

SCS ENGINEERS

January 4, 2010
File No. 09208040.04

Mr. John Morris, P.G.
Florida Department of Environmental Protection
Southwest District
13051 N. Telecom Parkway
Temple Terrace, Florida 33637-0926

Subject: Citrus County Central Landfill
Quarterly Leachate Sampling – Fourth Quarter 2009
Permit No. 21375-008-SO/01

Dear Mr. Morris:

SCS Engineers (SCS) is providing the Fourth Quarter Leachate Effluent monitoring results on behalf of the Citrus County Solid Waste Management Division (County) for the Central Landfill located in Citrus County, Florida (the site). This report provides copies of the final laboratory reports, field forms, and a CD containing an electronic copy of this report and the electronic data deliverable (EDD) in the "ADaPT" format provided by TestAmerica Laboratories Inc., (TestAmerica).

The leachate effluent sample was analyzed in compliance with the permit and for the quarterly parameters listed in Specific Condition Part E.9.b.2 (quarterly) of the permit. The resulting data from the quarterly sampling event are included in Attachment 1 (Effluent data is located on pages 7, 9, 10, 11, and 12 of 26 of the laboratory analytical report.) and Table 1, Attachment 3. These concentrations are similar to historic concentrations (Table 1, Attachment 3). With the exception of sodium, chloride, and total dissolved solids (TDS), the leachate effluent sample complied with the groundwater standards and minimum criteria referenced in Florida Administrative Code (FAC) Chapters 62-520.420 and 62-520.400, respectively. As per Specific Condition Part E.9.b, sodium, chloride, and TDS are not required to meet the groundwater standards and minimum criteria at the discharge point; however they must comply at the edge of the zone of discharge along the western boundary.

Fourth Quarter and Annual 2009 leachate quality sampling, physical readings and measurements, and leachate quality analyses were performed by TestAmerica. Field work, sampling methodologies, data evaluation, and data Quality Assurance/Quality Control (QA/QC) were conducted in accordance with FAC Chapter 62-160 Standard Operating Procedures (DEP-SOP-001/01) and the TestAmerica quality manual. Laboratory analyses were performed in accordance with Chapter 62-160, FAC DEP-SOP-001/01. TestAmerica is certified by the Florida Department of Health Environmental Laboratory Certification Program (DoH ELCP).



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TestAmerica mobilized to the site on October 14, 2009, to collect leachate samples following the FDEP Standard Operating Procedures (SOPs) as guidance for the collection of these samples. Copies of the laboratory report and field forms are presented in Attachment 1.

Monthly samples of the leachate effluent were analyzed for the parameters listed in Specific Condition Part E.9.b.2 (monthly) of the Permit. The monthly samples are collected by the site and analyzed by their contract laboratory. The analytical laboratory reports from the monthly sampling events for October, November, and December of 2009, are included in Attachment 2 and summarized on Table 2, Attachment 3.

If you have any questions regarding this report, please contact the undersigned at (813) 621-0080.

Sincerely,



Ken Guilbeault, LEP
Senior Project Professional



C. Ed Hilton, P.E.
Vice President

SCS ENGINEERS

KEG/CEH:keg

cc: T. Casey Stephens - Citrus County
Solid Waste Administrator, FDEP - Tallahassee

Attachments

ATTACHMENT 1
LABORATORY ANALYTICAL RESULTS
AND FIELD FORMS

ANALYTICAL REPORT

Job Number: 660-32059-1

Job Description: Citrus County Leachate Collections

For:

SCS Engineers
4041 Park Oaks Blvd
Suite 100
Tampa, FL 33610

Attention: Mr. Ken Guilbeault



Approved for release.
Nancy Robertson
Project Manager II
10/28/2009 5:04 PM

Nancy Robertson
Project Manager II
nancy.robertson@testamericainc.com
10/28/2009

Methods: FDEP, DOH Certification #: E84282, E81005 These test results meet all the requirements of NELAC unless specified in the case narrative. All questions regarding this test report should be directed to the TestAmerica Project Manager who signed this test report. The estimated uncertainty associated with these reported results is available upon request. The results contained in this test report relate only to these samples included herein.

**Job Narrative
660-32059-1**

Receipt

All samples were received in good condition within temperature requirements.

GC/MS VOA

No analytical or quality issues were noted.

GC Semi VOA

No analytical or quality issues were noted.

Metals

No analytical or quality issues were noted.

General Chemistry

Method 350.1: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and RPD for batch 86341 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 660-32059-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
660-32059-1	EFF LEACHATE				
Color		Lt Yellow		Color Units	Field Sampling
Field pH		7.83		SU	Field Sampling
Oxidation Reduction Potential		240.1		millivolts	Field Sampling
Oxygen, Dissolved		0.72		mg/L	Field Sampling
Sheen		None		SU	Field Sampling
Specific Conductance		3772		umhos/cm	Field Sampling
Chloride		910	25	mg/L	300.0
Total Dissolved Solids		2000	17	mg/L	SM 2540C
<i>Total Recoverable</i>					
Sodium		570	5.0	mg/L	6010B

METHOD SUMMARY

Client: SCS Engineers

Job Number: 660-32059-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds (GC/MS)	TAL TAM	SW846 8260B	
Purge and Trap	TAL TAM		SW846 5030B
EDB, DBCP, and 1,2,3-TCP (GC)	TAL TAL	SW846 8011	
Microextraction	TAL TAL		SW846 8011
Metals (ICP)	TAL TAM	SW846 6010B	
Preparation, Total Recoverable or Dissolved Metals	TAL TAM		SW846 3005A
Anions, Ion Chromatography	TAL TAM	MCAWW 300.0	
Nitrogen, Ammonia	TAL TAM	MCAWW 350.1	
Solids, Total Dissolved (TDS)	TAL TAM	SM SM 2540C	
Field Sampling	TAL TAM	EPA Field Sampling	

Lab References:

TAL TAL = TestAmerica Tallahassee

TAL TAM = TestAmerica Tampa

Method References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: SCS Engineers

Job Number: 660-32059-1

Method	Analyst	Analyst ID
SW846 8260B	Perrin, Todd	TP
SW846 8011	Kelly, Cheryl A	CAK
SW846 6010B	Fox, Greg	GF
EPA Field Sampling	Sampler, Field	FS
MCAWW 300.0	Cerome, Saurel	SC
MCAWW 350.1	Steward, Tiffany	TS
SM SM 2540C	Oonnoony, Thomas	TO

SAMPLE SUMMARY

Client: SCS Engineers

Job Number: 660-32059-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
660-32059-1	EFF Leachate	Water	10/14/2009 0937	10/15/2009 1030
660-32059-2	Trip Blank	Water	10/14/2009 0000	10/15/2009 1030

Analytical Data

Client: SCS Engineers

Job Number: 660-32059-1

Client Sample ID: EFF Leachate

Lab Sample ID: 660-32059-1

Date Sampled: 10/14/2009 0937

Client Matrix: Water

Date Received: 10/15/2009 1030

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 660-86118	Instrument ID:	BVMG5973
Preparation:	5030B		Lab File ID:	1GJ1526.D
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	10/15/2009 1844		Final Weight/Volume:	5 mL
Date Prepared:	10/15/2009 1844			

Analyte	Result (ug/L)	Qualifier	MDL	PQL
Benzene	0.50	U	0.50	1.0
Ethylbenzene	0.44	U	0.44	1.0
Toluene	0.51	U	0.51	1.0
Xylenes, Total	0.50	U	0.50	3.0
Vinyl chloride	0.50	U	0.50	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	100		70 - 130
Dibromofluoromethane	99		70 - 130
4-Bromofluorobenzene	104		70 - 130

Analytical Data

Client: SCS Engineers

Job Number: 660-32059-1

Client Sample ID: Trip Blank

Lab Sample ID: 660-32059-2

Date Sampled: 10/14/2009 0000

Client Matrix: Water

Date Received: 10/15/2009 1030

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 660-86118	Instrument ID:	BVMG5973
Preparation:	5030B		Lab File ID:	1GJ1525.D
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	10/15/2009 1822		Final Weight/Volume:	5 mL
Date Prepared:	10/15/2009 1822			

Analyte	Result (ug/L)	Qualifier	MDL	PQL
Benzene	0.50	U	0.50	1.0
Ethylbenzene	0.44	U	0.44	1.0
Toluene	0.51	U	0.51	1.0
Xylenes, Total	0.50	U	0.50	3.0
Vinyl chloride	0.50	U	0.50	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	99		70 - 130
Dibromofluoromethane	97		70 - 130
4-Bromofluorobenzene	103		70 - 130

Analytical Data

Client: SCS Engineers

Job Number: 660-32059-1

Client Sample ID: EFF Leachate

Lab Sample ID: 660-32059-1

Date Sampled: 10/14/2009 0937

Client Matrix: Water

Date Received: 10/15/2009 1030

8011 EDB, DBCP, and 1,2,3-TCP (GC)

Method:	8011	Analysis Batch: 640-62179	Instrument ID:	SGL
Preparation:	8011	Prep Batch: 640-62140	Initial Weight/Volume:	37 mL
Dilution:	1.0		Final Weight/Volume:	2.0 mL
Date Analyzed:	10/21/2009 2042		Injection Volume:	2 uL
Date Prepared:	10/21/2009 1230		Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	PQL
Ethylene Dibromide	0.0061	U	0.0061	0.019

Analytical Data

Client: SCS Engineers

Job Number: 660-32059-1

Client Sample ID: EFF Leachate

Lab Sample ID: 660-32059-1

Date Sampled: 10/14/2009 0937

Client Matrix: Water

Date Received: 10/15/2009 1030

6010B Metals (ICP)-Total Recoverable

Method: 6010B

Analysis Batch: 660-86123

Instrument ID: ICPA

Preparation: 3005A

Prep Batch: 660-86036

Lab File ID: 9J19A

Dilution: 10

Initial Weight/Volume: 50 mL

Date Analyzed: 10/19/2009 0939

Final Weight/Volume: 50 mL

Date Prepared: 10/16/2009 0858

Analyte	Result (mg/L)	Qualifier	MDL	PQL
Sodium	570		3.1	5.0

Client: SCS Engineers

Job Number: 660-32059-1

General Chemistry

Client Sample ID: EFF Leachate

Lab Sample ID: 660-32059-1
 Client Matrix: Water

Date Sampled: 10/14/2009 0937
 Date Received: 10/15/2009 1030

Analyte	Result	Qual	Units	MDL	PQL	Dil	Method
Chloride	910		mg/L	10	25	50	300.0
	Analysis Batch: 660-86152		Date Analyzed: 10/19/2009 2356				
Ammonia (as N)	0.010	U	mg/L	0.010	0.020	1.0	350.1
	Analysis Batch: 660-86341		Date Analyzed: 10/23/2009 1502				

Analyte	Result	Qual	Units	PQL	PQL	Dil	Method
Total Dissolved Solids	2000		mg/L	17	17	1.0	SM 2540C
	Analysis Batch: 660-86066		Date Analyzed: 10/16/2009 1356				

Client: SCS Engineers

Job Number: 660-32059-1

Field Service / Mobile Lab

Client Sample ID: EFF Leachate

Lab Sample ID: 660-32059-1

Date Sampled: 10/14/2009 0937

Client Matrix: Water

Date Received: 10/15/2009 1030

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Color	Lt Yellow		Color Units	1.0	Field Sampling	660-86433	10/14/2009	0937
Field pH	7.83		SU	1.0	Field Sampling	660-86433	10/14/2009	0937
Oxidation Reduction Potential	240.1		millivolts	1.0	Field Sampling	660-86433	10/14/2009	0937
Oxygen, Dissolved	0.72		mg/L	1.0	Field Sampling	660-86433	10/14/2009	0937
Sheen	None		SU	1.0	Field Sampling	660-86433	10/14/2009	0937
Specific Conductance	3772		umhos/cm	1.0	Field Sampling	660-86433	10/14/2009	0937

DATA REPORTING QUALIFIERS

Client: SCS Engineers

Job Number: 660-32059-1

Lab Section	Qualifier	Description
GC/MS VOA		
	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.
GC Semi VOA		
	U	Indicates that the compound was analyzed for but not detected.
Metals		
	U	Indicates that the compound was analyzed for but not detected.
General Chemistry		
	J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
	U	Indicates that the compound was analyzed for but not detected.

Quality Control Results

Client: SCS Engineers

Job Number: 660-32059-1

Method Blank - Batch: 660-86118

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 660-86118/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/15/2009 1223
Date Prepared: 10/15/2009 1223

Analysis Batch: 660-86118
Prep Batch: N/A
Units: ug/L

Instrument ID: BVMG GC/MS
Lab File ID: 1GJ1509.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	PQL
Benzene	0.50	U	0.50	1.0
Ethylbenzene	0.44	U	0.44	1.0
Toluene	0.51	U	0.51	1.0
Xylenes, Total	0.50	U	0.50	3.0
Vinyl chloride	0.50	U	0.50	1.0
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Surrogate	% Rec	Acceptance Limits		
Toluene-d8 (Surr)	100	70 - 130		
Dibromofluoromethane	97	70 - 130		
4-Bromofluorobenzene	103	70 - 130		

Lab Control Sample - Batch: 660-86118

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 660-86118/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/15/2009 1053
Date Prepared: 10/15/2009 1053

Analysis Batch: 660-86118
Prep Batch: N/A
Units: ug/L

Instrument ID: BVMG GC/MS
Lab File ID: 1GJ1505.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Benzene	20.0	19.4	97	64 - 140	
Ethylbenzene	20.0	20.2	101	69 - 131	
Toluene	20.0	20.0	100	70 - 131	
Vinyl chloride	20.0	23.6	118	48 - 147	
<hr/>					
Surrogate	% Rec	Acceptance Limits			
Toluene-d8 (Surr)	100	70 - 130			
Dibromofluoromethane	99	70 - 130			
4-Bromofluorobenzene	104	70 - 130			

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: SCS Engineers

Job Number: 660-32059-1

Matrix Spike - Batch: 660-86118

Method: 8260B
Preparation: 5030B

Lab Sample ID: 660-32054-B-7 MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/15/2009 1607
Date Prepared: 10/15/2009 1607

Analysis Batch: 660-86118
Prep Batch: N/A
Units: ug/L

Instrument ID: BVMG GC/MS
Lab File ID: 1GJ1519.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Benzene	0.50 U	50.0	50.4	101	64 - 140	
Ethylbenzene	0.44 U	50.0	53.9	108	69 - 131	
Toluene	0.51 U	50.0	52.8	106	70 - 131	
Vinyl chloride	0.61 I	50.0	68.7	136	48 - 147	
Surrogate		% Rec	Acceptance Limits			
Toluene-d8 (Surr)		99	70 - 130			
Dibromofluoromethane		99	70 - 130			
4-Bromofluorobenzene		103	70 - 130			

Duplicate - Batch: 660-86118

Method: 8260B
Preparation: 5030B

Lab Sample ID: 660-32054-B-3 DU
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/15/2009 1415
Date Prepared: 10/15/2009 1415

Analysis Batch: 660-86118
Prep Batch: N/A
Units: ug/L

Instrument ID: BVMG GC/MS
Lab File ID: 1GJ1514.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Benzene	0.63 I	0.542	14	30	I
Ethylbenzene	0.44 U	0.44	NC	30	U
Toluene	0.51 U	0.51	NC	30	U
Xylenes, Total	0.50 U	0.50	NC	30	U
Vinyl chloride	12	12.4	3	30	
Surrogate		% Rec	Acceptance Limits		
Toluene-d8 (Surr)		100	70 - 130		
Dibromofluoromethane		98	70 - 130		
4-Bromofluorobenzene		103	70 - 130		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: SCS Engineers

Job Number: 660-32059-1

Method Blank - Batch: 640-62140

Lab Sample ID: MB 640-62140/11-A
 Client Matrix: Water
 Dilution: 1.0
 Date Analyzed: 10/21/2009 1757
 Date Prepared: 10/21/2009 1230

Analysis Batch: 640-62179
 Prep Batch: 640-62140
 Units: ug/L

**Method: 8011
 Preparation: 8011**

Instrument ID: SGL HP6890
 Lab File ID: 1J21L019.D
 Initial Weight/Volume: 35 mL
 Final Weight/Volume: 2.0 mL
 Injection Volume: 2 uL
 Column ID: PRIMARY

Analyte	Result	Qual	MDL	PQL
Ethylene Dibromide	0.0065	U	0.0065	0.020

**Lab Control Sample/
 Lab Control Sample Duplicate Recovery Report - Batch: 640-62140**

LCS Lab Sample ID: LCS 640-62140/12-A
 Client Matrix: Water
 Dilution: 1.0
 Date Analyzed: 10/21/2009 1810
 Date Prepared: 10/21/2009 1230

Analysis Batch: 640-62179
 Prep Batch: 640-62140
 Units: ug/L

**Method: 8011
 Preparation: 8011**

Instrument ID: SGL HP6890
 Lab File ID: 1J21L020.D
 Initial Weight/Volume: 35 mL
 Final Weight/Volume: 2.0 mL
 Injection Volume: 2 uL
 Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 640-62140/13-A
 Client Matrix: Water
 Dilution: 1.0
 Date Analyzed: 10/21/2009 1825
 Date Prepared: 10/21/2009 1230

Analysis Batch: 640-62179
 Prep Batch: 640-62140
 Units: ug/L

Instrument ID: SGL HP6890
 Lab File ID: 1J21L021.D
 Initial Weight/Volume: 35 mL
 Final Weight/Volume: 2.0 mL
 Injection Volume: 2 uL
 Column ID: PRIMARY

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ethylene Dibromide	100	105	85 - 118	5	12		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: SCS Engineers

Job Number: 660-32059-1

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 640-62140**

**Method: 8011
Preparation: 8011**

MS Lab Sample ID: 640-24309-C-1-A MS Analysis Batch: 640-62179
Client Matrix: Water Prep Batch: 640-62140
Dilution: 1.0
Date Analyzed: 10/21/2009 1838
Date Prepared: 10/21/2009 1230

Instrument ID: SGL HP6890
Lab File ID: 1J21L022.D
Initial Weight/Volume: 17.5 mL
Final Weight/Volume: 2.0 mL
Injection Volume: 2 uL
Column ID: PRIMARY

MSD Lab Sample ID: 640-24309-C-1-B MSD Analysis Batch: 640-62179
Client Matrix: Water Prep Batch: 640-62140
Dilution: 1.0
Date Analyzed: 10/21/2009 1852
Date Prepared: 10/21/2009 1230

Instrument ID: SGL HP6890
Lab File ID: 1J21L023.D
Initial Weight/Volume: 17.5 mL
Final Weight/Volume: 2.0 mL
Injection Volume: 2 uL
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ethylene Dibromide	109	111	85 - 118	3	12		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: SCS Engineers

Job Number: 660-32059-1

Method Blank - Batch: 660-86036

Lab Sample ID: MB 660-86036/1-A
 Client Matrix: Water
 Dilution: 1.0
 Date Analyzed: 10/19/2009 0858
 Date Prepared: 10/16/2009 0858

Analysis Batch: 660-86123
 Prep Batch: 660-86036
 Units: mg/L

**Method: 6010B
 Preparation: 3005A
 Total Recoverable**

Instrument ID: TJA ICP TRACE
 Lab File ID: 9J19A
 Initial Weight/Volume: 50 mL
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	PQL
Sodium	0.31	U	0.31	0.50

Lab Control Sample - Batch: 660-86036

Lab Sample ID: LCS 660-86036/2-A
 Client Matrix: Water
 Dilution: 1.0
 Date Analyzed: 10/19/2009 0904
 Date Prepared: 10/16/2009 0858

Analysis Batch: 660-86123
 Prep Batch: 660-86036
 Units: mg/L

**Method: 6010B
 Preparation: 3005A
 Total Recoverable**

Instrument ID: TJA ICP TRACE
 Lab File ID: 9J19A
 Initial Weight/Volume: 50 mL
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sodium	10.0	9.38	94	75 - 125	

**Matrix Spike/
 Matrix Spike Duplicate Recovery Report - Batch: 660-86036**

MS Lab Sample ID: 660-32060-E-1-B MS
 Client Matrix: Water
 Dilution: 1.0
 Date Analyzed: 10/19/2009 0921
 Date Prepared: 10/16/2009 0858

Analysis Batch: 660-86123
 Prep Batch: 660-86036

**Method: 6010B
 Preparation: 3005A
 Total Recoverable**

Instrument ID: TJA ICP TRACE
 Lab File ID: 9J19A
 Initial Weight/Volume: 50 mL
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 660-32060-E-1-C MSD
 Client Matrix: Water
 Dilution: 1.0
 Date Analyzed: 10/19/2009 0927
 Date Prepared: 10/16/2009 0858

Analysis Batch: 660-86123
 Prep Batch: 660-86036

Instrument ID: TJA ICP TRACE
 Lab File ID: 9J19A
 Initial Weight/Volume: 50 mL
 Final Weight/Volume: 50 mL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Sodium	97	101	75 - 125	0	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: SCS Engineers

Job Number: 660-32059-1

Method Blank - Batch: 660-86152

Method: 300.0
Preparation: N/A

Lab Sample ID: MB 660-86152/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/19/2009 1306
Date Prepared: N/A

Analysis Batch: 660-86152
Prep Batch: N/A
Units: mg/L

Instrument ID: ICS 2000
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	PQL
Chloride	0.20	U	0.20	0.50

Lab Control Sample - Batch: 660-86152

Method: 300.0
Preparation: N/A

Lab Sample ID: LCS 660-86152/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/19/2009 1340
Date Prepared: N/A

Analysis Batch: 660-86152
Prep Batch: N/A
Units: mg/L

Instrument ID: ICS 2000
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	10.0	9.74	97	90 - 110	

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 660-86152**

Method: 300.0
Preparation: N/A

MS Lab Sample ID: 660-32055-K-4 MS ^2
Client Matrix: Water
Dilution: 2.0
Date Analyzed: 10/19/2009 2219
Date Prepared: N/A

Analysis Batch: 660-86152
Prep Batch: N/A

Instrument ID: ICS 2000
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 5 mL

MSD Lab Sample ID: 660-32055-K-4 MSD ^2
Client Matrix: Water
Dilution: 2.0
Date Analyzed: 10/19/2009 2251
Date Prepared: N/A

Analysis Batch: 660-86152
Prep Batch: N/A

Instrument ID: ICS 2000
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 5 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chloride	97	97	90 - 110	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: SCS Engineers

Job Number: 660-32059-1

Method Blank - Batch: 660-86341

Method: 350.1
Preparation: N/A

Lab Sample ID: MB 660-86341/11
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/23/2009 1431
Date Prepared: N/A

Analysis Batch: 660-86341
Prep Batch: N/A
Units: mg/L

Instrument ID: Autoanalyzer
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	MDL	PQL
Ammonia (as N)	0.010	U	0.010	0.020

Lab Control Sample - Batch: 660-86341

Method: 350.1
Preparation: N/A

Lab Sample ID: LCS 660-86341/12
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/23/2009 1432
Date Prepared: N/A

Analysis Batch: 660-86341
Prep Batch: N/A
Units: mg/L

Instrument ID: Autoanalyzer
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia (as N)	0.500	0.551	110	90 - 110	

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 660-86341**

Method: 350.1
Preparation: N/A

MS Lab Sample ID: 660-32009-E-9 MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/23/2009 1451
Date Prepared: N/A

Analysis Batch: 660-86341
Prep Batch: N/A

Instrument ID: Autoanalyzer
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 660-32009-E-9 MSD
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/23/2009 1452
Date Prepared: N/A

Analysis Batch: 660-86341
Prep Batch: N/A

Instrument ID: Autoanalyzer
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia (as N)	77	17	90 - 110	77	30	J3	J3

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: SCS Engineers

Job Number: 660-32059-1

Method Blank - Batch: 660-86066

Method: SM 2540C
Preparation: N/A

Lab Sample ID: MB 660-86066/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/16/2009 1345
Date Prepared: N/A

Analysis Batch: 660-86066
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	PQL	PQL
Total Dissolved Solids	5.0	U	5.0	5.0

Lab Control Sample - Batch: 660-86066

Method: SM 2540C
Preparation: N/A

Lab Sample ID: LCS 660-86066/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/16/2009 1345
Date Prepared: N/A

Analysis Batch: 660-86066
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids	10000	9740	97	80 - 120	

Duplicate - Batch: 660-86066

Method: SM 2540C
Preparation: N/A

Lab Sample ID: 660-32067-E-2 DU
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/16/2009 1358
Date Prepared: N/A

Analysis Batch: 660-86066
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids	230	240	4	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

JOB NUMBER: 060-32059 Logged in TALS By: Amanda Namison

Cooler Received on (date) 10/15/09 And Opened By (full name): Charles Volz

1. Shipper (circle one) FEDEX UPS DHL WALK-IN COURIER OTHER: _____

2. Tracking # _____

3. Temperature of rep. sample or temp blank when opened: 2.7 Degrees Celsius CU-07

4. Number of H2SO4 (sulfuric acid) preserved containers: 1

All containers pH < 2? yes If not please comment below:

5. Number of HCL (hydrochloric acid) preserved containers: _____

All containers pH < 2? _____ If not please comment below:

6. Number of HNO3 (nitric acid) preserved containers: 1

All containers pH < 2? yes If not please comment below:

7. Number of NaOH (sodium hydroxide) preserved containers: _____

All containers pH > 12? _____ If not please comment below:

8. Number of Unpreserved containers: 2

All containers pH between 6 and 8? yes If not please comment below:

9. Was chlorine present in any of the unpreserved containers? NO

If yes, which samples? _____

Login Sample Receipt Check List

Client: SCS Engineers

Job Number: 660-32059-1

Login Number: 32059
Creator: Volz, Charles
List Number: 1

List Source: TestAmerica Tampa

Question	T / F / NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.7 degrees C CU-07
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified	True	

Login Sample Receipt Check List

Client: SCS Engineers

Job Number: 660-32059-1

Login Number: 32059

Creator: Bellarmine, Prabhu J

List Number: 1

List Source: TestAmerica Tallahassee

List Creation: 10/16/09 12:51 PM

Question	T / F / NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified	True	

ATTACHMENT 2

MONTHLY LEACAHATE QUALITY
ANALYTICAL RESULTS FOR
OCTOBER, NOVEMBER, AND DECEMBER 2009

S.A.C. ENVIRONMENTAL LABORATORY INC
FLDOH CERTIFICATION #84492
ANALYTICAL REPORT

SOLID WASTE MANAGEMENT
 PO BOX 340
 LECANTO FL 34460

Invoice Number 10651

Client CITRUS COUNTY UTILITIES **Sample Number** E091918
Project LANDFILL LEACHATE PLANT **Date/Time Sampled** 10/7/09 1100 HRS
Sample Description WWTP/EFF **Date/Time Received** 10/7/09 1245 HRS

Method	Analytes	Units	Results	MDL	Analyst	Analysis Date/Time
SM5210-B	CBOD	mg/L	1.48	1.4 mg/L	SJL	10/8/09 1328 HRS
SM2540-D	TSS	mg/L	5.00	1.0 mg/L	SJL	10/9/09 0956 HRS
SM4500-NO3-E	NITRATE	mg/L	1.01	0.10 mg/L	CK	10/8/09 0900 HRS

Sally Ann Casillas
 Laboratory Manager

These results relate only to this sample.

For all results qualified with an L, the PQL is defined to be 4 times the MDL

5376 S SUNCOAST BOULEVARD HOMOSASSA FL 34446 352.621.3513 FAX 352.621.3514

S.A.C. ENVIRONMENTAL LABORATORY INC
FLDOH CERTIFICATION #84492
ANALYTICAL REPORT

SOLID WASTE MANAGEMENT
 PO BOX 340
 LECANTO FL 34460

Invoice Number 10705

Client	CITRUS COUNTY UTILITIES	Sample Number	E092107
Project	LANDFILL LEACHATE PLANT	Date/Time Sampled	11/4/09 0905 HRS
Sample Description	WWTP/EFF	Date/Time Received	11/4/09 1157 HRS

Method	Analytes	Units	Results	MDL	Analyst	Analysis Date/Time
SM5210-B	CBOD	mg/L	2.40	1.850 mg/L	SJL	11/5/09 1310 HRS
SM2540-D	TSS	mg/L	<1	1.000 mg/L	SJL	11/6/09 0950 HRS
SM4500-NO3-E	NITRATE	mg/L	3.60	0.046 mg/L	CK	11/5/09 1020 HRS

Sally Ann Casullo
 Laboratory Manager

These results relate only to this sample.

For all results qualified with an I, the PQL is defined to be 4 times the MDL

5376 S SUNCOAST BOULEVARD HOMOSASSA FL 34446 352.621.3513 FAX 352.621.3514

1 OF 1

S.A.C. ENVIRONMENTAL LABORATORY INC FLDOH CERTIFICATION #84492 ANALYTICAL REPORT

SOLID WASTE MANAGEMENT
PO BOX 340
LECANTO FL 34460

Invoice Number 10762

Client CITRUS COUNTY UTILITIES
Project LANDFILL LEACHATE PLANT
Sample Description WWTP/EFF

Sample Number E092361
Date/Time Sampled 12/9/09 0745 HRS
Date/Time Received 12/9/09 1047 HRS

Method	Analytes	Units	Results	MDL	Analyst	Analysis Date/Time
SM5210-B	CBOD	mg/L	1.76	0.30 mg/L	SJL	12/10/09 0930 HRS
SM2540-D	TSS	mg/L	<1	1.00 mg/L	SJL	12/11/09 0955 HRS
SM4500-NO3-E	NITRATE	mg/L	1.38	0.06 mg/L	CK	12/9/09 1053 HRS

Sally Ann Casullo
Laboratory Manager

These results relate only to this sample.

For all results qualified with an I, the PQL is defined to be 4 times the MDL

5376 S SUNCOAST BOULEVARD HOMOSSA FL 34446 352.621.3513 FAX 352.621.3514

ATTACHMENT 3

TABLES

**Table 1. Summary of Leachate Effluent Quality Analytical Results
Citrus County Central Landfill**

Parameter	Standard	MCL	Units	Leachate Effluent					
				10/15/2008	1/27/2009	4/20/2009	7/21/2009	9/9/2009	10/14/2009
Volatile Organics								Resample	
Acetone	GCTL	6300	ug/L	---	---	---	21	---	---
Benzene	PDWS	1	ug/L	0.5 U	1 U	0.5 U	0.5 U	---	0.5 U
Ethylbenzene	SDWS	30	ug/L	0.5 U	1 U	0.5 U	0.44 U	---	0.44 U
Ethylene Dibromide	PDWS	0.02	ug/L	0.0061 U	0.0064 U	0.0064 U	0.5 U	---	0.0061 U
Toluene	SDWS	40	ug/L	0.5 U	1 U	0.5 U	0.51 U	---	0.51 U
Vinyl chloride	PDWS	1	ug/L	0.53 U	1.1 U	0.53 U	0.5 U	---	0.5 U
Xylenes, Total	SDWS	20	ug/L	1 U	2.1 I	1 U	0.5 U	---	0.5 U
Trihalomethanes									
Bromodichloromethane	See Total THMs		ug/L	---	14	---	410	0.35 U	---
Bromoform	See Total THMs		ug/L	---	2.9	---	71	0.58 U	---
Chloroform	See Total THMs		ug/L	---	11	---	370	0.90 U	---
Dibromochloromethane	See Total THMs		ug/L	---	6.9	---	280	0.58 U	---
Total THMs	Permit	100	ug/L	---	34.8	---	1131	Not Detected	---
Metals									
Arsenic	PDWS	0.01	mg/L	---	---	---	0.0091 I	---	---
Barium	PDWS	2	mg/L	---	---	---	0.058	---	---
Cobalt	GCTL	0.14	mg/L	---	---	---	0.011	---	---
Chromium	PDWS	0.1	mg/L	---	---	---	0.0058 I	---	---
Copper	SDWS	1	mg/L	---	---	---	0.014	---	---
Nickel	PDWS	0.1	mg/L	---	---	---	0.046	---	---
Iron	SDWS	0.3	mg/L	---	---	---	0.068 I	---	---
Zinc	SDWS	5	mg/L	---	---	---	0.020 I	---	---
General Chemistry									
Ammonia, Total	GCTL	2.8	mg/L	0.094	1.1	0.19	0.16	---	0.010 U
Chloride	SDWS	250	mg/L	940	1300	1500	710	---	910
Cyanide	PDWS	0.2	mg/L	---	---	---	0.014	---	---
Sodium	PDWS	160	mg/L	570	800	820	430	---	570
TDS	SDWS	500	mg/L	2400	2800	3000	1800	---	2000
General Field Parameters									
Conductivity	NS	NS	umhos/cm	3929	4907	4820	3462	2786	3772
Dissolved Oxygen	NS	NS	mg/L	2.96	0.93	2.78	1.34	0.3	0.72
pH	SDWS	6.5-8.5	pH Units	7.87	7.79	7.68	7.49	7.94	7.83
Temperature, Water	NS	NS	deg C	26.55	17.35	24.83	31.5	27.9	27.9
Turbidity	NS	NS	NTU	1.07	1.65	5	---	6.67	4.73

Notes

1. PDWS = Primary Drinking Water Standard (62-550 F.A.C.).
2. SDWS = Secondary Drinking Water Standard (62-550 F.A.C.).
3. GCTL = Groundwater Clean-up Target Level (62-777 F.A.C.).
4. THMs = Trihalomethanes
5. NS = No numeric standard has been set for this analyte.
6. --- = Parameter not analyzed.
7. mg/l: milligrams per liter.
8. ug/l: micrograms per liter.
9. NTU: nephelometric turbidity units.
10. Yellow Shaded values indicate parameter concentrations exceeded primary, secondary Drinking Water Standards or groundwater cleanup target levels.
11. I = Analyte detected below quantitation limits.
12. U = Analyte concentration was below the laboratory detection limit (value shown).

**Table 2. Summary of Leachate Effluent Monthly Analytical Results
Citrus County Central Landfill**

Parameter	Standard	MCL	Units	Leachate Effluent											
				1/7/2009	2/4/2009	3/4/2009	4/1/2009	5/12/2009	6/4/2009	7/1/2009	8/5/2009	9/9/2009	10/7/2009	11/4/2009	12/9/2009
CBOD	Permit	20	mg/L	1.38	4.56	4.4	2.78	3.3	10.04	5.96	2.38	1.54	1.48	2.4	1.76
TSS	Permit	20	mg/L	1.0 U	3	7.5	3	7	1	5	5	3.5	5	1.0 U	1.0 U
Nitrate	Permit	10	mg/L	5	6.03	3.85	1.85	0.52	0.46	5.68	0.38	0.45	1.01	3.6	1.38

Notes

1. mg/l: milligrams per liter.
2. ug/l: micrograms per liter.
3. Yellow Shaded values indicate parameter concentrations exceeded Permit MCL levels.
4. I = Analyte detected below quantitation limits.
5. U = Analyte concentration was below the laboratory detection limit (value shown).

ATTACHMENT 4

COMPACT DISK CONTAINING
REPORT IN PDF FORMAT AND
ADaPT FILE