ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

102-A Woodwinds Industrial Court
Cary NC, 27511
Phone: 919.467.3090 FAX: 919.467.3515

Wednesday, February 12, 2014
City of Greensboro (CI034)
Attn: Gail Hay
2503 White Street
Greensboro, NC 27405

RE: Laboratory Results for
Project Number: [none], Project Name/Desc: Landfill Soil Sampling
ENCO Workorder(s): C401124

Dear Gail Hay,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, January 28, 2014.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Stephanie Franz
Project Manager
Enclosure(s)

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

PROJECT NARRATIVE

Date: 12 February 2014
Client: City of Greensboro (CI034)
Project: Landfill Soil Sampling
Lab ID: C401124

Overview

Environmental Conservation Laboratories, Inc. (ENCO) analyzed all submitted samples in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling by ENCO are discussed in the QC Remarks section below.

Quality Control Samples

No Comments

Quality Control Remarks

No Comments

Other Comments

On 28 January 2014, the client requested ENCO Labs perform TCLP Metals (RCRA8 list) on samples TP2B, TP4A, and TP5B. The project was copied from the original work order (C314283) and the analyses were scheduled.

The analytical data presented in this report are consistent with the methods as referenced in the analytical report. Any exceptions or deviations are noted in the QC remarks section of this narrative or in the Flags/Notes and Definitions section of the report.

Released By:
Environmental Conservation Laboratories, Inc.

Stephanie Franz
Project Manager

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: TP2B | **Lab ID: C401124-01** | **Sampled: 11/07/13 13:28** | **Received: 01/28/14 15:30**

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 6010C	05/06/14	08/09/14	02/10/14	14:21	02/11/14 20:33
EPA 7470A	12/05/13		02/10/14	17:33	02/11/14 14:15

Client ID: TP4A | **Lab ID: C401124-02** | **Sampled: 11/07/13 12:42** | **Received: 01/28/14 15:30**

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 6010C	05/06/14	08/09/14	02/10/14	14:21	02/11/14 20:45
EPA 7470A	12/05/13		02/10/14	17:33	02/11/14 14:17

Client ID: TP5B | **Lab ID: C401124-03** | **Sampled: 11/07/13 12:07** | **Received: 01/28/14 15:30**

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 6010C	05/06/14	08/09/14	02/10/14	14:21	02/11/14 20:47
EPA 7470A	12/05/13		02/10/14	17:33	02/11/14 14:23

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

SAMPLE DETECTION SUMMARY

Client ID: TP2B **Lab ID: C401124-01**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - TCLP	0.893	B	0.0500	0.500	mg/L	EPA 6010C	QB-01
Lead - TCLP	0.121	J	0.105	0.500	mg/L	EPA 6010C	

Client ID: TP4A **Lab ID: C401124-02**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - TCLP	0.699	B	0.0500	0.500	mg/L	EPA 6010C	QB-01
Cadmium - TCLP	0.0991		0.0180	0.0500	mg/L	EPA 6010C	
Lead - TCLP	9.74		0.105	0.500	mg/L	EPA 6010C	

Client ID: TP5B **Lab ID: C401124-03**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - TCLP	1.18	B	0.0500	0.500	mg/L	EPA 6010C	QB-01
Cadmium - TCLP	0.607		0.0180	0.0500	mg/L	EPA 6010C	
Lead - TCLP	0.500		0.105	0.500	mg/L	EPA 6010C	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

ANALYTICAL RESULTS

Description: TP2B | **Lab Sample ID:** C401124-01 | **Received:** 01/28/14 15:30
Matrix: Soil | **Sampled:** 11/07/13 13:28 | **Work Order:** C401124
Project: Landfill Soil Sampling | **Sampled By:** Gail Hay | **% Solids:**

TCLP Metals by 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2]^	ND		mg/L	1	0.270	0.500	4B10025	EPA 6010C	02/11/14 20:33	JDH	
Barium [7440-39-3]^	**0.893**	B	mg/L	1	0.0500	0.500	4B10025	EPA 6010C	02/11/14 20:33	JDH	QB-01
Cadmium [7440-43-9]^	ND		mg/L	1	0.0180	0.0500	4B10025	EPA 6010C	02/11/14 20:33	JDH	
Chromium [7440-47-3]^	ND		mg/L	1	0.0500	0.500	4B10025	EPA 6010C	02/11/14 20:33	JDH	
Lead [7439-92-1]^	**0.121**	J	mg/L	1	0.105	0.500	4B10025	EPA 6010C	02/11/14 20:33	JDH	
Mercury [7439-97-6]^	ND		mg/L	1	0.00340	0.00400	4B10031	EPA 7470A	02/11/14 14:15	T1D	
Selenium [7782-49-2]^	ND		mg/L	1	0.250	0.500	4B10025	EPA 6010C	02/11/14 20:33	JDH	
Silver [7440-22-4]^	ND		mg/L	1	0.0950	0.500	4B10025	EPA 6010C	02/11/14 20:33	JDH	

Description: TP4A | **Lab Sample ID:** C401124-02 | **Received:** 01/28/14 15:30
Matrix: Soil | **Sampled:** 11/07/13 12:42 | **Work Order:** C401124
Project: Landfill Soil Sampling | **Sampled By:** Gail Hay | **% Solids:**

TCLP Metals by 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2]^	ND		mg/L	1	0.270	0.500	4B10025	EPA 6010C	02/11/14 20:45	JDH	
Barium [7440-39-3]^	**0.699**	B	mg/L	1	0.0500	0.500	4B10025	EPA 6010C	02/11/14 20:45	JDH	QB-01
Cadmium [7440-43-9]^	**0.0991**		mg/L	1	0.0180	0.0500	4B10025	EPA 6010C	02/11/14 20:45	JDH	
Chromium [7440-47-3]^	ND		mg/L	1	0.0500	0.500	4B10025	EPA 6010C	02/11/14 20:45	JDH	
Lead [7439-92-1]^	**9.74**		mg/L	1	0.105	0.500	4B10025	EPA 6010C	02/11/14 20:45	JDH	
Mercury [7439-97-6]^	ND		mg/L	1	0.00340	0.00400	4B10031	EPA 7470A	02/11/14 14:17	T1D	
Selenium [7782-49-2]^	ND		mg/L	1	0.250	0.500	4B10025	EPA 6010C	02/11/14 20:45	JDH	
Silver [7440-22-4]^	ND		mg/L	1	0.0950	0.500	4B10025	EPA 6010C	02/11/14 20:45	JDH	

Description: TP5B | **Lab Sample ID:** C401124-03 | **Received:** 01/28/14 15:30
Matrix: Soil | **Sampled:** 11/07/13 12:07 | **Work Order:** C401124
Project: Landfill Soil Sampling | **Sampled By:** Gail Hay | **% Solids:**

TCLP Metals by 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2]^	ND		mg/L	1	0.270	0.500	4B10025	EPA 6010C	02/11/14 20:47	JDH	
Barium [7440-39-3]^	**1.18**	B	mg/L	1	0.0500	0.500	4B10025	EPA 6010C	02/11/14 20:47	JDH	QB-01
Cadmium [7440-43-9]^	**0.607**		mg/L	1	0.0180	0.0500	4B10025	EPA 6010C	02/11/14 20:47	JDH	
Chromium [7440-47-3]^	ND		mg/L	1	0.0500	0.500	4B10025	EPA 6010C	02/11/14 20:47	JDH	
Lead [7439-92-1]^	**0.500**		mg/L	1	0.105	0.500	4B10025	EPA 6010C	02/11/14 20:47	JDH	
Mercury [7439-97-6]^	ND		mg/L	1	0.00340	0.00400	4B10031	EPA 7470A	02/11/14 14:23	T1D	
Selenium [7782-49-2]^	ND		mg/L	1	0.250	0.500	4B10025	EPA 6010C	02/11/14 20:47	JDH	
Silver [7440-22-4]^	ND		mg/L	1	0.0950	0.500	4B10025	EPA 6010C	02/11/14 20:47	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

QUALITY CONTROL DATA

TCLP Metals by 6000/7000 Series Methods - Quality Control

Batch 4B10025 - EPA 3010A

Blank (4B10025-BLK1) Prepared: 02/10/2014 14:21 Analyzed: 02/11/2014 20:21

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	0.270	U	0.500	mg/L							
Barium	**0.0510**	**J**	0.500	mg/L							
Cadmium	0.0180	U	0.0500	mg/L							
Chromium	0.0500	U	0.500	mg/L							
Lead	0.105	U	0.500	mg/L							
Selenium	0.250	U	0.500	mg/L							
Silver	0.0950	U	0.500	mg/L							

LCS (4B10025-BS1) Prepared: 02/10/2014 14:21 Analyzed: 02/11/2014 20:29

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	0.203		0.0100	mg/L	0.200		102	80-120			
Barium	0.211	B	0.0100	mg/L	0.200		106	80-120			
Cadmium	0.0206		0.00100	mg/L	0.0200		103	80-120			
Chromium	0.205		0.0100	mg/L	0.200		102	80-120			
Lead	0.208		0.0100	mg/L	0.200		104	80-120			
Selenium	0.198		0.0100	mg/L	0.200		99	80-120			
Silver	0.210		0.0100	mg/L	0.200		105	80-120			

Matrix Spike (4B10025-MS1) Prepared: 02/10/2014 14:21 Analyzed: 02/11/2014 20:35

Source: C401124-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	10.4		0.500	mg/L	10.0	0.270 U	104	75-125			
Barium	11.5	B	0.500	mg/L	10.0	0.893	106	75-125			
Cadmium	1.06		0.0500	mg/L	1.00	0.0180 U	106	75-125			
Chromium	10.3		0.500	mg/L	10.0	0.0500 U	103	75-125			
Lead	10.7		0.500	mg/L	10.0	0.121	106	75-125			
Selenium	10.3		0.500	mg/L	10.0	0.250 U	103	75-125			
Silver	10.3		0.500	mg/L	10.0	0.0950 U	103	75-125			

Matrix Spike Dup (4B10025-MSD1) Prepared: 02/10/2014 14:21 Analyzed: 02/11/2014 20:38

Source: C401124-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	10.1		0.500	mg/L	10.0	0.270 U	101	75-125	2	20	
Barium	11.1	B	0.500	mg/L	10.0	0.893	102	75-125	3	20	
Cadmium	1.01		0.0500	mg/L	1.00	0.0180 U	101	75-125	4	20	
Chromium	10.0		0.500	mg/L	10.0	0.0500 U	100	75-125	2	20	
Lead	10.2		0.500	mg/L	10.0	0.121	101	75-125	4	20	
Selenium	9.92		0.500	mg/L	10.0	0.250 U	99	75-125	3	20	
Silver	10.2		0.500	mg/L	10.0	0.0950 U	102	75-125	1	20	

Post Spike (4B10025-PS1) Prepared: 02/10/2014 14:21 Analyzed: 02/11/2014 20:40

Source: C401124-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	0.203		0.0100	mg/L	0.200	0.000960	101	80-120			
Barium	0.219	B	0.0100	mg/L	0.200	0.0179	101	80-120			
Cadmium	0.0201		0.00100	mg/L	0.0200	0.000283	99	80-120			
Chromium	0.198		0.0100	mg/L	0.200	0.000407	99	80-120			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

TCLP Metals by 6000/7000 Series Methods - Quality Control

Batch 4B10025 - EPA 3010A - Continued

Post Spike (4B10025-PS1) Continued Prepared: 02/10/2014 14:21 Analyzed: 02/11/2014 20:40

Source: C401124-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	0.203		0.0100	mg/L	0.200	0.00241	100	80-120			
Selenium	0.196		0.0100	mg/L	0.200	-0.000892	98	80-120			
Silver	0.202		0.0100	mg/L	0.200	0.000448	101	80-120			

Batch 4B10031 - EPA 7470A

Blank (4B10031-BLK1) Prepared: 02/10/2014 17:33 Analyzed: 02/11/2014 13:57

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.00017	U	0.00020	mg/L							

Blank (4B10031-BLK2) Prepared: 02/10/2014 17:33 Analyzed: 02/11/2014 14:12

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.00340	U	0.00400	mg/L							

LCS (4B10031-BS1) Prepared: 02/10/2014 17:33 Analyzed: 02/11/2014 13:59

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.00444		0.00020	mg/L	0.00500		89	80-120			

Matrix Spike (4B10031-MS1) Prepared: 02/10/2014 17:33 Analyzed: 02/11/2014 14:03

Source: C400990-03

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.00456		0.00020	mg/L	0.00500	0.00017 U	91	75-125			

Matrix Spike Dup (4B10031-MSD1) Prepared: 02/10/2014 17:33 Analyzed: 02/11/2014 14:06

Source: C400990-03

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.00463		0.00020	mg/L	0.00500	0.00017 U	93	75-125	2	25	

Post Spike (4B10031-PS1) Prepared: 02/10/2014 17:33 Analyzed: 02/11/2014 14:08

Source: C400990-03

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.00392		0.00020	mg/L	0.00500	-0.000026	79	75-125			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

www.encolabs.com

10775 Central Port Dr.
Orlando, FL 32824
(407) 826-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 111
Jacksonville, FL 32216-6069
(904) 296-3007 Fax (904) 296-6210

102-A Woodwinds Industrial Ct.
Cary, NC 27511
(919) 467-3090 Fax (919) 467-3515

Client Name	Project Number
Address	Project Name/Desc
City/ST/Zip	PO # / Billing Info
Tel / Fax	Reporting Contact
Sampler(s) Name, Affiliation (Print): Gail Hay, City of Greensboro	Billing Contact
Sampler(s) Signature: Gail Hay	Site Location / Time Zone

Requested Analyses

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

✓ Standard

___ Expedited

Due ___/___/___

Lab Workorder: C314283

Preservation (See Codes) (Combine as necessary)

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	Sample Comments
1	TP1A	11/7/13	1336	G	SO		
2	TP2a		1321	G			
3	TP2b		1328	G	SO		
4	TP3a		1303	G			
5	TP3b		1317	G	SO		
6	TP4a		1242	G			
7	TP4b		1258	G	SO		
8	TP5a		1204	G			
9	TP5b		1207	G	SO		
10	TP5c		1211	G			
11	TP6a		1157	G			
						22	<-- Total # of Containers

Sample Kit Prepared By: SE	Date/Time: ~~11/6/13~~ 11/7/13	Relinquished By: SE/COG	Date/Time: 11/8/13 805	Received By: [signature]	Date/Time: 11/8/13 915
Comments/Special Reporting Requirements: 11/7/13		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time
		Cooler #'s & Temps on Receipt: C-155°C 1.1C		Condition Upon Receipt: ✓ Acceptable ___ Unacceptable	

Matrix : GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments) **Preservation:** I-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note : All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist