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July 13, 2007

Ms. Susan J. Pelz, P.E.
Solid Waste Manager
Southwest District
Florida Department of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33667-0926

Re: Report of Arsenic Source Evaluation
Lena Road Landfill, Manatee County
GMS ID No. 4041M02025
Pending Modification #39884-014-SO/MM to existing FDEP Permit No. 39884-010-SO/01

Dear Ms. Pelz:

On behalf of the Manatee County Utility Operations Department, PBS&J is pleased to submit this report of an evaluation performed to determine the source of the arsenic detections in the groundwater monitoring network at the Lena Road Landfill (LRL) in Manatee County, Florida. The evaluation was performed in response to your letter to Mr. Daniel Gray of the Manatee County Utility Operations department dated January 18, 2007, and in accordance with the work plan presented by PBS&J in a letter addressed to you dated February 15, 2007. The evaluation was required because the statistical analyses performed as part of the biennial groundwater monitoring plan evaluation, as presented in report dated May 2007, did not produce any definitive results regarding a possible source of the arsenic detections.

The work plan, which incorporated your comments presented in a letter addressed to Mr. Gray dated March 22, 2007, involved a literature review of technical information regarding the occurrence of arsenic in the environment, particularly in Florida, as well as a field investigation. The field investigation involved the following four tasks:

1. Profiling of the soil lithology at four borings installed at the current Yard Waste Handling Area (YWHA) of the LRL, and at the six well locations in the landfill groundwater monitoring network where arsenic has consistently been detected in the groundwater, in order to determine whether there may be a correlation between soil type and the arsenic detections.

2. The collection of soil and groundwater samples from four temporary monitoring wells installed at the YWHA for laboratory analysis for arsenic.

3. The collection of soil and groundwater samples from the same six monitoring wells in the landfill's monitoring network where soil profiles were performed for laboratory analysis of arsenic.

4. The collection of a soil sample from the planned future location of the YWHA for laboratory analysis of arsenic.

Descriptions of the tasks that were performed as part of the evaluation are presented below along with the evaluation findings.

LITERATURE REVIEW

PBS&J reviewed the following publications as part of this study:

1. *Geotechnical Evaluation of Proposed Sanitary Landfill Sites, Manatee County, Florida;* Ardaman & Associates, Inc., 1980.
2. *Compilation of Hydrogeological and Groundwater Data for Lena Road Landfill, Stage II Area;* Ardaman & Associates, Inc., 1985.
3. *Soil Survey of Manatee County, Florida*, U.S. Soil Conservation Service, 1981.
4. *Arsenic Concentrations in Florida Surface Soils: Influence of Soil Type and Properties;* M. Chen, L. Ma, W.G. Harris, 2002.
5. *Soils Underneath Florida Landfills and Their Role in the Occurrence and Fate of Iron and Arsenic in Groundwater;* D.R. Rhue.
6. *Natural Arsenic in the Miocene Hawthorn Group, Florida: Wide Ranging Implication for ASR, Phosphate Mining, Private Well*, O.V. Lazareva, 2004.
7. *Arsenic in Groundwater: Testing Pollution Mechanisms for Sedimentary Aquifers in Bangladesh;* J.M. McArthur, American Geophysical Union, 2004.
8. *Risk Assessment of Organic Versus Inorganic Arsenic;* L.E. Tonner-Navarro, FDEP Division of Waste Management, 1998.
9. *Arsenic Bioavailability from Florida Soils: Uncertainty Evaluation of the University of Florida/Florida Department of Environmental Protection Study;* Methodology Focus Group; Contaminated Soils Forum, 2003.
10. *Chemistry of Inorganic Arsenic in Soils;* E. Smith, et al., American Society of Agronomy, 2002.
11. *The Toxicity of Arsenic and Arsenate*; C.J. Saranko, FDEP Division of Waste Management, 1998.
12. *Statewide Ambient Ground Water Quality Monitoring Program, Arsenic Speciation Results*; *Ground Water Technical Brief;* E.F. Hagan, Idaho Department of Water Resources, 2004.

13. *Occurrence of Arsenic in Ground Waters of Arkansas and Implications of Source and Release Mechanisms, Arkansas Ambient Water Quality Monitoring Report*, T. Kresse and J. Fazio, 2003.

The literature review provided valuable information for attempting to determine the potential source of the arsenic in the groundwater at the LRL, and the following major conclusions were drawn from the review:

- Some soil types and sedimentary units, such as the organic-rich soil (peat), clay, the sediments of a regional stratigraphic unit called the Hawthorn Group, and limestone, all of which are present in the upper part of the subsurface at the LRL, can have high natural arsenic concentrations.

- Under the right reducing conditions, arsenic can precipitate into the groundwater from soil, sediments, and/or lithified material.

- Arsenic is generally stable at four different oxidation states, -III, 0, +III, and +V, but +III (arsenite) and +V (arsenate) are the most common forms. Arsenite typically is more prevalent than arsenate under reducing conditions.

Copies of these documents will be kept in the project file for future reference.

FIELD INVESTIGATION

The field investigation part of this evaluation was performed in May 2007. Direct-push technology (DPT) equipment was used for the soil profiling, to install temporary wells, and for some of the soil sample collection. The DPT equipment was owned and operated by Geologic and Environmental Testing, Inc. under the direction of PBS&J personnel. All of the field activities for the evaluation were performed in general accordance with the Florid Department of Environmental Protections (FDEPs) Standard Operating Procedures for Field Activities (SOP 001/01).

Task 1. Soil Profiling

Soil profiles were performed at the four locations where temporary monitoring wells were planned for the YWHA. Continuous soil samples were collected from the surface to the approximate depth of the planned base of the temporary wells (approximately 15 to 20 feet below land surface). The borings and wells were designated TMW-1 through TMW-4, and were placed at the locations illustrated in Figure 1.

PBS&J also performed soil borings next to the six wells in the landfill groundwater monitoring network, GW-1, GW-2, GW-4, GW-10, GW-12, and GW-14, where arsenic has consistently

been detected in the groundwater. These borings were also extended to the approximate depths of the wells. These wells are depicted with a box drawn around them in Figure 1.

Task 2. Soil and Groundwater Sampling at the Current YWHA

PBS&J personnel collected soil samples from a depth interval of 1 to 2 feet below land surface (BLS) at each of the four soil borings performed at the YWHA. The soil samples were submitted to Southern Research Laboratory (SRL) for arsenic analysis by the Synthetic Precipitation Leaching Procedure (SPLP) test using EPA test method 1312/6020A.

The temporary wells at the YWHA were constructed with 0.75-inch diameter, polyvinyl chloride (PVC) screen and casing. Ten feet of 0.01-inch screen was used for the wells, and a 20/30-size filter pack will be placed around the well screens. The wells were provided with slip caps and left sticking above grade. Construction diagrams of the wells are provided in Attachment A.

Prior to sampling TMW-1 through TMW-4, the wells were purged with a peristaltic pump using the "low-flow" method. One groundwater sample was collected from each well and submitted to SRL for analysis of total arsenic using EPA test method 6020A.

Task 3. Soil and Groundwater Sampling at the Monitoring Network Wells

One soil sample was also collected from a depth interval of 1 to 2 feet BLS from the borings placed next to the six wells in the monitoring network. The soil samples were submitted to SRL for arsenic analysis by the SPLP test using EPA test method 1312/6020A.

PBS&J personnel collected groundwater samples from wells GW-1, GW-2, GW-4, GW-10, GW-12, and GW-14. Prior to sampling, the wells were purged with a peristaltic pump using the "low-flow" method. The groundwater samples collected from these wells were submitted to SRL for total arsenic analysis using EPA test method 6020A.

Task 4. Soil Sampling at the Future YWHA

PBS&J collected one soil sample from a depth of 1 to 2 feet BLS from the central part of the planned future location of the YWHA, which is located on the north side of the LRL property, and submitted it to SRL for SPLP arsenic analysis using EPA test method 1312/6020A.

EVALUATION FINDINGS

Soil Profiling

Profiling of the soil at the well borings installed at the YWHA indicated the soil lithology in the upper part of the subsurface at that site is very consistent. There is a 1- to 2-foot thick layer of dark silty sand at the surface, which is mixed with soft blue-green clay and contains some organic

material. Underlying that unit is a 2- to 4-foot thick layer of dark organic-rich silty sand. The rest of the sequence, to a depth of approximately 16 feet BLS, is comprised of dark silty sand, which, in some areas, is intermingled with another organic-rich layer.

The soil at the six wells in the groundwater monitoring network at the LRL is more varied. Generally, the following five units are present in the upper 16 feet of the subsurface at these locations: 1) a dark gray silty sand, 2) a dark silty sand with organic material, 3) a gray to yellow silty sand, 4) a gray silty sand with phosphate nodules, and 5) a gray, green and blue clay unit with phosphate nodules. Phosphate nodules are typically an identifying characteristic of the Hawthorn Group. These units are not present at all of the six wells profiled during the evaluation, and where present, vary in thickness.

A description of the soil observed in the borings installed at the YWHA and the well network is presented in Table 1.

Soil and Groundwater Sampling Results at the Current YWHA

Arsenic was detected in all four of the soil samples collected from 1 to 2 feet BLS at the four well borings installed at the YWHA. As is standard protocol with SPLP testing, the arsenic concentrations were compared to the Florida Groundwater Cleanup Target Levels (GCTLs). The GCTL for arsenic is 0.1 milligrams per liter (mg/L). The arsenic concentrations at three of the well locations (all except TMW-4) exceeded the standard. The soil in the sampling intervals at all three of the wells where there were exceedances was comprised of at least a small percentage of organic material.

A summary of the soil SPLP test results is presented in Table 2.

Arsenic was detected in the groundwater samples collected from all four of the temporary monitoring wells installed in the YWHA. The arsenic concentrations were compared to the GCTL, and the concentrations at all four locations exceeded the standard. These wells are all screened in soil zones where organic-rich material is present.

A summary of the groundwater analytical test results is presented in Table 3.

The soil and groundwater laboratory analytical reports are provided in Attachment B along with the other laboratory reports from the evaluation.

Soil and Groundwater Sampling Results at the Monitoring Network Wells

The results of the SPLP testing on the soil samples collected from a depth interval of 1- to 2-feet BLS at the wells in the landfill monitoring network (Table 2) indicated that arsenic was present at detectable concentrations in the samples collected at 3 of the 6 wells, GW-4, GW-10, and GW-

14. The soil in the sampling intervals at all three of these wells was comprised of at least a small percentage of organic-rich material, whereas the soil at the other three wells was not. The SPLP arsenic concentrations at GW-4 and GW-10 exceeded the GCTL for arsenic.

Arsenic was detected in the groundwater samples collected at 5 of the 6 wells (all except GW-2) sampled from the landfill monitoring network, at concentrations ranging from 0.004 mg/L to 0.036 mg/L (Table 3). The concentrations were in the same range as those of the recent semiannual sampling events at the LRL. The arsenic concentrations in the samples collected at GW-1 and GW-14 exceeded the GCTL for arsenic. The soil in the screened intervals at all of the wells except GW-1 is comprised of at least a small percentage of material that reportedly contains naturally-occurring arsenic, including clay, organic-rich material, and the Hawthorn Group sediments.

Soil Sampling Results at the Future YWHA

There was no detectable SPLP arsenic concentration in the soil sample collected at the planned future location of the YWHA. This sample was comprised of silty sand.

Additional Soil and Groundwater Sampling

As a supplement to the field investigation, and in order to verify that the Hawthorn Group sediments at the LRL contain naturally-occurring arsenic, PBS&J collected a sample of this material from the boring performed at GW-14, and submitted it to SRL for total arsenic analysis using EPA method 6020A. The sample had an arsenic concentration of 4.90 milligrams per kilogram (parts per million).

Also, in response to information gathered during the literature review, PBS&J collected additional groundwater samples from the temporary well (TMW-4) at the YWHA and the well from the LRL network (GW-1) where the highest arsenic concentrations were detected during the evaluation, and submitted them to SRL for arsenic speciation analysis using EPA test method 1632. The speciation test was performed to measure the ratio of arsenic and arsenate, and, in turn, provide a relative measure of the reducing conditions that may occur in the subsurface at the LRL. As learned in the literature review, arsenite is typically more prevalent than arsenate under reducing conditions. The laboratory results indicated that the arsenite concentration was higher in both samples, by a factor of 3:1 at TMW-4 and 6:1 at GW-1.

The laboratory reports for all of the additional sampling locations are provided in Attachment B.

CONCLUSIONS

Information gathered during the course of this evaluation indicates that arsenic occurs naturally in a number of lithologic and sedimentary units in Florida, including some that are present in the

upper part of the subsurface beneath the LRL. The findings also indicate that arsenic can precipitate from the soil and sediments under reducing conditions. Arsenic speciation testing was performed on groundwater samples collected during the study, and the results suggest that reducing conditions exist beneath the LRL, although a comprehensive geochemical evaluation would have to be performed to verify this fact. These results suggest that the source of the arsenic detections in the groundwater of the surficial aquifer in the monitoring network at the LRL is the naturally-occurring arsenic which is present in the subsurface and precipitates into the groundwater because of the reducing conditions.

If you have any questions regarding this report or need any additional information then please call me at (407) 806-4339.

Very truly yours,

Greg Mudd, PG
Senior Geologist

C: Mr. Gus Defonzo, Manatee County Solid Waste Division
Mr. Mike Gore, Manatee County Solid Waste Division
Ms. Jeanne Detweiler, Manatee County Solid Waste Division
Mr. David Deans, P.E., PBS&J
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TABLES

TABLE 1: SOIL PROFILE SUMMARY

Facility Name: Lena Road Landfill

Sample ID	Depth Interval (fbls)	Soil Lithology
TMW-1	0-2	Mixture of blue-green clay, silt, & sand, and organic material.
	2-4	As above.
	4-6	Blue-green clay; soft, low plasticity; dry.
	6-8	Dark brown to black organic-rich silt and sand with numerous wood fibers.
	8-10	White to light brown silty sand.
	10-12	As above.
	12-14	Dark brown to black organic-rich silt and sand.
	14-16	Gray and brown silty sand.
TMW-2	0-2	Mixture of blue-green clay, silt, & sand, and organic material.
	2-4	As above but clay yellow in color.
	4-6	As above with less organic material.
	6-8	Light brown silty sand.
	8-10	Medium to dark brown silty sand.
	10-12	As above.
	12-14	As above.
	14-16	As above.
TMW-3	0-2	Mixture of blue-green clay, silt & sand with alternating layers of tan, gray and black silty sand. Some organic material.
	2-4	As above.
	4-6	As above.
	6-8	Light brown silty sand.
	8-10	Dark brown to black organic-rich silty sand.
	10-12	Gray sility sand.
	12-14	As above.
	14-16	As above.
TMW-4	0-2	Mixture of blue-green clay, silt, sand & limerock with alternating layers of tan, gray and black silty sand.
	2-4	Dark brown to black organic-rich silt and sand with numerous wood fibers.
	4-6	Dark gray clay with alternating layers of silt and sand.
	6-8	Medium brown silt and sand with stringers of organic material.
	8-10	As above.
	10-12	Gray sility sand with layers of balck silty sand and wood fibers..
	12-14	Gray and brown clayey silty sand.
	14-16	As above.

Sample ID	Depth Interval (fbls)	Soil Lithology
GW-1	0-2	Dark gray silty sand.
	2-4	As above with clay; perched water.
	4-6	As above with less clay; dry.
	6-8	Light brown silty sand.
	8-10	Dark gray silty sand.
	10-12	As above.
	12-14	As above.
	14-16	As above.
GW-2	0-2	Dark gray silty sand.
	2-4	Dark sility sand with organic-rich material.
	4-6	As above.
	6-8	Light brown silty sand.
	8-10	Dark gray silty sand; unit coarsend with depth.
	10-12	As above grades into gray green clay, silt and sand with phospahte nodules.
	12-14	As above; sand becomes coarse-grained with depth.
	14-16	As above.
GW-4	0-2	Dark gray silty sand with organic-rich material.
	2-4	As above.
	4-6	As above.
	6-8	Light brown silty sand.
	8-10	Dark gray silty sand; unit coarsend with depth.
	10-12	As above grades into gray green clay, silt and sand with phospahte nodules.
	12-14	As above; sand becomes coarse-grained with depth.
	14-16	As above.
GW-10	0-2	Dark gray silty sand with alternating layers of blue-clay and organic-rich material.
	2-4	As above.
	4-6	Blue-green clay; soft, low plasticity; dry.
	6-8	Light brown silty sand.
	8-10	As above with alternating layers of blue clay.
	10-12	As above grades into gray green clay, silt and sand with phospahte nodules.
	12-14	As above.
	14-16	As above.
GW-12	0-2	Light brown silty sand.
	2-4	As above.
	4-6	As above.
	6-8	As above.
	8-10	Dark brown to black silty sand.
	10-12	Light brown silty sand.
	12-14	As above.
	14-16	As above.

Sample ID	Depth Interval (fbls)	Soil Lithology
GW-14	0-2	Light brown and gray silty sand.
	2-4	As above.
	4-6	Yellow and gray silty, clayey sand; percentage of clay increases with depth.
	6-8	As above.
	8-10	Dark gray silty sand; unit coarsend with depth.
	10-12	As above grades into gray green clay, silt and sand with phospahte nodules.
	12-14	As above; sand becomes coarse-grained with depth.
	14-16	As above.

Abbreviations: ftbl= feet below land surface.

TABLE 2: SOIL SPLP ANALYTICAL SUMMARY

Facility Name: Lena Road Landfill

Sample ID	Collection Date	Sample Interval Lithology	SPLP Arsenic Concentration (mg/L)
TMW-1/1-2'	05/30/07	Mixture of blue-green clay, silt, & sand, and organic material.	**0.012**
TMW-2/1-2'	05/30/07	Mixture of blue-green clay, silt, & sand with organic material.	**0.026**
TMW-3/1-2'	05/30/07	Mixture of blue-green clay, silt, & sand, with alternating layers of tan, gray, black silty sand.	**0.011**
TMW-4/1-2'	05/30/07	Mixture of blue-green clay, silt, & sand, with alternating layers of tan, gray, black silty sand. Some organic material.	0.005
GW-1/1-2'	05/30/07	Dark gray silty sand.	<0.002
GW-2/1-2'	05/30/07	Dark gray silty sand.	<0.001
GW-4/1-2'	05/30/07	Dark gray silty sand with organic-rich material.	**0.016**
GW-10/1-2'	05/30/07	Dark gray silty sand with alternating layers of blue-clay and organic-rich material.	**0.025**
GW-12/1-2'	05/30/07	Light brown silty sand.	<0.003
GW-14/1-2'	05/30/07	Light brown and gray silty sand.	0.007
GCTL (1)			0.01
NADSC (2)			0.1

Abbreviations: ftbl= feet below land surface; mg/L = milligrams per liter; GCTL = Groundwater Cleanup Target Level; NADSC = Natural Attenuation Default Source Concentration.

Notes: (1) GCTLs and NADSCs are promulgated by Chapter 62-777, FAC.

(2) Concentrations shown in bold-faced type indicate an exceedance of the GCTL.

TABLE 3: GROUNDWATER ANALYTICAL SUMMARY

Facility Name: Lena Road Landfill

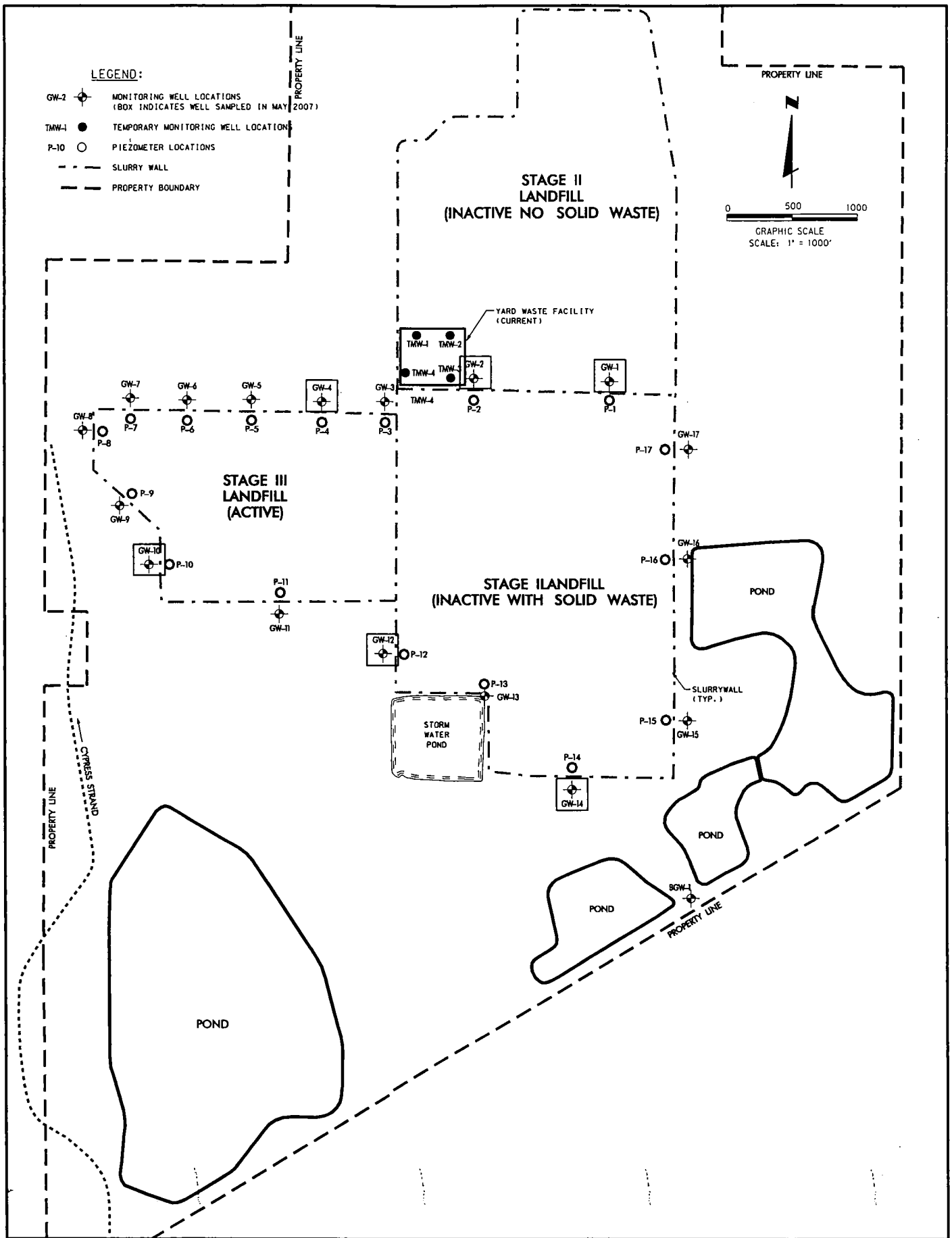
Sample ID	Collection Date	Approximate Depth to Water (fbls)	Arsenic Concentration (mg/L)
TMW-1	05/31/07	10	**0.088**
TMW-2	05/31/07	10	**0.129**
TMW-3	05/31/07	10	**0.375**
TMW-4	05/31/07	10	**0.378**
GW-1	05/31/07	7	**0.036**
GW-2	05/31/07	9	<0.003
GW-4	05/31/07	8	0.005
GW-10	05/31/07	10	0.004
GW-12	05/31/07	11	0.006
GW-14	05/31/07	5	**0.011**
GCTL (1)			0.01
NADSC (2)			0.1

Abbreviations: ftbl= feet below land surface; mg/L = milligrams per liter; GCTL = Groundwater Cleanup Target Level; NADSC = Natural Attenuation Default Source Concentration.

Notes: (1) GCTLs and NADSCs are promulgated by Chapter 62-777, FAC.

(2) Concentrations shown in bold-faced type indicate an exceedance of the GCTL.

FIGURES



PBS&J	LENA ROAD LANDFILL MANATEE COUNTY, FLORIDA	MAY 2007 INVESTIGATION SAMPLING LOCATIONS	FIG. 1

\\ORLFS1\EC$\SO\OLDG\HAZARD\MANATEE\LENAROADLANDFILL\ARSENIC ISSUE\FIGURE 1.DGN

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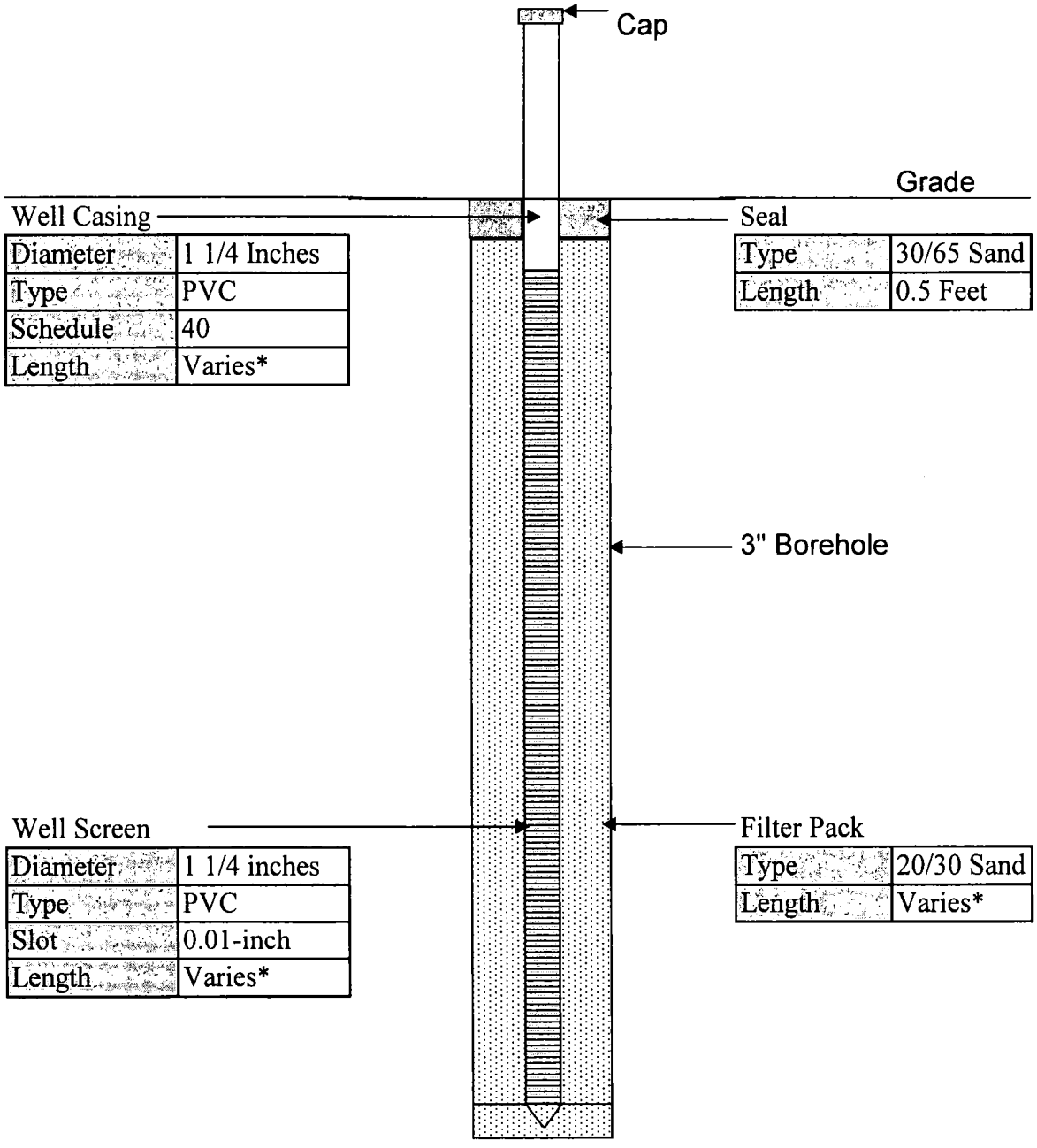
ATTACHMENT A

Temporary Well Construction Diagrams

TEMPORARY MONITORING WELL CONSTRUCTION DIAGRAM



Well Casing	
Diameter	1 1/4 Inches
Type	PVC
Schedule	40
Length	Varies*

Seal	
Type	30/65 Sand
Length	0.5 Feet

Well Screen	
Diameter	1 1/4 inches
Type	PVC
Slot	0.01-inch
Length	Varies*

Filter Pack	
Type	20/30 Sand
Length	Varies*

* Length of screen, riser, and sand pack will depend on the depth to groundwater.

PBS&J

Note: Not to scale.

ATTACHMENT B

Groundwater Sampling Forms

Water Sampling Log

PBS&J	WELL NO.: GW-12	SAMPLE ID: GW-12	DATE: 5/30/07
SITE NAME: Lena Road Landfill	SITE LOCATION: Bradenton, Manatee County, FL		

PURGE DATA

WELL DIAMETER (in):	2	TOTAL WELL DEPTH (ft):	20.21*	DEPTH TO WATER (ft):	13.75	WELL CAPACITY (gal/ft):	0.16

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) x WELL CAPACITY =

= (20.21 – 13.75) x 0.16 = 1.03

PURGE METHOD:	Peristaltic Pump	PURGING INITIATED AT:	1240	PURGING ENDED AT:	1300
		PURGE RATE (gpm):	0.25	TOTAL VOLUME PURGED (gal):	5

WELL VOLS. PURGED	CUMUL. VOLUME PURGED (gal)	pH	TEMP. (°C)	COND. (µmhos)	COLOR	ODOR	DISSOLVED OXYGEN	TURBIDITY
1	1.6	6.29	25.9	.540	Clear	None	0.51	<20
2	3.2	6.40	26.2	.541	"	"	0.63	<20
3	4.8	6.44	26.3	.542	"	"	0.66	7.4**

SAMPLING DATA

SAMPLED BY / AFFILIATION	Greg Mudd, PBS&J	SAMPLER(S) SIGNATURE(S)		
SAMPLING METHOD(S):	Straw-method	SAMPLING INITIATED AT:	1305	SAMPLING ENDED AT: 1310

FIELD DECONTAMINATION: Y N | FIELD-FILTERED: Y N | DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATIONS			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (ml)	FINAL pH	
1	HDP	250 ml	HNO3			Arsenic

REMARKS: * With approximately 3 feet of stick-up. **As measured by Hach 2100P turbidity meter.

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; HDP = HIGH DENSITY POLYETHYLENE; O = OTHER (SPECIFY)

WELL CAPACITY: 1.25" = 0.06 gal/ft; 2" = 0.16 gal/ft; 4" = 0.65 gal/ft; 6" = 1.47 gal/ft; 8" = 2.61 gal/ft; 12" = 5.88 gal/ft

NOTE: this does not constitute all the information required by Chapter 62-160, F.A.C.

Water Sampling Log

PBS&J	WELL NO.: GW-10	SAMPLE ID: GW-10	DATE: 5/30/07
SITE NAME: Lena Road Landfill	SITE LOCATION: Bradenton, Manatee County, FL		

PURGE DATA

WELL DIAMETER (in):	2	TOTAL WELL DEPTH (ft):	20.29*	DEPTH TO WATER (ft):	13.55	WELL CAPACITY (gal/ft):	0.16

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH − DEPTH TO WATER) x WELL CAPACITY =

= (20.29 − 13.55) x 0.16 = 1.03

PURGE METHOD:	Peristaltic Pump	PURGING INITIATED AT:	1315	PURGING ENDED AT:	1335
		PURGE RATE (gpm):	0.25	TOTAL VOLUME PURGED (gal):	5

WELL VOLS. PURGED	CUMUL. VOLUME PURGED (gal)	pH	TEMP. (°C)	COND. (µmhos)	COLOR	ODOR	DISSOLVED OXYGEN	TURBIDITY
1	1.6	7.01	25.5	.726	Clear	None	0.71	<20
2	3.2	6.97	25.7	.728	"	"	0.73	<20
3	4.8	6.96	25.8	.728	"	"	0.76	5.67**

SAMPLING DATA

SAMPLED BY / AFFILIATION	Greg Mudd, PBS&J	SAMPLER(S) SIGNATURE(S)		
SAMPLING METHOD(S):	Straw-method	SAMPLING INITIATED AT:	1335	SAMPLING ENDED AT: 1340

FIELD DECONTAMINATION: Y N | FIELD-FILTERED: Y N | DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATIONS			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (ml)	FINAL pH	
1	HDP	250 ml	HNO3			Arsenic

REMARKS: * With approximately 3 feet of stick-up. **As measured by Hach 2100P turbidity meter.

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; HDP = HIGH DENSITY POLYETHYLENE; O = OTHER (SPECIFY)

WELL CAPACITY: 1.25" = 0.06 gal/ft; 2" = 0.16 gal/ft; 4" = 0.65 gal/ft; 6" = 1.47 gal/ft; 8" = 2.61 gal/ft; 12" = 5.88 gal/ft

NOTE: this does not constitute all the information required by Chapter 62-160, F.A.C.

Water Sampling Log

PBS&J	WELL NO.: GW-4	SAMPLE ID: GW-4	DATE: 5/30/07
SITE NAME: Lena Road Landfill	SITE LOCATION: Bradenton, Manatee County, FL		

PURGE DATA

WELL DIAMETER (in):	2	TOTAL WELL DEPTH (ft):	1952*	DEPTH TO WATER (ft):	11.21	WELL CAPACITY (gal/ft):	0.16

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) x WELL CAPACITY =

= (19.52 – 11.21) x 0.16 = 1.3

PURGE METHOD:	Peristaltic Pump	PURGING INITIATED AT:	1045	PURGING ENDED AT:	1105
		PURGE RATE (gpm):	0.25	TOTAL VOLUME PURGED (gal):	5

WELL VOLS. PURGED	CUMUL. VOLUME PURGED (gal)	pH	TEMP. (°C)	COND. (µmhos)	COLOR	ODOR	DISSOLVED OXYGEN	TURBIDITY
1	1.6	6.13	25.2	.250	Clear	None	0.51	<20
2	3.2	6.11	25.1	.255	"	"	0.63	<20
3	4.8	6.16	25.1	.252	"	"	0.66	17.9**

SAMPLING DATA

SAMPLED BY / AFFILIATION	Greg Mudd, PBS&J	SAMPLER(S) SIGNATURE(S)		
SAMPLING METHOD(S):	Straw-method	SAMPLING INITIATED AT:	1105	SAMPLING ENDED AT: 1110

FIELD DECONTAMINATION: Y N | FIELD-FILTERED: Y N | DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATIONS			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (ml)	FINAL pH	
1	HDP	250 ml	HNO3			Arsenic

REMARKS: * With approximately 3 feet of stick-up. **As measured by Hach 2100P turbidity meter.

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; HDP = HIGH DENSITY POLYETHYLENE; O = OTHER (SPECIFY)

WELL CAPACITY: 1.25" = 0.06 gal/ft; 2" = 0.16 gal/ft; 4" = 0.65 gal/ft; 6" = 1.47 gal/ft; 8" = 2.61 gal/ft; 12" = 5.88 gal/ft

NOTE: this does not constitute all the information required by Chapter 62-160, F.A.C.

Water Sampling Log

PBS&J	WELL NO.: GW-2	SAMPLE ID: GW-2	DATE: 5/30/07
SITE NAME: Lena Road Landfill	SITE LOCATION: Bradenton, Manatee County, FL		

PURGE DATA

WELL DIAMETER (in):	2	TOTAL WELL DEPTH (ft):	19.42*	DEPTH TO WATER (ft):	11.97	WELL CAPACITY (gal/ft):	0.16

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH − DEPTH TO WATER) x WELL CAPACITY =

= (19.42 − 11.97) x 0.16 = 1.2

PURGE METHOD:	Peristaltic Pump	PURGING INITIATED AT:	1135	PURGING ENDED AT:	1155
		PURGE RATE (gpm):	0.25	TOTAL VOLUME PURGED (gal):	5

WELL VOLS. PURGED	CUMUL. VOLUME PURGED (gal)	pH	TEMP. (°C)	COND. (µmhos)	COLOR	ODOR	DISSOLVED OXYGEN	TURBIDITY
1	1.6	6.5	25.4	.656	Clear	None	0.41	<20
2	3.2	6.5	25.5	.650	"	"	0.43	<20
3	4.8	6.5	25.5	.646	"	"	0.42	7.62**

SAMPLING DATA

SAMPLED BY / AFFILIATION	Greg Mudd, PBS&J	SAMPLER(S) SIGNATURE(S)	
SAMPLING METHOD(S):	Straw-method	SAMPLING INITIATED AT: 1200	SAMPLING ENDED AT: 1205

FIELD DECONTAMINATION: Y N | FIELD-FILTERED: Y N | DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATIONS			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (ml)	FINAL pH	
1	HDP	250 ml	HNO3			Arsenic

REMARKS: * With approximately 3 feet of stick-up. **As measured by Hach 2100P turbidity meter.

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; HDP = HIGH DENSITY POLYETHYLENE; O = OTHER (SPECIFY)

WELL CAPACITY: 1.25" = 0.06 gal/ft; 2" = 0.16 gal/ft; 4" = 0.65 gal/ft; 6" = 1.47 gal/ft; 8" = 2.61 gal/ft; 12" = 5.88 gal/ft

NOTE: this does not constitute all the information required by Chapter 62-160, F.A.C.

Water Sampling Log

PBS&J	WELL NO.: GW-14	SAMPLE ID: GW-14	DATE: 5/30/07
SITE NAME: Lena Road Landfill	SITE LOCATION: Bradenton, Manatee County, FL		

PURGE DATA

WELL DIAMETER (in):	2	TOTAL WELL DEPTH (ft):	20.13*	DEPTH TO WATER (ft):	7.92	WELL CAPACITY (gal/ft):	0.16

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH − DEPTH TO WATER) x WELL CAPACITY =

= (20.13 − 7.92) x 0.16 = 1.9

PURGE METHOD:	Peristaltic Pump	PURGING INITIATED AT:	1210	PURGING ENDED AT:	1230
		PURGE RATE (gpm):	0.25	TOTAL VOLUME PURGED (gal):	5

WELL VOLS. PURGED	CUMUL. VOLUME PURGED (gal)	pH	TEMP. (°C)	COND. (µmhos)	COLOR	ODOR	DISSOLVED OXYGEN	TURBIDITY
1	1.6	7.15	25.2	.237	Clear	None	0.11	<20
2	3.2	7.15	25.2	.237	"	"	0.13	<20
3	4.8	7.18	25.1	.237	"	"	0.12	18.9**

SAMPLING DATA

SAMPLED BY / AFFILIATION	Greg Mudd, PBS&J	SAMPLER(S) SIGNATURE(S)			
SAMPLING METHOD(S):	Straw-method	SAMPLING INITIATED AT:	1230	SAMPLING ENDED AT:	1235

FIELD DECONTAMINATION: Y N | FIELD-FILTERED: Y N | DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATIONS			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (ml)	FINAL pH	
1	HDP	250 ml	HNO3			Arsenic

REMARKS: * With approximately 3 feet of stick-up. **As measured by Hach 2100P turbidity meter.

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; HDP = HIGH DENSITY POLYETHYLENE; O = OTHER (SPECIFY)

WELL CAPACITY: 1.25" = 0.06 gal/ft; 2" = 0.16 gal/ft; 4" = 0.65 gal/ft; 6" = 1.47 gal/ft; 8" = 2.61 gal/ft; 12" = 5.88 gal/ft

NOTE: this does not constitute all the information required by Chapter 62-160, F.A.C.

Water Sampling Log

PBS&J	WELL NO.: GW-1	SAMPLE ID: GW-1	DATE: 5/30/07
SITE NAME: Lena Road Landfill	SITE LOCATION: Bradenton, Manatee County, FL		

PURGE DATA

WELL DIAMETER (in):	2	TOTAL WELL DEPTH (ft):	19.49*	DEPTH TO WATER (ft):	9.58	WELL CAPACITY (gal/ft):	0.16

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) x WELL CAPACITY =

= (19.49 – 9.58) x 0.02 = 1.6

PURGE METHOD:	Peristaltic Pump	PURGING INITIATED AT:	1110	PURGING ENDED AT:	1130
		PURGE RATE (gpm):	0.25	TOTAL VOLUME PURGED (gal):	5

WELL VOLS. PURGED	CUMUL. VOLUME PURGED (gal)	pH	TEMP. (°C)	COND. (µmhos)	COLOR	ODOR	DISSOLVED OXYGEN	TURBIDITY
1	1.6	6.5	25.4	.700	Clear	None	0.41	<20
2	3.2	6.3	25.4	.690	"	"	0.43	<20
3	4.8	6.5	25.5	.686	"	"	0.42	6.6**

SAMPLING DATA

SAMPLED BY / AFFILIATION	Greg Mudd, PBS&J	SAMPLER(S) SIGNATURE(S)		
SAMPLING METHOD(S):	Straw-method	SAMPLING INITIATED AT:	1130	SAMPLING ENDED AT: 1135

FIELD DECONTAMINATION: Y N | FIELD-FILTERED: Y N | DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATIONS			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (ml)	FINAL pH	
1	HDP	250 ml	HNO3			Arsenic

REMARKS: * With approximately 3 feet of stick-up. **As measured by Hach 2100P turbidity meter.

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; HDP = HIGH DENSITY POLYETHYLENE; O = OTHER (SPECIFY)

WELL CAPACITY: 1.25" = 0.06 gal/ft; 2" = 0.16 gal/ft; 4" = 0.65 gal/ft; 6" = 1.47 gal/ft; 8" = 2.61 gal/ft; 12" = 5.88 gal/ft

NOTE: this does not constitute all the information required by Chapter 62-160, F.A.C.

Water Sampling Log

PBS&J	WELL NO.: TMW-1	SAMPLE ID: TMW-1	DATE: 5/30/07
SITE NAME: Lena Road Landfill	SITE LOCATION: Bradenton, Manatee County, FL		

PURGE DATA

WELL DIAMETER (in):	2	TOTAL WELL DEPTH (ft):	20*	DEPTH TO WATER (ft):	13.76	WELL CAPACITY (gal/ft):	0.02

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH − DEPTH TO WATER) x WELL CAPACITY =

= (20 − 13.76) x 0.02 = 0.13

PURGE METHOD:	Peristaltic Pump	PURGING INITIATED AT:	0845	PURGING ENDED AT:	0915
		PURGE RATE (gpm):	0. 25	TOTAL VOLUME PURGED (gal):	7.5

WELL VOLS. PURGED	CUMUL. VOLUME PURGED (gal)	pH	TEMP. (°C)	COND. (µmhos)	COLOR	ODOR	DISSOLVED OXYGEN	TURBIDITY
50	6.5	6.78	26.2	.330	Yellow	None	0.31	<20
53	7	6.75	26.3	.360	"	"	0.27	<20
56	7.5	6.69	26.5	.368	"	"	0.30	19.58**

SAMPLING DATA

SAMPLED BY / AFFILIATION	Greg Mudd, PBS&J	SAMPLER(S) SIGNATURE(S)		
SAMPLING METHOD(S):	Straw-method	SAMPLING INITIATED AT:	0920	SAMPLING ENDED AT: 0910

FIELD DECONTAMINATION: Y N | FIELD-FILTERED: Y N | DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATIONS			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (ml)	FINAL pH	
1	HDP	250 ml	HNO3			Arsenic

REMARKS: * With approximately 3 feet of stick-up. **As measured by Hach 2100P turbidity meter.

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; HDP = HIGH DENSITY POLYETHYLENE; O = OTHER (SPECIFY)

WELL CAPACITY: 1.25" = 0.06 gal/ft; 2" = 0.16 gal/ft; 4" = 0.65 gal/ft; 6" = 1.47 gal/ft; 8" = 2.61 gal/ft; 12" = 5.88 gal/ft

NOTE: this does not constitute all the information required by Chapter 62-160, F.A.C.

Water Sampling Log

PBS&J	WELL NO.: TMW-2	SAMPLE ID: TMW-2	DATE: 5/30/07
SITE NAME: Lena Road Landfill	SITE LOCATION: Bradenton, Manatee County, FL		

PURGE DATA

WELL DIAMETER (in):	2	TOTAL WELL DEPTH (ft):	20*	DEPTH TO WATER (ft):	13.50	WELL CAPACITY (gal/ft):	0.02

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) x WELL CAPACITY =

= (20 – 13.50) x 0.02 = 0.13

PURGE METHOD:	Peristaltic Pump	PURGING INITIATED AT:	0925	PURGING ENDED AT:	1000
		PURGE RATE (gpm):	0.25	TOTAL VOLUME PURGED (gal):	

WELL VOLS. PURGED	CUMUL. VOLUME PURGED (gal)	pH	TEMP. (°C)	COND. (µmhos)	COLOR	ODOR	DISSOLVED OXYGEN	TURBIDITY
42	5.5	6.51	26.2	.310	Yellow	None	0.19	<20
45	6	6.55	26.1	.320	"	"	0.27	<20
48	6.5	6.61	26.2	.317	"	"	0.20	18.7**

SAMPLING DATA

SAMPLED BY / AFFILIATION	Greg Mudd, PBS&J	SAMPLER(S) SIGNATURE(S)		
SAMPLING METHOD(S):	Straw-method	SAMPLING INITIATED AT:	1005	SAMPLING ENDED AT: 1010

FIELD DECONTAMINATION: Y N | FIELD-FILTERED: Y N | DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATIONS			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (ml)	FINAL pH	
1	HDP	250 ml	HNO3			Arsenic

REMARKS: * With approximately 3 feet of stick-up. **As measured by Hach 2100P turbidity meter.

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; HDP = HIGH DENSITY POLYETHYLENE; O = OTHER (SPECIFY)

WELL CAPACITY: 1.25" = 0.06 gal/ft; 2" = 0.16 gal/ft; 4" = 0.65 gal/ft; 6" = 1.47 gal/ft; 8" = 2.61 gal/ft; 12" = 5.88 gal/ft

NOTE: this does not constitute all the information required by Chapter 62-160, F.A.C.

Water Sampling Log

PBS&J	WELL NO.: TMW-3	SAMPLE ID: TMW-3	DATE: 5/30/07
SITE NAME: Lena Road Landfill	SITE LOCATION: Bradenton, Manatee County, FL		

PURGE DATA

WELL DIAMETER (in):	TOTAL WELL DEPTH (ft):	DEPTH TO WATER (ft):	WELL CAPACITY (gal/ft):
2	20*	13.43	0.02

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) x WELL CAPACITY =

= (20 – 13.43) x 0.02 = 0.13

PURGE METHOD:	PURGING INITIATED AT:	PURGING ENDED AT:
Peristaltic Pump	1010	1040

PURGE RATE (gpm):	TOTAL VOLUME PURGED (gal):
0. 25	7.5

WELL VOLS. PURGED	CUMUL. VOLUME PURGED (gal)	pH	TEMP. (°C)	COND. (µmhos)	COLOR	ODOR	DISSOLVED OXYGEN	TURBIDITY
50	6.5	6.47	26.2	.371	Yellow	None	0.21	<20
53	7	6.45	26.3	.360	"	"	0.25	<20
56	7.5	6.59	26.3	.355	"	"	0.20	19.5**

SAMPLING DATA

SAMPLED BY / AFFILIATION	SAMPLER(S) SIGNATURE(S)	
Greg Mudd, PBS&J		
SAMPLING METHOD(S): Straw-method	SAMPLING INITIATED AT: 1040	SAMPLING ENDED AT: 1045

FIELD DECONTAMINATION: Y N | FIELD-FILTERED: Y N | DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATIONS			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (ml)	FINAL pH	
1	HDP	250 ml	HNO3			Arsenic

REMARKS: * With approximately 3 feet of stick-up. **As measured by Hach 2100P turbidity meter.

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; HDP = HIGH DENSITY POLYETHYLENE; O = OTHER (SPECIFY)

WELL CAPACITY: 1.25" = 0.06 gal/ft; 2" = 0.16 gal/ft; 4" = 0.65 gal/ft; 6" = 1.47 gal/ft; 8" = 2.61 gal/ft; 12" = 5.88 gal/ft

NOTE: this does not constitute all the information required by Chapter 62-160, F.A.C.

Water Sampling Log

PBS&J	WELL NO.: TMW-4	SAMPLE ID: TMW-4	DATE: 5/30/07
SITE NAME: Lena Road Landfill	SITE LOCATION: Bradenton, Manatee County, FL		

PURGE DATA

WELL DIAMETER (in):	TOTAL WELL DEPTH (ft):	DEPTH TO WATER (ft):	WELL CAPACITY (gal/ft):
2	20*	13.01	0.02

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH − DEPTH TO WATER) x WELL CAPACITY =

= (20 − 13.01) x 0.02 = 0.13

PURGE METHOD:	PURGING INITIATED AT:	PURGING ENDED AT:
Peristaltic Pump	1045	1100

PURGE RATE (gpm):	TOTAL VOLUME PURGED (gal):
0. 25	3.75

WELL VOLS. PURGED	CUMUL. VOLUME PURGED (gal)	pH	TEMP. (°C)	COND. (µmhos)	COLOR	ODOR	DISSOLVED OXYGEN	TURBIDITY
25	3.25	6.21	25.2	.263	Yellow	None	0.51	<20
27	3.5	6.20	25.2	.261	"	"	0.45	<20
29	3.75	6.16	25.2	.252	"	"	0.62	17.9**

SAMPLING DATA

SAMPLED BY / AFFILIATION	SAMPLER(S) SIGNATURE(S)
Greg Mudd, PBS&J	

SAMPLING METHOD(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
Straw-method	1105	1110

FIELD DECONTAMINATION: Y N | FIELD-FILTERED: Y N | DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATIONS			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (ml)	FINAL pH	
1	HDP	250 ml	HNO3			Arsenic

REMARKS: * With approximately 3 feet of stick-up. **As measured by Hach 2100P turbidity meter.

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; HDP = HIGH DENSITY POLYETHYLENE; O = OTHER (SPECIFY)

WELL CAPACITY: 1.25" = 0.06 gal/ft; 2" = 0.16 gal/ft; 4" = 0.65 gal/ft; 6" = 1.47 gal/ft; 8" = 2.61 gal/ft; 12" = 5.88 gal/ft

NOTE: this does not constitute all the information required by Chapter 62-160, F.A.C.

ATTACHMENT C

Laboratory Analytical Reports

Southern Research Laboratories, Inc.

3477 Parkway Center Court
Orlando, Florida 32808
(407) 522-7100 Fax (407) 522-7043
Toll Free 1 (888) 420-Test

Thank you **Mr. Greg Mudd** for the opportunity to be of service to you and your company, we **S**incerely **A**ppreciate **Y**our **B**usiness. SRL certifies these **Laboratory Results** were produced in accordance with NELAC Standards. Hold times and preservation requirements were met for all analytes unless specifically noted in the report.

Client Name: **PBS&J - Orlando**	Date(s) Collected: 05/30-05/31/07
Contact Name: **Greg Mudd**	Date Received: 05/31/07
Project Name: Lena Road Landfill	Time Received: 16:50
Project Number: NA	Date Reported : 06/12/07
Phone Number: (407) 647-7275	Date Facsmiled : 06/12/07
Fax Number: (407) 647-8945	SRL Work Order # 07-05059

SRL WO #	Clients #	Matrix	Analysis Requested
29883	TMW-1/1-2'	Solid	SPLP Arsenic (As)
29884	TMW-2/1-2'	Solid	SPLP Arsenic (As)
29885	TMW-3/1-2'	Solid	SPLP Arsenic (As)
29886	TMW-4/1-2'	Solid	SPLP Arsenic (As)
29887	GW-1/1-2'	Solid	SPLP Arsenic (As)
29888	GW-2/1-2'	Solid	SPLP Arsenic (As)
29889	GW-14/1-2'	Solid	SPLP Arsenic (As)
29890	GW-12/1-2'	Solid	SPLP Arsenic (As)
29891	GW-10/1-2'	Solid	SPLP Arsenic (As)
29892	GW-4/1-2'	Solid	SPLP Arsenic (As)
29893	TMW-4	Liquid	Arsenic (As)
29894	TMW-1	Liquid	Arsenic (As)
29895	TMW-2	Liquid	Arsenic (As)
29896	TMW-3	Liquid	Arsenic (As)
29897	GW-4	Liquid	Arsenic (As)
29898	GW-1	Liquid	Arsenic (As)
29899	GW-2	Liquid	Arsenic (As)
29900	GW-14	Liquid	Arsenic (As)
29901	GW-12	Liquid	Arsenic (As)
29902	GW-10	Liquid	Arsenic (As)

Sherri Payne
Vice President & Quality Assurance Officer
Southern Research Laboratories, Inc.

Southern Research Laboratories, Inc.
an MBE Environmental Laboratory
3477 Parkway Center Court
Orlando, Florida 32808 (407) 522-7100

NELAP Certified
FDOH Cert # : E83484
SRL Lab Ref # : 07-05059
Received Date : 05/31/07

Greg Mudd
PBS&J
482 South Keller Road
Orlando, Florida 32810-6101 (407) 647-7275

Project Number/Project Name
Lena Road Landfill
Bradenton, Florida

EPA Method 1312/6020A SPLP Arsenic (As) in Soil & Waste

Client ID #	**TMW-1/1-2'**	**TMW-2/1-2'**	**TMW-3/1-2'**	**TMW-4/1-2'**			
SRL (Lab) ID#	29883	29884	29885	29886			
Date Collected	05/30/07	05/30/07	05/30/07	05/30/07			
Lab FDOH Certification #	E86678	E86678	E86678	E86678			
Date Prepared	06/08/07	06/08/07	06/08/07	06/08/07			
Date Analyzed	06/08/07	06/08/07	06/08/07	06/08/07			
Units	mg/L	mg/L	mg/L	mg/L	**PQL**	**MDL**	**CAS Number**
Arsenic (As), SPLP	**0.012**	**0.026**	**0.011**	**0.005**	0.003	0.001	7440-38-2

Client ID #	**GW-1/1-2'**	**GW-2/1-2'**	**GW-14/1-2'**	**GW-12/1-2'**			
SRL (Lab) ID#	29887	29888	29889	29890			
Date Collected	05/30/07	05/30/07	05/30/07	05/30/07			
Lab FDOH Certification #	E86678	E86678	E86678	E86678			
Date Prepared	06/08/07	06/08/07	06/08/07	06/08/07			
Date Analyzed	06/08/07	06/08/07	06/08/07	06/08/07			
Units	mg/L	mg/L	mg/L	mg/L	**PQL**	**MDL**	**CAS Number**
Arsenic (As), SPLP	*0.002 I*	*0.001 I*	**0.007**	*0.003 I*	0.003	0.001	7440-38-2

Client ID #	**GW-10/1-2'**	**GW-4/1-2'**					
SRL (Lab) ID#	29891	29892					
Date Collected	05/30/07	05/31/07					
Lab FDOH Certification #	E86678	E86678					
Date Prepared	06/08/07	06/08/07					
Date Analyzed	06/08/07	06/08/07					
Units	mg/L	mg/L			**PQL**	**MDL**	**CAS Number**
Arsenic (As), SPLP	**0.025**	**0.016**			0.003	0.001	7440-38-2

Parameter	**% Recovery BS/MS/MSD**	**Acceptable Limits**	**%RPD MS/MSD**	**Acceptable Limits**
Arsenic (As), SPLP	105/108/107	75-125	1	25

Southern Research Laboratories, Inc.
an MBE Environmental Laboratory
3477 Parkway Center Court
Orlando, Florida 32808 (407) 522-7100

NELAP Certified
FDOH Cert # : E83484
SRL Lab Ref # : 07-05059
Received Date : 05/31/07

Greg Mudd
PBS&J
482 South Keller Road
Orlando, Florida 32810-6101 (407) 647-7275

Project Number/Project Name
Lena Road Landfill
Bradenton, Florida

EPA Method 6020A Arsenic (As) in Water

Client ID #	**TMW-4**	**TMW-1**	**TMW-2**	**TMW-3**			
SRL (Lab) ID#	29893	29894	29895	29896			
Date Collected	05/31/07	05/31/07	05/31/07	05/31/07			
Lab FDOH Certification #	E86678	E86678	E86678	E86678			
Date Prepared	06/05/07	06/05/07	06/05/07	06/05/07			
Date Analyzed	06/08/07	06/08/07	06/08/07	06/08/07			
Units	mg/L	mg/L	mg/L	mg/L	**PQL**	**MDL**	**CAS Number**
Arsenic (As)	**0.088**	**0.129**	**0.375**	**0.378**	0.003	0.001	7440-38-2

Client ID #	**GW-4**	**GW-1**	**GW-2**	**GW-14**			
SRL (Lab) ID#	29897	29898	29899	29900			
Date Collected	05/31/07	05/31/07	05/31/07	05/31/07			
Lab FDOH Certification #	E86678	E86678	E86678	E86678			
Date Prepared	06/05/07	06/05/07	06/05/07	06/05/07			
Date Analyzed	06/08/07	06/08/07	06/08/07	06/08/07			
Units	mg/L	mg/L	mg/L	mg/L	**PQL**	**MDL**	**CAS Number**
Arsenic (As)	**0.005**	**0.036**	*0.003 I*	**0.011**	0.003	0.001	7440-38-2

Client ID #	**GW-12**	**GW-10**					
SRL (Lab) ID#	29901	29902					
Date Collected	05/31/07	05/31/07					
Lab FDOH Certification #	E86678	E86678					
Date Prepared	06/05/07	06/05/07					
Date Analyzed	06/08/07	06/08/07					
Units	mg/L	mg/L			**PQL**	**MDL**	**CAS Number**
Arsenic (As)	**0.006**	**0.004**			0.003	0.001	7440-38-2

	% Recovery BS/MS/MSD	**Acceptable Limits**	**%RPD MS/MSD**	**Acceptable Limits**
Arsenic (As)	90/90/90	75-125	0	25

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3477 Parkway Center Court
Orlando, Florida 32808 (407) 522-7100

NELAP Certified
FDOH Cert # : E83484
SRL Lab Ref # : 07-05059
Received Date : 05/31/07

Greg Mudd
PBS&J
482 South Keller Road
Orlando, Florida 32810-6101 (407) 647-7275

Project Number/Project Name
Lena Road Landfill
Bradenton, Florida

DATA QUALIFIER CODES

Reporting Exceptions and Qualified Data

When quality control results are outside established control limits reanalysis, including re-extraction (if applicable), is preferred. If re-analysis is not viable or desirable, then results may be qualified. Sample results associated with quality control data that exceed acceptance criteria will be qualified with an appropriate comment.

D = Data reported from a dilution and or multiple dilutions.

I = Estimated Value, The reported value is between the Laboratory Method Detection Limit (**MDL**) and the Laboratory Practical Quantitation Limit (**PQL**)

J = Estimated value

L = Off-Scale high; exceeds the linear range or highest calibration standard.

O = Sampled, but analysis lost or not performed

Q = Sample held beyond normal holding time

U = indicates the compound was analyzed for, but not detected. The numerical value preceding the "U" is the limit of detection for that compound based upon the dilution. **MEDF** = **M**atrix **E**ffected **D**ilution **F**actor.

V = Analyte was detected in both the sample and associated Laboratory Method Blank; Laboratory Contamination

Y = The analysis was from an unpreserved or improperly preserved sample. The data may not be accurate

Unless otherwise noted, ug/Kg and mg/Kg denote dry weight.

(SOILS) Actual Reporting Limit will depend on moisture content of sample and the amount of sample received.

Chain of Custody

[redacted]

Project Manager:
Company: PBS:J
Address:
City, State, Zip:
Phone: Fax:

Southern Research Laboratories, Inc.
3477 Parkway Center Court
Orlando, Florida 32808
(407) 522-7100
Toll Free 1 (888) 420-TEST
Fax: (407) 522-7043

Project Name: LAWA ROAD LANDFILL
Project Location:
Project Number:
REQUESTED DUE DATE:
Sampling QAP No.:
Approval Date:
Comments:

Sampled by [Print Name(s)] / Affiliation:
Sampler(s) Signature(s):

Preservatives (see codes)

Analyses Requested: ARSENIC

	Sample Identification	Sampled Date:	Sampled Time:	Grab or Composite	Matrix: (see codes)	Total Number of Containers		Comments:
11	TMW-4	5/31/07	0815	X	GW	1	1	29893
12	TMW-1	"	0925	X	"	1	1	29894
13	TMW-2	"	1005	X	"	1	1	29895
14	TMW-3	"	1040	X	"	1	1	29896
15	GW-4	"	1105	X	"	1	1	29897
16	GW-1	"	1130	X	"	1	1	29898
17	GW-2	"	1200	X	"	1	1	29899
18	GW-14	"	1235	X	"	1	1	29900
19	GW-13	"	1305	X	"	1	1	29901
20	GW-10	"	1335	X	"	1	1	29902

5/31/07 @ 9:30

Relinquished by: / Affiliation:	Date:	Time:	Accepted by: / Affiliation:	Date:	Time:
[redacted]	5-2-07	15:50			
Ray Mulp via courier	5-31-07	1600		5/31/07	1650

Shipment Method:
Out: / / Via:
Returned: / / Via:

Additional Comments:
Sample containers pre-preserved by lab

Cooler No.(s): 347 Temperature(s) (°C): 3 cool 4 0C
Sampling Kit No.: 3702
Equipment ID No.:

Matrix Codes: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water(Blanks) HW = Potential Haz Waste O = Other(Specify)
Preservative Codes: H = Hydrochloric Acid & Ice I = Ice Only N = Nitric Acid & Ice S = Sulfuric Acid & Ice X = Sodium Hydroxide & Ice O = Other(Specify)

Chain of Custody

[redacted]

Page 1 of 2

Project Manager: GREG MUDD	Project Name: LENA ROAD LANDFILL
Company: PBS;J	Project Location: BRADENTON, FL
Address: 482 KELLY RD	
City, State, Zip: ORLANDO, FL 32814	
Phone: 407 647 7275 Fax:	

Southern Research Laboratories, Inc.
3477 Parkway Center Court
Orlando, Florida 32808
(407) 522-7100
Toll Free 1 (888) 420-TEST
Fax: (407) 522-7043

Sampled by [Print Name(s)] / Affiliation: GREG MUDD/PBS;J

Sampler(s) Signature(s):

Project Number:

REQUESTED DUE DATE.

Sampling QAP No.:

Approval Date:

Comments:

	Sample Identification	Sampled Date:	Sampled Time:	Grab or Composite	Matrix: (see codes)	Total Number of Containers	Preservatives (see codes)	Analyses Requested: 5014 - TPH 1312	Comments
1	TMW-1/1-2'	5/30/07	1100	X	SO	1		1	29883
2	TMW-2/1-2'	"	1215	X	"	1		1	29884
3	TMW-3/1-2'	"	1315	X	"	1		1	29885
4	TMW-4/1-2'	"	1415	X	"	1		1	29886
5	GW-1/1-2'	"	1515	X	"	1		1	29887
6	GW-2/1-2'	"	1605	X	"	1		1	29888
7	GW-14/1-2'	"	1645	X	"	1		1	29889
8	GW-12/1-2'	"	1700	X	"	1		1	29890
9	GW-10/1-2'	"	1745	X	"	1		1	29891
10	GW-4/1-2'	5/31/07	1052	X	"	1		1	29892

5/30/07 @ 14:15

Shipment Method:

Out: / / Via:

Returned: / / Via:

Additional Comments:
* RUN SPLP ARSENIC ON ALL SOIL SAMPLES

Relinquished by: / Affiliation:	Date:	Time:	Accepted by: / Affiliation:	Date:	Time:
[redacted]	5-2-07	15:50			
[redacted]	5-3-07	1600		5/31/07	1650

Cooler No.(s) / Temperature(s) (°C): 347 Leaf <4°C

Sampling Kit No.: 3702

Equipment ID No.:

Matrix Codes: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water(Blanks) HW = Potential Haz Waste O = Other(Specify:)

Preservative Codes: H = Hydrochloric Acid & Ice I = Ice Only N = Nitric Acid & Ice S = Sulfuric Acid & Ice X = Sodium Hydroxide & Ice O = Other(Specify)

Southern Research Laboratories, Inc.

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Orlando, Florida 32808
(407) 522-7100 Fax (407) 522-7043
Toll Free 1 (888) 420-Test

Thank you **Mr. Greg Mudd** for the opportunity to be of service to you and your company, we **S**incerely **A**ppreciate **Y**our **B**usiness. SRL certifies these **Laboratory Results** were produced in accordance with NELAC Standards. Hold times and preservation requirements were met for all analytes unless specifically noted in the report.

Client Name: **PBS&J - Orlando**	Date(s) Collected: 06/07/07
Contact Name: **Greg Mudd**	Date Received: 06/07/07
Project Name: Lena Road Landfill	Time Received: 14:40
Project Number: 100933.01	Date Reported : 06/21/07
Phone Number: (407) 647-7275	Date Facsmiled : 06/21/07
Fax Number: (407) 647-8945	SRL Work Order # 07-06022

SRL WO #	Clients #	Matrix	Analysis Requested
30016	GW-14/10-12'	Solid	Arsenic (As)
30017	NYWA-1/1-2'	Solid	SPLP Arsenic (As)

Sherri Payne
Vice President & Quality Assurance Officer
Southern Research Laboratories, Inc.

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an MBE Environmental Laboratory
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Orlando, Florida 32808 (407) 522-7100

NELAP Certified
FDOH Cert # : E83484
SRL Lab Ref # : 07-06022
Received Date : 06/07/07

Greg Mudd
PBS&J
482 South Keller Road
Orlando, Florida 32810-6101 (407) 647-7275

Project Number/Project Name
100933.01
Lena Road Landfill
Bradenton, Florida

EPA Method 6020A Arsenic(As) in Soil & Waste

Client ID #	:	**GW-14/10-12'**			
SRL (Lab) ID#	:	30016			
Date Collected	:	06/07/07			
Lab FDOH Certification #	:	E86678			
Date Prepared	:	06/11/07			
Date Analyzed	:	06/11/07			
Units	:	mg/Kg	**PQL**	**MDL**	**CAS Number**
Arsenic (As)		**4.90**	0.50	0.09	7440-38-2
Percent Moisture	:	12.4%	0.0%	0.0%	

	% Recovery BS/MS/MSD	Acceptable Limits	%RPD MS/MSD	Acceptable Limits
Arsenic (As)	91/89/94	70-125	5	30

EPA Method 1312/6020A SPLP Arsenic (As) in Soil & Waste

Client ID #	:	**NYWA-1/1-2'**			
SRL (Lab) ID#	:	30017			
Date Collected	:	06/07/07			
Lab FDOH Certification #	:	E86678			
Date Prepared	:	06/11/07			
Date Analyzed	:	06/13/07			
Units	:	mg/L	**PQL**	**MDL**	**CAS Number**
Arsenic (As), SPLP		0.001 U	0.003	0.001	7440-38-2
Percent Moisture	:	5.5%	0.0%	0.0%	

Parameter	% Recovery BS/MS/MSD	Acceptable Limits	%RPD MS/MSD	Acceptable Limits
Arsenic (As), SPLP	94/88/87	75-125	1	25

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NELAP Certified
FDOH Cert # : E83484
SRL Lab Ref # : 07-06022
Received Date : 06/07/07

Greg Mudd
PBS&J
482 South Keller Road
Orlando, Florida 32810-6101 (407) 647-7275

Project Number/Project Name
100933.01
Lena Road Landfill
Bradenton, Florida

DATA QUALIFIER CODES

Reporting Exceptions and Qualified Data

When quality control results are outside established control limits reanalysis, including re-extraction (if applicable), is preferred. If re-analysis is not viable or desirable, then results may be qualified. Sample results associated with quality control data that exceed acceptance criteria will be qualified with an appropriate comment.

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O = Sampled, but analysis lost or not performed

Q = Sample held beyond normal holding time

U = indicates the compound was analyzed for, but not detected. The numerical value preceding the "U" is the limit of detection for that compound based upon the dilution. **MEDF** = **M**atrix **E**ffected **D**ilution **F**actor.

V = Analyte was detected in both the sample and associated Laboratory Method Blank; Laboratory Contamination

Y = The analysis was from an unpreserved or improperly preserved sample. The data may not be accurate

Unless otherwise noted, ug/Kg and mg/Kg denote dry weight.

(SOILS) Actual Reporting Limit will depend on moisture content of sample and the amount of sample received.

Chain of Custody

[redacted]

Page 1 of 1

Project Manager: GREG MUDD	Project Name: LENA ROAD LANDFILL
Company: PBS:J	Project Location: BRADENTON, FL
Address: 482 KELLER RD	
City, State, Zip: ORLANDO, FL 32810	
Phone: 407 647 7275 Fax:	
Sampled by [Print Name(s)] / Affiliation: GREG MUDD, PBSJ	Project Number: 100833.01
Sampler(s) Signature(s):	REQUESTED DUE DATE:

Southern Research Laboratories, Inc.
3477 Parkway Center Court
Orlando, Florida 32808
(407) 522-7100
Toll Free 1 (888) 420-TEST
Fax: (407) 522-7043

	Sample Identification	Sampled Date:	Sampled Time:	Grab or Composite	Matrix: (see codes)	Total Number of Containers	Preservatives (see codes): ARSENIC SPLP	Preservatives (see codes): ARSENIC-TOTAL	Analyses Requested	Comments
1	GW-MW10-12'	6-7-07	1000 ✓	X	SO	1		(1)		30016
2	MW-1 11-K	"	1100 ✓	X	"	1	(1)			30017

Sampling QAP No.:
Approval Date:

Shipment Method:	Relinquished by: / Affiliation:	Date:	Time:	Accepted by: / Affiliation:	Date:	Time:
Out: / / Via:		6-5-07	1530			
Returned: / / Via:		6-7-07	1440		6-7-07	14:45

Additional Comments:

Cooler No(s) / Temperature(s) (°C): 93 NA

Sampling Kit No.: 375

Equipment ID No.:

Matrix Codes: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water(Blanks) HW = Potential Haz Waste O = Other(Specify:)

Preservative Codes: H = Hydrochloric Acid & Ice I = Ice Only N = Nitric Acid & Ice S = Sulfuric Acid & Ice X = Sodium Hydroxide & Ice O = Other(Specify)

Southern Research Laboratories, Inc.

3477 Parkway Center Court
Orlando, Florida 32808
(407) 522-7100 Fax (407) 522-7043
Toll Free 1 (888) 420-Test

Thank you **Mr. Greg Mudd** for the opportunity to be of service to you and your company, we **S**incerely **A**ppreciate **Y**our **B**usiness. SRL certifies these **Laboratory Results** were produced in accordance with NELAC Standards. Hold times and preservation requirements were met for all analytes unless specifically noted in the report.

Client Name: **PBS&J - Orlando**	Date(s) Collected: 06/28/07
Contact Name: **Greg Mudd**	Date Received: 06/29/07
Project Name: Lena Road Landfill	Time Received: 14:10
Project Number: 100931.01 0700	Date Reported : 07/09/07
Phone Number: (407) 647-7275	Date Facsmiled : 07/09/07
Fax Number: (407) 647-8945	SRL Work Order # 07-06068

SRL WO #	Clients #	Matrix	Analysis Requested
30343	TMW-4	Liquid	Arsenic (As) Speciation
30344	GW-1	Liquid	Arsenic (As) Speciation

Sherri Payne
Vice President & Quality Assurance Officer
Southern Research Laboratories, Inc.

Southern Research Laboratories, Inc.
an MBE Environmental Laboratory
3477 Parkway Center Court
Orlando, Florida 32808 (407) 522-7100

NELAP Certified
FDOH Cert # : E83484
SRL Lab Ref # : 07-06068
Received Date : 06/29/07

Greg Mudd
PBS&J
482 South Keller Road
Orlando, Florida 32810-6101 (407) 647-7275

Project Number/Project Name
100931.01 0700
Lena Road Landfill
Bradenton, Florida

EPA Method 1632 Arsenic (As) Speciation in Water

Client ID #	**TMW-4**	**GW-1**		
SRL (Lab) ID#	30343	30344		
Date Collected	06/28/07	06/28/07		
Lab FDOH Certification #	E87641	E87641		
Date Prepared	07/06/07	07/06/07		
Date Analyzed	07/06/07	07/06/07		
Units	ug/L	ug/L	**Reporting Limit**	**CAS Number**
Arsenic III	**15**	**46**	1.0	22541-54-4
Arsenic V	**5.2**	**7.1**	1.0	17428-41-0
Dimethylarsinate	5.0 U	5.0 U	5.0	NA
Monomethylarsonate	1.0 U	1.0 U	1.0	NA
Arsenic (As)	**20**	**53**	1.0	7440-38-2

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3477 Parkway Center Court
Orlando, Florida 32808 (407) 522-7100

NELAP Certified
FDOH Cert # : E83484
SRL Lab Ref # : 07-06068
Received Date : 06/29/07

Greg Mudd
PBS&J
482 South Keller Road
Orlando, Florida 32810-6101 (407) 647-7275

Project Number/Project Name
100931.01 0700
Lena Road Landfill
Bradenton, Florida

DATA QUALIFIER CODES

Reporting Exceptions and Qualified Data

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V = Analyte was detected in both the sample and associated Laboratory Method Blank; Laboratory Contamination

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Unless otherwise noted, ug/Kg and mg/Kg denote dry weight.

(SOILS) Actual Reporting Limit will depend on moisture content of sample and the amount of sample received.

Chain of Custody

Project Manager: GREG MUDD	Page 1
Company: PBS:J	Project Name: LEWIS ROAD LANDFILL
Address: 482 KELLER RD	Project Location:
City, State, Zip: ORLANDO FL 32810	
Phone: 407 8064339 Fax:	

Southern Research Laboratories, Inc.
3477 Parkway Center Court
Orlando, Florida 32808
(407) 522-7100
Toll Free 1 (888) 420-TEST
Fax: (407) 522-7043

Sampled by [Print Name(s)] / Affiliation: GREG MUDD/PBSJ

Sampler(s) Signature(s):

Project Number: 160931.010700

REQUESTED DUE DATE:

Sampling QAP No.:

Approval Date:

Comments:

	Sample Identification	Sampled Date:	Sampled Time:	Grab or Composite	Matrix: (see codes)	Total Number of Containers	Preservatives (see codes)	Analyses Requested: ARSENIC - SPECIATION	Comments
1	TMW-4	6/26/07	1130	G	GW	1	1		30543
2	GW-1	"	1100	G	GW	1	1		30544

Shipment Method:

Out: / / Via:

Returned: / / Via:

Additional Comments: ANALYZE SAMPLES FOR ARSENIC SPECIATION

Relinquished by: / Affiliation:	Date:	Time:	Accepted by: / Affiliation:	Date:	Time:
[signature] SRL	6/27/07	13:15			
[signature] COURIER	6/27/07	0900	[signature]	6/27/07	1410

Cooler No(s) / Temperature(s) (°C): 316 / NA

Sampling Kit No.: 3782

Equipment ID No.:

Matrix Codes: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water(Blanks) HW = Potential Haz Waste O = Other(Specify:)

Preservative Codes: H = Hydrochloric Acid & Ice I = Ice Only N = Nitric Acid & Ice S = Sulfuric Acid & Ice X = Sodium Hydroxide & Ice O = Other(Specify)

Sample containers prepreserved by lab 5