Ritter, Christine

From: Gary Babb <gbabb@nc.rr.com>
Sent: Monday, February 09, 2015 3:17 PM
To: Ritter, Christine
Cc: Drummond, Jaclynne
Subject: Re: Seaboard/Riverdale LF Filter Bed Media Characterization

Thanks Christine - We appreciate the quick turnaround!
Gary

On 2/6/2015 2:45 PM, Ritter, Christine wrote:

(apologies-this email supercedes the one below)

Gary-

The NC Solid Waste Section has **reviewed and approved** your request to re-use the filter bed media byproduct at the closed Riverdale Drive Landfill as structural backfill for cap maintenance based on the TCLP results submitted. We request that you collect a sample of the filter media byproduct at least once every three years and analyze for the full TCLP suite including metals, volatile organics, semi-volatile organics, pesticides and herbicides and send the results to the NC Solid Waste Section.

Please let me know if you have any additional questions.

Christine Ritter (Christine.Ritter@ncdenr.gov)
Hydrogeologist
NC Dept of Environment and Natural Resources
Division of Waste Management/Solid Waste Section
Tel: (919) 707-8254
web: http://portal.ncdenr.org/web/wm/sw

PHYSICAL ADDRESS: 217 WEST JONES ST. RALEIGH, NC 27603
MAILING ADDRESS: 1646 MAIL SERVICE CENTER RALEIGH, NC 27699-1646

From: Ritter, Christine
Sent: Friday, February 06, 2015 2:43 PM
To: 'Gary Babb'
Cc: Drummond, Jaclynne
Subject: RE: Seaboard/Riverdale LF Filter Bed Media Characterization

Gary-

The NC Solid Waste Section has reviewed your request to re-use the filter bed media byproduct at the closed Riverdale Drive Landfill as structural backfill for cap maintenance based on the TCLP results submitted. We request that you collect a sample of the filter media byproduct at least once every three

years and analyze for the full TCLP suite including metals, volatile organics, semi-volatile organics, pesticides and herbicides and send the results to the NC Solid Waste Section.

Please let me know if you have any additional questions.

Christine Ritter (Christine.Ritter@ncdenr.gov)
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PHYSICAL ADDRESS:
217 WEST JONES ST.
RALEIGH, NC 27603

MAILING ADDRESS:
1646 MAIL SERVICE CENTER
RALEIGH, NC 27699-1646

From: Gary Babb [mailto:gbabb@nc.rr.com]
Sent: Monday, January 26, 2015 3:28 PM
To: Ritter, Christine; Drummond, Jaclynne; Jernigan, Hugh; James LaRue; Rich Glover; Robby Stone; Terry Houk
Subject: Seaboard/Riverdale LF Filter Bed Media Characterization

Christine,

Please find attached correspondence and lab analyses related to the characterization and re-use of the filter bed media byproduct generated during groundwater/leachate treatment at the former Seaboard Chemical/Riverdale Landfill Site. Please contact me if there are any questions or comments regarding this correspondence. Also, please let me know if you would like a hard copy of this information.

Thanks,
Gary Babb

--

Gary D. Babb, P.G.
Babb & Associates, P.A.
P.O. Box 37697
Raleigh, NC 27627

(919) 325-0696
(919) 605-4719 mobile

Babb & Associates, P.A.
Environmental Compliance and Remediation

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Environmental Compliance and Remediation

Babb & Associates, P.A.

January 26, 2015

Ms. Christine Ritter, Hydrogeologist
NC DENR - Division of Waste Management
NC Solid Waste Section
Mail Service Center 1646
Raleigh, North Carolina 27699-1646

Re: Analysis and Disposal of Filter Bed Media
Former Seaboard Chemical/Riverdale Drive Landfill Site
Jamestown, North Carolina
EPA ID #NCD071574164/NC Landfill #41-01

Dear Christine:

The Seaboard Group has completed the sample collection and analyses of a filter media byproduct generated as a part of the pretreatment process for contaminated groundwater and leachate at the former Seaboard Chemical/Riverdale Drive Landfill site in Jamestown, North Carolina.

The pretreatment process involves the removal of suspended solids and nuisance inorganics (iron, manganese, calcium, etc.) from the groundwater extraction system and leachate collection tanks at the site. Backwash from this pretreatment process is dewatered in two sand filter beds located at lift station 1 (LS-1) and at the metals treatment building. The resultant filter media byproduct is comprised primarily of sand with solids that have been physically removed from the influent groundwater/leachate. After this filtration process, the groundwater/leachate mixture is further treated by air stripping and either discharge to the on-site phytoremediation system (primary) or advanced oxidation system/POTW (secondary). Based on the initial startup operation of the treatment system, approximately three (3) cubic yards of filter medial byproduct will be generated monthly.

To characterize the filter media byproduct, three grab samples were collected and analyzed for a full TCLP analysis by ENCO Laboratories of Cary, North Carolina. A copy of the ENCO laboratory report is attached to this correspondence. As summarized on page 3 of the laboratory report, the only compound reported above the laboratory detection limit in any of the three samples was barium. The compound barium was detected at concentrations of 0.769 mg/l, 1.53 mg/l, and 2.24 mg/l. The TCLP standard for characterization of barium as a hazardous waste is 100.0 mg/l. Further, the North Carolina 2L Groundwater Standard established for barium is 700 mg/l. The reported barium concentrations in the three filter

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media byproduct samples is significantly below both the TCLP Standard and 2L Groundwater Standard. No other TCLP compounds, including heavy metals, volatile organics, semi-volatile organics, pesticides, or herbicides, were reported above the laboratory detection limits in any of the three filter media byproduct samples analyzed.

Based on the results of this sampling and analysis, we proposed to use the filter media byproduct at the closed Riverdale Drive Landfill (41-01) as structural backfill for cap maintenance. The generated material will be used to fill and grade low settlement areas of the cap to prevent ponding and provide a positive flow for surface water runoff. This use is consistent with the post-closure care and maintenance of the closed landfill cap.

The Seaboard Group requested approval and concurrence with this waste characterization and proposed use of the filter media byproduct for landfill cap maintenance. If there are any questions concerning the sampling/analyses procedures, the waste characterization, or the proposed filter media byproduct management alternative, please contact the us at (919) 325-0696.

Respectfully,

Babb & Associates, P.A.

Gary D. Babb

Gary D. Babb, P.G.
President

NORTH CAROLINA LICENSED SEAL 488 GEOLOGIST GARY D. BABB

Attachment

Cc: Jackie Drummond, NC Solid Waste
Hugh Jernigan, NC Solid Waste
Terry Houk, City of High Point
Robby Stone, City of High Point
Jim LaRue, Seaboard Group
Rich Glover, Seaboard Group

ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

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

Tuesday, January 13, 2015
Babb & Associates (BA024)
Attn: Gary Babb
3605 Country Cove Lane
Raleigh, NC 27606

RE: Laboratory Results for
Project Number: [none], Project Name/Desc: Seaboard/Riverdale
ENCO Workorder(s): C416878

Dear Gary Babb,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, December 23, 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,

Bill Scott

Bill Scott

Project Manager

Enclosure(s)

www.encolabs.com

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: LS-1-A **Lab ID: C416878-01** **Sampled: 12/22/14 16:00** **Received: 12/23/14 11:15**

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 6010C	06/20/15	07/05/15	01/06/15	09:19	01/07/15 12:10
EPA 7470A	01/19/15	01/27/15	12/30/14	11:45	12/31/14 09:34
EPA 8081B	12/29/14	02/09/15	12/31/14	05:35	01/07/15 15:53
EPA 8151A	12/29/14	02/08/15	12/30/14	21:30	01/12/15 23:09
EPA 8260B	01/05/15	01/22/15	01/08/15	00:00	01/08/15 12:56
EPA 8270D	12/29/14	02/11/15	01/02/15	10:54	01/11/15 01:21

Client ID: Filt, SB **Lab ID: C416878-02** **Sampled: 12/22/14 16:00** **Received: 12/23/14 11:15**

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 6010C	06/20/15	07/05/15	01/06/15	09:19	01/07/15 12:13
EPA 7470A	01/19/15	01/27/15	12/30/14	11:45	12/31/14 09:37
EPA 8081B	12/29/14	02/09/15	12/31/14	05:35	01/07/15 16:04
EPA 8151A	12/29/14	02/08/15	12/30/14	21:30	01/12/15 23:35
EPA 8260B	01/05/15	01/22/15	01/08/15	00:00	01/08/15 13:24
EPA 8270D	12/29/14	02/11/15	01/02/15	10:54	01/11/15 01:49

Client ID: LS-1-B **Lab ID: C416878-03** **Sampled: 12/22/14 16:15** **Received: 12/23/14 11:15**

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 6010C	06/20/15	07/05/15	01/06/15	09:19	01/07/15 12:16
EPA 7470A	01/19/15	01/27/15	12/30/14	11:45	12/31/14 09:40
EPA 8081B	12/29/14	02/09/15	12/31/14	05:35	01/07/15 16:16
EPA 8151A	12/29/14	02/08/15	12/30/14	21:30	01/13/15 00:01
EPA 8260B	01/05/15	01/22/15	01/08/15	00:00	01/08/15 13:53
EPA 8270D	12/29/14	02/11/15	01/02/15	10:54	01/11/15 02:17

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SAMPLE DETECTION SUMMARY

Client ID: LS-1-A **Lab ID:** C416878-01

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - TCLP	0.769		0.0158	0.250	mg/L	EPA 6010C	

Client ID: Filt, SB **Lab ID:** C416878-02

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - TCLP	1.53		0.0158	0.250	mg/L	EPA 6010C	

Client ID: LS-1-B **Lab ID:** C416878-03

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - TCLP	2.24		0.0158	0.250	mg/L	EPA 6010C	

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

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ANALYTICAL RESULTS

Description: LS-1-A	**Lab Sample ID:** C416878-01	**Received:** 12/23/14 11:15
Matrix: Soil	**Sampled:** 12/22/14 16:00	**Work Order:** C416878
Project: Seaboard/Riverdale	**Sampled By:** Rich Glover	**% Solids:**

TCLP Volatile Organics by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1-Dichloroethene [75-35-4]^	ND		mg/L	100	0.09	0.1	5A08020	EPA 8260B	01/08/15 12:56	JAJ	
1,2-Dichloroethane [107-06-2]^	ND		mg/L	100	0.06	0.1	5A08020	EPA 8260B	01/08/15 12:56	JAJ	
2-Butanone [78-93-3]^	ND		mg/L	100	0.4	0.5	5A08020	EPA 8260B	01/08/15 12:56	JAJ	
Benzene [71-43-2]^	ND		mg/L	100	0.07	0.1	5A08020	EPA 8260B	01/08/15 12:56	JAJ	
Carbon Tetrachloride [56-23-5]^	ND		mg/L	100	0.09	0.1	5A08020	EPA 8260B	01/08/15 12:56	JAJ	
Chlorobenzene [108-90-7]^	ND		mg/L	100	0.07	0.1	5A08020	EPA 8260B	01/08/15 12:56	JAJ	
Chloroform [67-66-3]^	ND		mg/L	100	0.08	0.1	5A08020	EPA 8260B	01/08/15 12:56	JAJ	
Tetrachloroethene [127-18-4]^	ND		mg/L	100	0.08	0.1	5A08020	EPA 8260B	01/08/15 12:56	JAJ	
Trichloroethene [79-01-6]^	ND		mg/L	100	0.09	0.1	5A08020	EPA 8260B	01/08/15 12:56	JAJ	
Vinyl chloride [75-01-4]^	ND		mg/L	100	0.07	0.1	5A08020	EPA 8260B	01/08/15 12:56	JAJ	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*0.049*	*1*	*0.0500*	*99 %*	*41-142*	*5A08020*	*EPA 8260B*	*01/08/15 12:56*	*JAJ*	
Dibromofluoromethane	*0.049*	*1*	*0.0500*	*97 %*	*53-146*	*5A08020*	*EPA 8260B*	*01/08/15 12:56*	*JAJ*	
Toluene-d8	*0.049*	*1*	*0.0500*	*98 %*	*41-146*	*5A08020*	*EPA 8260B*	*01/08/15 12:56*	*JAJ*	

TCLP Semivolatile Organics by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,4-Dichlorobenzene [106-46-7]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:21	jfi	
2,4,5-Trichlorophenol [95-95-4]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:21	jfi	
2,4,6-Trichlorophenol [88-06-2]^	ND		mg/L	1	0.03	0.10	5A02003	EPA 8270D	01/11/15 01:21	jfi	
2,4-Dinitrotoluene [121-14-2]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:21	jfi	
2-Methylphenol [95-48-7]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:21	jfi	QL-02
3 & 4-Methylphenol [108-39-4/106-44-5]^	ND		mg/L	1	0.04	0.10	5A02003	EPA 8270D	01/11/15 01:21	jfi	QL-02
Hexachlorobenzene [118-74-1]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:21	jfi	
Hexachlorobutadiene [87-68-3]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:21	jfi	
Hexachloroethane [67-72-1]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:21	jfi	
Nitrobenzene [98-95-3]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:21	jfi	
Pentachlorophenol [87-86-5]^	ND		mg/L	1	0.04	0.10	5A02003	EPA 8270D	01/11/15 01:21	jfi	QL-02
Pyridine [110-86-1]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:21	jfi	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
2,4,6-Tribromophenol	*0.28*	*1*	*0.250*	*110 %*	*47-128*	*5A02003*	*EPA 8270D*	*01/11/15 01:21*	*jfi*	
2-Fluorobiphenyl	*0.15*	*1*	*0.250*	*62 %*	*44-102*	*5A02003*	*EPA 8270D*	*01/11/15 01:21*	*jfi*	
2-Fluorophenol	*0.21*	*1*	*0.250*	*86 %*	*25-79*	*5A02003*	*EPA 8270D*	*01/11/15 01:21*	*jfi*	*QS-03*
Nitrobenzene-d5	*0.22*	*1*	*0.250*	*89 %*	*43-112*	*5A02003*	*EPA 8270D*	*01/11/15 01:21*	*jfi*	
Phenol-d5	*0.18*	*1*	*0.250*	*73 %*	*14-54*	*5A02003*	*EPA 8270D*	*01/11/15 01:21*	*jfi*	*QS-03*
Terphenyl-d14	*0.31*	*1*	*0.250*	*126 %*	*65-122*	*5A02003*	*EPA 8270D*	*01/11/15 01:21*	*jfi*	*QS-03*

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ANALYTICAL RESULTS

Description:	LS-1-A	**Lab Sample ID:**	C416878-01	**Received:**	12/23/14 11:15
Matrix:	Soil	**Sampled:**	12/22/14 16:00	**Work Order:**	C416878
Project:	Seaboard/Riverdale	**Sampled By:**	Rich Glover	**% Solids:**	

TCLP Pesticides by GC

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Chlordane (tech) [12789-03-6]^	ND		mg/L	1	0.00032	0.00050	4L30007	EPA 8081B	01/07/15 15:53	JJB	
Endrin [72-20-8]^	ND		mg/L	1	0.000014	0.000050	4L30007	EPA 8081B	01/07/15 15:53	JJB	
gamma-BHC [58-89-9]^	ND		mg/L	1	0.000020	0.000050	4L30007	EPA 8081B	01/07/15 15:53	JJB	
Heptachlor [76-44-8]^	ND		mg/L	1	0.000018	0.000050	4L30007	EPA 8081B	01/07/15 15:53	JJB	
Heptachlor epoxide [1024-57-3]^	ND		mg/L	1	0.000018	0.000050	4L30007	EPA 8081B	01/07/15 15:53	JJB	
Methoxychlor [72-43-5]^	ND		mg/L	1	0.000020	0.000050	4L30007	EPA 8081B	01/07/15 15:53	JJB	
Toxaphene [8001-35-2]^	ND		mg/L	1	0.00048	0.00050	4L30007	EPA 8081B	01/07/15 15:53	JJB	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
2,4,5,6-TCMX	*0.0045*	*1*	*0.00500*	*90 %*	*38-142*	*4L30007*	*EPA 8081B*	*01/07/15 15:53*	*JJB*	
Decachlorobiphenyl	*0.0062*	*1*	*0.00500*	*123 %*	*34-159*	*4L30007*	*EPA 8081B*	*01/07/15 15:53*	*JJB*	

TCLP Herbicides by GC

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
2,4,5-TP (Silvex) [93-72-1]^	ND		mg/L	1	0.0004	0.0005	4L30037	EPA 8151A	01/12/15 23:09	RC	
2,4-D [94-75-7]^	ND		mg/L	1	0.0003	0.0005	4L30037	EPA 8151A	01/12/15 23:09	RC	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
2,4-DCAA	*0.0016*	*1*	*0.00200*	*82 %*	*68-139*	*4L30037*	*EPA 8151A*	*01/12/15 23:09*	*RC*	

TCLP Metals by 6000/7000 Series Methods

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6]^	ND		mg/L	1	0.0002	0.002	4L23063	EPA 7470A	12/31/14 09:34	JMA	

TCLP Metals by 6000/7000 Series Methods

^ - ENCO Jacksonville certified analyte [NC 442]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2]^	ND		mg/L	1	0.178	0.250	5A06003	EPA 6010C	01/07/15 12:10	ACV	
Barium [7440-39-3]^	**0.769**		mg/L	1	0.0158	0.250	5A06003	EPA 6010C	01/07/15 12:10	ACV	
Cadmium [7440-43-9]^	ND		mg/L	1	0.00425	0.0250	5A06003	EPA 6010C	01/07/15 12:10	ACV	
Chromium [7440-47-3]^	ND		mg/L	1	0.0325	0.250	5A06003	EPA 6010C	01/07/15 12:10	ACV	
Lead [7439-92-1]^	ND		mg/L	1	0.0550	0.500	5A06003	EPA 6010C	01/07/15 12:10	ACV	
Selenium [7782-49-2]^	ND		mg/L	1	0.165	1.00	5A06003	EPA 6010C	01/07/15 12:10	ACV	
Silver [7440-22-4]^	ND		mg/L	1	0.0300	0.250	5A06003	EPA 6010C	01/07/15 12:10	ACV	

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

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ANALYTICAL RESULTS

Description: Filt, SB	**Lab Sample ID:** C416878-02	**Received:** 12/23/14 11:15
Matrix: Soil	**Sampled:** 12/22/14 16:00	**Work Order:** C416878
Project: Seaboard/Riverdale	**Sampled By:** Rich Glover	**% Solids:**

TCLP Volatile Organics by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1-Dichloroethene [75-35-4]^	ND		mg/L	100	0.09	0.1	5A08020	EPA 8260B	01/08/15 13:24	JAJ	
1,2-Dichloroethane [107-06-2]^	ND		mg/L	100	0.06	0.1	5A08020	EPA 8260B	01/08/15 13:24	JAJ	
2-Butanone [78-93-3]^	ND		mg/L	100	0.4	0.5	5A08020	EPA 8260B	01/08/15 13:24	JAJ	
Benzene [71-43-2]^	ND		mg/L	100	0.07	0.1	5A08020	EPA 8260B	01/08/15 13:24	JAJ	
Carbon Tetrachloride [56-23-5]^	ND		mg/L	100	0.09	0.1	5A08020	EPA 8260B	01/08/15 13:24	JAJ	
Chlorobenzene [108-90-7]^	ND		mg/L	100	0.07	0.1	5A08020	EPA 8260B	01/08/15 13:24	JAJ	
Chloroform [67-66-3]^	ND		mg/L	100	0.08	0.1	5A08020	EPA 8260B	01/08/15 13:24	JAJ	
Tetrachloroethene [127-18-4]^	ND		mg/L	100	0.08	0.1	5A08020	EPA 8260B	01/08/15 13:24	JAJ	
Trichloroethene [79-01-6]^	ND		mg/L	100	0.09	0.1	5A08020	EPA 8260B	01/08/15 13:24	JAJ	
Vinyl chloride [75-01-4]^	ND		mg/L	100	0.07	0.1	5A08020	EPA 8260B	01/08/15 13:24	JAJ	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*0.058*	*1*	*0.0500*	*116 %*	*41-142*	*5A08020*	*EPA 8260B*	*01/08/15 13:24*	*JAJ*	
Dibromofluoromethane	*0.055*	*1*	*0.0500*	*110 %*	*53-146*	*5A08020*	*EPA 8260B*	*01/08/15 13:24*	*JAJ*	
Toluene-d8	*0.058*	*1*	*0.0500*	*116 %*	*41-146*	*5A08020*	*EPA 8260B*	*01/08/15 13:24*	*JAJ*	

TCLP Semivolatile Organics by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,4-Dichlorobenzene [106-46-7]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:49	jfi	
2,4,5-Trichlorophenol [95-95-4]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:49	jfi	
2,4,6-Trichlorophenol [88-06-2]^	ND		mg/L	1	0.03	0.10	5A02003	EPA 8270D	01/11/15 01:49	jfi	
2,4-Dinitrotoluene [121-14-2]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:49	jfi	
2-Methylphenol [95-48-7]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:49	jfi	QL-02
3 & 4-Methylphenol [108-39-4/106-44-5]^	ND		mg/L	1	0.04	0.10	5A02003	EPA 8270D	01/11/15 01:49	jfi	QL-02
Hexachlorobenzene [118-74-1]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:49	jfi	
Hexachlorobutadiene [87-68-3]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:49	jfi	
Hexachloroethane [67-72-1]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:49	jfi	
Nitrobenzene [98-95-3]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:49	jfi	
Pentachlorophenol [87-86-5]^	ND		mg/L	1	0.04	0.10	5A02003	EPA 8270D	01/11/15 01:49	jfi	QL-02
Pyridine [110-86-1]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 01:49	jfi	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
2,4,6-Tribromophenol	*0.17*	*1*	*0.250*	*67 %*	*47-128*	*5A02003*	*EPA 8270D*	*01/11/15 01:49*	*jfi*	
2-Fluorobiphenyl	*0.10*	*1*	*0.250*	*42 %*	*44-102*	*5A02003*	*EPA 8270D*	*01/11/15 01:49*	*jfi*	*QS-03*
2-Fluorophenol	*0.12*	*1*	*0.250*	*48 %*	*25-79*	*5A02003*	*EPA 8270D*	*01/11/15 01:49*	*jfi*	
Nitrobenzene-d5	*0.14*	*1*	*0.250*	*55 %*	*43-112*	*5A02003*	*EPA 8270D*	*01/11/15 01:49*	*jfi*	
Phenol-d5	*0.10*	*1*	*0.250*	*40 %*	*14-54*	*5A02003*	*EPA 8270D*	*01/11/15 01:49*	*jfi*	
Terphenyl-d14	*0.23*	*1*	*0.250*	*92 %*	*65-122*	*5A02003*	*EPA 8270D*	*01/11/15 01:49*	*jfi*	

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ANALYTICAL RESULTS

Description:	Filt, SB	**Lab Sample ID:**	C416878-02	**Received:**	12/23/14 11:15
Matrix:	Soil	**Sampled:**	12/22/14 16:00	**Work Order:**	C416878
Project:	Seaboard/Riverdale	**Sampled By:**	Rich Glover	**% Solids:**	

TCLP Pesticides by GC

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Chlordane (tech) [12789-03-6]^	ND		mg/L	1	0.00032	0.00050	4L30007	EPA 8081B	01/07/15 16:04	JJB	
Endrin [72-20-8]^	ND		mg/L	1	0.000014	0.000050	4L30007	EPA 8081B	01/07/15 16:04	JJB	
gamma-BHC [58-89-9]^	ND		mg/L	1	0.000020	0.000050	4L30007	EPA 8081B	01/07/15 16:04	JJB	
Heptachlor [76-44-8]^	ND		mg/L	1	0.000018	0.000050	4L30007	EPA 8081B	01/07/15 16:04	JJB	
Heptachlor epoxide [1024-57-3]^	ND		mg/L	1	0.000018	0.000050	4L30007	EPA 8081B	01/07/15 16:04	JJB	
Methoxychlor [72-43-5]^	ND		mg/L	1	0.000020	0.000050	4L30007	EPA 8081B	01/07/15 16:04	JJB	
Toxaphene [8001-35-2]^	ND		mg/L	1	0.00048	0.00050	4L30007	EPA 8081B	01/07/15 16:04	JJB	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
2,4,5,6-TCMX	*0.0036*	*1*	*0.00500*	*72 %*	*38-142*	*4L30007*	*EPA 8081B*	*01/07/15 16:04*	*JJB*	
Decachlorobiphenyl	*0.0055*	*1*	*0.00500*	*111 %*	*34-159*	*4L30007*	*EPA 8081B*	*01/07/15 16:04*	*JJB*	

TCLP Herbicides by GC

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
2,4,5-TP (Silvex) [93-72-1]^	ND		mg/L	1	0.0004	0.0005	4L30037	EPA 8151A	01/12/15 23:35	RC	
2,4-D [94-75-7]^	ND		mg/L	1	0.0003	0.0005	4L30037	EPA 8151A	01/12/15 23:35	RC	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
2,4-DCAA	*0.0017*	*1*	*0.00200*	*85 %*	*68-139*	*4L30037*	*EPA 8151A*	*01/12/15 23:35*	*RC*	

TCLP Metals by 6000/7000 Series Methods

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6]^	ND		mg/L	1	0.0002	0.002	4L23063	EPA 7470A	12/31/14 09:37	JMA	

TCLP Metals by 6000/7000 Series Methods

^ - ENCO Jacksonville certified analyte [NC 442]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2]^	ND		mg/L	1	0.178	0.250	5A06003	EPA 6010C	01/07/15 12:13	ACV	
Barium [7440-39-3]^	**1.53**		mg/L	1	0.0158	0.250	5A06003	EPA 6010C	01/07/15 12:13	ACV	
Cadmium [7440-43-9]^	ND		mg/L	1	0.00425	0.0250	5A06003	EPA 6010C	01/07/15 12:13	ACV	
Chromium [7440-47-3]^	ND		mg/L	1	0.0325	0.250	5A06003	EPA 6010C	01/07/15 12:13	ACV	
Lead [7439-92-1]^	ND		mg/L	1	0.0550	0.500	5A06003	EPA 6010C	01/07/15 12:13	ACV	
Selenium [7782-49-2]^	ND		mg/L	1	0.165	1.00	5A06003	EPA 6010C	01/07/15 12:13	ACV	
Silver [7440-22-4]^	ND		mg/L	1	0.0300	0.250	5A06003	EPA 6010C	01/07/15 12:13	ACV	

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ANALYTICAL RESULTS

Description: LS-1-B	**Lab Sample ID:** C416878-03	**Received:** 12/23/14 11:15
Matrix: Soil	**Sampled:** 12/22/14 16:15	**Work Order:** C416878
Project: Seaboard/Riverdale	**Sampled By:** Rich Glover	**% Solids:**

TCLP Volatile Organics by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1-Dichloroethene [75-35-4]^	ND		mg/L	100	0.09	0.1	5A08020	EPA 8260B	01/08/15 13:53	JAJ	
1,2-Dichloroethane [107-06-2]^	ND		mg/L	100	0.06	0.1	5A08020	EPA 8260B	01/08/15 13:53	JAJ	
2-Butanone [78-93-3]^	ND		mg/L	100	0.4	0.5	5A08020	EPA 8260B	01/08/15 13:53	JAJ	
Benzene [71-43-2]^	ND		mg/L	100	0.07	0.1	5A08020	EPA 8260B	01/08/15 13:53	JAJ	
Carbon Tetrachloride [56-23-5]^	ND		mg/L	100	0.09	0.1	5A08020	EPA 8260B	01/08/15 13:53	JAJ	
Chlorobenzene [108-90-7]^	ND		mg/L	100	0.07	0.1	5A08020	EPA 8260B	01/08/15 13:53	JAJ	
Chloroform [67-66-3]^	ND		mg/L	100	0.08	0.1	5A08020	EPA 8260B	01/08/15 13:53	JAJ	
Tetrachloroethene [127-18-4]^	ND		mg/L	100	0.08	0.1	5A08020	EPA 8260B	01/08/15 13:53	JAJ	
Trichloroethene [79-01-6]^	ND		mg/L	100	0.09	0.1	5A08020	EPA 8260B	01/08/15 13:53	JAJ	
Vinyl chloride [75-01-4]^	ND		mg/L	100	0.07	0.1	5A08020	EPA 8260B	01/08/15 13:53	JAJ	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*0.056*	*1*	*0.0500*	*113 %*	*41-142*	*5A08020*	*EPA 8260B*	*01/08/15 13:53*	*JAJ*	
Dibromofluoromethane	*0.055*	*1*	*0.0500*	*110 %*	*53-146*	*5A08020*	*EPA 8260B*	*01/08/15 13:53*	*JAJ*	
Toluene-d8	*0.058*	*1*	*0.0500*	*115 %*	*41-146*	*5A08020*	*EPA 8260B*	*01/08/15 13:53*	*JAJ*	

TCLP Semivolatile Organics by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,4-Dichlorobenzene [106-46-7]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 02:17	jfi	
2,4,5-Trichlorophenol [95-95-4]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 02:17	jfi	
2,4,6-Trichlorophenol [88-06-2]^	ND		mg/L	1	0.03	0.10	5A02003	EPA 8270D	01/11/15 02:17	jfi	
2,4-Dinitrotoluene [121-14-2]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 02:17	jfi	
2-Methylphenol [95-48-7]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 02:17	jfi	QL-02
3 & 4-Methylphenol [108-39-4/106-44-5]^	ND		mg/L	1	0.04	0.10	5A02003	EPA 8270D	01/11/15 02:17	jfi	QL-02
Hexachlorobenzene [118-74-1]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 02:17	jfi	
Hexachlorobutadiene [87-68-3]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 02:17	jfi	
Hexachloroethane [67-72-1]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 02:17	jfi	
Nitrobenzene [98-95-3]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 02:17	jfi	
Pentachlorophenol [87-86-5]^	ND		mg/L	1	0.04	0.10	5A02003	EPA 8270D	01/11/15 02:17	jfi	QL-02
Pyridine [110-86-1]^	ND		mg/L	1	0.02	0.10	5A02003	EPA 8270D	01/11/15 02:17	jfi	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
2,4,6-Tribromophenol	*0.30*	*1*	*0.250*	*122 %*	*47-128*	*5A02003*	*EPA 8270D*	*01/11/15 02:17*	*jfi*	
2-Fluorobiphenyl	*0.18*	*1*	*0.250*	*73 %*	*44-102*	*5A02003*	*EPA 8270D*	*01/11/15 02:17*	*jfi*	
2-Fluorophenol	*0.18*	*1*	*0.250*	*70 %*	*25-79*	*5A02003*	*EPA 8270D*	*01/11/15 02:17*	*jfi*	
Nitrobenzene-d5	*0.24*	*1*	*0.250*	*97 %*	*43-112*	*5A02003*	*EPA 8270D*	*01/11/15 02:17*	*jfi*	
Phenol-d5	*0.14*	*1*	*0.250*	*54 %*	*14-54*	*5A02003*	*EPA 8270D*	*01/11/15 02:17*	*jfi*	
Terphenyl-d14	*0.31*	*1*	*0.250*	*123 %*	*65-122*	*5A02003*	*EPA 8270D*	*01/11/15 02:17*	*jfi*	*QS-03*

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ANALYTICAL RESULTS

Description:	LS-1-B	**Lab Sample ID:**	C416878-03	**Received:**	12/23/14 11:15
Matrix:	Soil	**Sampled:**	12/22/14 16:15	**Work Order:**	C416878
Project:	Seaboard/Riverdale	**Sampled By:**	Rich Glover	**% Solids:**	

TCLP Pesticides by GC

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Chlordane (tech) [12789-03-6]^	ND		mg/L	1	0.00032	0.00050	4L30007	EPA 8081B	01/07/15 16:16	JJB	
Endrin [72-20-8]^	ND		mg/L	1	0.000014	0.000050	4L30007	EPA 8081B	01/07/15 16:16	JJB	
gamma-BHC [58-89-9]^	ND		mg/L	1	0.000020	0.000050	4L30007	EPA 8081B	01/07/15 16:16	JJB	
Heptachlor [76-44-8]^	ND		mg/L	1	0.000018	0.000050	4L30007	EPA 8081B	01/07/15 16:16	JJB	
Heptachlor epoxide [1024-57-3]^	ND		mg/L	1	0.000018	0.000050	4L30007	EPA 8081B	01/07/15 16:16	JJB	
Methoxychlor [72-43-5]^	ND		mg/L	1	0.000020	0.000050	4L30007	EPA 8081B	01/07/15 16:16	JJB	
Toxaphene [8001-35-2]^	ND		mg/L	1	0.00048	0.00050	4L30007	EPA 8081B	01/07/15 16:16	JJB	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
2,4,5,6-TCMX	*0.0052*	*1*	*0.00500*	*103 %*	*38-142*	*4L30007*	*EPA 8081B*	*01/07/15 16:16*	*JJB*	
Decachlorobiphenyl	*0.0066*	*1*	*0.00500*	*133 %*	*34-159*	*4L30007*	*EPA 8081B*	*01/07/15 16:16*	*JJB*	

TCLP Herbicides by GC

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
2,4,5-TP (Silvex) [93-72-1]^	ND		mg/L	1	0.0004	0.0005	4L30037	EPA 8151A	01/13/15 00:01	RC	
2,4-D [94-75-7]^	ND		mg/L	1	0.0003	0.0005	4L30037	EPA 8151A	01/13/15 00:01	RC	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
2,4-DCAA	*0.0014*	*1*	*0.00200*	*71 %*	*68-139*	*4L30037*	*EPA 8151A*	*01/13/15 00:01*	*RC*	

TCLP Metals by 6000/7000 Series Methods

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6]^	ND		mg/L	1	0.0002	0.002	4L23063	EPA 7470A	12/31/14 09:40	JMA	

TCLP Metals by 6000/7000 Series Methods

^ - ENCO Jacksonville certified analyte [NC 442]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2]^	ND		mg/L	1	0.178	0.250	5A06003	EPA 6010C	01/07/15 12:16	ACV	
Barium [7440-39-3]^	**2.24**		mg/L	1	0.0158	0.250	5A06003	EPA 6010C	01/07/15 12:16	ACV	
Cadmium [7440-43-9]^	ND		mg/L	1	0.00425	0.0250	5A06003	EPA 6010C	01/07/15 12:16	ACV	
Chromium [7440-47-3]^	ND		mg/L	1	0.0325	0.250	5A06003	EPA 6010C	01/07/15 12:16	ACV	
Lead [7439-92-1]^	ND		mg/L	1	0.0550	0.500	5A06003	EPA 6010C	01/07/15 12:16	ACV	
Selenium [7782-49-2]^	ND		mg/L	1	0.165	1.00	5A06003	EPA 6010C	01/07/15 12:16	ACV	
Silver [7440-22-4]^	ND		mg/L	1	0.0300	0.250	5A06003	EPA 6010C	01/07/15 12:16	ACV	

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QUALITY CONTROL DATA

TCLP Volatile Organics by GCMS - Quality Control

Batch 5A08020 - EPA 5030B_MS

Blank (5A08020-BLK1) Prepared: 01/08/2015 00:00 Analyzed: 01/08/2015 11:59

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	0.0009	U	0.001	mg/L							
1,2-Dichloroethane	0.0006	U	0.001	mg/L							
2-Butanone	0.004	U	0.005	mg/L							
Benzene	0.0007	U	0.001	mg/L							
Carbon Tetrachloride	0.0009	U	0.001	mg/L							
Chlorobenzene	0.0007	U	0.001	mg/L							
Chloroform	0.0008	U	0.001	mg/L							
Tetrachloroethene	0.0008	U	0.001	mg/L							
Trichloroethene	0.0009	U	0.001	mg/L							
Vinyl chloride	0.0007	U	0.001	mg/L							
4-Bromofluorobenzene	*0.060*			*mg/L*	*0.0500*		*119*	*41-142*			
Dibromofluoromethane	*0.058*			*mg/L*	*0.0500*		*115*	*53-146*			
Toluene-d8	*0.060*			*mg/L*	*0.0500*		*119*	*41-146*			

Blank (5A08020-BLK2) Prepared: 01/08/2015 00:00 Analyzed: 01/08/2015 12:27

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	0.09	UD	0.1	mg/L							
1,2-Dichloroethane	0.06	UD	0.1	mg/L							
2-Butanone	0.4	UD	0.5	mg/L							
Benzene	0.07	UD	0.1	mg/L							
Carbon Tetrachloride	0.09	UD	0.1	mg/L							
Chlorobenzene	0.07	UD	0.1	mg/L							
Chloroform	0.08	UD	0.1	mg/L							
Tetrachloroethene	0.08	UD	0.1	mg/L							
Trichloroethene	0.09	UD	0.1	mg/L							
Vinyl chloride	0.07	UD	0.1	mg/L							
4-Bromofluorobenzene	*0.057*			*mg/L*	*0.0500*		*113*	*41-142*			
Dibromofluoromethane	*0.057*			*mg/L*	*0.0500*		*113*	*53-146*			
Toluene-d8	*0.059*			*mg/L*	*0.0500*		*117*	*41-146*			

LCS (5A08020-BS1) Prepared: 01/08/2015 00:00 Analyzed: 01/08/2015 10:26

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	0.025		0.001	mg/L	0.0200		127	47-139			
Benzene	0.022		0.001	mg/L	0.0200		112	56-136			
Chlorobenzene	0.021		0.001	mg/L	0.0200		103	51-139			
Trichloroethene	0.023		0.001	mg/L	0.0200		116	62-135			
4-Bromofluorobenzene	*0.051*			*mg/L*	*0.0500*		*102*	*41-142*			
Dibromofluoromethane	*0.056*			*mg/L*	*0.0500*		*113*	*53-146*			
Toluene-d8	*0.058*			*mg/L*	*0.0500*		*116*	*41-146*			

Matrix Spike (5A08020-MS1) Prepared: 01/08/2015 00:00 Analyzed: 01/08/2015 17:42

Source: A407536-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	0.031		0.001	mg/L	0.0200	0.0009 U	155	47-139			QM-07
Benzene	0.027		0.001	mg/L	0.0200	0.0007 U	136	56-136			

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QUALITY CONTROL DATA

TCLP Volatile Organics by GCMS - Quality Control

Batch 5A08020 - EPA 5030B_MS - Continued

Matrix Spike (5A08020-MS1) Continued Prepared: 01/08/2015 00:00 Analyzed: 01/08/2015 17:42

Source: A407536-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chlorobenzene	0.027		0.001	mg/L	0.0200	0.0007 U	135	51-139			
Trichloroethene	0.029		0.001	mg/L	0.0200	0.0009 U	143	62-135			QM-07
4-Bromofluorobenzene	*0.056*			*mg/L*	*0.0500*		*112*	*41-142*			
Dibromofluoromethane	*0.058*			*mg/L*	*0.0500*		*117*	*53-146*			
Toluene-d8	*0.060*			*mg/L*	*0.0500*		*120*	*41-146*			

Matrix Spike Dup (5A08020-MSD1) Prepared: 01/08/2015 00:00 Analyzed: 01/08/2015 18:10

Source: A407536-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	0.031		0.001	mg/L	0.0200	0.0009 U	155	47-139	0.3	16	QM-07
Benzene	0.027		0.001	mg/L	0.0200	0.0007 U	135	56-136	0.6	14	
Chlorobenzene	0.028		0.001	mg/L	0.0200	0.0007 U	142	51-139	5	13	QM-07
Trichloroethene	0.028		0.001	mg/L	0.0200	0.0009 U	140	62-135	3	20	QM-07
4-Bromofluorobenzene	*0.056*			*mg/L*	*0.0500*		*113*	*41-142*			
Dibromofluoromethane	*0.058*			*mg/L*	*0.0500*		*116*	*53-146*			
Toluene-d8	*0.059*			*mg/L*	*0.0500*		*118*	*41-146*			

TCLP Semivolatile Organics by GCMS - Quality Control

Batch 5A02003 - EPA 3510C_MS

Blank (5A02003-BLK1) Prepared: 01/02/2015 10:54 Analyzed: 01/10/2015 21:09

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	0.003	U	0.02	mg/L							
2,4,5-Trichlorophenol	0.004	U	0.02	mg/L							
2,4,6-Trichlorophenol	0.006	U	0.02	mg/L							
2,4-Dinitrotoluene	0.003	U	0.02	mg/L							
2-Methylphenol	0.004	U	0.02	mg/L							
3 & 4-Methylphenol	0.008	U	0.02	mg/L							
Hexachlorobenzene	0.003	U	0.02	mg/L							
Hexachlorobutadiene	0.004	U	0.02	mg/L							
Hexachloroethane	0.003	U	0.02	mg/L							
Nitrobenzene	0.003	U	0.02	mg/L							
Pentachlorophenol	0.008	U	0.02	mg/L							
Pyridine	0.004	U	0.02	mg/L							
2,4,6-Tribromophenol	*0.048*			*mg/L*	*0.0500*		*96*	*47-128*			
2-Fluorobiphenyl	*0.042*			*mg/L*	*0.0500*		*85*	*44-102*			
2-Fluorophenol	*0.039*			*mg/L*	*0.0500*		*79*	*25-79*			
Nitrobenzene-d5	*0.051*			*mg/L*	*0.0500*		*102*	*43-112*			
Phenol-d5	*0.032*			*mg/L*	*0.0500*		*63*	*14-54*			*QS-03*
Terphenyl-d14	*0.063*			*mg/L*	*0.0500*		*126*	*65-122*			*QS-03*

Blank (5A02003-BLK2) Prepared: 01/02/2015 10:54 Analyzed: 01/10/2015 21:37

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	0.02	U	0.10	mg/L							
2,4,5-Trichlorophenol	0.02	U	0.10	mg/L							

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QUALITY CONTROL DATA

TCLP Semivolatile Organics by GCMS - Quality Control

Batch 5A02003 - EPA 3510C_MS - Continued

Blank (5A02003-BLK2) Continued Prepared: 01/02/2015 10:54 Analyzed: 01/10/2015 21:37

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4,6-Trichlorophenol	0.03	U	0.10	mg/L							
2,4-Dinitrotoluene	0.02	U	0.10	mg/L							
2-Methylphenol	0.02	U	0.10	mg/L							
3 & 4-Methylphenol	0.04	U	0.10	mg/L							
Hexachlorobenzene	0.02	U	0.10	mg/L							
Hexachlorobutadiene	0.02	U	0.10	mg/L							
Hexachloroethane	0.02	U	0.10	mg/L							
Nitrobenzene	0.02	U	0.10	mg/L							
Pentachlorophenol	0.04	U	0.10	mg/L							
Pyridine	0.02	U	0.10	mg/L							
2,4,6-Tribromophenol	*0.26*			*mg/L*	*0.250*		*103*	*47-128*			
2-Fluorobiphenyl	*0.15*			*mg/L*	*0.250*		*61*	*44-102*			
2-Fluorophenol	*0.20*			*mg/L*	*0.250*		*80*	*25-79*			*QS-03*
Nitrobenzene-d5	*0.24*			*mg/L*	*0.250*		*95*	*43-112*			
Phenol-d5	*0.15*			*mg/L*	*0.250*		*60*	*14-54*			*QS-03*
Terphenyl-d14	*0.30*			*mg/L*	*0.250*		*119*	*65-122*			

LCS (5A02003-BS1) Prepared: 01/02/2015 10:54 Analyzed: 01/10/2015 22:33

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	0.03		0.02	mg/L	0.0500		63	17-94			
Pentachlorophenol	0.06		0.02	mg/L	0.0500		111	27-100			QL-02
2,4,6-Tribromophenol	*0.057*			*mg/L*	*0.0500*		*114*	*47-128*			
2-Fluorobiphenyl	*0.049*			*mg/L*	*0.0500*		*98*	*44-102*			
2-Fluorophenol	*0.048*			*mg/L*	*0.0500*		*96*	*25-79*			*QS-03*
Nitrobenzene-d5	*0.056*			*mg/L*	*0.0500*		*112*	*43-112*			
Phenol-d5	*0.039*			*mg/L*	*0.0500*		*77*	*14-54*			*QS-03*
Terphenyl-d14	*0.068*			*mg/L*	*0.0500*		*135*	*65-122*			*QS-03*

Matrix Spike (5A02003-MS1) Prepared: 01/02/2015 10:54 Analyzed: 01/10/2015 23:01

Source: A407635-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	0.02		0.02	mg/L	0.0500	0.003 U	37	17-94			
Pentachlorophenol	0.04		0.02	mg/L	0.0500	0.008 U	83	27-100			
2,4,6-Tribromophenol	*0.041*			*mg/L*	*0.0500*		*81*	*47-128*			
2-Fluorobiphenyl	*0.035*			*mg/L*	*0.0500*		*70*	*44-102*			
2-Fluorophenol	*0.027*			*mg/L*	*0.0500*		*54*	*25-79*			
Nitrobenzene-d5	*0.040*			*mg/L*	*0.0500*		*79*	*43-112*			
Phenol-d5	*0.019*			*mg/L*	*0.0500*		*38*	*14-54*			
Terphenyl-d14	*0.046*			*mg/L*	*0.0500*		*92*	*65-122*			

Matrix Spike Dup (5A02003-MSD1) Prepared: 01/02/2015 10:54 Analyzed: 01/10/2015 23:29

Source: A407635-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	0.02		0.02	mg/L	0.0500	0.003 U	39	17-94	5	34	
Pentachlorophenol	0.05		0.02	mg/L	0.0500	0.008 U	100	27-100	19	26	
2,4,6-Tribromophenol	*0.048*			*mg/L*	*0.0500*		*96*	*47-128*			

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QUALITY CONTROL DATA

TCLP Semivolatile Organics by GCMS - Quality Control

Batch 5A02003 - EPA 3510C_MS - Continued

Matrix Spike Dup (5A02003-MSD1) Continued Prepared: 01/02/2015 10:54 Analyzed: 01/10/2015 23:29

Source: A407635-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2-Fluorobiphenyl	*0.038*			*mg/L*	*0.0500*		*75*	*44-102*			
2-Fluorophenol	*0.029*			*mg/L*	*0.0500*		*58*	*25-79*			
Nitrobenzene-d5	*0.042*			*mg/L*	*0.0500*		*83*	*43-112*			
Phenol-d5	*0.022*			*mg/L*	*0.0500*		*43*	*14-54*			
Terphenyl-d14	*0.054*			*mg/L*	*0.0500*		*108*	*65-122*			

TCLP Pesticides by GC - Quality Control

Batch 4L30007 - EPA 3510C

Blank (4L30007-BLK1) Prepared: 12/30/2014 07:35 Analyzed: 01/07/2015 12:05

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chlordane (tech)	0.000064	U	0.00010	mg/L							
Endrin	2.8E-6	U	0.000010	mg/L							
gamma-BHC	4.0E-6	U	0.000010	mg/L							
Heptachlor	3.6E-6	U	0.000010	mg/L							
Heptachlor epoxide	3.6E-6	U	0.000010	mg/L							
Methoxychlor	4.0E-6	U	0.000010	mg/L							
Toxaphene	0.000096	U	0.00010	mg/L							
2,4,5,6-TCMX	*0.0011*			*mg/L*	*0.00100*		*105*	*38-142*			
Decachlorobiphenyl	*0.00099*			*mg/L*	*0.00100*		*99*	*34-159*			

Blank (4L30007-BLK2) Prepared: 12/31/2014 05:35 Analyzed: 01/07/2015 12:16

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chlordane (tech)	0.000064	U	0.00010	mg/L							
Endrin	2.8E-6	U	0.000010	mg/L							
gamma-BHC	4.0E-6	U	0.000010	mg/L							
Heptachlor	3.6E-6	U	0.000010	mg/L							
Heptachlor epoxide	3.6E-6	U	0.000010	mg/L							
Methoxychlor	4.0E-6	U	0.000010	mg/L							
Toxaphene	0.000096	U	0.00010	mg/L							
2,4,5,6-TCMX	*0.00098*			*mg/L*	*0.00100*		*98*	*38-142*			
Decachlorobiphenyl	*0.00099*			*mg/L*	*0.00100*		*99*	*34-159*			

LCS (4L30007-BS1) Prepared: 12/30/2014 07:35 Analyzed: 01/07/2015 12:27

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Endrin	0.00079		0.000010	mg/L	0.00100		79	28-143			
2,4,5,6-TCMX	*0.00084*			*mg/L*	*0.00100*		*84*	*38-142*			
Decachlorobiphenyl	*0.0012*			*mg/L*	*0.00100*		*116*	*34-159*			

Matrix Spike (4L30007-MS1) Prepared: 12/30/2014 07:35 Analyzed: 01/07/2015 12:39

Source: A407635-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Endrin	0.00078		0.000010	mg/L	0.00100	2.8E-6 U	78	28-143			

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QUALITY CONTROL DATA

TCLP Pesticides by GC - Quality Control

Batch 4L30007 - EPA 3510C - Continued

Matrix Spike (4L30007-MS1) Continued Prepared: 12/30/2014 07:35 Analyzed: 01/07/2015 12:39

Source: A407635-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4,5,6-TCMX	*0.00092*			*mg/L*	*0.00100*		*92*	*38-142*			
Decachlorobiphenyl	*0.0011*			*mg/L*	*0.00100*		*113*	*34-159*			

Matrix Spike Dup (4L30007-MSD1) Prepared: 12/30/2014 07:35 Analyzed: 01/07/2015 12:50

Source: A407635-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Endrin	0.00061		0.000010	mg/L	0.00100	2.8E-6 U	61	28-143	25	22	QM-11
2,4,5,6-TCMX	*0.00086*			*mg/L*	*0.00100*		*86*	*38-142*			
Decachlorobiphenyl	*0.00089*			*mg/L*	*0.00100*		*89*	*34-159*			

TCLP Herbicides by GC - Quality Control

Batch 4L30037 - EPA 3510C

Blank (4L30037-BLK1) Prepared: 12/30/2014 21:30 Analyzed: 01/12/2015 19:18

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4,5-TP (Silvex)	0.0004	U	0.0005	mg/L							
2,4-D	0.0003	U	0.0005	mg/L							
2,4-DCAA [2C]	*0.0012*			*mg/L*	*0.00200*		*59*	*68-139*			*QS-03*

Blank (4L30037-BLK2) Prepared: 12/30/2014 21:30 Analyzed: 01/12/2015 19:44

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4,5-TP (Silvex)	0.0004	U	0.0005	mg/L							
2,4-D	0.0003	U	0.0005	mg/L							
2,4-DCAA	*0.0016*			*mg/L*	*0.00200*		*78*	*68-139*			

LCS (4L30037-BS1) Prepared: 12/30/2014 21:30 Analyzed: 01/12/2015 20:10

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4,5-TP (Silvex)	0.0018		0.0005	mg/L	0.00200		89	70-114			
2,4-D	0.0016		0.0005	mg/L	0.00200		80	37-129			
2,4-DCAA	*0.0020*			*mg/L*	*0.00200*		*98*	*68-139*			

Matrix Spike (4L30037-MS1) Prepared: 12/30/2014 21:30 Analyzed: 01/12/2015 20:35

Source: A407635-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4,5-TP (Silvex)	0.0017		0.0005	mg/L	0.00200	0.0004 U	86	70-114			
2,4-D	0.0014		0.0005	mg/L	0.00200	0.0003 U	71	37-129			
2,4-DCAA	*0.0017*			*mg/L*	*0.00200*		*84*	*68-139*			

Matrix Spike Dup (4L30037-MSD1) Prepared: 12/30/2014 21:30 Analyzed: 01/12/2015 21:01

Source: A407635-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4,5-TP (Silvex)	0.0021		0.0005	mg/L	0.00200	0.0004 U	103	70-114	17	15	QM-11

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QUALITY CONTROL DATA

TCLP Herbicides by GC - Quality Control

Batch 4L30037 - EPA 3510C - Continued

Matrix Spike Dup (4L30037-MSD1) Continued Prepared: 12/30/2014 21:30 Analyzed: 01/12/2015 21:01

Source: A407635-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4-D	0.0019		0.0005	mg/L	0.00200	0.0003 U	97	37-129	31	33	
2,4-DCAA	*0.0017*			*mg/L*	*0.00200*		*87*	*68-139*			

TCLP Metals by 6000/7000 Series Methods - Quality Control

Batch 4L23063 - EPA 7470A

Blank (4L23063-BLK1) Prepared: 12/30/2014 11:45 Analyzed: 12/31/2014 08:20

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.00002	U	0.0002	mg/L							

Blank (4L23063-BLK2) Prepared: 12/30/2014 11:45 Analyzed: 12/31/2014 08:23

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.0002	U	0.002	mg/L							

Blank (4L23063-BLK3) Prepared: 12/30/2014 11:45 Analyzed: 12/31/2014 08:26

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.0002	U	0.002	mg/L							

Blank (4L23063-BLK4) Prepared: 12/30/2014 11:45 Analyzed: 12/31/2014 08:29

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.0002	U	0.002	mg/L							

LCS (4L23063-BS1) Prepared: 12/30/2014 11:45 Analyzed: 12/31/2014 08:32

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.005		0.0002	mg/L	0.00500		101	80-120			

Matrix Spike (4L23063-MS1) Prepared: 12/30/2014 11:45 Analyzed: 12/31/2014 08:38

Source: A407483-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.005		0.0002	mg/L	0.00500	0.00002 U	106	75-125			

Matrix Spike Dup (4L23063-MSD1) Prepared: 12/30/2014 11:45 Analyzed: 12/31/2014 08:41

Source: A407483-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.005		0.0002	mg/L	0.00500	0.00002 U	107	75-125	0.7	20	

Post Spike (4L23063-PS1) Prepared: 12/31/2014 06:00 Analyzed: 12/31/2014 08:44

Source: A407483-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	5.09		0.200	ug/L	5.61	-0.007	91	80-120			

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QUALITY CONTROL DATA

TCLP Metals by 6000/7000 Series Methods - Quality Control

Batch 5A06003 - EPA 3010A

Blank (5A06003-BLK1) Prepared: 01/06/2015 09:19 Analyzed: 01/07/2015 11:22

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	0.178	U	0.250	mg/L							
Barium	0.0158	U	0.250	mg/L							
Cadmium	0.00425	U	0.0250	mg/L							
Chromium	0.0325	U	0.250	mg/L							
Lead	0.0550	U	0.500	mg/L							
Selenium	0.165	U	1.00	mg/L							
Silver	0.0300	U	0.250	mg/L							

Blank (5A06003-BLK4) Prepared: 01/06/2015 09:19 Analyzed: 01/07/2015 11:30

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	0.178	U	0.250	mg/L							
Barium	0.0158	U	0.250	mg/L							
Cadmium	0.00425	U	0.0250	mg/L							
Chromium	0.0325	U	0.250	mg/L							
Lead	0.0550	U	0.500	mg/L							
Selenium	0.165	U	1.00	mg/L							
Silver	0.0300	U	0.250	mg/L							

LCS (5A06003-BS1) Prepared: 01/06/2015 09:19 Analyzed: 01/07/2015 11:33

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	12.0		0.250	mg/L	12.5		96	80-120			
Barium	12.1		0.250	mg/L	12.5		97	80-120			
Cadmium	1.22		0.0250	mg/L	1.25		98	80-120			
Chromium	12.1		0.250	mg/L	12.5		97	80-120			
Lead	12.0		0.500	mg/L	12.5		96	80-120			
Selenium	11.9		1.00	mg/L	12.5		95	80-120			
Silver	2.44		0.250	mg/L	2.50		97	80-120			

Matrix Spike (5A06003-MS1) Prepared: 01/06/2015 09:19 Analyzed: 01/07/2015 11:35

Source: B405682-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	12.2		0.250	mg/L	12.5	0.178 U	98	75-125			
Barium	12.3		0.250	mg/L	12.5	0.102	98	75-125			
Cadmium	1.23		0.0250	mg/L	1.25	0.00425 U	98	75-125			
Chromium	12.1		0.250	mg/L	12.5	0.0325 U	97	75-125			
Lead	12.2		0.500	mg/L	12.5	0.0550 U	97	75-125			
Selenium	12.0		1.00	mg/L	12.5	0.165 U	96	75-125			
Silver	2.48		0.250	mg/L	2.50	0.0300 U	99	75-125			

Matrix Spike Dup (5A06003-MSD1) Prepared: 01/06/2015 09:19 Analyzed: 01/07/2015 11:37

Source: B405682-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	12.6		0.250	mg/L	12.5	0.178 U	101	75-125	3	20	
Barium	12.5		0.250	mg/L	12.5	0.102	99	75-125	2	20	
Cadmium	1.27		0.0250	mg/L	1.25	0.00425 U	102	75-125	4	20	
Chromium	12.5		0.250	mg/L	12.5	0.0325 U	100	75-125	4	20	

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 5A06003 - EPA 3010A - Continued

Matrix Spike Dup (5A06003-MSD1) Continued Prepared: 01/06/2015 09:19 Analyzed: 01/07/2015 11:37

Source: B405682-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	12.6		0.500	mg/L	12.5	0.0550 U	101	75-125	3	20	
Selenium	12.5		1.00	mg/L	12.5	0.165 U	100	75-125	4	20	
Silver	2.52		0.250	mg/L	2.50	0.0300 U	101	75-125	2	20	

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

FLAGS/NOTES AND DEFINITIONS

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
ND	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a "tentative identification".
P	Greater than 25% concentration difference was observed between the primary and secondary GC column. The lower concentration is reported.
QL-02	The associated laboratory control sample exhibited high bias; since the result is ND, the impact on data quality is minimal.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.
QS-03	Surrogate recovery outside acceptance limits

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ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD www.encolabs.com

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Page 1 of 1

Client Name: BABB + ASSOC.	Project Number:
Address: 3605 COUNTRY COVE LN	Project Name/Desc: SEABOARD / RIVERDALE
City/ST/Zip: RALEIGH NC 27606	PO # / Billing Info:
Tel: 919-325-0696 Fax:	Reporting Contact: GARY BABB
Sampler(s) Name, Affiliation (Firm): RICH OLIVER, ENCO	Billing Contact: RANDY SMITH
Sampler(s) Signature:	Site Location / Time Zone:

Requested Analyses: TCLP - FULL; 1311 VOA; 8260/8270 TCLP; 8151 8081 TCLP; METALS TCLP

Preservation (See Codes) (Contains as necessary)

Requested Turnaround Times

Note: Rush requests subject to acceptance by the facility

✓ Standard

___ Expedited

Due __/__/__

Lab Workorder: C416878

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	TCLP - FULL	1311 VOA	8260/8270 TCLP	8151 8081 TCLP	METALS TCLP	Sample Comments
1	LS-1-A	12/22/14	16:00	GRAB		3	X					
2	FILT. SB	"	16:00	GRAB		3	X					
3	LS-1-B	"	16:15	GRAB		3	X					
	TEMP BLANK					1						
						10	<-- Total # of Containers					

Sample Kit Prepared By	Date/Time	Relinquished By	Date/Time: 12/22/14 16:30	Received By	Date/Time: 12/23/14 11:15
Comments/Special Reporting Requirements		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time
		Cooler #'s & Temps on Receipt: 2.7c		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

Ritter, Christine

From: Gary Babb <gbabb@nc.rr.com>
Sent: Monday, January 26, 2015 10:53 AM
To: Ritter, Christine
Subject: Seaboard/Riverdale Filter Media

Christine,

Was working on the letter to you regarding the TCLP testing of the filter media we discussed last week. We had talked about comparing the results to the Protection of Groundwater Standard - Soil Remediation Goals established by the Inactive Hazardous Sites Branch, which for barium is 580 mg/kg (residential use is 3.000 mg/kg).

That standard, reported in mg/kg, doesn't really apply to a TCLP extract, which is reported in mg/l. The units of mg/kg are total compound concentrations in the sample. So what I'm planning to do is to compare our sample results for barium (0.769, 1.53, and 2.24 mg/l) to both the TCLP Standard (100 mg/l) and the 2L Groundwater Standard (700 mg/l).

If we were to compare our samples to the Protection of Groundwater Standard we would need to run totals, not TCLP, to be apples to apples. But comparing the TCLP leachable concentration of barium to the 2L Groundwater Standard, which is the drinking water standard, certainly seems restrictive enough given our intended use of the material (cap maintenance).

Unless I hear different from you, that's how I intend to present the data. You should get a letter from me in a couple days, it's going through the internal review process now.

Have a good week,
Gary

--

Gary D. Babb, P.G.
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Environmental Compliance and Remediation

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