20NTU				
Calibration Standard # 3	100NTU				
Calibration Standard # 4	800NTU				
Lot # (s)	a8212	a8212	a8212	a8212	
Expiration Date(s)	19-Nov	19-Nov	19-Nov	19-Nov	
Ambient Temperature	25°C (77°F)				
Instrument Reading: Calibrated	10NTU	20. NTU	100NTU	800NTU	
Calibrated By:	Chuck Henderson		Signature:		

Peterson Environmental, Inc.
1704 W. Grace Street
Tampa, FL 33607
Phone: 813-871-2626| Fax 813-871-1366

Appendix D

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

October 05, 2018

Mr. Scott A. Davidson, P.G.
Meskel & Associates Engineering, Inc.
8936 Western Way
Jacksonville, FL 32256

RE: Project: Walnut St
Pace Project No.: 35420683

Dear Mr. Davidson, P.G.:
Enclosed are the analytical results for sample(s) received by the laboratory on September 28, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC 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,

Todd Rea
todd.rea@pacelabs.com
(904) 903-7948
Project Manager

Enclosures

cc: Mr. Gabriel S. Pastrana, P.E., Pastrana Engineering & Environment, LLC

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

CERTIFICATIONS

Project: Walnut St
Pace Project No.: 35420683

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
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
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Wyoming Certification: FL NELAC Reciprocity
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SAMPLE SUMMARY

Project: Walnut St
Pace Project No.: 35420683

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35420683001	**MW-1**	Water	09/27/18 11:55	09/28/18 00:17
35420683002	**MW-2**	Water	09/27/18 12:58	09/28/18 00:17

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SAMPLE ANALYTE COUNT

Project: Walnut St
Pace Project No.: 35420683

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35420683001	**MW-1**	EPA 8011	MMB	1	PASI-O
		FL-PRO	BP2	3	PASI-O
		EPA 6010	SC1	1	PASI-O
		EPA 6010	LEC	1	PASI-O
		EPA 8270 by SIM	CB1	20	PASI-O
		EPA 8260	BTN	37	PASI-O
35420683002	**MW-2**	EPA 8011	MMB	1	PASI-O
		FL-PRO	BP2	3	PASI-O
		EPA 6010	SC1	1	PASI-O
		EPA 6010	LEC	1	PASI-O
		EPA 8270 by SIM	CB1	20	PASI-O
		EPA 8260	BTN	37	PASI-O

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Walnut St
Pace Project No.: 35420683

Sample: MW-1 **Lab ID: 35420683001** Collected: 09/27/18 11:55 Received: 09/28/18 00:17 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.0072 U**	ug/L	0.0096	0.0072	1	09/29/18 02:59	09/29/18 12:00	106-93-4	
FL-PRO Water, Low Volume	Analytical Method: FL-PRO Preparation Method: EPA 3510								
Petroleum Range Organics	**0.75 U**	mg/L	0.94	0.75	1	09/29/18 17:25	10/01/18 13:19		
Surrogates									
o-Terphenyl (S)	91	%	82-142		1	09/29/18 17:25	10/01/18 13:19	84-15-1	
N-Pentatriacontane (S)	96	%	42-159		1	09/29/18 17:25	10/01/18 13:19	630-07-09	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**4.6 U**	ug/L	10.0	4.6	1	10/03/18 14:06	10/04/18 10:06	7439-92-1	
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead, Dissolved	**4.6 U**	ug/L	10.0	4.6	1	10/02/18 04:12	10/02/18 14:18	7439-92-1	
8270 MSSV PAHLV by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	**0.040 U**	ug/L	0.50	0.040	1	10/02/18 08:25	10/02/18 22:15	83-32-9	
Acenaphthylene	**0.030 U**	ug/L	0.50	0.030	1	10/02/18 08:25	10/02/18 22:15	208-96-8	
Anthracene	**0.043 U**	ug/L	0.50	0.043	1	10/02/18 08:25	10/02/18 22:15	120-12-7	
Benzo(a)anthracene	**0.055 U**	ug/L	0.10	0.055	1	10/02/18 08:25	10/02/18 22:15	56-55-3	
Benzo(a)pyrene	**0.12 U**	ug/L	0.20	0.12	1	10/02/18 08:25	10/02/18 22:15	50-32-8	
Benzo(b)fluoranthene	**0.027 U**	ug/L	0.10	0.027	1	10/02/18 08:25	10/02/18 22:15	205-99-2	
Benzo(g,h,i)perylene	**0.15 U**	ug/L	0.50	0.15	1	10/02/18 08:25	10/02/18 22:15	191-24-2	
Benzo(k)fluoranthene	**0.16 U**	ug/L	0.50	0.16	1	10/02/18 08:25	10/02/18 22:15	207-08-9	
Chrysene	**0.026 U**	ug/L	0.50	0.026	1	10/02/18 08:25	10/02/18 22:15	218-01-9	
Dibenz(a,h)anthracene	**0.13 U**	ug/L	0.15	0.13	1	10/02/18 08:25	10/02/18 22:15	53-70-3	
Fluoranthene	**0.026 I**	ug/L	0.50	0.018	1	10/02/18 08:25	10/02/18 22:15	206-44-0	
Fluorene	**0.088 U**	ug/L	0.50	0.088	1	10/02/18 08:25	10/02/18 22:15	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.12 U**	ug/L	0.15	0.12	1	10/02/18 08:25	10/02/18 22:15	193-39-5	
1-Methylnaphthalene	**0.19 U**	ug/L	2.0	0.19	1	10/02/18 08:25	10/02/18 22:15	90-12-0	
2-Methylnaphthalene	**0.68 U**	ug/L	2.0	0.68	1	10/02/18 08:25	10/02/18 22:15	91-57-6	
Naphthalene	**0.29 U**	ug/L	2.0	0.29	1	10/02/18 08:25	10/02/18 22:15	91-20-3	
Phenanthrene	**0.16 U**	ug/L	0.50	0.16	1	10/02/18 08:25	10/02/18 22:15	85-01-8	
Pyrene	**0.032 U**	ug/L	0.50	0.032	1	10/02/18 08:25	10/02/18 22:15	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	63	%	33-101		1	10/02/18 08:25	10/02/18 22:15	321-60-8	
p-Terphenyl-d14 (S)	89	%	38-115		1	10/02/18 08:25	10/02/18 22:15	1718-51-0	
8260 MSV	Analytical Method: EPA 8260								
Benzene	**0.10 U**	ug/L	1.0	0.10	1		10/03/18 17:54	71-43-2	
Bromodichloromethane	**0.27 U**	ug/L	0.60	0.27	1		10/03/18 17:54	75-27-4	
Bromoform	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	75-25-2	
Bromomethane	**0.61 I**	ug/L	5.0	0.50	1		10/03/18 17:54	74-83-9	V
Carbon tetrachloride	**0.50 U**	ug/L	3.0	0.50	1		10/03/18 17:54	56-23-5	
Chlorobenzene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	108-90-7	
Chloroethane	**0.50 U**	ug/L	10.0	0.50	1		10/03/18 17:54	75-00-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Walnut St
Pace Project No.: 35420683

Sample: MW-1 **Lab ID: 35420683001** Collected: 09/27/18 11:55 Received: 09/28/18 00:17 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
2-Chloroethylvinyl ether	**0.50 U**	ug/L	40.0	0.50	1		10/03/18 17:54	110-75-8	c2
Chloroform	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	67-66-3	
Chloromethane	**0.62 U**	ug/L	1.0	0.62	1		10/03/18 17:54	74-87-3	
Dibromochloromethane	**0.26 U**	ug/L	2.0	0.26	1		10/03/18 17:54	124-48-1	
1,2-Dichlorobenzene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	95-50-1	
1,3-Dichlorobenzene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	541-73-1	
1,4-Dichlorobenzene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	106-46-7	
1,1-Dichloroethane	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	75-34-3	
1,2-Dichloroethane	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	107-06-2	
1,1-Dichloroethene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	75-35-4	
cis-1,2-Dichloroethene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	156-59-2	
trans-1,2-Dichloroethene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	156-60-5	
1,2-Dichloropropane	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	78-87-5	
cis-1,3-Dichloropropene	**0.25 U**	ug/L	0.50	0.25	1		10/03/18 17:54	10061-01-5	
trans-1,3-Dichloropropene	**0.25 U**	ug/L	0.50	0.25	1		10/03/18 17:54	10061-02-6	
Ethylbenzene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	100-41-4	
Methylene Chloride	**2.5 U**	ug/L	5.0	2.5	1		10/03/18 17:54	75-09-2	
Methyl-tert-butyl ether	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	1634-04-4	
1,1,2,2-Tetrachloroethane	**0.12 U**	ug/L	0.50	0.12	1		10/03/18 17:54	79-34-5	
Tetrachloroethene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	127-18-4	
Toluene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	108-88-3	
1,2,4-Trichlorobenzene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	120-82-1	
1,1,1-Trichloroethane	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	71-55-6	
1,1,2-Trichloroethane	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	79-00-5	
Trichloroethene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	79-01-6	
Vinyl chloride	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 17:54	75-01-4	
Xylene (Total)	**1.5 U**	ug/L	3.0	1.5	1		10/03/18 17:54	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		10/03/18 17:54	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		10/03/18 17:54	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		10/03/18 17:54	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Walnut St
Pace Project No.: 35420683

Sample: MW-2 **Lab ID: 35420683002** Collected: 09/27/18 12:58 Received: 09/28/18 00:17 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.0072 U**	ug/L	0.0096	0.0072	1	09/29/18 02:59	09/29/18 12:15	106-93-4	
FL-PRO Water, Low Volume	Analytical Method: FL-PRO Preparation Method: EPA 3510								
Petroleum Range Organics	**0.75 U**	mg/L	0.94	0.75	1	09/29/18 17:25	10/01/18 06:54		
Surrogates									
o-Terphenyl (S)	93	%	82-142		1	09/29/18 17:25	10/01/18 06:54	84-15-1	
N-Pentatriacontane (S)	95	%	42-159		1	09/29/18 17:25	10/01/18 06:54	630-07-09	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**4.6 U**	ug/L	10.0	4.6	1	10/03/18 14:06	10/04/18 10:17	7439-92-1	
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead, Dissolved	**4.6 U**	ug/L	10.0	4.6	1	10/02/18 04:12	10/02/18 14:29	7439-92-1	
8270 MSSV PAHLV by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	**0.040 U**	ug/L	0.50	0.040	1	10/02/18 08:25	10/02/18 22:37	83-32-9	
Acenaphthylene	**0.030 U**	ug/L	0.50	0.030	1	10/02/18 08:25	10/02/18 22:37	208-96-8	
Anthracene	**0.043 U**	ug/L	0.50	0.043	1	10/02/18 08:25	10/02/18 22:37	120-12-7	
Benzo(a)anthracene	**0.055 U**	ug/L	0.10	0.055	1	10/02/18 08:25	10/02/18 22:37	56-55-3	
Benzo(a)pyrene	**0.12 U**	ug/L	0.20	0.12	1	10/02/18 08:25	10/02/18 22:37	50-32-8	
Benzo(b)fluoranthene	**0.027 U**	ug/L	0.10	0.027	1	10/02/18 08:25	10/02/18 22:37	205-99-2	
Benzo(g,h,i)perylene	**0.15 U**	ug/L	0.50	0.15	1	10/02/18 08:25	10/02/18 22:37	191-24-2	
Benzo(k)fluoranthene	**0.16 U**	ug/L	0.50	0.16	1	10/02/18 08:25	10/02/18 22:37	207-08-9	
Chrysene	**0.026 U**	ug/L	0.50	0.026	1	10/02/18 08:25	10/02/18 22:37	218-01-9	
Dibenz(a,h)anthracene	**0.13 U**	ug/L	0.15	0.13	1	10/02/18 08:25	10/02/18 22:37	53-70-3	
Fluoranthene	**0.018 U**	ug/L	0.50	0.018	1	10/02/18 08:25	10/02/18 22:37	206-44-0	
Fluorene	**0.088 U**	ug/L	0.50	0.088	1	10/02/18 08:25	10/02/18 22:37	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.12 U**	ug/L	0.15	0.12	1	10/02/18 08:25	10/02/18 22:37	193-39-5	
1-Methylnaphthalene	**0.19 U**	ug/L	2.0	0.19	1	10/02/18 08:25	10/02/18 22:37	90-12-0	
2-Methylnaphthalene	**0.68 U**	ug/L	2.0	0.68	1	10/02/18 08:25	10/02/18 22:37	91-57-6	
Naphthalene	**0.29 U**	ug/L	2.0	0.29	1	10/02/18 08:25	10/02/18 22:37	91-20-3	
Phenanthrene	**0.16 U**	ug/L	0.50	0.16	1	10/02/18 08:25	10/02/18 22:37	85-01-8	
Pyrene	**0.032 U**	ug/L	0.50	0.032	1	10/02/18 08:25	10/02/18 22:37	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	67	%	33-101		1	10/02/18 08:25	10/02/18 22:37	321-60-8	
p-Terphenyl-d14 (S)	92	%	38-115		1	10/02/18 08:25	10/02/18 22:37	1718-51-0	
8260 MSV	Analytical Method: EPA 8260								
Benzene	**0.10 U**	ug/L	1.0	0.10	1		10/03/18 18:17	71-43-2	
Bromodichloromethane	**0.27 U**	ug/L	0.60	0.27	1		10/03/18 18:17	75-27-4	
Bromoform	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	75-25-2	
Bromomethane	**0.50 U**	ug/L	5.0	0.50	1		10/03/18 18:17	74-83-9	
Carbon tetrachloride	**0.50 U**	ug/L	3.0	0.50	1		10/03/18 18:17	56-23-5	
Chlorobenzene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	108-90-7	
Chloroethane	**0.50 U**	ug/L	10.0	0.50	1		10/03/18 18:17	75-00-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Walnut St
Pace Project No.: 35420683

Sample: MW-2 **Lab ID: 35420683002** Collected: 09/27/18 12:58 Received: 09/28/18 00:17 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
2-Chloroethylvinyl ether	**0.50 U**	ug/L	40.0	0.50	1		10/03/18 18:17	110-75-8	c2
Chloroform	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	67-66-3	
Chloromethane	**0.62 U**	ug/L	1.0	0.62	1		10/03/18 18:17	74-87-3	
Dibromochloromethane	**0.26 U**	ug/L	2.0	0.26	1		10/03/18 18:17	124-48-1	
1,2-Dichlorobenzene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	95-50-1	
1,3-Dichlorobenzene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	541-73-1	
1,4-Dichlorobenzene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	106-46-7	
1,1-Dichloroethane	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	75-34-3	
1,2-Dichloroethane	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	107-06-2	
1,1-Dichloroethene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	75-35-4	
cis-1,2-Dichloroethene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	156-59-2	
trans-1,2-Dichloroethene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	156-60-5	
1,2-Dichloropropane	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	78-87-5	
cis-1,3-Dichloropropene	**0.25 U**	ug/L	0.50	0.25	1		10/03/18 18:17	10061-01-5	
trans-1,3-Dichloropropene	**0.25 U**	ug/L	0.50	0.25	1		10/03/18 18:17	10061-02-6	
Ethylbenzene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	100-41-4	
Methylene Chloride	**2.5 U**	ug/L	5.0	2.5	1		10/03/18 18:17	75-09-2	
Methyl-tert-butyl ether	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	1634-04-4	
1,1,2,2-Tetrachloroethane	**0.12 U**	ug/L	0.50	0.12	1		10/03/18 18:17	79-34-5	
Tetrachloroethene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	127-18-4	
Toluene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	108-88-3	
1,2,4-Trichlorobenzene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	120-82-1	
1,1,1-Trichloroethane	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	71-55-6	
1,1,2-Trichloroethane	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	79-00-5	
Trichloroethene	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	79-01-6	
Vinyl chloride	**0.50 U**	ug/L	1.0	0.50	1		10/03/18 18:17	75-01-4	
Xylene (Total)	**1.5 U**	ug/L	3.0	1.5	1		10/03/18 18:17	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	96	%	70-130		1		10/03/18 18:17	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		10/03/18 18:17	17060-07-0	
Toluene-d8 (S)	106	%	70-130		1		10/03/18 18:17	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Walnut St
Pace Project No.: 35420683

QC Batch: 482613 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 35420683001, 35420683002

METHOD BLANK: 2611562 Matrix: Water
Associated Lab Samples: 35420683001, 35420683002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dichloroethane-d4 (S)	%	102	70-130		10/03/18 11:10	
4-Bromofluorobenzene (S)	%	97	70-130		10/03/18 11:10	
Toluene-d8 (S)	%	103	70-130		10/03/18 11:10	

LABORATORY CONTROL SAMPLE: 2611563

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane-d4 (S)	%			99	70-130	
4-Bromofluorobenzene (S)	%			99	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE SAMPLE: 2611569

Parameter	Units	35421457002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane-d4 (S)	%				93	70-130	
4-Bromofluorobenzene (S)	%				96	70-130	
Toluene-d8 (S)	%				101	70-130	

SAMPLE DUPLICATE: 2611568

Parameter	Units	35421457001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane-d4 (S)	%	103	106	3	40	
4-Bromofluorobenzene (S)	%	95	94	1	40	
Toluene-d8 (S)	%	103	103	0	40	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Walnut St
Pace Project No.: 35420683

QC Batch: 482059
QC Batch Method: EPA 3510
Analysis Method: EPA 8270 by SIM
Analysis Description: 8270 Water PAHLV by SIM MSSV
Associated Lab Samples: 35420683001, 35420683002

METHOD BLANK: 2609101 Matrix: Water
Associated Lab Samples: 35420683001, 35420683002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2-Fluorobiphenyl (S)	%	48	33-101		10/02/18 18:54	
p-Terphenyl-d14 (S)	%	74	38-115		10/02/18 18:54	

LABORATORY CONTROL SAMPLE: 2609102

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%			54	33-101	
p-Terphenyl-d14 (S)	%			75	38-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2609488 2609489

Parameter	Units	35420869006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Fluorobiphenyl (S)	%						66	66	33-101			
p-Terphenyl-d14 (S)	%						88	89	38-115			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Walnut St
Pace Project No.: 35420683

QC Batch: 481602 Analysis Method: FL-PRO
QC Batch Method: EPA 3510 Analysis Description: FL-PRO Water Low Volume
Associated Lab Samples: 35420683001, 35420683002

METHOD BLANK: 2607005 Matrix: Water
Associated Lab Samples: 35420683001, 35420683002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
N-Pentatriacontane (S)	%	91	42-159		09/30/18 17:34	
o-Terphenyl (S)	%	90	82-142		09/30/18 17:34	

LABORATORY CONTROL SAMPLE: 2607006

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
N-Pentatriacontane (S)	%			93	42-159	
o-Terphenyl (S)	%			93	82-142	

MATRIX SPIKE SAMPLE: 2607602

Parameter	Units	35420458001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
N-Pentatriacontane (S)	%				91	42-159	
o-Terphenyl (S)	%				89	82-142	

SAMPLE DUPLICATE: 2607603

Parameter	Units	35420497001 Result	Dup Result	RPD	Max RPD	Qualifiers
N-Pentatriacontane (S)	%	83	81	3		
o-Terphenyl (S)	%	92	83	5		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALIFIERS

Project: Walnut St
Pace Project No.: 35420683

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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.
U	Compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
c2	Acid preservation may not be appropriate for the analysis of 2-Chloroethylvinyl ether.

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Walnut St
Pace Project No.: 35420683

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35420683001	**MW-1**	EPA 8011	481486	EPA 8011	481668
35420683002	**MW-2**	EPA 8011	481486	EPA 8011	481668
35420683001	**MW-1**	EPA 3510	481602	FL-PRO	481790
35420683002	**MW-2**	EPA 3510	481602	FL-PRO	481790
35420683001	**MW-1**	EPA 3010	482668	EPA 6010	482782
35420683002	**MW-2**	EPA 3010	482668	EPA 6010	482782
35420683001	**MW-1**	EPA 3010	482119	EPA 6010	482120
35420683002	**MW-2**	EPA 3010	482119	EPA 6010	482120
35420683001	**MW-1**	EPA 3510	482059	EPA 8270 by SIM	482250
35420683002	**MW-2**	EPA 3510	482059	EPA 8270 by SIM	482250
35420683001	**MW-1**	EPA 8260	482613		
35420683002	**MW-2**	EPA 8260	482613		

WO# : 35420683

Pace Analytical

CHAIN-OF-CUST
The Chain-of-Custody is a

35420683

urately.

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Meskel & Associates Engineering, Inc.	Report To:	Scott Davidson, P.G.	Attention:	
Address:	8936 Western Way	Copy To:		Company Name:	
	Jacksonville, FL 32256			Address:	
Email:	sdavidson@meskelengineering.com	Purchase Order #:		Pace Quote:	
Phone:	(904)519-6990 Fax:	Project Name:	Walnut St	Pace Project Manager:	todd.rea@pacelabs.com
Requested Due Date:	STD	Project #:	0103-0012	Pace Profile #:	8770

Regulatory Agency
FDEP
State / Location
FL

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	VOA/VOH (8260)	EDB (8011)	TRPH (FL-PRO)	PAHs (8270 SIM)	Lead - Total (6010)	Lead - Dissolved (6010)	Residual Chlorine (Y/N)
1	MW-1	WT	G	9/27/18		11:55			10	✓	✓	✓	✓						✓	✓	✓	✓	✓	✓	
2	MW-2	WT	G	9/27/18		12:53			10	✓	✓	✓	✓						✓	✓	✓	✓	✓	✓	
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	[signature] / MAE	9/28/18	18:00	CNM Pace	9/28/18	0017	CNM 8.2 5.2

SAMPLER NAME AND SIGNATURE					
PRINT Name of SAMPLER:	GABRIEL PASTRANA				
SIGNATURE of SAMPLER:	[signature]	DATE Signed:	9/27/18		

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical Florida Laboratory	Document Name: Sample Condition Upon Receipt Form	Document Revised: May 30, 2018
	Document No.: F-FL-C-007 rev. 13	Issuing Authority: Pace Florida Quality Office

Sample Condition Upon Receipt Form (SCUR)

WO# : 35420683

Project #
Project Manager: PM: TSR **Due Date:** 10/05/18
Client: CLIENT: MEASEN

Date and Initials of person:
Examining contents:
Label: CMM
Deliver:
pH:

Thermometer Used: T-338 Date: 9/28/18 Time: 0017 Initials: AS

State of Origin: ☐ For WV projects, all containers verified to ≤6 °C

Cooler #1 Temp.°C	5.2 (Visual)	0 (Correction Factor)	5.2 (Actual)	☐ Samples on ice, cooling process has begun
Cooler #2 Temp.°C	(Visual)	(Correction Factor)	(Actual)	☐ Samples on ice, cooling process has begun
Cooler #3 Temp.°C	(Visual)	(Correction Factor)	(Actual)	☐ Samples on ice, cooling process has begun
Cooler #4 Temp.°C	(Visual)	(Correction Factor)	(Actual)	☐ Samples on ice, cooling process has begun
Cooler #5 Temp.°C	(Visual)	(Correction Factor)	(Actual)	☐ Samples on ice, cooling process has begun
Cooler #6 Temp.°C	(Visual)	(Correction Factor)	(Actual)	☐ Samples on ice, cooling process has begun

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☑ Other Blue Stack

Shipping Method: ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground ☐ International Priority ☐ Other

Billing: ☐ Recipient ☐ Sender ☐ Third Party ☐ Credit Card ☐ Unknown

Tracking #

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No **Seals intact:** ☐ Yes ☐ No **Ice:** Wet Blue Dry None

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Samples shorted to lab (If Yes, complete) Shorted Date: Shorted Time: Qty:

		Comments:
Chain of Custody Present	☑ Yes ☐ No ☐ N/A	
Chain of Custody Filled Out	☑ Yes ☐ No ☐ N/A	
Relinquished Signature & Sampler Name COC	☑ Yes ☐ No ☐ N/A	
Samples Arrived within Hold Time	☑ Yes ☐ No ☐ N/A	
Rush TAT requested on COC	☐ Yes ☑ No ☐ N/A	
Sufficient Volume	☑ Yes ☐ No ☐ N/A	
Correct Containers Used	☑ Yes ☐ No ☐ N/A	
Containers Intact	☑ Yes ☐ No ☐ N/A	
Sample Labels match COC (sample IDs & date/time of collection)	☑ Yes ☐ No ☐ N/A	
All containers needing acid/base preservation have been checked.	☑ Yes ☐ No ☐ N/A	Preservation Information: Preservative: Lot #/Trace #: Date: Time: Initials:
All Containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: VOA, Coliform, TOC, O&G, Carbamates	☑ Yes ☐ No ☐ N/A	
Headspace in VOA Vials? (>6mm):	☐ Yes ☑ No ☐ N/A	
Trip Blank Present:	☐ Yes ☑ No ☐ N/A	

Client Notification/ Resolution:
Person Contacted: Date/Time:

Comments/ Resolution (use back for additional comments):

Project Manager Review: Date:

Appendix E

NOTICE OF INTENT
TO USE THE GENERIC PERMIT
FOR DISCHARGE OF GROUND WATER
FROM DEWATERING OPERATIONS
(subsection 62-621.300(2), F.A.C.)

PART I INSTRUCTIONS

A. Will dewatering operations be performed as part of construction activities?

☐ NO Continue completing this form.

☐ YES You may elect to obtain coverage under the Generic Permit for Stormwater Discharge from Large and Small Construction Activities (CGP), DEP Form 62-621.300(4)(b), which will cover both the construction and dewatering operations.

B. This Notice of Intent (NOI) form shall be completed and submitted to the industrial wastewater program at the local DEP office as part of the request for coverage under the Generic Permit for Discharge of Ground Water from Dewatering Operations subsection 62-621.300(2)(a), F.A.C., at least 14 days prior to planned commencement of discharge. For the purposes of this generic permit, 'dewatering operations' means temporarily lowering the water table by draining or pumping of ground water from activities such as excavations, building foundations, vaults, trenches and aquifer performance tests for exploratory purposes. Applicants should be familiar with the rule, generic permit document and instructions before completing this NOI form. Attach additional information on separate sheets as necessary.

1. Submit this completed form and supporting documentation and the $100.00 application fee to the industrial wastewater program at the local DEP office. Electronic submittal is preferred and may be available at http://www.dep.state.fl.us/water/wastewater/iw/iw-forms.htm. To locate a local DEP office, go to: http://www.dep.state.fl.us/secretary/dist/default.htm.
2. Checks should be payable to the Florida Department of Environmental Protection. **DEP will not process this form without the appropriate fee.**
3. If an item is not applicable to your project, indicate "NA" in the appropriate space provided.

PART II DEWATERING INFORMATION:

A. Is the project site currently identified as contaminated, or is there a site within 500 feet of the dewatering project identified as contaminated, by a DEP or EPA cleanup/restoration program? You may use the Quick Links to DEP's Contamination Locator Map (CLM) and DEP's Institutional Controls Registry (ICR) Web Viewer to determine cleanup restoration status. You may access the CLM at: http://webapps.dep.state.fl.us/DepClnup/welcome.do, or http://ca.dep.state.fl.us/mapdirect/?focus=contamlocator. The ICR may be accessed at: http://www.dep.state.fl.us/waste/categories/brownfields/pages/ICR.htm, or http://ca.dep.state.fl.us/mapdirect/?focus=icr

☐ YES Continue to B.

☐ NO Continue to D.

DEP Form 62-621.300(2)(b) incorporated in subsection 62-621.300(2), F.A.C.
Effective 02/2015

B. Has the site been remediated?

☐ YES Continue to D.

☐ NO Continue to C.

C. Are the pollutants of concern (i.e. contamination) present in ground water at the dewatering project site at concentrations equal to or exceeding the surface water criteria in Rule 62-302.530?

☐ YES Dewatering operations do not qualify for coverage under this generic permit. However, the site may qualify for coverage under Rule 62-621.300(1), F.A.C., or under an individual wastewater permit on the appropriate form listed in Rule 62-620.910, F.A.C.

☐ NO Continue to D.

D. Have Best Management Practices (BMPs) for this generic permit been developed or addressed in an existing BMP plan in accordance to the requirements of this generic permit. BMPs must be implemented upon commencement of the discharge

☐ YES Continue to Part III.

☐ NO Your application cannot be processed until this item is complete.

NOTE: Chemical treatment is allowed as described in the Best Management Practices of the Generic Permit. However, sites that use cationic treatment chemicals are not eligible for coverage under Generic Permit for Discharge of Ground Water from Dewatering Operations unless concurrence from the applicable local DEP office is obtained in advance of the submittal of this NOI. Appropriate controls and implementation procedures designed to ensure that the use of cationic treatment chemicals will not cause or contribute to a violation of water quality standards shall be included in the site specific BMPs.

PART III DISCHARGE INFORMATION:

A. Please identify receiving surface water body.

PART IV SITE INFORMATION

A. COVERAGE STATUS:

1. Is this application for new coverage or for renewal of coverage under the generic permit?	New ☐ Renewal ☐
2. If this application is for renewal of coverage under the generic permit, provide the FLG No.	FLG No:

B. NAME OF SITE:

Site Name:

C. PERMITTEE INFORMATION:

1. Name:	2. Title (Owner, Operator, Contractor, etc.):	
3. Phone No.: ( ) -	4. Fax No.: ( ) -	
4. Email Address:		
5. Street or P. O. Box:		
6. City or Town:	7. State:	8. Zip Code:

D. SITE LOCATION INFORMATION:

1. Street, Route or Other Specific Identifier:		
2. County:		
3. City or Town:	4. State:	5. Zip Code:
6. Latitude: ° ′ ″	7. Longitude: ° ′ ″	
8. If records required in accordance with Part V. of DEP Document 62-621.300(2)(a), are kept off-site, please provide the physical address of site where records will be kept. Note: location must be accessible for inspection of records by the Department.		

PART V CERTIFICATIONS

A. OWNER OR OPERATOR[1]

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____

Name & Official Title (type or print) Signature

_____ _____

Telephone No. Date signed

_____

Email Address

[1] Signatory requirements are contained in Rule 62-620.305, F.A.C.

DEP Form 62-621.300(2)(b) incorporated in subsection 62-621.300(2), F.A.C.
Effective 02/2015

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERIC PERMIT

FOR

DISCHARGES FROM PETROLEUM

CONTAMINATED SITES

Document number 62-621.300(1)
Effective Date: February 14, 2000

Generic Permit for Discharges From Petroleum Contaminated Sites

(1) Effluent Limitations and Monitoring Requirements for Existing Sources and New Dischargers.

(a) Contamination by Automotive Gasoline. The facility is authorized to discharge treated ground water and storm water that has been contaminated by automotive gasoline. These contaminated waters shall be treated by air stripping, followed by activated carbon adsorption, if necessary, or equivalent treatment to meet the following effluent limitations. Such discharges shall be limited and monitored by the permittee as specified in Table 1:

Table 1

	Effluent Limitations		Monitoring Requirements	
Effluent Characteristic	Daily Avg	Daily Max	Measurement Frequency	Sample Type
Flow, (MGD)	Report	Report	Continuous	Flowmeter
Benzene, μg/l	------	1.0	1/month	Grab
*Total Lead μg/l	------	30.0	1/month	Grab
pH, Standard Units	See Paragraph (1)(a)2			Grab or Continuous
Acute Whole Effluent Toxicity	See Paragraph (1)(a)1 and Paragraph (2)(b)			Grab

*Monitoring for this parameter is required only when contamination results from leaded fuel.

1. An LC_{50} of 100% or less in a test of 96 hours duration or less shall constitute a violation of Rule 62-4.244(3)(a), F.A.C., and the terms of this permit. The testing for this requirement must conform with Rule 62-621.800, F.A.C.

2. For fresh waters and coastal waters, the pH of the effluent shall not be lowered to less than 6.0 units for fresh waters, or less than 6.5 units for coastal waters, or raised above 8.5 units, unless the permittee submits natural background data in the NOI request confirming a natural background pH outside of this range. If natural background of the receiving water, as revealed by sampling data from the permittee in the NOI request, is determined to be less than 6.0 units for fresh waters, or less than 6.5 units in coastal waters, the pH shall not vary below natural background or vary more than one (1) unit above natural background for fresh and coastal waters. If natural

background of the receiving water, as revealed by sampling data from the permittee in the NOI request, is determined to be higher than 8.5 units, the pH shall not vary above natural background or vary more than one (1) unit below natural background of fresh and coastal waters. The acceptable pH range shall be included in the letter granting permit coverage and on the DMR. The pH shall be monitored once every month by grab sample, or continuously with a recorder. For purposes of this section only, fresh waters are those having a chloride concentration of less than 1500 mg/l, and coastal waters are those having a chloride concentration equal to or greater than 1500 mg/l.

3. In accordance with Rule 62-302.500(1)(a-c), F.A.C., the discharge shall at all times be free from floating solids, visible foam, turbidity, or visible oil in such amounts as to form nuisances on surface waters.

4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the nearest accessible point after final treatment but prior to actual discharge or mixing with the receiving waters.

(b) Contamination by Aviation Gasoline, Jet Fuel or Diesel Fuel. The permittee is authorized to discharge treated ground water and storm water that has been contaminated by aviation gasoline, jet fuel or diesel fuel. These contaminated waters shall be treated by air stripping, followed by activated carbon adsorption, if necessary, or equivalent treatment to meet the following effluent limitations. Such discharges shall be limited and monitored by the permittee as specified in Table 2:

Table 2

	Effluent Limitations		Monitoring Requirements	
Effluent Characteristic	Daily Avg	Daily Max	Measurement Frequency	Sample Type
Flow, (MGD)	Report	Report	Continuous	Flowmeter
Benzene, μg/l	------	1.0	1/month	Grab
Naphthalene, μg/l	------	100.0	1/month	Grab
*Total Lead μg/l	------	30.0	1/month	Grab
pH, Standard Units	See Paragraph (1)(b)2			Grab or Continuous
Acute Whole Effluent Toxicity	See Paragraph (1)(b)1 and Paragraph (2)(b)			Grab

*Monitoring for this parameter is required only when contamination results from leaded fuel.

1. An LC_{50} of 100% or less in a test of 96 hours duration or less shall constitute a violation of Rule 62-4.244(3)(a), F.A.C., and the terms of this permit. The testing for this requirement must conform with Rule 62-621.800, F.A.C.

2. The permittee shall comply with the same pH requirements as specified in paragraph (1)(a)2, of this permit. The pH shall be monitored once every month by grab sample, or continuously with a recorder.

3. In accordance with Rule 62-302.500(1)(a-c), F.A.C., the discharge shall at all times be free from floating solids, visible foam, turbidity, or visible oil in such amounts as to form nuisances on surface waters.

4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the nearest accessible point after final treatment but prior to actual discharge or mixing with the receiving waters.

(c) Short term discharges.

1. If benzene, naphthalene, or total lead concentrations indicative of contamination from petroleum fuels are known to be present as a result of site assessment, and the discharge will occur for thirty (30) days or less, the permittee shall comply with the applicable effluent limitations and monitoring requirements shown in Table 3.

Table 3

	Effluent Limitations		Monitoring Requirements	
Effluent Characteristic	Daily Avg	Daily Max	Measurement Frequency	Sample Type
Flow, (MGD)	Report	Report	Continuous	Flowmeter
Benzene, μg/l	------	1.0	1/week	Grab
Naphthalene, μg/l	------	100.0	1/week	Grab
*Total Lead μg/l	------	30.0	1/week	Grab
pH, Standard Units	See Paragraph (1)(a)2			Grab or Continuous

a. For discharges that last for less than one week, daily monitoring shall be required for the applicable parameters.

b. Discharge Monitoring Reports shall be submitted to the Department within thirty (30) days after termination of the discharge, along with a letter stating that discharge has ceased.

c. Coverage under paragraph (1)(c)1 is limited to a total of 30 days of discharge.

2. If benzene, naphthalene, or total lead concentrations indicative of contamination from petroleum fuels are known to be present as a result of site assessment, and the discharge is for a pump test to characterize the aquifer and will last for eight (8) hours or less, the discharge is covered under this generic permit if the following conditions are met.

a. The effluent limitations shown in Table 3 are met.

b. A Discharge Monitoring Report is sent to the Department within thirty (30) days after termination of the discharge.

c. Coverage under paragraph (1)(c)2 is limited to a total of eight (8) hours of discharge.

3. Applicants who wish to be covered under the provisions of paragraph(1)(c)1 or 2 but have not had the site assessed, may obtain coverage only if the reported values for the parameters listed in Table 4 do not exceed any of the listed screening values. Before discharge can occur, analytical tests on untreated samples of the ground water shall be performed for the parameters listed in Table 4.

Table 4

	Screening Values for Discharge into:	
Parameter	Fresh Waters	Coastal Waters
Total Organic Carbon (TOC)	10.0 mg/l	10.0 mg/l
pH, standard units	6.0-8.5	6.5-8.5
Total Recoverable Mercury	0.012 μg/l	0.025 μg/l
Total Recoverable Cadmium	9.3 μg/l	9.3 μg/l
Total Recoverable Copper	2.9 μg/l	2.9 μg/l
Total Recoverable Lead	0.03 mg/l	5.6 μg/l
Total Recoverable Zinc	86.0 μg/l	86.0 μg/l
Total Recoverable Chromium (Hex.)	11.0 μg/l	50.0 μg/l
Benzene	1.0 μg/l	1.0 μg/l
Naphthalene	100.0 μg/l	100.0 μg/l

a. If any of the analytical test results exceed the screening values in Table 4, except TOC, benzene, naphthalene, and lead, then discharge is not authorized by this permit.

b. For initial TOC values that exceed the screening values listed in Table 4, which may be caused by naturally-occurring, high molecular weight organic compounds, the permittee may request to be exempted from the TOC requirement. To request this exemption the permittee shall submit additional information with an NOI which describes the method used to determine that these compounds are naturally occurring.

c. If levels of benzene, naphthalene, or lead are detected in amounts that exceed the screening values listed in Table 4, which indicate contamination from petroleum fuels, the facility may proceed in accordance with paragraph (1)(c)1 or 2.

(2) Other permit requirements.

(a) Within sixty (60) days after the effective date of this permit or startup of discharge, the permittee shall submit the results of the following analyses. These analyses are not required for short term dischargers covered under paragraph (1)(c). These analyses shall be performed on a representative sample of the ground water effluent discharge, taken after final treatment.

The following analyses are required one time only during the coverage of this permit:

1. EPA Method 625 - Acid and Base/Neutral Extractable Organics

2. EPA Method 624 - Purgeable Organics

(b) Within thirty (30) days after commencement of discharge, permittees, other than those seeking coverage under paragraph (1)(c), shall test for acute toxicity as provided for in Rule 62-621.800, F.A.C., to evaluate whole effluent toxicity of the discharge from the outfall. If more than one (1) outfall exists, separate tests shall be performed on each outfall.

(c) If the pH is monitored continuously, the pH values shall not deviate outside the required range more than 1% of the time in any calendar month; and no individual excursion shall exceed sixty (60) minutes. An “excursion” is an unintentional and temporary incident in which the pH value of discharge wastewater exceeds the range set forth in this permit.

(d) All of the general conditions listed in Rule 62-621.250, F.A.C., are applicable to this generic permit.

(e) A Best Management Practices (BMP) Plan shall be prepared in accordance with Rule 62-621.700, F.A.C., and in conjunction with development of the Remedial Action Plan required by the Department.

(f) The permittee shall notify the Department in writing within thirty (30) days after the permanent termination of discharge to surface waters from the facility.

(3) Test Procedures.

(a) In performing analyses for dissolved constituents in surface and ground waters, the permittee shall use the guidelines recommended and described in Rules 62-770.600(8)(a-d), F.A.C.

(b) If the petroleum contamination is from a petroleum fuel in which the source of contamination has not been identified, the ground water shall be analyzed using the recommended methods listed below for the following parameters as described in Rule 62-770.600(8)(c)1, F.A.C.:

1. Lead - EPA Method 239.2 or Standard Method 304;

2. Priority Pollutant Volatile Organics - EPA Method 624;

3. Priority Pollutant Extractable Organics - EPA Method 625; and

4. Non-Priority Pollutant Organics (with GC/MS Peaks greater than 10 ppb) - EPA Methods 624 & 625.

(4) Reporting of Monitoring Results. Monitoring results obtained for each calendar month shall be summarized and reported on a Discharge Monitoring Report (DMR) form (DEP form 62-620.910(10)), once each month. Unless stated otherwise in this permit, these forms shall be submitted

after each calendar quarter and postmarked no later than the 28th day of the month following the completed calendar quarter. For example, data for January-March shall be submitted by April 28. Calendar quarters are January-March, April-June, July-September and October-December. Signed copies of these and all other reports required by this permit shall be submitted to the Department at the following address:

Department of Environmental Protection
Bureau of Water Facilities Regulation
Wastewater Compliance Evaluation Section
Mail Station #3551
2600 Blair Stone Road
Tallahassee, FL 32399-2400

If no discharge occurs during the reporting period, sampling requirements of this permit do not apply. The statement "No Discharge" shall be written on the DMR form.

(5) Application Requirements

(a) Unless stated otherwise in this permit, all dischargers seeking coverage under this generic permit are required to submit a Notice of Intent (NOI) to the appropriate Department district office. The NOI shall include:

1. the name and address of the person that the permit coverage will be issued to;

2. the name, and address of the operation, including county location;

3. any applicable individual wastewater permit number(s);

4. if applicable, the identification of any new discharge location not contained in the expired permit;

5. evidence that the operation has obtained approval of a Remedial Action Plan (RAP) Order from the Department;

6. a map showing the facility and discharge location (including latitude and longitude);

7. the name of the receiving water; and

8. a Pollution Prevention Plan prepared in accordance with paragraph (6) of this permit, for discharges lasting over one (1) year.

(b) Dischargers who have not previously obtained an individual wastewater permit are required to submit the NOI at least thirty (30) days before the discharge is to begin.

(c) Dischargers with current individual wastewater permits that desire coverage under this generic permit are required to file an NOI with the Department at least thirty (30) days prior to expiration of their current permit(s).

(d) Facilities seeking coverage under paragraph (1)(c)1 of this permit shall be required to submit to the Department the date the discharge is expected to cease, results of the analytical data required under paragraph (1)(c)3, if applicable, and the same information in paragraph (5)(a), except items (5)(a)3, 4, 5, and 8. Notification of coverage to discharge will be upon receipt of a letter from the Department acknowledging short-term coverage. The Department shall process requests for short-term coverage pursuant to the provisions of Rule 62-620.510(1)-(5), F.A.C. The Department shall render a decision as to whether to grant or deny coverage within 30 days after the Department has received all of the information necessary to make the application complete. If this time schedule is not met, the applicant may apply for an order from the circuit court requiring the Department to render a decision within a specified time. Discharge may not begin until the applicant receives this letter from the Department.

(e) For facilities seeking coverage under paragraph (1)(a) or (b) of this permit, notification of coverage shall be given by the Department by certified mail to the permittee, with the issuance date for each facility being the effective date of coverage by the Department. The Department shall process requests for coverage pursuant to the provisions of Rule 62-620.510(1)-(5), F.A.C. The Department shall render a decision as to whether to grant or deny coverage within 30 days after the Department has received all of the information necessary to make the application complete. If this time schedule is not met, the applicant may apply for an order from the circuit court requiring the Department to render a decision within a specified time. Discharge may not begin until the applicant receives the notice of coverage.

(f) Facilities seeking coverage under paragraph (1)(c)2 of this permit, shall be covered automatically once the facility receives acceptable ground water screening values, if applicable.

(g) Coverage under this generic permit is limited to a term not to exceed five years from the effective date of coverage. Permittees may request continued coverage under this generic permit by submitting a complete NOI in accordance with paragraph (5)(a) to the Department district office. Requests for continued coverage shall be made at least 180 days before expiration of the current coverage.

(h) Annual regulatory program and surveillance fees are required for all facilities that discharge in excess of

thirty (30) days during the life of this permit. The fees are due in accordance with Rule 62-4.052, F.A.C.

(6) Pollution Prevention Plan. New permittees with long term treatment systems expected to discharge one (1) year or more shall develop a Pollution Prevention Plan for the site and submit it with the NOI. It shall contain the following information:

(a) A narrative of what caused the ground water contamination.

(b) Methods currently being deployed at the site to prevent ground water contamination from reoccurring.

(c) Other alternative treatment options which were considered in reducing the ground water contamination.

(d) Explanation of why long term treatment of discharge to surface waters of the State was chosen as opposed to:

1. An in situ ground water remediation technique which does not involve recovery of contaminated water;

2. An alternative means of discharge or disposal of treated ground water, such as re-infiltration on site; or,

3. Using a limited scope cleanup strategy which involves short term ground water recovery followed by monitoring-only at the site.